



April 12, 2006

Ms. Teresa Clarke
Affordable Housing Associates
1250 Addison Street, Suite G
Berkeley, California 94702

RE: Letter Report – Groundwater Sampling
160 14th Street, Oakland, California
ACC Project No. 6179-014.02

Dear Ms. Clarke:

ACC Environmental Consultants (ACC) has prepared this letter report specifically summarizing the findings of grab groundwater sampling conducted during previously scheduled soil sampling and profiling activities at 160 14th Street, Oakland, California (Figure 1). Soil and grab groundwater sampling was performed in accordance with ACC's April 5, 2006 *Soil and Groundwater Management Plan*. Secondary goals were to profile soil for offsite disposal and to assess the need to treat groundwater extracted during potential site dewatering.

The groundwater characterization work included advancing three soil borings to total depths of 12 to 16 feet below ground surface (bgs) in representative locations chosen by ACC. These grab groundwater sample locations were chosen based primarily on previous groundwater investigation findings and the likely location of dewatering wells.

BACKGROUND

The subject property is currently occupied by an asphalt-paved parking lot. ACC conducted a Phase I Environmental Site Assessment (ESA) on the subject property in April 2001. The Phase I ESA identified former underground storage tanks at the Site and a dry cleaning business located adjacent to the Site to the north at 190 14th Street.

In order to evaluate potential subsurface impacts from the former USTs and offsite dry cleaning operation, ACC advanced three exploratory soil borings in July 2001 and collected grab groundwater samples in two soil borings designated SB1 and SB3 at a depth of 16 to 20 feet bgs using a limited-access Geoprobe[®] drill tool. Grab groundwater sample analytical results from the July 2001 investigation are summarized in Table 1.

TABLE 1 - WATER SAMPLE ANALYTICAL RESULTS - 2001

Sample No.	TPHg (µg/L)	HVOCs (µg/L)	TEPH (µg/L)	B/T/E/X (µg/L)
SB1-W	78	6.1 [†]	340* < 690**	5.7/ <0.5/ 1.9/ <0.5
SB3-W	N/A	2.6 [†]	N/A	N/A

Notes: µg/L = micrograms per Liter (approximately equivalent to parts per billion)

**TEPH as diesel*

*** TEPH as motor oil*

† = All concentrations of HVOCs for both water samples were below laboratory detection limits with the exception of tetrachloroethene. The value in the table is for that compound.

FIELD PROCEDURES - 2006

Prior to field work, a soil boring permit was obtained from the Alameda County Public Works Agency, Water Resources Section and the area was cleared by Underground Service Alert. On April 4, 2006, ACC advanced six exploratory soil borings to depths ranging between 12 to 20 feet bgs using a truck-mounted Geoprobe[®] drill rig. Grab groundwater samples were collected from each of soil borings B-1, B-3, and B-5 and representative soil samples were collected to profile soil for offsite disposal. Soil sample analytical results will be summarized under separate cover.

Each grab groundwater sample was collected in laboratory supplied, VOA vials. All samples were properly identified with labels and stored in a pre-chilled, insulated container to be transported following chain of custody protocol to Curtis & Tompkins, a state-certified analytical laboratory. The grab groundwater samples were analyzed for total petroleum hydrocarbons as gasoline (TPHg), benzene, toluene, ethylbenzene, and total xylenes (BTEX), methyl tertiary butyl ether (MTBE) by EPA Method 8015, 8020/8021, and halogenated volatile organic compounds (HVOCs) by EPA Method 8260.

SUBSURFACE CONDITIONS

The surface of the area investigated was covered by concrete to an approximate depth of 6 inches bgs. Subsurface soil consisted primarily of silt and sandy silt to an average depth of 12 feet bgs. Sand was generally observed from 12 feet bgs to 20 feet bgs. Soils were uniform across the area of the investigation (Figure 2).

ANALYTICAL RESULTS

HVOC analytical results are summarized in Table 2 and TPHg/BTEX/MTBE results are summarized in Table 3. Reported HVOCs included tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2-Dichloroethene (Cis-DCE), and vinyl chloride. A copy of the analytical results and chain of custody record is attached. The sample designation indicates the soil boring location. Boring locations are illustrated on Figure 2.

TABLE 2 - HVOC ANALYTICAL RESULTS - 2006

Sample No.	PCE ($\mu\text{g/L}$)	TCE ($\mu\text{g/L}$)	Cis-DCE ($\mu\text{g/L}$)	Vinyl Chloride	HVOCs ($\mu\text{g/L}$)
B-1 Water	780	33	<2.0	<2.0	<RL
B-3 Water	68	5.3	16	8.7	<RL
B-5 Water	820	42	<5.0	<5.0	<RL

*Notes: All results are in $\mu\text{g/L}$ = micrograms per Liter (approximately equivalent to parts per billion)
 All concentrations of other standard HVOCs were below laboratory reporting limits*

TABLE 3 - TPHg/BTEX ANALYTICAL RESULTS - 2006

Sample Name	TPHg	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE
B-1 Water	960	<2.0	18	<2.0	2.8	<2.0
B-3 Water	18,000	690	82	990	2,070	<3.6
B-5 Water	1,100	<5.0	<5.0	<5.0	6.6	<5.0

Notes: All results are in $\mu\text{g/L}$ = micrograms per Liter (approximately equivalent to parts per billion)

DISCUSSION

ACC collected grab groundwater samples in soil borings B-1, B-3, and B-5. Grab groundwater samples were collected in soil borings B-1 and B-5 due to their locations adjacent to the dry cleaners located immediately north of the Site and relative to the former USTs (Figure 2). A grab groundwater sample was also collected in soil boring B-3 due to its location immediately adjacent to the former USTs. Collectively, the three grab groundwater samples are representative of groundwater conditions across approximately half of the Site and should provide current groundwater quality data necessary to assess the need to polish any water generated during site dewatering.

Grab groundwater sample analytical results from soil boring B-1, collected in the north corner of the Site, reported 960 micrograms per Liter ($\mu\text{g/L}$) TPHg. Reported BTEX was insignificant. PCE was reported at 780 $\mu\text{g/L}$ and TCE was reported at 33 $\mu\text{g/L}$. Grab groundwater sample analytical results from soil boring B-3, collected immediately adjacent to the former UST excavation, reported 18,000 $\mu\text{g/L}$ TPHg, 690 $\mu\text{g/L}$ benzene, 82 $\mu\text{g/L}$ toluene, 990 $\mu\text{g/L}$ ethylbenzene, and 2,070 $\mu\text{g/L}$ total xylenes. PCE was reported at 68 $\mu\text{g/L}$ with lower reported concentrations of TCE, DCE, and vinyl chloride. Grab groundwater sample analytical results from soil boring B-5, collected in the middle of the Site at the north end, reported 1,100 $\mu\text{g/L}$ TPHg and insignificant BTEX. PCE was reported at 820 $\mu\text{g/L}$ and TCE was reported at 42 $\mu\text{g/L}$.

Analytical results generally indicated that concentrations of constituents of concern previously reported in groundwater samples collected in July 2001 have increased significantly. TPHg and BTEX were reported at elevated concentrations in the grab groundwater sample collected

immediately adjacent to the former UST excavation and at much lower concentrations in the two groundwater samples collected approximately 50 feet from the former UST excavation. BTEX concentrations were low to nondetect in the grab groundwater samples collected in soil borings B1 and B-5 indicating that natural attenuation processes at the Site are actively degrading residual BTEX.

PCE, formerly present at insignificant concentrations, was reported at concentrations approximately two orders of magnitude greater. ACC believes that PCE impact in groundwater originates from the dry cleaners located immediately north of the subject property. While the dry cleaners is likely downgradient or crossgradient of the Site, PCE and some of the daughter products produced during the degradation of PCE, were reported as much as 100 feet onto the Site.

CONCLUSIONS

Based on the analytical results of the grab groundwater samples collected on April 4, 2006, and comparison to grab groundwater sample analytical results obtain in July 2001, ACC concludes:

- Elevated TPHg and BTEX concentrations exist in groundwater in proximity to the former UST excavation but attenuate rapidly with distance from this suspect soil source;
- Elevated PCE concentrations exist in groundwater along the northwest end of the Site and likely originate from the dry cleaners immediately adjacent to the subject property;
- The majority of soil containing residual petroleum hydrocarbons associated with the former USTs will be excavated as part of scheduled site development and disposed offsite, thus removing much of the source of petroleum hydrocarbon impact reported in B-3 Water; and
- If performed, Site dewatering would serve the dual purpose of successfully lowering the groundwater table below the depth of anticipated soil excavation and remediating impacted groundwater at the Site.

RECOMMENDATIONS

Based on the conclusions of subsurface investigation performed to date, ACC recommends:

- Applying for a wastewater discharge permit from the East Bay Municipal Utility District (EBMUD) as soon as feasible; and
- Confirming with EBMUD the potential need to polish extracted groundwater with granulated activated carbon prior to discharge; and
- Pursuing cost recovery associated with dealing with PCE in extracted groundwater.

Soil sample analytical results are still pending and will be submitted for review under separate cover.

Ms. Teresa Clarke
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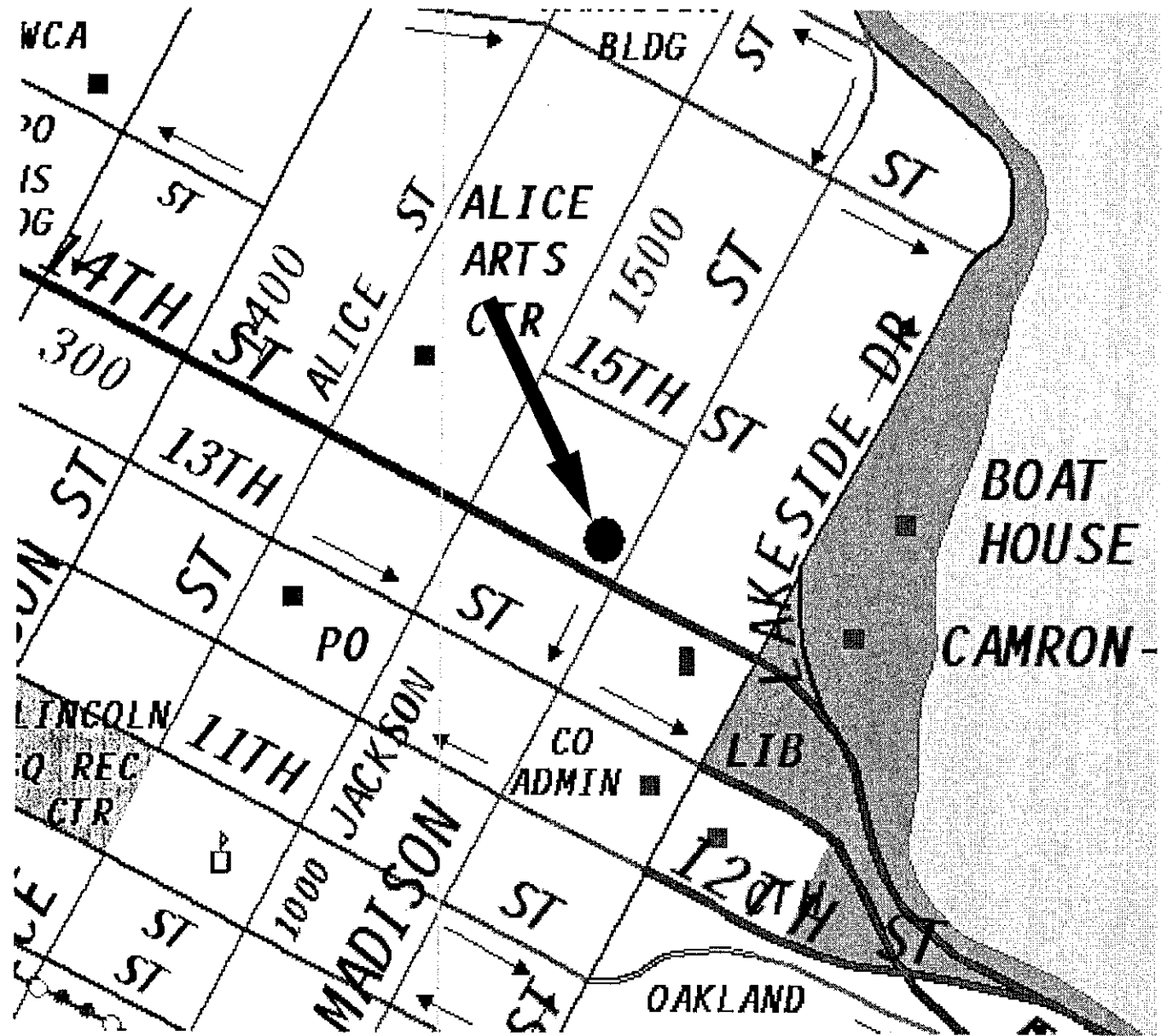
If you have any questions regarding this report or the work performed at the site, please contact me at (510) 638-8400, extension 109.

Sincerely,


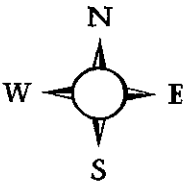
A handwritten signature in black ink that reads "David DeMent". The signature is written in a cursive style with a large initial "D" and a stylized "M".

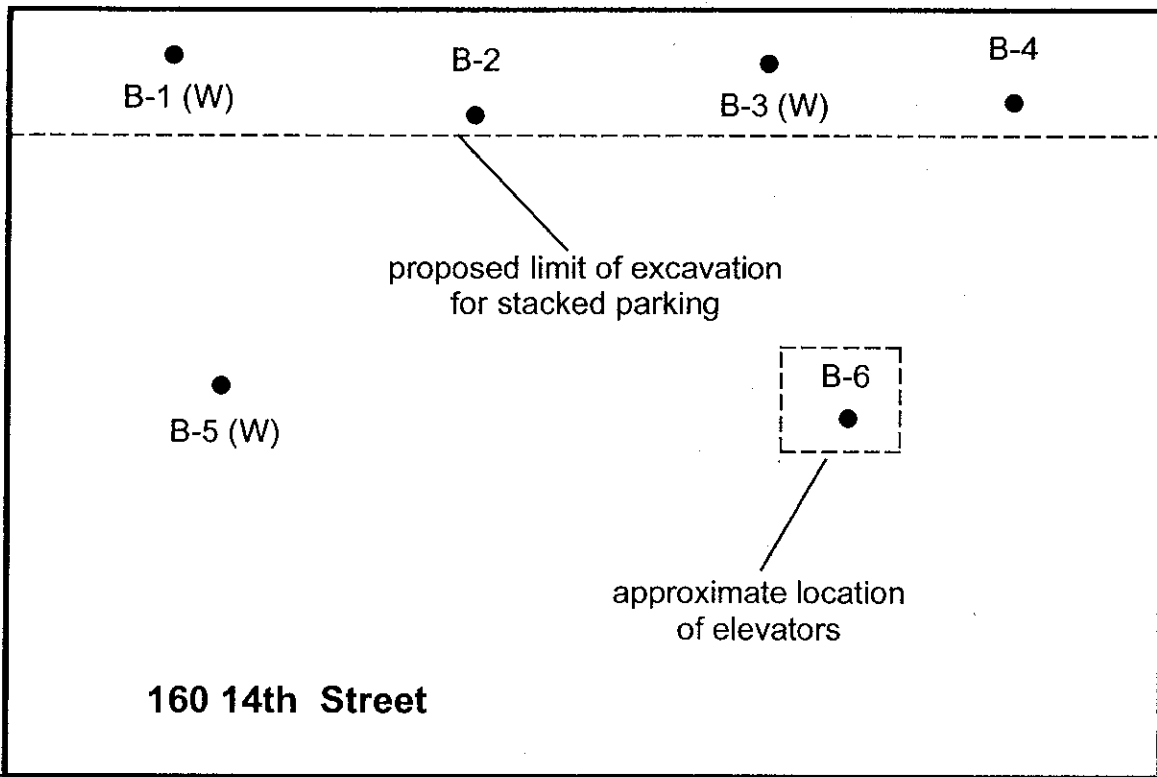
David DeMent, PG, REA II
Environmental Division Manger

Enclosures



Source: The Thomas Guide, Bay Area Metro, 2004

Title: Location Map 160 14th Street Oakland, California	
Figure Number: 1	Scale: None
ACC Project: 6179-014	Drawn By: TRB
 Northern California 7977 Capwell Drive, Suite 100 Oakland, CA 94621 (510) 638-8400	Date: 3/24/06 



Madison Street

sidewalk


160 14th Street

sidewalk

14th Street

Legend

- B-6 ● Soil Boring Location
- (w) - Grab Groundwater Sample

Title: Site Plan and Sample Locations 160 14th Street Oakland, California	
Figure Number: 2	Scale: 1" = 25'
Project Number: 6179-014.02	Drawn By: DRD
 7977 Capwell Drive, Suite 100 Oakland, California 94621 (510) 638-8400 Fax: (510) 638-8404	Date: 4/12/06
	