September 30, 2011

Ms. Karel Detterman
Hazardous Materials Specialist
Alameda County Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502

Subject: **Site Investigation Workplan**
Alameda Police Department – Fuel Leak Case No. RO0003024 and Geo Tracker Global ID T0600100045
1555 Oak Street
Alameda, California
AMEC Project No. 4096114861 01

Dear Ms. Detterman:

AMEC Environment & Infrastructure (AMEC), is providing the *Site Investigation Work Plan* for your review. This work plan was prepared to fulfill the requirements of the Alameda County Department of Environmental Health request, dated June 30, 2011.

I declare, under penalty of perjury, that the information and/or recommendations contained in the work plan are true and correct to the best of my knowledge.

Yours very truly,

Jesse Barajas
City of Alameda
Public Works Department

October 3, 2011

Ms. Karel Detterman
Hazardous Materials Specialist
Alameda County Environmental Health
1131 Harbor Bay Parkway
Alameda, California 94502

Subject: **Revised Site Investigation Workplan**
Alameda Police Department – Fuel Leak Case No. RO0003024 and Geo Tracker Global ID T0600100045
1555 Oak Street, Alameda, California
AMEC Project No. 4096114861 01

Dear Ms. Detterman:

On behalf of the City of Alameda Public Works Department (the City) AMEC Environment & Infrastructure (AMEC) is pleased to submit this Site Investigation Workplan to the Alameda County Environmental Health Department (the County) for a soil and groundwater investigation in the area of the 6,000-gallon underground storage tank (UST) located at the above-referenced site in Alameda, California (the Site; Figure 1). This workplan is in response to the County to the City letter dated June 30, 2011.

The workplan presents a plan to define the extent of soil and groundwater contamination at the Site as a result of a documented release to groundwater from the UST. Analytical results of a groundwater sample collected from an existing compliance monitoring well indicated the presence of Total Petroleum Hydrocarbons as Diesel (TPH-D) at a concentration of 1,600 micrograms per liter (µg/L).

SCOPE OF WORK

AMEC proposes to conduct a subsurface investigation of potential soil and groundwater impacts at the Site. The investigation will consists of installing soil borings and collecting soil and groundwater samples. AMEC will provide environmental assessment activities, as described below.

PRELIMINARY WORK

The following tasks will be completed as part of the pre-field activities.

- AMEC will prepare a Health and Safety Plan (HASP) in general accordance with the requirements of the Occupation Safety and Health Administration for field activities.
- AMEC will obtain a drilling permit from the County.
- AMEC will conduct Site preparation and utility clearance activities, which will include the following:

Correspondence:
AMEC
1465 North McDowell Boulevard
Suite 200
Petaluma, CA 94954
USA
Tel 707/793-3800
Fax 707/793-3900

- Site visit to observe the proposed drilling locations for access issues, evidence of overhead and/or underground utilities, permanent structures and other site features.

- Pre-mark boring locations for Underground Service Alert (USA) clearance. Soil borings will be located and marked in the field using a Global Positioning System (GPS) device. In accordance with state law, AMEC will contact USA a minimum of 48-hours prior to commencing the field activities.

- AMEC will retain a licensed utility locator to identify and mark underground utilities using a combination of 1) ground penetrating radar (GPR), 2) electromagnetic (EM) metal detection, and 3) Radio Frequency (RF) pipe location.

FIELD INVESTIGATION

AMEC will advance two soil borings at the Site. The borings will be completed to collect soil and groundwater samples at locations downgradient of the UST and the existing compliance monitoring well. The drilling will be conducted by a C-57 licensed drilling contractor under the oversight of an AMEC field geologist. The proposed boring locations are presented on the attached Figure 1. Final boring locations will be adjusted based on the results of the utility location assessment, if needed.

The borings will be advanced to groundwater using a direct push drill rig equipped with 1-7/8-inch-diameter hollow drive rod. Groundwater is anticipated to occur at depths between 10 and 20 feet below ground surface (bgs). Soil samples will be collected continuously using a 1-7/8-inch-outside-diameter steel rod lined with acetate liners Retrieved soil will be screened for the presence of volatile organic compounds (VOCs) using an organic vapor meter (OVM) or equivalent instrument. OVM readings will be noted on the field boring logs. The soil sample with the highest OVM readings from each boring will be selected for analysis; if no OVM readings are detected, then the soil sample at the soil/groundwater interface will be selected for analysis. The liners will be extracted and sealed with Teflon end sheets and plastic caps. The sealed sample tubes will be labeled with a unique sample number and placed into a cooler with ice packs with the appropriate chain-of-custody documentation. The samples will be submitted to the laboratory as described below.

Boring logs will be prepared for the borings using the Unified Soil Classification System (USCS) and Munsell soil color charts. The geologist will note and record the USCS and Munsell information on boring logs, along with other notable sample features such as organic vapor concentrations obtained using the OVM, field observations of staining, odors, or other soil characteristics.

The drilling and sampling equipment will be pre-cleaned prior to use in the field. Additionally, the sampling equipment will be washed and rinsed between boring locations. The decontamination procedure consists of a four-step process: 1) washing with a solution of non-phosphate detergent (e.g., Alconox®) and tap water, 2) a tap water rinse, 3) a second tap water rinse, and 4) a distilled water rinse.

Upon completion of the borings, a grab groundwater sample will be collected from each location. The groundwater samples will be collected using a disposable Teflon bailer and decanted into the appropriate laboratory supplied sample containers.

The existing compliance monitoring well will be redeveloped by bailing a minimum of 10 volumes of groundwater from the well casing. Upon completion of the development, a groundwater sample will be collected from the well using a disposable bailer and decanted into the appropriate laboratory supplied

sample containers. Water quality parameters will be monitored during development (pH, temperature, electrical conductivity, and turbidity).

Upon conclusion of the boring program, the boreholes will be backfilled to ground surface with a neat cement slurry and topped with a concrete cap. Investigation derived wastes (IDW) including excess soil cuttings, decontamination water and groundwater extracted during well development will be placed in 55-gallon drums, labeled and staged on site pending disposal. To the extent practicable, field activities will be conducted in a manner that minimizes IDW.

LABORATORY ANALYSIS

Soil and groundwater samples will be analyzed on a standard 10-day laboratory turnaround at a state-certified laboratory for the following list of analytes:

- TPH-Diesel Range Organics (DRO) using Environmental Protection Agency (EPA) Test Method 8015m. This test method will also include a silica gel strip (EPA Test Method 3630C) for the diesel analysis to remove naturally occurring polar hydrocarbon compounds.

- The VOCs benzene, toluene, ethylbenzene, and total xylenes (BTEX), ethylene dibromide (EDB), ethylene dichloride (EDC), Methyl Tertiary-Butyl Ether (MTBE), Tert-amyl-methyl ether (TAME), Ethyl tert-butyl ether (ETBE), Di-isopropyl ether (DIPE) and t-Butyl alcohol (TBA) using EPA Test Method 8260 modified.

The laboratory will supply the data in the electronic deliverable format (EDF) required for input into the State of California electronic database *Geo Tracker*.

REPORT

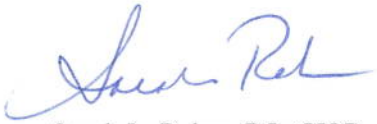
Following completion of the fieldwork and review of the analytical results, we will prepare a written letter report that summarizes the preliminary field work, field observations and sampling procedures, the results of the chemical analyses, and recommendations for additional work. The final report will be submitted to the County on behalf of the City. The report will be submitted electronically to the County and uploaded to the Geotracker web site.

If you have any questions, please call Ms. Gilbert at (510) 628-3215.

Yours very truly,

AMEC ENVIRONMENT & INFRASTRUCTURE

Gary A. Lieberman
Principal Geologist



Sarah L. Raker, PG, CHG
Senior Principal Geologist

GAL/SLR:sac

Attachments: Figure 1 – Proposed Soil Boring Locations

cc: Mr. Jesse Barajas, City of Alameda, Public Works Department

EXPLANATION

Proposed Soil Boring

Existing Compliance Monitoring Well

Approximate Location of 6,000 Gallon Diesel Fuel Tank

NOTES:

1. All locations are approximate

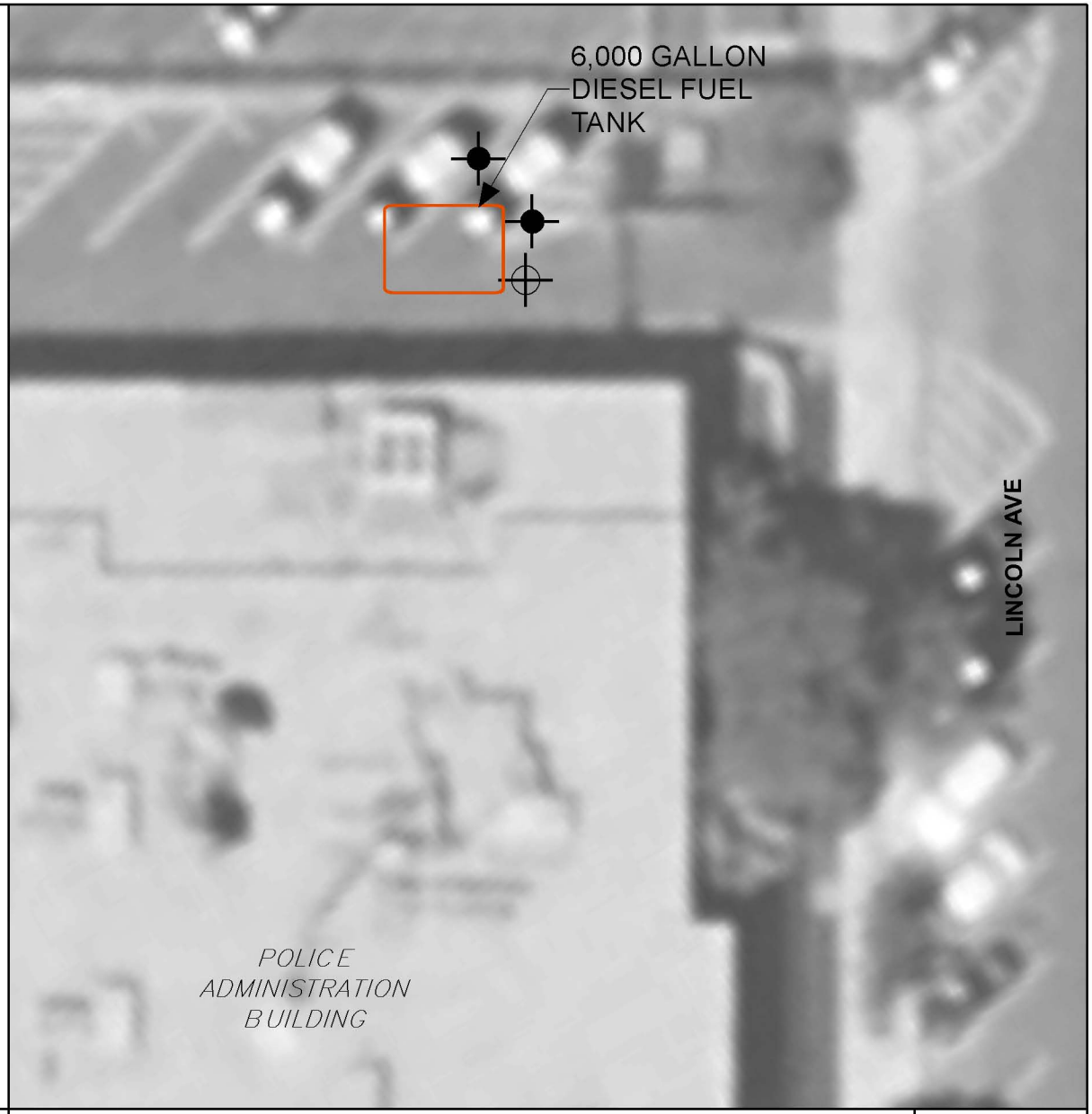
AERIAL IMAGE:

© 2009-04-01, "DigitalGlobe", 1:4000, 0.3m

N

0 20 40

Feet



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Site Map
Site Investigation Work Plan
Alameda Police Department
Alameda, CA

FIGURE
1

DRAWN	JOB NUMBER	CHECKED	CHECKED DATE	APPROVED	APPROVED DATE
RJP	4096114861 01	JAG	9/2011		

Tuesday, September 27, 2011 11:37:58 AM
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EXPLANATION

Proposed Soil Boring

Existing Compliance Monitoring Well

Approximate Location of 6,000 Gallon Diesel Fuel Tank

RECEIVED

1:13 pm, Sep 30, 2011

Alameda County
Environmental Health

NOTES:

1. All locations are approximate

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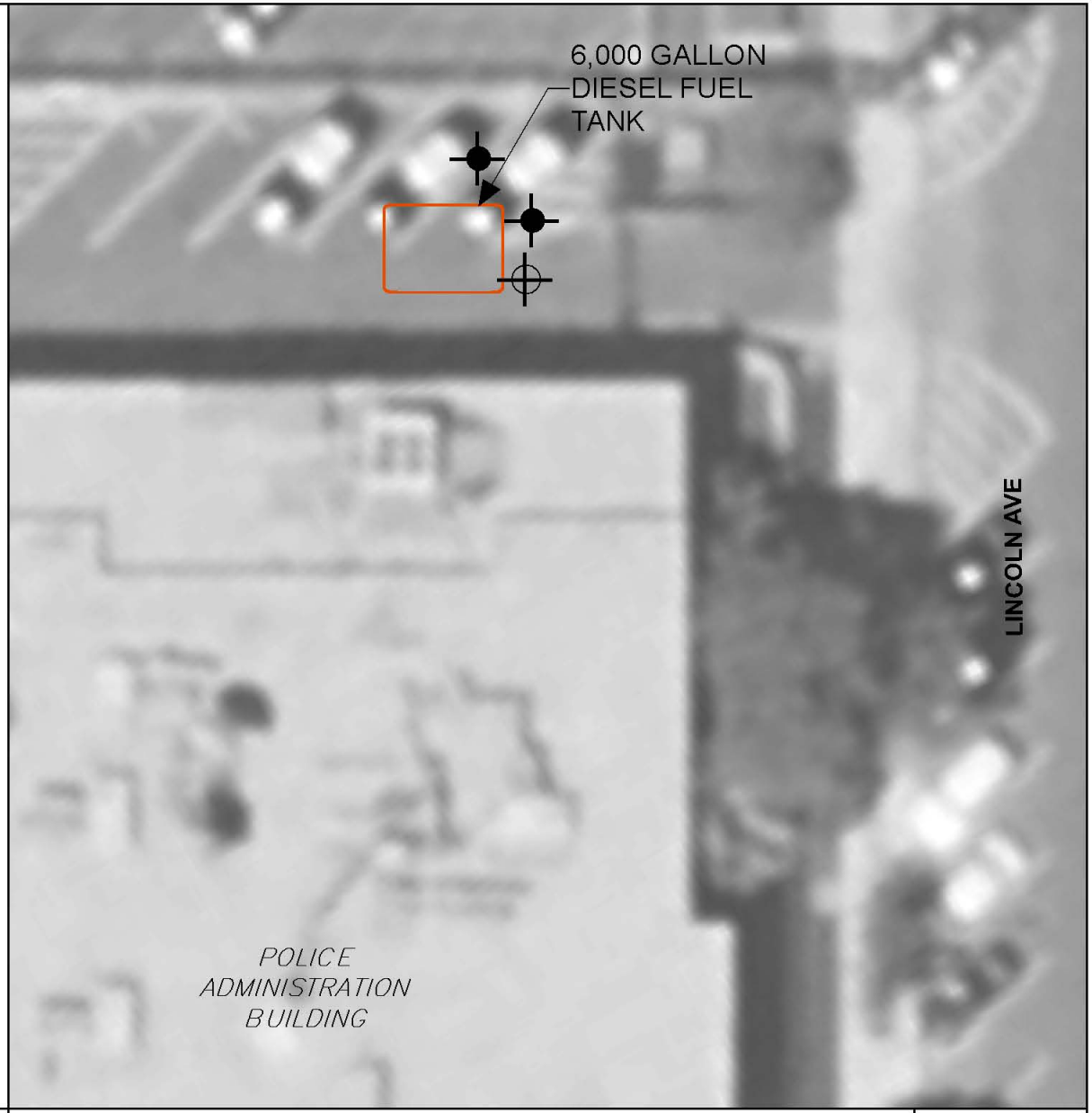

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Site Map
Site Investigation Work Plan
Alameda Polic Department
Alameda, CA

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