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Jennifer C. Sedlachek
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ExxonMobil

March 28, 2017

Ms. Karel Detterman
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

RE: Former Mobil RAS #10MHG/160 14th Street, Oakland, California.

Dear Ms. Detterman:

Attached for your review and comment is a letter report entitled *Soil and Groundwater Report* dated March 28, 2017, for the above-referenced site. The letter was prepared by Cardno, of Petaluma, California, and details proposed activities at the subject site.

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.

If you have any questions or comments, please contact me at 510.547.8196.

Sincerely,

A handwritten signature in blue ink, appearing to read "J Sedlachek".

Jennifer C. Sedlachek
Project Manager

Attachment: Cardno's *Soil and Groundwater Report*, dated March 28, 2017

cc: Ms. Janice A. Jacobson, Cardno

Soil and Groundwater Report

Former Mobil Service Station 10MHG

Cardno 287202.R02

March 28, 2017

Soil and Groundwater Report

Former Mobil Service Station 10MHG
160 14th Street
Oakland, California

Cardno 287202.R02

March 28, 2017

Christine M. Capwell
**SCANNED
IMAGE**

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1 Introduction

At the request of ExxonMobil Environmental Services (EMES), on behalf of ExxonMobil Oil Corporation, Cardno prepared this soil and groundwater report for the site. On January 19, 2017, Cardno met with the Alameda County Health Care Service Agency (ACDEH) to discuss the results of Cardno's *Soil and Groundwater Investigation Report*, dated July 28, 2016 (Cardno, 2016). Two data gaps were identified during this meeting that prevent the site from meeting the closure criteria included in the *Low-Threat Underground Storage Tank Case Closure Policy* (SWRCB, 2012). The ACDEH requested an evaluation of these data gaps in a letter dated January 26, 2017 (Appendix A).

2 Site Description

Former Mobil Service Station 10MHG (Assessor's Parcel Number 08-0628-5-1) is located on the southeastern corner of Madison Street and 14th Street in Oakland, California, as shown on the Site Vicinity Map (Plate 1). A service station operated at the site from 1964 to 1986, when the station was decommissioned (AAC, 2001a).

Between 2006 and 2008, the site was redeveloped into a mixed commercial and residential multi-story building. The upper floors of the building are comprised of residential apartments while the lower floor is occupied by a restaurant, a café, and parking. A car lift extends approximately 12.45 feet below grade beneath a portion of the building. Sub-grade vapor and moisture barriers were installed below the building.

The site is located in a mixed-use commercial and residential area. The neighboring properties include a dry cleaner and office building to the west, the Islamic Center of Northern California to the northeast, retail and residential buildings to the east, a public library to the south, and a preschool to the southwest. Select site features and neighboring properties are illustrated on the Generalized Site Plan (Plate 2) and Extended Site Plan (Plate 3).

3 Geology and Hydrogeology

The site is located along the eastern margin of the San Francisco Bay within the East Bay Plain (Hickenbottom and Muir, 1988). The surficial deposits in the site vicinity are mapped as Merritt Sand consisting of fine-grained, very well sorted, well-drained eolian deposits of the Pleistocene and Holocene age (Graymer, 2000). The active northwest trending Hayward fault is located east of the site. Boring logs indicate that the site is underlain primarily by silts and sands to 24 feet bgs, the maximum depth explored (Cardno, 2016).

The East Bay Plain is regionally divided into two major groundwater basins: the San Pablo and the San Francisco Basin. These basins are tectonic depressions that are filled primarily with a sequence of coalescing alluvial fans. The San Francisco Basin is further divided into seven sub-areas. The site is located in the Oakland Sub-Area, which is filled primarily by alluvial deposits that range from 300 to 700 feet thick without well-defined aquitards (CRWQCB, 1999). Under natural conditions, the direction of groundwater flow in the East Bay Plain is east to west towards San Francisco Bay and correlates with topography.

The site is located approximately 850 feet west of Lake Merritt, which is connected to the Oakland Inner Harbor to the west, which connects to the San Francisco Bay, located approximately 3.3 miles to the west and 0.8 mile to the south of the site. The groundwater flow direction at the site is presumably east towards Lake Merritt. Groundwater recharge of the East Bay Plain occurs by infiltration from precipitation, irrigation, pipe leakage, and stream flow. First-encountered groundwater at the site is present between 12 and 21 feet bgs.

4 Sensitive Receptors

Sensitive receptors are located in the site vicinity. Well locations are illustrated on Plate 4. Additional sensitive receptors are illustrated on Plate 5.

Private and Public Water Supply Wells

In October 2015, Cardno contacted the County of Alameda Public Works Agency, Water Resources Section (County), to obtain records of private and public supply water wells within a 5,000-foot radius of the site. Public water supply wells were not located within the search radius. Six potential private water wells (one domestic well and five irrigation wells) were identified within a 5,000-foot radius of the site. The domestic well, owned by Western Union, is located at 125 12th Street, approximately 1,000 feet south of the site. It was installed in May 1991, and appears to be an irrigation well. It is reportedly 33 feet deep and 6 inches in diameter. During a December 2015 field visit, Cardno was not able to confirm the locations or uses of the six wells identified within the search radius.

Water for the city is provided by the East Bay Municipal Utility District (EBMUD).

Surface Water Bodies and Wetlands

Lake Merritt lies approximately 850 feet to the east and flows to Oakland Inner harbor, which is approximately 4,300 feet to the southwest. San Francisco Bay lies approximately 3.3 miles to the west and 0.8 mile to the south of the site.

Public Use Areas and Schools

Public use areas within 330 feet of the site include the Islamic Center of Northern California adjacent of the site to the northeast and the Oakland Public Library south of the site.

Schools within 330 feet of the site include the Little Stars Preschool across the street southwest of the site.

Underground Structures

A car lift extending approximately 12.45 feet below grade is located at the site. The car lift underlies approximately 20% of the building and is used strictly for vehicle storage. Below grade parking is also present at the apartment building at 1428 Madison Street and at the Alameda County Human Resource building at 1405 Lakeside Drive, both located downgradient of the site. No additional subgrade structures were identified near the site.

5 Previous Work

Groundwater and soil sampling results are summarized in Tables 1A and 1B and Tables 2A through 2C, respectively. The locations of the former USTs and sampling locations are illustrated on Plates 2 and 3. Select groundwater and soil analytical results are illustrated on Plates 5 and 6, respectively.

5.1 Fueling System Activities

In May 1986, one 10,000-gallon gasoline UST, one 6,000-gallon gasoline UST, and one 550-gallon used-oil UST were removed from the site in conjunction with the demolition of a Mobil gasoline service station. Concentrations of TPHg and used oil were not reported in soil samples collected from the gasoline USTs excavation or the used-oil UST excavation, respectively (Blaine, 1986).

5.2 Site Assessment Activities

Site assessment activities have been conducted since 2001, including a Phase I environmental site assessment (ACC, 2001a); a Tier 1 risk evaluation (ACC, 2006b); drilling and sampling of soil borings (ACC, 2001b; ACC,

2006a; AAC, 2007; Cardno, 2016); and the collection of discrete composite soil samples and excavation sidewall samples (AAC, 2007).

5.3 Remedial Activities

During redevelopment activities between 2006 and 2008, approximately 6,528 tons of soil were excavated and removed from the site (ACC, 2006c; ACC, 2008). The excavation was approximately 150 feet long, 20 feet wide, and 15 feet deep (ACC, 2009). The majority of the excavation occurred in the stacked parking area on the north side of the property and included the area where the former USTs were located (AAC, 2009).

5.4 Engineering Controls

According to information provided to ACC Environmental Consultants, Inc. by the property owner, "a Stego® Wrap 15-mil Class A vapor barrier was installed prior to the installation of the slab-on-grade for the parking garage and the ground floor commercial spaces." The barrier was installed at the suggestion of the City of Oakland Fire Department due to remaining solvent concentrations at the site. A data sheet for the vapor barrier material is included in Appendix B and states that it is used as a sub-slab vapor barrier and can control soil gases. Additionally, "a bentonite waterproofing barrier (Volclay Voltex DS) was installed in the below grade parking garage lift area" (ACC, 2008).

6 Low-Threat Case Closure Data Gaps

In the January 2016 meeting, two data gaps were identified that prevented the site from achieving closure under the *Low-Threat Underground Storage Tank Case Closure Policy* (SWRCB, 2012): groundwater criteria and petroleum vapor intrusion to indoor air criteria.

6.1 Groundwater

Cardno compared the site to the scenarios various the groundwater-specific criteria using the benzene and TPHg plume lengths from the technical justification for the low-threat policy (SWRCB, 2011). Based on the proximity of Lake Merritt (less than 1,000 feet) and the typical plume lengths, the site does not meet the first four criteria; however, the site may be closed using the fifth criteria. A summary of the criteria is included below.

1. The contaminant plume length that exceeds water quality objectives.

To evaluate the extent of hydrocarbon concentrations associated with the site, Cardno used average, 90th percentile, and maximum benzene and TPHg plume lengths from the technical justification for the low-threat policy (SWRCB, 2011). A rose diagram from a neighboring site, located at 165 13th Street, was used to determine the likely plume width and direction (PSI, 2009). The average, 90th percentile, and maximum plume lengths are plotted on Plate 5. The downgradient distribution of benzene concentrations range from the average length of 198 feet to the maximum length of 554 feet. The downgradient distribution of TPHg concentrations range from the average length of 248 feet to the maximum length of 855 feet.

The cumulative site data suggest that the extent of dissolved-phase petroleum hydrocarbons from the site should be expected to extend an average distance (or less) of approximately 250 feet based on the average TPHg plume length. That estimate is likely conservative as the primary source was removed in 1986 when the USTs were removed and the vast majority of the secondary source was removed during excavation activities between 2006 and 2008.

2. There is no free product.

Free product has not been observed at the site.

3. The nearest existing water well or surface water body.

Public water supply wells are not located within a 5,000-foot radius of the site. One reported domestic well is located approximately 1,000 feet south of the site. Lake Merritt lies approximately 850 feet to the east and flows to Oakland Inner harbor, which is approximately 4,300 feet to the southwest.

4. The dissolved concentration of benzene and MTBE.

Benzene concentrations have not been reported above 690 µg/L at the site. Concentrations of MTBE have not been reported in groundwater samples collected from the site.

With the exception of the proximity of Lake Merritt, the site would meet the criteria for closure. The average, 90th percentile, and maximum plume lengths from the technical justification for the low-threat policy were used to evaluate dissolved-phase concentrations reaching Lake Merritt, located approximately 850 feet east of the site, are illustrated on Plate 5 (SWRCB, 2011). Based on the absence of MTBE at the site, only TPHg and benzene were evaluated. The maximum TPHg plume length (855 feet) reaches Merritt Lake. Based on the cumulative site data, there is no reason to expect the site would have the maximum length. The 90th percentile (413 feet TPHg and 350 feet benzene) plume length reaches approximately one half of the distance to Lake Merritt and the average length (248 feet TPHg and 198 feet benzene) would end approximately 600 feet from Lake Merritt.

Solvents

The distribution of petroleum hydrocarbons and solvents at the site suggests that there are multiple sources. Borings B7 and B8 (in the sidewalk along 14th Street) have concentrations of PCE at 110 µg/L with concentrations of BTEX below the reporting limit. Based on the inferred groundwater flow direction towards Lake Merritt, it appears likely that the PCE reported in borings B7 and B8 originates from an upgradient source, west of the site. The lateral extent of solvents at the site is unknown.

6.2 Petroleum Vapor Intrusion to Indoor Air

Due to the vapor barrier at the site, petroleum vapors are unlikely to migrate from groundwater to indoor air; however, Cardno compared the site to Scenario 3 of the petroleum vapor phase intrusion to indoor air criteria where benzene in groundwater is greater than 100 µg/L but less than 1,000 µg/L to further evaluate potential vapor intrusion.

1. The bio-attenuation zone shall be a continuous zone that provides a separation of at least 10 feet vertically between the dissolved-phase benzene and the foundation of existing or potential building.

To assess if there was a continuous zone providing 10 feet of separation, Cardno reviewed building plans for the site to assess the depth of sub-grade structures in the building. Final details for the elevator shaft were not located; however, plans showing construction depths were included in building plans (Appendix C).

According to the building plans, the floor is located at an elevation of 27.50 feet at ground level. The sump pit at the bottom of the elevator shaft is located approximately 5 feet lower at an elevation of 22.40 feet and the car lift is located approximately 12 feet below the floor at an elevation of 15.05 feet.

During the most recent site assessment in 2016, groundwater was encountered from between 17 and 20 feet bgs, indicating that there is an unsaturated zone extending approximately 12 feet below the elevator shaft and 5 feet below the car lift. Cardno concludes that there is at least 10 feet of soil between the elevator shaft and dissolved-phase benzene concentrations.

The parking area of the building does not extend past the ground floor; therefore, it does not represent a continuous pathway to the residential floors of the building, limiting the potential exposure to vapors from this location. The parking area is continually ventilated.

2. The bio-attenuation zone shall contain total petroleum hydrocarbon concentrations (TPHg and TPHd combined) less than 100 mg/kg throughout the entire depth of the bio-attenuation zone.

A total of 50 soil samples, representative of concentrations remaining at the site, have been analyzed for total petroleum hydrocarbons. These samples were collected from approximately 2 to 23.5 feet bgs, representing soil concentrations to approximately 11 feet below the deepest portion of the building. Concentrations of total petroleum hydrocarbons exceeding 100 mg/kg were only reported in one soil sample collected at 8 feet bgs from boring SB2, located next to the former USTs. Concentrations of total petroleum hydrocarbons were reported below 100 mg/kg in five samples (including four at or below 6.5 mg/kg), and concentrations of total petroleum hydrocarbons were below reporting limits in 44 of the samples. In addition, a majority of the soil containing petroleum hydrocarbons was removed by excavation. Cardno concludes that the concentrations of total petroleum hydrocarbons remaining at the site adequately meet this requirement.

7 Conclusions and Recommendations

Due to the bio-attenuation zone and the vapor barrier under the building slab, exposure to petroleum vapors migrating from groundwater to indoor air does not pose an unacceptable human health risk to the occupants of the site building or nearby buildings. Cardno concludes that the site adequately meets petroleum vapor intrusion to indoor air criteria.

Based on plume lengths detailed in the technical justification for the low-threat policy (SWRCB, 2011), petroleum hydrocarbons in groundwater are not likely to extend downgradient to Lake Merritt. Cardno concludes that remaining petroleum hydrocarbons at the site adequately meet the groundwater-specific criteria.

The source of and extent of solvents at and near the site is unknown. Based on the distribution of the concentrations, the source of the solvents appears to be upgradient and west of the site. Cardno recommends pursuing these concentrations as a separate case as they do not appear to originate from the site. Cardno recommends closing the petroleum hydrocarbon case associated with the site.

8 Contact Information

The responsible party contact is Ms. Jennifer C. Sedlachek, ExxonMobil Environmental Services Company, 4096 Piedmont Avenue #194, Oakland, California, 94611. The consultant contact is Ms. Janice A. Jacobson, Cardno, 601 N. McDowell Boulevard, Petaluma, California, 94954. The agency contact is Ms. Karel Detterman, Alameda County Environmental Health, 1131 Harbor Bay Parkway, Alameda, California, 94502.

9 Limitations

For documents cited that were not generated by Cardno, the data taken from those documents is used “as is” and is assumed to be accurate. Cardno does not guarantee the accuracy of this data and makes no warranties for the referenced work performed nor the inferences or conclusions stated in these documents.

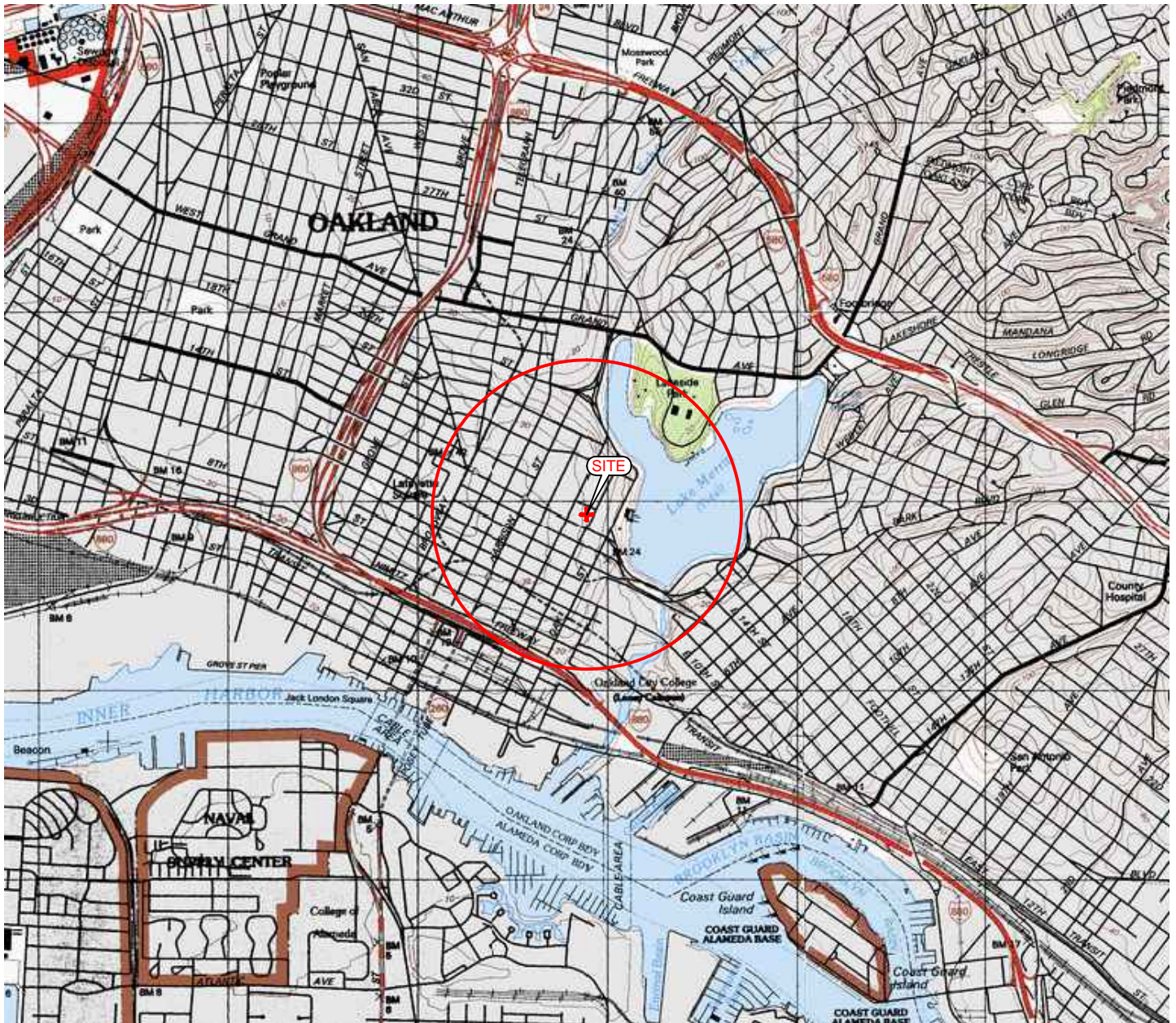
This document and the work performed have been undertaken in good faith, with due diligence and with the expertise, experience, capability, and specialized knowledge necessary to perform the work in a good and workmanlike manner and within all accepted standards pertaining to providers of environmental services in California at the time of investigation. No soil engineering or geotechnical references are implied or should be inferred. The evaluation of the geologic conditions at the site for this investigation is made from a limited number of data points. Subsurface conditions may vary away from these data points.

10 References

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11 Acronym List

µg/L	Micrograms per liter	NAPL	Non-aqueous phase liquid
µs	Microsiemens	NEPA	National Environmental Policy Act
1,2-DCA	1,2-dichloroethane	NGVD	National Geodetic Vertical Datum
acfm	Actual cubic feet per minute	NPDES	National Pollutant Discharge Elimination System
AS	Air sparge	O&M	Operations and Maintenance
bgs	Below ground surface	ORP	Oxidation-reduction potential
BTEX	Benzene, toluene, ethylbenzene, and total xylenes	OSHA	Occupational Safety and Health Administration
CEQA	California Environmental Quality Act	OVA	Organic vapor analyzer
cfm	Cubic feet per minute	P&ID	Process & Instrumentation Diagram
COC	Chain of Custody	PAH	Polycyclic aromatic hydrocarbon
CPT	Cone Penetration (Penetrometer) Test	PCB	Polychlorinated biphenyl
DIPE	Di-isopropyl ether	PCE	Tetrachloroethene or perchloroethylene
DO	Dissolved oxygen	PID	Photo-ionization detector
DOT	Department of Transportation	PLC	Programmable logic control
DPE	Dual-phase extraction	POTW	Publicly owned treatment works
DTW	Depth to water	ppmv	Parts per million by volume
EDB	1,2-dibromoethane	PQL	Practical quantitation limit
EPA	Environmental Protection Agency	psi	Pounds per square inch
EPH	Extractable petroleum hydrocarbons	PVC	Polyvinyl chloride
ESL	Environmental screening level	QA/QC	Quality assurance/quality control
ETBE	Ethyl tertiary butyl ether	RBSL	Risk-based screening levels
FID	Flame-ionization detector	RCRA	Resource Conservation and Recovery Act
fpm	Feet per minute	RL	Reporting limit
GAC	Granular activated carbon	scfm	Standard cubic feet per minute
gpd	Gallons per day	SSTL	Site-specific target level
gpm	Gallons per minute	STLC	Soluble threshold limit concentration
GRO	Gasoline-range organics	SVE	Soil vapor extraction
GWPTS	Groundwater pump and treat system	SVOC	Semivolatile organic compound
HVOC	Halogenated volatile organic compound	TAME	Tertiary amyl methyl ether
J	Estimated value between MDL and PQL (RL)	TBA	Tertiary butyl alcohol
LEL	Lower explosive limit	TCE	Trichloroethene
LPC	Liquid-phase carbon	TOC	Top of well casing elevation; datum is msl
LRP	Liquid-ring pump	TOG	Total oil and grease
LUFT	Leaking underground fuel tank	TPHd	Total petroleum hydrocarbons as diesel
LUST	Leaking underground storage tank	TPHg	Total petroleum hydrocarbons as gasoline
MCL	Maximum contaminant level	TPHmo	Total petroleum hydrocarbons as motor oil
MDL	Method detection limit	TPHs	Total petroleum hydrocarbons as stoddard solvent
mg/kg	Milligrams per kilogram	TRPH	Total recoverable petroleum hydrocarbons
mg/L	Milligrams per liter	UCL	Upper confidence level
mg/m ³	Milligrams per cubic meter	USCS	Unified Soil Classification System
MPE	Multi-phase extraction	USGS	United States Geologic Survey
MRL	Method reporting limit	UST	Underground storage tank
msl	Mean sea level	VCP	Voluntary Cleanup Program
MTBE	Methyl tertiary butyl ether	VOC	Volatile organic compound
MTCA	Model Toxics Control Act	VPC	Vapor-phase carbon
NAI	Natural attenuation indicators		



EXPLANATION

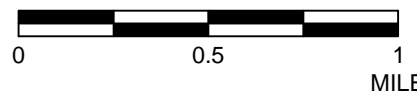


0.5-mile radius circle

SOURCE: Modified from a map provided by www.topoquest.com



APPROXIMATE SCALE



FN 2872TOPO

SITE VICINITY MAP

Former Mobil Service Station 10MHG
 160 14th Street
 Oakland, California

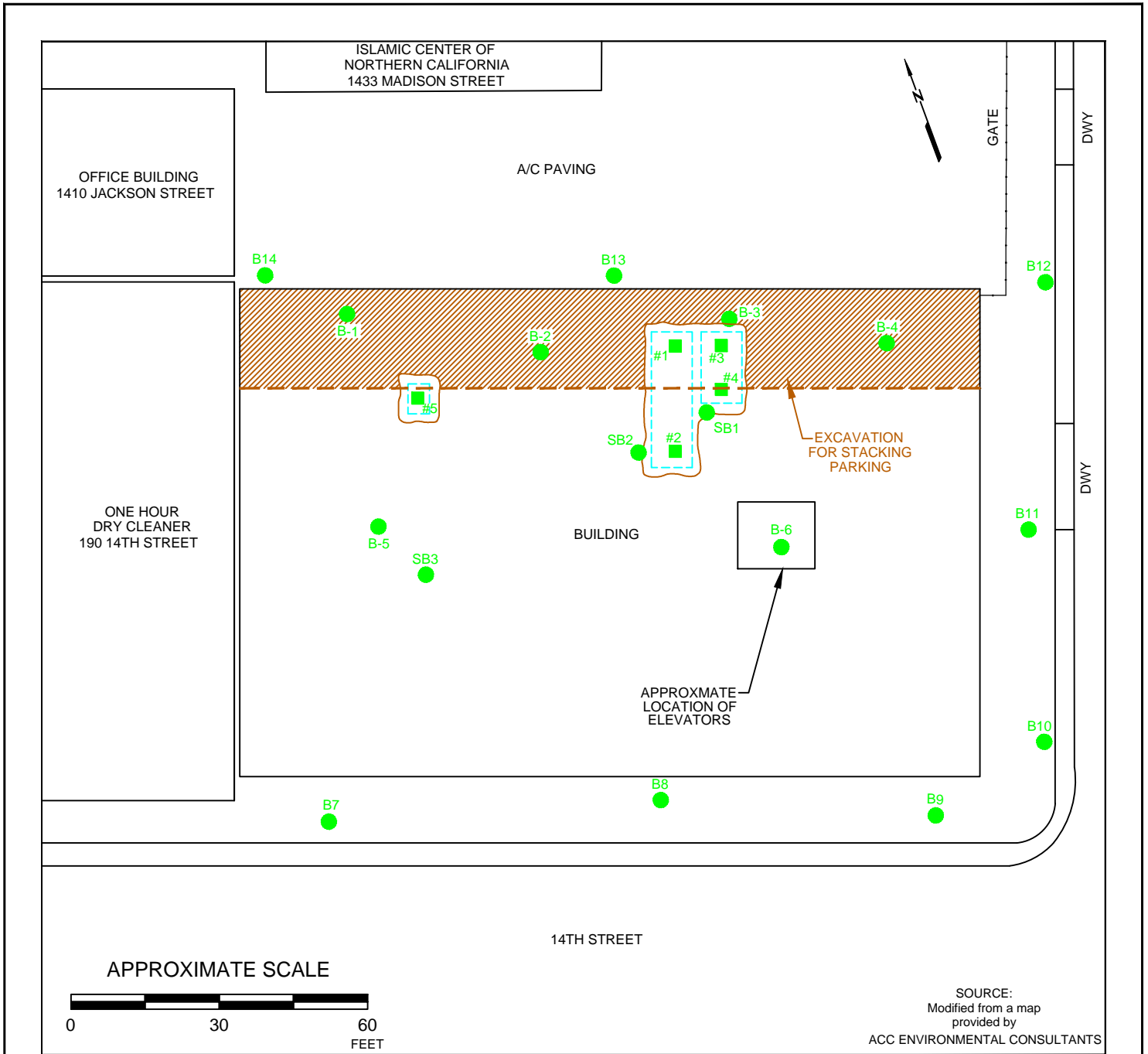


PROJECT NO.

2872

PLATE

1



FN 28720003 R02

EXPLANATION

- B14
● Soil Boring
- #5
■ Excavation Soil Sample
- Former UST



GENERALIZED SITE PLAN

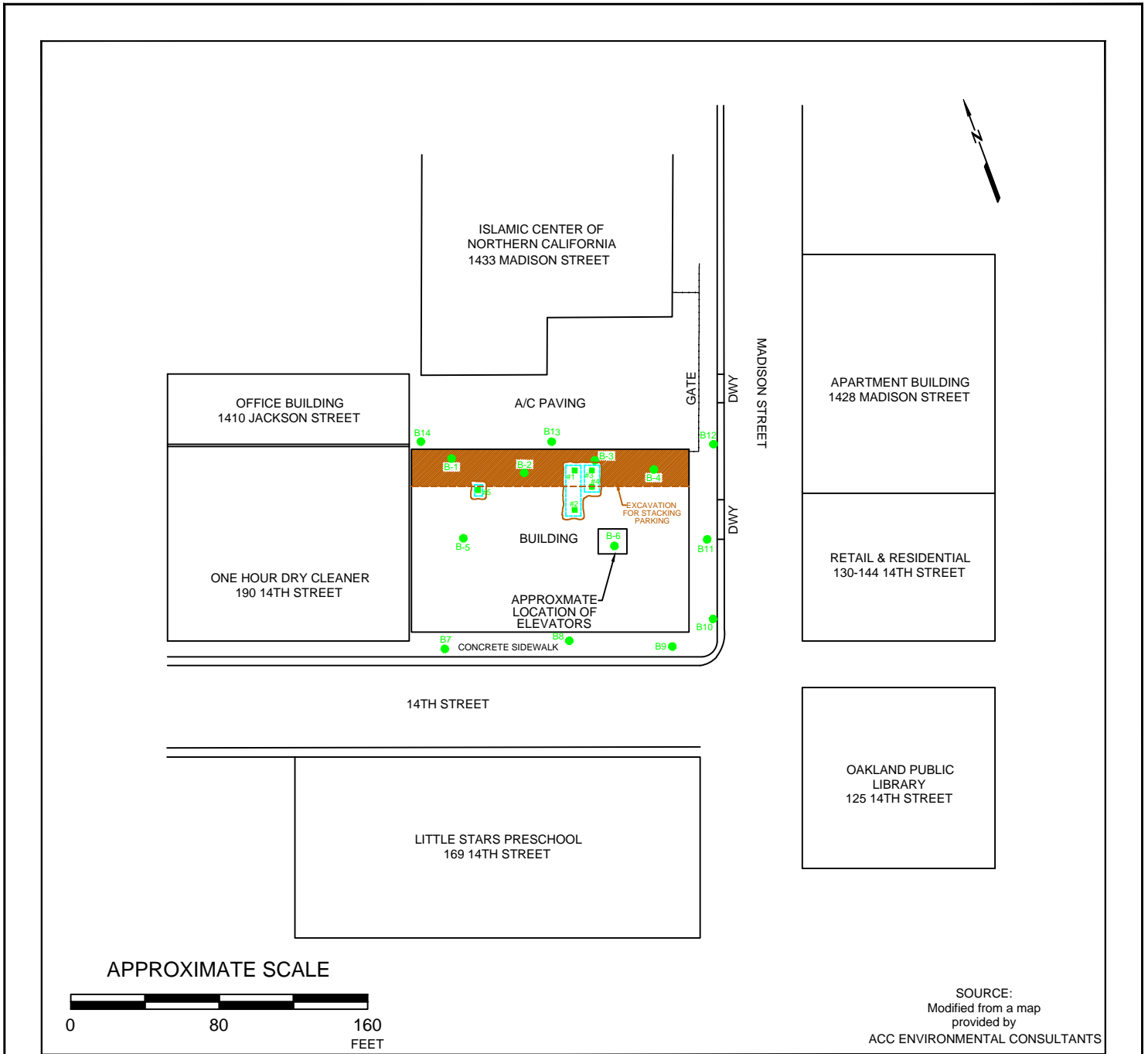
Former Mobil Service Station 10MHG
160 14th Street
Oakland, California

PROJECT NO.

2872

PLATE

2



FN 28720002 R02

EXPLANATION

- B14 ● Soil Boring
- #5 ■ Excavation Soil Sample
- Former UST



EXTENDED SITE PLAN

Former Mobil Service Station 10MHG
 160 14th Street
 Oakland, California

PROJECT NO.

2872

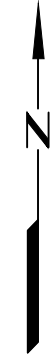
PLATE

3



EXPLANATION

- ▲ 1 2100 Harrison Street (Irrigation)
- ▲ 2 300 Lakeside Drive (Irrigation)
- ▲ 3 244 Lakeside Drive (Irrigation)
- ▲ 4 125 12th Street (Domestic)
- ▲ 5 425 Foothill Boulevard (Irrigation)
- ▲ 6 900 Fallon Street (Irrigation)



Imagery Source: Google Earth Pro
 Imagery Date: July 26, 2014

APPROXIMATE SCALE



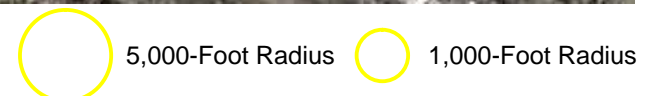
WELL LOCATION MAP

FORMER MOBIL SERVICE STATION 10MHG
 160 14th Street
 Oakland, California



PROJECT NO.
 2872

PLATE
 4



Sample Date
 Total Petroleum Hydrocarbons as gasoline
 Benzene
 Tetrachloroethene
 Trichloroethene

- < Less than the stated laboratory reporting limit
- a The chromatographic pattern does not match that of the specified standard.
- c Sample taken from VOA vial with air bubble >6 mm diameter.

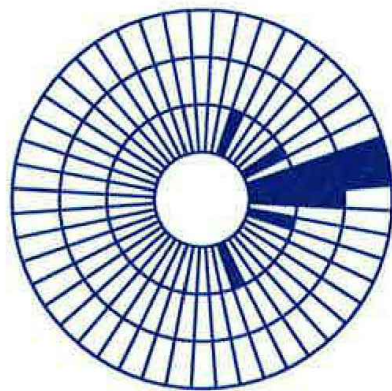
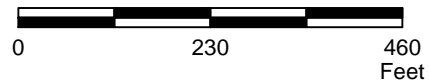
ug/L Micrograms per Liter

- 1** Former Mobil Service Station 10MHG (below grade car lift)
- 2** Islamic Center of Northern California
- 3** Little Stars Pre-school
- 4** 1428 Madison Street (below grade parking)
- 5** Alameda County Human Resource (below grade parking)
- 6** Oakland Public Library

Plume lengths from SWRCB, July 12, 2011.

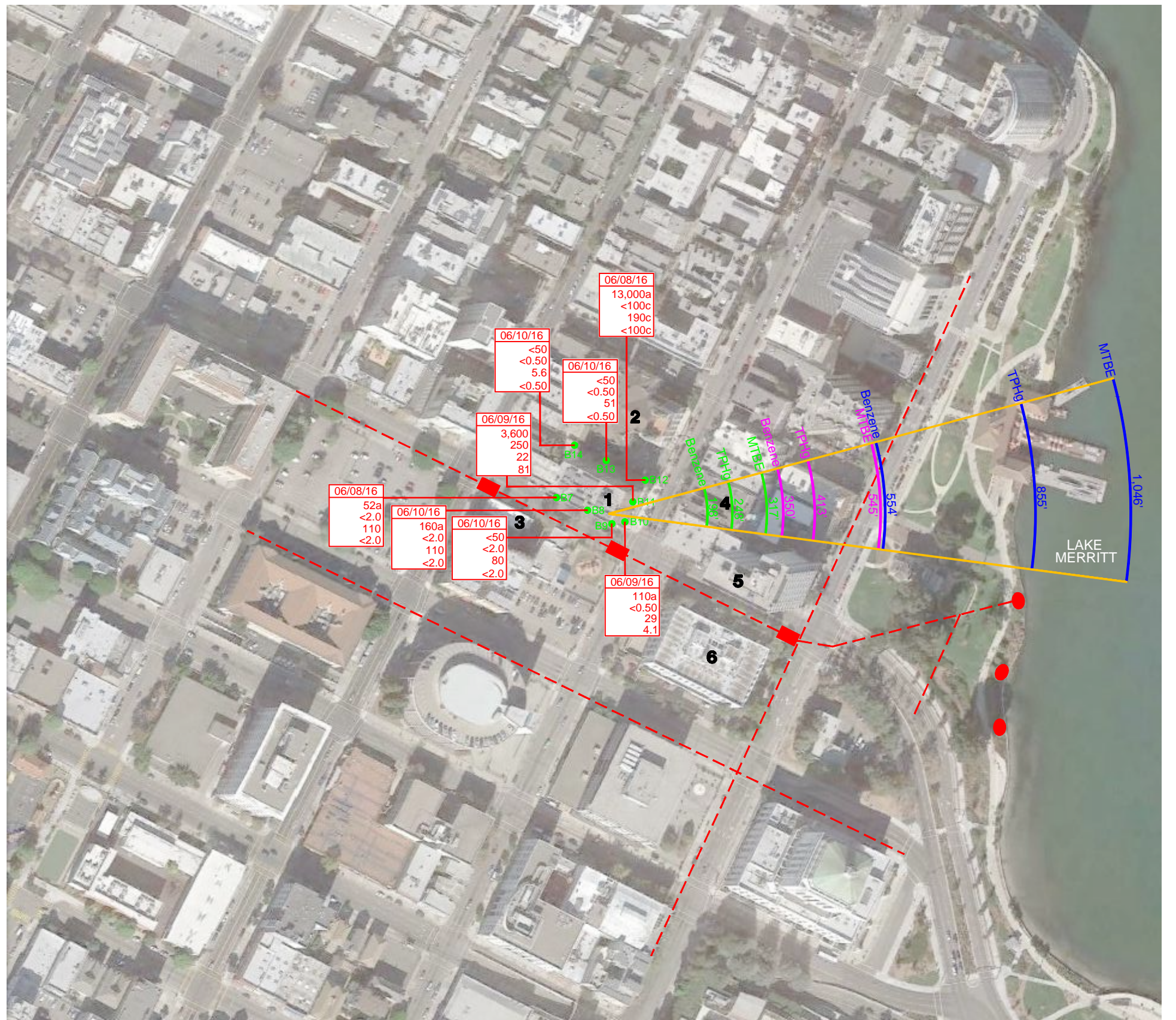
- Maximum Plume Length
- 90th Percentile Plume Length
- Average Plume Length

APPROXIMATE SCALE



HISTORIC GROUNDWATER FLOW DIRECTION ROSE DIAGRAM
 PSI
 165 13th Street, Oakland, California

Base map provided by Google Earth



FN 2872 PUBLIC NOTIFICATION PARCEL MAP_SP R02



EXTENT OF DISSOLVED-PHASE CONCENTRATIONS

FORMER MOBIL SERVICE STATION 10MHG
 160 14th Street
 Oakland, California

EXPLANATION

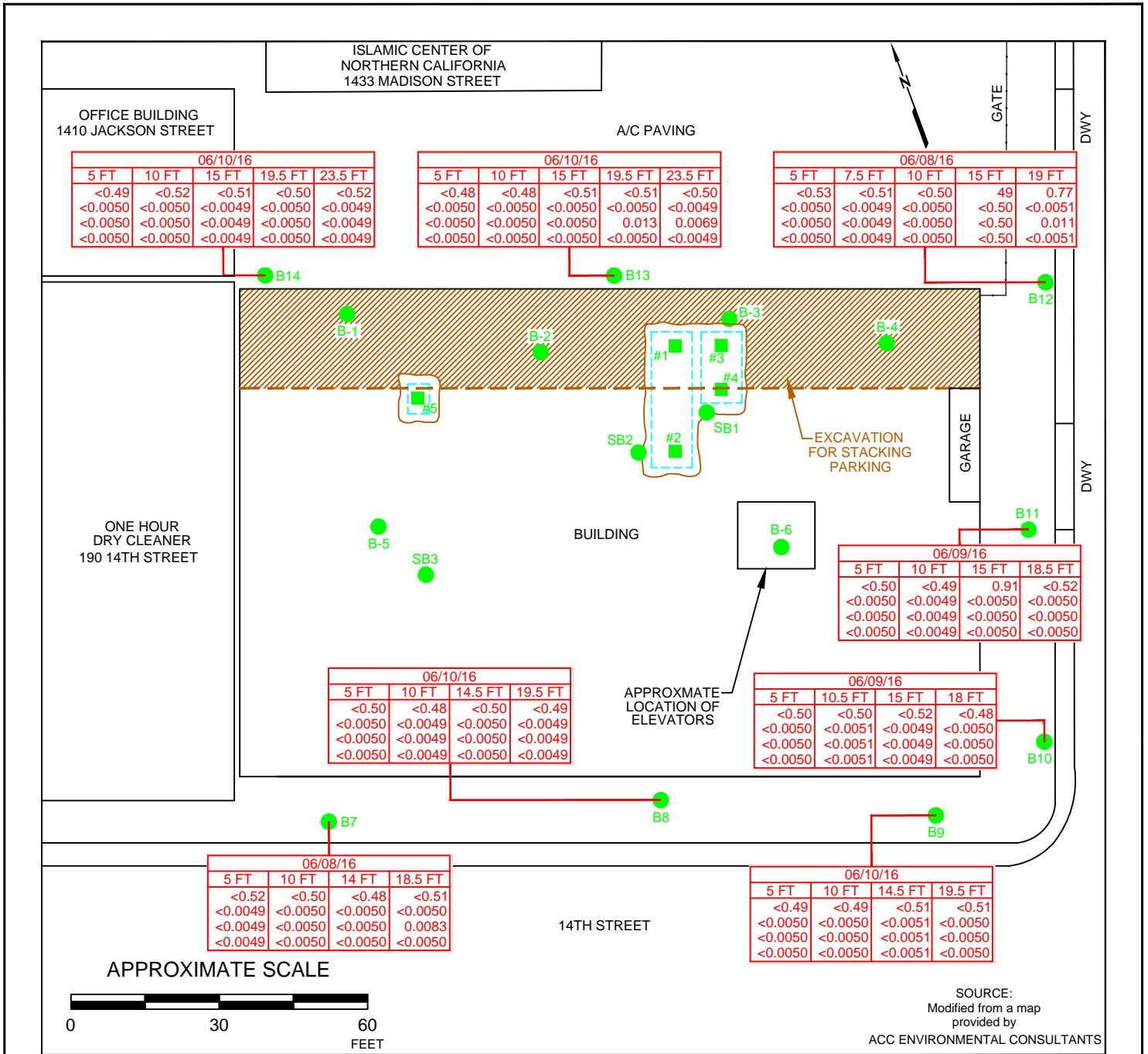
- B14 Soil Boring
- Inlet / Drain
- Outlet
- Storm Drain System

PROJECT NO.

2872

PLATE

5



FN 28720004 R02

EXPLANATION

- B14 ● Soil Boring
- #5 ■ Excavation Soil Sample
- Former UST

Sample Date	
Sample Depth	
Total Petroleum Hydrocarbons as gasoline	mg/kg
Benzene	
Tetrachloroethene	
Trichloroethene	

< Less than the stated laboratory reporting limit.

mg/kg Milligrams per kilogram



SELECT SOIL ANALYTICAL RESULTS

Former Mobil Service Station 10MHG
160 14th Street
Oakland, California

PROJECT NO.

2872

PLATE

6

TABLE 1A
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS
Former Mobil Service Station 10MHG
160 14th Street
Oakland, California
(Page 1 of 2)

Sample ID	Sampling Date	TPHmo (µg/L)	TPHd (µg/L)	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)	PCE (µg/L)	TCE (µg/L)	cis-1,2-DCE (µg/L)
Environmental Screening Levels (February 2016)													
Tier 1		---	100	100	1.0	40	13	20	5.0	0.17	0.42	0.46	6.0
2001 Soil Boring Investigation													
SB1-W	07/23/01	<690	340	78	5.7	<0.50	1.9	<0.50	---	---	6.1	<0.50	<0.50
SB3-W	07/23/01	---	---	---	---	---	---	---	---	---	2.6	<0.50	<0.50
2006 Groundwater Sampling													
B-1	04/04/06	---	---	960	<2.0	18	<2.0	2.8	<2.0	b	780	33	<2.0
B-3	04/04/06	---	---	18,000	690	82	990	2,070	<3.6	b	68	5.3	16
B-5	04/04/06	---	---	1,100	<5.0	<5.0	<5.0	6.6	<5.0	b	820	42	<5.0
2016 Groundwater Sampling													
W-17.5-B7	06/08/16	---	<50	52a	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	110	<2.0	<2.0
W-16-B8	06/10/16	---	<51	160a	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	110	<2.0	<2.0
W-16-B9	06/10/16	---	<47	<50	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	80	<2.0	<2.0
W-16.5-B10	06/09/16	---	<50	110a	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	29	4.1	3.8
W-16-B11	06/09/16	---	2,100a	3,600	250	150	790	2,400	<20	220	22	81	92
W-16-B12	06/08/16	---	16,000a	13,000a	<100c	<100c	550c	460c	<100c	1,000c	190c	<100c	170c
W-19-B13	06/10/16	---	<46	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	51	<0.50	<0.50
W-21-B14	06/10/16	---	<46	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	5.6	<0.50	<0.50

TABLE 1A
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS
Former Mobil Service Station 10MHG
160 14th Street
Oakland, California
(Page 2 of 2)

Notes:	
TPHmo	= Total petroleum hydrocarbons as motor oil analyzed using EPA Method 8015M.
TPHd	= Total petroleum hydrocarbons as diesel analyzed using EPA Method 8015M.
TPHg	= Total petroleum hydrocarbons as gasoline analyzed using EPA Method 8015.
MTBE	= Methyl tertiary butyl ether analyzed using EPA Method 8260B; prior to 2016, analyzed using EPA Method 8020/8021.
BTEX	= Benzene, toluene, ethylbenzene, and total xylenes analyzed using EPA Method 8260B; prior to 2016, analyzed using EPA Method 8020/8021.
PCE	= Tetrachloroethene analyzed using EPA Method 8260B; prior to 2016, analyzed using EPA Method 8021B.
TCE	= Trichloroethene analyzed using EPA Method 8260B; prior to 2016, analyzed using EPA Method 8021B.
cis-1,2-DCE	= cis-1,2-Dichloroethene analyzed using EPA Method 8260B; prior to 2016, analyzed using EPA Method 8021B
VOCs	= Additional volatile organic compounds analyzed using EPA Method 8260B; prior to 2016, analyzed using EPA Method 8021B.
µg/L	= Micrograms per liter.
ND	= Not detected.
<	= Less than the laboratory reporting limit.
---	= Not analyzed/Not applicable/Not sampled.
a	= The chromatographic pattern does not match that of the specified standard.
b	= Previous consultant reported VOCs below reporting limits, but did not specify which analytes were included in the VOC analysis.
c	= Sample taken from VOA vial with air bubble >6 mm diameter.

TABLE 1B
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS - ADDITIONAL VOCS
Former Mobil Service Station 10MHG
160 14th Street
Oakland, California
(Page 2 of 2)

Notes:	=	
TPHmo	=	Total petroleum hydrocarbons as motor oil analyzed using EPA Method 8015M.
TPHd	=	Total petroleum hydrocarbons as diesel analyzed using EPA Method 8015M.
TPHg	=	Total petroleum hydrocarbons as gasoline analyzed using EPA Method 8015.
MTBE	=	Methyl tertiary butyl ether analyzed using EPA Method 8260B; prior to 2016, analyzed using EPA Method 8020/8021.
BTEX	=	Benzene, toluene, ethylbenzene, and total xylenes analyzed using EPA Method 8260B; prior to 2016, analyzed using EPA Method 8020/8021.
PCE	=	Tetrachloroethene analyzed using EPA Method 8260B; prior to 2016, analyzed using EPA Method 8021B.
TCE	=	Trichloroethene analyzed using EPA Method 8260B; prior to 2016, analyzed using EPA Method 8021B.
cis-1,2-DCE	=	cis-1,2-Dichloroethene analyzed using EPA Method 8260B; prior to 2016, analyzed using EPA Method 8021B
VOCs	=	Additional volatile organic compounds analyzed using EPA Method 8260B; prior to 2016, analyzed using EPA Method 8021B.
µg/L	=	Micrograms per liter.
ND	=	Not detected.
<	=	Less than the laboratory reporting limit.
---	=	Not analyzed/Not applicable/Not sampled.
a	=	The chromatographic pattern does not match that of the specified standard.
b	=	Previous consultant reported VOCs below reporting limits, but did not specify which analytes were included in the VOC analysis.
c	=	Sample taken from VOA vial with air bubble >6 mm diameter.

TABLE 2A
CUMULATIVE SOIL ANALYTICAL RESULTS
Former Mobil Service Station 10MHG
160 14th Street
Oakland, California
(Page 1 of 3)

Sample ID	Sampling Date	Depth (feet bgs)	Used Oil (mg/kg)	TPHmo (mg/kg)	TPHd (mg/kg)	TPHg (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	o-X (mg/kg)	pm-X (mg/kg)	X (mg/kg)	MTBE (mg/kg)	1,2,4-Trimethylbenzene (mg/kg)	1,3,5-Trimethylbenzene (mg/kg)	Naphthalene (mg/kg)	n-Butylbenzene (mg/kg)	n-Propylbenzene (mg/kg)	Tetra-chloroethene (mg/kg)	Tri-chloroethene (mg/kg)	VOCs (mg/kg)	SVOCs (mg/kg)
Environmental Screening Levels (February 2016)																						
Tier 1			---	100	240	100	0.044	2.9	1.4	---	---	2.3	0.023	---	---	0.033	---	---	0.42	0.42	---	---
1986 UST Removals																						
<i>10,000-Gallon Gasoline UST</i>																						
#1	05/08/86	15.5-16	---	---	---	<2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
#2	05/08/86	15.5	---	---	---	<2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
<i>6,000-Gallon Gasoline UST</i>																						
#3	05/08/86	12	---	---	---	<2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
#4	05/08/86	12	---	---	---	<2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
<i>550-Gallon Used-Oil UST</i>																						
#5	05/08/86	8	<10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2001 Soil Investigation																						
SB1-13.0	07/23/01	13	---	---	---	<1.0	0.014	<0.0050	<0.0050	---	---	<0.0050	<0.0050	---	---	---	---	---	---	---	---	---
SB1-15.5	07/23/01	15	---	---	---	<1.0	<0.0050	<0.0050	<0.0050	---	---	<0.0050	<0.0050	---	---	---	---	---	---	---	---	---
SB2-8.0	07/23/01	8	---	650	100a	87	1.8	<0.62	2.0	---	---	<0.62	<0.62	---	---	---	---	---	---	---	---	---
SB2-13.0	07/23/01	13	---	---	---	<1.0	<0.0050	<0.0050	<0.0050	---	---	<0.0050	<0.0050	---	---	---	---	---	---	---	---	---
2006 Soil Investigation																						
B-1@10.5'	04/04/06	10.5	---	---	---	<0.94	<0.0047	<0.0047	<0.0047	---	---	<0.0047	<0.0047	---	---	---	---	---	---	---	---	---
B2-COMP	04/04/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B-4@3'	04/04/06	3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B-4@6'	04/04/06	6	---	---	---	<0.98	<0.0049	<0.0049	<0.0049	---	---	<0.0049	<0.0049	---	---	---	---	---	---	---	---	---
B-5@2'	04/04/06	2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B-6@4'	04/04/06	4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B-6@8'	04/04/06	8	---	---	---	<0.0049	<0.0049	<0.0049	0.0064	---	---	0.022	<0.0049	---	---	---	---	---	---	---	---	---
SW-S-16.0	09/01/06	16	---	---	---	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	---	<0.0050	---	---	---	---	---	---	---	---	---
SW-W-21.0	09/01/06	21	---	---	---	1.9c	0.041	<0.0048	0.34	<0.0048	<0.0048	---	<0.0048	---	---	---	---	---	---	---	---	---
SW-E-14.5	09/06/06	14.5	---	---	---	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	---	<0.0050	---	---	---	---	---	---	---	---	---
EB-13W-14.0	09/06/06	14	---	---	---	<0.94	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	---	<0.0047	---	---	---	---	---	---	---	---	---
2016 Soil Investigation																						
S-5-B7	06/08/16	5	---	---	<5.0	<0.52	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.049	<0.0049	<0.0049	<0.0049	<0.0049	ND	---
S-10-B7	06/08/16	10	---	---	<4.9	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.0050	ND	---
S-14-B7	06/08/16	14	---	---	<5.0	<0.48	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.0050	ND	---
S-18.5-B7	06/08/16	18.5	---	---	<5.0	<0.51	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.0050	<0.0050	0.0083	<0.0050	ND	---
S-5-B8	06/10/16	5	---	---	<5.0	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.0050	ND	---
S-10-B8	06/10/16	10	---	---	<5.0	<0.48	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.049	<0.0049	<0.0049	<0.0049	<0.0049	ND	---
S-14.5-B8	06/10/16	14.5	---	---	<5.0	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.0050	ND	---
S-19.5-B8	06/10/16	19.5	---	---	<5.0	<0.49	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.049	<0.0049	<0.0049	<0.0049	<0.0049	ND	---

TABLE 2A
CUMULATIVE SOIL ANALYTICAL RESULTS
Former Mobil Service Station 10MHG
160 14th Street
Oakland, California
(Page 2 of 3)

Sample ID	Sampling Date	Depth (feet bgs)	Used Oil (mg/kg)	TPHmo (mg/kg)	TPHd (mg/kg)	TPHg (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	o-X (mg/kg)	pm-X (mg/kg)	X (mg/kg)	MTBE (mg/kg)	1,2,4-Trimethylbenzene (mg/kg)	1,3,5-Trimethylbenzene (mg/kg)	Naphthalene (mg/kg)	n-Butylbenzene (mg/kg)	n-Propylbenzene (mg/kg)	Tetra-chloroethene (mg/kg)	Tri-chloroethene (mg/kg)	VOCs (mg/kg)	SVOCs (mg/kg)
Environmental Screening Levels (February 2016)																						
Tier 1			---	100	240	100	0.044	2.9	1.4	---	---	2.3	0.023	---	---	0.033	---	---	0.42	0.42	---	---
S-5-B9	06/09/16	5	---	---	<5.0	<0.49	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.0050	ND	---
S-10-B9	06/10/16	10	---	---	<5.1	<0.49	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.0050	ND	---
S-14.5-B9	06/10/16	14.5	---	---	<4.9	<0.51	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.051	<0.0051	<0.0051	<0.0051	<0.0051	ND	---
S-19.5-B9	06/10/16	19.5	---	---	<4.9	<0.51	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.0050	ND	---
S-5-B10	06/09/16	5	---	---	<5.0	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.0050	ND	---
S-10.5-B10	06/09/16	10.5	---	---	<5.0	<0.50	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.051	<0.0051	<0.0051	<0.0051	<0.0051	ND	---
S-15-B10	06/09/16	15	---	---	<5.0	<0.52	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.049	<0.0049	<0.0049	<0.0049	<0.0049	ND	---
S-18-B10	06/09/16	18	---	---	<5.0	<0.48	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.0050	ND	---
S-5-B11	06/09/16	5	---	---	<5.0	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.0050	ND	---
S-10-B11	06/09/16	10	---	---	<5.0	<0.49	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.049	<0.0049	<0.0049	<0.0049	<0.0049	ND	---
S-15-B11	06/09/16	15	---	---	<5.0	0.91	<0.0050	<0.0050	0.0094	0.0052	0.020	0.025	<0.0050	0.057	0.0066	0.064	0.016	0.0098	<0.0050	<0.0050	ND	---
S-18.5-B11	06/09/16	18.5	---	---	<5.0	<0.52	<0.0050	<0.0050	0.021	0.039	0.081	0.12	<0.0050	0.040	0.011	<0.050	<0.0050	<0.0050	<0.0050	<0.0050	ND	---
S-5-B12	06/08/16	5	---	---	<5.0	<0.53	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.0050	ND	---
S-7.5-B12	06/08/16	7.5	---	---	<5.0	<0.51	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.049	<0.0049	<0.0049	<0.0049	<0.0049	ND	---
S-10-B12	06/08/16	10	---	---	<5.0	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.0050	ND	---
S-15-B12	06/08/16	15	---	---	29a	49	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	1.1	1.3	<0.50	<0.50	ND	---
S-19-B12	06/08/16	19	---	---	<5.1	0.77	<0.0051	<0.0051	0.012	<0.0051	0.012	0.012	<0.0051	0.099	0.024	<0.051	<0.0051	0.012	0.011	<0.0051	ND	---
S-5-B13	06/10/16	5	---	---	6.5a	<0.48	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.0050	ND	---
S-10-B13	06/10/16	10	---	---	<4.9	<0.48	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.0050	ND	---
S-15-B13	06/10/16	15	---	---	<4.9	<0.51	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.0050	ND	---
S-19.5-B13	06/10/16	19.5	---	---	<5.0	<0.51	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.0050	<0.0050	0.013	<0.0050	ND	---
S-23.5-B13	06/10/16	23.5	---	---	<5.1	<0.50	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.049	<0.0049	<0.0049	0.0069	<0.0049	ND	---
S-5-B14	06/10/16	5	---	---	<4.9	<0.49	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.0050	ND	---
S-10-B14	06/10/16	10	---	---	<5.0	<0.52	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.0050	ND	---
S-15-B14	06/10/16	15	---	---	<5.1	<0.51	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.049	<0.0049	<0.0049	<0.0049	<0.0049	ND	---
S-19.5-B14	06/10/16	19.5	---	---	<5.0	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.0050	ND	---
S-23.5-B14	06/10/16	23.5	---	---	<5.0	<0.52	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.049	<0.0049	<0.0049	<0.0049	<0.0049	ND	---
Soil Stockpile Samples																						
Comp.1	07/21/06	---	---	---	---	<0.99	<0.0050	<0.0050	0.005	---	---	0.005	<0.0050	---	---	---	---	---	---	---	---	---
Comp.2	07/21/06	---	---	---	---	<0.93	<0.0050	<0.0050	<0.0050	---	---	<0.0050	<0.0050	---	---	---	---	---	---	---	---	---
Composite 1	08/02/06	---	---	18	2.2a	<0.93	<0.0050	<0.0050	0.005	---	---	<0.0050	<0.0050	---	---	---	---	---	---	---	---	---
Composite 2	08/02/06	---	---	13	1.5a	<0.94	<0.0050	<0.0050	<0.0050	---	---	<0.0050	<0.0050	---	---	---	---	---	---	---	---	---
Composite 3	08/02/06	---	---	150	53a	<0.89	<0.0050	<0.0050	0.069	---	---	<0.0050	<0.0050	---	---	---	---	---	---	---	---	---
Composite 4	08/02/06	---	---	13	5.8a	<0.96	<0.0050	<0.0050	<0.0050	---	---	<0.0050	<0.0050	---	---	---	---	---	---	---	---	---
Composite 5	08/02/06	---	---	7.2	1.2a	<1.0	<0.0050	<0.0050	<0.0050	---	---	<0.0050	<0.0050	---	---	---	---	---	---	---	---	---
S-COMP	12/04/06	---	---	15b	3.3a,b	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SP-1	06/08/16	---	---	---	<5.0	0.70	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.15	0.0037	<0.0050	0.012	0.017	<0.0050	<0.0050	ND	ND

TABLE 2A
CUMULATIVE SOIL ANALYTICAL RESULTS
Former Mobil Service Station 10MHG
160 14th Street
Oakland, California
(Page 3 of 3)

Notes:	
Used Oil	= Used oil analyzed using modified EPA Method 3510.
TPHmo	= Total petroleum hydrocarbons as motor oil analyzed using EPA Method 8015M.
TPHd	= Total petroleum hydrocarbons as diesel analyzed using EPA Method 8015M.
TPHg	= Total petroleum hydrocarbons as gasoline analyzed using EPA Method 8015.
MTBE	= Methyl tertiary butyl ether analyzed using EPA Method 8260B; prior to 2016, analyzed using EPA Method 8020/8021.
BTEX	= Benzene, toluene, ethylbenzene, and total xylenes analyzed using EPA Method 8260B; prior to 2016, analyzed using EPA Method 8020/8021.
VOCs	= Additional volatile organic compounds analyzed using EPA Method 8260B.
SVOCs	= Semi-volatile organic compounds analyzed using EPA Method 8270C.
PAHs	= Polyaromatic hydrocarbons analyzed using EPA Method 8310.
Metals	= Total metals analyzed using EPA Method 6010B.
STLC	= Soluble Threshold Limit Concentration.
mg/kg	= Milligrams per kilogram.
mg/L	= Milligrams per liter.
feet bgs	= Feet below ground surface.
ND	= Not detected.
	= Sample removed from site and not representative of current conditions.
<	= Less than the laboratory reporting limit.
---	= Not analyzed/Not applicable/Not sampled.
a	= The chromatographic pattern does not match that of the specified standard.
b	= Heavy hydrocarbons contributed to the quantitation.
c	= Unknown single peak(s).

TABLE 2B
CUMULATIVE SOIL ANALYTICAL RESULTS - PAHs
Former Mobil Service Station 10MHG
160 14th Street
Oakland, California
(Page 2 of 2)

Sample ID	Sampling Date	Depth (feet bgs)	Acenaph-thene (mg/kg)	Acenaph-thylene (mg/kg)	Anthra-cene (mg/kg)	Benzo (a) Anthracene (mg/kg)	Benzo (b) Fluor-anthene (mg/kg)	Benzo (k) Fluor-anthene (mg/kg)	Benzo (g,h,i) Perylene (mg/kg)	Benzo (a) Pyrene (mg/kg)	Chrysene (mg/kg)	Dibenz (a,h) Anthracene (mg/kg)	Fluor-anthene (mg/kg)	Fluorene (mg/kg)	Indeno (1,2,3-c,d) Pyrene (mg/kg)	Naph-thalene (mg/kg)	Phen-anthrene (mg/kg)	Pyrene (mg/kg)
Environmental Screening Levels (February 2016)																		
Tier 1			16	13	2.8	0.16	0.16	1.6	2.5	0.016	3.8	0.016	60	8.9	0.16	0.033	11	85
S-5-B13	06/10/16	5	<0.015	<0.030	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.015	<0.0099	<0.0099
S-10-B13	06/10/16	10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-15-B13	06/10/16	15	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-19.5-B13	06/10/16	19.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-23.5-B13	06/10/16	23.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-5-B14	06/10/16	5	<0.015	<0.030	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.015	<0.010	<0.010
S-10-B14	06/10/16	10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-15-B14	06/10/16	15	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-19.5-B14	06/10/16	19.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-23.5-B14	06/10/16	23.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Soil Stockpile Samples

Not analyzed for these analytes.

Notes:

- Used Oil = Used oil analyzed using modified EPA Method 3510.
- TPHmo = Total petroleum hydrocarbons as motor oil analyzed using EPA Method 8015M.
- TPHd = Total petroleum hydrocarbons as diesel analyzed using EPA Method 8015M.
- TPHg = Total petroleum hydrocarbons as gasoline analyzed using EPA Method 8015.
- MTBE = Methyl tertiary butyl ether analyzed using EPA Method 8260B; prior to 2016, analyzed using EPA Method 8020/8021.
- BTEX = Benzene, toluene, ethylbenzene, and total xylenes analyzed using EPA Method 8260B; prior to 2016, analyzed using EPA Method 8020/8021.
- VOCs = Additional volatile organic compounds analyzed using EPA Method 8260B.
- SVOCs = Semi-volatile organic compounds analyzed using EPA Method 8270C.
- PAHs = Polycyclic aromatic hydrocarbons analyzed using EPA Method 8310.
- Metals = Total metals analyzed using EPA Method 6010B.
- STLC = Soluble Threshold Limit Concentration.
- mg/kg = Milligrams per kilogram.
- mg/L = Milligrams per liter.
- feet bgs = Feet below ground surface.
- ND = Not detected.
- █ = Sample removed from site and not representative of current conditions.
- < = Less than the laboratory reporting limit.
- = Not analyzed/Not applicable/Not sampled.
- a = The chromatographic pattern does not match that of the specified standard.
- b = Heavy hydrocarbons contributed to the quantitation.
- c = Unknown single peak(s).

TABLE 2C
CUMULATIVE SOIL ANALYTICAL RESULTS - METALS

Former Mobil Service Station 10MHG
160 14th Street
Oakland, California
(Page 2 of 2)

Notes:

Used Oil	=	Used oil analyzed using modified EPA Method 3510.
TPHmo	=	Total petroleum hydrocarbons as motor oil analyzed using EPA Method 8015M.
TPHd	=	Total petroleum hydrocarbons as diesel analyzed using EPA Method 8015M.
TPHg	=	Total petroleum hydrocarbons as gasoline analyzed using EPA Method 8015.
MTBE	=	Methyl tertiary butyl ether analyzed using EPA Method 8260B; prior to 2016, analyzed using EPA Method 8020/8021.
BTEX	=	Benzene, toluene, ethylbenzene, and total xylenes analyzed using EPA Method 8260B; prior to 2016, analyzed using EPA Method 8020/8021.
VOCs	=	Additional volatile organic compounds analyzed using EPA Method 8260B.
SVOCs	=	Semi-volatile organic compounds analyzed using EPA Method 8270C.
PAHs	=	Polyaromatic hydrocarbons analyzed using EPA Method 8310.
Metals	=	Total metals analyzed using EPA Method 6010B.
STLC	=	Soluble Threshold Limit Concentration.
mg/kg	=	Milligrams per kilogram.
mg/L	=	Milligrams per liter.
feet bgs	=	Feet below ground surface.
ND	=	Not detected.
	=	Sample removed from site and not representative of current conditions.
<	=	Less than the laboratory reporting limit.
---	=	Not analyzed/Not applicable/Not sampled.
a	=	The chromatographic pattern does not match that of the specified standard.
b	=	Heavy hydrocarbons contributed to the quantitation.
c	=	Unknown single peak(s).

APPENDIX

A

CORRESPONDENCE



January 26, 2017

Ms. Jennifer Sedlachek
ExxonMobil
4096 Piedmont Ave. #194
Piedmont, CA 94611
(Sent via E-mail to: jennifer.c.sedlachek@exxonmobil.com)

Subject: Fuel Leak Case No. RO0002922 and Geotracker Global ID T06019782296, Mobil #10-MHG, 160
14th St., Oakland, CA 94612

Dear Ms. Sedlachek:

Thank you for attending the meeting at Alameda County Department of Environmental Health's (ACDEH's) office on Thursday January 19, 2017. The purpose of was to discuss the results of the *Soil and Groundwater Investigation Report* (Report) dated July 28, 2016 and in reference to the State Water Resources Control Board's (SWRCBs) Low Threat Underground Storage Tank Case Closure Policy (LTCP), identify any remaining data gaps, and develop a path to case closure. ACDEH understands that site was redeveloped into a mixed residential commercial building prior to 2008 while still an open fuel leak case. As discussed during the meeting, two data gaps were identified, as described in the Technical Comments. ACDEH requests that you address the identified data gaps discussed during our meeting by submitting a Soil and Groundwater Investigation Report by the date provided below.

TECHNICAL COMMENTS

1. **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.

The site groundwater gradient direction is not known; however there are several adjacent environmental cases with historical groundwater data which indicate the local gradient direction is predominantly towards Lake Merritt located approximately 820 feet to the east. A grab groundwater sample from B11 located near the east and presumed downgradient edge of the property detected 250 micrograms per liter (ug/L) benzene. The LTCP defines the length of the plume as the maximum extent from the point of release of any petroleum related constituent gasoline-range organic (GRO) in groundwater that exceeds the water quality objectives. Using the criteria listed in Table 1 of the LTCP's *Technical Justification for Groundwater Media-Specific Criteria* to define the length of the plume, please prepare a figure plotting the estimated GRO plume length(s) in the groundwater gradient direction on an aerial photograph base map. Please show the prevalent groundwater gradient direction for nearby cases and identify sensitive receptors within 1,000 feet of the edge of the plume. On the same figure, please identify buildings with basements, beneficial resources and other sensitive receptors, surface water bodies, schools, hospitals, day care centers, elder care facilities.

2. **LTCP Media Specific Criteria for Vapor Intrusion to Indoor Air:** The LTCP describes conditions, including bioattenuation (unsaturated) zones, which if met, will assure that exposure to petroleum vapors in indoor air will not pose unacceptable health risks to human occupants of existing or future site buildings, and adjacent parcels. Appendices 1 through 4 of the LTCP criteria

illustrate four potential exposure scenarios and describe characteristics and criteria associated with each scenario.

ACDEH understands that the site was redeveloped into a mixed use residential commercial building prior to 2008 while still an open fuel leak case. According to the case file, much to all of the property was overexcavated to a substantial depth to accommodate the new building's subgrade features including two elevator shafts and a parking garage; however, documentation of the final excavated depth, confirmation soil sampling of the remaining soil, or the risk of vapor intrusion to indoor air has not been determined or assessed. Benzene was detected in groundwater at 250 ug/L in boring B11 at the edge of the property. Since benzene groundwater concentrations exceed 100 ug/L, to meet Scenario 3 of the LTCP, a 10-foot bioattenuation zone containing combined soil concentrations of Total Petroleum Hydrocarbons as gasoline (TPHg) and TPH as diesel (TPHd) less than 100 milligrams per kilogram (mg/kg) must be shown to exist. Please review the building plans of the new development to determine the final excavated depth of the building foundation, especially the final excavated depth below ground surface (bgs) of the parking garage, the elevator shaft, and as well as all other subgrade features. Please prepare a cross section showing the subsurface features, the base of the excavation, and historical soil and groundwater data to support the existence of a 10-foot thick bioattenuation zone. Alternately, if the data does not support the existence of a 10-foot thick bioattenuation zone, please provide documentation that it meets an alternative LTCP scenario or include a work plan to collect sufficient data to determine that it may meet one of the other criteria.

Technical Report Request

Please upload the technical report to the ACDEH ftp site (Attention: Karel Detterman), and to the State Water Resources Control Board's Geotracker website, in accordance with the following specified file naming convention and schedule:

- **March 31, 2017 – Soil and Groundwater Report**
File to be named: RO2922_SWI_R_yyyy-mm-dd

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

If you have any questions, please call me at (510) 567-6708 or send me an e-mail message karel.detterman@acgov.org. Online case files are available for review at the following website: <http://www.acgov.org/aceh/index.htm>.

Sincerely,

Karel Detterman, PG
Hazardous Materials Specialist

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

Ms. Sedlachek
RO0002922
January 26, 2017, Page 3

cc: Ms. Leticia Gonzalez, Property Supervisor, Satellite Affordable Housing Associates (SAHA), 1835 Alcatraz Avenue, Berkeley, California 94703, (Sent via E-mail to: lgonzalez@sahahomes.org)

Mr. Ted Dang, Fourteenth and Madison Associates, 1305 Franklin Street, Oakland, CA 94612

Madison Street Lofts, 1835 Alcatraz Avenue, Berkeley, CA 94703-2714

Mr. Liang Lee, 388 Market Street, Floor 5, San Francisco, CA 94111-5311

Mr. Jim Chappell, Cardno, 601 N. McDowell, Petaluma, CA 94954, (Sent via E-mail to: jim.chappell@cardno.com)

Ms. Janice Jacobson, Cardno, 601 N. McDowell, Petaluma, CA 94954, (Sent via E-mail to: janice.jacobson@cardno.com)

Karel Detterman, ACDEH, (Sent via E-mail to: karel.detterman@acgov.org)

Dilan Roe, ACDEH, (Sent via E-mail to: dilan.roe@acgov.org)

Paresh Khatri, ACDEH, (Sent via E-mail to: paresh.khatri@acgov.org)

Electronic File, GeoTracker

APPENDIX

B

DATA SHEETS STEGO® WRAP VAPOR
BARRIER



Stego® Wrap Vapor Barrier

STEGO INDUSTRIES, LLC



Vapor Retarders
07 26 00, 03 30 00

1. Product Name
Stego Wrap Vapor Barrier

2. Manufacturer
Stego Industries, LLC
216 Avenida Fabricante, Suite 101
San Clemente, CA 92672
Sales, Technical Assistance
Ph: (877) 464-7834
Fx: (949) 257-4113
www.stegoindustries.com

3. Product Description
USES: Stego Wrap Vapor Barrier is used as a below-slab vapor barrier.

COMPOSITION: Stego Wrap Vapor Barrier is a multi-layer plastic extrusion manufactured with only high grade prime, virgin, polyolefin resins.

ENVIRONMENTAL FACTORS:
Stego Wrap Vapor Barrier can be used in systems for the control of soil gases (radon, methane), soil poisons (oil by-products) and sulfates.

5. Installation
UNDER SLAB: Unroll Stego Wrap Vapor Barrier over an aggregate, sand or tamped earth base. Overlap all seams a minimum of six inches and tape using Stego Tape or Crete Claw® Tape. All penetrations must be sealed using a combination of Stego Wrap and Stego accessories.

For additional information, please refer to Stego's complete installation instructions.

6. Availability & Cost
Stego Wrap Vapor Barrier is available nationally via building supply distributors. For current cost information, contact your local Stego Wrap distributor or Stego Industries' sales department.

7. Warranty
Stego Industries, LLC believes to the best of its knowledge, that specifications and recommendations herein are

accurate and reliable. However, since site conditions are not within its control, Stego Industries does not guarantee results from the use of the information provided and disclaims all liability from any loss or damage. NO WARRANTY, EXPRESS, IMPLIED OR STATUTORY, IS GIVEN AS TO THE MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR OTHERWISE WITH RESPECT TO THE PRODUCTS REFERRED TO. Please see www.stegoindustries.com/legal.

8. Maintenance
None required.

9. Technical Services
Technical advice, custom CAD drawings, and additional information can be obtained by contacting Stego Industries' technical assistance department or via the website.

10. Filing Systems

- Stego Industries' website
- Buildsite



4. Technical Data

TABLE 1: PHYSICAL PROPERTIES OF STEGO WRAP VAPOR BARRIER

PROPERTY	TEST	RESULTS
Under Slab Vapor Retarders	ASTM E1745 Class A, B & C – Standard Specification for Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs	Exceeds Class A, B & C
Water Vapor Permeance	ASTM F1249 – Test Method for Water Vapor Transmission Rate Through Plastic Film and Sheeting Using a Modulated Infrared Sensor	0.0086 perms *0.0036 WVTR
Puncture Resistance	ASTM D1709 – Test Methods for Impact Resistance of Plastic Film by Free-Falling Dart Method	2266 grams
Tensile Strength	ASTM D882 – Test Method for Tensile Properties of Thin Plastic Sheeting	70.6 lbf/in.
Permeance After Conditioning (ASTM E1745 Sections 7.1.2 - 7.1.5)	ASTM E154 Section 8, F1249 – Permeance after wetting, drying, and soaking ASTM E154 Section 11, F1249 – Permeance after heat conditioning ASTM E154 Section 12, F1249 – Permeance after low temperature conditioning ASTM E154 Section 13, F1249 – Permeance after soil organism exposure	0.0098 perms 0.0091 perms 0.0097 perms 0.0095 perms
Methane Transmission Rate	ASTM D1434 – Standard Test Method for Determining Gas Permeability Characteristics of Plastic Film and Sheeting	**192.8 GTR mL(STP)/m ² *day
Radon Diffusion Coefficient	K124/02/95	8.8 x 10 ⁻¹² m ² /second
Thickness		15 mils
Roll Dimensions		14 ft. wide x 140 ft. long or 1,960 ft ²
Roll Weight		140 lbs.

Note: perm unit = grains/(ft² *hr* in.Hg) * WVTR = Water Vapor Transmission Rate ** GTR = Gas Transmission Rate



APPENDIX

C

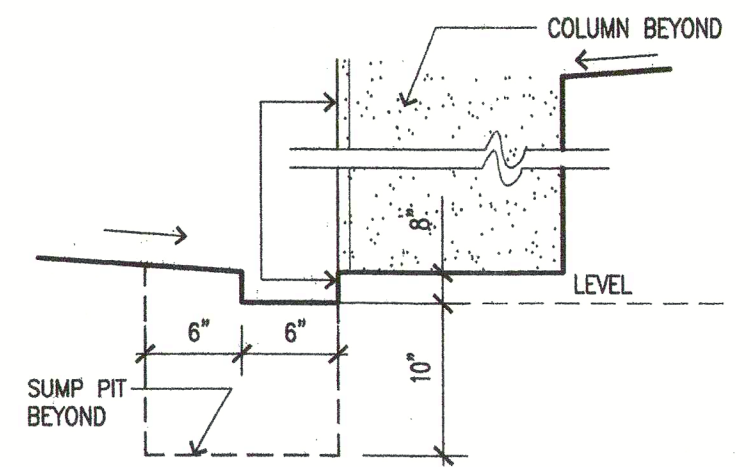
BUILDING PLANS

MEP BID SET	08.31.05
FOUNDATION PERMIT	09.29.05
100% DESIGN DEVELOPMENT	11.07.05
BUILDING PERMIT AND 50% CD SET	01.20.06
100% CONSTRUCTION DRAWINGS / BID SET	03.06.06
ISSUED FOR CONSTRUCTION	04.28.06

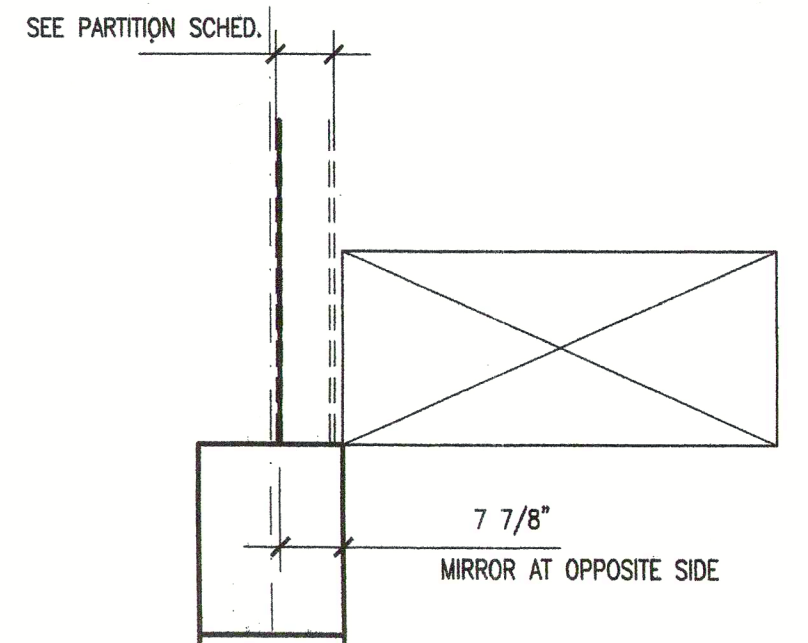
DATE: 08.31.05
 JOB No: 0127
 PHASE: C.D.
 PERMIT No:
 SCALE: 1/8" = 1'-0"
 ISSUED FOR: 100% CD

SHEET NOTES:

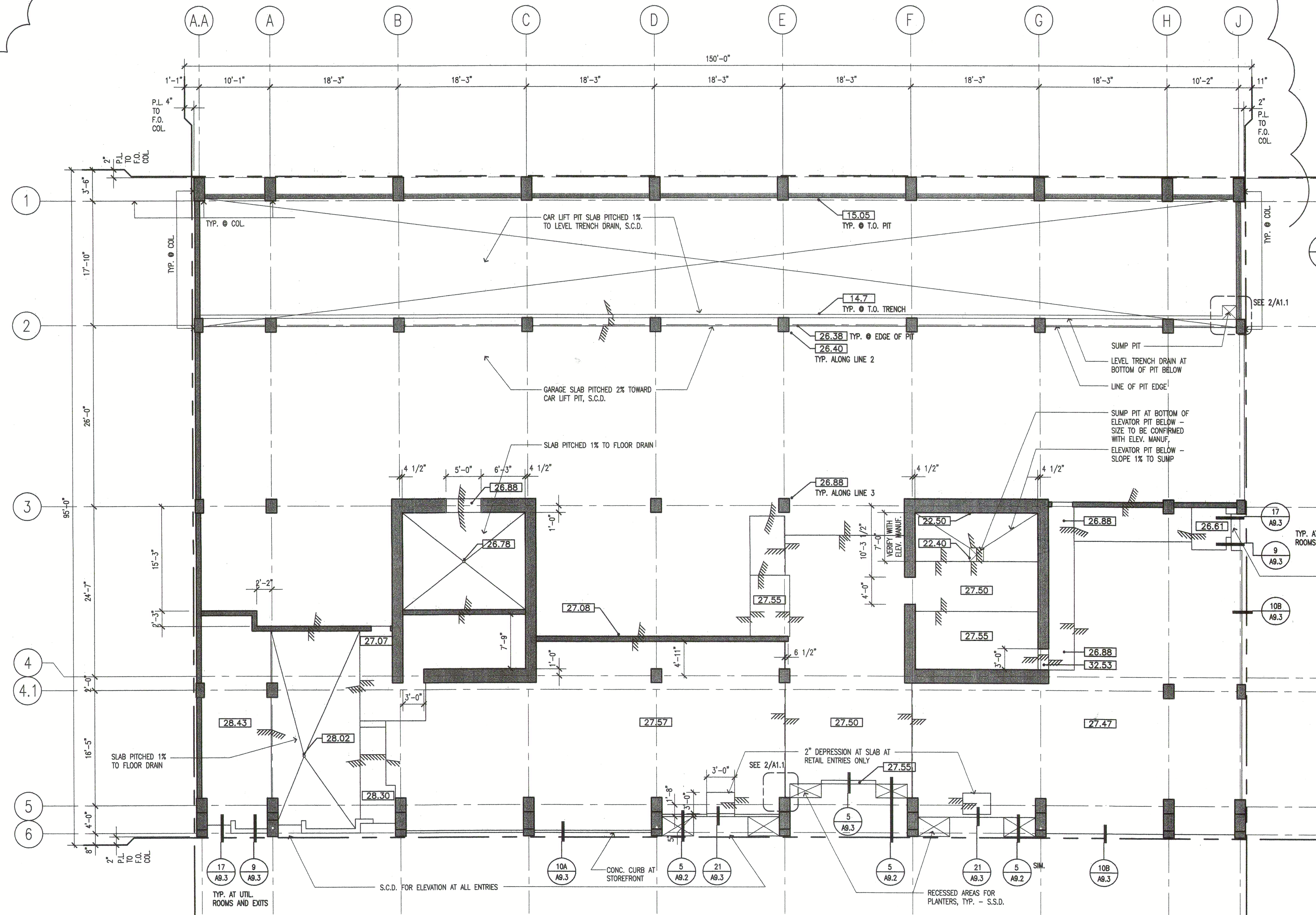
1. SEE CIVIL DRAWINGS FOR FLOOR ELEVATIONS NOT SHOWN.
2. SEE STRUCTURAL DRAWINGS FOR COLUMN AND CONCRETE WALL DIMENSIONS.
3. CENTER COLUMN ON GRID LINE U.O.N.
4. CAST IN DRIP GROOVES AT BOTTOM OF SLAB, TYP. - SEE 11/A9.3
5. SPOT ELEVATIONS ARE T.O. CONC. TYP. U.O.N.
6. SEE PLUMBING DRAWINGS FOR LOCATIONS OF PIPE PENETRATIONS.



2 SECTION DETAIL THROUGH TRENCH
1/4" = 1'-0"



3 SECTION DETAIL AT ENTRY LOBBY WALLS
1/2" = 1'-0"



1 GROUND FLOOR SLAB PLAN
A1.1

1/8" = 1'-0"