DMI EMK ENVIRONMENTAL SERVICES, Inc.

Corporate Office
410 East Arrellaga Street, Santa Barbara, CA 93101
Phone (805) 568-0074; FAX (805) 965-3374
Ventura Office
1056 East Meta Street, Suite 101, Ventura, CA 93001
Phone (805) 653-0633; FAX (805) 653-0266

July 20, 2017

RECEIVED
By Alameda County Environmental Health 9:07 am, Aug 01, 2017

Mr. Keith Nowell
Alameda County Environmental Health Services
Environmental Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

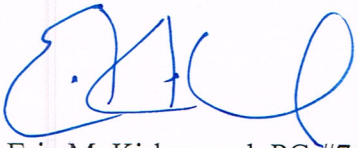
Subject: Winton Valero
23990 Hesperian Boulevard, Hayward, CA 94541
Fuel Leak Case No. RO0003188
GeoTracker Global ID T10000007782
SITE CONCEPTUAL MODEL AND
REQUEST FOR LOW-THREAT CLOSURE

Dear Mr. Nowell:

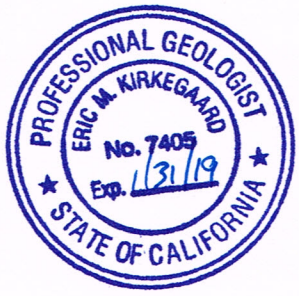
DMI-EMK Environmental Services, Inc. (DMI-EMK) prepared the attached *Site Conceptual Model and Request for Low-Threat Closure* (SCM) on behalf of Mr. Oscar Quiambao, the responsible party (RP) for the subject site located at 23990 Hesperian Boulevard in Hayward, California. This SCM is provided in response to the Alameda County Department of Environmental Health letters dated June 8, 2016, and May 23, 2017, and the State Water Resources Control Board (SWRCB) letter dated August 19, 2016, which required submittal of a site conceptual model to further evaluate the subject site for closure under the SWRCB Low Threat Underground Storage Tank Case Closure Policy.

We trust this report meets your current requirements. If you have questions or comments regarding this report, please contact us at (805) 653-0633.

Respectfully submitted,
DMI-EMK Environmental Services, Inc.



Eric M. Kirkegaard, PG #7405
Senior Geologist



cc: Mr. Oscar Quiambao

July 20, 2017

Mr. Eric Kirkegaard
DMI-EMK Environmental Services, Inc.
1056 East Meta Street, #101
Ventura, CA 93001

Subject: Winton Valero
23990 Hesperian Boulevard, Hayward, CA 94541
Fuel Leak Case No. RO0003188
GeoTracker Global ID T10000007782
AUTHORIZATION TO SUBMIT:
SITE CONCEPTUAL MODEL AND
REQUEST FOR LOW-THREAT CLOSURE
DATED JULY 20, 2017

I have reviewed and acknowledge the content and recommendations and/or conclusions contained in the attached document or report submitted on my behalf to ACDEH's FTP server and the SWRCB's GeoTracker website.

Sincerely,

OQ Enterprises, Inc.

STATE WATER RESOURCES CONTROL BOARD

GEOTRACKER ESI

UPLOADING A GEO_REPORT FILE

SUCCESS

Your GEO_REPORT file has been successfully submitted!

Submittal Type:	GEO_REPORT
Report Title:	Site Conceptual Model and Request for Low-Threat Closure
Report Type:	Request for Closure
Report Date:	7/20/2017
Facility Global ID:	T10000007782
Facility Name:	WINTON VALERO
File Name:	RO3188_SCM_R_2017-07-20.pdf
Organization Name:	DMI Environmental Services
Username:	DMI ENVIRONMENTAL
IP Address:	97.93.42.158
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SITE CONCEPTUAL MODEL AND REQUEST FOR LOW-THREAT CLOSURE

WINTON VALERO
23990 HESPERIAN BOULEVARD
HAYWARD, CALIFORNIA 94541

Fuel Leak Case No. RO0003188
SWRCB Global ID # T10000007782

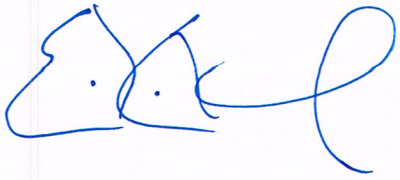
Prepared for:
Mr. Oscar Quiambao
27472 Hayward Boulevard
Hayward, California 94542

July 20, 2017

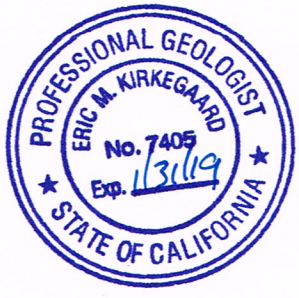
CERTIFICATION

This document is an instrument of service, prepared by the undersigned professionals, in accordance with the current standard of care accepted by professional environmental and geologic practice.

DMI-EMK Environmental Services, Inc.



Eric M. Kirkegaard, PG #7405
Senior Geologist



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SITE CONCEPTUAL MODEL
AND REQUEST FOR LOW-THREAT CLOSURE

WINTON VALERO
23990 HESPERIAN BOULEVARD
HAYWARD, CALIFORNIA 94541
Fuel Leak Case No. RO0003188
SWRCB Global ID # T10000007782

1.0 INTRODUCTION

DMI-EMK Environmental Services, Inc. (DMI-EMK) prepared this *Site Conceptual Model and Request for Low-Threat Closure* (SCM) on behalf of Mr. Oscar Quiambao, the responsible party (RP) for the subject site located at 23990 Hesperian Boulevard in Hayward, California. This SCM is provided in response to the Alameda County Department of Environmental Health (ACDEH) letters dated June 8, 2016, and May 23, 2017 (Appendix A), and the State Water Resources Control Board (SWRCB) letter dated August 19, 2016 (Appendix B), which required submittal of a site conceptual model to further evaluate the subject site for closure under the SWRCB Low Threat Underground Storage Tank Case Closure Policy (LTCP).

2.0 PROJECT DESCRIPTION

The following provides a description of the subject site and the regional and local geologic and hydrogeologic conditions in the vicinity of the site.

2.1 SITE DESCRIPTION

The site is located at 23990 Hesperian Boulevard, in Hayward, California (Figure 1). The site is situated at the northeast corner of West Winton Avenue and Hesperian Boulevard, in an area used for commercial and residential purposes. The site is bordered to the north, east, and south by commercial businesses and residential properties and to the west by Hayward Executive Airport. Until recently, the site was operated as an automobile fueling station containing four underground storage tanks (USTs; including one 8,000-gallon UST, two 10,000-gallon USTs, and one 12,000-gallon UST) and an automotive repair facility. The automotive repair facility has been removed and the site was renovated to include a convenience store and updated fuel delivery system (fuel dispensers and underground fuel delivery piping) while utilizing the four existing USTs. The former and current site configuration is shown on Figure 2, the site plan with sample locations and lines of cross section is shown on Figure 3, and cross sections A-A' and B-B' are presented on Figure 4.

2.2 SITE HISTORY

2.2.1 Previous Activities

As reported in the *Recommendation for Case Closure* (Environmental Resolutions, Inc., 1991), the following summarizes site activities from 1985 through 2001.

November 1985	USTs and product lines were replaced with double-walled USTs and double-contained product lines.
May 23, 1988	A Sensitive Receptor Survey was performed.
June 14 and 15, 1988	Texaco installed three groundwater monitoring wells (MW3A thorough MW3C). Groundwater samples were collected.
September 28, 1988	Texaco drilled three soil borings (B-1 through B-3) and installed two monitoring wells (MW-3D and MW-3E). Soil and groundwater samples were collected.
January 20, 1989	Texaco drilled three soil borings (B-4 through B-6) and installed two monitoring wells (MW-3F and MW-3G). Soil and groundwater samples were collected.
February 26, 1990	One soil boring (B-7) was drilled. Soil samples were collected.
July 13, 1990	One monitoring well was drilled and installed, and groundwater samples were collected.
April 1991	Began semi-annual groundwater monitoring (Resna Industries. Inc. [Resna]).
July 9, 1993	Ceecon performed a soil vapor-extraction test. The test indicated the presence of halogenated volatile organic compounds (HVOCs).
January 1994	Began quarterly groundwater monitoring. (Blaine Tech Services).
February 17, 1994	Report submitted by Terra Vac Corporation for the drilling and installation of eight vapor-extraction wells (VW1 through VW8). Total petroleum hydrocarbons as gasoline (TPH-G) and benzene were detected in soil samples at maximum concentrations of 810 and 86 milligrams per kilogram (mg/Kg).
October 28, 1994	Krazen & Associates, under contract of Taco Bell Corporation, drilled three soil borings (B1 through B3) and hand-augered one boring (HA1). Laboratory analyses detected total petroleum hydrocarbons as diesel (TPH-D) at a maximum concentration of 1.9 mg/Kg. TPH-G and benzene, toluene, ethylbenzene, and total xylenes (BTEX) were not detected in soil samples at or above laboratory detection limits. Groundwater analyses detected TPH-D, TPH-G, and benzene at 83,000 micrograms per liter (µg/L), 28,000 µg/L, and 380 µg/L, respectively.
June 19, 1995	Texaco installed three air sparge wells (SP-1 through SP-3). Laboratory analyses of soil samples detected TPH-G at maximum concentration of 7.9 mg/Kg and benzene at 0.030 mg/Kg.
September 1994 through April 1995	Texaco operated a dual-phase extraction remediation system at the site.

July 25, 1995	Report submitted by Terra Vac Corporation for the drilling and installation of three air-sparge wells (SP1 through SP3). TPH-G and BTEX were not detected at or above the laboratory detection limits.
January 1996	Texaco submitted a Non-Attainment Area Management Plan (NAAMP), which included a Compliance Monitoring Program (CMP).
June 1996	Texaco implemented the CMP.
July 31 through August 5, 1996	Air-sparge wells SP-1 through SP-3, monitoring wells MW-3C through MW-3E, and vapor-extraction wells VW-1 through VW-9 were destroyed.
August 23 and September 9, 1996	Product lines were removed. Laboratory analysis of soil samples collected detected TPH-D at a maximum concentration of 12 mg/Kg. TPH-G and BTEX were not detected at or above laboratory detection limits.
January 14, 1997	One 550-gallon single walled fiberglass used –oil UST was removed. No holes or cracks were observed in the UST, and no groundwater was observed in the UST cavity. Laboratory analyses of soil samples detected total recoverable petroleum hydrocarbons (TRPH), TPH-D, and total lead at a maximum concentration of 220 mg/Kg, 2.1 mg/Kg, and 11 mg/Kg, respectively. Laboratory analyses of soil samples did not detect TPH-G or BTEX at or above the laboratory detection limits. This work was reported in ERI's Used-Oil Underground Storage Tank Removal at Exxon Station 7-0218 dated February 4, 1997.
1998	ExxonMobil assumed the environmental investigation of the site.
1999	ExxonMobil completed the requirements of the CMP, and submitted a request for no further action.
December 22, 1999	ACC Environmental Consultants (ACC) drilled two soil borings (B1 and B2) downgradient of the former USTs at 994 West Winton Avenue in Hayward, California. Laboratory analyses of soil samples detected TPH-G at a maximum concentration of 99 mg/Kg. Laboratory analyses of groundwater samples detected TPH-G at a maximum concentration of 49,000 µg/L and benzene at maximum concentration of 190 µg/L. Methyl tertiary butyl ether (MTBE) was not detected at or above the laboratory detection limits.
January 20, 2000	ACC drilled six soil borings (SB1 through SB6) at 994 West Winton Avenue. Laboratory analyses of soil samples did not detect TPH-G, BTEX, or MTBE at or above the laboratory detection limits. Laboratory analyses of groundwater samples detected TPH-G at a maximum concentration of 46,000 µg/L and benzene at a maximum concentration of 210 µg/L. MTBE was not detected at or above the laboratory detection limits.
2000	At the request of the California Regional Water Quality Control Board, San Francisco Bay Region (Regional Board), ExxonMobil completed one additional groundwater monitoring event.

March 2000	ExxonMobil received a letter from the City of Hayward Fire Department denying closure, stating that the case could not be separated from the UST investigation at 994 West Winton Avenue and requesting joint groundwater sampling.
April 20, 2000	ERI observed Environ Corporation drill three on-site borings (SB1 through SB3) using direct push methods. Groundwater samples collected. Soil samples were not collected.
May 2000	ACC commenced case closure documentation with City of Hayward Fire Department for the site at 994 West Winton Avenue.
October 2000	ERI performed a well survey incorporating the results of a municipal water supply well search and previous investigations. A city of Hayward emergency supply is located approximately 1,000 feet west of the site along West Winton Avenue. An industrial water supply well that has reportedly been destroyed was also found.
February 12, 2001	ERI verbally notified Valero Refining Company (property owner) of the proposed case closure.

2.2.2 Case Closure – 2000 and 2002

On November 8, 2000, the San Francisco Bay Regional Water Quality Control Board (RWQCB) issued a *Site Closure Summary* (Appendix C) for the subject site which documents maximum pollutant concentrations before and after the soil vapor extraction remediation performed from September 1994 through May 1995.

Information contained in the RWQCB *Site Closure Summary* dated November 8, 2000, (Appendix C) indicates the site was remediated using soil vapor extraction and groundwater extraction, and at the time of closure, groundwater beneath the site contained the following contaminant concentrations:

- TPH-G at 4,600 µg/L
- Benzene at 40 µg/L
- Toluene at 4.9 µg/L
- Ethylbenzene at 85 µg/L
- Xylene at 82 µg/L
- MTBE at 96 µg/L

Review of the SWRCB GeoTracker website indicates that the case was closed as of January 9, 2002.

2.2.3 Recent Activities

2.2.3.1 System Piping Removal and Compliance Soil Sampling – 2015

On July 31, 2015, DMI-EMK was onsite to collect compliance soil samples from beneath removed fuel dispenser islands (samples D1 through D4), fuel delivery piping (P1 through P3),

and UST vent lines (VL1 and VL2), and from stockpiled gravel removed from above the USTs (SP1 through SP4). The soil samples were collected under direction from the City of Hayward Fire Department and submitted to a State-certified laboratory for analysis. In addition, soil samples were collected from beneath two removed hydraulic hoists (H1 and H2) and the footprint of the planned convenience store building (C1 through C4). Soil sampling locations are shown on Figure 3. Laboratory analytical results reported for sample D4@2' indicated the presence of elevated concentrations of total petroleum hydrocarbons as diesel (TPH-D; 570 mg/Kg) and oil (TPH-O; 300 mg/Kg).

Laboratory analytical results for this phase of work are presented on Tables 1A through 1C. The findings of this phase of work were presented in DMI-EMK's *Station Upgrades and Remedial Excavation Report* dated June 26, 2017.

2.2.3.2 Excavation of Impacted Soils – 2015

The City of Hayward Fire Department concurred that a limited excavation was acceptable to remove impacted soil at dispenser island sample location D4@2' prior to completion of UST system upgrades being conducted at that time. As such, an area measuring approximately 6 feet by 10 feet was excavated to approximately 14 feet bgs. On September 4, 2015, DMI-EMK was onsite to collect soil samples from the bottom and sidewalls of the excavation, and from the excavation soil stockpile. Soil sampling locations are shown on Figure 3. The excavated soil (approximately 39 tons) was transported from the site and disposed of at Recology Hay Road Landfill in Vacaville, California.

Laboratory analytical results reported for the excavation sidewall soil samples indicate the following maximum contaminant concentrations:

- TPH-G at 2,600 mg/Kg (sample EXC8@10')
- TPH-D at 3,700 mg/Kg (sample EXC5@5')
- Ethylbenzene at 5.4 mg/Kg (sample EXC8@10')
- Total Xylenes at 13 mg/Kg (sample EXC8@10')
- n-Butyl-benzene at 7.0 mg/Kg (sample EXC4@10')
- sec-Butyl-benzene at 7.6 mg/Kg (sample EXC8@10')
- Isopropyl benzene at 7.0 mg/Kg (sample EXC8@10')
- 4-Isopropyl toluene at 5.5 mg/Kg (sample EXC8@10')
- Naphthalene at 55 mg/Kg (sample EXC8@10')
- n-Propyl benzene at 37 mg/Kg (sample EXC8@10')
- 1,2,4-Trimethylbenzene at 310 mg/Kg (sample EXC8@10')
- 1,3,5-Trimethylbenzene at 83 mg/Kg (sample EXC8@10')

Benzene, toluene, and MTBE were not reported at or above the laboratory detection limits in the excavation sidewall soil samples.

Laboratory analytical results reported for confirmation soil sample (EXC1@14') collected from the bottom of the excavation indicate the following maximum contaminant concentrations:

- TPH-G at 180 mg/Kg
- TPH-D at 2,600 mg/Kg
- n-Butyl-benzene at 1.1 mg/Kg
- sec-Butyl-benzene at 0.51 mg/Kg
- Isopropyl benzene at 0.91 mg/Kg
- n-Propyl benzene at 2.5 mg/Kg

BTEX and MTBE were not reported at or above the laboratory detection limits in confirmation soil sample EXC1@14' collected from the bottom of the excavation.

Laboratory analytical results for this phase of soil sampling are presented on Tables 2A through 2C.

Based on these results, the City of Hayward Fire Department required the submittal of an Underground Storage Tank (UST) Site – Unauthorized Release / Contamination Report. After review by the Hayward Fire Department and the San Francisco Bay Regional Water Quality Control Board, the case was transferred to ACDEH for regulatory oversight.

2.2.3.3 Site Assessment – 2016

In a letter dated October 23, 2015, ACDEH directed the preparation and submittal of a workplan to delineate the extent of petroleum hydrocarbon impact associated with an identified fuel release at the subject site. In response, DMI-EMK prepared and submitted a *Soil and Groundwater Assessment Workplan* dated October 26, 2015, which was conditionally approved by ACDEH in their letter dated December 4, 2015.

On February 2, 2016, five direct-push soil borings (HP1 through HP5; Figure 3) were advanced for collection of soil and groundwater samples. Each boring was advanced and sampled to a depth of approximately 30.5 feet bgs using truck-mounted direct-push drilling equipment rig equipped with dual-core, hydraulically driven, core samplers.

The results of this assessment indicate that residual soil petroleum hydrocarbon contaminant concentrations identified in the vicinity of the fuel dispenser release do not exceed the SWRCB LTCP criteria for Commercial/Industrial Land use or Utility Worker (Tables 3A and 3B).

Groundwater contaminant concentrations identified at boring locations HP1 through HP5 do not exceed the SWRCB LTCP criteria or the State of California Primary Maximum Contaminant Levels (MCLs). The following constituents were above water quality objectives (WQO):

- TBA is above the California Drinking Water Action Level of 12 µg/L in sample HP4-W1 (TBA at 15 µg/L) and HP5-W1 (TBA at 17 µg/L).
- TPH-G is above the WQO of 100 µg/L in HP1-W1 (290 µg/L), HP2-W1 (400 µg/L), HP3-W1 (370 µg/L), HP4-W1 (1,200 µg/L), and HP5-W1 (1,100 µg/L).

- TPH-D is above the WQO of 100 µg/L in HP3-W1 (170 µg/L) and HP4-W1 (120 µg/L).

Laboratory analytical results for this phase of soil and groundwater sampling are presented on Tables 3A through 4B. Boring logs for HP1 through HP5 are presented in Appendix D. The findings of this phase of work were presented in DMI-EMK's *Soil and Groundwater Assessment Report and Request for Low-Threat Closure* dated May 4, 2016.

The reported TBA and TPH-G concentrations from the February 2, 2016, hydropunch groundwater samples were contoured in order to estimate the lateral extent of the groundwater contaminant plume associated with the subject site. The TBA and TPH-G isoconcentration maps are illustrated in Figures 4, and 5, respectively.

3.0 SITE CONCEPTUAL MODEL

As required in the ACDEH letters dated June 8, 2016, and May 23, 2017 (Appendix A), and by the SWRCB dated August 19, 2016 (Appendix B), DMI-EMK prepared a tabulated SCM for the subject site (Appendix E). In addition, a Site Conceptual Exposure Model was prepared (Appendix F).

4.0 SUMMARY AND CONCLUSIONS

The following is based on the results of current and historical corrective actions conducted at the site and the findings of the SCM.

4.1 SOIL

Laboratory results reported for compliance soil sample D4@2', collected on July 31, 2015, showed an elevated concentration of TPH-D (570 mg/Kg). In order to remove secondary source soil from this location prior to completion of UST system upgrades conducted at that time, the City of Hayward Fire Department approved a limited excavation. Approximately 39 tons of petroleum impacted soil were excavated from this secondary source area and disposed of at Recology Hay Road Landfill in Vacaville, California. While laboratory results for the excavation confirmation soil samples showed elevated concentrations of petroleum hydrocarbon remaining at the margins of the remedial excavation (to a depth of 10 feet bgs) the bottom sample showed significantly lower concentrations. Benzene and MTBE were not detected in any of the soil samples.

Based on the excavation soil sample results, ACDEH required a site assessment to evaluate the extent of impact to soil and groundwater beneath the site. Laboratory analytical results show that residual petroleum hydrocarbon contaminants reported in the soil samples from borings HP1 through HP5 do not exceed the SWRCB Table 1 LTCP criteria for Commercial/Industrial Land use or Utility Worker. These results also indicate that petroleum impacts at the margins of the remedial excavation are limited in extent, both laterally and vertically.

As approximately 39 tons of secondary source soil contamination has been removed from the dispenser release area at sample D4@2', and residual petroleum hydrocarbon impacted soil beneath the site does not exceed the SWRCB Table 1 LTCP criteria for Commercial/Industrial Land use or Utility Workers, it is our opinion that no further corrective action is warranted with regard to petroleum hydrocarbon impacted soil beneath the site.

4.2 GROUNDWATER

Based on laboratory results, residual petroleum hydrocarbon contaminants reported in the groundwater samples from borings HP1 through HP5 do not exceed State of California Primary MCLs or the SWRCB LTCP criteria. Although TBA, TPH-G, and TPH-D, were reported at concentrations above their respective WQO's, the current groundwater contaminant concentrations show significant decreases in comparison with the levels reported in the RWQCB *Site Closure Summary* dated November 8, 2000. Residual groundwater impacts are expected to continue to decrease over time as:

- The source of the release has been stopped via removal of the fuel dispenser at sample location D4@2'.
- Approximately 39 tons of secondary source soil contamination have been removed from beneath the former fuel dispenser at sample location D4@2'.
- Laboratory results for soil samples from the remedial excavation show that benzene and MTBE are not present and therefore do not represent a threat to leaching into groundwater.

Contouring of the TPH-G concentrations reported for groundwater samples from borings HP1 through HP5 indicates a separation of approximately 1,014-feet between the downgradient extent of the TPH-G contaminant plume (using the WQO of 100 µg/L) and the City of Hayward emergency Municipal Well D2. Based on the site's estimated TPH-G plume length of 105 feet, low to non-detect concentrations of benzene and MTBE, and separation of approximately 1,014 feet from the outside edge of the plume to Municipal Well D2, the site meets the SWRCB *Technical Justification* document Class 2 plume criteria, and is close to meeting the Class 1 plume criteria. Therefore, residual groundwater contamination associated with the site does not appear to pose a significant risk to the emergency use Municipal Well D2.

It is our opinion that no further corrective action is warranted with regard to residual petroleum hydrocarbon impacted groundwater beneath the site based on the following conditions:

- The source of the release has been stopped via removal of the fuel dispenser at sample location D4@2' and excavation of approximately 39 tons of secondary source soil contamination.
- Laboratory results for groundwater samples from borings HP1 through HP5 show significantly decreased concentrations in comparison with the historic groundwater contaminant concentrations allowed for closure in the RWQCB Site Closure Summary dated November 8, 2000.
- Laboratory results for soil samples from the remedial excavation show that benzene and MTBE are not present and therefore do not represent a threat to leaching into groundwater.

- Contouring of the TPH-G concentrations reported for groundwater samples from borings HP1 through HP5 indicates a separation of approximately 1,014-feet between the downgradient extent of the TPH-G contaminant plume (using the WQO of 100 µg/L) and the City of Hayward emergency Municipal Well D2.

5.0 RECOMMENDATIONS

Based on the results of current and historical corrective actions, the previous RWQCB case closure in 2000, and our conclusions regarding soil and groundwater contamination associated with the site, DMI-EMK recommends that ACDEH consider the site for closure per the SWRCB LTCP.

6.0 LIMITATIONS

This report, including all attached exhibits, describes results of all or a portion of DMI-EMK Environmental Services, Inc.'s (DMI-EMK) investigation into subsurface conditions at the subject site. The findings and recommendations are based on the application of a variety of scientific and technical disciplines to data developed regarding the subject property. The data was developed by observation, sampling, and gathering of information (both documentary and oral) about the property. Some of the data is subject to change over time. Some of the data is based on information not currently observable or measurable, but recorded by documents or orally reported by individuals. The findings and recommendations are based, in part, on application of sampling techniques. Said techniques inherently involve a risk of overstating or understating the presence or severity of contamination. The findings and recommendations are based also on sampling only for the specific contaminants shown in the laboratory reports. The samples taken were not subject to testing for every contaminant known to the environmental industry, and every biological and/or chemical condition known to the environmental industry.

DMI-EMK is not responsible for the accuracy of data not developed by DMI-EMK or its agents or subcontractors. DMI-EMK is not responsible for overstating or understating the presence or severity of contamination. DMI-EMK is not responsible for failing to test for contaminants or biological/chemical conditions it had no reason to know were of concern at the subject site.

DMI-EMK has performed this investigation in a professional manner using that degree of skill and care exercised for similar projects under similar conditions by reputable and competent environmental consultants. No warranty, either expressed or implied, was made. DMI-EMK is not responsible for the ramifications caused by the concealment, withholding or failure to disclose of relevant information known to anyone contacted by DMI-EMK in connection with its work at the subject site. This report and all field data, notes, laboratory test data on which it is based (hereinafter collectively designated "Information") were prepared by DMI-EMK solely for the benefit of DMI-EMK's client Mr. Oscar Quiambao ("Client"). The Client has the legal right to release all or a portion of this Information, in its discretion, to third parties. Said third parties may not have access to all information upon which this report was based, nor access to prior reports, nor to other information developed and not placed in any report (hereinafter collectively designated "Additional Information"). The presence or absence of such Additional Information may materially affect the statement contained in this report. Any use or reliance upon this report of Information by a party other than the Client, therefore, shall be solely at the risk of such third party and without legal recourse against DMI-EMK, its employees, officers, or directors, regardless of whether the action in which recovery of damages is sought based upon contract, tort, statute or otherwise.

7.0 REFERENCES

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-RWQCB, 2000. *Site Closure Summary - Former Exxon Service Station 7-0128, 2399 Hesperian Boulevard, Hayward California*, November 2000, 4 p.

State Water Resources Control Board (SWRCB), 2012. *Low-Threat Underground Storage Tank Case Closure Policy*, 15 p.

TABLES

TABLE 1A
SUMMARY OF SOIL SAMPLE LABORATORY ANALYTICAL RESULTS*
(TOTAL PETROLEUM HYDROCARBONS, BTEX AND OXYGENATES)
SAMPLES COLLECTED JULY 31, 2015

Sample ID	Depth (ft)	TPH-G	TPH-D	TPH-O	B	T	E	X	MTBE	TBA	TAME	DIPE	ETBE
H1	**6**	<0.080	<7.6	<40	na	na	na	na	na	na	na	na	na
H2	**7**	<0.086	7.9[J]	<40	na	na	na	na	na	na	na	na	na
VL1	**2**	<0.18	8.9[J]	<40	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	<0.0088	<0.0018	<0.0018	<0.0018
VL2	**3**	<0.082	<7.6	<40	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0080	<0.0016	<0.0016	<0.0016
D1	**1.5**	<0.17	<7.6	<40	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0084	<0.0017	<0.0017	<0.0017
D2	**1.5**	<0.081	<7.6	<40	<0.0017	<0.0017	<0.0017	0.0018[J]	<0.0017	<0.0083	<0.0017	<0.0017	<0.0017
D3	**2**	<0.082	<7.6	<40	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	<0.0088	<0.0018	<0.0018	<0.0018
D4	**2**	8.1[D3]	570	300	<0.0018	<0.0018	<0.0018	0.0025[J]	<0.0018	<0.0089	<0.0018	<0.0018	<0.0018
P1	**2**	<0.084	<7.6	<40	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0085	<0.0017	<0.0017	<0.0017
P2	**2**	<0.079	<7.6	<40	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0078	<0.0016	<0.0016	<0.0016
P3	**3**	<0.083	19	<40	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0079	<0.0016	<0.0016	<0.0016
C1@1', C2@1', C3@1', C4@1.5'	**Composite**	<0.099	<7.6	<40	<0.0020	<0.0020	<0.0020	<0.0020	na	na	na	na	na
SP1, SP2, SP3, SP4	**Composite**	<0.10	<7.6	<40	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0098	<0.0020	<0.0020	<0.0020
MDL		**0.0099**	**7.6**	**40**	**0.0020**	**0.0020**	**0.0020**	**0.0020**	**0.0020**	**0.010**	**0.0020**	**0.0020**	**0.0020**
PQL		**0.50**	**10**	**50**	**0.0050**	**0.0050**	**0.0050**	**0.0050**	**0.0050**	**0.025**	**0.0050**	**0.0050**	**0.0050**
LTCP Criteria (Comm/Ind) 0 to 5 feet bgs		**nl**	**nl**	**nl**	**8.2**	**nl**	**89**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**
LTCP Criteria (Comm/Ind) 5 to 10 feet bgs (Volatilization to outdoor air)		**nl**	**nl**	**nl**	**12**	**nl**	**134**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**
LTCP Criteria (Utility Worker) 0 to 5 feet bgs		**nl**	**nl**	**nl**	**14**	**nl**	**314**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**

*Reported in milligrams per kilogram (mg/kg). Results above laboratory Method Detection Limits (MDLs) are shaded. Results above LTCP Criteria are presented in **bold.** Samples were analyzed by EPA Method 8015, and 8260B.

TABLE 1A (Footnotes)
SUMMARY OF SOIL SAMPLE LABORATORY ANALYTICAL RESULTS
(TOTAL PETROLEUM HYDROCARBONS, BTEX AND OXYGENATES)
SAMPLES COLLECTED JULY 31, 2015

TPH-G	Total petroleum hydrocarbons as gasoline – quantified against a gasoline standard
TPH-D	Total petroleum hydrocarbons as diesel – quantified against a diesel standard
TPH-O	Total petroleum hydrocarbons as oil – quantified against an oil standard
B	Benzene
T	Toluene
E	Ethylbenzene
X	Total xylenes
MTBE	Methyl-tertiary-Butyl Ether
TBA	tertiary-Butyl Alcohol
TAME	tertiary-Amyl-Methyl Ether
DIPE	Di-isopropyl Ether
ETBE	Ethyl-tertiary-Butyl Ether
MDL/PQL	Method Detection Limit / Practical Quantitation Limit employed by the laboratory; MDLs/PQLs may have been raised for samples containing elevated concentrations of contaminants or increased weight of sample
J	Estimated concentration; concentration reported above MDL but below PQL
D3	The hydrocarbons present are a complex mixture of diesel range and heavy oil range organics
D4	The sample chromatograph pattern does not resemble the fuel standard used for quantitation
D5	Results in the diesel organics range are primarily due to overlap from a gasoline range product
na	Constituent not analyzed
LTCP Criteria:	Based on the State Water Resources Control Board (SWRCB) Low-Threat Underground Storage Tank Case Closure Policy (LTCP) Table 1 – Concentrations of Petroleum Constituents in Soil That Will Have No Significant Risk of Adversely Affecting Human Health., August 2012.
nl	LTCP Criteria not listed for this constituent

TABLE 1B
SUMMARY OF SOIL SAMPLE LABORATORY ANALYTICAL RESULTS*
(RECALCITRANT COMPOUNDS AND LEAD)
SAMPLES COLLECTED JULY 31, 2015

Sample ID	Depth (ft)	n-Butyl-benzene	Sec-Butyl-benzene	Tert-Butyl-benzene	Isopropyl-benzene	4-Isopropyl Toluene	Naphthalene	n-Propyl-benzene	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene	Lead
H1	**6**	na	na	na	na	na	na	na	na	na	na
H2	**7**	na	na	na	na	na	na	na	na	na	na
VL1	**2**	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	7.2
VL2	**3**	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	8.6
D1	**1.5**	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	8.4
D2	**1.5**	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	7.9
D3	**2**	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	9.8
D4	**2**	<0.0018	0.0062	<0.0018	<0.0018	0.0029[J]	<0.0018	0.0020[J]	0.0098	<0.0018	21
P1	**2**	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	7.5
P2	**2**	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	7.2
P3	**3**	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	7.0
C1@1', C2@1', C3@1', C4@1.5'	**Composite**	na	na	na	na	na	na	na	na	na	20
SP1, SP2, SP3, SP4	**Composite**	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	3.4
MDL		**0.0020**	**0.0020**	**0.0020**	**0.0020**	**0.0020**	**0.0020**	**0.0020**	**0.0020**	**0.0020**	**0.29**
PQL		**0.0050**	**0.0050**	**0.0050**	**0.0050**	**0.0050**	**0.0050**	**0.0050**	**0.0050**	**0.0050**	**0.48**
LTCP Criteria (Comm/Ind) 0 to 5 feet bgs		**nl**	**nl**	**nl**	**nl**	**nl**	**45**	**nl**	**nl**	**nl**	**nl**
LTCP Criteria (Comm/Ind) 5 to 10 feet bgs (Volatilization to outdoor air)		**nl**	**nl**	**nl**	**nl**	**nl**	**45**	**nl**	**nl**	**nl**	**nl**
LTCP Criteria (Utility Worker) 0 to 5 feet bgs		**nl**	**nl**	**nl**	**nl**	**nl**	**219**	**nl**	**nl**	**nl**	**nl**

*Reported in milligrams per kilogram (mg/kg). Results above laboratory Method Detection Limits (MDLs) are shaded. Results above LTCP Criteria are presented in **bold.** Samples were analyzed by EPA Method 8260B.

TABLE 1B (Footnotes)
SUMMARY OF SOIL SAMPLE LABORATORY ANALYTICAL RESULTS
(RECALCITRANT COMPOUNDS)
SAMPLES COLLECTED JULY 31, 2015

MDL/PQL	Method Detection Limit / Practical Quantitation Limit employed by the laboratory; MDLs/PQLs may have been raised for samples containing elevated concentrations of contaminants or increased weight of sample
J	Estimated concentration; concentration reported above MDL but below PQL
LTCP Criteria:	Based on the State Water Resources Control Board (SWRCB) Low-Threat Underground Storage Tank Case Closure Policy (LTCP) Table 1 – Concentrations of Petroleum Constituents in Soil That Will Have No Significant Risk of Adversely Affecting Human Health., August 2012.
na	Constituent not analyzed
nl	LTCP Criteria not listed for this constituent

TABLE 1C
SUMMARY OF SOIL SAMPLE LABORATORY ANALYTICAL RESULTS*
CALIFORNIA ASSESSMENT MANUAL METALS
SAMPLES COLLECTED JULY 31, 2015

Sample ID	Depth (feet)	Sb	As	Ba	Be	Cd	Cr	Co	Cu	Pb	Hg	Mo	Ni	Se	Ag	Tl	V	Zn
C1@1', C2@1', C3@1', C4@1.5'	Composite	<0.96	9.7	160	0.42[J]	0.41	33	10	46	20	0.022[J]	0.40[J]	44	<0.96	<0.19	<0.48	29	52
MDL		**0.96**	**0.48**	**0.48**	**0.24**	**0.14**	**0.24**	**0.24**	**0.48**	**0.29**	**0.010**	**0.24**	**0.096**	**0.96**	**0.19**	**0.48**	**0.48**	**0.48**
PQL		**2.4**	**0.96**	**0.96**	**0.48**	**0.24**	**0.48**	**0.48**	**0.96**	**0.48**	**0.095**	**0.48**	**0.24**	**1.9**	**0.48**	**0.96**	**0.96**	**0.96**
LTCP Criteria (Comm/Ind) 0 to 5 feet bgs		**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**
LTCP Criteria (Comm/Ind) 5 to 10 feet bgs		**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**
LTCP Criteria (Utility Worker) 0 to 5 feet bgs		**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**

* Reported in milligrams per kilogram (mg/kg). Results above laboratory Method Detection Limits (MDLs) are shaded. Results above LTCP Criteria are presented in **bold.** Samples were analyzed by EPA Method 6010B.

TABLE 1C (Footnotes)
SUMMARY OF SOIL SAMPLE LABORATORY ANALYTICAL RESULTS
CALIFORNIA ASSESSMENT MANUAL METALS
SAMPLES COLLECTED JULY 31, 2015

Sb	Antimony
As	Arsenic
Ba	Barium
Be	Beryllium
Cd	Cadmium
Cr	Chromium
Co	Cobalt
Cu	Copper
Pb	Lead
Hg	Mercury
Mo	Molybdenum
Ni	Nickel
Se	Selenium
Ag	Silver
Tl	Thallium
V	Vanadium
Zn	Zinc

MDL/PQL	Method Detection Limit / Practical Quantitation Limit employed by the laboratory; MDLs/PQLs may have been raised for samples containing elevated concentrations of contaminants or increased weight of sample
J	Estimated concentration; concentration reported above MDL but below PQL
LTCP Criteria:	Based on the State Water Resources Control Board (SWRCB) Low-Threat Underground Storage Tank Case Closure Policy (LTCP) Table 1 – Concentrations of Petroleum Constituents in Soil That Will Have No Significant Risk of Adversely Affecting Human Health., August 2012.
nl	LTCP Criteria not listed for this constituent

TABLE 2A
SUMMARY OF SOIL SAMPLE LABORATORY ANALYTICAL RESULTS*
(TOTAL PETROLEUM HYDROCARBONS, BTEX AND OXYGENATES)
SAMPLES COLLECTED SEPTEMBER 4, 2015

Sample ID	Depth (ft)	TPH-G	TPH-D	TPH-O	B	T	E	X	MTBE	TBA	TAME	DIPE	ETBE
EXC1	**14**	180	2,600	na	<0.11	<0.11	<0.11	<0.11	na	na	na	na	na
EXC2	**10**	540	310	na	<0.46	<0.46	<0.46	<0.46	na	na	na	na	na
EXC3	**5**	<0.16	<7.6	na	<0.0016	<0.0016	<0.0016	<0.0016	na	na	na	na	na
EXC4	**10**	560	1,400	na	<0.41	<0.41	0.97[J]	<0.41	na	na	na	na	na
EXC5	**5**	36	3,700	na	<0.096	<0.096	<0.096	<0.096	na	na	na	na	na
EXC6	**10**	450	3,400	na	<0.39	<0.39	<0.39	1.0	na	na	na	na	na
EXC7	**5**	2.4	240	na	<0.0017	<0.0017	<0.0017	<0.0017	na	na	na	na	na
EXC8	**10**	2,600	28	na	<0.73	<0.73	5.4	13	na	na	na	na	na
EXC9	**5**	<0.17	<7.6	na	<0.0017	<0.0017	<0.0017	<0.0017	na	na	na	na	na
EXC-SP	**Stockpile**	290	3,500	430	<0.020	<0.020	0.10	<0.020	<0.020	na	na	na	na
MDL		**0.0099**	**7.6**	**40**	**0.0020**	**0.0020**	**0.0020**	**0.0020**	**0.0020**	**0.010**	**0.0020**	**0.0020**	**0.0020**
PQL		**0.50**	**10**	**50**	**0.0050**	**0.0050**	**0.0050**	**0.0050**	**0.0050**	**0.025**	**0.0050**	**0.0050**	**0.0050**
LTCP Criteria (Comm/Ind) 0 to 5 feet bgs		**nl**	**nl**	**nl**	**8.2**	**nl**	**89**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**
LTCP Criteria (Comm/Ind) 5 to 10 feet bgs (Volatilization to outdoor air)		**nl**	**nl**	**nl**	**12**	**nl**	**134**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**
LTCP Criteria (Utility Worker) 0 to 5 feet bgs		**nl**	**nl**	**nl**	**14**	**nl**	**314**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**

*Reported in milligrams per kilogram (mg/kg). Results above laboratory Method Detection Limits (MDLs) are shaded. Results above LTCP Criteria are presented in **bold.** Samples were analyzed by EPA Method 8015, and 8260B.

TABLE 2A (Footnotes)
SUMMARY OF SOIL SAMPLE LABORATORY ANALYTICAL RESULTS
(TOTAL PETROLEUM HYDROCARBONS, BTEX AND OXYGENATES)
SAMPLES COLLECTED SEPTEMBER 4, 2015

TPH-G	Total petroleum hydrocarbons as gasoline – quantified against a gasoline standard
TPH-D	Total petroleum hydrocarbons as diesel – quantified against a diesel standard
TPH-O	Total petroleum hydrocarbons as oil – quantified against an oil standard
B	Benzene
T	Toluene
E	Ethylbenzene
X	Total xylenes
MTBE	Methyl-tertiary-Butyl Ether
TBA	tertiary-Butyl Alcohol
TAME	tertiary-Amyl-Methyl Ether
DIPE	Di-isopropyl Ether
ETBE	Ethyl-tertiary-Butyl Ether
MDL/PQL	Method Detection Limit / Practical Quantitation Limit employed by the laboratory; MDLs/PQLs may have been raised for samples containing elevated concentrations of contaminants or increased weight of sample
J	Estimated concentration; concentration reported above MDL but below PQL
na	Constituent not analyzed
LTCP Criteria:	Based on the State Water Resources Control Board (SWRCB) Low-Threat Underground Storage Tank Case Closure Policy (LTCP) Table 1 – Concentrations of Petroleum Constituents in Soil That Will Have No Significant Risk of Adversely Affecting Human Health., August 2012.
nl	LTCP Criteria not listed for this constituent

TABLE 2B
SUMMARY OF SOIL SAMPLE LABORATORY ANALYTICAL RESULTS*
(RECALCITRANT COMPOUNDS)
SAMPLES COLLECTED SEPTEMBER 4, 2015

Sample ID	Depth (ft)	n-Butyl-benzene	Sec-Butyl-benzene	Tert-Butyl-benzene	Isopropyl-benzene	4-Isopropyl Toluene	Naphthalene	n-Propyl-benzene	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene
EXC1	**14**	1.1	0.51	<0.11	0.91	<0.11	<0.11	2.5	<0.11	<0.11
EXC2	**10**	<0.46	<0.46	<0.46	<0.46	<0.46	12	1.9	<0.46	<0.46
EXC3	**5**	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
EXC4	**10**	7.0	2.5	<0.41	1.5	0.45[J]	14	5.5	7.5	<0.41
EXC5	**5**	<0.096	<0.096	<0.096	<0.096	<0.096	<0.096	<0.096	<0.096	<0.096
EXC6	**10**	<0.39	1.4	<0.39	0.48[J]	0.98	9.1	1.3	17	5.5
EXC7	**5**	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017
EXC8	**10**	<0.73	7.6	<0.73	7.0	5.5	**55**	37	310	83
EXC9	**5**	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017
EXC-SP	**Stockpile**	<0.020	1.1	0.021[J]	0.44	0.027[J]	6.2	1.3	0.42	<0.020
MDL		**0.0020**	**0.0020**	**0.0020**	**0.0020**	**0.0020**	**0.0020**	**0.0020**	**0.0020**	**0.0020**
PQL		**0.0050**	**0.0050**	**0.0050**	**0.0050**	**0.0050**	**0.0050**	**0.0050**	**0.0050**	**0.0050**
LTCP Criteria (Comm/Ind) 0 to 5 feet bgs		**nl**	**nl**	**nl**	**nl**	**nl**	**45**	**nl**	**nl**	**nl**
LTCP Criteria (Comm/Ind) 5 to 10 feet bgs (Volatilization to outdoor air)		**nl**	**nl**	**nl**	**nl**	**nl**	**45**	**nl**	**nl**	**nl**
LTCP Criteria (Utility Worker) 0 to 5 feet bgs		**nl**	**nl**	**nl**	**nl**	**nl**	**219**	**nl**	**nl**	**nl**

*Reported in milligrams per kilogram (mg/kg). Results above laboratory Method Detection Limits (MDLs) are shaded. Results above LTCP Criteria are presented in **bold.** Samples were analyzed by EPA Method 8260B.

MDL/PQL Method Detection Limit / Practical Quantitation Limit employed by the laboratory; MDLs/PQLs may have been raised for samples containing elevated concentrations of contaminants or increased weight of sample
J Estimated concentration; concentration reported above MDL but below PQL
LTCP Criteria: Based on the State Water Resources Control Board (SWRCB) Low-Threat Underground Storage Tank Case Closure Policy (LTCP) Table 1 – Concentrations of Petroleum Constituents in Soil That Will Have No Significant Risk of Adversely Affecting Human Health., August 2012.
na Constituent not analyzed
nl LTCP Criteria not listed for this constituent

TABLE 2C
SUMMARY OF SOIL SAMPLE LABORATORY ANALYTICAL RESULTS*
CALIFORNIA ASSESSMENT MANUAL METALS
SAMPLES COLLECTED SEPTEMBER 4, 2015

Sample ID	Depth (feet)	Sb	As	Ba	Be	Cd	Cr	Co	Cu	Pb	Hg	Mo	Ni	Se	Ag	Tl	V	Zn
EXC-SP	Stockpile	1.1[J]	8.0	160	0.32[J]	0.57	53	11	25	10	0.018[J]	<0.24	51	<0.94	<0.19	<0.47	40	51
MDL		**0.96**	**0.48**	**0.48**	**0.24**	**0.14**	**0.24**	**0.24**	**0.48**	**0.29**	**0.010**	**0.24**	**0.096**	**0.96**	**0.19**	**0.48**	**0.48**	**0.48**
PQL		**2.4**	**0.96**	**0.96**	**0.48**	**0.24**	**0.48**	**0.48**	**0.96**	**0.48**	**0.095**	**0.48**	**0.24**	**1.9**	**0.48**	**0.96**	**0.96**	**0.96**
LTCP Criteria (Comm/Ind) 0 to 5 feet bgs		**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**
LTCP Criteria (Comm/Ind) 5 to 10 feet bgs		**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**
LTCP Criteria (Utility Worker) 0 to 5 feet bgs		**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**

* Reported in milligrams per kilogram (mg/kg). Results above laboratory Method Detection Limits (MDLs) are shaded. Results above LTCP Criteria are presented in **bold.** Samples were analyzed by EPA Method 6010B.

TABLE 2C (Footnotes)
SUMMARY OF SOIL SAMPLE LABORATORY ANALYTICAL RESULTS
CALIFORNIA ASSESSMENT MANUAL METALS
SAMPLES COLLECTED SEPTEMBER 4, 2015

Sb	Antimony	Hg	Mercury
As	Arsenic	Mo	Molybdenum
Ba	Barium	Ni	Nickel
Be	Beryllium	Se	Selenium
Cd	Cadmium	Ag	Silver
Cr	Chromium	Tl	Thallium
Co	Cobalt	V	Vanadium
Cu	Copper	Zn	Zinc
Pb	Lead		

MDL/PQL	Method Detection Limit / Practical Quantitation Limit employed by the laboratory; MDLs/PQLs may have been raised for samples containing elevated concentrations of contaminants or increased weight of sample
J	Estimated concentration; concentration reported above MDL but below PQL
LTCP Criteria:	Based on the State Water Resources Control Board (SWRCB) Low-Threat Underground Storage Tank Case Closure Policy (LTCP) Table 1 – Concentrations of Petroleum Constituents in Soil That Will Have No Significant Risk of Adversely Affecting Human Health., August 2012.
nl	LTCP Criteria not listed for this constituent

TABLE 3A
SUMMARY OF SOIL SAMPLE LABORATORY ANALYTICAL RESULTS*
(TOTAL PETROLEUM HYDROCARBONS, BTEX AND OXYGENATES)
SAMPLES COLLECTED FEBRUARY 2, 2016

Sample ID	Depth (ft)	TPH-G	TPH-D	TPH-O	B	T	E	X	MTBE	TBA	TAME	DIPE	ETBE
HP1-1@5'	**5**	<0.089	8.3	<40	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	<0.0088	<0.0018	<0.0018	<0.0018
HP1-2@10'	**10**	<0.087	<7.6	<40	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0084	<0.0017	<0.0017	<0.0017
HP1-3@15'	**15**	39	25	<40	<0.072	<0.072	<0.072	<0.072	<0.072	1.5	<0.072	<0.072	<0.072
HP1-4@20'	**20**	340	52	<40	<0.39	<0.39	0.47 J	<0.39	<0.39	<2.0	<0.39	<0.39	<0.39
HP1-5@25'	**25**	53	<7.6	<40	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0077	<0.0015	<0.0015	<0.0015
HP1-6@30'	**30**	<0.075	<7.6	<40	0.0028 J	<0.0016	<0.0016	<0.0016	<0.0016	<0.0079	<0.0016	<0.0016	<0.0016
HP2-1@5'	**5**	0.097 J	<7.6	<40	<0.0019	<0.0019	<0.0019	<0.0019	<0.0019	<0.0094	<0.0019	<0.0019	<0.0019
HP2-2@10'	**10**	<0.078	<7.6	<40	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	<0.0088	<0.0018	<0.0018	<0.0018
HP2-3@15'	**15**	<0.092	12	<40	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0081	<0.0016	<0.0016	<0.0016
HP2-4@20'	**20**	<0.080	<7.6	<40	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	<0.0088	<0.0018	<0.0018	<0.0018
HP2-5@25'	**25**	1.9	<7.6	<40	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	<0.0092	<0.0018	<0.0018	<0.0018
HP2-6@30'	**30**	<0.083	<7.6	<40	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	<0.0089	<0.0018	<0.0018	<0.0018
HP3-1@5'	**5**	<0.079	<7.6	<40	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0086	<0.0017	<0.0017	<0.0017
HP3-2@10'	**10**	<0.080	<7.6	<40	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0077	<0.0015	<0.0015	<0.0015
HP3-3@15'	**15**	<0.086	9.9 J	<40	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0081	<0.0016	<0.0016	<0.0016
HP3-4@20'	**20**	<0.085	<7.6	<40	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0083	<0.0017	<0.0017	<0.0017
HP3-5@25'	**25**	2.7	7.6 J	<40	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0076	<0.0015	<0.0015	<0.0015
HP3-6@30'	**30**	<0.10	9.6 J	<40	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0084	<0.0017	<0.0017	<0.0017
MDL		**0.0099**	**7.6**	**40**	**0.0020**	**0.0020**	**0.0020**	**0.0020**	**0.0020**	**0.010**	**0.0020**	**0.0020**	**0.0020**
PQL		**0.50**	**10**	**50**	**0.0050**	**0.0050**	**0.0050**	**0.0050**	**0.0050**	**0.025**	**0.0050**	**0.0050**	**0.0050**
LTCP Criteria (Comm/Ind) 0 to 5 feet bgs		**nl**	**nl**	**nl**	**8.2**	**nl**	**89**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**
LTCP Criteria (Comm/Ind) 5 to 10 feet bgs (Volatilization to outdoor air)		**nl**	**nl**	**nl**	**12**	**nl**	**134**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**
LTCP Criteria (Utility Worker) 0 to 5 feet bgs		**nl**	**nl**	**nl**	**14**	**nl**	**314**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**

*Reported in milligrams per kilogram (mg/kg). Results above laboratory Method Detection Limits (MDLs) are shaded. Results above LTCP Criteria are presented in **bold.** Samples were analyzed by EPA Method 8015, and 8260B.

TABLE 3A (Continued)
SUMMARY OF SOIL SAMPLE LABORATORY ANALYTICAL RESULTS*
(TOTAL PETROLEUM HYDROCARBONS, BTEX AND OXYGENATES)
SAMPLES COLLECTED FEBRUARY 2, 2016

Sample ID	Depth (ft)	TPH-G	TPH-D	TPH-O	B	T	E	X	MTBE	TBA	TAME	DIPE	ETBE
HP4-1@5'	**5**	<0.091	14	<40	<0.0019	<0.0019	<0.0019	<0.0019	<0.0019	<0.0094	<0.0019	<0.0019	<0.0019
HP4-2@10'	**10**	0.30 J	11	<40	<0.0017	<0.0017	<0.0017	0.0017 J	<0.0017	<0.0085	<0.0017	<0.0017	<0.0017
HP4-3@15'	**15**	500 D4	180 D5	<40	<0.37	<0.37	1.7	<0.37	<0.37	<1.8	<0.37	<0.37	<0.37
HP4-4@20'	**20**	590 D4	42 D5	<40	<0.40	<0.40	<0.40	<0.40	<0.40	<2.0	<0.40	<0.40	<0.40
HP4-5@25'	**25**	1.8	15	<40	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0081	<0.0016	<0.0016	<0.0016
HP4-6@30'	**30**	<0.083	8.2 J	<40	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0081	<0.0016	<0.0016	<0.0016
HP5-1@5'	**5**	<0.078	<7.6	<40	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0081	<0.0016	<0.0016	<0.0016
HP5-2@10'	**10**	<0.087	7.7 J	<40	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0083	<0.0017	<0.0017	<0.0017
HP5-3@15'	**15**	<0.092	8.3 J	<40	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0082	<0.0016	<0.0016	<0.0016
HP5-4@20'	**20**	<0.45	7.9 J	<40	<0.0017	<0.0017	<0.0017	0.0017 J	<0.0017	<0.0086	<0.0017	<0.0017	<0.0017
HP5-5@25'	**25**	110	12	<40	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0071	<0.0014	<0.0014	<0.0014
HP5-6@30'	**30**	<0.098	<7.6	<40	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	<0.0090	<0.0018	<0.0018	<0.0018
MDL		**0.0099**	**7.6**	**40**	**0.0020**	**0.0020**	**0.0020**	**0.0020**	**0.0020**	**0.010**	**0.0020**	**0.0020**	**0.0020**
PQL		**0.50**	**10**	**50**	**0.0050**	**0.0050**	**0.0050**	**0.0050**	**0.0050**	**0.025**	**0.0050**	**0.0050**	**0.0050**
LTCP Criteria (Comm/Ind) 0 to 5 feet bgs		**nl**	**nl**	**nl**	**8.2**	**nl**	**89**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**
LTCP Criteria (Comm/Ind) 5 to 10 feet bgs (Volatilization to outdoor air)		**nl**	**nl**	**nl**	**12**	**nl**	**134**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**
LTCP Criteria (Utility Worker) 0 to 5 feet bgs		**nl**	**nl**	**nl**	**14**	**nl**	**314**	**nl**	**nl**	**nl**	**nl**	**nl**	**nl**

*Reported in milligrams per kilogram (mg/kg). Results above laboratory Method Detection Limits (MDLs) are shaded. Results above LTCP Criteria are presented in **bold.** Samples were analyzed by EPA Method 8015, and 8260B.

TABLE 3A (Footnotes)
SUMMARY OF SOIL SAMPLE LABORATORY ANALYTICAL RESULTS
(TOTAL PETROLEUM HYDROCARBONS, BTEX AND OXYGENATES)
SAMPLES COLLECTED FEBRUARY 2, 2016

TPH-G	Total petroleum hydrocarbons as gasoline – quantified against a gasoline standard
TPH-D	Total petroleum hydrocarbons as diesel – quantified against a diesel standard
TPH-O	Total petroleum hydrocarbons as oil – quantified against an oil standard
B	Benzene
T	Toluene
E	Ethylbenzene
X	Total xylenes
MTBE	Methyl-tertiary-Butyl Ether
TBA	tertiary-Butyl Alcohol
TAME	tertiary-Amyl-Methyl Ether
DIPE	Di-isopropyl Ether
ETBE	Ethyl-tertiary-Butyl Ether
MDL/PQL	Method Detection Limit / Practical Quantitation Limit employed by the laboratory; MDLs/PQLs may have been raised for samples containing elevated concentrations of contaminants or increased weight of sample
J	Estimated concentration; concentration reported above MDL but below PQL
D4	The sample chromatograph pattern does not resemble the fuel standard used for quantitation
D5	Results in the diesel organics range are primarily due to overlap from a gasoline range product
LTCP Criteria:	Based on the State Water Resources Control Board (SWRCB) Low-Threat Underground Storage Tank Case Closure Policy (LTCP) Table 1 – Concentrations of Petroleum Constituents in Soil That Will Have No Significant Risk of Adversely Affecting Human Health., August 2012.
nl	LTCP Criteria not listed for this constituent

TABLE 3B
SUMMARY OF SOIL SAMPLE LABORATORY ANALYTICAL RESULTS*
(RECALCITRANT COMPOUNDS)
SAMPLES COLLECTED FEBRUARY 2, 2016

Sample ID	Depth (ft)	n-Butyl-benzene	Sec-Butyl-benzene	Tert-Butyl-benzene	Isopropyl-benzene	Naphthalene	n-Propyl-benzene	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene
HP1-1@5'	**5**	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018
HP1-2@10'	**10**	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017
HP1-3@15'	**15**	0.059	0.37	<0.072	<0.072	<0.072	0.19	<0.072	<0.072
HP1-4@20'	**20**	16	5.2	<0.39	5.3	<0.39	20	<0.39	<0.39
HP1-5@25'	**25**	0.0062	0.0038 J	<0.0015	0.0015 J	<0.0015	0.0041	<0.0015	<0.0015
HP1-6@30'	**30**	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
HP2-1@5'	**5**	<0.0019	<0.0019	<0.0019	<0.0019	<0.0019	<0.0019	<0.0019	<0.0019
HP2-2@10'	**10**	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018
HP2-3@15'	**15**	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
HP2-4@20'	**20**	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018
HP2-5@25'	**25**	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018
HP2-6@30'	**30**	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018
HP3-1@5'	**5**	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017
HP3-2@10'	**10**	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015
HP3-3@15'	**15**	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
HP3-4@20'	**20**	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017
HP3-5@25'	**25**	0.052	0.030	0.0019 J	0.0015 J	<0.0015	0.0037 J	<0.0015	<0.0015
HP3-6@30'	**30**	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017
MDL		**0.0020**	**0.0020**	**0.0020**	**0.0020**	**0.0020**	**0.0020**	**0.0020**	**0.0020**
PQL		**0.0050**	**0.0050**	**0.0050**	**0.0050**	**0.0050**	**0.0050**	**0.0050**	**0.0050**
LTCP Criteria (Comm/Ind) 0 to 5 feet bgs		**nl**	**nl**	**nl**	**nl**	**45**	**nl**	**nl**	**nl**
LTCP Criteria (Comm/Ind) 5 to 10 feet bgs (Volatilization to outdoor air)		**nl**	**nl**	**nl**	**nl**	**45**	**nl**	**nl**	**nl**
LTCP Criteria (Utility Worker) 0 to 5 feet bgs		**nl**	**nl**	**nl**	**nl**	**219**	**nl**	**nl**	**nl**

*Reported in milligrams per kilogram (mg/kg). Results above laboratory Method Detection Limits (MDLs) are shaded. Results above LTCP Criteria are presented in **bold.** Samples were analyzed by EPA Method 8260B.

TABLE 3B (Continued)
SUMMARY OF SOIL SAMPLE LABORATORY ANALYTICAL RESULTS*
(RECALCITRANT COMPOUNDS)
SAMPLES COLLECTED FEBRUARY 2, 2016

Sample ID	Depth (ft)	n-Butyl-benzene	Sec-Butyl-benzene	Tert-Butyl-benzene	Isopropyl-benzene	Naphthalene	n-Propyl-benzene	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene
HP4-1@5'	**5**	<0.0019	<0.0019	<0.0019	<0.0019	<0.0019	<0.0019	<0.0019	<0.0019
HP4-2@10'	**10**	<0.0017	<0.0017	<0.0017	<0.0017	0.0036 J	<0.0017	0.0079	0.0070
HP4-3@15'	**15**	9.2	4.4	0.43 J	5.1	1.1	18	<0.37	<0.37
HP4-4@20'	**20**	10	3.0	<0.40	1.6	<0.40	6.4	<0.40	<0.40
HP4-5@25'	**25**	0.0026 J	<0.0016	<0.0016	0.0033 J	<0.0016	0.0072	<0.0016	<0.0016
HP4-6@30'	**30**	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
HP5-1@5'	**5**	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
HP5-2@10'	**10**	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017
HP5-3@15'	**15**	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
HP5-4@20'	**20**	<0.0017	<0.0017	<0.0017	0.0036 J	<0.0017	0.0042 J	0.0029 J	<0.0017
HP5-5@25'	**25**	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014
HP5-6@30'	**30**	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018
MDL		**0.0020**	**0.0020**	**0.0020**	**0.0020**	**0.0020**	**0.0020**	**0.0020**	**0.0020**
PQL		**0.0050**	**0.0050**	**0.0050**	**0.0050**	**0.0050**	**0.0050**	**0.0050**	**0.0050**
LTCP Criteria (Comm/Ind) 0 to 5 feet bgs		**nl**	**nl**	**nl**	**nl**	**45**	**nl**	**nl**	**nl**
LTCP Criteria (Comm/Ind) 5 to 10 feet bgs (Volatilization to outdoor air)		**nl**	**nl**	**nl**	**nl**	**45**	**nl**	**nl**	**nl**
LTCP Criteria (Utility Worker) 0 to 5 feet bgs		**nl**	**nl**	**nl**	**nl**	**219**	**nl**	**nl**	**nl**

*Reported in milligrams per kilogram (mg/kg). Results above laboratory Method Detection Limits (MDLs) are shaded. Results above LTCP Criteria are presented in **bold.** Samples were analyzed by EPA Method 8260B.

TABLE 3B (Footnotes)
SUMMARY OF SOIL SAMPLE LABORATORY ANALYTICAL RESULTS
(RECALCITRANT COMPOUNDS)
SAMPLES COLLECTED FEBRUARY 2, 2016

MDL/PQL	Method Detection Limit / Practical Quantitation Limit employed by the laboratory; MDLs/PQLs may have been raised for samples containing elevated concentrations of contaminants or increased weight of sample
J	Estimated concentration; concentration reported above MDL but below PQL
LTCP Criteria:	Based on the State Water Resources Control Board (SWRCB) Low-Threat Underground Storage Tank Case Closure Policy (LTCP) Table 1 – Concentrations of Petroleum Constituents in Soil That Will Have No Significant Risk of Adversely Affecting Human Health., August 2012.
nl	LTCP Criteria not listed for this constituent

TABLE 4A
SUMMARY OF GROUNDWATER SAMPLE LABORATORY ANALYTICAL RESULTS*
(TOTAL PETROLEUM HYDROCARBONS, BTEX AND OXYGENATES)
SAMPLES COLLECTED FEBRUARY 2, 2016

Sample ID	TPH-G	TPH-D	TPH-O	B	T	E	X	MTBE	TBA	TAME	DIPE	ETBE
HP1-W1	**290**	81	<54	<0.25	<0.25	0.33 J	0.29 J	0.36 J	<2.5	<0.25	<0.25	<0.25
HP2-W1	**400**	65	<53	<0.25	<0.25	<0.25	0.47 J	<0.25	<2.5	<0.25	<0.25	<0.25
HP3-W1	**370**	**170**	76	<0.25	0.28 J	<0.25	0.53	<0.25	<2.5	<0.25	<0.25	<0.25
HP4-W1	**1,200**	**120**	<54	0.37 J	0.33 J	0.96	0.89	3.9	**15**	<0.25	<0.25	<0.25
HP5-W1	**1,100**	92	<51	<0.25	0.27 J	<0.25	0.55	1.2	**17**	<0.25	<0.25	<0.25
MDL	**25**	**41**	**50**	**0.25**	**0.25**	**0.25**	**0.27**	**0.25**	**2.5**	**0.25**	**0.25**	**0.25**
PQL	**50**	**50**	**100**	**0.50**	**0.50**	**0.50**	**0.50**	**0.50**	**10**	**0.50**	**0.50**	**0.50**
MCL[1]/WQO[2]	**100[2]**	**100[2]**	**nl**	**1.0[1]**	**150[1]**	**300[1]**	**1,750[1]**	**13[1]**	**12[2]**	**nl**	**0.8[2]**	**nl**

*Reported in micrograms per liter (µg/L). Results above laboratory Method Detection Limits (MDLs) are shaded. Results above MCLs/WQOs are presented in **bold.** Samples were analyzed by EPA Methods 8015M, and 8260B.

TPH-G	Total petroleum hydrocarbons as gasoline – quantified against a gasoline standard
TPH-D	Total petroleum hydrocarbons as diesel – quantified against a diesel standard
TPH-O	Total petroleum hydrocarbons as oil – quantified against an oil standard
B	Benzene
T	Toluene
E	Ethylbenzene
X	Total xylenes
MTBE	Methyl-tertiary-Butyl Ether
TBA	tertiary-Butyl Alcohol
TAME	tertiary-Amyl-Methyl Ether
DIPE	Di-isopropyl Ether
ETBE	Ethyl-tertiary-Butyl Ether

MDL/PQL	Method Detection Limit / Practical Quantitation Limit employed by the laboratory; MDLs/PQLs may have been raised for samples containing elevated concentrations of contaminants
J	Estimated concentration; concentration reported above MDL but below PQL
MCL[1]/WQO[2]	Primary Maximum Contaminant Level / Water Quality Objective (California Drinking Water Action Level)
nl	MCL/WQO not listed for this constituent

TABLE 4B
SUMMARY OF GROUNDWATER SAMPLE LABORATORY ANALYTICAL RESULTS*
(RECALCITRANT COMPOUNDS)
SAMPLES COLLECTED FEBRUARY 2, 2016

Sample ID	n-Butyl-benzene	Sec-Butyl-benzene	Tert-Butyl-benzene	Isopropyl-benzene	Naphthalene	n-Propyl-benzene	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene
HP1-W1	3.4	1.8	0.45 J	2.0	2.0	6.8	0.44 J	<0.25
HP2-W1	0.36 J	0.97	0.36 J	<0.25	<0.25	<0.25	<0.25	<0.25
HP3-W1	0.77	2.2	0.49 J	0.43 J	<0.25	0.29 J	0.25 J	<0.25
HP4-W1	9.6	7.7	0.71	23	1.4	44	0.29 J	<0.25
HP5-W1	1.3	3.0	0.46 J	11	<0.25	6.8	<0.25	<0.25
MDL	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**
PQL	**0.50**	**0.50**	**0.50**	**0.50**	**0.50**	**0.50**	**0.50**	**0.50**
MCL/WQO	**260[2]**	**260[2]**	**260[2]**	**700[2]**	**170[2]**	**260[2]**	**330[2]**	**330[2]**

*Reported in micrograms per liter (µg/L). Results above laboratory Method Detection Limits (MDLs) are shaded. Results above MCLs/WQOs are presented in **bold.** Samples were analyzed by EPA Method 8260B.

MDL/PQL Method Detection Limit / Practical Quantitation Limit employed by the laboratory; MDLs/PQLs may have been raised for samples containing elevated concentrations of contaminants
J Estimated concentration; concentration reported above MDL but below PQL
MCL[1]/WQO[2] State Drinking Water Maximum Contaminant Level / Water Quality Objective
nl MCL/WQO not listed for this constituent

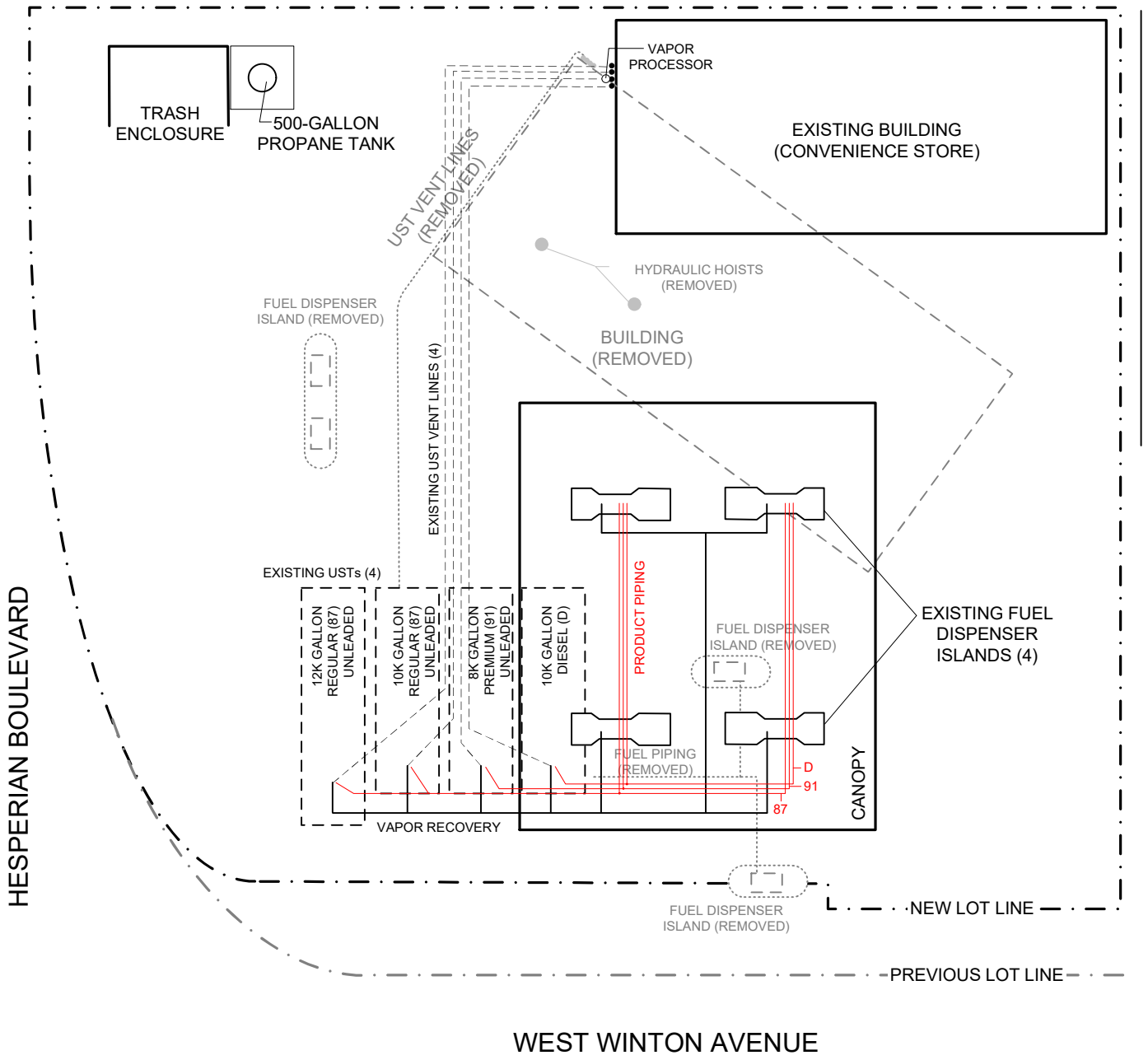
FIGURES

SITE LOCATION MAP

WINTON VALERO
23990 HESPERIAN BOULEVARD
HAYWARD, CALIFORNIA

DMI-EMK Environmental Services, Inc.	FIGURE 1

DATE: 7/20/17



N

APPROX. SCALE: 1" = 20'

0ft. 12ft. 20ft. 40ft.

KEY

UST	UNDERGROUND STORAGE TANK (UST) LOCATIONS (EXISTING)
	FORMER FUEL DISPENSERS (REMOVED)

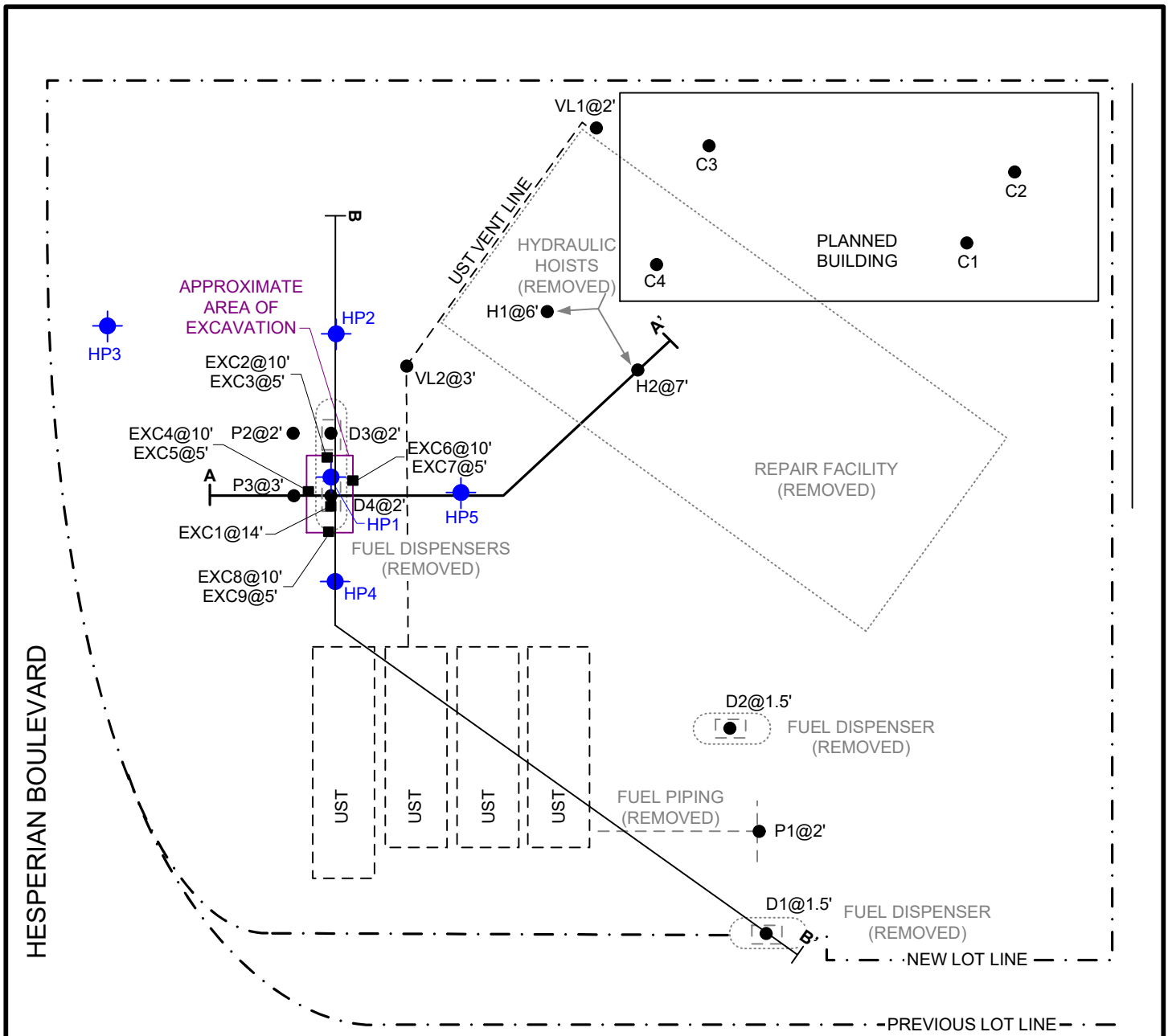
SITE PLAN WITH PREVIOUS AND CURRENT STATION CONFIGURATION

WINTON VALERO
23990 HESPERIAN BOULEVARD
HAYWARD, CALIFORNIA

DMI-EMK Environmental Services, Inc.

FIGURE 2

DATE: 7/20/17



KEY

HP1	DIRECT-PUSH BORING LOCATION AND NUMBER - FEBRUARY 2, 2016
UST	UNDERGROUND STORAGE TANK (UST) LOCATIONS (EXISTING)
	FORMER FUEL DISPENSERS
EXC1@14'	EXCAVATION SOIL SAMPLE LOCATION AND IDENTIFICATION WITH DEPTH IN FEET - SEPTEMBER 4, 2015
D1@1.5'	COMPLIANCE SOIL SAMPLE LOCATION AND IDENTIFICATION WITH DEPTH IN FEET - JULY 31, 2015
SP1-SP4	COMPOSITE SOIL SAMPLE FROM STOCKPILE - JULY 31, 2015
C1-C4	COMPOSITE SOIL SAMPLE FROM LOCATION OF PLANNED BUILDING - JULY 31, 2015

WEST WINTON AVENUE

N

APPROX. SCALE: 1" = 20'

0ft. 12ft. 20ft. 40ft.

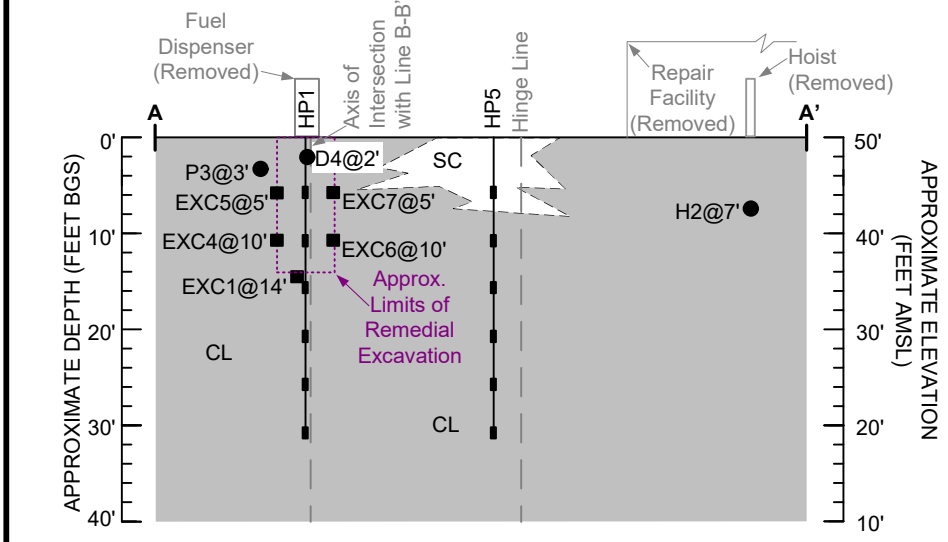
SITE PLAN WITH SAMPLE LOCATIONS AND LINES OF CROSS SECTION

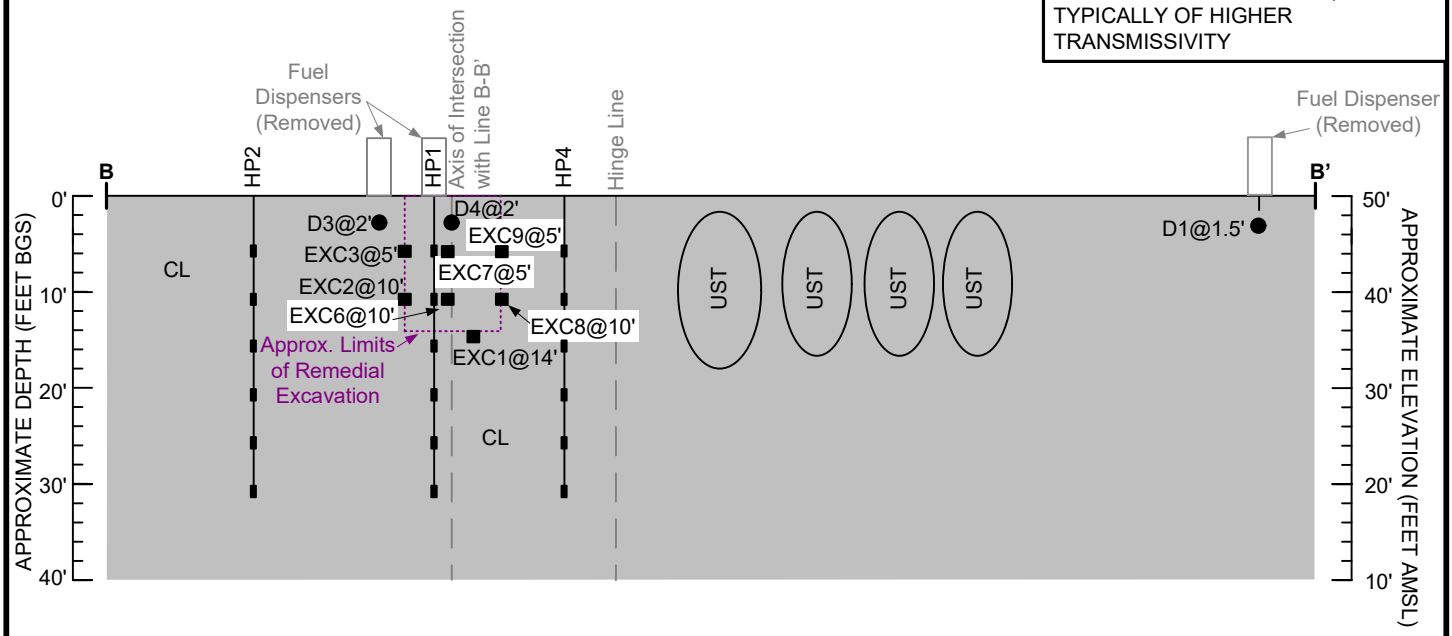
WINTON VALERO
23990 HESPERIAN BOULEVARD
HAYWARD, CALIFORNIA

DMI-EMK Environmental Services, Inc.

FIGURE 3

DATE: 7/20/17





KEY

UST	UNDERGROUND STORAGE TANK
HP1	HYDROPUNCH BORING
SM, ML, CL, SP	USCS SOIL CLASSIFICATIONS
P3@3" ■	SOIL SAMPLE IDENTIFICATION

NOTE:

NONE OF THE SOIL SAMPLES CONTAIN PETROLEUM HYDROCARBON CONSTITUENT CONCENTRATIONS EXCEEDING LTCP CRITERIA

SHADED AREAS REPRESENT FINER-GRAINED SOILS, TYPICALLY OF LOW TRANSMISSIVITY

UNSHADED AREAS REPRESENT COARSER-GRAINED SOILS, TYPICALLY OF HIGHER TRANSMISSIVITY

VERTICAL AND HORIZONTAL SCALE: 1" = 20'

0ft. 12ft. 20ft. 40ft.

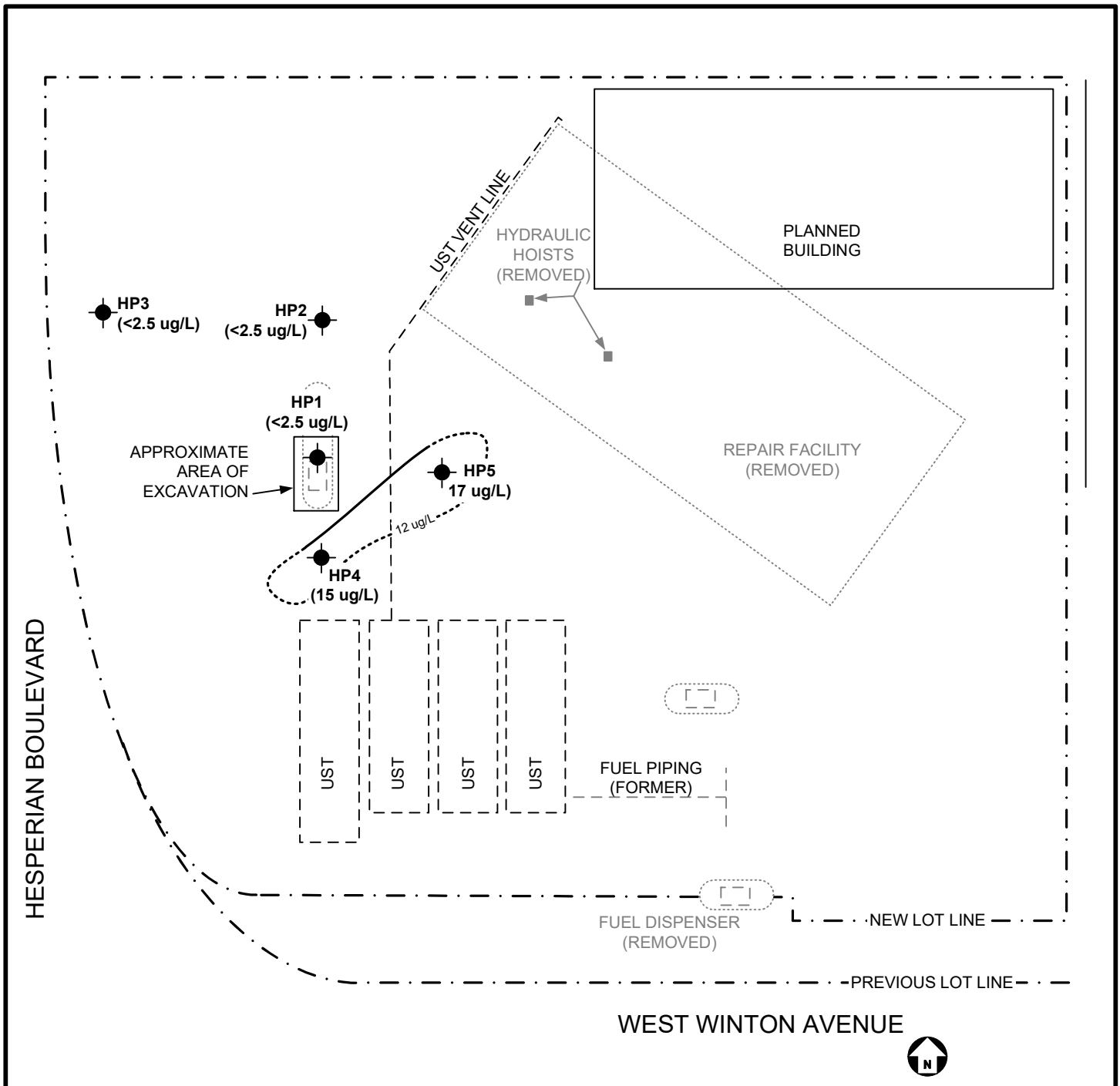
CROSS SECTIONS A-A' AND B-B'

WINTON VALERO
23990 HESPERIAN BOULEVARD
HAYWARD, CALIFORNIA

DMI-EMK Environmental Services, Inc.

FIGURE 4

DATE: 7/20/17



APPROX. SCALE: 1" = 20'

0ft. 12ft. 20ft. 40ft.

KEY

HP1	DIRECT-PUSH BORING LOCATION WITH IDENTIFICATION AND TBA CONCENTRATION REPORTED IN MICROGRAMS PER LIGER (ug/L)
12 ug/L	TBA CONCENTRATION CONTOUR, LINE DASHED WHERE INFERRED
12 ug/L	WATER QUALITY OBJECTIVE (CALIFORNIA DRINKING WATER ACTION LEVEL)
UST	UNDERGROUND STORAGE TANK (UST) LOCATIONS (EXISTING)
	FORMER FUEL DISPENSERS

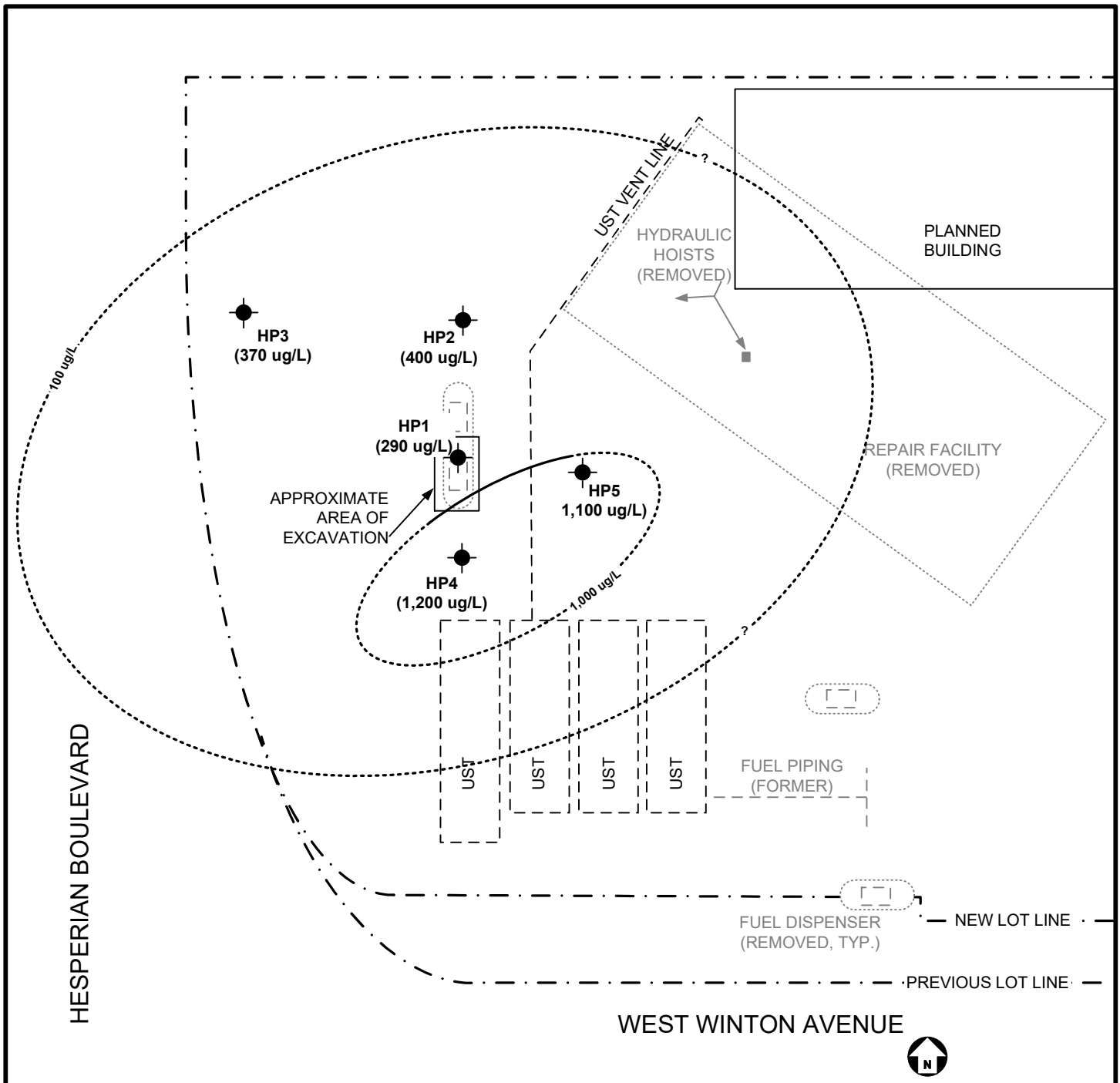
TBA ISOCONCENTRATION MAP FEBRUARY 2, 2016

WINTON VALERO
23990 HESPERIAN BOULEVARD
HAYWARD, CALIFORNIA

DMI-EMK Environmental Services, Inc.

FIGURE 5

DATE: 7/20/17



KEY

HP1	DIRECT-PUSH BORING LOCATION WITH IDENTIFICATION AND TPH-G CONCENTRATION REPORTED IN MICROGRAMS PER LIGER (ug/L)
100 ug/L	TPH-G CONCENTRATION CONTOUR, LINE DASHED WHERE INFERRED
100 ug/L	ACEH REFERENCED WATER QUALITY OBJECTIVE IN DIRECTIVE DATED 6-8-16
UST	UNDERGROUND STORAGE TANK (UST) LOCATIONS (EXISTING)
	FORMER FUEL DISPENSERS

TPH-G ISOCONCENTRATION MAP FEBRUARY 2, 2016

WINTON VALERO
23990 HESPERIAN BOULEVARD
HAYWARD, CALIFORNIA

DMI-EMK Environmental Services, Inc.

FIGURE 6

DATE: 7/20/17

Reference Map: Google Map

APPROX. SCALE: 1" = 150'

0ft. 75ft. 150ft. 300ft.

SENSITIVE RECEPTOR MAP

WINTON VALERO
23990 HESPERIAN BOULEVARD
HAYWARD, CALIFORNIA

DMI-EMK Environmental Services, Inc.

FIGURE 7

DATE: 7/20/17

APPENDIX A

ALAMEDA COUNTY ENVIRONMENTAL HEALTH DIRECTIVE LETTERS DATED JUNE 8, 2016 AND MAY 23, 2017

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
REBECCA GEBHART, Acting Director

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

June 8, 2016

OQ Enterprises Inc.
27472 Hayward Boulevard
Hayward, CA 94542
Attn.: Oscar Quiambao
(*Sent via electronic mail to:* oq.enterprises@yahoo.com)

Subject: Request for Data Gap Work Plan and Focused Site Conceptual Model; Fuel Leak Case No. RO0003188 and GeoTracker Global ID T10000007782, Winton Valero, 23990 Hesperian Boulevard, Hayward, CA 94541

Dear Mr. Quiambao:

Thank you for the recently submitted document entitled *Soil and Groundwater Assessment Report and Request for Low Threat Closure* (SWI), dated May 4, 2016, and prepared by DMI-EMK Environmental Services, Inc. (DMI-EMK) for the subject site. Alameda County Environmental Health (ACEH) staff has reviewed the case file, including the SWI, for the above-referenced site.

The SWI documents the advancement of five soil bores around the northwest dispenser island, recovery of soil and grab-groundwater (GGW) samples, and analysis results of samples submitted to an analytical laboratory. ACEH has evaluated the data and recommendations presented in the above-mentioned report, in conjunction with the case files, to determine if the site is eligible for closure as a low risk site under the State Water Resources Control Board's (SWRCBs) Low Threat Underground Storage Tank Case Closure Policy (LTCP). ACEH is of the opinion the case may meet the LTCP General Criteria a through d, g, and h.

The fueling station portion of the site need not meet the LTCP Media-Specific Criteria for Vapor Intrusion to Indoor Air for on-site exposure based on its' exemption as an active fueling station. However, the exemption does not apply to the convenience store being constructed on the property, as it is a commercial non-fueling facility. Based on the lack of volatiles (benzene, toluene, ethylbenzene, and xylenes- collectively BTEX- and naphthalene) reported in the subsurface soil and groundwater, the site appears to meet the Media-Specific Criteria for Vapor Intrusion to Indoor Air for on- and off-site exposures.

Additional data may be available that ACEH is not aware of, or may not have been submitted, and therefore has not been incorporated in to ACEH's review. If additional data is made available, the data can be incorporated in future LTCP reviews. The evaluation of the case under the LTCP that is presented below is intended to initiate further discussions, submittal of other available documents, or the collection of additional data in order to determine if or when the case can be closed under the LTCP and to document current LTCP data gaps.

Based on ACEH staff review, we have determined that the site fails to meet the LTCP General Criteria e- A conceptual site model that assesses the nature, extent, and mobility of the release has been developed, General Criteria f- Secondary source has been removed to the extent practicable, and Media-Specific Criteria for Groundwater and the Media-Specific Criteria for Direct Contact and Outdoor Air Exposures.

Therefore, at this juncture ACEH requests that you prepare a Data Gap Investigation Work Plan that is supported by a focused Site Conceptual Model (SCM) to address the Technical Comments provided below.

TECHNICAL COMMENTS

1. **LTCP General Criteria e (Site Conceptual Model) –** According to the LTCP, the SCM is a fundamental element of a comprehensive site investigation. The SCM establishes the source and attributes of the unauthorized release, describes all affected media (including soil, groundwater, and soil vapor as appropriate), describes local geology, hydrogeology and other physical site characteristics that affect contaminant environmental transport and fate, and identifies all confirmed and potential contaminant receptors (including water supply wells, surface water bodies, structures and their inhabitants). The SCM is relied upon by practitioners as a guide for investigative design and data collection. All relevant site characteristics identified by the SCM shall be assessed and supported by data so that the nature, extent and mobility of the release have been established to determine conformance with applicable criteria in this policy.

   Our review of the case files indicates that insufficient data collection and analysis has not been presented:

   a. To assess the nature, extent, and mobility of the release;

   b. All potential release sources have not been identified (e.g. the waste oil underground storage tank - UST);

   c. Receptors have not been identified;

   d. Definition of the contaminant plume;

   e. To support compliance with Media Specific Criteria for Groundwater as described in Technical Comment 3, below; and

   f. To support compliance with Media-Specific Criteria for Direct Contact and Outdoor Air Exposures as described in Technical Comment 4, below.

2. **General Criteria f – Secondary Source Has Been Removed to the Extent Practicable –** "Secondary source" is defined as petroleum-impacted soil or groundwater located at or immediately beneath the point of release from the primary source. Unless site attributes prevent secondary source removal (e.g. physical or infrastructural constraints exist whose removal or relocation would be technically or economically infeasible), petroleum-release sites are required to undergo secondary source removal to the extent practicable as described in the policy. "To the extent practicable" means implementing a cost-effective corrective action which removes or destroys-in-place the most readily recoverable fraction of source-area mass. It is expected that most secondary mass removal efforts will be completed in one year or less. Following removal or destruction of the secondary source, additional removal or active remedial actions shall not be required by regulatory agencies unless (1) necessary to abate a demonstrated threat to human health or (2) the groundwater plume does not meet the definition of low threat as described in this policy.

   Section 2.3.2 indicates that on July 31, 2015, DMI-EMK was onsite to collect compliance soil samples from beneath removed fuel dispenser islands, fuel delivery piping, and UST vent lines, and from stockpiled gravel removed from above the USTs and that an area measuring

approximately 6 feet by 10 feet was excavated to approximately 14 feet below the ground surface (bgs) from beneath a former dispenser. ACEH has not been provided an opportunity to review the report documenting these activities. ACEH requests the submittal of the Station Upgrades Report documenting these activities by the date specified below.

The SWI states the site was operated as an automobile fueling station containing four USTs and repair facility and that the automobile repair facility has been removed. In our Directive letter dated December 4, 2015, ACEH requested information on the potential presence of a waste oil UST (WOT) and to provide language in the site description stating if a waste oil tank was associated with the facility, and if present, if the tank was an UST or an above ground tank (AGT), and additionally, indicate if is it active or has it been removed (provide date). As of this time, ACEH has not received the requested information. If this documentation is not present in the Station Upgrades Report requested above, ACEH requests submittal of the Station Demolition Report documenting the removal of the service bays, the presence/absence of the WOT, and sampling associated with the WOT removal. ACEH requests the submittal of the Station Demolition Report documenting these activities by the date specified below.

Alternatively, please provide justification of why the site satisfies the General Criteria f in the focused SCM described in Technical Comment 5 below.

3. **LTCP Media Specific Criteria for Groundwater –** To satisfy the media-specific criteria for groundwater, the contaminant plume that exceeds water quality objectives must be stable or decreasing in areal extent, and meet all of the additional characteristics of one of the five classes of sites listed in the policy.

   Our review of the case files indicates that insufficient data collection and analysis has been presented to support the requisite characteristics of plume stability or plume classification as follows:

   a. Media-specific criteria for groundwater includes the distances from the leading edge of the contaminant plume to the nearest surface water body and nearest supply well. ACEH notes that the GGW samples collected from all five soil bores contain TPHd at concentrations greater than 100 micrograms per liter (µg/L). Therefore, the plume is not defined.

   b. As the contaminant plume length is undefined, by using the SWRCBs LTCP *Technical Justification for Groundwater Plume Length, Indicator Constituents, Concentrations, Buffer Distances (Separation Distances) to Receptors* (LTCP Guidance; SWRCB 2012), the maximum plume length, using TPH as gasoline (TPHg) as a surrogate for TPHd, is identified as 855 feet. The nearest supply well, a City of Hayward municipal water supply well, is located 1,000 feet west of the site in the down gradient direction. Applying the LTCP buffer distance of 1,000 feet, wells or surface water bodies located within approximately 1,850 feet of the site would indicate the media-specific criteria for groundwater has not been met for undefined contaminant plumes. The City of Hayward well is within 1,850 feet of the site.

   Please present a strategy in the Data Gap Work Plan (described in Technical Comment 5 below) to address the items discussed above. Alternatively, please provide justification of why the site satisfies the Media-Specific Criteria for Groundwater in the focused SCM described in Technical Comment 5 below.

4. **LTCP Media-Specific Criteria for Direct Contact and Outdoor Air Exposures –** It is unclear to ACEH if the site meets the Direct Contact and Outdoor Air Exposure criteria as the site operated a WOT at least through November 2000. As requested in Technical Comment 2 above, the evaluation for the Direct Contact criteria cannot be made until ACEH has reviewed the data associated with the WOT removal. As previously requested, if the WOT documentation is not present in the Station Upgrades Report requested above, please submit the Station Demolition Report documenting the presence/absence of the WOT, or the WOT Removal Report. Documentation regarding the WOT removal should include the sampling and laboratory analysis report conducted for the tank removal. ACEH requests the submittal of the Station Demolition Report documenting these activities by the date specified below. Alternatively, please provide justification of why the site satisfies the Media-Specific Criteria for Direct Contact and Outdoor Air Exposure.

5. **Data Gap Investigation Work Plan and Focused Site Conceptual Model –** Please prepare Data Gap Investigation Work Plan to address the technical comments listed above. Please support the scope of work in the Data Gap Investigation Work Plan with a focused SCM and Data Quality Objectives (DQOs) that relate the data collection to each LTCP criteria. For example please clarify which scenario within each Media-Specific Criteria a sampling strategy is intended to apply to.

   In order to expedite review, ACEH requests the focused SCM be presented in a tabular format that highlights the major SCM elements and associated data gaps, which need to be addressed to progress the site to case closure under the LTCP. Please see Attachment A "Site Conceptual Model Requisite Elements". Please sequence activities in the proposed data gap investigation scope of work to enable efficient data collection in the fewest mobilizations possible.

TECHNICAL REPORT REQUEST

Please upload technical reports to the ACEH ftp site (Attention: Keith Nowell), and to the State Water Resources Control Board's Geotracker website, in accordance with the following specified file naming convention and schedule:

- **July 11, 2016 –** Station Upgrades Report documenting over excavation (File to be named: RO3188_MISC_R_yyyy-mm-dd)

- **July 11, 2016 –** Station Demolition Report documenting WOT removal activities (File to be named: RO3188_TNK_R_yyyy-mm-dd)

- **August 12, 2016** – Data Gap Investigation Plan and Focused Site Conceptual Model (File to be named: RO3188_WP_SCM_R_yyyy-mm-dd)

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

Online case files are available for review at the following website: http://www.acgov.org/aceh/index.htm.

Thank you for your cooperation. ACEH looks forward to working with you and your consultants to advance the case toward closure. Should you have any questions regarding this correspondence or your case, please call me at (510) 567-6764 or send an electronic mail message at keith.nowell@acgov.org

Sincerely,

Keith Nowell

Digitally signed by Keith Nowell
DN: cn=Keith Nowell, o, ou, email=keith.nowell@acgov.org, c=US
Date: 2016.06.08 07:55:20 -07'00'

Keith Nowell, PG, CHG
Hazardous Materials Specialist

Enclosures: Attachment 1 - Responsible Party(ies) Legal Requirements/Obligations & ACEH Electronic Report Upload (ftp) Instructions

Attachment A – Site Conceptual Model Requisite Elements

Cc: Eric Kirkegaard, DMI-EMK Environmental Services, Inc., 1056 East Meta Street, #101, Ventura, CA 93001 (*Sent via electronic mail to: Erick@dmi-emk.com)*

Dilan Roe, ACEH (*Sent via electronic mail to: dilan.roe@acgov.org)*
Keith Nowell, ACEH, (*Sent via electronic mail to keith.nowell@acgov.org*)
GeoTracker, file

Attachment 1

Responsible Party(ies) Legal Requirements / Obligations

REPORT REQUESTS

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

ELECTRONIC SUBMITTAL OF REPORTS

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

PERJURY STATEMENT

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

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

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

UNDERGROUND STORAGE TANK CLEANUP FUND

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

AGENCY OVERSIGHT

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

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

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

REQUIREMENTS

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

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

Submission Instructions

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

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

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

ATTACHMENT A

Site Conceptual Model Requisite Elements

The site conceptual model (SCM) is an essential decision-making and communication tool for all interested parties during the site characterization, remediation planning and implementation, and closure process. A SCM is a set of working hypotheses pertaining to all aspects of the contaminant release, including site geology, hydrogeology, release history, residual and dissolved contamination, attenuation mechanisms, pathways to nearby receptors, and likely magnitude of potential impacts to receptors.

The SCM is initially used to characterize the site and identify data gaps. As the investigation proceeds and the data gaps are filled, the working hypotheses are modified, and the overall SCM is refined and strengthened until it is said to be "validated". At this point, the focus of the SCM shifts from site characterization towards remedial technology evaluation and selection, and later remedy optimization, and forms the foundation for developing the most cost-effective corrective action plan to protect existing and potential receptors.

For ease of review, Alameda County Environmental Health (ACEH) requests utilization of tabular formats to (1) highlight the major SCM elements and their associated data gaps which need to be addressed to progress the site to case closure (see Table 4-1 of attached example), and (2) highlight the identified data gaps and proposed investigation activities (see Table 5-1 of the attached example). ACEH requests that the tables presenting the SCM elements, data gaps, and proposed investigation activities be updated as appropriate at each stage of the project and submitted with work plans, feasibility studies, corrective action plans, and requests for closures to support proposed work, conclusions, and/or recommendations.

The SCM should incorporate, but is not limited to, the topics listed below. Please support the SCM with the use of large-scaled maps and graphics, tables, and conceptual diagrams to illustrate key points. Please include an extended site map(s) utilizing an aerial photographic base map with sufficient resolution to show the facility, delineation of streets and property boundaries within the adjacent neighborhood, downgradient irrigation wells, and proposed locations of transects, monitoring wells, and soil vapor probes.

a. Regional and local (on-site and off-site) geology and hydrogeology. Include a discussion of the surface geology (e.g., soil types, soil parameters, outcrops, faulting), subsurface geology (e.g., stratigraphy, continuity, and connectivity), and hydrogeology (e.g., water-bearing zones, hydrologic parameters, impermeable strata). Please include a structural contour map (top of unit) and isopach map for the aquitard that is presumed to separate your release from the deeper aquifer(s), cross sections, soil boring and monitoring well logs and locations, and copies of regional geologic maps.

b. Analysis of the hydraulic flow system in the vicinity of the site. Include rose diagrams for depicting groundwater gradients. The rose diagram shall be plotted on groundwater elevation contour maps and updated in all future reports submitted for your site. Please address changes due to seasonal precipitation and groundwater pumping, and evaluate the potential interconnection between shallow and deep aquifers. Please include an analysis of vertical hydraulic gradients, and effects of pumping rates on hydraulic head from nearby water supply wells, if appropriate. Include hydraulic head in the different water bearing zones and hydrographs of all monitoring wells.

c. Release history, including potential source(s) of releases, potential contaminants of concern (COC) associated with each potential release, confirmed source locations, confirmed release locations, and existing delineation of release areas. Address primary leak source(s) (e.g., a tank, sump, pipeline, etc.) and secondary sources (e.g., high-

Site Conceptual Model Requisite Elements (continued)

concentration contaminants in low-permeability lithologic soil units that sustain groundwater or vapor plumes). Include local and regional plan view maps that illustrate the location of sources (former facilities, piping, tanks, etc.).

d. Plume (soil gas and groundwater) development and dynamics including aging of source(s), phase distribution (NAPL, dissolved, vapor, residual), diving plumes, attenuation mechanisms, migration routes, preferential pathways (geologic and anthropogenic), magnitude of chemicals of concern and spatial and temporal changes in concentrations, and contaminant fate and transport. Please refer to the *Preferential Pathway and Sensitive Preceptor Study* description on the next page. Please include three-dimensional plume maps for groundwater and two-dimensional soil vapor plume plan view maps to provide an accurate depiction of the contaminant distribution of each COC.

e. Summary tables of chemical concentrations in different media (i.e., soil, groundwater, and soil vapor). Please include applicable environmental screening levels on all tables. Include graphs of contaminant concentrations versus time.

f. Current and historic facility structures (e.g., buildings, drain systems, sewer systems, underground utilities, etc.) and physical features including topographical features (e.g., hills, gradients, surface vegetation, or pavement) and surface water features (e.g. routes of drainage ditches, links to water bodies). Please include current and historic site maps.

g. Current and historic site operations/processes (e.g., parts cleaning, chemical storage areas, manufacturing, etc.).

h. Other contaminant release sites in the vicinity of the site. Hydrogeologic and contaminant data from those sites may prove helpful in testing certain hypotheses for the SCM. Include a summary of work and technical findings from nearby release sites, including the two adjacent closed LUFT sites, (i.e., Montgomery Ward site and the Quest Laboratory site).

i. Land uses and exposure scenarios on the facility and adjacent properties. Include beneficial resources (e.g., groundwater classification, wetlands, natural resources, etc.), resource use locations (e.g., water supply wells, surface water intakes), subpopulation types and locations (e.g., schools, hospitals, day care centers, etc.), exposure scenarios (e.g. residential, industrial, recreational, farming), and exposure pathways, and potential threat to sensitive receptors. Include an analysis of the contaminant volatilization from the subsurface to indoor/outdoor air exposure route (i.e., vapor pathway). Please include copies of Sanborn maps and aerial photographs, as appropriate. Please refer to the *Preferential Pathway and Sensitive Preceptor Study* description on the next page.

j. Identification and listing of specific data gaps that require further investigation during subsequent phases of work. Proposed activities to investigate and fill data gaps identified.

Preferential Pathway and Sensitive Receptor Study

Please conduct a study as a part of the SCM requested in order to (1) locate potential anthropogenic migration pathways on and in the vicinity of the site that could spread contamination through vertical and lateral migration, and (2) identify exposure scenarios and sensitive receptors that are linked to site contamination through these preferential pathways. The results of your study shall contain all information required by California Code of Regulations, Title 23, Division 3, Chapter 16, §2654(b) including but not limited to the following components, as applicable to the site:

a. **Utility Survey** - An evaluation of all existing subsurface utility lines, laterals, and trenches including sewers, electrical, fiber optic cable, cable, water, storm drains, trench backfill, etc. within and near the site and plume area(s). Please include an evaluation of shallow utilities associated with current and historical site operations/processes including UST systems, remediation systems, parts cleaning, sumps, etc.

b. **Updated Well Survey** – ACEH requests that well data sources (Alameda County Public Works Agency [ACPWA] and Department of Water Resources [DWR]) be reviewed for more recently installed vicinity water supply wells. ACEH requests the identification of all active, inactive, standby, decommissioned (sealed with concrete), unrecorded, and abandoned (improperly decommissioned or lost) wells including monitoring, remediation, irrigation, water supply, industrial, livestock, dewatering, and cathodic protection wells within a ¼-mile radius of the subject site. Please inspect all available Well Completion Reports filed with the DWR and ACPWA in your survey, and perform a background study of the historical land uses of the site and properties in the vicinity of the site. Use the results of your background study to determine the existence of unrecorded/unknown (abandoned) wells, which can act as contaminant migration pathways at or from your site.

c. **Land Uses and Exposure Scenarios on the Facility and Adjacent Properties** – The surrounding land use appears to be predominately agricultural; however, redevelopment of the site as a service station has been planned. Consequently, the identification of existing and future land use on and in the vicinity of the site is requested, including:

- Beneficial resources (e.g., groundwater classification, wetlands, surface water bodies, natural resources, etc.)
- Subpopulation types and locations (e.g., schools, hospitals, day care centers, elder care facilities, etc.)
- Exposure scenarios (e.g. residential, industrial, recreational, farming) and exposure pathways including those identified in the Low Threat Underground Storage Tank Case Closure Policy General Criteria h – Nuisance Conditions, and Media-Specific Criteria for Groundwater, Vapor Intrusion to Indoor Air, and Direct Contact and Outdoor Air Exposure

d. **Planned Development** – Future development activities are planned in the vicinity of the site. Please include an analysis of new utility corridors, building foundations, wells, and/or development activities that could significantly alter contaminant migration (i.e., covering of large areas of the site with pavement, etc.).

Please synthesize this information and discuss your analysis and interpretation of the results of the preferential pathway and sensitive receptor study and incorporate into the requested SCM. Please provide the following supporting documentation and data as applicable:

- Copies of current and historical maps, such as site maps, Sanborn maps, aerial photographs, etc., used when conducting the background study.
- DWR well logs, marked as confidential, uploaded to Alameda County Environmental Health's ftp site. For confidentiality purposes do not upload the DWR well logs to Geotracker. The well logs will be placed in our confidential file and will be available only to internal staff for review.
- Table with details of the well search findings including Map ID corresponding to well location on map, State Well ID, Well Owner ID, approximate distance from the site, direction from the site, use, installation date, depth (feet below ground surface [bgs]), screened interval (feet bgs), sealed interval (feet bgs), diameter (inches), and well location address.
- Maps and geologic cross-sections illustrating historical groundwater elevations and flow directions (rose diagram) at the site. Synthesize the data requested above and include the location and depth of all utility lines, trenches, UST pits and piping trenches, wells, surface water bodies, foundational elements, surface covering types (pavement, landscaped, etc.) within and near the site and plume area(s), and the location of potential receptors.

Table 4-1
Site Conceptual Model

CSM Element	CSM Sub-Element	Description	Data Gap Item #	Resolution
Geology and Hydrogeology	Regional	As described by URS (2004), the lithology encountered in the subsurface beneath the Site during drilling activities consisted predominantly of a brown to greenish-gray silty clay with sand and gravel. The primary stratigraphic units at the Site are listed below, with the approximate ranges of depth (bgs) each unit was encountered across the Site: • 0 to 5 feet bgs: The surface soil typically consisted of very dark-brown clay to dark-gray gravel fill, depending on whether the boring was in the vacant vegetated parcel (dark-brown clay), at 3860 MLK Jr. Way; or beneath the asphalt and concrete surfaces at the Lucky's Auto Body parcel at 3884 MLK Jr. Way (gravel fill). • 5 to 20 feet bgs: very dark-brown silty clay grades to a greenish-gray silty clay and brown silty clay and gravelly clay. Groundwater was encountered in direct-push boreholes at an average depth of 17.2 feet bgs, with depths ranging from 16.2 to 19.6 feet bgs. This groundwater depth is not considered a stabilized groundwater depth, because it was not measured from appropriately constructed monitoring wells.	None	NA

Table 4-1
Site Conceptual Model (Continued)

CSM Element	CSM Sub-Element	Description	Data Gap Item #	Resolution
Geology and Hydrogeology	Site	Regional groundwater in the Oakland area generally follows topography, from areas of higher elevation in the east toward lower elevation in the west and southwest. The groundwater flow direction in the vicinity of the Site is to the west towards San Francisco Bay (Arcadis, 2012). URS reviewed groundwater investigation reports from the ARCO #4931 station at 731 West MacArthur Boulevard, approximately 1,000 feet southwest of the Site (Arcadis, 2012). The depth to water in the groundwater monitoring wells at the ARCO site ranged from approximately 3.2 to 10.8 feet bgs (approximately 52.2 to 43 feet elevation).	1.There are no monitoring wells on site so that the local groundwater flow direction and gradient is not known.	Five groundwater wells are to be installed at the site.
Surface Water Bodies		The closest surface water body is the San Francisco Bay, which is 1.5 miles west of the site.		
Nearby Wells		The State Water Resource Quality Control Board (RWQCB) Geotracker GAMA website provides the locations of water supply wells proximal to the site. The nearest supply well is located approximately 2 miles southwest of the site. There are multiple monitoring wells in the vicinity of the site including those at the Arco services station at 781 West MacArthur Blvd., and Dollar Cleaners, 4860 – 4868 Telegraph Avenue, Oakland.	2.	NA
Release Source and Volume		The three prior gasoline USTs (two 650-gallon and one 500-gallon) are considered the main source of the release of fuel hydrocarbons that have been detected in soil and groundwater beneath the Site. Tanks #1 and #2 were both observed to have one or more holes from corrosion at the time of removal. Although no holes were observed in Tank #3 during removal, the integrity of the tank was questionable as it split into two pieces along the weld during removal. Soil surrounding the tanks was stained green and was noted to have strong petroleum hydrocarbon odors. The release from the Tanks at the Site was discovered on January 5, 1995 during tank removal activities. The volume of the release is not known.	5. & 6. Additional soil and groundwater data is required in the source areas.	See data gaps table. Additional soil borings will be advanced in the source areas. Groundwater monitoring wells will be installed.

Table 4-1
Site Conceptual Model (Continued)

CSM Element	CSM Sub-Element	Description	Data Gap Item #	Resolution
		The area around the ramps and pit in the southern area of the site is considered a potential source area.		
LNAPL		There are currently no groundwater monitoring wells located at the Site. Although light non-aqueous phase liquids were not observed during grab groundwater sampling activities, concentrations of TPH-g in sample G2 (22,000 µg/L), located near former Tank #3, and sample GP3 (79,800 µg/L), located adjacent to former Tank #1 may indicate the potential for the presence of light non-aqueous phase liquid (LNAPL) to be present.	1. Need monitoring wells at the site.	Monitoring wells (5) to be installed.
Source Removal Activities		Soil that was excavated from the UST pits during tank removal activities was returned to the excavation after the collection of soil samples for chemical analysis. There is no information regarding the quality of the soil that was placed back in the UST excavations. As such, with the exception of the removal of the USTs themselves, there have been no other source removal activities conducted at the Site.	2., 5.,6. Soil contamination at depth (12-foot bgs and deeper) is not well characterized. Since the site is to be excavated to approximately 12 feet bgs for the construction of a parking garage, additional shallow soil sampling is not required.	Ten soil borings are proposed, as discussed in the data gaps table.
Contaminants of Concern		Based on the historical investigations conducted at the Site, BTEX, cis-1,2-dichloroethene (cis-1,2-DCE), 1,2-dichloroethane (1,2-DCA) and TPH-g are present in groundwater above their respective MCLs and/or ESLs. However, based on correspondence from the ACEHSD, the contaminants of concern (COCs) for the site are BTEX, and TPH-g. These COCs are present above the screening levels primarily in the northern corner of the Site, near the location of the former USTs. Benzene and TPH-g are also present in groundwater above their MCLs and ESLs in the southern portion of the Site in the vicinity of the truck ramp and pit adjacent to the	4.	

Table 4-1
Site Conceptual Model (Continued)

CSM Element	CSM Sub-Element	Description	Data Gap Item #	Resolution
		former shop building, and in the northwestern area of the Site.		
Petroleum Hydrocarbons in Soil		Of the 58 samples analyzed from the two investigations, eight samples from seven borings exceeded their respective screening criteria. These samples were typically the deepest sample from the boring, ranging from 8.0 to 14.0 feet bgs. This is consistent with releases from a UST as opposed to a surface spill or release. Based on the historical investigation data, BTEX and TPH-g are the contaminants present in soil at concentrations exceeding their respective screening criteria. The contaminants are present mainly in soil at the location of former Tanks #1 through #3, and to a lesser extent, near the former fuel pump island in the northern corner of the Site. The lateral extent of contamination exceeding the screening criteria appears to be limited to the area around the former USTs. Soil concentration in all the samples from boring GP3 and S10, located in the sidewalk by Martin Luther King Jr. Way near former Tank #1 and Tank #2 are below their respective screening criteria. There is no additional data from around former Tank #3. Given the nature of the petroleum hydrocarbon (mainly light fraction gasoline), the vertical extent of contamination beneath and in close proximity to the former tanks is likely limited to the lowest level of groundwater fluctuation.	4. & 7. Additional soil sampling is required to better define the vertical extent of contamination. Redevelopment will include excavation of the entire site to a depth of 12 feet bgs for the construction of an underground parking garage.	Additional soil borings to be advanced, as described in the data gaps table.
Petroleum Hydrocarbons in Groundwater		During the two subsurface investigations conducted at the Site, a total of 15 grab groundwater samples were collected and analyzed for TPH-g and BTEX. The results of the analyses are summarized in Table 2-2. Concentration of TPH-g and/or BTEX exceeded their respective screening criteria in ten of the 15 samples analyzed. Similar to the soil sampling results, the highest concentrations were detected beneath or in close proximity to the former USTs. However, TPH-g and benzene were detected in one Site boring (G7) exceeding their respective screening criteria near the southern corner of the Site. There are no permanent monitoring wells located at the Site. As such, the groundwater flow direction across	8. There are no monitoring wells on site.	Five monitoring wells will be installed, as described in the data gaps table and in the work plan.

Table 4-1
Site Conceptual Model (Continued)

CSM Element	CSM Sub-Element	Description	Data Gap Item #	Resolution
		the Site cannot be evaluated. This has been defined as a significant data gap. The scope of work presented in this work plan includes the installation of four groundwater monitoring wells at the Site.		
Risk Evaluation		The Site is a former auto body and car wash facility. The Site is currently vacant, and with the exception of a billboard located in the northwest corner of the Site, has no structures and is covered with either asphalt or concrete foundations from former buildings located at the Site. The Site is zoned for residential and current plans are to redevelop the Site for residential use. However, there may be some commercial use on the ground level. This preliminary CSM assumes that development would consist of an underground parking garage; store fronts and residential units at ground level; and second story residential units. The CSM identifies the primary source; impacted media; release mechanism(s); secondary source(s); exposure route; potential receptors (residential, commercial/industrial worker, and construction worker), and an assessment of whether the exposure route/pathway is potentially complete, incomplete, or insignificant. Potential exposure routes that have been evaluated include incidental ingestion, dermal contact, dust inhalation, and vapor inhalation. For direct contact with contaminated soil, the exposure route for incidental ingestion, dermal contact, and dust inhalation for a residential and commercial/industrial worker are considered incomplete. These exposure routes for the construction worker are considered a potentially complete pathway, depending on the nature of the work. For volatilization from soil to outdoor air, vapor inhalation is the potential exposure pathway. Given dilution effects that take place outdoors, this exposure pathway is considered incomplete for all three potential receptors. For indoor air, this exposure pathway is considered potentially complete for all three potential receptors.		

Table 4-1
Site Conceptual Model (Continued)

CSM Element	CSM Sub-Element	Description	Data Gap Item #	Resolution
		For leaching of contaminants from soil to groundwater, the ingestion and dermal pathways for groundwater are considered incomplete, except for the construction worker, as shallow groundwater is not utilized as a drinking water source at the Site. For the construction worker, incidental ingestion and dermal contact is a potentially complete pathway. For volatilization from groundwater to outdoor air, the exposure pathway is considered insignificant due to dilution effects that take place outdoors. For indoor air, volatilization from groundwater to indoor air is considered a potentially complete pathway.		

Table 5-1
Data Gaps Summary and Proposed Investigation

Item	Data Gap Item #	Proposed Investigation	Rationale	Analyses
1	Groundwater flow direction and gradient is unknown. There are only grab groundwater data points; there are no monitoring wells on site. There are no upgradient groundwater sample locations. The current groundwater data sets are 7 and 9 years old and may not be representative of current site conditions.	Install five groundwater monitoring wells, as described in the work plan. Wells will be constructed of 2-inch-diameter Schedule 40 PVC well casing, total depth up to 25 feet bgs; the screened interval will be determined based on observations of groundwater levels during field work. The well screen will consist of 5 to 10 feet of 0.010-inch well screen. Soil samples will be collected at 12 feet, 15 feet, and 20 feet bgs. Additional samples may be collected based on professional judgment.	The wells will be located to provide up- and downgradient control for the shallow groundwater plume. They will enable water level data to be collected to allow the groundwater flow direction and gradient to be calculated. Wells will be installed as follows: At the source area associated with UST #3. Downgradient of the site to the northwest, near the billboard. At the source area associated with USTs 1 and 2. Upgradient of the site adjacent to the ramp and pit. Adjacent to prior soil boring S4 (prior BTEX detections). Soil samples will be collected during well installation to further characterize subsurface soil contamination. Northern (off-site, downgradient) grab groundwater samples (far side of MLK, sidewalk): three borings.	Soil: TPH-g, BTEX, EDB, EDC. Soil samples from MW-1 will also be analyzed for PAHs. Groundwater: Natural attenuation parameters [COD, Fe(2+), Dissolved Gases (methane)] at selected locations (2). BTEX, TPH-g

Table 5-1
Data Gaps Summary and Proposed Investigation (Continued)

Item	Data Gap Item #	Proposed Investigation	Rationale	Analyses
2	The soil data set does not adequately characterize the contamination (if any) that may remain on site after the excavation to approximately 11 to 12 feet bgs for the underground parking structure. The current soil data sets are 7 and 9 years old and may not be representative of current site conditions. Lithology below is not adequately characterized.	Ten soil borings will be drilled to a total depth of 20 feet bgs. Soil samples will be collected at 12 feet, 15 feet, and 20 feet bgs from soil borings SB-4 through SB-10. Soil samples will not be collected from soil borings SB-1, SB-2, and SB-3 which are located across MLK north of the site, as there is no reason to suspect an off-site soil contamination source in this area. Borings will be logged using the Unified Soil Classification System. Grab groundwater samples will be collected from the first encountered groundwater at each soil boring.	Soil samples will be collected starting at 12 feet bgs. Shallow soil on site is to be excavated for disposal during the construction of the underground parking garage. Excavation will be conducted to a depth of about 12 feet bgs. Soil borings will be located as shown in the work plan figure: Source area borings: At the former locations of USTs 1, 2 and 3. One boring north of the site on the side walk of MLK Way. One boring between USTs 1 and 2 and the pump island (potential leakage from conveyance piping). One boring at the approximate location of UST 3 (in addition to the soil samples to be collected from the monitoring well to be installed at this location). One boring in the vicinity of the ramps and pit in the southern portion of the site (in addition to soil samples to be collected from the monitoring well in this area). Step out borings: Step out boring SB-5 to be completed proximal to the UST #3 source area. GP4 Area: Benzene was previously detected at 25,000 µg/kg at location GP4 (Carver, 2006). Two step-out borings will be completed in this area to further characterize soils at depth.	TPH-g, BTEX, EDB, EDC. Boring SB-4 (on sidewalk of MLK near UST 1): PAHs

Table 5-1
Data Gaps Summary and Proposed Investigation (Continued)

Item	Data Gap Item #	Proposed Investigation	Rationale	Analyses
3	There is no data on the presence and usage of wells in the vicinity of the site.	Obtain a well survey.	Identify irrigation and other wells in the site vicinity.	N/A
4	PAHs are potential COCs at the northern boundary of the site.	See soil borings – Item 2. PAHs will be analyzed at select locations as described in Item 2.	Item 2	Item 2
5	There is a potential source area in the vicinity of the ramps and pit.	A monitoring well will be installed in this area. It will also serve as the upgradient well for the site. See Item 2. A soil boring will also be completed in this area.	Item 2	Item 2
6	Determine size and contents of the three USTs that were removed from the site	Review prior reports.	Tanks #1 and #2 were identified as 650-gallon gasoline tanks. Tank #3 was a 500-gallon gasoline tank [Tank Removal Report – 1995]. Tanks #2 and #3 were observed to be badly deteriorated with holes due to corrosion.	NA
7	Confirm whether TPH-g and BTEX were detected during construction of the adjacent residential unit	Review prior reports.	The URS site investigation conducted in 2004 found no detections of TPH-g [<1,000 µg/kg] or BTEX [<5.0 µg/kg] in the borings completed to 14 feet bgs.	NA

Table 5-1
Data Gaps Summary and Proposed Investigation (Continued)

Item	Data Gap Item #	Proposed Investigation	Rationale	Analyses
8	Review data from the nearby service stations (Arco)	Review prior reports.	The former Arco station (731 West MacArthur Blvd.) is about 0.5 miles crossgradient of the 3884 MLK site. The BTEX levels are lower than those at the subject site; the Arco site does not appear to be contributing to on site TPH or BTEX contamination. Groundwater elevation data from this site was used to calculate groundwater flow direction, since there are currently no wells at the 3884 MLK site.	NA

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
REBECCA GEBHART, Interim Director

DEPARTMENT OF ENVIRONMENTAL HEALTH
LOCAL OVERSIGHT PROGRAM (LOP) FOR
HAZARDOUS MATERIALS RELEASES
1131 HARBOR BAY
ALAMEDA, CA 94502
(510) 567-6700
FAX (510) 337-9335

May 23, 2017

OQ Enterprises Inc.
27472 Hayward Boulevard
Hayward, CA 94542
Attn.: Oscar Quiambao
(*Sent via electronic mail to:* oq.enterprises@yahoo.com)

Subject: Late Letter; Fuel Leak Case No. RO0003188 and GeoTracker Global ID T10000007782, Winton Valero, 23990 Hesperian Boulevard, Hayward, CA 94541

Dear Mr. Quiambao:

A review of the case file for the above-referenced site indicates that your case is currently in not in compliance with the Alameda County Department of Environmental Health (ACDEH) June 8, 2016 correspondence, which requested the electronic submittal of information and submittal of a Data Gap Work Plan and Focused Site Conceptual Model. Over 11 months have lapsed and the requested documents have not been received.

As additional data is made available, the data can be incorporated in future State Water Resources Control Board's (SWRCBs) Low Threat Underground Storage Tank Case Closure Policy (LTCP) reviews. The evaluation of the site under the LTCP presented in our June 8, 2016 letter is intended to initiate further discussions, submittal of other available documents, and/or the collection of additional data in order to determine if or when the site can be closed under the LTCP and to document current LTCP data gaps.

In our June 8, 2016 letter, ACDEH requested additional data pertaining to site investigation and remedial actions that have not been incorporated in to our case review in conjunction with the LTCP. Additionally, ACDEH outlined the LTCP general and media specific criteria the case does not appear to satisfy.

ACDEH notes that a well search request for the Alameda County Public Works Agency (ACPWA) database was submitted to and approved in December 2016. No further information regarding the well search has been provided to our agency.

In order to regain compliance, please submit the Data Gap Work Plan and Focused Site Conceptual Model and electronically upload the requested documents to GeoTracker and ACDEH's FTP server by the dates specified below.

SUBMITTAL ACKNOWLEDGEMENT STATEMENT

Please note that ACDEH has updated its Attachment 1 with regard to report submittals to ACDEH. ACDEH will now be requiring a Submittal Acknowledgement Statement, replacing the Perjury Statement, as a cover letter signed by the Responsible Party (RP). The language for the Submittal Acknowledgement Statement is as follows:

"I have read and acknowledge the content, recommendations and/or conclusions contained in the attached document or report submitted on my behalf to ACDEH's FTP server and the SWRCB's GeoTracker website."

Please make this change to your submittals to ACDEH.

TECHNICAL REPORT REQUEST

Please upload technical reports to the ACDEH FTP site (Attention: Keith Nowell), and to the State Water Resources Control Board's (SWRCBs) GeoTracker website, in accordance with the following specified file naming convention and schedule:

- **June 23, 2017** – Station Upgrades Report documenting over excavation (File to be named: RO3188_MISC_R_yyyy-mm-dd)
- **June 23, 2017** – Station Demolition Report documenting WOT removal activities (File to be named: RO3188_TNK_R_yyyy-mm-dd)
- **July 24, 2017** – Data Gap Investigation Plan and Focused Site Conceptual Model (File to be named: RO3188_WP_SCM_R_yyyy-mm-dd)

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

Online case files are available for review at the following website: http://www.acgov.org/aceh/index.htm.

Thank you for your cooperation. ACDEH looks forward to working with you and your consultants to advance the case toward closure. Should you have any questions regarding this correspondence or your case, please call me at (510) 567-6764 or send an electronic mail message at keith.nowell@acgov.org

Sincerely,

Keith Nowell

Digitally signed by Keith Nowell
DN: cn=Keith Nowell, o=Alameda County, ou=Department of Environmental Health, email=keith.nowell@acgov.org, c=US
Date: 2017.05.23 15:32:26 -07'00'

Keith Nowell, PG, CHG
Hazardous Materials Specialist

Enclosures: Attachment 1 – Responsible Party (ies) Legal Requirements/Obligations and Electronic Report Upload (ftp) Instructions

Attachment A – Site Conceptual Model Requisite Elements

cc: Eric Kirkegaard, DMI-EMK Environmental Services, Inc., 1056 East Meta Street, #101, Ventura, CA 93001 (*Sent via electronic mail to: Erick@dmi-emk.com*)

Dilan Roe, ACDEH, (*Sent via electronic mail to: dilan.roe@acgov.org*)
Paresh Khatri, ACDEH, (*Sent via electronic mail to: paresh.khatri@acgov.org*)
Keith Nowell, ACDEH (*Sent via electronic mail to: keith.nowell@acgov.org*)
Geotracker, File

Attachment 1

Responsible Party(ies) Legal Requirements / Obligations

REPORT REQUESTS

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

ELECTRONIC SUBMITTAL OF REPORTS

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

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 ACDEH's FTP server and the SWRCB's GeoTracker website." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case.

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 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. For your submittal to be considered a valid technical report, you are to present site-specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification. Please ensure all that all technical reports submitted for this case meet this requirement. 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

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

AGENCY OVERSIGHT

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

Alameda County Environmental Cleanup Oversight Programs (LOP and SCP)	**REVISION DATE:** December 1, 2016
	ISSUE DATE: July 5, 2005
	PREVIOUS REVISIONS: October 31, 2005; December 16, 2005; March 27, 2009; July 8, 2010, July 25, 2010; May 15, 2014, November 29, 2016
SECTION: Miscellaneous Administrative Topics & Procedures	**SUBJECT:** Electronic Report Upload (ftp) Instructions

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

REQUIREMENTS

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

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

Submission Instructions

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

2) Upload Files to the ftp Site
   a) Open File Explorer using the Windows  key + E keyboard shortcut.
      i) Note: Netscape, Safari, and Firefox browsers will not open the FTP site as they are NOT being supported at this time.
   b) On the address bar, type in ftp://alcoftp1.acgov.org.
   c) Enter your User Name and Password. (Note: Both are Case Sensitive)
   d) Click Log On.
   e) Open "My Computer" on your computer and navigate to the file(s) you wish to upload to the ftp site.
   f) With both "My Computer" and the ftp site open in separate windows, drag and drop the file(s) from "My Computer" to the ftp window.

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

ATTACHMENT A

Site Conceptual Model Requisite Elements

ATTACHMENT A

Site Conceptual Model

The site conceptual model (SCM) is an essential decision-making and communication tool for all interested parties during the site characterization, remediation planning and implementation, and closure process. A SCM is a set of working hypotheses pertaining to all aspects of the contaminant release, including site geology, hydrogeology, release history, residual and dissolved contamination, attenuation mechanisms, pathways to nearby receptors, and likely magnitude of potential impacts to receptors.

The SCM is initially used to characterize the site and identify data gaps. As the investigation proceeds and the data gaps are filled, the working hypotheses are modified, and the overall SCM is refined and strengthened until it is said to be "validated". At this point, the focus of the SCM shifts from site characterization towards remedial technology evaluation and selection, and later remedy optimization, and forms the foundation for developing the most cost-effective corrective action plan to protect existing and potential receptors.

For ease of review, Alameda County Environmental Health (ACEH) requests utilization of tabular formats to (1) highlight the major SCM elements and their associated data gaps which need to be addressed to progress the site to case closure (see Table 1 of attached example), and (2) highlight the identified data gaps and proposed investigation activities (see Table 2 of the attached example). ACEH requests that the tables presenting the SCM elements, data gaps, and proposed investigation activities be updated as appropriate at each stage of the project and submitted with work plans, feasibility studies, corrective action plans, and requests for closures to support proposed work, conclusions, and/or recommendations.

The SCM should incorporate, but is not limited to, the topics listed below. Please support the SCM with the use of large-scaled maps and graphics, tables, and conceptual diagrams to illustrate key points. Please include an extended site map(s) utilizing an aerial photographic base map with sufficient resolution to show the facility, delineation of streets and property boundaries within the adjacent neighborhood, downgradient irrigation wells, and proposed locations of transects, monitoring wells, and soil vapor probes.

a. Regional and local (on-site and off-site) geology and hydrogeology. Include a discussion of the surface geology (e.g., soil types, soil parameters, outcrops, faulting), subsurface geology (e.g., stratigraphy, continuity, and connectivity), and hydrogeology (e.g., water-bearing zones, hydrologic parameters, impermeable strata). Please include a structural contour map (top of unit) and isopach map for the aquitard that is presumed to separate your release from the deeper aquifer(s), cross sections, soil boring and monitoring well logs and locations, and copies of regional geologic maps.

b. Analysis of the hydraulic flow system in the vicinity of the site. Include rose diagrams for depicting groundwater gradients. The rose diagram shall be plotted on groundwater elevation contour maps and updated in all future reports submitted for your site. Please address changes due to seasonal precipitation and groundwater pumping, and evaluate the potential interconnection between shallow and deep aquifers. Please include an analysis of vertical hydraulic gradients, and effects of pumping rates on hydraulic head from nearby water supply wells, if appropriate. Include hydraulic head in the different water bearing zones and hydrographs of all monitoring wells.

c. Release history, including potential source(s) of releases, potential contaminants of concern (COC) associated with each potential release, confirmed source locations, confirmed release locations, and existing delineation of release areas. Address primary leak source(s) (e.g., a tank, sump, pipeline, etc.) and secondary sources (e.g., high-

ATTACHMENT A

Site Conceptual Model (continued)

concentration contaminants in low-permeability lithologic soil units that sustain groundwater or vapor plumes). Include local and regional plan view maps that illustrate the location of sources (former facilities, piping, tanks, etc.).

d. Plume (soil gas and groundwater) development and dynamics including aging of source(s), phase distribution (NAPL, dissolved, vapor, residual), diving plumes, attenuation mechanisms, migration routes, preferential pathways (geologic and anthropogenic), magnitude of chemicals of concern and spatial and temporal changes in concentrations, and contaminant fate and transport. Please include three-dimensional plume maps for groundwater and two-dimensional soil vapor plume plan view maps to provide an accurate depiction of the contaminant distribution of each COC.

e. Summary tables of chemical concentrations in different media (i.e., soil, groundwater, and soil vapor). Please include applicable environmental screening levels on all tables. Include graphs of contaminant concentrations versus time.

f. Current and historic facility structures (e.g., buildings, drain systems, sewer systems, underground utilities, etc.) and physical features including topographical features (e.g., hills, gradients, surface vegetation, or pavement) and surface water features (e.g. routes of drainage ditches, links to water bodies). Please include current and historic site maps.

g. Current and historic site operations/processes (e.g., parts cleaning, chemical storage areas, manufacturing, etc.).

h. Other contaminant release sites in the vicinity of the site. Hydrogeologic and contaminant data from those sites may prove helpful in testing certain hypotheses for the SCM. Include a summary of work and technical findings from nearby release sites, including the two adjacent closed LUFT sites, (i.e., Montgomery Ward site and the Quest Laboratory site).

i. Land uses and exposure scenarios on the facility and adjacent properties. Include beneficial resources (e.g., groundwater classification, wetlands, natural resources, etc.), resource use locations (e.g., water supply wells, surface water intakes), subpopulation types and locations (e.g., schools, hospitals, day care centers, etc.), exposure scenarios (e.g. residential, industrial, recreational, farming), and exposure pathways, and potential threat to sensitive receptors. Include an analysis of the contaminant volatilization from the subsurface to indoor/outdoor air exposure route (i.e., vapor pathway). Please include copies of Sanborn maps and aerial photographs, as appropriate.

j. Identification and listing of specific data gaps that require further investigation during subsequent phases of work. Proposed activities to investigate and fill data gaps identified.

TABLE 1

INITIAL SITE CONCEPTUAL MODEL

CSM Element	CSM Sub-Element	Description	Data Gap	How to Address
Geology and Hydrogeology	Regional	The site is in the northwest portion of the Livermore Valley, which consists of a structural trough within the Diablo Range and contains the Livermore Valley Groundwater Basin (referred to as "the Basin") (DWR, 2006). Several faults traverse the Basin, which act as barriers to groundwater flow, as evidenced by large differences in water levels between the upgradient and downgradient sides of these faults (DWR, 2006). The Basin is divided into 12 groundwater basins, which are defined by faults and non-water-bearing geologic units (DWR, 1974). The hydrogeology of the Basin consists of a thick sequence of fresh-water-bearing continental deposits from alluvial fans, outwash plains, and lacustrine environments to up to approximately 5,000 feet bgs (DWR, 2006). Three defined fresh-water bearing geologic units exist within the Basin: Holocene Valley Fill (up to approximately 400 feet bgs in the central portion of the Basin), the Plio-Pleistocene Livermore Formation (generally between approximately 400 and 4,000 feet bgs in the central portion of the Basin), and the Pliocene Tassajara Formation (generally between approximately 250 and 5,000 or more feet bgs) (DWR, 1974). The Valley Fill units in the western portion of the Basin are capped by up to 40 feet of clay (DWR, 2006).	None	NA
	Site	***Geology:*** Borings advanced at the site indicate that subsurface materials consist primarily of finer-grained deposits (clay, sandy clay, silt and sandy silt) with interbedded sand lenses to 20 feet below ground surface (bgs), the approximate depth to which these borings were advanced. The documented lithology for one on-site boring that was logged to approximately 45 feet bgs indicates that beyond approximately 20 feet bgs, fine-grained soils are present to approximately 45 feet bgs. A cone penetrometer technology test indicated the presence of sandier lenses from approximately 45 to 58 feet bgs and even coarser materials (interbedded with finer-grained materials) from approximately 58 feet to 75 feet bgs, the total depth drilled. The lithology documented at the site is similar to that reported at other nearby sites, specifically the Montgomery Ward site (7575 Dublin Boulevard), the Quest laboratory site (6511 Golden Gate Drive), the Shell-branded Service Station site (11989 Dublin Boulevard), and the Chevron site (7007 San Ramon Road). ***Hydrogeology:*** Shallow groundwater has been encountered at depths of approximately 9 to 15 feet bgs. The hydraulic gradient and groundwater flow direction have not been specifically evaluated at the site.	As noted, most borings at the site have been advanced to approximately 20 feet bgs, and one boring has been advanced and logged to 45 feet bgs; CPT data was collected to 75 feet bgs at one location. Lithologic data will be obtained from additional borings that will be advanced on site to further the understanding of the subsurface, especially with respect to deeper lithology. The on-site shallow groundwater horizontal gradient has not been confirmed. Additionally, it is not known if there may be a vertical component to the hydraulic gradient.	Two direct push borings and four multi-port wells will be advanced to depth (up to approximately 75 feet bgs) and soil lithology will be logged. See items 4 and 5 on Table 2. Shallow and deeper groundwater monitoring wells will be installed to provide information on lateral and vertical gradients. See Items 2 and 5 on Table 2.
Surface Water Bodies		The closest surface water bodies are culverted creeks. Martin Canyon Creek flows from a gully west of the site, enters a culvert north of the site, and then bends to the south, passing approximately 1,000 feet east of the site before flowing into the Alamo Canal. Dublin Creek flows from a gully west of the site, enters a culvert approximately 750 feet south of the site, and then joins Martin Canyon Creek approximately 750 feet southeast of the site.	None	NA
Nearby Wells		The State Water Resources Control Board's GeoTracker GAMA website includes information regarding the approximate locations of water supply wells in California. In the vicinity of the site, the closest water supply wells presented on this website are depicted approximately 2 miles southeast of the site; the locations shown are approximate (within 1 mile of actual location for California Department of Public Health supply wells and 0.5 mile for other supply wells). No water-producing wells were identified within 1/4 mile of the site in the well survey conducted for the Quest Laboratory site (6511 Golden Gate Drive; documented in 2009); information documented in a 2005 report for the Chevron site at 7007 San Ramon Road indicates that a water-producing well may exist within 1/2 mile of the site.	A formal well survey is needed to identify water-producing, monitoring, cathodic protection, and dewatering wells.	Obtain data regarding nearby, permitted wells from the California Department of Water Resources and Zone 7 Water Agency (Item 11 on Table 2).

TABLE 2

DATA GAPS AND PROPOSED INVESTIGATION

Item	Data Gap	Proposed Investigation	Rationale	Analysis
5	Evaluate the possible presence of impacts to deeper groundwater. Evaluate deeper groundwater concentration trends over time. Obtain data regarding the vertical groundwater gradient. Obtain more lithological data below 20 feet bgs.	Install four continuous multichannel tubing (CMT) groundwater monitoring wells (aka multi-port wells) to approximately 65 feet bgs in the northern parking lot with ports at three depths (monitoring well locations may be adjusted pending results of shallow grab groundwater samples; we will discuss any potential changes with ACEH before proceeding). Groundwater monitoring frequency to be determined. Soil samples will be collected only if there are field indications of impacts. Soil lithology will be logged. However, information regarding the moisture content of soil may not be reliable using sonic drilling technology (two borings will be logged using direct push technology; see Item 4, above).	One well is proposed at the western (upgradient) property boundary to confirm that there are no deeper groundwater impacts from upgradient. Two wells are proposed near the center of the northern parking lot to evaluate potential impacts in an area where deeper impacts, if any, would most likely to be found. One well is proposed at the eastern (downgradient) property boundary to confirm that there are no impacts extending off-site. Port depths will be chosen based on the locations of saturated soils (as logged in direct push borings; see Item 4, above), but are expected at approximately 15, 45, and 60 feet bgs.	*Groundwater*: VOCs by EPA Method 8260, dissolved oxygen, oxidation/reduction potential, temperature, pH, and specific conductance.
6	Evaluate possible off-site migration of impacted soil vapor in the downgradient direction (east). Evaluate concentration trends over time.	Install 4 temporary nested soil vapor probes at approximately 4 and 8 feet bgs along the eastern property boundary. Based on the results of the sampling, two sets of nested probes will be converted to vapor monitoring wells to allow for evaluation of VOC concentration trends over time.	Available data indicate that PCE and TCE are present in soil vapor in the eastern portion of the northern parking lot. Samples are proposed on approximately 50-foot intervals along the eastern property boundary to provide a transect of concentrations through the vapor plume. The depths of 4 and 8 feet bgs are chosen to provide data closest to the source (i.e., groundwater) while avoiding saturated soil, and also provide shallower data to help evaluate potential attenuation within the soil column. Two sets of nested vapor probes will be converted into vapor monitoring wells (by installing well boxes at ground surface); the locations of the permanent wells will be chosen based on the results of samples from the temporary probes.	*Soil vapor*: VOCs by EPA Method TO-15.
7	Evaluate potential for off-site migration of impacted groundwater in the downgradient direction (east).	Advance two borings to approximately 20 feet bgs in the parking lot of the property east of the Crown site for collection of grab groundwater samples.	Two borings are proposed off-site, on the property east of the Crown site, just east of the building in the expected area of highest potential VOC concentrations.	*Groundwater*: VOCs by EPA Method 8260, dissolved oxygen, oxidation/reduction potential, temperature, pH, and specific conductance.
8	Evaluate VOC concentrations just north of the highest concentration area.	Advance two borings to approximately 20 feet bgs north of Building A for collection of soil and grab groundwater samples. Soil samples will be collected at two depths in the vadose zone. Soil samples will be collected based on field indications of impacts (PID readings, odor, staining) or, in the absence of field indications of impacts, at 5 and 10 feet bgs.	The highest concentrations of PCE in groundwater were detected at boring NM-B-32, just north of Building A. The nearest available data to the north are approximately 75 feet away. One of the borings will be advanced approximately 20 feet north of NM-B-32 to provide data close to the highest concentration area. A second boring will be advanced approximately halfway between the first boring and former boring NM-B-33 to provide additional spatial data for contouring purposes. These borings will be part of a transect in the highest concentration area.	*Groundwater*: VOCs by EPA Method 8260, dissolved oxygen, oxidation/reduction potential, temperature, pH, and specific conductance. *Soil*: VOCs by EPA Method 8260 (soil samples to be collected using field preservation in accordance with EPA Method 5035).
9	Evaluate VOC concentrations in soil vapor in the south parcel of the site.	Install four temporary soil vapor probes at approximately 5 feet bgs around boring SV-25, where PCE was detected in soil vapor at a low concentration.	PCE was detected in soil vapor sample SV-25 in the southern parcel, although was not detected in groundwater in that area. Three probes will be installed approximately 30 feet from of boring SV-25 to attempt to delineate the extent of impacts. A fourth probe is proposed west of the original sample, close to the property boundary and the location of mapped utility lines, which may be a potential conduit, to evaluate potential impacts from the west.	*Soil vapor*: VOCs by EPA Method TO-15.
10	Obtain additional information regarding subsurface structures and utilities to further evaluate migration pathways and sources.	Ground penetrating radar (GPR) and other utility locating methodologies will be used, as appropriate, to further evaluate the presence of unknown utilities and structures at the site.	Utilities have been identified at the site that include an on-site sewer lateral and drain line, and shallow water, electric, and gas lines. Given the current understanding of the distribution of PCE in groundwater at the site, it is possible that other subsurface utilities, and specifically sewer laterals, exist that may act as a source or migration pathway for distribution of VOCs in the subsurface.	NA

APPENDIX B

STATE WATER RESOURCES CONTROL BOARD LETTER DATED AUGUST 19, 2016

August 19, 2016

OQ Enterprises, Inc.
Attention: Mr. Oscar Quiambao
27472 Hayward Boulevard
Hayward, CA 94542
[Via email only] (oq.enterprises@yahoo.com)

Dear Mr. Quiambao:

CLOSURE DENIAL REVIEW FOR PETROLEUM UNDERGROUND STORAGE TANK CASE, WINTON VALERO, 23990 HESPERIAN BOULEVARD, HAYWARD, ALAMEDA COUNTY

State Water Resources Control Board (State Water Board) Resolution No. 2012-0062 requires that State Water Board staff review a lead agency's decision when the lead agency has denied a request by a responsible party for an underground storage tank (UST) case closure pursuant to the Low-Threat UST Case Closure Policy (Policy).

The subject case has the following identification numbers:

- State Water Board, GeoTracker No. T10000007782
- Alameda County Environmental Health (County), Case No. RO0003188

State Water Board staff reviewed the closure request dated May 4, 2016, and the response from the County dated June 8, 2016. After careful consideration of the GeoTracker record, State Water Board staff agrees with the County staff determination that all of the Policy criteria have not been met. Based on information in the above-referenced GeoTracker record, State Water Board staff finds that the subject case does not meet the following Policy criterion:

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

Available site documents indicate that a 750-gallon waste oil UST was present at the subject site as of November 2000. There is no documentation in the GeoTracker record regarding the removal or abandonment-in-place of this UST during station demolition and upgrade activities. Station demolition and/or upgrade reports indicating the presence or absence of this waste oil tank must be submitted to complete the conceptual site model that assesses the nature, extent, and mobility of the release.

Contaminants remaining at the subject site continue to pose a potential threat to human health, safety, and the environment. Criteria for low-threat UST case closure have not been met at this time, therefore closure of the UST case is not appropriate.

If you have any questions, please contact Mr. George Lockwood at (916) 341-5752 or George.Lockwood@waterboards.ca.gov.

Sincerely,

Karen Larsen, Deputy Director
Division of Water Quality

cc: [Via email only]

Mr. Bruce H. Wolfe, Executive Officer
San Francisco Bay Water Board
(Bruce.Wolfe@waterboards.ca.gov)

Ms. Dyan Whyte
San Francisco Bay Water Board
(Dyan.Whyte@waterboards.ca.gov)

Ms. Marnie Ajello
State Water Board
(Marnie.Ajello@waterboards.ca.gov)

Ms. Tamarin Austin
State Water Board
(Tamarin.Austin@waterboards.ca.gov)

Ms. Therese Barakatt
State Water Board
(Therese.Barakatt@waterboards.ca.gov)

Mr. George Lockwood
State Water Board
(George.Lockwood@waterboards.ca.gov)

Mr. Ronald Browder
Alameda County Environmental Health
(Ronald.Browder@acgov.org)

Ms. Dilan Roe
Alameda County Environmental Health
(Dilan.Roe@acgov.org)

cc: Continued next page

cc: (Continued)

Mr. Keith Nowell
Alameda County Environmental Health
(Keith.Nowell@acgov.org)

Mr. Eric Kirkegaard
DMI-EMK Environmental Services, Inc
(Erick@dmi-emk.com)

Mr. Michael Harris
Redhorse Corporation
(Michael.Harris@redhorsecorp.com)

APPENDIX C

SAN FRANCISCO BAY REGIONAL WATER QUALITY CONTROL BOARD
SITE CLOSURE SUMMARY REPORT
DATED NOVEMBER 8, 2000

SITE CLOSURE SUMMARY

I. AGENCY INFORMATION

Date: November 8, 2000

Agency Name:	S.F.B.R.W.Q.C.B.	Address:	1515 Clay Street, Suite 1400
City/State/Zip:	Oakland, CA 94612	Phone:	(510) 622-2433
Responsible Staff Person:	Mr. Stephen Hill	Title:	Environmental Specialist

II. SITE INFORMATION

Site Facility Name: Former Exxon Service Station 7-0218		
Site Facility Address: 23990 Hesperian Boulevard, Hayward, California		
RB LUSTIS Case No.	Local or LOP Case No.:	Priority:
URF Filing Date:	SWEEPS No.: 01-003-	

Responsible Parties (include addresses and phone numbers)

Mr. Darin L. Rouse (925) 246-8768

ExxonMobil Refining and Supply

P.O. Box 4032

Concord, California 94524-4032

Tank No.	Size in Gallons	Contents	Closed In-Place/Removed?	Date
	750	Used-Oil	Active	
	42,000 (total)	4 UST's (gasoline and diesel)	Active	

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and Type of Release: Unknown cause, unknown quantity of gasoline			
Site characterization complete? Yes		Date Approved By Oversight Agency: Unknown	
Monitoring wells installed? Yes		Number: 8	Proper screened interval? Yes
Highest GW Depth Below Ground Surface: 11.80		Lowest Depth: 22.10	Flow Direction: West
Most Sensitive Current Use: Not applicable, gasoline service station.			
Most Sensitive Potential Use: Not applicable, gasoline service station.			
Are drinking water wells affected? No		Aquifer Name: East Bay Plain Aquifer System	
Is surface water affected? No		Nearest/Affected SW Name: Sulpher Creek (3,750 feet North)	
Off-Site Beneficial Use Impacts (Addresses/Locations): None			
Report(s) on file? Yes		Where is report(s) filed? City of Hayward, Fire Department	

TREATMENT AND DISPOSAL OF AFFECTED MATERIAL

Material	Amount (Include Units)	Action (Treatment or Disposal w/Destination)	Date
Tank	550-gallon used-oil	Disposed at Erickson Inc., Richmond	January 1997
Piping	Product piping		August-September 1996
Free Product	None		
Soil	31.21 Tons	Disposal, BFI Landfill, Livermore	January 1997
Groundwater	145 gallons	Treatment, Romic Environmental- East Palo Alto, CA	April 1998
Barrels			

MAXIMUM DOCUMENTED POLLUTANT CONCENTRATIONS--BEFORE AND AFTER CLEANUP

POLLUTANT	Soil (ppm)		Water (ppb)		POLLUTANT	Soil (ppm)		Water (ppb)	
	Before	After	Before	After		Before	After	Before	After
TPH (Gas)	810	<1.0	150,000	4600	Xylene	44	<0.0050	39,000	82
TPH (Diesel)	110	12	--	--	Ethylbenzene	16	<0.0050	9,200	85
Benzene	86	<0.0050	16,000	40	Oil & Grease				
Toluene	1.3	<0.0050	33,000	4.9	Heavy Metals				
MTBE			<50	96	Other				

Comments (Depth of Remediation, etc.): Site was remediated by soil vapor extraction (SVE) and groundwater extraction. Concentrations reached asymptotic levels. Therefore, remediation was discontinued.

IV. CLOSURE

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan? Yes		
Does completed corrective action protect potential beneficial uses per the Regional Board Basin Plan? Yes		
Does corrective action protect public health for current land use? Yes		
Site Management Requirements:		
Monitoring Wells Decommissioned: Yes	Number Decommissioned: 4	Number Retained: 4
List Enforcement Actions Taken: NONE		
List Enforcement Actions Rescinded:		

V. TECHNICAL REPORTS, CORRESPONDENCE ETC., THAT THIS CLOSURE RECOMMENDATION WAS BASED UPON

Title: See attached listing.	Date:

VI. ADDITIONAL COMMENTS, DATA, ETC.

PLEASE INCLUDE/ATTACH THE FOLLOWING AS APPROPRIATE:

1) SITE MAP INDICATING TANK PIT LOCATION, MONITORING WELL LOCATION, GROUNDWATER GRADIENT, ETC.; AND,

2) SITE COMMENTS WORTHY OF NOTICE (E.G., AREA OF RESIDUAL POLLUTION LEFT IN PLACE, DEED NOTICES ETC.)

See attached site map.

This document and the related CASE CLOSURE LETTER, shall be retained by the lead agency as part of the official site file.

Technical Reports
Former Exxon Service Station 7-0218
23990 Hesperian Boulevard
Hayward, California

Harding Lawson Associates, July 20, 1988, Subsurface Investigation

Harding Lawson Associates, February 23, 1989, Underground Storage Tank Unauthorized Release Form

Harding Lawson Associates, October 13, 1989, Environmental Assessment Report

Harding Lawson Associates, May 7, 1990, Groundwater Remediation Plan

International Technology Corporation, February 1991, Report of Analytical Findings: Exxon Company, U.S.A. Bay Drain Closures

Terra Vac Corporation, January 21, 1994, Letter Modification to Work Plan

Terra Vac Corporation, February 17, 1994, Drilling Report, Dual Vacuum Extraction Remediation

Harding Lawson Associates, Quarterly Summary Report, Second Quarter, 1994

Krazan & Associates, Inc., November 22, 1994, Limited Level II Environmental Site Assessment Proposed Taco Bell #06-1052

Transglobal Environmental Geochemistry, February 6, 1995, Data Report – Van Brunt Associates Project #94502, Soil Vapor Survey – W. Winton & Hesperian, Hayward, California

Van Brunt Associates, March 20, 1995, Remedial Action Workplan for the Investigation of the Source, Location, and Extent of Volatile Organic Compounds (VOC's) Found in Groundwater at Airport Plaza Shopping Center

Terra Vac Corporation, July 25, 1995, Drilling Report

Terra Vac Corporation, January 2, 1996, Non-Attainment Area Management Plan

Terra Vac Corporation, June 13, 1996, Well Abandonment

Environmental Resolutions, Inc., October 14, 1996, Product Line Replacement

Terra Vac Corporation, October 17, 1996, Well Abandonment Report

Blaine Tech Services, April 8, 1997, Groundwater Monitoring and Sampling, First Quarter, 1997

Environmental Resolutions, Inc., May 18, 1998, Quarterly Groundwater Monitoring, Second Quarter 1998

Environmental Resolutions, Inc., April 29, 1999, Annual Groundwater Monitoring, 1999

Environmental Resolutions, Inc., June 22, 1999, Request for No Further Action

Environmental Resolutions, Inc., February 11, 2000, Annual Groundwater Monitoring, 2000

APPENDIX D

HISTORICAL BORING LOGS

DMI-EMK Environmental Services, Inc.	BORING # HP1
SITE: Winton Valero	DATE DRILLED: 2/2/16
LOCATION: 23990 Hesperian Boulevard, Hayward, California	BORING DIAMETER: 2.5-Inches
DRILLER: Cascade Drilling, LP	WELL DIAMETER: NA
DRILLING EQUIPMENT: GeoProbe	PERFORATION SIZE: NA
LOGGED BY: Eric Kirkegaard	SAND PACK: NA
PROJECT NUMBER: PSC1	BORING ELEVATION: NA

DEPTH (FT)	DRIVE INTERVAL	SAMPLE INTERVAL	SAMPLE ID	OVA/PID (ppm)	USCS	GRAPHIC LOG	DESCRIPTION Secondary/primary soil types; minor soil type; grain size; Munsell color; density (sand/gravel) or consistency (silt/clay); moisture; plasticity; odor; stain; other (% gravel;organics; etc.)	BORING DETAIL	COMMENTS
							GROUND SURFACE		
0									Soil 0' to 1' bgs
5.0			1	0	Fill		FILL: Sand/Cement slurry fill at dispenser island excavation.		Borehole Abandoned Using Portland Cement Slurry up to 1' bgs
10.0			2	0	Fill		Same as above.		¾" temporary well casing. Well casing removed prior to boring abandonment
15.0			3	3.4	CL		CLAY (CL); very dark gray (10YR 3/1), slightly moist, stiff, slight to moderate hydrocarbon odor and stain.		

DMI-EMK Environmental Services, Inc.

SITE: Winton Valero
23990 Hesperian Blvd, Hayward, CA

BORING # HP1

DEPTH (FT)	DRIVE INTERVAL	SAMPLE INTERVAL	SAMPLE ID	OVA/PID (ppm)	USCS	GRAPHIC LOG	DESCRIPTION Secondary/primary soil types; minor soil type; grain size; Munsell color; density (sand/gravel) or consistency (silt/clay); moisture; plasticity; odor; stain; other (% gravel;organics; etc.)	BORING DETAIL	COMMENTS
19.0									
20.0			4	27	CL		CLAY (CL); very dark gray (10YR 3/1), slightly moist, stiff, slight to moderate hydrocarbon odor and stain. Groundwater sample HP1-W1 at approximately 20 feet bgs.		Borehole Abandoned Using Portland Cement Slurry up to 1' bgs
21.0									
22.0									
23.0									
24.0									¾" temporary well casing. Well casing removed prior to boring abandonment
25.0			5	4.9	CL		CLAY (CL); very dark gray (10YR 3/1), slightly moist, stiff, slight to moderate hydrocarbon odor and stain.		
26.0									
27.0									¾" temporary well screen (0.020" slot). Well screen removed prior to boring abandonment
28.0							Color and moisture change. First groundwater at approximately 27.5 feet bgs.		
29.0									
30.0			6	1.4	CL		CLAY (CL); dark yellowish brown (10YR 3/4), wet, soft, slight hydrocarbon odor, no staining.		
31.0							End of boring at 30.5 feet below ground surface (bgs). Temporary well casing and screen removed after sampling and borehole abandoned using Portland cement slurry up to 1 foot bgs and capped with soil to match existing surface.		
32.0									
33.0									
34.0									
35.0									
36.0									
37.0									
38.0									
39.0									
40.0									
41.0									

DMI-EMK Environmental Services, Inc.	BORING # HP2
SITE: Winton Valero	DATE DRILLED: 2/2/16
LOCATION: 23990 Hesperian Boulevard, Hayward, California	BORING DIAMETER: 2.5-Inches
DRILLER: Cascade Drilling, LP	WELL DIAMETER: NA
DRILLING EQUIPMENT: GeoProbe	PERFORATION SIZE: NA
LOGGED BY: Eric Kirkegaard	SAND PACK: NA
PROJECT NUMBER: PSC1	BORING ELEVATION: NA

DEPTH (FT)	DRIVE INTERVAL	SAMPLE INTERVAL	SAMPLE ID	OVA/PID (ppm)	USCS	GRAPHIC LOG	DESCRIPTION Secondary/primary soil types; minor soil type; grain size; Munsell color; density (sand/gravel) or consistency (silt/clay); moisture; plasticity; odor; stain; other (% gravel;organics; etc.)	BORING DETAIL	COMMENTS
0							GROUND SURFACE		
5.0			1	0	CL		CLAY (CL); very dark brown (10YR 2/2), slightly moist, stiff, low plasticity, no hydrocarbon odor or stain.		Soil 0' to 1' bgs Borehole Abandoned Using Portland Cement Slurry up to 1' bgs
10.0			2	0	CL		CLAY (CL); trace fine to coarse sand, dark brown (10YR 3/3), slightly moist, stiff, no hydrocarbon odor or stain.		¾" temporary well casing. Well casing removed prior to boring abandonment
15.0			3	0	CL		CLAY (CL); very dark brown (10YR 2/1) with dark yellowish brown (10YR 4/4) mottling, slightly moist, stiff, no hydrocarbon odor or stain.		

DMI-EMK Environmental Services, Inc.

SITE: Winton Valero
23990 Hesperian Blvd, Hayward, CA

BORING # HP2

DEPTH (FT)	DRIVE INTERVAL	SAMPLE INTERVAL	SAMPLE ID	OVA/PID (ppm)	USCS	GRAPHIC LOG	DESCRIPTION	BORING DETAIL	COMMENTS
19.0									
20.0			4	0	CL		CLAY (CL); dark grayish brown (10YR 4/2), slightly moist, stiff, no hydrocarbon odor or stain. Groundwater sample HP2-W1 at approximately 20 feet bgs.		Borehole Abandoned Using Portland Cement Slurry up to 1' bgs
21.0									
22.0									
23.0									
24.0									¾" temporary well casing. Well casing removed prior to boring abandonment
25.0			5	1.8	CL		CLAY (CL); very dark grayish brown (10YR 3/2), slightly moist, stiff, slight hydrocarbon odor and stain.		
26.0									
27.0									¾" temporary well screen (0.020" slot). Well screen removed prior to boring abandonment
28.0							Color and moisture change. First groundwater at approximately 27.5 feet bgs.		
29.0									
30.0			6	0.2	CL		CLAY (CL); dark yellowish brown (10YR 3/4), wet, soft, slight hydrocarbon odor, no staining.		
31.0							End of boring at 30.5 feet below ground surface (bgs). Temporary well casing and screen removed after sampling and borehole abandoned using Portland cement slurry up to 1 foot bgs and capped with soil to match existing surface.		
32.0									
33.0									
34.0									
35.0									
36.0									
37.0									
38.0									
39.0									
40.0									
41.0									

DMI-EMK Environmental Services, Inc.	BORING # HP3
SITE: Winton Valero	DATE DRILLED: 2/2/16
LOCATION: 23990 Hesperian Boulevard, Hayward, California	BORING DIAMETER: 2.5-Inches
DRILLER: Cascade Drilling, LP	WELL DIAMETER: NA
DRILLING EQUIPMENT: GeoProbe	PERFORATION SIZE: NA
LOGGED BY: Eric Kirkegaard	SAND PACK: NA
PROJECT NUMBER: PSC1	BORING ELEVATION: NA

DEPTH (FT)	DRIVE INTERVAL	SAMPLE INTERVAL	SAMPLE ID	OVA/PID (ppm)	USCS	GRAPHIC LOG	DESCRIPTION Secondary/primary soil types; minor soil type; grain size; Munsell color; density (sand/gravel) or consistency (silt/clay); moisture; plasticity; odor; stain; other (% gravel;organics; etc.)	BORING DETAIL	COMMENTS
0	HAND-AUGER TO 4-FEET						GROUND SURFACE		Soil 0' to 1' bgs
5.0		■	1	0	CL		CLAY (CL); very dark brown (10YR 2/2), slightly moist, stiff, low plasticity, no hydrocarbon odor or stain.		Borehole Abandoned Using Portland Cement Slurry up to 1' bgs
9.0									¾" temporary well casing. Well casing removed prior to boring abandonment
10.0		■	2	0	CL		CLAY (CL); trace fine to coarse sand, dark brown (10YR 3/3), slightly moist, stiff, no hydrocarbon odor or stain.		
11.0									
15.0		■	3	0	CL		CLAY (CL); very dark brown (10YR 2/1) with dark yellowish brown (10YR 4/4) mottling, slightly moist, stiff, no hydrocarbon odor or stain.		

DMI-EMK Environmental Services, Inc.

SITE: Winton Valero
23990 Hesperian Blvd, Hayward, CA

BORING # HP3

DEPTH (FT)	DRIVE INTERVAL	SAMPLE INTERVAL	SAMPLE ID	OVA/PID (ppm)	USCS	GRAPHIC LOG	DESCRIPTION	BORING DETAIL	COMMENTS
19.0									
20.0			4	0	CL		CLAY (CL); dark grayish brown (10YR 4/2), slightly moist, stiff, no hydrocarbon odor or stain.		Borehole Abandoned Using Portland Cement Slurry up to 1' bgs
21.0							Groundwater sample HP3-W1 at approximately 20 feet bgs.		
22.0									
23.0									
24.0									¾" temporary well casing. Well casing removed prior to boring abandonment
25.0			5	0.6	CL		CLAY (CL); very dark grayish brown (10YR 3/2), slightly moist, stiff, slight hydrocarbon odor, no stain.		
26.0									
27.0									¾" temporary well screen (0.020" slot). Well screen removed prior to boring abandonment
28.0							Color and moisture change First groundwater at approximately 27.5 feet bgs.		
29.0									
30.0			6	0	CL		CLAY (CL); dark yellowish brown (10YR 3/4), wet, soft, no hydrocarbon odor or stain.		
31.0							End of boring at 30.5 feet below ground surface (bgs). Temporary well casing and screen removed after sampling and borehole abandoned using Portland cement slurry up to 1 foot bgs and capped with soil to match existing surface.		
32.0									
33.0									
34.0									
35.0									
36.0									
37.0									
38.0									
39.0									
40.0									
41.0									

DMI-EMK Environmental Services, Inc.	BORING # HP4
SITE: Winton Valero	DATE DRILLED: 2/2/16
LOCATION: 23990 Hesperian Boulevard, Hayward, California	BORING DIAMETER: 2.5-Inches
DRILLER: Cascade Drilling, LP	WELL DIAMETER: NA
DRILLING EQUIPMENT: GeoProbe	PERFORATION SIZE: NA
LOGGED BY: Eric Kirkegaard	SAND PACK: NA
PROJECT NUMBER: PSC1	BORING ELEVATION: NA

DEPTH (FT)	SAMPLE ID	OVA/PID (ppm)	USCS	DESCRIPTION (Secondary/primary soil types; minor soil type; grain size; Munsell color; density (sand/gravel) or consistency (silt/clay); moisture; plasticity; odor; stain; other (% gravel;organics; etc.))	COMMENTS
0				GROUND SURFACE	Soil 0' to 1' bgs
5.0	1	0	CL	CLAY (CL); very dark brown (10YR 2/2), slightly moist, stiff, low plasticity, no hydrocarbon odor or stain.	Borehole Abandoned Using Portland Cement Slurry up to 1' bgs
9.0					¾" temporary well casing. Well casing removed prior to boring abandonment
10.0	2	0	CL	CLAY (CL); trace fine to coarse sand, dark brown (10YR 3/3), slightly moist, stiff, no hydrocarbon odor or stain.	
11.0					
15.0	3	0	CL	CLAY (CL); very dark gray (10YR 3/1), slightly moist, stiff, slight to moderate hydrocarbon odor and stain.	

DMI-EMK Environmental Services, Inc.

SITE: Winton Valero
23990 Hesperian Blvd, Hayward, CA

BORING # HP4

DEPTH (FT)	DRIVE INTERVAL	SAMPLE INTERVAL	SAMPLE ID	OVA/PID (ppm)	USCS	GRAPHIC LOG	DESCRIPTION	BORING DETAIL	COMMENTS
19.0									Borehole Abandoned Using Portland Cement Slurry up to 1' bgs
20.0		■	4	0	CL		CLAY (CL); very dark gray (10YR 3/1), slightly moist, stiff, slight to moderate hydrocarbon odor and stain. Groundwater sample HP4-W1 at approximately 20 feet bgs.		
21.0									
22.0									
23.0									
24.0									¾" temporary well casing. Well casing removed prior to boring abandonment
25.0		■	5	1.8	CL		CLAY (CL); very dark gray (10YR 3/1), slightly moist, stiff, slight to moderate hydrocarbon odor and stain.		
26.0									
27.0									¾" temporary well screen (0.020" slot). Well screen removed prior to boring abandonment
28.0							Color and moisture change. First groundwater at approximately 27.5 feet bgs.		
29.0									
30.0		■	6	0.2	CL		CLAY (CL); dark yellowish brown (10YR 3/4), wet, soft, slight hydrocarbon odor, no stain.		
31.0							End of boring at 30.5 feet below ground surface (bgs). Temporary well casing and screen removed after sampling and borehole abandoned using Portland cement slurry up to 1 foot bgs and capped with soil to match existing surface.		
32.0									
33.0									
34.0									
35.0									
36.0									
37.0									
38.0									
39.0									
40.0									
41.0									

DMI-EMK Environmental Services, Inc.	BORING # HP5
SITE: Winton Valero	DATE DRILLED: 2/2/16
LOCATION: 23990 Hesperian Boulevard, Hayward, California	BORING DIAMETER: 2.5-Inches
DRILLER: Cascade Drilling, LP	WELL DIAMETER: NA
DRILLING EQUIPMENT: GeoProbe	PERFORATION SIZE: NA
LOGGED BY: Eric Kirkegaard	SAND PACK: NA
PROJECT NUMBER: PSC1	BORING ELEVATION: NA

DEPTH (FT)	DRIVE INTERVAL	SAMPLE INTERVAL	SAMPLE ID	OVA/PID (ppm)	USCS	GRAPHIC LOG	DESCRIPTION Secondary/primary soil types; minor soil type; grain size; Munsell color; density (sand/gravel) or consistency (silt/clay); moisture; plasticity; odor; stain; other (% gravel;organics; etc.)	BORING DETAIL	COMMENTS
							GROUND SURFACE		
0									Soil 0' to 1' bgs
1.0									
2.0									
3.0									
4.0									
5.0			1	0	SC		Clayey SAND (SC); very dark brown (10YR 2/2), fine sand, slightly moist, stiff, low plasticity, no hydrocarbon odor or stain.		Borehole Abandoned Using Portland Cement Slurry up to 1' bgs
6.0									
7.0									
8.0									
9.0									¾" temporary well casing. Well casing removed prior to boring abandonment
10.0			2	0	CL		CLAY (CL); trace fine to coarse sand, dark brown (10YR 3/3), slightly moist, stiff, no hydrocarbon odor or stain.		
11.0									
12.0									
13.0									
14.0									
15.0			3	0	CL		CLAY (CL); very dark brown (10YR 2/1), slightly moist, stiff, no hydrocarbon odor or stain.		
16.0									
17.0									
18.0									

DMI-EMK Environmental Services, Inc.

SITE: Winton Valero
23990 Hesperian Blvd, Hayward, CA

BORING # HP5

DEPTH (FT)	DRIVE INTERVAL	SAMPLE INTERVAL	SAMPLE ID	OVA/PID (ppm)	USCS	GRAPHIC LOG	DESCRIPTION	BORING DETAIL	COMMENTS
19.0									Borehole Abandoned Using Portland Cement Slurry up to 1' bgs
20.0		■	4	0.6	CL		CLAY (CL); very dark gray (10YR 3/1), slightly moist, stiff, slight hydrocarbon odor and stain. Groundwater sample HP5-W1 at approximately 20 feet bgs.		
21.0									
22.0									
23.0									
24.0									¾" temporary well casing. Well casing removed prior to boring abandonment
25.0		■	5	1.3	CL		CLAY (CL); very dark gray (10YR 3/1), slightly moist, stiff, slight to moderate hydrocarbon odor and stain.		
26.0									
27.0									¾" temporary well screen (0.020" slot). Well screen removed prior to boring abandonment
28.0							Color and moisture change. First groundwater at approximately 27.5 feet bgs.		
29.0									
30.0		■	6	0.9	CL		CLAY (CL); dark yellowish brown (10YR 3/4), wet, soft, slight hydrocarbon odor, no stain.		
31.0							End of boring at 30.5 feet below ground surface (bgs). Temporary well casing and screen removed after sampling and borehole abandoned using Portland cement slurry up to 1 foot bgs and capped with soil to match existing surface.		
32.0									
33.0									
34.0									
35.0									
36.0									
37.0									
38.0									
39.0									
40.0									
41.0									

APPENDIX E

TABULATED SITE CONCEPTUAL MODEL

SITE CONCEPTUAL MODEL				
SCM Element	SCM Sub-Element	Description	Data Gap	How to Address
Geology and Hydrogeology	Regional	The subject site is located within the East Bay Plain Groundwater Basin (Plain) of the San Francisco Bay hydrologic system. The Plain is about 25 miles long, two to seven miles wide, and includes all or portions of the cities of Richmond, San Pablo, EL Cerrito, Albany, Berkeley, Emeryville, Piedmont, Alameda, Oakland, San Leandro, San Lorenzo, and Hayward. It is bounded by the San Francisco Bay approximately 2.5 miles to the west (nearest surface body of water), the San Pablo Bay to the north, and the Hayward Fault to the east. The southern boundary is defined as the northern boundary of the Alameda County Water District (DWR, 1980). The subject site is located near the Alameda Creek watershed at the southern end of the Plain. The area has a Mediterranean climate with an average annual rainfall of 23 inches that occurs mostly between November and March. The upland watershed area for the Plain is over 100 square miles along the western slope of the Coast Ranges. The Site is located within the San Leandro Sub-Area of the Plain. Locally, unconsolidated sediments beneath the Sub-Area are approximately 500 feet thick and consist primarily of estuarine deposits of the Alameda Formation and younger alluvial fans. The upper portion of the sub-area is underlain extensively by the Yerba Buena Mud Member that contains high clay content and forms an extensive east-west aquitard across the Plain. This black, organic clay averages 25 to 50 feet thick with a gravel/sand/shell layer commonly in the middle of the unit. The San Francisco Bay Regional Water Quality Control Board (RWQCB, 2015) has identified the Yerba Buena Mud to be an ideal case for "less aggressive" remediation because "groundwater in these shallow deposits is unlikely to be used as a source of drinking water (due to low yield, elevated levels of coliform bacteria from leaking sewer pipes, and requirement of a 50 foot well seal for new municipal wells)." Deeper units beneath the site consist of a sequence of alluvial fan deposits between older muds. From the 1860s to the 1930s, all water supplies to the Plain area were provided by groundwater, springs, and local reservoirs. As a result of the development of various Sierra Nevada water supplies in the 1920s and 1930s, all local municipal water supplies were abandoned. Since then, the Plain has not been a regional water supply source. However, the Plain is used locally for irrigation, industry, emergency water supply purposes, and as a limited drinking water supply. Water service in the Plain is provided by the City of Hayward and East Bay Municipal Utility District (EBMUD). Future potential beneficial uses include utilizing the Basin's aquifers for storage of imported surface water by EBMUD. This storage is intended for emergency use. Additional potential uses by EBMUD include municipal extraction wells and non-potable irrigation wells (RWQCB, 1999). The City of Hayward overlies the San Lorenzo Cone,	None	NA

SITE CONCEPTUAL MODEL (Continued)				
SCM Element	SCM Sub-Element	Description	Data Gap	How to Address
Geology and Hydrogeology (Continued)	Regional	which contains upper (Shallow Zone: 0 to 200 feet below ground surface [bgs]) and lower (Deep Zone: greater than 200 feet bgs) aquifers. The Shallow Zone groundwater is generally a calcium-bicarbonate type of water with total dissolved solids (TDS) concentrations ranging from about 300 to 1,000 milligrams per liter (mg/L). The Deep Zone groundwater is generally a sodium-bicarbonate type of water with TDS concentrations ranging from about 300 to 1,400 mg/L (Muir, 1993).	None	NA
Geology and Hydrogeology	Site	***Geology:*** Results of the site investigation conducted in February 2016 indicate soils beneath the subject site consisted of clay with trace amounts of sand to approximately 30.5 feet bgs, the maximum depth explored. ***Hydrogeology:*** Based on the *Site Closure Summary* dated November 8, 2000 (Appendix C), the depth to first groundwater has ranged from 11.80 to 22.10 feet bgs and generally flows in a westerly direction. Results of the site investigation conducted in February 2016 indicate first groundwater was encountered at approximately 27.5 feet bgs during drilling and subsequently increased to approximately 20 feet bgs shortly after installing temporary well casing for groundwater sampling.	None	NA
Surface Bodies of Water		The nearest surface body of water is San Francisco Bay, located approximately 2.5 miles west of the subject site.	None	NA
Nearby Wells		Identification of the following sensitive receptors was obtained via: 1) research of the SWRCB GeoTracker GAMA website, 2) a well completion report release request sent to the County of Alameda Public Works Agency, 3) review of the provided well search Excel file, 4) review of site conditions on Google Earth and Google Maps, and 5) a telephone conversation with personnel at the City of Hayward Utilities & Environmental Services Department on February 10, 2017. Based on our research, a municipal water well (Municipal Well D2) is located approximately 1,137 feet west of the western edge of the property. Per the telephone conversation with personnel at the City of Hayward Utilities & Environmental Services Department, Municipal Well D2 is located within a small structure located near 1275 West Winton Avenue. Municipal Well D2 is not utilized as a service well and is considered an emergency use well. The total depth of the well is 604 feet and the screen interval is from 500 feet bgs to 585 feet bgs.	None	NA

SITE CONCEPTUAL MODEL (Continued)				
SCM Element	SCM Sub-Element	Description	Data Gap	How to Address
Release Source		A previous investigation and cleanup was conducted at the site from 1985 through 2001. On November 8, 2000, the RWQCB issued a *Site Closure Summary* (Appendix C) for the subject site which documents maximum pollutant concentrations before and after the soil vapor extraction remediation performed in from September 1994 through May 1995. Review of the SWRCB GeoTracker website indicates the case was closed as of January 9, 2002. As part of UST system upgrades and site renovations, compliance soil samples were collected from beneath former fuel dispensers and product and vent piping on July 31, 2015. Laboratory analyses showed elevated concentrations of TPH-D (570 mg/Kg) and TPH-O (300 mg/Kg) at sample location D4@2' (former fuel dispenser location). Based on these results the City of Hayward Fire Department required the submittal of an Underground Storage Tank (UST) Site – Unauthorized Release / Contamination Report. After review by the Hayward Fire Department and the San Francisco Bay Regional Water Quality Control Board, the case was transferred to ACDEH for regulatory oversight.	None	NA
Source Removal		Prior to completion of UST system upgrades being conducted at that time an area measuring approximately 6 feet by 10 feet was excavated to approximately 14 feet bgs. Approximately 39 tons of petroleum impacted soil was transported from the site and disposed of at Recology Hay Road Landfill in Vacaville, California. Soil samples were collected from the sidewalls and bottom of the excavation on September 4, 2015. Laboratory analyses showed maximum concentrations of TPH-G (2,600 mg/Kg at EXC8@10' and TPH-D (3,700 mg/Kg at EXC5@5') in the excavation sidewall samples. Of the analyzed volatile constituents, only naphthalene (55 mg/Kg at EXC8@10') exceeded the SWRCB LTCP criteria for volatilization to outdoor air (Commercial/Industrial).	Residual soil impacts present at excavation sample locations.	ACDEH directed assessment of extent of impact to soil and groundwater (letter dated October 3, 2015).
Petroleum Impacts	Soil	On February 2, 2016, soil samples were collected from direct-push borings HP1 through HP5. Laboratory analytical results indicate the presence of one or more petroleum hydrocarbon constituents in concentrations at or above laboratory detection limits in soil samples from each of the borings. However, the reported concentrations do not exceed the SWRCB LTCP criteria for Commercial/Industrial Land use or Utility Worker exposure (SWRCB LTCP, *Table 1 Concentrations of Petroleum Constituents in Soil That Will Have No Significant Risk of Adversely Affecting Human Health*, August 2012). Furthermore, as low levels of naphthalene were only reported in two soil samples (0.0036 mg/Kg in HP4-2@10' and 1.1 mg/Kg in HP4-3@15') the elevated naphthalene reported for excavation sample EXC8@10' (55 mg/Kg) appears to be limited in extent and adequately delineated.	Assessment results show that petroleum impacts identified in excavation sample locations are limited in extent.	ACDEH directed preparation of a SCM and submittal of additional reports documenting source removal activities and the status of a waste-oil UST (letters dated June 8, 2016 and May 23, 2017).

SITE CONCEPTUAL MODEL (Continued)				
SCM Element	SCM Sub-Element	Description	Data Gap	How to Address
Petroleum Impacts	Groundwater	The RWQCB *Site Closure Summary* dated November 8, 2000, (Appendix C) indicates, at the time of the initial case closure, groundwater beneath the site contained the following contaminant concentrations: • TPH-G at 4,600 micrograms per liter (µg/L) • Benzene at 40 µg/L • Toluene at 4.9 µg/L • Ethylbenzene at 85 µg/L • Xylene at 82 µg/L • MTBE at 96 µg/L On February 2, 2016, groundwater samples were collected from direct-push borings HP1 through HP5. Laboratory results show the following maximum contaminant concentrations: • TPH-G at 1,200 µg/L • TPH-D at 170 µg/L • Benzene at 0.37 µg/L • Toluene at 0.33 µg/L • Ethylbenzene at 0.96 µg/L • Xylene at 0.89 µg/L • MTBE at 3.9 µg/L • Tertiary butyl alcohol at 17 µg/L • n-Butylbenzene at 9.6 µg/L • sec-Butylbenzene at 7.4 µg/L • tert-Butylbenzene at 0.71 µg/L • Isopropylbenzene at 23 µg/L • Naphthalene at 2.0 µg/L • n-Propylbenzene at 44 µg/L • 1,2,4 Trimethylbenzene at 0.44 µg/L	Based on the groundwater concentrations reported in the *Site Closure Summary* dated November 8, 2000, and the significantly decreased concentrations reported for groundwater samples collected from borings HP1 through HP5 on February 2, 2016, it appears that groundwater contaminant plume is adequately delineated.	Preparation of SCM as directed by ACDEH to support case closure per SWRCB LTCP.

SITE CONCEPTUAL MODEL (Continued)				
SCM Element	SCM Sub-Element	Description	Data Gap	How to Address
Petroleum Impacts (Continued)	Groundwater	None of these contaminants exceed the SWRCB LTCP water quality objectives based on the State of California Primary MCLs. Of these constituents, only TBA and TPH are reportedly present above WQO's (12 µg/L for TBA and 100 µg/L for TPH). Based on isoconcentration modeling, the extent of these contaminant plumes appears to be adequately delineated (Figures 5 and 6, respectively). In addition, the reported TPH-G, BTEX, and MTBE concentrations are significantly less than those reported in the RWQCB *Site Closure Summary* dated November 8, 2000, and appear to be indicative of a weathered groundwater contaminant plume. The SWRCB's *Technical Justification for Groundwater Plume Lengths, Indicator Constituents, Concentrations, and Buffer Distances (Separation Distances) to Receptors* (Technical Justification) uses benzene, MTBE, and TPH-G as adequate indicator constituents for the groundwater plume lengths discussed in the SWRCB LTCP. The technical justification for using these three constituents relies heavily on the facts that (1) benzene has the highest toxicity of the soluble petroleum constituents, (2) MTBE typically has the longest plume lengths, and (3) TPH-G represents the additional dissolved hydrocarbons that may be present resulting from a typical petroleum release. Contaminant plume length estimates are summarized below: <u>Benzene (at 5 µg/L)</u> Average = 198 feet, 90th Percentile = 350 feet, Maximum = 554 feet <u>MTBE (at 5 µg/L)</u> Average = 317 feet, 90th Percentile = 545 feet, Maximum = 1,046 feet <u>TPH-G (at 100 µg/L)</u> Average = 248 feet, 90th Percentile = 413 feet, Maximum = 855 feet The TPH-G groundwater concentrations at boring locations HP1 through HP5 were contoured using the WQO of 100 µg/L to estimate the plume length. Based on the contouring results, the TPH-G plume is estimated to be approximately 105 feet long, which is shorter than the average TPH-G plume length shown above. Benzene and MTBE were not reported at or above WQO's, and were therefore not contoured. The low to non-detect benzene and MTBE concentrations support the shorter than average estimated length of the TPH-G plume at the subject site.	Based on the groundwater concentrations reported in the *Site Closure Summary* dated November 8, 2000, and the significantly decreased concentrations reported for groundwater samples collected from borings HP1 through HP5 on February 2, 2016, it appears that groundwater contaminant plume is adequately delineated.	Preparation of SCM as directed by ACDEH to support case closure per SWRCB LTCP.

SITE CONCEPTUAL MODEL (Continued)				
SCM Element	SCM Sub-Element	Description	Data Gap	How to Address
Petroleum Impacts (Continued)	Groundwater	With regard to the SWRCB LTCP, the Technical Justification document defines a Class 1 plume as being less than 100 feet in length with a separation of 250 feet from the outside edge of the plume to a receptor, and a Class 2 plume as being less than 250 feet in length with a separation of 1,000 feet from the outside edge of the plume to a receptor, and also allows for maximum concentrations of benzene at 3,000 µg/L and MTBE at 1,000 µg/L. Based on the site's estimated TPH-G plume length of 105 feet, low to non-detect concentrations of benzene and MTBE, and separation of approximately 1,014 feet from the outside edge of the plume to the City of Hayward Municipal Well D2 (Figure 7), the site meets the Technical Justification document Class 2 plume criteria, and is close to meeting the Class 1 plume criteria.	Based on the groundwater concentrations reported in the *Site Closure Summary* dated November 8, 2000, and the significantly decreased concentrations reported for groundwater samples collected from borings HP1 through HP5 on February 2, 2016, it appears that groundwater contaminant plume is adequately delineated.	Preparation of SCM as directed by ACDEH to support case closure per SWRCB LTCP.
LNAPL		Current assessment results indicate that petroleum hydrocarbon impacts have decreased significantly compared with groundwater impacts reported in the RWQCB *Site Closure Summary* dated November 8, 2000. LNAPL was not encountered during drilling and sampling of borings HP1 through HP5. Based on the low TPH concentrations and low to non-detect benzene and MTBE concentrations reported in the groundwater samples from boring HP1 through HP5, LNAPL is not suspected to be present at the site.	None	NA
Sensitive Receptor Exposure	Direct Exposure to Impacted Soil	A low potential exists for direct exposure to impacted soil due to excavation and removal of approximately 39 tons of petroleum impacted soil, and due to a paved surface at the site. Although worker exposure may result if excavation is conducted in the vicinity of the former dispenser island located north of the USTs, the reported contaminant concentrations do not exceed the SWRCB LTCP criteria for Utility Workers.	See Site Conceptual Exposure Model (Appendix F)	

SITE CONCEPTUAL MODEL (Continued)				
SCM Element	SCM Sub-Element	Description	Data Gap	How to Address
Sensitive Receptor Exposure	Volatilization and Outdoor Air Exposure	A low potential exists for volatilization to outdoor air as the limited area of residual petroleum impact is paved and only one sample location (EXC8@10') contained residual soil contamination (naphthalene at 55 mg/Kg) exceeding the SWRCB LTCP criteria of 45 mg/Kg for this mode of exposure.	See Site Conceptual Exposure Model (Appendix F)	
Sensitive Receptor Exposure	Volatilization and Indoor Air Exposure	The subject site is an active fueling facility and satisfaction of the media-specific criteria for petroleum vapor intrusion into indoor air is not required under the SWRCB LTCP, except in cases where release characteristics can be reasonably believed to pose an unacceptable health risk. As laboratory results for soil and groundwater samples show very low concentrations of volatile constituents at the site (with exception to one elevated detection of naphthalene at 55 mg/Kg at sample location EXC8@10' adjacent to the existing USTs), a low potential exists for volatilization and indoor air exposure.	See Site Conceptual Exposure Model (Appendix F)	
Sensitive Receptor Exposure	Exposure to Impacted Groundwater	A low potential for exposure to impacted groundwater exists onsite as first groundwater was encountered at approximately 27.5 feet bgs (subsequently rose to approximately 20 feet bgs after installation of temporary well casing for sampling). Although a City of Hayward well (Municipal Well D2) is located approximately 1,137 feet west of the western edge of the subject site, contouring of the TPH-G groundwater contaminant plume indicates there is a separation of approximately 1,014 feet between the 100 µg/L TPH-G contour and the well. In addition, the well is screened from 500 to 585 feet bgs, is not utilized as a service well, and is considered an emergency use well. Based on these conditions and the low to non-detect concentrations of volatile constituents in the site's groundwater contaminant plume, there is a low potential for exposure to impacted groundwater via use of the City of Hayward Municipal Well D2.	See Site Conceptual Exposure Model (Appendix F)	

SITE CONCEPTUAL MODEL				
SCM Element	SCM Sub-Element	Description	Data Gap	How to Address
Geology and Hydrogeology	Regional	The subject site is located within the East Bay Plain Groundwater Basin (Plain) of the San Francisco Bay hydrologic system. The Plain is about 25 miles long, two to seven miles wide, and includes all or portions of the cities of Richmond, San Pablo, EL Cerrito, Albany, Berkeley, Emeryville, Piedmont, Alameda, Oakland, San Leandro, San Lorenzo, and Hayward. It is bounded by the San Francisco Bay approximately 2.5 miles to the west (nearest surface body of water), the San Pablo Bay to the north, and the Hayward Fault to the east. The southern boundary is defined as the northern boundary of the Alameda County Water District (DWR, 1980). The subject site is located near the Alameda Creek watershed at the southern end of the Plain. The area has a Mediterranean climate with an average annual rainfall of 23 inches that occurs mostly between November and March. The upland watershed area for the Plain is over 100 square miles along the western slope of the Coast Ranges. The Site is located within the San Leandro Sub-Area of the Plain. Locally, unconsolidated sediments beneath the Sub-Area are approximately 500 feet thick and consist primarily of estuarine deposits of the Alameda Formation and younger alluvial fans. The upper portion of the sub-area is underlain extensively by the Yerba Buena Mud Member that contains high clay content and forms an extensive east-west aquitard across the Plain. This black, organic clay averages 25 to 50 feet thick with a gravel/sand/shell layer commonly in the middle of the unit. The San Francisco Bay Regional Water Quality Control Board (RWQCB, 2015) has identified the Yerba Buena Mud to be an ideal case for "less aggressive" remediation because "groundwater in these shallow deposits is unlikely to be used as a source of drinking water (due to low yield, elevated levels of coliform bacteria from leaking sewer pipes, and requirement of a 50 foot well seal for new municipal wells)." Deeper units beneath the site consist of a sequence of alluvial fan deposits between older muds. From the 1860s to the 1930s, all water supplies to the Plain area were provided by groundwater, springs, and local reservoirs. As a result of the development of various Sierra Nevada water supplies in the 1920s and 1930s, all local municipal water supplies were abandoned. Since then, the Plain has not been a regional water supply source. However, the Plain is used locally for irrigation, industry, emergency water supply purposes, and as a limited drinking water supply. Water service in the Plain is provided by the City of Hayward and East Bay Municipal Utility District (EBMUD). Future potential beneficial uses include utilizing the Basin's aquifers for storage of imported surface water by EBMUD. This storage is intended for emergency use. Additional potential uses by EBMUD include municipal extraction wells and non-potable irrigation wells (RWQCB, 1999). The City of Hayward overlies the San Lorenzo Cone,	None	NA

SITE CONCEPTUAL MODEL (Continued)				
SCM Element	SCM Sub-Element	Description	Data Gap	How to Address
Geology and Hydrogeology (Continued)	Regional	which contains upper (Shallow Zone: 0 to 200 feet below ground surface [bgs]) and lower (Deep Zone: greater than 200 feet bgs) aquifers. The Shallow Zone groundwater is generally a calcium-bicarbonate type of water with total dissolved solids (TDS) concentrations ranging from about 300 to 1,000 milligrams per liter (mg/L). The Deep Zone groundwater is generally a sodium-bicarbonate type of water with TDS concentrations ranging from about 300 to 1,400 mg/L (Muir, 1993).	None	NA
Geology and Hydrogeology	Site	***Geology:*** Results of the site investigation conducted in February 2016 indicate soils beneath the subject site consisted of clay with trace amounts of sand to approximately 30.5 feet bgs, the maximum depth explored. ***Hydrogeology:*** Based on the *Site Closure Summary* dated November 8, 2000 (Appendix C), the depth to first groundwater has ranged from 11.80 to 22.10 feet bgs and generally flows in a westerly direction. Results of the site investigation conducted in February 2016 indicate first groundwater was encountered at approximately 27.5 feet bgs during drilling and subsequently increased to approximately 20 feet bgs shortly after installing temporary well casing for groundwater sampling.	None	NA
Surface Bodies of Water		The nearest surface body of water is San Francisco Bay, located approximately 2.5 miles west of the subject site.	None	NA
Nearby Wells		Identification of the following sensitive receptors was obtained via: 1) research of the SWRCB GeoTracker GAMA website, 2) a well completion report release request sent to the County of Alameda Public Works Agency, 3) review of the provided well search Excel file, 4) review of site conditions on Google Earth and Google Maps, and 5) a telephone conversation with personnel at the City of Hayward Utilities & Environmental Services Department on February 10, 2017. Based on our research, a municipal water well (Municipal Well D2) is located approximately 1,137 feet west of the western edge of the property. Per the telephone conversation with personnel at the City of Hayward Utilities & Environmental Services Department, Municipal Well D2 is located within a small structure located near 1275 West Winton Avenue. Municipal Well D2 is not utilized as a service well and is considered an emergency use well. The total depth of the well is 604 feet and the screen interval is from 500 feet bgs to 585 feet bgs.	None	NA

SITE CONCEPTUAL MODEL (Continued)				
SCM Element	SCM Sub-Element	Description	Data Gap	How to Address
Release Source		A previous investigation and cleanup was conducted at the site from 1985 through 2001. On November 8, 2000, the RWQCB issued a *Site Closure Summary* (Appendix C) for the subject site which documents maximum pollutant concentrations before and after the soil vapor extraction remediation performed in from September 1994 through May 1995. Review of the SWRCB GeoTracker website indicates the case was closed as of January 9, 2002. As part of UST system upgrades and site renovations, compliance soil samples were collected from beneath former fuel dispensers and product and vent piping on July 31, 2015. Laboratory analyses showed elevated concentrations of TPH-D (570 mg/Kg) and TPH-O (300 mg/Kg) at sample location D4@2' (former fuel dispenser location). Based on these results the City of Hayward Fire Department required the submittal of an Underground Storage Tank (UST) Site – Unauthorized Release / Contamination Report. After review by the Hayward Fire Department and the San Francisco Bay Regional Water Quality Control Board, the case was transferred to ACDEH for regulatory oversight.	None	NA
Source Removal		Prior to completion of UST system upgrades being conducted at that time an area measuring approximately 6 feet by 10 feet was excavated to approximately 14 feet bgs. Approximately 39 tons of petroleum impacted soil was transported from the site and disposed of at Recology Hay Road Landfill in Vacaville, California. Soil samples were collected from the sidewalls and bottom of the excavation on September 4, 2015. Laboratory analyses showed maximum concentrations of TPH-G (2,600 mg/Kg at EXC8@10' and TPH-D (3,700 mg/Kg at EXC5@5') in the excavation sidewall samples. Of the analyzed volatile constituents, only naphthalene (55 mg/Kg at EXC8@10') exceeded the SWRCB LTCP criteria for volatilization to outdoor air (Commercial/Industrial).	Residual soil impacts present at excavation sample locations.	ACDEH directed assessment of extent of impact to soil and groundwater (letter dated October 3, 2015).
Petroleum Impacts	Soil	On February 2, 2016, soil samples were collected from direct-push borings HP1 through HP5. Laboratory analytical results indicate the presence of one or more petroleum hydrocarbon constituents in concentrations at or above laboratory detection limits in soil samples from each of the borings. However, the reported concentrations do not exceed the SWRCB LTCP criteria for Commercial/Industrial Land use or Utility Worker exposure (SWRCB LTCP, *Table 1 Concentrations of Petroleum Constituents in Soil That Will Have No Significant Risk of Adversely Affecting Human Health*, August 2012). Furthermore, as low levels of naphthalene were only reported in two soil samples (0.0036 mg/Kg in HP4-2@10' and 1.1 mg/Kg in HP4-3@15') the elevated naphthalene reported for excavation sample EXC8@10' (55 mg/Kg) appears to be limited in extent and adequately delineated.	Assessment results show that petroleum impacts identified in excavation sample locations are limited in extent.	ACDEH directed preparation of a SCM and submittal of additional reports documenting source removal activities and the status of a waste-oil UST (letters dated June 8, 2016 and May 23, 2017).

SITE CONCEPTUAL MODEL (Continued)				
SCM Element	SCM Sub-Element	Description	Data Gap	How to Address
Petroleum Impacts	Groundwater	The RWQCB *Site Closure Summary* dated November 8, 2000, (Appendix C) indicates, at the time of the initial case closure, groundwater beneath the site contained the following contaminant concentrations: • TPH-G at 4,600 micrograms per liter (µg/L) • Benzene at 40 µg/L • Toluene at 4.9 µg/L • Ethylbenzene at 85 µg/L • Xylene at 82 µg/L • MTBE at 96 µg/L On February 2, 2016, groundwater samples were collected from direct-push borings HP1 through HP5. Laboratory results show the following maximum contaminant concentrations: • TPH-G at 1,200 µg/L • TPH-D at 170 µg/L • Benzene at 0.37 µg/L • Toluene at 0.33 µg/L • Ethylbenzene at 0.96 µg/L • Xylene at 0.89 µg/L • MTBE at 3.9 µg/L • Tertiary butyl alcohol at 17 µg/L • n-Butylbenzene at 9.6 µg/L • sec-Butylbenzene at 7.4 µg/L • tert-Butylbenzene at 0.71 µg/L • Isopropylbenzene at 23 µg/L • Naphthalene at 2.0 µg/L • n-Propylbenzene at 44 µg/L • 1,2,4 Trimethylbenzene at 0.44 µg/L	Based on the groundwater concentrations reported in the *Site Closure Summary* dated November 8, 2000, and the significantly decreased concentrations reported for groundwater samples collected from borings HP1 through HP5 on February 2, 2016, it appears that groundwater contaminant plume is adequately delineated.	Preparation of SCM as directed by ACDEH to support case closure per SWRCB LTCP.

SITE CONCEPTUAL MODEL (Continued)				
SCM Element	SCM Sub-Element	Description	Data Gap	How to Address
Petroleum Impacts (Continued)	Groundwater	None of these contaminants exceed the SWRCB LTCP water quality objectives based on the State of California Primary MCLs. Of these constituents, only TBA and TPH are reportedly present above WQO's (12 µg/L for TBA and 100 µg/L for TPH). Based on isoconcentration modeling, the extent of these contaminant plumes appears to be adequately delineated (Figures 5 and 6, respectively). In addition, the reported TPH-G, BTEX, and MTBE concentrations are significantly less than those reported in the RWQCB *Site Closure Summary* dated November 8, 2000, and appear to be indicative of a weathered groundwater contaminant plume. The SWRCB's *Technical Justification for Groundwater Plume Lengths, Indicator Constituents, Concentrations, and Buffer Distances (Separation Distances) to Receptors* (Technical Justification) uses benzene, MTBE, and TPH-G as adequate indicator constituents for the groundwater plume lengths discussed in the SWRCB LTCP. The technical justification for using these three constituents relies heavily on the facts that (1) benzene has the highest toxicity of the soluble petroleum constituents, (2) MTBE typically has the longest plume lengths, and (3) TPH-G represents the additional dissolved hydrocarbons that may be present resulting from a typical petroleum release. Contaminant plume length estimates are summarized below: <u>Benzene (at 5 µg/L)</u> Average = 198 feet, 90th Percentile = 350 feet, Maximum = 554 feet <u>MTBE (at 5 µg/L)</u> Average = 317 feet, 90th Percentile = 545 feet, Maximum = 1,046 feet <u>TPH-G (at 100 µg/L)</u> Average = 248 feet, 90th Percentile = 413 feet, Maximum = 855 feet The TPH-G groundwater concentrations at boring locations HP1 through HP5 were contoured using the WQO of 100 µg/L to estimate the plume length. Based on the contouring results, the TPH-G plume is estimated to be approximately 105 feet long, which is shorter than the average TPH-G plume length shown above. Benzene and MTBE were not reported at or above WQO's, and were therefore not contoured. The low to non-detect benzene and MTBE concentrations support the shorter than average estimated length of the TPH-G plume at the subject site.	Based on the groundwater concentrations reported in the *Site Closure Summary* dated November 8, 2000, and the significantly decreased concentrations reported for groundwater samples collected from borings HP1 through HP5 on February 2, 2016, it appears that groundwater contaminant plume is adequately delineated.	Preparation of SCM as directed by ACDEH to support case closure per SWRCB LTCP.

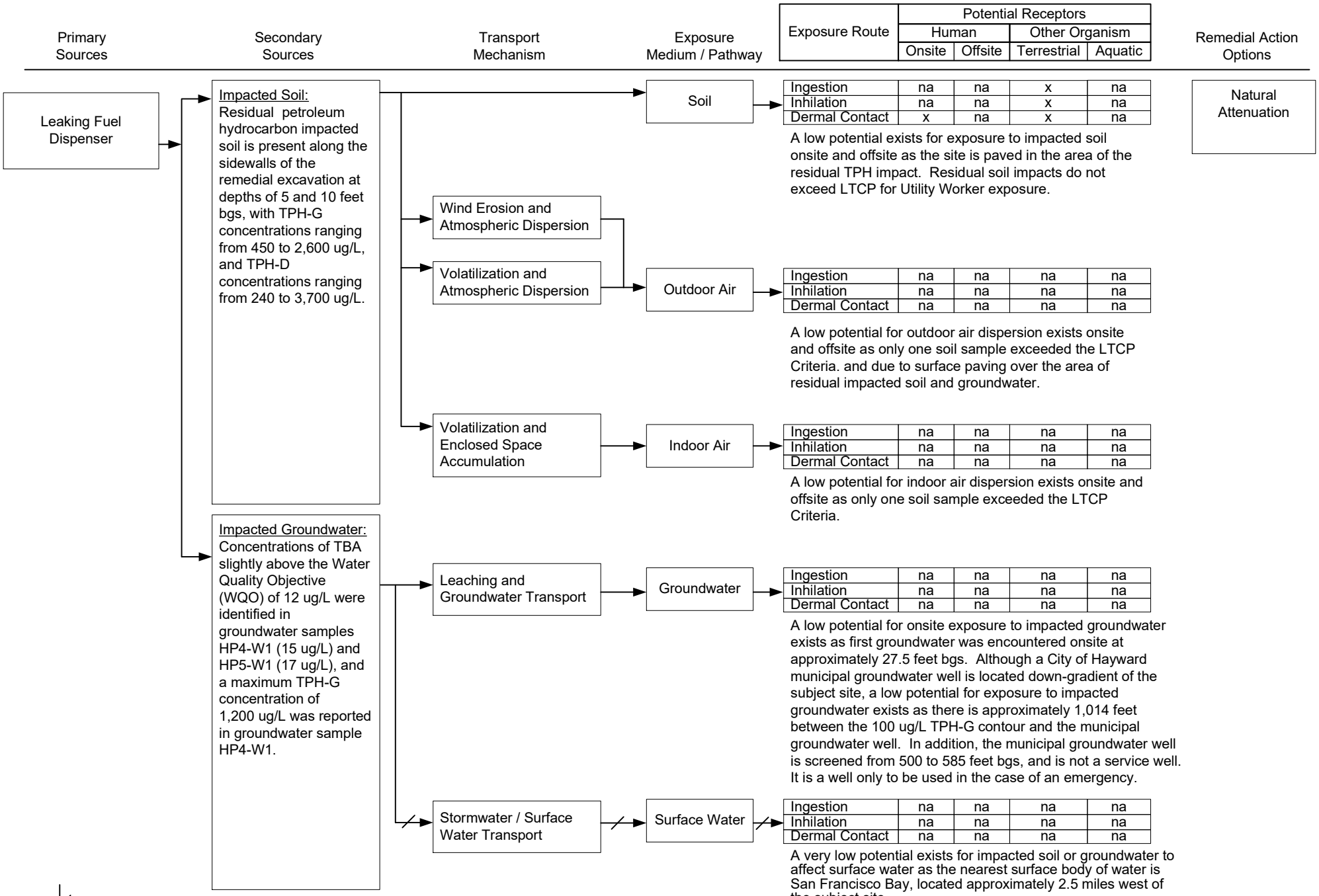
SITE CONCEPTUAL MODEL (Continued)				
SCM Element	SCM Sub-Element	Description	Data Gap	How to Address
Petroleum Impacts (Continued)	Groundwater	With regard to the SWRCB LTCP, the Technical Justification document defines a Class 1 plume as being less than 100 feet in length with a separation of 250 feet from the outside edge of the plume to a receptor, and a Class 2 plume as being less than 250 feet in length with a separation of 1,000 feet from the outside edge of the plume to a receptor, and also allows for maximum concentrations of benzene at 3,000 µg/L and MTBE at 1,000 µg/L. Based on the site's estimated TPH-G plume length of 105 feet, low to non-detect concentrations of benzene and MTBE, and separation of approximately 1,014 feet from the outside edge of the plume to the City of Hayward Municipal Well D2 (Figure 7), the site meets the Technical Justification document Class 2 plume criteria, and is close to meeting the Class 1 plume criteria.	Based on the groundwater concentrations reported in the *Site Closure Summary* dated November 8, 2000, and the significantly decreased concentrations reported for groundwater samples collected from borings HP1 through HP5 on February 2, 2016, it appears that groundwater contaminant plume is adequately delineated.	Preparation of SCM as directed by ACDEH to support case closure per SWRCB LTCP.
LNAPL		Current assessment results indicate that petroleum hydrocarbon impacts have decreased significantly compared with groundwater impacts reported in the RWQCB *Site Closure Summary* dated November 8, 2000. LNAPL was not encountered during drilling and sampling of borings HP1 through HP5. Based on the low TPH concentrations and low to non-detect benzene and MTBE concentrations reported in the groundwater samples from boring HP1 through HP5, LNAPL is not suspected to be present at the site.	None	NA
Sensitive Receptor Exposure	Direct Exposure to Impacted Soil	A low potential exists for direct exposure to impacted soil due to excavation and removal of approximately 39 tons of petroleum impacted soil, and due to a paved surface at the site. Although worker exposure may result if excavation is conducted in the vicinity of the former dispenser island located north of the USTs, the reported contaminant concentrations do not exceed the SWRCB LTCP criteria for Utility Workers.	See Site Conceptual Exposure Model (Appendix F)	

SITE CONCEPTUAL MODEL (Continued)				
SCM Element	SCM Sub-Element	Description	Data Gap	How to Address
Sensitive Receptor Exposure	Volatilization and Outdoor Air Exposure	A low potential exists for volatilization to outdoor air as the limited area of residual petroleum impact is paved and only one sample location (EXC8@10') contained residual soil contamination (naphthalene at 55 mg/Kg) exceeding the SWRCB LTCP criteria of 45 mg/Kg for this mode of exposure.	See Site Conceptual Exposure Model (Appendix F)	
Sensitive Receptor Exposure	Volatilization and Indoor Air Exposure	The subject site is an active fueling facility and satisfaction of the media-specific criteria for petroleum vapor intrusion into indoor air is not required under the SWRCB LTCP, except in cases where release characteristics can be reasonably believed to pose an unacceptable health risk. As laboratory results for soil and groundwater samples show very low concentrations of volatile constituents at the site (with exception to one elevated detection of naphthalene at 55 mg/Kg at sample location EXC8@10' adjacent to the existing USTs), a low potential exists for volatilization and indoor air exposure.	See Site Conceptual Exposure Model (Appendix F)	
Sensitive Receptor Exposure	Exposure to Impacted Groundwater	A low potential for exposure to impacted groundwater exists onsite as first groundwater was encountered at approximately 27.5 feet bgs (subsequently rose to approximately 20 feet bgs after installation of temporary well casing for sampling). Although a City of Hayward well (Municipal Well D2) is located approximately 1,137 feet west of the western edge of the subject site, contouring of the TPH-G groundwater contaminant plume indicates there is a separation of approximately 1,014 feet between the 100 µg/L TPH-G contour and the well. In addition, the well is screened from 500 to 585 feet bgs, is not utilized as a service well, and is considered an emergency use well. Based on these conditions and the low to non-detect concentrations of volatile constituents in the site's groundwater contaminant plume, there is a low potential for exposure to impacted groundwater via use of the City of Hayward Municipal Well D2.	See Site Conceptual Exposure Model (Appendix F)	

APPENDIX F

SITE CONCEPTUAL EXPOSURE MODEL

SITE CONCEPTUAL EXPOSURE MODEL
WINTON VALERO
23990 HESPERIAN BOULEVARD, HAYWARD, CALIFORNIA
FUEL LEAK CASE #RO0003188; GLOBAL ID # T100000077825



Note: Indicates pathway shut-off valve (i.e. invalid exposure pathway); na - not applicable