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GRIBI Associates

Geological and Environmental Consulting Services

September 5, 2003

Alameda County Environmental
Health Services Agency
1131 Harbor Bay Parkway, 2nd Floor
Alameda, CA 94502-6577

Attention: Mr. Amir Gholami

Subject: Risk Management Plan
1347 Park Street UST Site, Alameda, California
Alameda County Site ID 5511
GA Project No. 144-01-02

Ladies and Gentlemen:

Pursuant to your request, this letter provides a Risk Management Plan (RMP) for the 1347 Park Street underground storage tank (UST) site in Alameda, California. This RMP provides: (1) A summary of potential risks posed by residual hydrocarbons present at the site; and (2) A plan to limit risks of exposure to residual hydrocarbons associated with potential future construction-related activities at the site.

SITE BACKGROUND AND RISK SUMMARY

Site Background

The project site is situated on the southwest side of Alameda island (see Figure 1 and Figure 2). Based on results from hand auger borings drilled on both the project site and on the adjacent northeast site, it appears that near-surface soils in the site vicinity consist of relatively loose beach sands. The site is located on the East Bay Plain, and below the near-surface beach sands we would expect to encounter several tens to hundreds of feet of Bay Mud sediments. The Bay Mud sediments found along the East Bay Plain generally consist of low-permeability silts and clays, with occasional thin sand lenses. The Bay Mud sediments generally do not make good groundwater aquifers, and there is no significant beneficial groundwater usage in Bay Mud sediments in the site vicinity.

One 1,500-gallon heating oil UST, which apparently had been unused for a long time, was removed from the project site on November 1995. Following removal of the UST, the Alameda County Department of Environmental Health inspector noted holes in the tank and hydrocarbon odors and sheens in the excavation. Soil samples collected at about 11 feet in depth from the UST excavation sidewalls at each end of the tank contained elevated levels of diesel-range hydrocarbons, and one soil sample collected at about 14 feet in depth from the center of the UST excavation cavity contained no detectable hydrocarbons. The UST excavation cavity was overexcavated in early December 1995, and three of the four soil samples collected from the four excavation sidewalls at about 12 feet in

depth contained elevated levels of diesel-range hydrocarbons. After completion of overexcavation activities, the excavation cavity was backfilled with clean imported fill material and re-surfaced to match existing grade.

In September 1998, Gribi Associates drilled and sampled three soil borings, including one boring, IB-1, in Park Street east from the former UST, one boring, IB-2, in the site building basement west from the former UST, and one boring, IB-3, in the site building basement beneath the Park Street sidewalk southwest from the former UST. Soil and groundwater samples from investigative boring IB-2, located west from the former project site UST, contained no significant levels of diesel-range hydrocarbons. Both field screening and laboratory analytical results from investigative borings IB-1 and IB-3 showed detectable levels of diesel- and motor oil-range hydrocarbons in soil and groundwater immediately southeast to southwest from the former heating oil UST. However, results of polynuclear aromatic hydrocarbons (PNA) analysis for the IB-1 soil sample, which showed low levels of some PNA compounds, indicate that residual hydrocarbons present in subsurface soils adjacent to the former project site UST pose no significant risk to public health and the environment.

In February 2000, ALLCAL Environmental installed one groundwater monitoring well, MW-1, in Park Street just southeast from the former UST. This well was subsequently purged and sampled in May, August, and November 2000. Groundwater monitoring results showed groundwater depths ranging from about nine feet to 12 feet below surface grade. Groundwater samples collected during the four quarterly monitoring events showed elevated concentrations of diesel- and motor oil-range hydrocarbons. Based on the limited health and environmental risks posed by the residual diesel- and motor oil-range hydrocarbons, ALLCAL Environmental requested regulatory closure of the site in December 2000.

Summary of Site Risks

Project site conditions and impacts related to former UST releases at the site are summarized in Table 1.

Table 1
SUMMARY OF SITE CONDITIONS AND IMPACTS
1347 Park Street UST Site

Site Condition	*1,500-Gallon Heating Oil UST (Park Street Sidewalk, Removed 11/95)*
SOIL IMPACTS	
Soil Type	Merritt Sand
Impacted Depth Interval	8 to 12 feet in depth
Lateral Plume Description	South to southeast below Park Street sidewalk and Park Street parking lane; length unknown.
Maximum Contaminant Impacts	
TPH-D	4,900 ppm
TPH-MO	1,900 ppm
Benzene	0.11 ppm
Toluene	0.25 ppm
Ethylbenzene	0.60 ppm
Xylenes	1.4 ppm
Methyl-t-Butyl Ether	Nondetect
Naphthalene	7.4 ppm
2-Methylnaphthalene	28 ppm
Phenanthrene	8.3 ppm
Pyrene	5.0 ppm
Chrysene	5.1 ppm
GROUNDWATER IMPACTS	
Depth to Groundwater	8.5 - 12.0 feet
Groundwater Plume Description	South to southeast below Park Street sidewalk and Park Street parking lane; length unknown.
Maximum Contaminant Impacts	
TPH-D	140 ppm
TPH-MO	130 ppm
Benzene	0.0023 ppm
Toluene	0.0024 ppm
Ethylbenzene	0.0021 ppm
Xylenes	0.020 ppm
Methyl-t-Butyl Ether	Nondetect
Naphthalene	0.070 ppm

Results of a preliminary evaluation of all potential exposure pathways for three UST sites are summarized in Table 2.

Table 2
PRELIMINARY EXPOSURE PATHWAY SCREENING
1347 Park Street UST Site

Exposure Pathway	Complete?	Discussion
Air Exposure Pathway		
Surface soil volatilization to ambient air	No	Diesel/Motor Oil hydrocarbons are not volatile
Subsurface soil volatilization to ambient air	No	Diesel/Motor Oil hydrocarbons are not volatile
Subsurface soil volatilization to enclosed space	No	Diesel/Motor Oil hydrocarbons are not volatile
Groundwater volatilization to ambient air	No	Diesel/Motor Oil hydrocarbons are not volatile
Groundwater volatilization to enclosed space	No	Diesel/Motor Oil hydrocarbons are not volatile
Soil Exposure Pathway		
Dermal contact/ingestion of surface soils	No	Soil impacts below 8.0 feet in depth
Dermal contact/ingestion of subsurface soils	Possible	Construction worker only
Groundwater Exposure Pathway		
Soil leaching to groundwater, ingestion	No	No nearby water supply wells.
Dissolved/free phase groundwater ingestion	No	No nearby water supply wells
Surface Water Exposure Pathway		
Soil leaching to surface water	No	No nearby surface water bodies.
Groundwater plume discharge to surface water	No	No nearby surface water bodies.

In summary, potential risks of exposure to residual hydrocarbons at the site are primarily related to possible construction worker exposure during any construction-related activities, particularly within the Park Street public right-of-way. The primary route of exposure that would be expected from future construction-related activities would include worker dermal contact to hydrocarbon-impacted near-surface soil, subsurface soil, and groundwater.

RISK MANAGEMENT PLAN

The following risk management plan shall be implemented for the site in order to reduce identified exposure risks. Note that because there is a chance that site records identifying hydrocarbon risk areas might be lost in the future, this risk management plan shall apply to the entire site. The risk management plan shall incorporate the following measures:

1. A soil management plan must be provided if soils are generated during construction activities. This measure is meant to place controls on the use or disposal of soils from the site that may contain petroleum hydrocarbons.

2. A groundwater management plan must be provided if groundwater is generated during construction activities. The purpose of this measure is to assure that extracted groundwater is handled properly given the potential that groundwater may be impacted with petroleum hydrocarbons.

3. Groundwater from beneath the site shall not be used for any purpose unless approved by Alameda County Environmental Health Services (ACHES) or another appropriate regulatory agency. This measure is meant to place controls on the use of groundwater from beneath the site that may contain petroleum hydrocarbons.

4. Wells shall not be installed at the site unless approved by the Water Resources Section of the Public Works Agency. The purpose of this measure is to reduce the possibility that vertical conduits to deeper groundwater sources are introduced at the site.

5. Before any development occurs at the site, a health and safety plan shall be implemented to cover all possible worker exposure risks. The purpose of this measure is to assure that workers and the general public are protected from the potential hazards associated with subsurface petroleum impacts.

6. Records for the site, including investigative report, shall be retained on file with the City of Alameda Public Works Agency. Proper documentation can help all parties control potential risks associated with the site.

We appreciate the opportunity to present this Risk Management Plan for your review. Please contact us if you have questions or require additional information.

Very truly yours,

James E. Gribi
Registered Geologist
California No. 5843

JEG/ct
Enclosure

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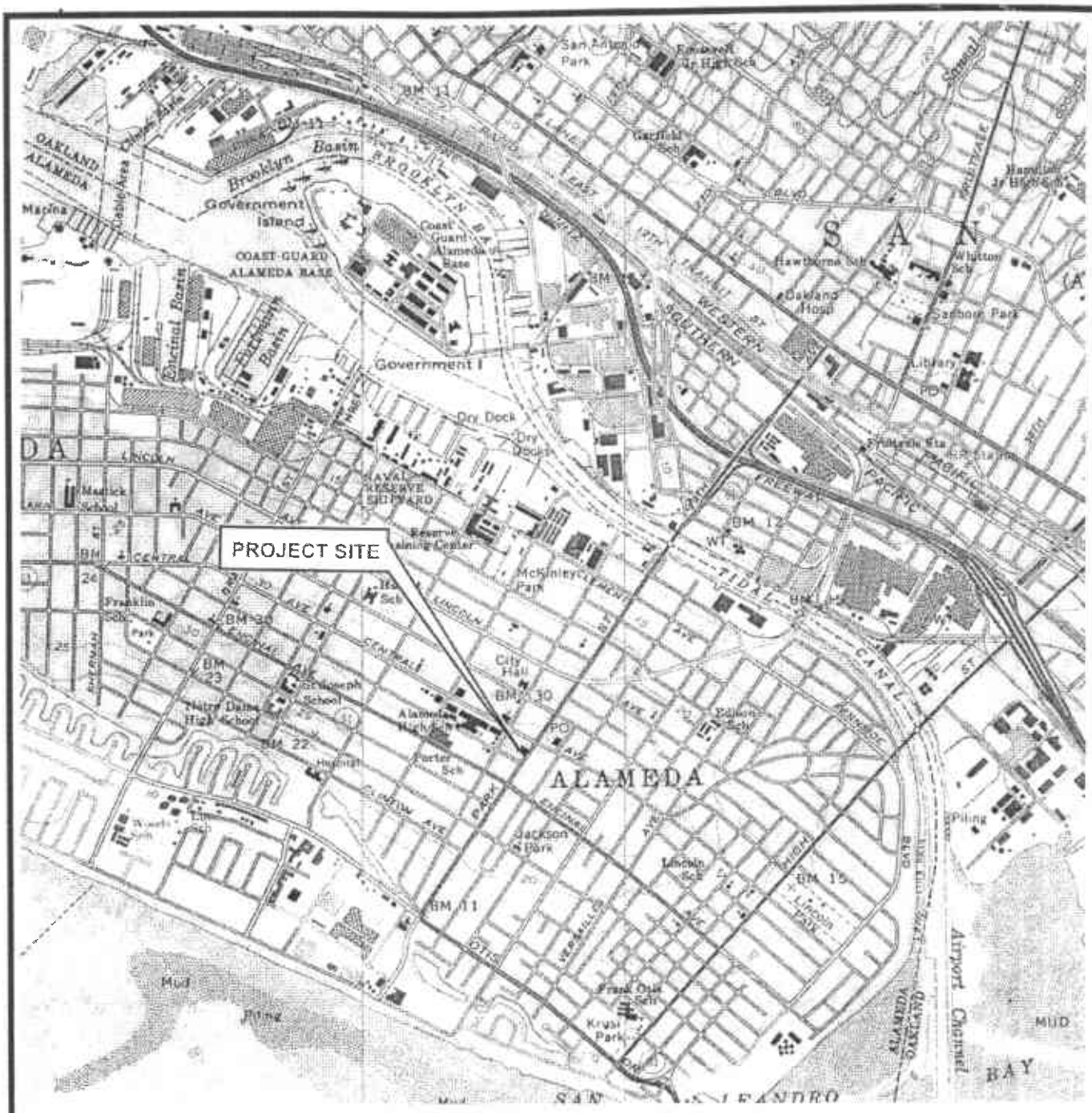
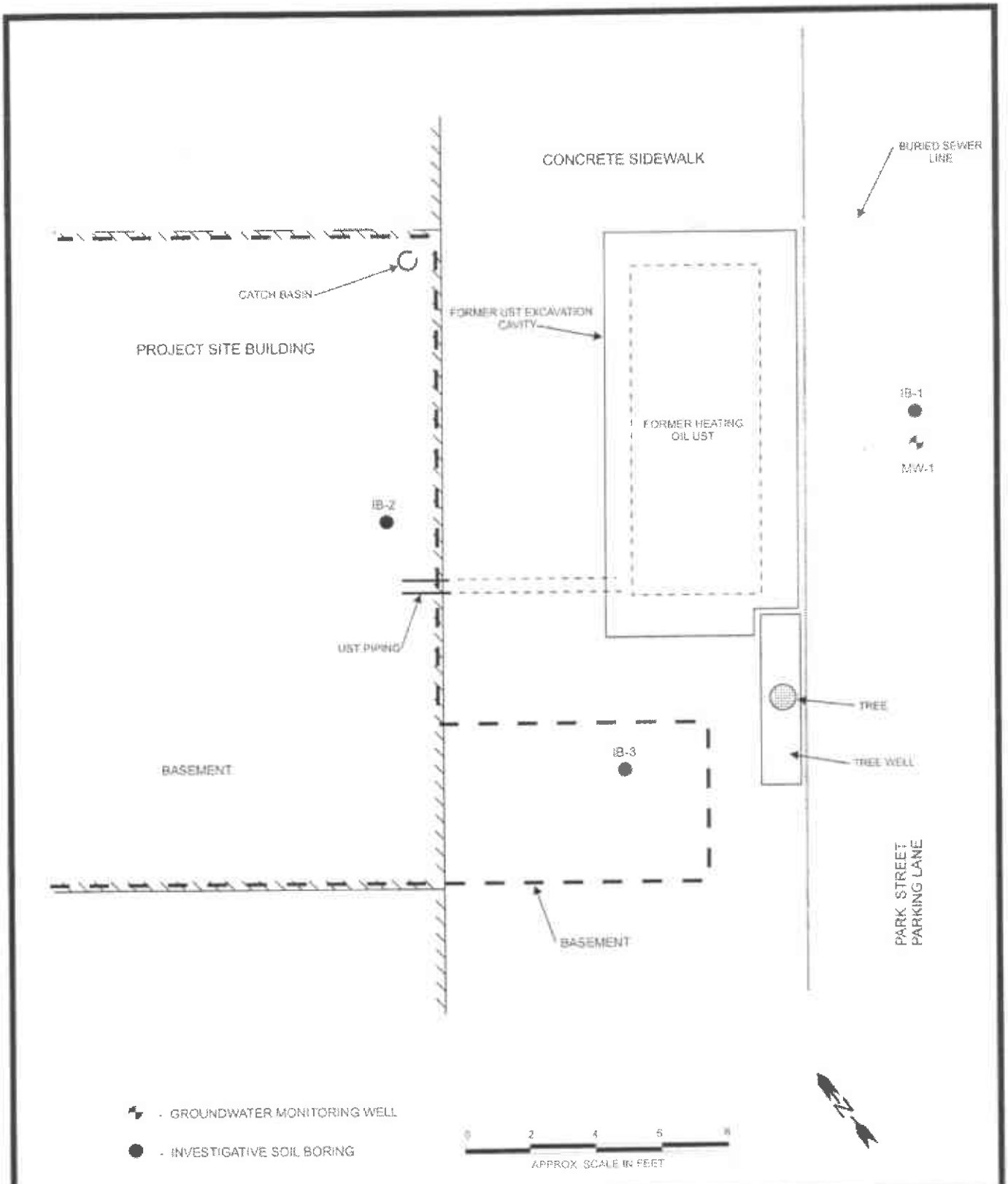
c Mr. Jim Russi
Mr. Steve Simi



TOPOGRAPHY FROM USGS OAKLAND, EAST, CALIFORNIA
7.5-MINUTE QUADRANGLE MAPS, (TOPO! 1997)

DESIGNED BY	CHECKED BY	**SITE VICINITY MAP**	DATE 11/14/98	FIGURE 1
DRAWN BY JG	SCALE 1:24,000	1347 PARK STREET UST SITE ALAMEDA, CALIFORNIA	**GRIBI Associates**	
PROJECT NO 144-01-01				



DESIGNED BY:	CHECKED BY:	**SITE PLAN**	DATE: 09/05/03	FIGURE: 2
DRAWN BY: JG	SCALE:	1347 PARK STREET ALAMEDA, CALIFORNIA	**GRIBI Associates**	
PROJECT NO: 144-01-01				