## Downtown Auto Center

SUBARU 510-547-4424 • TOYOTA 510-547-4635 • SAAB 510-547-4625 4145 Broadway, Oakland, CA 94611 TEL: 510-547-4436 FAXES: Business Office: 510-653-1025 • Finance Department: 510-653-3181

March 4, 2010

Ms. Barbara Jakub

Alameda, CA 94502

#### RECEIVED

8:49 am, Mar 12, 2010

Alameda County Environmental Health

SUBJECT: WELL SURVEY REPORT CERTIFICATION ACEH Case # RO 0000509 Downtown Toyota 4145 Broadway Oakland, CA

Alameda County Department of Environmental Health

1131 Harbor Bay Parkway, Suite 250

Dear Ms. Jakub:

You will find enclosed one copy of the following document prepared by RGA Environmental, Inc.

Well Survey Report dated February 23, 2010.

I declare, under penalty of perjury, that the information and/or recommendations contained in the above-mentioned report for the subject site is true and correct to the best of my knowledge.

Should you have any questions, please do not hesitate to call me at (510) 547-4635.

Cordially, Classic Investments, LLC

Ralph Fattore Managing Member

Cc: Mr. LeRoy Griffin, Oakland Fire Department, Emergency Services, 250 Frank Ogawa Plaza, Suite 3341, Oakland, CA 94612 (with enclosure)

0271.L7



Mr. Ralph Fattore Classic Investments, LLC 4145 Broadway Oakland, CA 94606

SUBJECT: WELL SURVEY REPORT County File #RO0000509 Downtown Toyota 4145 Broadway Oakland, California

Dear Mr. Fattore:

RGA Environmental, Inc. (RGA) is pleased to present this report documenting the results of a well survey for a 2,000-foot radius for the subject site. This report is written in response to a request from Ms. Barbara Jakub of the Alameda County Department of Environmental Health (ACDEH) in a letter dated July 25, 2008. A U.S. Geological Survey topographic map showing the location of the subject site, a circle around the site with a 2,000-foot radius, and showing wells identified during the well survey is attached with this report as Figure 1.

#### BACKGROUND

One 500-gallon underground waste oil tank was removed from the site on February 7, 1992. A detailed discussion of historic investigations at the site is provided in RGA's Subsurface Investigation Work Plan dated July 19, 2007 (document 0271.W1). A Site Vicinity Map showing the boundaries of the facility is provided as Figure 2. The known extent of impacted groundwater at and near the subject site associated with the UST release is shown in Figures 3, 4 and 5.

#### WELL SURVEY

Documentation regarding the locations of wells within 2,000 feet of the subject site was obtained from the Alameda County Public Works Agency (ACPWA) and from the California Department of Water Resources (DWR).

## ACPWA Well Survey Results

RGA submitted a request to Mr. James Yoo of the ACPWA for available well information within a 2,000-foot radius of the subject site. On August 20, 2008 ACPWA provided tables via e-mail to RGA of the findings of the ACPWA database search. The search area is in Township T1S, Range R4W, and included all or part of Section 24 Tracts B, D, E, F, H, L, M, N, P and Q.

A total of 104 well records were included in the spreadsheet provided by the ACPWA. All wells identified by the ACPWA (including destroyed wells and abandoned but not destroyed wells) and associated well information are summarized in Table 1. A legend provided by ACPWA for the well search that defines the various well search result abbreviations is also attached with Table 1. The majority of the wells were groundwater monitoring wells that extend to a maximum depth of 40 feet. The wells in Table 1 that are located within 2,000 feet of the subject site and that are greater than 40 feet deep are high-lighted with bold. The locations of the seven wells that are high-lighted in Table 1 are shown on Figure 2. The locations of the wells identified from the ACPWA data that are shown on Figure 2 were located on Figure 2 by locating the site address provided by ACPWA using the internet services Mapquest and Google Earth.

The distance and direction of the seven wells from the subject site are provided in Table 1. Review of Table 1 shows that five of the seven wells are cathodic wells located at distances ranging from 660 to 1850 feet to the northwest or west-northwest of the subject site, and that the depths of the cathodic wells ranges from 50 to 130 feet. Two of the wells are irrigation wells, with one well reported to be 65 feet deep and located 890 feet to the northwest of the site, and the other well reported to be 198 feet deep and located 1525 feet to the southeast of the subject site.

## DWR Well Survey Results

RGA also submitted a request to Ms. Ann Roth of the California Department of Water Resources (DWR) for available well information within a 2,000-foot radius of the subject site. On August 15, 2008 Ms. Roth provided a total of 93 tif images on a compact disk, some of which consisted of multiple images. Review of these images showed that a total of 56 wells were identified within a 2,000-foot radius of the subject site. Information regarding the wells from the DWR is summarized in Table 2. The majority of the wells are groundwater monitoring wells that extend to a maximum depth of 40 feet. The one well in Table 2 that is located within 2,000 feet of the subject site and that is greater than 40 feet deep is high-lighted with bold. The location of the well was also identified in the ACPWA database and is shown on Figure 2.

Information regarding the wells shown in Figure 1 is summarized in Table 3.

#### HYDROGEOLOGY

Based on review of regional geologic maps from U. S. Geological Survey Professional Paper 943, "Flatland Deposits - Their Geology and Engineering Properties and Their Importance to Comprehensive Planning," by E. J. Helley and K. R. Lajoie, 1979, the subject site is underlain by Late Pleistocene Alluvium (Qpa), which is described as weakly consolidated slightly weathered poorly sorted irregularly interbedded clay, silt, sand, and gravel.

There are no groundwater monitoring wells at the site to provide historical groundwater level measurements. Groundwater was encountered in the UST pit in 1992 at a depth of 10 feet bgs. Groundwater was reported by others to have been encountered at a depth of 11 feet bgs in 9 of the 14 boreholes associated with the February 1994 subsurface investigation at the site. Groundwater was reported to not have been encountered in the remaining 5 boreholes. No subsequent water levels were reported in the boreholes for the investigation, and no boring logs were available for review with the report. In borings drilled at the site in October 1999 by others, water was reported to have been encountered on the boring logs at depths ranging from 9.5 to 13.8 feet bgs, and was subsequently reported on the boring logs at depths ranging from 8.7 to 12.8 feet bgs. In September and October 2008 groundwater was encountered at the site during drilling of boreholes B5 and B7 at depths of 10.5 and 25.0 feet bgs, respectively, while groundwater was not encountered during drilling at depths of 9.6 and 8.7 feet bgs, respectively. The depth to water was not subsequently measured in continuously cored borehole B7.

At the nearby site at 3943 Broadway, approximately 850 feet south of the subject site, water level measurements reported between November 2001 and June 2008 in 12 groundwater monitoring wells typically ranged between approximately 8 and 11 feet bgs, with most measurements between either 8 and 10 feet bgs or 9 and 11 feet bgs. Based on water level measurements in the groundwater monitoring wells at 3943 Broadway, the groundwater flow direction calculated by others in the vicinity of the subject site has ranged from the west-southwest to the southwest. Nearby water surfaces that are located downgradient from the subject property include Glen Echo Creek, located approximately 2,200 feet to the southeast of the site and Lake Merritt, located approximately 8,200 feet to the south.

## SENSITIVE RECEPTORS

Internet searches were performed using the search functions at the internet services Yellow Pages, Mapquest and Yahoo for sensitive receptor facilities in the vicinity of 4145 Broadway, Oakland. Once the subject site address had been entered and a site vicinity map was obtained for each website, the "search nearby" field was used to search for each of the following types of facility: day care, daycare, nursery school, child care, childcare, preschool, pre-school, school, recreation center, hospital, convalescent home, and nursing home. The distance between the sites identified during the internet search and the subject site was measured using the internet service Google Earth by entering the facility addresses into the location search field and using

the measuring tool to measure the distance from each facility to the subject site. Facilities located within 2,000-foot radius of the subject site that were identified during the internet search and the associated distances to the subject site are summarized in Table 4. A total of sixteen facilities were identified within a 2,000-foot radius of the subject site. The closest facility is located 600 feet from the subject site.

## DISCUSSION AND RECOMMENDATIONS

Review of Figure 1 shows that a topographic ridge is located on the east side of Broadway, and that the topography slope is comparatively gentler on the west side of Broadway. The topographic slope is consistent with the range of groundwater flow direction from the west-southwest to the southwest identified from groundwater monitoring wells at 3943 Broadway, located approximately 800 to 1000 feet west-southwest of the subject site.

Based on investigation of a former waste oil UST release at the subject site, the known extent of petroleum hydrocarbons in groundwater is shown in Figures 3, 4, and 5. MBTEX compounds are generally absent, and when detected do not exceed applicable screening levels with only a few exceptions.

Comparison of the locations of wells identified in the vicinity of the subject site with the known extent of petroleum in groundwater as shown in Figures 3, 4, and 5 shows that none of the wells identified during the survey are impacted by petroleum in groundwater at the site. Comparison of the locations of the wells in Figure 1 with the west-southwest to southwesterly groundwater flow direction in the vicinity of the site shows that none of the wells identified during the survey are located downgradient of the subject site. Similarly, review of Table 4 shows that none of the sensitive receptors identified in Table 4 are impacted by petroleum in groundwater at the site. Review of Table 4 shows that the closest sensitive receptor identified in Table 4 is 600 feet from the subject site, and that only one sensitive receptor (Thunder Road Adolescent Chemical Dependency) is located downgradient of the subject site (at a distance of 1,000 feet).

Based on the survey results, RGA recommends that no further action be performed for the subject site.

## **DISTRIBUTION**

A copy of this report will be uploaded to the ACDEH website, in accordance with ACDEH requirements. In addition, a copy of this report will be uploaded to the GeoTracker database.

## LIMITATIONS

This report was prepared solely for the use of Classic Investments, LLC. The content and conclusions provided by RGA in this assessment are based on information collected during our

investigation, which may include, but not be limited to, visual site inspections; interviews with the site owner, regulatory agencies and other pertinent individuals; review of available public documents; subsurface exploration and our professional judgment based on said information at the time of preparation of this document. Any subsurface sample results and observations presented herein are considered to be representative of the area of investigation; however, geological conditions may vary between borings and may not necessarily apply to the general site as a whole. If future subsurface or other conditions are revealed which vary from these findings, the newly revealed conditions must be evaluated and may invalidate the findings of this report.

This report is issued with the understanding that it is the responsibility of the owner, or his representative, to ensure that the information contained herein is brought to the attention of the appropriate regulatory agencies, where required by law. Additionally, it is the sole responsibility of the owner to properly dispose of any hazardous materials or hazardous wastes left onsite, in accordance with existing laws and regulations.

This report has been prepared in accordance with generally accepted practices using standards of care and diligence normally practiced by recognized consulting firms performing services of a similar nature. RGA is not responsible for the accuracy or completeness of information provided by other individuals or entities that is used in this report. This report presents our professional judgment based upon data and findings identified in this report and interpretation of such data based upon our experience and background, and no warranty, either express or implied, is made. The conclusions presented are based upon the current regulatory climate and may require revision if future regulatory changes occur.

Should you have any questions, please do not hesitate to contact us at (510) 547-7771.

Sincerely,

RGA Environmental, Inc.

27, King

Paul H. King Professional Geologist # 5901 Expires: 12/31/11

avin Schroete

Karin Schroeter Project Manager

NA PAUL H. KING No. 5901 EOFCALIFO

Attachments:

Table 1 - Alameda County Public Works Agency Well Summary Information

Table 2 - Department of Water Resources Well Summary Information

Table 3 - Non-Groundwater Monitoring Well Summary Information

Table 4 - Sensitive Receptors Located Within 2,000-Foot Radius of Subject Site

Figure 1 - Well Location Map

Figure 2 - Site Vicinity Map

Figure 3 - Site Plan Detail Showing TPH-G Concentrations in Shallow Groundwater

Figure 4 - Site Plan Detail Showing TPH-D Concentrations in Shallow Groundwater

Figure 5 - Site Plan Detail Showing TPH-BO/MO Concentrations in Shallow Groundwater

PHK/mld/sjc 0271.R2

## **TABLES**

# CONFIDENTIAL

## STATE OF CALIFORNIA DWR WELL COMPLETION REPORT (WELL LOGS)

## REMOVED

# CONFIDENTIAL

## STATE OF CALIFORNIA DWR WELL COMPLETION REPORT (WELL LOGS)

## REMOVED

## **ACPWA Well Legend**

DOM=Domestic well

IRR=Irrigation well

MUN= Municipal well

IND=Industrial well

CAT=Cathodic well

DES=well destroyed (through permit)

ABN=Abandoned and not being used (but has not been destroyed through permit process)

TES=Test well

**BOR**= Geotechnical investigation

MON= Monitoring well

EXT=Extraction/ Vapor wells

**PIE=Piezometers** 

REC=Recovery well (extraction/ vapor)

? = Unknown or no information found or given

#### Table 2- DWR WELL SEARCH IMAGE INDEX

County	Township	Section	Tract	Sequence Log Number	Image Filename	Hyperlink to Image	Use	Notes
ALA01	01S04W	24	N12	343408	51271002.tif	View Log 343408	BOR	
ALA01	01S04W	24	N13	343409	51271003.tif	View Log 343409	MON	
ALA01	01S04W	24	N14	325190	51271004.tif	View Log 325190	BOR	
ALA01	01S04W	24	N16	405230	51271005.tif	View Log 405230	BOR	
ALA01	01S04W	24	N16	405229	51271006.tif	View Log 405229	BOR	
ALA01	01S04W	24	N17	403108	51271007.tif	View Log 403108	MON	
ALA01	01S04W	24	N18	403110	51271008.tif	View Log 403110	MON	
ALA01	01S04W	24	N19	403109	51271009.tif	View Log 403109	MON	
ALA01	01S04W	24		01-141A-D	51271010.tif	View Log 01-141A-D	Site Map	Site map for next 4 boring logs.
ALA01	01S04W	24	Р	01-141A	51271011.tif	View Log 01-141A	BOR	
ALA01	01S04W	24	Р	01-141B	51271012.tif	View Log 01-141B	BOR	
ALA01	01S04W	24	Р	01-141C	51271013.tif	View Log 01-141C	BOR	
ALA01	01S04W	24	Р	01-141D	51271014.tif	View Log 01-141D	BOR	
ALA01	01S04W	24	P7	01-445J	51271015.tif	View Log 01-445J	MON	
ALA01	01S04W	24	Р	01-445K	51271016.tif	View Log 01-445K	BOR	
ALA01	01S04W	24	Р	01-445L	51271017.tif	View Log 01-445L	BOR	
ALA01	01S04W	24	Р	01-445M	51271018.tif	View Log 01-445M	BOR	
ALA01	01S04W	24		01-445K-M	51271019.tif	View Log 01-445K-M	Map	Map for previous 4 boring logs.
ALA01	01S04W	24	N6	01-454K	51271020.tif	View Log 01-454K	MON	
ALA01	01S04W	24	Р	1-454L	51271021.tif	View Log 1-454L	BOR	
ALA01	01S04W	24	Р	01-454M	51271022.tif	View Log 01-454M	BOR	
ALA01	01S04W	24	Р	01-454N	51271023.tif	View Log 01-454N	BOR	
ALA01	01S04W	24	Р	01-4540	51271024.tif	View Log 01-454O	BOR	
ALA01	01S04W	24	P1-3	01-141EFG	51271025.tif	View Log 01-141EFG	EXT	
ALA01	01S04W	24	P1-3	01-141E	51271026.tif	View Log 01-141E	BOR	
ALA01	01S04W	24	P2	01-141F	51271027.tif	View Log 01-141F	BOR	
ALA01	01S04W	24	P3	01-141G	51271028.tif	View Log 01-141G	BOR	
ALA01	01S04W	24	P4	293443	51271029.tif	View Log 293443	MON	
ALA01	01S04W	24	P5	293446	51271030.tif	View Log 293446	MON	
ALA01	01S04W	24	P6	293447	51271031.tif	View Log 293447	MON	
ALA01	01S04W	24	Q1	115966	51271032.tif	View Log 115966	CAT	
ALA01	01S04W	24	D3	141710	51271033.tif	View Log 141710	CAT	
ALA01	01S04W	24		01-875	51271034.tif	View Log 01-875	Site Map	Site map for next 2 boring logs.
ALA01	01S04W	24	L19	413608A-B	51271035.tif	View Log 413608A-B	MON	
ALA01	01S04W	24	L20	413608A	51271036.tif	View Log 413608A	MON	
ALA01	01S04W	24	L19	413608B	51271037.tif	View Log 413608B	BOR	
ALA01	01S04W	24	L20	01-525H-J	51271038.tif	View Log 01-525H-J	BOR	
ALA01	01S04W	24		01-525H	51271039.tif	View Log 01-525H	BOR	
ALA01	01S04W	24	L	01-525I	51271040.tif	View Log 01-525I	BOR	
ALA01	01S04W	24	L23	01-525J	51271041.tif	View Log 01-525J	MON	
ALA01	01S04W	24		01-442U-X	51271042.tif	View Log 01-442U-X	Site Map	Site map for next 5 boring logs.
ALA01	01S04W	24	M1	01-442U	51271043.tif	View Log 01-442U	MON	
ALA01	01S04W	24	M2	01-422V	51271044.tif	View Log 01-422V	MON	
ALA01	01S04W	24	M3	01-442W	51271045.tif	View Log 01-442W	MON	
ALA01	01S04W	24	M4	01-442	51271046.tif	View Log 01-442	MON	
ALA01	01S04W	24	M5	01-442X	51271047.tif	View Log 01-442X	MON	
ALA01	01S04W	24	M6	346487	51271048.tif	View Log 346487	MON	
ALA01	01S04W	24	M6	413649A-B	51271049.tif	View Log 413649A-B	MON	
ALA01	01S04W	24	M6	413649A	51271050.tif	View Log 413649A	MON	
ALA01	01S04W	24	N1	413649B	51271051.tif	View Log 413649B	MON	

#### Table 2- DWR WELL SEARCH IMAGE INDEX

County	Township	Section	Tract	Sequence Log Number	Image Filenam	e Hyperlink to Image	Use	Notes
ALA01	01S04W	24		325191ABC	51271052.tif	/iew Log 325191ABC	DES	Destruction of N1 and N2
ALA01	01S04W	24	N20	325191	51271053.tif	View Log 325191	MON	
ALA01	01S04W	24	N2	405226	51271054.tif	View Log 405226	MON	
ALA01	01S04W	24	N1	257322	51271055.tif	View Log 257322	MON	
ALA01	01S04W	24	N3	257321	51271056.tif	View Log 257321	MON	
ALA01	01S04W	24	N4	01-450A	51271057.tif	View Log 01-450A	MON	
ALA01	01S04W	24	N5	01-450B	51271058.tif	View Log 01-450B	MON	
ALA01	01S04W	24	N7	01-450C	51271059.tif	View Log 01-450C	MON	
ALA01	01S04W	24	N8	NN	51271060.tif	View Log NN	MON	
ALA01	01S04W	24	N9	343406	51271061.tif	View Log 343406	MON	
ALA01	01S04W	24	N10	343407	51271062.tif	View Log 343407	MON	
ALA01	01S04W	24	N11	343404	51271063.tif	View Log 343404	MON	
ALA01	01S04W	24	B1	343405	51271064.tif	View Log 343405	MON	
ALA01	01S04W	24	B2	346001	51271065.tif	View Log 346001	MON	
ALA01	01S04W	24	B3	346002	51271066.tif	View Log 346002	MON	
ALA01	01S04W	24	<b>B</b> 4	346003	51271067.tif	View Log 346003	MON	
ALA01	01S04W	24	B5	374208	51271068.tif	View Log 374208	MON	
ALA01	01S04W	24	B5	374209	51271069.tif	View Log 374209	MON	
ALA01	01S04W	24	H1	376013A	51271070.tif	View Log 376013A	IRR	Located 3,100 feet NE of subject site
ALA01	01S04W	24	L1	106930	51271071.tif	View Log 106930	IRR	Well 198 ft deep located at 4082 Piedmont Ave.
ALA01	01S04W	24	L	01-204	51271072.tif	View Log 01-204	BOR	
ALA01	01S04W	24	L	01-204A	51271073.tif	View Log 01-204A	BOR	
ALA01	01S04W	24	L	01-204B	51271074.tif	View Log 01-204B	BOR	
ALA01	01S04W	24	L	01-204C	51271075.tif	View Log 01-204C	BOR	
ALA01	01S04W	24	L2	308393A	51271076.tif	View Log 308393A	MON	
ALA01	01S04W	24		308393A-B	51271077.tif	View Log 308393A-B \$	Site Map	Site map for next 4 boring logs.
ALA01	01S04W	24	L3	308393B	51271078.tif	View Log 308393B	MON	
ALA01	01S04W	24	L4	01-449J	51271079.tif	View Log 01-449J	MON	
ALA01	01S04W	24	L5	01-449K	51271080.tif	View Log 01-449K	MON	
ALA01	01S04W	24	L6	01-449L	51271081.tif	View Log 01-449L	MON	
ALA01	01S04W	24		364640A-D	51271082.tif	View Log 364640A-E	Misc.	Cover sheet for next 4 boring logs.
ALA01	01S04W	24	L7	364640A	51271083.tif	View Log 364640A	MON	
ALA01	01S04W	24	L8	364640B	51271084.tif	View Log 364640B	MON	
ALA01	01S04W	24	L9	364640C	51271085.tif	View Log 364640C	MON	
ALA01	01S04W	24	L10	364640D	51271086.tif	View Log 364640D	MON	
ALA01	01S04W	24	L13	427920	51271087.tif	View Log 427920	MON	
ALA01	01S04W	24	L11	427903	51271088.tif	View Log 427903	MON	
ALA01	01S04W	24	L15	422134A-B	51271089.tif	View Log 422134A-B	Misc.	Cover sheet for next 2 boring logs.
ALA01	01S04W	24	L14	422134A	51271090.tif	View Log 422134A	MON	
ALA01	01S04W	24	L15	422134B	51271091.tif	View Log 422134B	MON	
ALA01	01S04W	24	L16	185638	51271092.tif	View Log 185638	MON	
ALA01	01S04W	24	L17	185639	51271093.tif	View Log 185639	MON	
ALA01	01S04W	24	L18	185640	51271094.tif	View Log 185640	MON	

#### NOTES

: Indentification of WCRs as boring logs only limited to WCRs study area. Well locations in **bold** are shown on Figure 1.

 Table 3

 Non-Groundwater Monitoring Well Summary Information

	<u>Township</u> / <u>Range</u>	<u>Section, Tract, and</u> <u>Well Number</u>	Address	<u>City</u>	<u>Owner</u>	<u>Total Depth</u>	<u>Water Depth</u>	<u>Casing</u> <u>Diameter</u> (Inches)	Drill Date	<u>Use</u>	<u>Database</u>	<u>Distance</u> <u>From</u> <u>Subject Site</u> <u>(Feet)</u>
1	1S/4W	24D1	Webster St. & 45th St.	Oakland	EBMUD	53	25	0	5/75	CAT	ACPWA	1,850
2	1S/4W	24E1	360 42nd Street	Oakland	lies Relief Soc	65	9	12	?	IRR	ACPWA	890
3	1S/4W	24E2	Manila & 42nd St.	Oakland	EBMUD	50	0	0	5/75	CAT	ACPWA	660
4	1S/4W	24E3	42nd St. & Webster St.	Oakland	EBMUD	50	0	0	5/75	CAT	ACPWA	1,400
5	1S/4W	24E9	42nd St.& Manila Ave	Oakland	EBMUD	130	0	5	1/89	CAT	ACPWA	660
6	1S/4W	24E11	42nd St. & Webster St.	Oakland	EBMUD	130	0	5	12/97	CAT	ACPWA	1,400
7	1S/4W	24L1	4082 Piedmont Ave.	Oakland	John Bond	198	21	8	?/79	IRR	BOTH	1,525

Notes: All well locations are shown on Figure 1. DWR = Department of Water Resources ACPWA = Alameda County Public Works Department Both = DWR and ACPWA

## Table 4 Sensitive Receptors Located Within 2,000-Foot Radius of Subject Site

	Search Category	Facility Name	Facility Address	<u>Approximate Distance and</u> <u>Direction from Site</u>	<u>Comments</u>
1	Schools	Archway School	250 41st Street, Oakland	700 feet SSE	K-4th grade
					also Early Childhood
2	Schools	Emerson Elementary School	4803 Lawton Ave., Oakland	1,600 feet NNW	Education Center next door
					also Early Childhood
3	Schools	Piedmont Avenue Elementary School	4314 Piedmont Ave., Oakland	1,900 feet ESE	Education Center next door
4	Schools	Park Day School	370 43rd Street, Oakland	900 feet NWN	
					also Early Childhood
5	Schools	St. Leo the Great School	4238 Howe St., Oakland	1,400 feet ESE	Education Center next door
6	Schools	Oakland Technical Senior High School	4351 Broadway, Oakland	600 feetNNE	
7	Schools	Carter Middle School	4521 Webster St., Oakland	1,900 feet NNW	Multiple listings- Oakland International High School, Bay Area Technology School at this address
8	Schools	Community School-The East Bay	215 Ridgeway Ave., Oakland	950 feet ESE	
9	Schools	Thunder Road Adolescent Chemical Dependency	390 40th St., Oakland	1,000 feet WSW	
10	Hospitals	Kaiser Permanente/ Oakland Medical Center	280 W. MacArthur Blvd., Oakland	1,800 feet SWS	
11	Nursing Homes	Rounseville Rehabilitation Center	210 40th Street Way	950 feet SSE	
12	Nursing Homes	Claremont House	4500 Gilbert, Oakland	1,800 feet NNE	
13	Nursing Homes	Opal Home Care	3917 Opal St., Oakland	1,300 feet SSW	
14	Nursing Homes	Matilda Brown Home	360 42nd St., Oakland	750 feet NNW	
15	Nursing Homes	Piedmont Gardens	110 41st St., Oakland	1,800 feet SSW	
16	Recreation Centers	Temescal Pool	371 45th St., Oakland	1,200 feet NNW	

**FIGURES** 











## Downtown Auto Center

SUBARU 510-547-4424 • TOYOTA 510-547-4635 • SAAB 510-547-4625 4145 Broadway, Oakland, CA 94611 TEL: 510-547-4436 FAXES: Business Office: 510-653-1025 • Finance Department: 510-653-3181

March 4, 2010

## RECEIVED

8:49 am, Mar 12, 2010

Ms. Barbara Jakub Alameda County Department of Environmental Health 1131 Harbor Bay Parkway, Suite 250 Alameda, CA 94502

Alameda County Environmental Health

SUBJECT: PREFERENTIAL PATHWAY SURVEY REPORT CERTIFICATION ACEH Case # RO 0000509 Downtown Toyota 4145 Broadway Oakland, CA

Dear Ms. Jakub:

You will find enclosed one copy of the following document prepared by RGA Environmental, Inc.

• Preferential Pathway Survey Report dated February 23, 2010.

I declare, under penalty of perjury, that the information and/or recommendations contained in the above-mentioned report for the subject site is true and correct to the best of my knowledge.

Should you have any questions, please do not hesitate to call me at (510) 547-4635.

Cordially, Classic Investments, LLC

Ralph Fattore Managing Member

Cc: Mr. LeRoy Griffin, Oakland Fire Department, Emergency Services, 250 Frank Ogawa Plaza, Suite 3341, Oakland, CA 94612 (with enclosure)

0271.L8



Mr. Ralph Fattore Classic Investments, LLC 4145 Broadway Oakland, CA

SUBJECT: PREFERENTIAL PATHWAY SURVEY REPORT ACEHS File #RO-509 Downtown Toyota 4145 Broadway Oakland, CA

Dear Mr. Fattore:

RGA Environmental, Inc. (RGA) is pleased to present this report documenting the results of a preferential pathway study and well survey for the subject site. This report is written in response to a request from Ms. Barbara Jakub of the Alameda County Department of Environmental Health (ACDEH) in a letter dated July 25, 2008. A Site Location Map is attached as Figure 1, and a Site Vicinity Map showing underground utility and cross section locations is attached as Figure 2.

#### BACKGROUND

One 500-gallon underground waste oil tank was removed from the site on February 7, 1992. A detailed discussion of historic investigations at the site is provided in RGA's Subsurface Investigation Work Plan dated July 19, 2007 (document 0271.W1). The known extent of impacted groundwater at and near the subject site associated with the UST release is shown in Figures 5, 6, and 7. MBTEX compounds are generally absent, and when detected do not exceed applicable screening levels with only a few exceptions.

#### PREFERENTIAL PATHWAY SURVEY

Utility maps were obtained from the City of Oakland, the East Bay Municipal Utility District (EBMUD), Pacific Gas & Electric Company (PG&E), and Comcast Cable. The underground utility locations in the site vicinity are shown in Figure 2, and cross sections showing utility trench depths relative to the historic range of water table elevations are shown in Figures 3 and 4. The underground utilities evaluated in the vicinity of the site included storm drain, sanitary sewer, water supply, electrical, cable TV, and telephone. Each is discussed below.

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A 6-inch high curb is used to define street widths for Broadway and Garnet Street in Figure 2. The widths of Broadway and Garnet Street were measured to be 38 feet from sidewalk curb to the street median curb and 30 feet from sidewalk curb to sidewalk curb, respectively, which agrees with the street widths shown on the utility location maps provided by EBMUD and PG&E. The measured distance shown on Figure 2 from the building to the street edge on Broadway and Garnet Street is 10 feet.

## Storm Drain Pipes

Storm drain pipes in the site vicinity are owned and operated by the City of Oakland (City). A utility map obtained from the City showing storm drain pipe diameters and flow directions in the site vicinity is attached as Appendix A. Review of Appendix A and Figure 2 shows that a 27-inch diameter storm drain pipe drains from a manhole located on the east side of Broadway at the intersection of Ridgeway Street to a manhole located on the east side of Broadway at the intersection of 41<sup>st</sup> Street where it connects to a 30-inch diameter storm drain pipe that is located beneath 41<sup>st</sup> Street. The 30-inch diameter storm drain pipe drains to the west beneath 41<sup>st</sup> Street.

The distance from the manhole on the east side of Broadway at the intersection of Ridgeway Street to the manhole located on the east side of Broadway at the intersection of 41<sup>st</sup> Street is approximately 560 feet. The invert elevations are 89.10 and 81.0 feet, respectively, and the calculated depth of burial for each location is 7.10 and 7.22 feet, respectively. Determination of surface elevations for features located between surveyed locations was performed by interpolating between the closest surface elevations as obtained from the City monument maps that are provided in Appendix A. The depth of utility burial shown on Figure 3 is approximately 7.5 feet and was calculated by interpolating the utility elevation based on the slope of the utility as determined by the two closest invert elevations, and the associated interpolated ground surface elevations. The referenced City map legends and map scale are also provided in Appendix A.

The year of construction and the associated construction practices for the storm drain pipe trenches are unknown. According to current guidelines for trench backfill and bedding in section 306-1.2.1 of the City of Oakland 2006 "Greenbook" issued by the City of Oakland Design and Construction Services Department (section 306-1.2.1), the trench width is the pipe diameter plus a 9-inch minimum for each side of the pipe. The trench bedding consists of <sup>3</sup>/<sub>4</sub>-inch diameter crushed rock placed to a depth of 3 inches below the bottom of the outside of the pipe. The crushed rock bedding material surrounds the pipe and extends to a maximum height of 12 inches above the top of the outside of the pipe. Backfill material above the bedding material consists of jetted sand with a diameter equivalent to sieve #20 or greater. A Trench Detail diagram provided by the City of Oakland Design and Construction Services Department is also provided in Appendix A. However it is unknown if any of these utility trenches were constructed using these construction practices.

## Sanitary Sewer Pipes

Sanitary sewer pipes in the site vicinity are owned and operated by the City. The utility map in Appendix A obtained from the City showing storm drain pipe information also shows sanitary sewer pipe diameters and flow directions in the site vicinity. Review of Appendix A and Figure 2 shows that 8-inch sanitary sewer pipes are located along Broadway on both sides of the street (on the western side of the street closest to the subject site and on the opposite (eastern) side of the street from the subject site). The flow direction for both sanitary sewer pipes is to the southwest along Broadway. Manholes for the sanitary sewer pipe located on the western side of Broadway are present at the intersection with Garnet Street, approximately one half the distance between Garnet Street and  $41^{st}$  Street, and at the intersection with  $41^{st}$  Street.

Manholes for the sanitary sewer located to the western side of Broadway are located in the middle of each of the intersections of Broadway with Garnet and 41<sup>st</sup> Streets. The horizontal distance between the manholes for these street intersections is approximately 700 feet, the invert elevation for each of the manholes is 89.45 and 78.97 feet, and the calculated depth to the bottom of the sanitary sewer pipe from each of the manholes is approximately, 8.22 and 9.16 feet, respectively. Manholes for the sanitary sewer located near the eastern side of Broadway are located in the middle of each of the intersections of Broadway with Ridgeway and 41<sup>st</sup> Streets. The horizontal distance between the manholes for these street intersections is approximately 560 feet, the invert elevation for each manhole is 87.04 and 84.48 feet, and the calculated depth to the bottom of the sanitary sewer pipe from each of the manholes is approximately 9.16 and 7.74 feet, respectively. The interpolated depths of pipe burial for the bottom of the pipe at cross section A-A' for the sanitary sewer pipes on the west and east side of Broadway are each approximately 8.0 feet.

An abandoned 8-inch sanitary sewer pipe is located at the center of Broadway. Manholes for the abandoned sanitary sewer pipe are located at the intersection of Broadway with Ridgeway Street and also at the intersection with 41<sup>st</sup> Street. The invert elevation for the manhole at the intersection of Broadway with Ridgeway is 86.2 feet and the calculated depth to the bottom of the sanitary sewer pipe is approximately 10.0 feet, assuming an elevation of 96.20 feet at the middle of the intersection of Ridgeway Street and Broadway. Because of the limited flow line data available, it is assumed that the flow direction was to the southwest, as observed in the two sanitary sewer lines located along Broadway.

An additional 8-inch diameter sanitary sewer pipe is located at the center of Garnet Street, beginning at a location approximately 90 feet west of Broadway, and flowing west to a manhole located at the intersection of Garnet Street and Emerald Street. The horizontal distance between the two manholes is 220 feet, the invert depth for each manhole is 88.0 and 85.80 feet and the

calculated depth to the bottom of the sanitary sewer pipe for each of the manholes is approximately 8.91 and 9.17 feet. The interpolated depth of pipe burial for the bottom of the pipe at cross section B-B' for the sanitary sewer pipe in Garnet Street is approximately 9.7 feet.

Utility depth measurements were obtained as described above for storm drain pipes by comparing sanitary sewer flow line elevations for manholes for the utility segments of interest that were provided on City of Oakland Storm Drain and Sanitary Sewer Map number 132 with nearby ground surface elevations obtained from City of Oakland elevation map number 286. Determination of surface elevations for features located between surveyed locations was performed by interpolating between the closest surface elevations. Similarly, the depth of utility burial shown on Figure 4 was calculated by interpolating the utility elevations based on the slope of the utility as determined by the two closest invert elevations. Copies of the referenced maps and their legends and scale are provided in Appendix A.

As discussed above for storm drain trenches, the year of construction and the associated construction practices for the sanitary sewer pipe trenches are unknown. The current guidelines for trench backfill and bedding are set forth in section 306-1.21 of the City of Oakland 2006 "Greenbook" issued by the City of Oakland Design and Construction Services Department. The Greenbook specifies that the trench width is the pipe diameter plus a 9-inch minimum for each side of the pipe. The trench bedding consists of <sup>3</sup>/<sub>4</sub>-inch diameter crushed rock placed to a depth of 3 inches below the bottom of the outside of the pipe. The crushed rock bedding material surrounds the pipe and extends to a maximum height of 12 inches above the top of the outside of the pipe. Backfill material above the bedding material consists of jetted sand with a diameter equivalent to sieve #20 or greater. A Trench Detail diagram provided by the City of Oakland Design and Construction Services Department is provided in Appendix A. However it is unknown if any of these utility trenches were constructed using these construction practices.

## Water Supply Pipes

Water supply pipes in the site vicinity are owned and operated by the East Bay Municipal Utility District (EBMUD). P&D personnel spoke with Mr. Pat Clinton of EBMUD on April 25, 2005, regarding standard trench details. Mr. Clinton stated that the depth of burial for EBMUD water supply pipes is typically 3 feet below the surface for main pipes, and 2 to 3 feet below the surface for laterals. Backfill is typically 3 inches of sand placed below the pipe, and 3 to 6 inches of sand placed above the pipe. If the pipe is located in the street, aggregate baserock is used as fill from the top of the sand to the bottom of the concrete or asphalt driving surface.

On September 3, 2008 Mr. Rolly Mercurio of EBMUD provided a plan view map (Map 1491B488) in three pieces of the EBMUD water supply pipes in the site vicinity. No scale was provided with the map. In addition, on October 3, 2008 Mr. Mercurio provided additional maps, drawings with cross sections, and records for EBMUD water supply pipes in the site vicinity. All of the

documents provided by Mr. Mercurio are attached as Appendix B. In previous communications with Mr. Mercurio, he has stated that as a general rule the depth of burial for EBMUD water supply pipes is typically 3 to 4 feet below the ground surface, trench width is typically 44 inches, and pea gravel is typically used as bedding below the pipes. Review of Appendix B and Figure 2 shows that water supply pipes are located along Broadway on both sides of the street. On the western side of the street the utility is shown approximately 25 feet from the property line, and on the opposite (eastern) side of the street the utility is shown approximately 19 feet from the property line. The pipe diameters are 6 inches along the west side of Broadway, adjacent to the site, and 17.8 inches along the east side of Broadway in the vicinity of Ridgeway Avenue and 12 inches in the vicinity of 41<sup>st</sup> Street. The calculated depth of the 6-inch diameter pipe beneath the west side of Broadway at cross section A-A' is unknown but is estimated to be approximately 3.0 feet, as determined from the cross section shown in EBMUD map number 1491B488, Work Order E-29075. The elevation at the bottom of the pipe at that location is approximately 94.5 feet. The calculated depth of the 17.8-inch diameter pipe beneath the east side of Broadway at cross section A-A' is 5.40 feet, as determined from the cross-section shown in EBMUD map number W-1462, sheet 1 of 3. The elevation at the bottom of the pipe at that location is approximately 87.6 feet. The water pipe depths of burial in Broadway are shown in Figure 3.

Review of Figure 2 and Appendix B shows that a 6-inch diameter water supply pipe is located beneath Garnet Street and is connected to the 6-inch diameter pipe located beneath Broadway at the intersection of Garnet Street and Broadway. The interpolated depth of the bottom of the 6-inch diameter pipe beneath the west side of Broadway at cross section B-B' is estimated to be approximately 3.0 feet, as determined from the cross section shown in EBMUD map number 1491B488, Work Order E-29075. The elevation of the bottom of the pipe at this location is approximately 95.0 feet. The water pipe depth of burial in Garnet Street is shown in Figure 4.

## Natural Gas Pipes

Natural gas pipes in the site vicinity are owned and operated by PG&E. A utility map obtained from PG&E showing the horizontal locations of natural gas pipes in the site vicinity is attached as Appendix C.

On October 10, 2008, RGA contacted Mr. Anthony Thompson of PG&E for information about depths and trench construction practices for the natural gas pipes. Mr. Thompson stated that PG&E natural gas pipes are typically buried in trenches two to three feet in total depth, that trench wideths are typically 36 inches, and that two to four inches of sand fill is typically placed beneath the pipes. Mr. Thompson also stated that onsite backfill is used if it passes their soil testing requirements. Otherwise 12 inches of imported material is used for backfill on top of the pipes. For trenches containing multiple utilities, gas lines are located at the top, followed by cable TV, then by electric. He stated that it is impossible to know specific trench details without digging at the site.

Review of Appendix C and Figure 2 shows that a 16-inch-diameter steel natural gas pipe is located along the center of Broadway 5 feet from the western edge of the street median. In addition, a 2-inch diameter steel natural gas pipe is located approximately 14 feet from the property line on the east side of Broadway. A 2-inch diameter plastic line is located 16 feet from the southern edge of Garnet Street. The measured depths of the natural gas pipes were not verified in the field, and a default depth of burial of 4 feet was assumed for all natural gas pipes in the cross sections ( see Figures 3 and 4).

## Electrical Wires

Electrical wires in the site vicinity are owned and operated by PG&E. A utility map was obtained from PG&E showing the horizontal locations of electrical wires in the site. On October 23, 2008, RGA contacted Mr. Osami Takeshima of PG&E about depths and trench construction practices for electrical wires. Mr. Takeshima stated that PG&E electrical wires are typically buried under 30 inches of sand backfill, and that AT&T and PG&E electrical wires are generally buried in the same trench when they are not located above ground on utility poles. Electrical wires are buried at least 12 inches below the telephone wires. According to Mr. Takeshima, the only way to determine the actual depth of burial for electrical wires is to conduct a potholing investigation. USA markings indicate that PG&E electrical lines share the same trench phone lines located under the sidewalk for the western side of Broadway, 4 feet away from the subject site building.

Review of Appendix C and Figure 2 shows below ground electrical wires in the site vicinity are located on the western and eastern sides of Broadway near the sidewalk curb, and on the eastern side of Broadway approximately 25 feet from the eastern curb of Broadway. No underground electrical wires are located in Garnet Street. Underground electrical wire locations shown in Figures 2 and 3 are based on the map provided by PG&E. A trench depth of 4.0 feet below grade was assumed for these trenches, as shown on Figure 3.

## **Telephone Wires**

Telephone wires in the site vicinity are owned and operated by AT&T California (AT&T). On December 18, 2006, RGA personnel spoke with Ms. Pauline Williams of AT&T. Ms. Williams stated that trenches for telephone wires are typically 24 inches in total depth for telephone only trenches, and 36 inches in total depth for joint trenches. She stated that these trenches typically have between one to three inches of sand bedding, and 12 inches of sand above the utility.

On October 10, 2008, RGA personnel spoke with Ms. Karen Brinkman of AT&T. Ms Brinkman could not provide any information on trench construction in the vicinity of the subject site for underground phone lines and suggested that a private utility consultant be hired to further investigate buried phone lines in the vicinity of the subject site. USA markings indicate that the phone line is located under the sidewalk for the western side of Broadway, 4 feet away from the building. The measured depth of the conduit for the telephone wires was not verified in the field, and a default depth of burial of 4 feet was assumed for joint telephone and electric wire conduit trench in the cross section A - A' (see Figure 3). Along Garnet Street, a telephone only trench was identified to a utility pole located 8 feet east of the Garnet Street dealership building corner. The telephone trench did not extend to cross-section B - B' (see Figure 2).

## Other Buried Utilities

On October 9, 2008 RGA received a map from Ms. Kristi Hamaguchi of Comcast Cable showing the locations of buried Comcast Cable wires in the vicinity of the subject site. No scale was provided with the map. A copy of the map is provided as Appendix D. The Comcast Cable wire location is shown on Figure 2. Review of Appendix D and Figure 2 shows that Comcast Cable wires are buried near the center of Broadway. No Comcast Cable buried utilities are shown to be present in Garnet Street. In addition, Comcast Cable buried utilities were identified beneath the sidewalk on the western side of Broadway along a portion of the east side of the building. No trench construction information was available from Comcast Cable. A trench depth of 4.0 feet below grade was assumed for this trench, as shown on Figure 3.

## HYDROGEOLOGY

Based on review of regional geologic maps from U. S. Geological Survey Professional Paper 943, "Flatland Deposits - Their Geology and Engineering Properties and Their Importance to Comprehensive Planning," by E. J. Helley and K. R. Lajoie, 1979, the subject site is underlain by Late Pleistocene Alluvium (Qpa), which is described as weakly consolidated slightly weathered poorly sorted irregularly interbedded clay, silt, sand, and gravel.

There are no groundwater monitoring wells at the site to provide historical groundwater level measurements. Groundwater was encountered in the UST pit in 1992 at a depth of 10 feet bgs. Groundwater was reported by others to have been encountered at a depth of 11 feet bgs in 9 of the 14 boreholes associated with the February 1994 subsurface investigation at the site. Groundwater was reported to not have been encountered in the remaining 5 boreholes. No subsequent water levels were reported in the boreholes for the investigation, and no boring logs were available for review with the report. In borings drilled at the site in October 1999 by others, water was reported to have been encountered on the boring logs at depths ranging from 9.5 to 13.8 feet bgs, and was subsequently reported on the boring logs at depths ranging from 8.7 to 12.8 feet bgs. In September and October 2008 groundwater was encountered at the site during drilling of

boreholes B5 and B7 at depths of 10.5 and 25.0 feet bgs, respectively, while groundwater was not encountered during drilling of borehole B6. Water levels were subsequently measured in B5 and B6 after completion of drilling at depths of 9.6 and 8.7 feet bgs, respectively. The depth to water was not subsequently measured in continuously cored borehole B7.

At the nearby site at 3943 Broadway, approximately 850 feet south of the subject site, water level measurements reported between November 2001 and June 2008 in 12 groundwater monitoring wells typically ranged between approximately 8 and 11 feet bgs, with most measurements between either 8 and 10 feet bgs or 9 and 11 feet bgs. The range of groundwater levels from approximately 9 to 11 feet bgs, which encompasses the more approximate range of water levels measured in the site vicinity and at the subject site, is shown on the two cross sections presented in Figures 3 and 4.

Based on water level measurements in the groundwater monitoring wells at 3943 Broadway, the groundwater flow direction calculated by others in the vicinity of the subject site has ranged from the west-southwest to the southwest. Nearby water surfaces that are located downgradient from the subject property include Glen Echo Creek, located approximately 2,200 feet to the southeast of the site and Lake Merritt, located approximately 8,200 feet to the south.

## DISCUSSION AND RECOMMENDATIONS

Review of Figure 3 shows that groundwater levels appear to have historically intersected the bottom of the sanitary sewer trenches located on the western and eastern sides of Broadway, and the abandoned sanitary sewer trench located near the center of Broadway. Similarly, review of Figure 4 shows that groundwater levels appear to have historically intersected the sanitary sewer trench in Garnet Street. Figures 5 through 7 show the known extent of petroleum hydrocarbons in groundwater at the subject site, in addition to the groundwater flow direction in the vicinity of the subject site. Based on the west-southwesterly to southwesterly groundwater flow direction in the vicinity of the site, groundwater flow is away from both Broadway and Garnet Street.

Review of Figures 5 through 7 shows that only TPH-BO/MO appears to have extended beneath Broadway at concentrations exceeding the applicable ESL value of 100 ug/L. Based on the known extent of petroleum hydrocarbons in groundwater in the vicinity of the subject site and the observed attenuation of TPH-BO/MO concentrations in groundwater in the vicinity of Broadway, the only utility trench that appears to have potentially been impacted by TPH-BO/MO petroleum hydrocarbons is the sanitary sewer trench located on the west side of Broadway. Based on the historic water levels shown in Figure 3, groundwater appears to have entered the trench only intermittently.

Based on the intermittent presence of groundwater in the sanitary sewer trench on the west side of Broadway, the rates of attenuation observed in TPH-BO/MO concentrations between the former UST pit vicinity and the sanitary sewer trench located on the west side of Broadway, and also based

on the general absence of MBTEX compounds in groundwater samples collected at the site, the potential for preferential movement of contaminants of concern in utility trenches is low. Based on the results of this investigation, RGA recommends that no further work be performed.

## DISTRIBUTION

A copy of this report will be uploaded to the ACDEH website, in accordance with ACDEH requirements. In addition, a copy of this report will be uploaded to the GeoTracker database.

## LIMITATIONS

This report was prepared solely for the use of Classic Investments, LLC. The content and conclusions provided by RGA in this assessment are based on information collected during our investigation, which may include, but not be limited to, visual site inspections; interviews with the site owner, regulatory agencies and other pertinent individuals; review of available public documents; subsurface exploration and our professional judgment based on said information at the time of preparation of this document. Any subsurface sample results and observations presented herein are considered to be representative of the area of investigation; however, geological conditions may vary between borings and may not necessarily apply to the general site as a whole. If future subsurface or other conditions are revealed which vary from these findings, the newly revealed conditions must be evaluated and may invalidate the findings of this report.

This report is issued with the understanding that it is the responsibility of the owner, or his representative, to ensure that the information contained herein is brought to the attention of the appropriate regulatory agencies, where required by law. Additionally, it is the sole responsibility of the owner to properly dispose of any hazardous materials or hazardous wastes left onsite, in accordance with existing laws and regulations.

This report has been prepared in accordance with generally accepted practices using standards of care and diligence normally practiced by recognized consulting firms performing services of a similar nature. RGA is not responsible for the accuracy or completeness of information provided by other individuals or entities that is used in this report. This report presents our professional judgment based upon data and findings identified in this report and interpretation of such data based upon our experience and background, and no warranty, either express or implied, is made. The conclusions presented are based upon the current regulatory climate and may require revision if future regulatory changes occur.

Should you have any questions, please do not hesitate to contact us at (510) 658-4363.

Sincerely,

RGA Environmental, Inc.

Paul H. King Professional Geologist # 5901 Expires: 12/31/11

Karin Schroeter Project Manager

Attachments:

- Figure 1 Site Location Map
- Figure 2 Site Vicinity Map Showing Underground Utility And Cross Section Locations
- Figure 3 Cross Section A-A' Showing Utility Trench Locations and Depths
- Figure 4 Cross Section B-B' Showing Utility Trench Locations and Depths
- Figure 5 Site Vicinity Map Showing Underground Utilities And TPH-G Concentrations in Shallow Groundwater
- Figure 6 Site Vicinity Map Showing Underground Utilities And TPH-D Concentrations in Shallow Groundwater
- Figure 7 Site Vicinity Map Showing Underground Utilities And TPH-BO/MO Concentrations in Shallow Groundwater

Appendix A - City of Oakland Storm Drain and Sanitary Sewer Utility Maps and Ground Surface Elevation Maps

Appendix B - EBMUD Water Supply Utility Maps, Drawings with Cross Sections, and Records

Appendix C - PG&E Natural Gas and Electricity Utility Maps

Appendix D - Comcast Utility Map

PHK/mld/sjc/sf 0271.R3



**FIGURES** 















## **APPENDIX** A

**City of Oakland Storm Drain and Sanitary Sewer Utility Maps and Ground Surface Elevation Maps** 

CITY OF OAKLAND (ERIE) STORM DRAIN & SANITARY 08 F1.95.7-0 FL 900-07 F1.85 SEWER MAP 163165 0 , N 80-401 30 250% MAP#132 P.1062 207.16 1. 39. 6 90°0000 NORTH 30 1=100 SCALE : (2) Abenderedat 30 1026 F Services. 4000 601 30 F. 91.96 GARNET 8 10000 A 401-11 20 10De F1.87.45 60 S 0 Seg X 2731, 71-D 01.85 12 (Es 5 4.4. 80-105-00 ROUTE 646.84 2 87 6 . heardane 500 HIGHWAY OpietA EMERALD 100 100 A 2 STATE C 50 Sector Sector 512 531.77 30' 4/57 :30 1418.4 GA F1.77.65 PL DESS (8007, NA













## **APPENDIX B**

**EBMUD** Water Supply Utility Maps







## **APPENDIX C**

PG&E Natural Gas and Electricity Utility Maps







## **APPENDIX D**

**Comcast Utility Map** 

