A·C·C
ENVIRONMENTAL
CONSULTANTS

R02532

July 24, 2003

Mr. Robert Ribbing
Fleischmann's Yeast
240 Larkin Williams Industrial Court
Fenton, Missouri 63026

RE: Revised Work Plan for Additional Site Characterization
921 98th Street, Oakland, California
Alameda County UST Site
ACC Project Number: 6725-001.02

Dear Mr. Ribbing:

ACC Environmental Consultants, Inc., (ACC) has prepared this Revised Work Plan to perform additional site characterization in the vicinity of two former gasoline underground storage tanks (USTs) at 921 98th Street, Oakland, California (Site). The specific goals of this additional characterization are to: 1) further characterize suspect total petroleum hydrocarbons as gasoline (TPHg) impacts in soil and groundwater and confirm hydrogeological conditions as they pertain to migration potential from soil to first-encountered groundwater; 2) define the current degree and approximate extent of TPHg-impacted soil that warrants remedial excavation, if any, for purposes of source removal based on risk-based criteria; and 3) obtain additional data in order to obtain regulatory closure from the Alameda County Health Care Services Agency (ACHCSA) and the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) as a "low risk" groundwater case. Revisions to the July 11, 2003 Work Plan have been made based on discussion with Mr. Amir Golami with the ACHCSA.

INTRODUCTION

Two gasoline USTs formerly operated at the Site but were removed sometime prior to 1985. Investigative excavation and scanning the areas of the two former USTs confirmed their removal. One formaldehyde UST, believed to be a 7,500-gallon stainless steel tank, exists under an existing 40,000-gallon aboveground molasses tank. No other USTs are known or suspected.

BACKGROUND

During preparation of a Phase I Environmental Site Assessment, ACC identified two former gasoline USTs and product dispensers and one formaldehyde UST at the Site. UST locations are illustrated on Figure 2. The gasoline USTs were apparently last used in the early 1980's and the formaldehyde UST was last used in the late 1980's. No records of gasoline UST removal were found but the formaldehyde UST was investigated and found to contain approximately 500 gallons of a water/formaldehyde mixture.

ACC contracted with DCM Construction, Inc. (DCM) of Dublin, California, to excavate in the vicinity of the two former, gasoline USTs and break the concrete around the formaldehyde UST. These activities were intended to verify that the gasoline USTs had been removed and to facilitate

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closing the formaldehyde UST in-place under permit with the Oakland Fire Services Agency (OFSA). Exploratory excavation at gasoline UST T1 revealed broken and cut product and vent lines and engineered fill where soils should have been native silts and clays, while excavation at gasoline UST T2 was inconclusive (USTs are shown on Figure 2). ACC then contracted with a GeoTech Utility Locating (GeoTech), of El Cerrito, California, a subsurface utility locating firm, to scan the area of the suspect USTs, especially UST 2. The results of a subsurface magnetometer survey were more conclusive and indicated that no metallic anomalies were located in the area of the former gasoline UST's.

On September 16, 2002, ACC advanced eight exploratory soil borings (designated B1 through B8) at select locations adjacent to the USTs. The locations of the borings are illustrated on Figure 2. The eight exploratory soil borings were advanced by continuously coring with four-feet long, hydraulically-driven, hollow-stem Geoprobe® sampling tool equipped with 2-inch inside-diameter clear acetate liners. Soil borings B1 and B2 were advanced adjacent to and on each side of former gasoline UST T1. Soil boring B3 (also designated T1-Disp) was advanced at the former dispenser for UST T1. Soil borings B4 and B5 were advanced adjacent to and on two sides of former gasoline UST T2. Soil boring B6 was advanced at the midpoint between former UST T2 and its former product dispenser located inside the existing building. Finally, soil borings B7 and B8 were advanced directly adjacent to the formaldehyde UST as close as physical parameters allowed. Grab groundwater samples were collected in soil borings B1, B4, and B7. Soil sample analytical results from the gasoline USTs are summarized in Table 1 with grab groundwater sample analytical results summarized in Table 2.

TABLE 1 - SOIL ANALYTICAL RESULTS

Boring-Depth	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE
B1-11.0	300	2.3	<0.62	6.3	<0.62	<0.62
B1-15.0	410	5.5	9.3	9.6	43	<3.1
B2-8.0	26	<0.62	<0.62	1.0	1.7	<0.62
B2-12.0	1,400	23	70	48	230	<6.2
B3- T1 DISP- 2.5	370	<6.2	<6.2	13	47	<6.2
B3- T1 DISP- 5.0	80	<0.62	<0.62	1.2	<0.62	<0.62
B4-12.0	130	<0.62	<0.62	3.3	2.4	<0.62
B4-16.0	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
B5-8.0	870	<6.2	<6.2	<6.2	<6.2	<6.2
B5-12.0	180	<0.62	<0.62	1.4	<0.62	<0.62
B6-5.0	110	1.6	<0.62	2.3	9.0	<0.62

Notes: All results reported in milligrams per kilogram (mg/kg), approximately equal to parts per million (ppm)
< Sample tested below the laboratory minimum detection limit indicated

TABLE 2 – WATER ANALYTICAL RESULTS

Sample ID	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE
B1 -W	8,600	1,100	340	730	390	<10
B4 -W	17,000	120	10	850	330	<10
B7 -W	<50	<0.50	<0.50	<0.50	<1.0	1.8

Notes: All results reported in micrograms per liter (µg/L), approximately equal to parts per billion (ppb)
< Sample tested below the laboratory minimum detection limit indicated

Subsurface soil conditions are consistent across the Site. In general, soils consist of uniform silty clay and clay to a depth of approximately 16 feet bgs. The fine-grained clays are generally dark olive green to olive gray, medium stiff, moderately to highly plastic, damp, and display low estimated permeability. At approximately 15 to 16 feet bgs, sand content began to increase with depth and saturated SC clayey sand was observed in soil boring B1 below 16 feet bgs. This saturated zone appears to be first-encountered groundwater.

SCOPE OF WORK

In order to further characterize soil and groundwater conditions at the Site, ACC proposes the following scope of work:

- Advance fourteen (14) exploratory soil borings in the vicinity of the former USTs to total depths between 15 and 20 feet bgs;
- Continuously core the downgradient soil borings to observe and log each foot of soil encountered and prepare cross sections in order to help evaluate subsurface conditions and migration potential in soil and groundwater;
- Collect representative soil samples in each soil boring at depths anticipated to obtain the optimum data regarding subsurface soil conditions and analyze the soil samples for TPHg, benzene, toluene, ethylbenzene, and xylenes (BTEX), and MTBE by EPA Method 8260B;
- Collect representative grab groundwater samples in select soil borings in the top five (5) feet of first encountered groundwater and analyze the water samples for TPHg, BTEX, MTBE by EPA Method 8260B; and
- Prepare a summary technical report of findings for submission to the ACHCSA within fifteen (15) working-days of receipt of the analytical results and meet with ACHCSA to discuss the findings and requirements for regulatory closure.

RATIONALE FOR PROPOSED SCOPE OF WORK

Previously performed site investigation has demonstrated that elevated concentrations of TPHg and BTEX exist in soil and groundwater in the immediate vicinity of the former gasoline USTs. While concentrations of gasoline constituents likely attenuate dramatically with distance from the USTs, additional site characterization is necessary to confirm this finding and further document residual gasoline concentrations in soil and groundwater for risk assessment purposes. ACC believes that additional investigation will confirm that soil impacts are highly localized in the fine-grained soils at the Site and the plumes of impacted groundwater are relatively small.

ACC proposes to conduct additional subsurface investigation work in a logical, progressive fashion. Due to the lack of adequate subsurface characterization immediately adjacent to the two former gasoline USTs, ACC proposes to advance a minimum of fourteen exploratory soil borings and obtain additional subsurface data necessary to evaluate suspect impacted soil, further define impacts in groundwater, further define hydrogeological conditions, and help evaluate human health risk associated with residual gasoline constituents. The findings of this additional site characterization would then be the basis for evaluating remedial options and/or pursuing a risk-based closure.

This scope of work is based on ACC's experience with sites with similar hydrogeology and is designed to characterize subsurface site conditions in a cost-effective fashion. Groundwater flow direction is estimated to be northwest (Figure 2). Soil borings will be advanced so that grab groundwater samples can be collected to further define the plume of impacted groundwater downgradient in the estimated groundwater flow direction and in appropriate crossgradient locations. The soil borings proposed in this Work Plan can be advanced in one day.

Soil borings B9 through B12, B15 and B16 will be continuously cored in order to continuously log and screen soil for field indications of petroleum hydrocarbon impact and selected representative soil samples will be prepared for analysis. Soil screening will be done with a calibrated ppbRAE PID. This PID measures volatile constituents in air in the ppb range and is highly effective at prioritizing potential soil samples for analysis. Soil samples collected above the capillary fringe or soil samples exhibiting the highest PID readings, or soil samples collected immediately above significant changes in lithology, will be prepared for analysis. Soil samples will be analyzed for TPHg, BTEX, and MTBE by EPA Method 8260B. Grab groundwater samples will be analyzed for TPHg, BTEX, and MTBE by EPA Method 8260B. Soil borings B9 through B12, B15 and B16 will be advanced to collect soil and grab groundwater samples. Soil borings B13, B14, and B17 through B22 will be advanced in order to collect grab groundwater samples only. Sample locations B13, B14, and B21 will be advanced downgradient of Tanks T1 and T2 depending on physical conditions at the Site and the degree of access from ongoing site demolition. Sample locations B13, B14, and B21 will be advanced as far to the northwest as physically feasible within the building interior.

If elevated concentrations of MTBE are reported in groundwater samples, ACC will discuss with ACHCSA any need for additional groundwater samples to be run for fuel oxygenates, which may include: tert-Butyl alcohol (TBA); Di-isopropyl Ether (DIPE); Ethyl tert-butyl ether (ETBE); Tert-Amyl methyl ether (TAME); and the two scavengers ethylene dibromide (EDB) and the 1,2-

dichloroethane (EDC). Any additional fuel oxygenate analysis can be performed before the samples expire.

The proposed soil boring locations have been chosen to maximize the subsurface data obtained in one full day. Soil boring sample analyses are summarized in Table 3.

TABLE 3 – PROPOSED SOIL BORINGS

Soil Boring	Estimated Depth (feet bgs)	Sample Matrix	Constituent Analyses
B9	11.5-12.0	Soil	TPHg, BTEX, MTBE
	14.5-15.0	Soil	TPHg, BTEX, MTBE
B10	11.5-12.0	Soil	TPHg, BTEX, MTBE
	14.5-15.0	Soil	TPHg, BTEX, MTBE
B11	11.5-12.0	Soil	TPHg, BTEX, MTBE
	14.5-15.0	Soil	TPHg, BTEX, MTBE
	16-20	Water	TPHg, BTEX, MTBE
B12	11.5-12.0	Soil	TPHg, BTEX, MTBE
	14.5-15.0	Soil	TPHg, BTEX, MTBE
B13	16-20	Water	TPHg, BTEX, MTBE
B14	16-20	Water	TPHg, BTEX, MTBE
B15	11.5-12.0	Soil	TPHg, BTEX, MTBE
	14.5-15.0	Soil	TPHg, BTEX, MTBE
B16	11.5-12.0	Soil	TPHg, BTEX, MTBE
	14.5-15.0	Soil	TPHg, BTEX, MTBE
	16-20	Water	TPHg, BTEX, MTBE
B17	16-20	Water	TPHg, BTEX, MTBE
B18	16-20	Water	TPHg, BTEX, MTBE
B19	16-20	Water	TPHg, BTEX, MTBE
B20	16-20	Water	TPHg, BTEX, MTBE
B21	16-20	Water	TPHg, BTEX, MTBE
B22	16-20	Water	TPHg, BTEX, MTBE

DRILLING PROGRAM

A drilling permit will be obtained from the Alameda County Public Works Agency and it will be notified at least 72 hours prior to commencing field activities. The proposed soil boring locations are illustrated on Figure 2.

The soil borings will be advanced according to ACC protocol using a hydraulically driven Geoprobe® sampling tool equipped with 2.0-inch inside diameter clear acetate liners. Soil boring and sampling protocols are attached. Drilling will be performed under the direction of a Registered Geologist, and the subsurface materials in the borings will be identified and logged according to the Unified Soil Classification System. The sampling probe and rods will be pre-cleaned prior to use and between sample drives by washing them with a trisodium phosphate and potable water solution, a potable water rinse, and distilled water rinse. The work will be conducted in one day and soil cuttings will not be generated.

Soil borings B9 through B12 and B15 and B16 will be advanced by continuously coring from the surface to a depth of fifteen (15) feet bgs. Soil borings B11 and B16 will be advanced an additional five (5) feet into saturated soil to collect grab groundwater samples. Soil at two to four-foot increments will be screened with a ppbRAE PID prior to preparing soil samples for submission to the laboratory. ACC proposes to collect a minimum of two soil samples each in soil borings B9 through B12 and borings B15 and B16. Soil borings B13, B14, and B17 through B22 will be advanced approximately five (5) feet into first encountered groundwater (approximately 16 to 20 feet bgs) to collect grab groundwater samples with the use of a Hydropunch® tool. Grab groundwater samples will be collected through the use of a stainless steel hydropunch sampling probe and retrieved from the probe with either a new, disposable 0.5-inch-diameter bailer or new polyethylene tubing equipped with a check-ball.

The soil and grab groundwater samples will be submitted to STL San Francisco (STL-SF), a state-certified analytical laboratory, following standard chain of custody procedures for analysis of constituents of concern. Standard turnaround time for analytical results is five (5) working days. Following drilling and sample collection, each soil boring will be abandoned with neat cement to just below the surface (3 to 6 inches). The soil boring will then be completed with concrete to grade to match the surrounding material.

REPORT PREPARATION

A technical report discussing field work, observations and findings, analytical results, conclusions, and recommendations will be prepared for submission to the ACHCSA within fifteen (15) days of receipt of analytical results. The report will summarize data obtained to date, assess human health risk by comparing sample analytical results to applicable risk-based screening levels, evaluate the potential need for remedial soil excavation, and define the criteria for ultimately obtaining regulatory closure.

HEALTH AND SAFETY PLAN

A site-specific health and safety plan which encompasses the proposed work at the Site and complies with the requirements of 29 CFR Part 1910.120 will be prepared and present during field activities.

SCHEDULE

Upon Work Plan approval, the estimated schedule to complete the limited subsurface investigation is as follows:

Day	Activity
0-15	1) Work Plan approved by ACHCSA; 2) ACPWA drilling permit issued
15-20	1) Soil borings advanced; 2) soil and water samples submitted to STL-SF
20-25	1) Analytical results received; 2) ACC begins preparing draft technical report
35-40	ACC reviews comments from Fleischmann's, prepares and submits final technical report of findings to ACHCSA
45-50	ACC meets with ACHCSA to discuss report of findings

If you have any questions concerning this letter, please call me at (510) 638-8400, ext. 109 or email me at ddement@accenv.com.

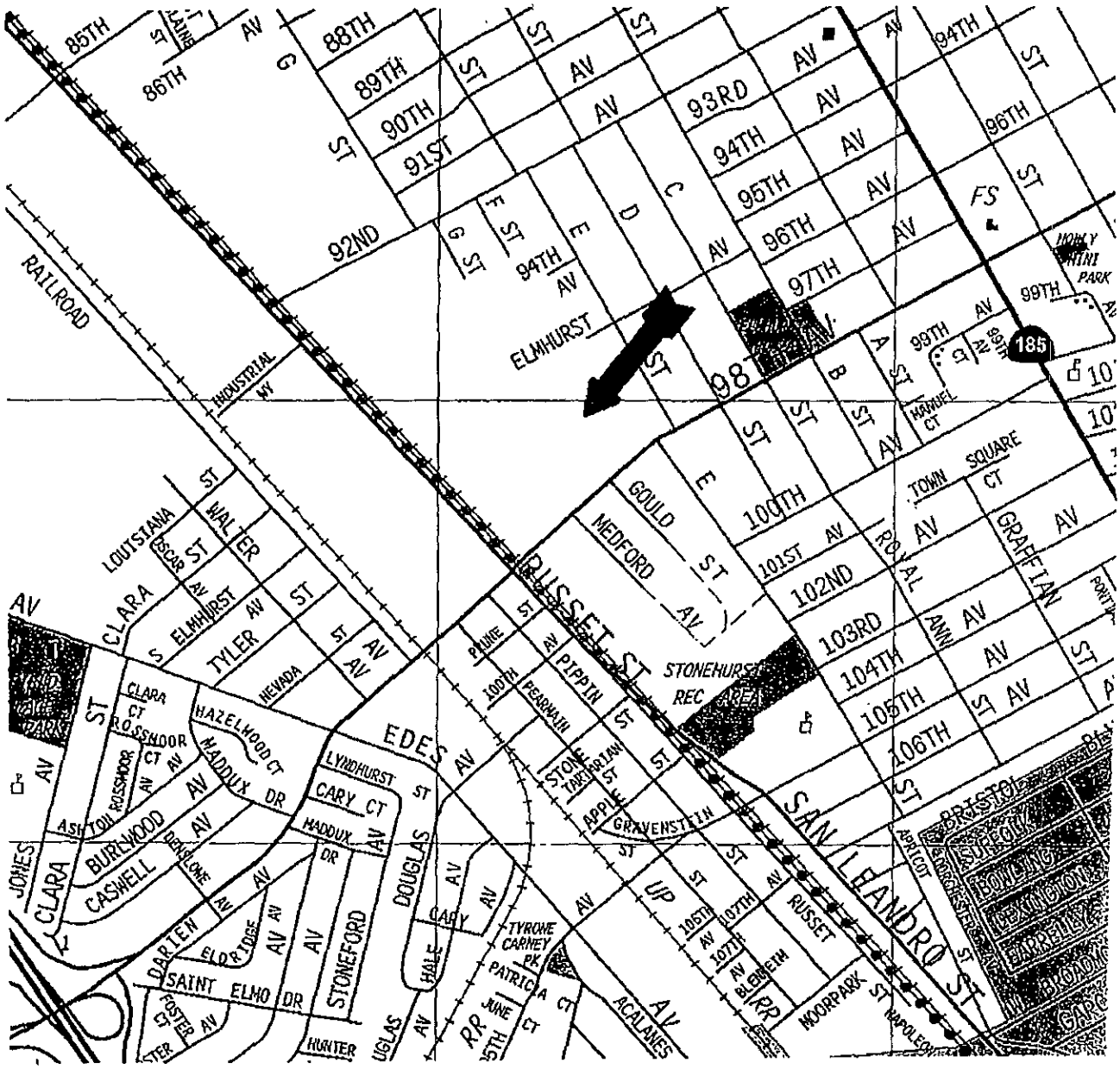
Sincerely,

David R. DeMent, RG, REA II
Environmental Division Manager

/trb:drd

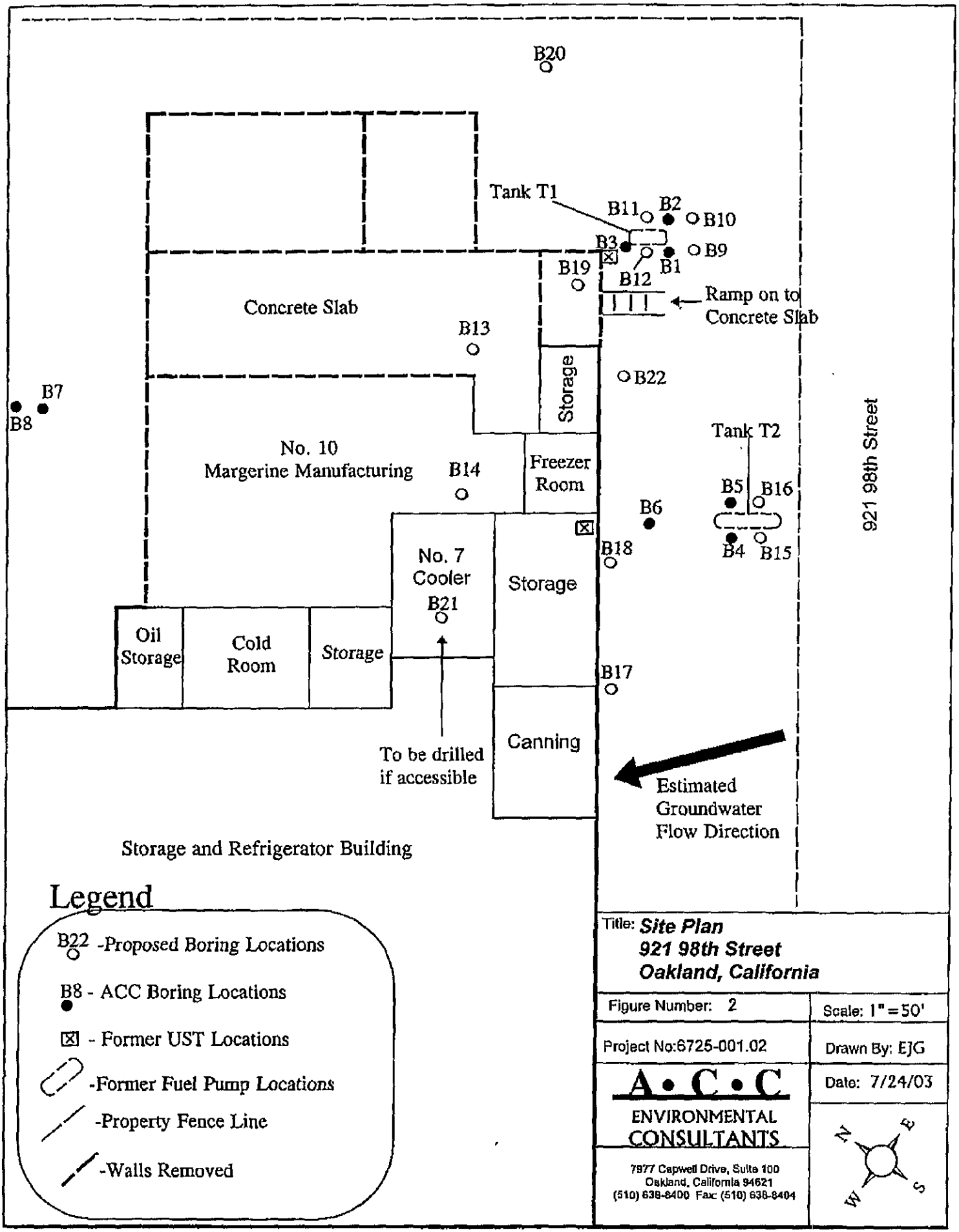
Attachments

cc: Mr. Amir Golami, ACHCSA



Source: Thomas Guide Digital Edition 2002

Title: ***Location Map*** ***921 98th Street*** ***Oakland, California***	
Figure Number: 1	Scale: None
Project No: 6725-001.02	Drawn By: EJG
A • C • C ENVIRONMENTAL CONSULTANTS	Date: 7/9/03
7977 Capwell Drive, Suite 100 Oakland, California 94621 (510) 638-8400 Fax (510) 638-8404	N W E S


B20
Tank T1
B11
B2
B10
B3
B9
B1
B12
B19
Ramp on to Concrete Slab
Concrete Slab
B13
Storage
B22
B7
B8
Tank T2
No. 10
Margerine Manufacturing
B14
Freezer Room
B5
B16
B6
921 98th Street
B18
B4
B15
No. 7 Cooler
B21
Storage
Oil Storage
Cold Room
Storage
B17
Canning
To be drilled if accessible
Estimated Groundwater Flow Direction
Storage and Refrigerator Building
Legend
B22 -Proposed Boring Locations
B8 - ACC Boring Locations
- Former UST Locations
-Former Fuel Pump Locations
-Property Fence Line
-Walls Removed
Title: Site Plan
921 98th Street
Oakland, California
Figure Number: 2
Scale: 1"=50'
Project No:6725-001.02
Drawn By: EJG
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