File No. 7-92-514-SA

WORK PLAN FOR ENHANCED BIO-REMEDIATION UNDERGROUND STORAGE TANK SITE LOCATED AT 3609 EAST 14TH STREET OAKLAND, CALIFORNIA JULY 28, 1997

PREPARED FOR:
MR. ABOLGHASSEM RAZI
TONY'S EXPRESS AUTO SERVICES
3609 EAST 14TH STREET
OAKLAND, CALIFORNIA 94601

Correct:

BY:
SOIL TECH ENGINEERING, INC.
1761 JUNCTION AVENUE
SAN JOSE, CALIFORNIA 95112

SOIL TECH ENGINEERING, INC.

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SOIL TECH ENGINEERING, INC.

Environmental & Geotechnical Consultants
1761 JUNCTION AVENUE, SAN JOSE, CALIFORNIA 95112
Tel: (408) 441-1881 Fax: (408) 441-0705

July 28, 1997

File No. 7-92-514-SA

Mr. Abolghassem Razi
Tony's Express Auto Services
3609 East 14th Street
Oakland, California 94601

SUBJECT: WORK PLAN FOR ENHANCED BIO-REMEDIATION UNDERGROUND STORAGE TANK SITE
Located at 3609 East 14th Street, in
Oakland, California

Dear Mr. Razi:

Enclosed is a work plan for enhanced bio-remediation programs for contaminated groundwater for the underground storage tank site located at 3609 East 14th Street, in Oakland, California.

SITE DESCRIPTION:

The site is located at the intersection of 36th Avenue and East 14th Street, in Oakland, California (Figure 1). The site is relatively flat and the area in the vicinity consists mainly of light commercial businesses and residential buildings.

BACKGROUND:

In July 1993, three fuel tanks and a waste oil tank were removed by Alpha Geo Services (AGS). STE was retained to conduct soil sampling from the tanks excavation area and the old piping associated with the fuel tanks. All soil sampling was conducted under the supervision of Alameda County Health Department staff, Mr. Barney Chan.

Soil samples from the tank areas were taken at approximately 12 feet depth, soil samples from the waste oil tank area were taken at approximately 7 feet, and the piping areas ranged from 2 to 5 feet below grade, respectively. Soil analyses from the tank excavation detected low to moderate levels of Total Petroleum Hydrocarbons as gasoline (TPHg) ranging from 2.1 to a maximum of 640 milligrams per kilogram (mg/Kg). Soil samples from the old piping areas showed elevated TPHg ranging from 75 mg/Kg to a maximum of 4,100 mg/Kg. No hydrocarbons nor Volatile Organic Compounds (VOC's) were detected in the waste oil tank excavation area. The details of the soil sampling event are described in STE's report title "Soil Sampling Below Removed Underground Tanks at Tony's Express Station...", dated July 27, 1993.

Due to the elevated TPHg, Alameda County Health Department requested a work plan for subsurface investigation in a letter, dated August 6, 1993. Therefore, STE prepared a preliminary site assessment work plan, dated August 15, 1993. The work plan was submitted to the Alameda County Health Department for approval. The county approved the plan in a letter, dated August 18, 1993.

The objective of the proposed work plan was to assess the extent of dissolved petroleum hydrocarbons beneath the site in order to determine whether or not the ground-water beneath the site has been impacted.

In August 1993, STE conducted an interim corrective action and preliminary soil and groundwater investigation by drilling thirteen soil borings and converting three into monitoring wells. Monitoring wells STMW-1, STMW-2 and STMW-3 were drilled in the vicinity of the former underground fuel tanks. Groundwater was first encountered at a depth of 16 feet below grade during drilling operation. STE recommended quarterly groundwater monitoring and sampling for at least one year to further evaluate the site condition as required by Alameda County Health Department.

The details of preliminary soil and groundwater investigation is described in STE's report titled "Interim Corrective Action & Preliminary Soil & Groundwater Investigation for Tony's Express Service Station" dated November 8, 1993.

To allow for future in-situ remediation of impacted soils which were difficult to reach, four vertical 6-inch diameter soil vapor extraction probes were installed in four soil borings. In addition, two horizontal perforated pipes were installed connecting four soil borings and two horizontal perforated pipes were installed connecting four soil borings and two horizontal perforated pipes were installed next to the two dispenser islands. These six probes were connected by non-perforated pipes to a vault in front of the northeast corner of the site building.

All impacted soils removed during excavation of former tanks and over-excavation of contaminated soil were bio-remediated on-site. When contaminant levels were acceptably low, a letter of request for disposal of was sent to Redwood Landfill in Novato, California. A copy of STE's letter to Redwood Landfill requesting the disposal of treated soil along with soil analyses was included in the November 1993 request.

Three quarterly monitoring of the three on-site wells were conducted by STE in December 1994, March 1995 and June 1995. The results of these groundwater monitoring and sampling activities are presented in our reports dated December 8, 1994, March 10, 1995 and June 13, 1995. The groundwater level has risen from approximately 15 feet below grade during our initial sampling in October 1993 to approximately 9 to 10 feet below grade during the quarterly monitoring in June 1995.

Low to moderate levels of TPHg and BTEX were detected in the groundwater for the last three quarters. Levels of contaminants were lower in March 1995 than in December 1994. Levels of contaminants have decreased significantly compared to the initial sampling activity in October 1993 which could be due to the high groundwater elevation and dissolution. Groundwater flow direction has been to the south-southeast during all three monitoring and sampling events.

Additional five monitoring wells (STMW-4 through STMW-8) were installed in August 1995. The details of additional investigation is described in STE's report dated October 9, 1995. Since then, all the wells have been monitored and sampled on a quarterly basis.

An additional subsurface investigation was conducted by STE on August 13 and September 7, 1996, per its May 13, 1996, work plan and ACHD's August 1, 1996, recommendations for amendments to the work plan. During this phase of investigation, five boreholes were drilled, soil and grab groundwater samples were collected from each of these borings, and based on the analytical results for TPHg and BTEX, three boreholes

were converted to monitoring wells. These three newly installed monitoring wells (STMW-9, STMW-10 and STMW-11) along with five existing on-site wells (STMW-2, STMW-3, STMW-4, STMW-6 and STMW-8) were monitored and sampled. STMW-1, STMW-5 and STMW-7 were monitored but not sampled per ACHD.

The details of this additional subsurface investigation is described in STE's October 15, 1996, report titled "Additional Subsurface Investigation...".

OBJECTIVE:

The objective of the remedial action work plan is to remediate the groundwater at the site, as required, so that residual levels of chemicals are acceptable for proper site closure.

To address this remedial objectives, the work plan provides:

- A summary of environmental investigations performed at the site including STE' field investigation performed in support of this work plan.
- A risk-based evaluation of chemicals detected in groundwater, providing the basis for site-specific clean up levels for protective human health considering future site use.

REMEDIATION GOALS:

In order to evaluate the chemical concentrations in groundwater identified during the preliminary investigation at the property, site-specific risk based action levels were

developed using the American Society for Testing and Materials (ASTM) Risk Based Corrective Action (RBCA) guidance. This methodology has been recommended by the State Water Resources Control Board for use by the State and Local Regulatory Agencies.

SCOPE OF WORK:

The general remedial work scope consists of treatment of impacted groundwater by bio-remediation and continue quarterly monitoring of the existing on-site wells. The impacted groundwater have moderate concentrations of petroleum hydrocarbons.

BASELINE CONDITIONS:

Prior to the introduction of any nutrients or oxygen release compounds (ORC) to the water-bearing zone, baseline conditions were established by collecting and analyzing samples of groundwater from the existing monitoring wells at the site. Specifically, samples from the site were collected and analyzed for fuel hydrocarbons using EPA Method 8260, nitrate, as nitrogen using EPA Method 353.3, and orthophosphate as phosphorous using EPA Method 365. The hydrocarbon-oxidizing bacteria population and the total heterotrophic plate, count will also be measured, as will the dissolved oxygen content. The baseline groundwater quality conditions will be reported in the first quarterly groundwater monitoring report and Table 1 of this report.

SJ & 8015

purgeable VOC's via GC/MS.

NUTRIENT ADDITION:

To increase nutrient concentrations in groundwater, STE proposes to dissolve a conunercial fertilizer in portable water and introduce the resurfing nutrient solution to the water-bearing zone via the existing monitoring wells. Specifically, STE proposes to use "Vigoro" brand ammonium sulfate, which contains 21 percent by weight of nitrogen derived from ammonium sulfate, and "Bandini" brand ammonium phosphate, which contains 20 percent by weight of phosphate and an additional 16 percent by weight of nitrogen derived from ammonium sulfate. The mass of each type of fertilizer will be calculated to create a solution containing no more than 10 mg/Kg of nitrate. The maximum contaminant level (N4CL) for nitrate in water is 10 mg/L. The nutrient solution will be batched in a 550-gallon, truck-mounted or stationary, polyethylene tank and gravity- fed into the monitoring wells at the site. The volume of nutrient solution to be added will be determined by the capacity of the various wells to accept the nutrient solution. However, the overall intention will be to "flood" the area in which residual hydrocarbons are present.

OXYGEN ADDITION:

Hydrocarbon-oxidizing micro-organisms utilize oxygen to breakdown and detoxify hydrocarbon compounds. As such, a continuing source of oxygen is necessary to maintain an enhanced microbial population. To provide a continuing source of oxygen, and ORC such as magnesium peroxide will be introduced into the water-bearing zone. When in contact with water, magnesium peroxide releases oxygen as follows:

$$MgO_2 + H_2O \rightarrow \frac{1}{2}\, O_2 + Mg(OH)_2$$

STE proposes to use an ORC supplied by Regenesis Bio-remediation Products (Regenesis), of San Juan Capistrano, California. Regenesis's product is a magnesium peroxide contained in a polyethylene mesh sleeve or "sock" that can be lowered into 2-inch diameter groundwater monitoring wells. Each sock reportedly will be release oxygen in a controlled manner over a duration of 6 to 12 months. When the compound is completely dissolved, the spent sock is removed and replaced. Literature pertaining to Regenesis's ORC is included in Appendix "A".

The socks of magnesium peroxide will be installed in the existing monitoring wells at the site. The socks will typically be installed near the bottom of the screened zone in each well and will be suspended from the well head on nylon twine.

GROUNDWATER MONITORING:

The effectiveness of the proposed bio-remediation program will be assessed by periodic groundwater monitoring. Groundwater monitoring will include water level measurement and the collection and analysis of groundwater samples on a periodic basis. The proposed monitoring procedures and frequencies are discussed below.

MONITORING FREQUENCY:

During the enhanced bio-remediation program, groundwater monitoring will be conducted on a quarterly basis for the first year and on an semi-annual basis thereafter. During each monitoring event, groundwater levels will be measured in all of the available monitoring wells and groundwater samples will be collected from each well per our Standard Operation Procedures (SOP).

WATER LEVEL MEASUREMENTS:

On each monitoring occasion, groundwater levels will be measured in all of the monitoring wells (Table 2), using an electric well sounder. The measurements will be recorded immediately after accessing each well and prior to any artificial water level disturbance. In particular, water levels will be recorded prior to retrieving ORC socks or adding additional nutrient solution. To minimize the potential for cross-contamination, the probe of the well sounder will be cleaned prior to first use and between subsequent measurements will be recorded to the nearest 0.01 foot relative to the reference mark on the top of the casing (Table 2) in each monitoring well.

WELL PURGING:

Prior to sampling, the wells will be purged of at least three casing volumes to remove standing water in the well casings and promote the inflow of representative groundwater from the surrounding formation. Casing volumes will be calculated based on the casing diameter and the height of the water column in the well casing. The wells will be purged by repeated bailing using clean Teflon or disposable polyethylene bailers or by using a submersible down-well pump. The pH, EC, temperature and dissolved oxygen content of the groundwater will be measured initially and after the removal of each successive casing volume. If successive pH, EC and temperature readings have not stabilized to within 10 percent of one another after the removal of three casing volumes, additional purging will be performed.

GROUNDWATER SAMPLING:

On completion of purging, groundwater samples will be collected from each of the wells using disposable polyethylene bailers. The samples will be decanted from the bailers into virgin containers prepared and supplied by PEL immediately upon collection, the sample containers will be labeled and placed on ice in coolers. Chain-of-custody procedures will be followed at all times from sample collection to delivery to the analytical laboratory.

GROUNDWATER SAMPLE ANALYSIS:

The groundwater samples will be analyzed for TPHd, TPHg, BTEX and MTBE by PEL using EPA Method 8260. In addition, the samples will be analyzed for nitrate as nitrogen using EPA Method 353.3, orthophosphate as phosphorous using EPA Method 365, the hydrocarbon oxidizing bacteria population, and the total heterotrophic plate count.

NUTRIENT AND OXYGEN REPLENISHMENT:

In conjunction with each groundwater monitoring event the condition of the ORC socks will be inspected and additional nutrient solution will be mixed and gravity-fed into the wells at each at the site. In brief spent socks will be replaced as necessary and nutrient solution will be added to the same wells as originally treated. The nutrient solution will always be batched such that the 10 mg/L MCL for nitrate is not exceeded.

REPORTING:

The results of each monitoring event will be documented in a bound report. At a minimum, each report will include a summary of relevant background information, a description of the remedial activities conducted during the preceding quarter, groundwater level data, the results of sample analyses performed, an evaluation of the results, conclusions and recommendations. The first quarterly report will include a summary of the baseline groundwater quality conditions and an account of the procedures used for oxygen and nutrient addition.

Each report will be supported by tables, figures and appendices as appropriate. The appendices will, at a minimum, include copies of the certificates of analyses received from the analytical laboratory. The reports will be signed by a registered engineer or geologist and will be suitable for submission to the regulatory agencies.

CLOSING REMARKS:

STE respectively requests that RWQCB and County personnel review and approve this work plan for implementation as expeditiously as possible. If there are any questions regarding the proposed scope of work or any other aspect of this work plan please not hesitate to call.

Respectfully submitted,

SOIL TECH ENGINEERING, INC.

FRANK HAMEDI-FARD
GENERAL MANAGER

LAWRENCE KOO, P. E.
C. E. #34928

File No. 7-92-514-SA

A P P E N D I X "A"

SOIL TECH ENGINEERING, INC.

TABLE 1
WATER SAMPLES ANALYTICAL RESULTS
ANALYZED FOR VOLATILE ORGANICS (8260)
IN MILLIGRAM PER LITER (mg/L)

Date	Sample Number	Parameter	Detection Limit
5/21/97	STMW-1	Acetone	0.16
		Benzene	0.087
		Chloroform	0.0021
		2-hexanone	0.21
		Isopropylbenzene	0.034
		Methyl Chloride	0.0018
		Naphthalene	0.21
		p-isopropyltoluene	0.017
		sec-butylbenzene	0.03
		Toluene	0.027
		1,2,4-trimethylbenzene	1.4
		1,3,5-trimethylbenzene	0.31
		Xylenes	1.2
5/21/97	STMW-2	Acetone	6.1
		Benzene	3.3
		Chloroform	0.0038
		1,2-dichloroethane	0.0036
		2,2-dichloropropane	0.0061
		trans-1,3-dichloropropene	0.024
		Ethylbenzene	1.1
		2-hexanone	0.053
		Isopropylbenzene	0.012
		Methyl Chloride	0.0067
		N-butylbenzene	0.0056
		N-propylbenzene	0.014
		Naphthalene	0.034

TABLE 1 CONT'D
WATER SAMPLES ANALYTICAL RESULTS
ANALYZED FOR VOLATILE ORGANICS (8260)
IN MILLIGRAM PER LITER (mg/L)

Date	Sample Number	Parameter	Detection Limit
5/21/97	STMW-2	p-isopropyltoluene	0.0022
		sec-butylbenzene	0.2
		Toluene	4.2
		1,2,4-trimethylbenzene	1.1
		1,3,5-trimethylbenzene	0.28
		Xylenes	5.7
5/21/97	STMW-3	Acetone	10.0
		Benzene	9.2
		1,2-dichloroethane	0.0066
		trans-1,3-dichlorpropene	0.084
		Ethylbenzene	2.1
		2-hexanone	0.014
		Isopropylbenzene	0.038
		Methyl Chloride	0.078
	MIBK	4-methyl-2-pentanone	0.0095
		N-butylbenzene	0.031
		N-propylbenzene	0.049
		Naphthalene	0.63
		p-isopropyltoluene	0.0068
		Tert-butylbenzene	0.23
		Toluene	14.0
		1,2,4-trimethylbenzene	0.86
		1,3,5-trimethylbenzene	0.55
		Xylenes	10.0
5/21/97	STMW-4	Benzene	0.37

TABLE 1 CONT'D
WATER SAMPLES ANALYTICAL RESULTS
ANALYZED FOR VOLATILE ORGANICS (8260)
IN MILLIGRAM PER LITER (mg/L)

Date	Sample Number	Parameter	Detection Limit
5/21/97	STMW-4	Toluene	0.028
		Xylenes	0.061
5/21/97	STMW-5	None Detected	
5/21/97	STMW-6	Acetone	11.0
		Benzene	3.6
		Chloroform	0.0075
		1,2-dichloroethane	0.0061
		Ethylbenzene	1.3
		2-hexanone	0.086
		Methyl Chloride	0.01
		Naphthalene	0.45
		p-isopropyltoluene	0.011
		sec-butylbenzene	0.3
		Toluene	5.8
		1,2,4-trimethylbenzene	1.6
		1,3,5-trimethylbenzene	0.42
		Xylenes	6.3
5/21/97	STMW-7	None Detected	
5/21/97	STMW-8	Acetone	7.3
		Benzene	2.3
		Chloroform	0.0064
		1,2-dichloroethane	0.0052
		2-hexanone	3.6
		Isopropylbenzene	0.012
		Methyl Chloride	0.0054

TABLE 1 CONT'D
WATER SAMPLES ANALYTICAL RESULTS
ANALYZED FOR VOLATILE ORGANICS (8260)
IN MILLIGRAM PER LITER (mg/L)

Date	Sample Number	Parameter	Detection Limit
5/21/97	STMW-8	Naphthalene	0.52
		p-isopropyltoluene	0.0095
		sec-butylbenzene	0.4
		Toluene	0.58
		1,2,4-trimethylbenzene	1.5
		1,3,5-trimethylbenzene	0.31
		Xylenes	2.8
5/21/97	STMW-10	Acetone	0.082
		Benzene	0.19
		Chloroform	0.0012
		Ethylbenzene	0.043
		Isopropylbenzene	0.0032
		Naphthalene	0.052
		Toluene	0.0037
		1,2,4-trimethylbenzene	0.04
		1,3,5-trimethylbenzene	0.011
		Xylenes	0.059
5/21/97	STMW-11	None Detected	

TABLE 1 CON'T
WATER SAMPLES ANALYTICAL RESULTS
ANALYZED FOR EPA 352.1 & EPA 365.2
IN MILLIGRAMS PER LITER (mg/L)

NO_3-N PO_4-3 SO_4-2

Date	Sample No.	Nitrate Nitrogen (352.1)	Ortho Phosphorus (365.2)
5/21/97	STMW-1	ND	ND
	STMW-2	0.7	ND
	STMW-3	0.5	ND
	STMW-4	ND	ND
	STMW-5	5.8	ND
	STMW-6	ND	ND
	STMW-7	ND	ND
	STMW-8	0.75	ND
	STMW-10	2.85	ND
	STMW-11	5.2	ND

TABLE 2
PROPOSED WELLS TO BE INTRODUCED THE NUTRIENT

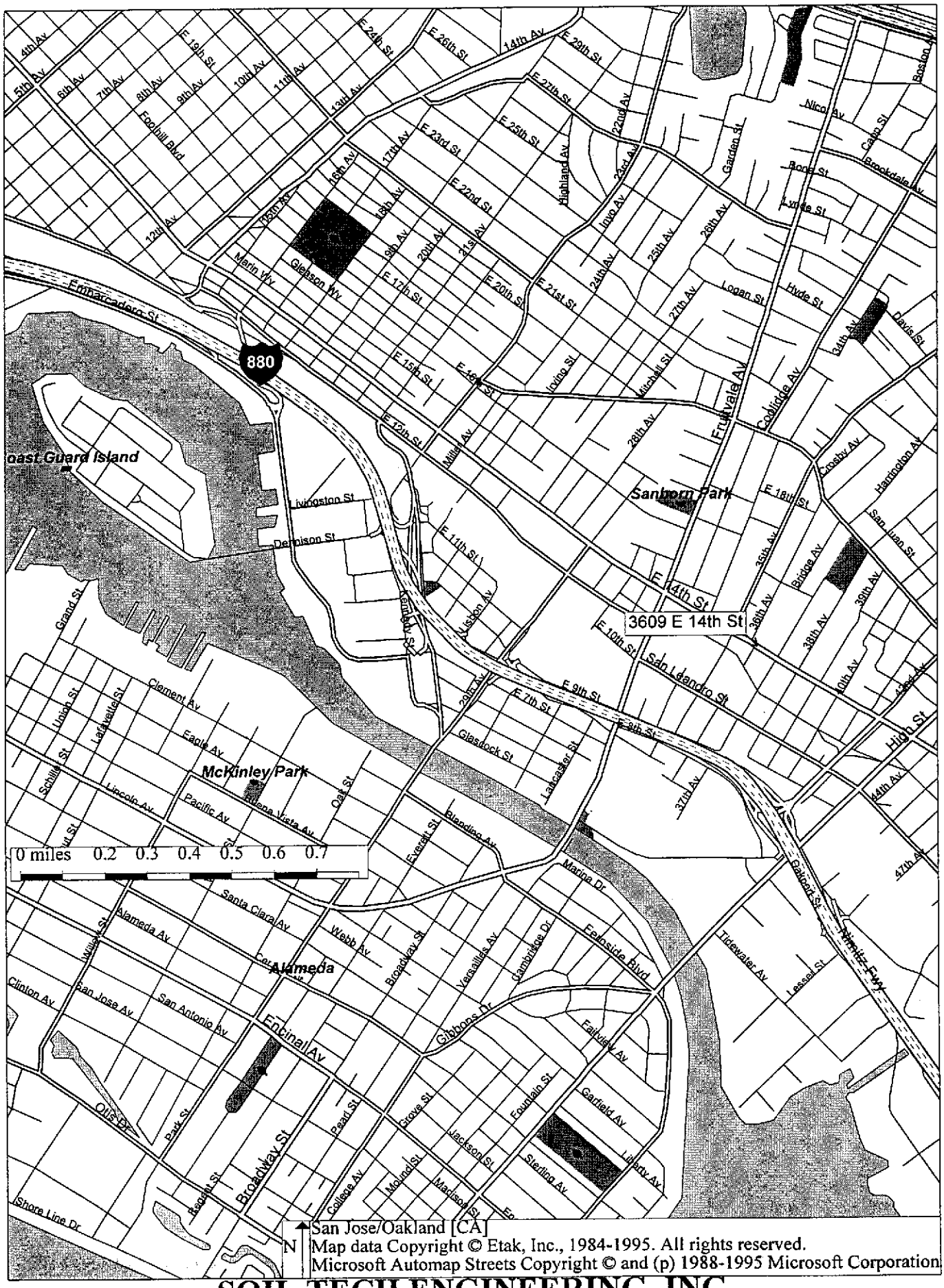
Monitoring Well Number	Monitoring Frequencey
STMW-1	Quarterly
STMW-2	Quarterly
STMW-3	Quarterly
STMW-4	Quarterly
STMW-6	Quarterly
STMW-8	Quarterly
STMW-10	Quarterly

File No. 7-92-514-SA

A P P E N D I X "B"

SOIL TECH ENGINEERING, INC.

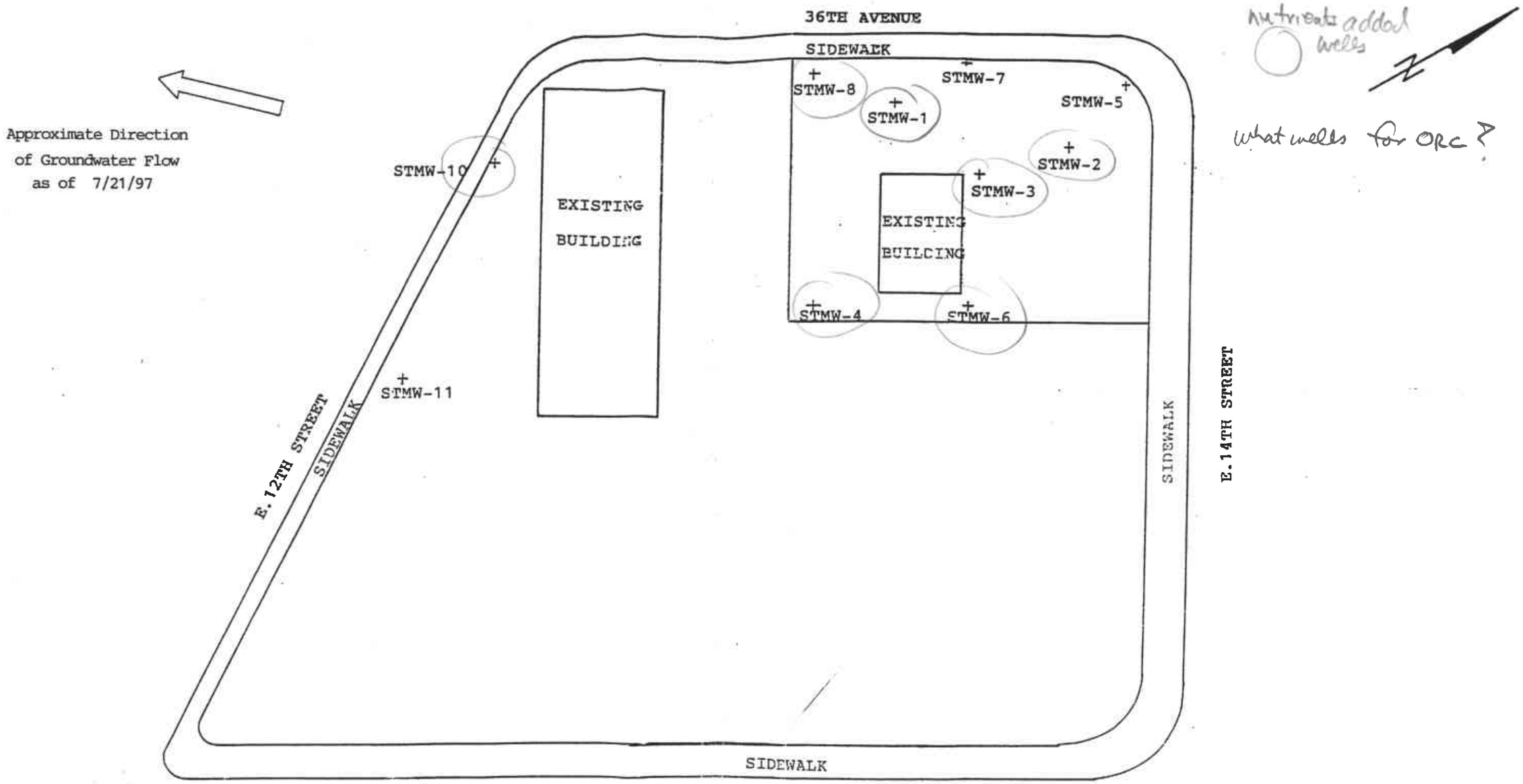
File No. 7-92-514-SA



SOIL TECH ENGINEERING, INC.

Figure 1

M1



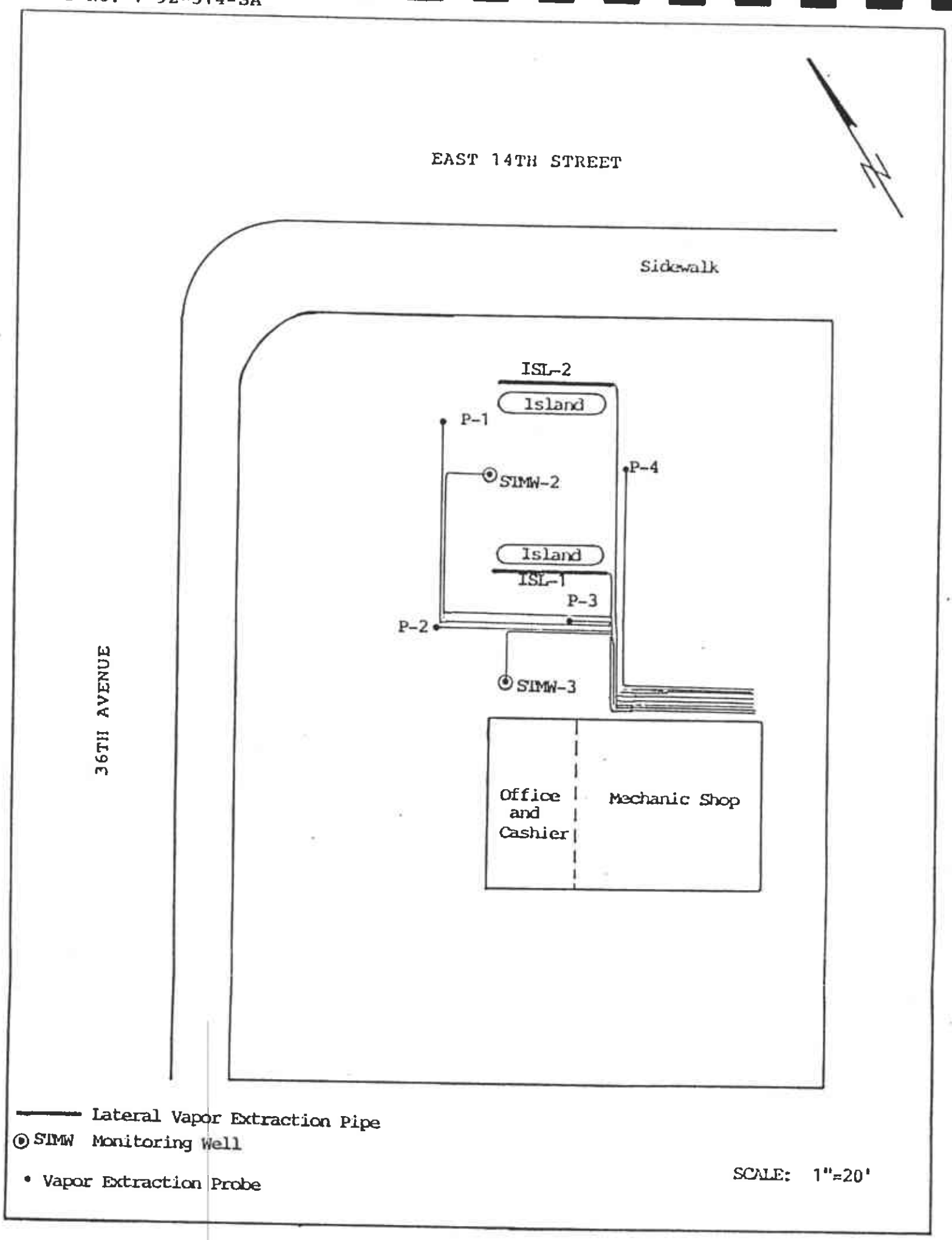
Nutrients added wells

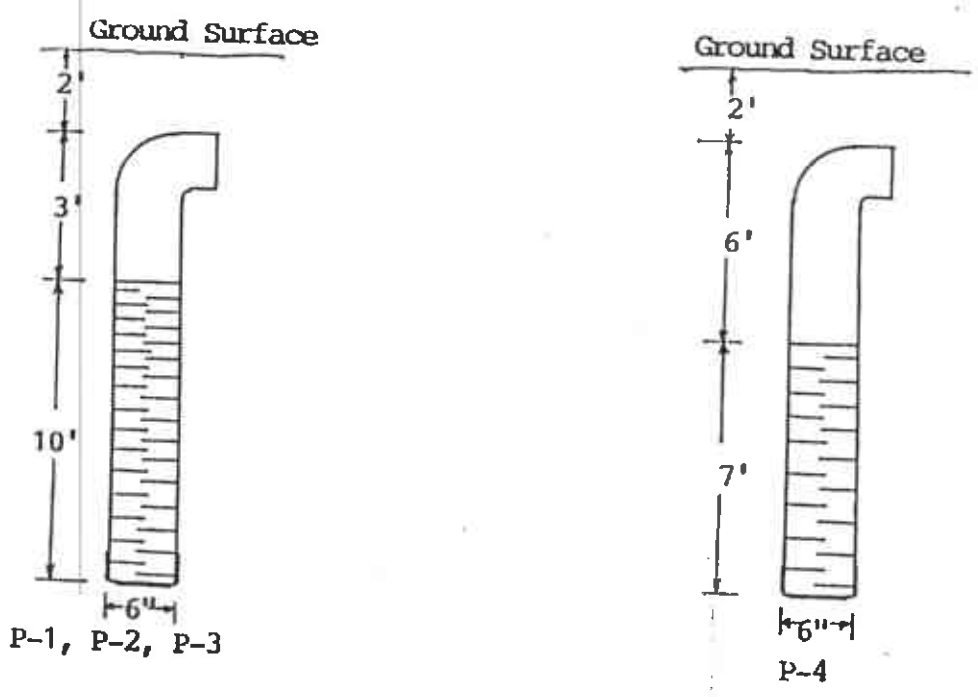
what wells for ORC?

LEGEND

+ MONITORING WELL

TONY'S EXPRESS AUTO SERVICES			
SCALE: 1"=40'			DRAWN BY
DATE: 7/21/97		7-92-514-SA	REVISED
3609 E. 14TH STREET OAKLAND CA, 94601			
SOIL TECH ENGINEERING INC			DRAWING N





Profile of Vapor Extraction Probes

Figure 3

File No. 7-92-514-SA

A P P E N D I X "C"

SOIL TECH ENGINEERING, INC.

Global Environmental Laboratory, Inc.
4118 CLIPPER COURT, FREMONT, CA 94539 PHONE: (510) 498-1991 FAX: (510) 498-1994

June 9, 1997

Soil Tech Engineering
1761 Junction Avenue
San Jose, CA 95112

Regarding: **Analytical Results**
Client Project: 7-92-514-SA
Global Lab Project: 970523B

Dear Mr. Noori Ameli :

Enclosed are the lab results for the samples submitted to Global Lab for the project above. The samples will be disposed of by the laboratory after 30 days from the time they were received.

We appreciate the opportunity to be of assistance to you. If you have any questions or comments, please feel free to contact me at (510) 498-1991.

Sincerely,

Lisheng Wu
Laboratory Manager

INVOICE

GLOBAL

No. 970172

Environmental Laboratory, Inc.
4118 Clipper Court
Fremont, CA 94538
TEL: (510) 498-1991
FAX: (510) 498-1994

Soil Tech Enginnering
1761 Junction Avenue
San Jose, CA 95112

ATTN: Accounts Payable

INVOICE DATE	COC NO.	OUR PROJECT NO.	YOUR PROJECT NO.	TERMS	SAMPLING DATE
05-29-97		970523B	7-92-514-SA	30 days	05-21-97

QUANTITY	DESCRIPTION	PRICE	AMOUNT
10	EPA 8260 ~~Selenium~~ Analysis VOA's	130.00	1300.00
10	EPA 352.1 Analysis	25.00	250.00
10	EPA 365.2 Analysis	25.00	250.00
		SUB TOTAL	1800.00
		PLEASE PAY THIS AMOUNT	1800.00

GE Global Environmental Laboratory, Inc.
4118 CLIPPER COURT, FREMONT, CA 94539 PHONE: (510) 498-1991 FAX: (510) 498-1994

Volatile Organics (EPA 8260) Report

Client:	Soil Tech Engineering	Date Sampled:	05-21-97
	1761 Junson Avenue	Date Recieved:	05-23-97
	San Jose, CA 95112	Date Analyzed:	05-27-97
Client Project:	7-92-514-SA	Date Reported:	05-29-97
Matrix:	Water	Lab Job #:	970523B
Client I.D.:	STMW-1	Lab ID #:	970523B01

Analyte		Result (ug/L)		Reporting Limit (ug/L)
acetone		160		2.0
acrylonitrile		ND		2.0
benzene		87		1.0
bromobenzene		ND		1.0
bromochloromethane		ND		1.0
bromodichloromethane		ND		1.0
bromoform		ND		1.0
carbon disulfide		ND		1.0
carbon tetrachloride		ND		1.0
chlorobenzene		ND		1.0
chloroethane		ND		1.0
chloroform		2.1		1.0
2-chlorotoluene		ND		1.0
4-chlorotoluene		ND		1.0
dibromochloromethane		ND		1.0
1,2-dibromo-3-chloropropane(DBCP)		ND		1.0
1,2-dibromoethane(EDB)		ND		1.0
m-dichlorobenzene		ND		1.0
o-dichlorobenzene		ND		1.0
p-dichlorobenzene		ND		1.0
trans-1,4-dichloro-2-butene		ND		1.0
dichlorodifluoromethane		ND		1.0
1,1-dichloroethane		ND		1.0
1,2-dichloroethane		ND		1.0
1,1-dichloroethene		ND		1.0
cis-1,2-dichloroethylene		ND		1.0
trans-1,2-dichloroethylene		ND		1.0
1,1-dichloropropane		ND		1.0
1,2-dichloropropane		ND		1.0
2,2-dichloropropane		ND		1.0
cis-1,3-dichloropropene		ND		1.0
trans-1,3-dichlorpropene		ND		1.0
ethylbenzene		ND		1.0
2-hexanone		210		1.0
hexachlorobutadiene		ND		1.0
isopropylbenzene		34		1.0
methylene bromide		ND		1.0
methyl chloride		1.8		1.0
methylene bromide		ND		1.0
methylene chloride		ND		1.0

GE Global Environmental Laboratory, Inc.

4118 CLIPPER COURT, FREMONT, CA 94539 PHONE: (510) 498-1991 FAX: (510) 498-1994

Client:	Soil Tech Engineering	Date Sampled:	05-21-97
	1761 Junson Avenue	Date Recieved:	05-23-97
	San Jose, CA 95112	Date Analyzed:	05-27-97
Client Project:	7-92-514-SA	Date Reported:	05-29-97
Matrix:	Water	Lab Job #:	970523B
Client I.D.:	STMW-1	Lab ID #:	970523B01

Analyte		Result (ug/L)		Reporting Limit (ug/L)
methyl ethyl ketone		ND		2.0
methyl iodide		ND		1.0
4-methyl-2-pentanone		ND		1.0
N-butylbenzene		ND		1.0
N-propylbenzene		ND		1.0
Naphthalene		210		1.0
p-isopropyltoluene		17		1.0
sec-butylbenzene		30		1.0
styrene		ND		1.0
1,1,1,2-tetrachloroethane		ND		1.0
1,1,2,2-tetrachloroethane		ND		2.0
tetrachloroethene		ND		1.0
tert-butylbenzene		ND		1.0
toluene		27		1.0
1,2,3-trichlorobenzene		ND		1.0
1,2,4-trichlorobenzene		ND		1.0
1,2,4-trimethylbenzene		1400		1.0
1,3,5-trimethylbenzene		310		1.0
1,1,1-trichloroethane		ND		1.0
1,1,2-trichloroethane		ND		1.0
trichloroethylene		ND		1.0
trichlorofluoromethane		ND		1.0
1,2,3-trichloropropane		ND		1.0
vinyl acetate		ND		3.0
vinyl chloride		ND		1.0
xylenes		1200		1.0
Freon113		ND		2.0
Surrogate Compounds	**% Recovery**	**% Control Limits**		
1,2-Dichloroethane-D4	95	76-114		
Toluene-D8	104	86-110		
4-bromofluorobenzene	99	84-115		

ND = Not Detected at Methold Detection Limit

Reviewed By: **ELAP #: 2132**

Lei Chen, Laboratory Director

GE Global Environmental Laboratory, Inc.
4118 CLIPPER COURT, FREMONT, CA 94539 PHONE: (510) 498-1991 FAX: (510) 498-1994

Volatile Organics (EPA 8260) Report

Client:	Soil Tech Engineering	Date Sampled:	05-21-97
	1761 Junson Avenue	Date Recieved:	05-23-97
	San Jose, CA 95112	Date Analyzed:	05-27-97
Client Project:	7-92-514-SA	Date Reported:	05-29-97
Matrix:	Water	Lab Job #:	970523B
Client I.D.:	STMW-2	Lab ID #:	970523B02

Analyte		Result (ug/L)		Reporting Limit (ug/L)
acetone		6100		2.0
acrylonitrile		ND		2.0
benzene		3300		1.0
bromobenzene		ND		1.0
bromochloromethane		ND		1.0
bromodichloromethane		ND		1.0
bromoform		ND		1.0
carbon disulfide		ND		1.0
carbon tetrachloride		ND		1.0
chlorobenzene		ND		1.0
chloroethane		ND		1.0
chloroform		3.8		1.0
2-chlorotoluene		ND		1.0
4-chlorotoluene		ND		1.0
dibromochloromethane		ND		1.0
1,2-dibromo-3-chloropropane(DBCP)		ND		1.0
1,2-dibromoethane(EDB)		ND		1.0
m-dichlorobenzene		ND		1.0
o-dichlorobenzene		ND		1.0
p-dichlorobenzene		ND		1.0
trans-1,4-dichloro-2-butene		ND		1.0
dichlorodifluoromethane		ND		1.0
1,1-dichloroethane		ND		1.0
1,2-dichloroethane		3.6		1.0
1,1-dichloroethene		ND		1.0
cis-1,2-dichloroethylene		ND		1.0
trans-1,2-dichloroethylene		ND		1.0
1,1-dichloropropane		ND		1.0
1,2-dichloropropane		ND		1.0
2,2-dichloropropane		6.1		1.0
cis-1,3-dichloropropene		ND		1.0
trans-1,3-dichlorpropene		24		1.0
ethylbenzene		1100		1.0
2-hexanone		53		1.0
hexachlorobutadiene		ND		1.0
isopropylbenzene		12		1.0
methylene bromide		ND		1.0
methyl chloride		6.7		1.0
methylene bromide		ND		1.0
methylene chloride		ND		1.0

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Client:	Soil Tech Engineering	Date Sampled:	05-21-97
	1761 Junson Avenue	Date Recieved:	05-23-97
	San Jose, CA 95112	Date Analyzed:	05-27-97
Client Project:	7-92-514-SA	Date Reported:	05-29-97
Matrix:	Water	Lab Job #:	970523B
Client I.D.:	STMW-2	Lab ID #:	970523B02

Analyte		Result (ug/L)		Reporting Limit (ug/L)
methyl ethyl ketone		ND		2.0
methyl iodide		ND		1.0
4-methyl-2-pentanone		ND		1.0
N-butylbenzene		5.6		1.0
N-propylbenzene		14		1.0
Naphthalene		34		1.0
p-isopropyltoluene		2.2		1.0
sec-butylbenzene		200		1.0
styrene		ND		1.0
1,1,1,2-tetrachloroethane		ND		1.0
1,1,2,2-tetrachloroethane		ND		2.0
tetrachloroethene		ND		1.0
tert-butylbenzene		ND		1.0
toluene		4200		1.0
1,2,3-trichlorobenzene		ND		1.0
1,2,4-trichlorobenzene		ND		1.0
1,2,4-trimethylbenzene		1100		1.0
1,3,5-trimethylbenzene		280		1.0
1,1,1-trichloroethane		ND		1.0
1,1,2-trichloroethane		ND		1.0
trichloroethylene		ND		1.0
trichlorofluoromethane		ND		1.0
1,2,3-trichloropropane		ND		1.0
vinyl acetate		ND		3.0
vinyl chloride		ND		1.0
xylenes		5700		1.0
Freon113		ND		2.0
Surrogate Compounds	**% Recovery**	**% Control Limits**		
1,2-Dichloroethane-D4	98	76-114		
Toluene-D8	103	86-110		
4-bromofluorobenzene	98	84-115		

ND = Not Detected at Methold Detection Limit

Reviewed By: **ELAP #: 2132**

Lei Chen, Laboratory Director

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Volatile Organics (EPA 8260) Report

Client:	Soil Tech Engineering	Date Sampled:	05-21-97
	1761 Junson Avenue	Date Recieved:	05-23-97
	San Jose, CA 95112	Date Analyzed:	05-27-97
Client Project:	7-92-514-SA	Date Reported:	05-29-97
Matrix:	Water	Lab Job #:	970523B
Client I.D.:	STMW-3	Lab ID #:	970523B03

Analyte		Result (ug/L)		Reporting Limit (ug/L)
acetone		10000		2.0
acrylonitrile		ND		2.0
benzene		9200		1.0
bromobenzene		ND		1.0
bromochloromethane		ND		1.0
bromodichloromethane		ND		1.0
bromoform		ND		1.0
carbon disulfide		ND		1.0
carbon tetrachloride		ND		1.0
chlorobenzene		ND		1.0
chloroethane		ND		1.0
chloroform		ND		1.0
2-chlorotoluene		ND		1.0
4-chlorotoluene		ND		1.0
dibromochloromethane		ND		1.0
1,2-dibromo-3-chloropropane(DBCP)		ND		1.0
1,2-dibromoethane(EDB)		ND		1.0
m-dichlorobenzene		ND		1.0
o-dichlorobenzene		ND		1.0
p-dichlorobenzene		ND		1.0
trans-1,4-dichloro-2-butene		ND		1.0
dichlorodifluoromethane		ND		1.0
1,1-dichloroethane		ND		1.0
1,2-dichloroethane		6.6		1.0
1,1-dichloroethene		ND		1.0
cis-1,2-dichloroethylene		ND		1.0
trans-1,2-dichloroethylene		ND		1.0
1,1-dichloropropane		ND		1.0
1,2-dichloropropane		ND		1.0
2,2-dichloropropane		ND		1.0
cis-1,3-dichloropropene		ND		1.0
trans-1,3-dichlorpropene		84		1.0
ethylbenzene		2100		1.0
2-hexanone		14		1.0
hexachlorobutadiene		ND		1.0
isopropylbenzene		38		1.0
methylene bromide		ND		1.0
methyl chloride		78		1.0
methylene bromide		ND		1.0
methylene chloride		ND		1.0

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	1761 Junson Avenue	Date Recieved:	05-23-97
	San Jose, CA 95112	Date Analyzed:	05-27-97
Client Project:	7-92-514-SA	Date Reported:	05-29-97
Matrix:	Water	Lab Job #:	970523B
Client I.D.:	STMW-3	Lab ID #:	970523B03

Analyte		Result (ug/L)		Reporting Limit (ug/L)
methyl ethyl ketone		ND		2.0
methyl iodide		ND		1.0
4-methyl-2-pentanone		9.5		1.0
N-butylbenzene		31		1.0
N-propylbenzene		49		1.0
Naphthalene		630		1.0
p-isopropyltoluene		6.8		1.0
sec-butylbenzene		ND		1.0
styrene		ND		1.0
1,1,1,2-tetrachloroethane		ND		1.0
1,1,2,2-tetrachloroethane		ND		2.0
tetrachloroethene		ND		1.0
tert-butylbenzene		230		1.0
toluene		14000		1.0
1,2,3-trichlorobenzene		ND		1.0
1,2,4-trichlorobenzene		ND		1.0
1,2,4-trimethylbenzene		860		1.0
1,3,5-trimethylbenzene		550		1.0
1,1,1-trichloroethane		ND		1.0
1,1,2-trichloroethane		ND		1.0
trichloroethylene		ND		1.0
trichlorofluoromethane		ND		1.0
1,2,3-trichloropropane		ND		1.0
vinyl acetate		ND		3.0
vinyl chloride		ND		1.0
xylenes		10000		1.0
Freon113		ND		2.0
Surrogate Compounds	**% Recovery**	**% Control Limits**		
1,2-Dichloroethane-D4	106	76-114		
Toluene-D8	103	86-110		
4-bromofluorobenzene	99	84-115		

ND = Not Detected at Methold Detection Limit

Reviewed By: **ELAP #: 2132**

Lei Chen, Laboratory Director

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Volatile Organics (EPA 8260) Report

Client:	Soil Tech Engineering	Date Sampled:	05-21-97
	1761 Junson Avenue	Date Recieved:	05-23-97
	San Jose, CA 95112	Date Analyzed:	05-27-97
Client Project:	7-92-514-SA	Date Reported:	05-29-97
Matrix:	Water	Lab Job #:	970523B
Client I.D.:	STMW-4	Lab ID #:	970523B04

Analyte		Result (ug/L)		Reporting Limit (ug/L)
acetone		ND		2.0
acrylonitrile		ND		2.0
benzene		370		1.0
bromobenzene		ND		1.0
bromochloromethane		ND		1.0
bromodichloromethane		ND		1.0
bromoform		ND		1.0
carbon disulfide		ND		1.0
carbon tetrachloride		ND		1.0
chlorobenzene		ND		1.0
chloroethane		ND		1.0
chloroform		ND		1.0
2-chlorotoluene		ND		1.0
4-chlorotoluene		ND		1.0
dibromochloromethane		ND		1.0
1,2-dibromo-3-chloropropane(DBCP)		ND		1.0
1,2-dibromoethane(EDB)		ND		1.0
m-dichlorobenzene		ND		1.0
o-dichlorobenzene		ND		1.0
p-dichlorobenzene		ND		1.0
trans-1,4-dichloro-2-butene		ND		1.0
dichlorodifluoromethane		ND		1.0
1,1-dichloroethane		ND		1.0
1,2-dichloroethane		ND		1.0
1,1-dichloroethene		ND		1.0
cis-1,2-dichloroethylene		ND		1.0
trans-1,2-dichloroethylene		ND		1.0
1,1-dichloropropane		ND		1.0
1,2-dichloropropane		ND		1.0
2,2-dichloropropane		ND		1.0
cis-1,3-dichloropropene		ND		1.0
trans-1,3-dichlorpropene		ND		1.0
ethylbenzene		ND		1.0
2-hexanone		ND		1.0
hexachlorobutadiene		ND		1.0
isopropylbenzene		ND		1.0
methylene bromide		ND		1.0
methyl chloride		ND		1.0
methylene bromide		ND		1.0
methylene chloride		ND		1.0

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	San Jose, CA 95112	Date Analyzed:	05-27-97
Client Project:	7-92-514-SA	Date Reported:	05-29-97
Matrix:	Water	Lab Job #:	970523B
Client I.D.:	STMW-4	Lab ID #:	970523B04

Analyte		Result (ug/L)		Reporting Limit (ug/L)
methyl ethyl ketone		ND		2.0
methyl iodide		ND		1.0
4-methyl-2-pentanone		ND		1.0
N-butylbenzene		ND		1.0
N-propylbenzene		ND		1.0
Naphthalene		ND		1.0
p-isopropyltoluene		ND		1.0
sec-butylbenzene		ND		1.0
styrene		ND		1.0
1,1,1,2-tetrachloroethane		ND		1.0
1,1,2,2-tetrachloroethane		ND		2.0
tetrachloroethene		ND		1.0
tert-butylbenzene		ND		1.0
toluene		28		1.0
1,2,3-trichlorobenzene		ND		1.0
1,2,4-trichlorobenzene		ND		1.0
1,2,4-trimethylbenzene		ND		1.0
1,3,5-trimethylbenzene		ND		1.0
1,1,1-trichloroethane		ND		1.0
1,1,2-trichloroethane		ND		1.0
trichloroethylene		ND		1.0
trichlorofluoromethane		ND		1.0
1,2,3-trichloropropane		ND		1.0
vinyl acetate		ND		3.0
vinyl chloride		ND		1.0
xylenes		61		1.0
Freon113		ND		2.0
Surrogate Compounds	**% Recovery**	**% Control Limits**		
1,2-Dichloroethane-D4	108	76-114		
Toluene-D8	81	86-110		
4-bromofluorobenzene	113	84-115		

ND = Not Detected at Methold Detection Limit

Reviewed By: **ELAP #: 2132**

Lei Chen, Laboratory Director

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Volatile Organics (EPA 8260) Report

Client:	Soil Tech Engineering	Date Sampled:	05-21-97
	1761 Junson Avenue	Date Recieved:	05-23-97
	San Jose, CA 95112	Date Analyzed:	05-27-97
Client Project:	7-92-514-SA	Date Reported:	05-29-97
Matrix:	Water	Lab Job #:	970523B
Client I.D.:	STMW-5	Lab ID #:	970523B05

Analyte		Result (ug/L)		Reporting Limit (ug/L)
acetone		ND		2.0
acrylonitrile		ND		2.0
benzene		ND		1.0
bromobenzene		ND		1.0
bromochloromethane		ND		1.0
bromodichloromethane		ND		1.0
bromoform		ND		1.0
carbon disulfide		ND		1.0
carbon tetrachloride		ND		1.0
chlorobenzene		ND		1.0
chloroethane		ND		1.0
chloroform		ND		1.0
2-chlorotoluene		ND		1.0
4-chlorotoluene		ND		1.0
dibromochloromethane		ND		1.0
1,2-dibromo-3-chloropropane(DBCP)		ND		1.0
1,2-dibromoethane(EDB)		ND		1.0
m-dichlorobenzene		ND		1.0
o-dichlorobenzene		ND		1.0
p-dichlorobenzene		ND		1.0
trans-1,4-dichloro-2-butene		ND		1.0
dichlorodifluoromethane		ND		1.0
1,1-dichloroethane		ND		1.0
1,2-dichloroethane		ND		1.0
1,1-dichloroethene		ND		1.0
cis-1,2-dichloroethylene		ND		1.0
trans-1,2-dichloroethylene		ND		1.0
1,1-dichloropropane		ND		1.0
1,2-dichloropropane		ND		1.0
2,2-dichloropropane		ND		1.0
cis-1,3-dichloropropene		ND		1.0
trans-1,3-dichlorpropene		ND		1.0
ethylbenzene		ND		1.0
2-hexanone		ND		1.0
hexachlorobutadiene		ND		1.0
isopropylbenzene		ND		1.0
methylene bromide		ND		1.0
methyl chloride		ND		1.0
methylene bromide		ND		1.0
methylene chloride		ND		1.0

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		Date Recieved:	05-23-97
		Date Analyzed:	05-27-97
Client Project:	7-92-514-SA	Date Reported:	05-29-97
Matrix:	Water	Lab Job #:	970523B
Client I.D.:	STMW-5	Lab ID #:	970523B05

Analyte		Result (ug/L)		Reporting Limit (ug/L)
methyl ethyl ketone		ND		2.0
methyl iodide		ND		1.0
4-methyl-2-pentanone		ND		1.0
N-butylbenzene		ND		1.0
N-propylbenzene		ND		1.0
Naphthalene		ND		1.0
p-isopropyltoluene		ND		1.0
sec-butylbenzene		ND		1.0
styrene		ND		1.0
1,1,1,2-tetrachloroethane		ND		1.0
1,1,2,2-tetrachloroethane		ND		2.0
tetrachloroethene		ND		1.0
tert-butylbenzene		ND		1.0
toluene		ND		1.0
1,2,3-trichlorobenzene		ND		1.0
1,2,4-trichlorobenzene		ND		1.0
1,2,4-trimethylbenzene		ND		1.0
1,3,5-trimethylbenzene		ND		1.0
1,1,1-trichloroethane		ND		1.0
1,1,2-trichloroethane		ND		1.0
trichloroethylene		ND		1.0
trichlorofluoromethane		ND		1.0
1,2,3-trichloropropane		ND		1.0
vinyl acetate		ND		3.0
vinyl chloride		ND		1.0
xylenes		ND		1.0
Freon113		ND		2.0
Surrogate Compounds	**% Recovery**	**% Control Limits**		
1,2-Dichloroethane-D4	116	76-114		
Toluene-D8	105	86-110		
4-bromofluorobenzene	100	84-115		

ND = Not Detected at Methold Detection Limit

Reviewed By: **ELAP #: 2132**

Lei Chen, Laboratory Director

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Volatile Organics (EPA 8260) Report

Client:	Soil Tech Engineering 1761 Junson Avenue San Jose, CA 95112	Date Sampled: Date Recieved: Date Analyzed:	05-21-97 05-23-97 05-27-97
Client Project:	7-92-514-SA	Date Reported:	05-29-97
Matrix:	Water	Lab Job #:	970523B
Client I.D.:	STMW-6	Lab ID #:	970523B06

Analyte		Result (ug/L)		Reporting Limit (ug/L)
acetone		11000		2.0
acrylonitrile		ND		2.0
benzene		3600		1.0
bromobenzene		ND		1.0
bromochloromethane		ND		1.0
bromodichloromethane		ND		1.0
bromoform		ND		1.0
carbon disulfide		ND		1.0
carbon tetrachloride		ND		1.0
chlorobenzene		ND		1.0
chloroethane		ND		1.0
chloroform		7.5		1.0
2-chlorotoluene		ND		1.0
4-chlorotoluene		ND		1.0
dibromochloromethane		ND		1.0
1,2-dibromo-3-chloropropane(DBCP)		ND		1.0
1,2-dibromoethane(EDB)		ND		1.0
m-dichlorobenzene		ND		1.0
o-dichlorobenzene		ND		1.0
p-dichlorobenzene		ND		1.0
trans-1,4-dichloro-2-butene		ND		1.0
dichlorodifluoromethane		ND		1.0
1,1-dichloroethane		ND		1.0
1,2-dichloroethane		6.1		1.0
1,1-dichloroethene		ND		1.0
cis-1,2-dichloroethylene		ND		1.0
trans-1,2-dichloroethylene		ND		1.0
1,1-dichloropropane		ND		1.0
1,2-dichloropropane		ND		1.0
2,2-dichloropropane		ND		1.0
cis-1,3-dichloropropene		ND		1.0
trans-1,3-dichlorpropene		ND		1.0
ethylbenzene		1300		1.0
2-hexanone		86		1.0
hexachlorobutadiene		ND		1.0
isopropylbenzene		ND		1.0
methylene bromide		ND		1.0
methyl chloride		10		1.0
methylene bromide		ND		1.0
methylene chloride		ND		1.0

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Client:	Soil Tech Engineering	Date Sampled:	05-21-97
	1761 Junson Avenue	Date Recieved:	05-23-97
	San Jose, CA 95112	Date Analyzed:	05-27-97
Client Project:	7-92-514-SA	Date Reported:	05-29-97
Matrix:	Water	Lab Job #:	970523B
Client I.D.:	STMW-6	Lab ID #:	970523B06

Analyte		Result (ug/L)		Reporting Limit (ug/L)
methyl ethyl ketone		ND		2.0
methyl iodide		ND		1.0
4-methyl-2-pentanone		ND		1.0
N-butylbenzene		ND		1.0
N-propylbenzene		ND		1.0
Naphthalene		450		1.0
p-isopropyltoluene		11		1.0
sec-butylbenzene		300		1.0
styrene		ND		1.0
1,1,1,2-tetrachloroethane		ND		1.0
1,1,2,2-tetrachloroethane		ND		2.0
tetrachloroethene		ND		1.0
tert-butylbenzene		ND		1.0
toluene		5800		1.0
1,2,3-trichlorobenzene		ND		1.0
1,2,4-trichlorobenzene		ND		1.0
1,2,4-trimethylbenzene		1600		1.0
1,3,5-trimethylbenzene		420		1.0
1,1,1-trichloroethane		ND		1.0
1,1,2-trichloroethane		ND		1.0
trichloroethylene		ND		1.0
trichlorofluoromethane		ND		1.0
1,2,3-trichloropropane		ND		1.0
vinyl acetate		ND		3.0
vinyl chloride		ND		1.0
xylenes		6300		1.0
Freon113		ND		2.0
Surrogate Compounds	**% Recovery**	**% Control Limits**		
1,2-Dichloroethane-D4	109	76-114		
Toluene-D8	108	86-110		
4-bromofluorobenzene	98	84-115		

ND = Not Detected at Methold Detection Limit

Reviewed By: **ELAP #: 2132**

Lei Chen, Laboratory Director

GE Global Environmental Laboratory, Inc.
4118 CLIPPER COURT, FREMONT, CA 94539 PHONE: (510) 498-1991 FAX: (510) 498-1994

Volatile Organics (EPA 8260) Report

Client:	Soil Tech Engineering	Date Sampled:	05-21-97
	1761 Junson Avenue	Date Recieved:	05-23-97
	San Jose, CA 95112	Date Analyzed:	05-27-97
Client Project:	7-92-514-SA	Date Reported:	05-29-97
Matrix:	Water	Lab Job #:	970523B
Client I.D.:	STMW-7	Lab ID #:	970523B07

Analyte		Result (ug/L)		Reporting Limit (ug/L)
acetone		ND		2.0
acrylonitrile		ND		2.0
benzene		ND		1.0
bromobenzene		ND		1.0
bromochloromethane		ND		1.0
bromodichloromethane		ND		1.0
bromoform		ND		1.0
carbon disulfide		ND		1.0
carbon tetrachloride		ND		1.0
chlorobenzene		ND		1.0
chloroethane		ND		1.0
chloroform		ND		1.0
2-chlorotoluene		ND		1.0
4-chlorotoluene		ND		1.0
dibromochloromethane		ND		1.0
1,2-dibromo-3-chloropropane(DBCP)		ND		1.0
1,2-dibromoethane(EDB)		ND		1.0
m-dichlorobenzene		ND		1.0
o-dichlorobenzene		ND		1.0
p-dichlorobenzene		ND		1.0
trans-1,4-dichloro-2-butene		ND		1.0
dichlorodifluoromethane		ND		1.0
1,1-dichloroethane		ND		1.0
1,2-dichloroethane		ND		1.0
1,1-dichloroethene		ND		1.0
cis-1,2-dichloroethylene		ND		1.0
trans-1,2-dichloroethylene		ND		1.0
1,1-dichloropropane		ND		1.0
1,2-dichloropropane		ND		1.0
2,2-dichloropropane		ND		1.0
cis-1,3-dichloropropene		ND		1.0
trans-1,3-dichlorpropene		ND		1.0
ethylbenzene		ND		1.0
2-hexanone		ND		1.0
hexachlorobutadiene		ND		1.0
isopropylbenzene		ND		1.0
methylene bromide		ND		1.0
methyl chloride		ND		1.0
methylene bromide		ND		1.0
methylene chloride		ND		1.0

GE Global Environmental Laboratory, Inc.

4118 CLIPPER COURT, FREMONT, CA 94539 PHONE: (510) 498-1991 FAX: (510) 498-1994

Client:	Soil Tech Engineering	Date Sampled:	05-21-97
	1761 Junson Avenue	Date Recieved:	05-23-97
	San Jose, CA 95112	Date Analyzed:	05-27-97
Client Project:	7-92-514-SA	Date Reported:	05-29-97
Matrix:	Water	Lab Job #:	970523B
Client I.D.:	STMW-7	Lab ID #:	970523B07

Analyte		Result (ug/L)		Reporting Limit (ug/L)
methyl ethyl ketone		ND		2.0
methyl iodide		ND		1.0
4-methyl-2-pentanone		ND		1.0
N-butylbenzene		ND		1.0
N-propylbenzene		ND		1.0
Naphthalene		ND		1.0
p-isopropyltoluene		ND		1.0
sec-butylbenzene		ND		1.0
styrene		ND		1.0
1,1,1,2-tetrachloroethane		ND		1.0
1,1,2,2-tetrachloroethane		ND		2.0
tetrachloroethene		ND		1.0
tert-butylbenzene		ND		1.0
toluene		ND		1.0
1,2,3-trichlorobenzene		ND		1.0
1,2,4-trichlorobenzene		ND		1.0
1,2,4-trimethylbenzene		ND		1.0
1,3,5-trimethylbenzene		ND		1.0
1,1,1-trichloroethane		ND		1.0
1,1,2-trichloroethane		ND		1.0
trichloroethylene		ND		1.0
trichlorofluoromethane		ND		1.0
1,2,3-trichloropropane		ND		1.0
vinyl acetate		ND		3.0
vinyl chloride		ND		1.0
xylenes		ND		1.0
Freon113		ND		2.0
Surrogate Compounds	**% Recovery**	**% Control Limits**		
1,2-Dichloroethane-D4	118	76-114		
Toluene-D8	105	86-110		
4-bromofluorobenzene	100	84-115		

ND = Not Detected at Methold Detection Limit

Reviewed By: **ELAP #: 2132**

Lei Chen, Laboratory Director

GE Global Environmental Laboratory, Inc.
4118 CLIPPER COURT, FREMONT, CA 94539 PHONE: (510) 498-1991 FAX: (510) 498-1994

Volatile Organics (EPA 8260) Report

Client:	Soil Tech Engineering	Date Sampled:	05-21-97
	1761 Junson Avenue	Date Recieved:	05-23-97
	San Jose, CA 95112	Date Analyzed:	05-27-97
Client Project:	7-92-514-SA	Date Reported:	05-29-97
Matrix:	Water	Lab Job #:	970523B
Client I.D.:	STMW-8	Lab ID #:	970523B08

Analyte		Result (ug/L)		Reporting Limit (ug/L)
acetone		7300		2.0
acrylonitrile		ND		2.0
benzene		2300		1.0
bromobenzene		ND		1.0
bromochloromethane		ND		1.0
bromodichloromethane		ND		1.0
bromoform		ND		1.0
carbon disulfide		ND		1.0
carbon tetrachloride		ND		1.0
chlorobenzene		ND		1.0
chloroethane		ND		1.0
chloroform		6.4		1.0
2-chlorotoluene		ND		1.0
4-chlorotoluene		ND		1.0
dibromochloromethane		ND		1.0
1,2-dibromo-3-chloropropane(DBCP)		ND		1.0
1,2-dibromoethane(EDB)		ND		1.0
m-dichlorobenzene		ND		1.0
o-dichlorobenzene		ND		1.0
p-dichlorobenzene		ND		1.0
trans-1,4-dichloro-2-butene		ND		1.0
dichlorodifluoromethane		ND		1.0
1,1-dichloroethane		ND		1.0
1,2-dichloroethane		5.2		1.0
1,1-dichloroethene		ND		1.0
cis-1,2-dichloroethylene		ND		1.0
trans-1,2-dichloroethylene		ND		1.0
1,1-dichloropropane		ND		1.0
1,2-dichloropropane		ND		1.0
2,2-dichloropropane		ND		1.0
cis-1,3-dichloropropene		ND		1.0
trans-1,3-dichlorpropene		ND		1.0
ethylbenzene		360		1.0
2-hexanone		ND		1.0
hexachlorobutadiene		ND		1.0
isopropylbenzene		12		1.0
methylene bromide		ND		1.0
methyl chloride		5.4		1.0
methylene bromide		ND		1.0
methylene chloride		ND		1.0

Global Environmental Laboratory, Inc.
4118 CLIPPER COURT, FREMONT, CA 94539 PHONE: (510) 498-1991 FAX: (510) 498-1994

Client:	Soil Tech Engineering	Date Sampled:	05-21-97
	1761 Junson Avenue	Date Recieved:	05-23-97
	San Jose, CA 95112	Date Analyzed:	05-27-97
Client Project:	7-92-514-SA	Date Reported:	05-29-97
Matrix:	Water	Lab Job #:	970523B
Client I.D.:	STMW-8	Lab ID #:	970523B08

Analyte		Result (ug/L)		Reporting Limit (ug/L)
methyl ethyl ketone		ND		2.0
methyl iodide		ND		1.0
4-methyl-2-pentanone		ND		1.0
N-butylbenzene		ND		1.0
N-propylbenzene		ND		1.0
Naphthalene		520		1.0
p-isopropyltoluene		9.5		1.0
sec-butylbenzene		400		1.0
styrene		ND		1.0
1,1,1,2-tetrachloroethane		ND		1.0
1,1,2,2-tetrachloroethane		ND		2.0
tetrachloroethene		ND		1.0
tert-butylbenzene		ND		1.0
toluene		580		1.0
1,2,3-trichlorobenzene		ND		1.0
1,2,4-trichlorobenzene		ND		1.0
1,2,4-trimethylbenzene		1500		1.0
1,3,5-trimethylbenzene		310		1.0
1,1,1-trichloroethane		ND		1.0
1,1,2-trichloroethane		ND		1.0
trichloroethylene		ND		1.0
trichlorofluoromethane		ND		1.0
1,2,3-trichloropropane		ND		1.0
vinyl acetate		ND		3.0
vinyl chloride		ND		1.0
xylenes		2800		1.0
Freon113		ND		2.0
Surrogate Compounds	**% Recovery**	**% Control Limits**		
1,2-Dichloroethane-D4	103	76-114		
Toluene-D8	107	86-110		
4-bromofluorobenzene	102	84-115		

ND = Not Detected at Methold Detection Limit

Reviewed By: **ELAP #: 2132**

Lei Chen, Laboratory Director

GE Global Environmental Laboratory, Inc.
4118 CLIPPER COURT, FREMONT, CA 94539 PHONE: (510) 498-1991 FAX: (510) 498-1994

Volatile Organics (EPA 8260) Report

Client:	Soil Tech Engineering	Date Sampled:	05-21-97
	1761 Junson Avenue	Date Recieved:	05-23-97
	San Jose, CA 95112	Date Analyzed:	05-27-97
Client Project:	7-92-514-SA	Date Reported:	05-29-97
Matrix:	Water	Lab Job #:	970523B
Client I.D.:	STMW-10	Lab ID #:	970523B09

Analyte		Result (ug/L)		Reporting Limit (ug/L)
acetone		82		2.0
acrylonitrile		ND		2.0
benzene		190		1.0
bromobenzene		ND		1.0
bromochloromethane		ND		1.0
bromodichloromethane		ND		1.0
bromoform		ND		1.0
carbon disulfide		ND		1.0
carbon tetrachloride		ND		1.0
chlorobenzene		ND		1.0
chloroethane		ND		1.0
chloroform		1.2		1.0
2-chlorotoluene		ND		1.0
4-chlorotoluene		ND		1.0
dibromochloromethane		ND		1.0
1,2-dibromo-3-chloropropane(DBCP)		ND		1.0
1,2-dibromoethane(EDB)		ND		1.0
m-dichlorobenzene		ND		1.0
o-dichlorobenzene		ND		1.0
p-dichlorobenzene		ND		1.0
trans-1,4-dichloro-2-butene		ND		1.0
dichlorodifluoromethane		ND		1.0
1,1-dichloroethane		ND		1.0
1,2-dichloroethane		ND		1.0
1,1-dichloroethene		ND		1.0
cis-1,2-dichloroethylene		ND		1.0
trans-1,2-dichloroethylene		ND		1.0
1,1-dichloropropane		ND		1.0
1,2-dichloropropane		ND		1.0
2,2-dichloropropane		ND		1.0
cis-1,3-dichloropropene		ND		1.0
trans-1,3-dichlorpropene		ND		1.0
ethylbenzene		43		1.0
2-hexanone		ND		1.0
hexachlorobutadiene		ND		1.0
isopropylbenzene		3.2		1.0
methylene bromide		ND		1.0
methyl chloride		ND		1.0
methylene bromide		ND		1.0
methylene chloride		ND		1.0

GE Global Environmental Laboratory, Inc.
4118 CLIPPER COURT, FREMONT, CA 94539 PHONE: (510) 498-1991 FAX: (510) 498-1994

Client:	Soil Tech Engineering 1761 Junson Avenue San Jose, CA 95112	Date Sampled: Date Recieved: Date Analyzed: Date Reported:	05-21-97 05-23-97 05-27-97 05-29-97
Client Project:	7-92-514-SA	Lab Job #:	970523B
Matrix:	Water	Lab ID #:	970523B09
Client I.D.:	STMW-10		

Analyte		Result (ug/L)		Reporting Limit (ug/L)
methyl ethyl ketone		ND		2.0
methyl iodide		ND		1.0
4-methyl-2-pentanone		ND		1.0
N-butylbenzene		ND		1.0
N-propylbenzene		ND		1.0
Naphthalene		52		1.0
p-isopropyltoluene		ND		1.0
sec-butylbenzene		ND		1.0
styrene		ND		1.0
1,1,1,2-tetrachloroethane		ND		1.0
1,1,2,2-tetrachloroethane		ND		2.0
tetrachloroethene		ND		1.0
tert-butylbenzene		ND		1.0
toluene		3.7		1.0
1,2,3-trichlorobenzene		ND		1.0
1,2,4-trichlorobenzene		ND		1.0
1,2,4-trimethylbenzene		40		1.0
1,3,5-trimethylbenzene		11		1.0
1,1,1-trichloroethane		ND		1.0
1,1,2-trichloroethane		ND		1.0
trichloroethylene		ND		1.0
trichlorofluoromethane		ND		1.0
1,2,3-trichloropropane		ND		1.0
vinyl acetate		ND		3.0
vinyl chloride		ND		1.0
xylenes		59		1.0
Freon113		ND		2.0
Surrogate Compounds	**% Recovery**	**% Control Limits**		
1,2-Dichloroethane-D4	118	76-114		
Toluene-D8	107	86-110		
4-bromofluorobenzene	101	84-115		

ND = Not Detected at Methold Detection Limit

Reviewed By: **ELAP #: 2132**

Lei Chen, Laboratory Director

GE Global Environmental Laboratory, Inc.
4118 CLIPPER COURT, FREMONT, CA 94539 PHONE: (510) 498-1991 FAX: (510) 498-1994

Volatile Organics (EPA 8260) Report

Client:	Soil Tech Engineering	Date Sampled:	05-21-97
	1761 Junson Avenue	Date Recieved:	05-23-97
	San Jose, CA 95112	Date Analyzed:	05-27-97
Client Project:	7-92-514-SA	Date Reported:	05-29-97
Matrix:	Water	Lab Job #:	970523B
Client I.D.:	STMW-11	Lab ID #:	970523B10

Analyte		Result (ug/L)		Reporting Limit (ug/L)
acetone		ND		2.0
acrylonitrile		ND		2.0
benzene		ND		1.0
bromobenzene		ND		1.0
bromochloromethane		ND		1.0
bromodichloromethane		ND		1.0
bromoform		ND		1.0
carbon disulfide		ND		1.0
carbon tetrachloride		ND		1.0
chlorobenzene		ND		1.0
chloroethane		ND		1.0
chloroform		ND		1.0
2-chlorotoluene		ND		1.0
4-chlorotoluene		ND		1.0
dibromochloromethane		ND		1.0
1,2-dibromo-3-chloropropane(DBCP)		ND		1.0
1,2-dibromoethane(EDB)		ND		1.0
m-dichlorobenzene		ND		1.0
o-dichlorobenzene		ND		1.0
p-dichlorobenzene		ND		1.0
trans-1,4-dichloro-2-butene		ND		1.0
dichlorodifluoromethane		ND		1.0
1,1-dichloroethane		ND		1.0
1,2-dichloroethane		ND		1.0
1,1-dichloroethene		ND		1.0
cis-1,2-dichloroethylene		ND		1.0
trans-1,2-dichloroethylene		ND		1.0
1,1-dichloropropane		ND		1.0
1,2-dichloropropane		ND		1.0
2,2-dichloropropane		ND		1.0
cis-1,3-dichloropropene		ND		1.0
trans-1,3-dichlorpropene		ND		1.0
ethylbenzene		ND		1.0
2-hexanone		ND		1.0
hexachlorobutadiene		ND		1.0
isopropylbenzene		ND		1.0
methylene bromide		ND		1.0
methyl chloride		ND		1.0
methylene bromide		ND		1.0
methylene chloride		ND		1.0

Global Environmental Laboratory, Inc.
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Client:	Soil Tech Engineering	Date Sampled:	05-21-97
	1761 Junson Avenue	Date Recieved:	05-23-97
	San Jose, CA 95112	Date Analyzed:	05-27-97
Client Project:	7-92-514-SA	Date Reported:	05-29-97
Matrix:	Water	Lab Job #:	970523B
Client I.D.:	STMW-11	Lab ID #:	970523B10

Analyte		Result (ug/L)		Reporting Limit (ug/L)
methyl ethyl ketone		ND		2.0
methyl iodide		ND		1.0
4-methyl-2-pentanone		ND		1.0
N-butylbenzene		ND		1.0
N-propylbenzene		ND		1.0
Naphthalene		ND		1.0
p-isopropyltoluene		ND		1.0
sec-butylbenzene		ND		1.0
styrene		ND		1.0
1,1,1,2-tetrachloroethane		ND		1.0
1,1,2,2-tetrachloroethane		ND		2.0
tetrachloroethene		ND		1.0
tert-butylbenzene		ND		1.0
toluene		ND		1.0
1,2,3-trichlorobenzene		ND		1.0
1,2,4-trichlorobenzene		ND		1.0
1,2,4-trimethylbenzene		ND		1.0
1,3,5-trimethylbenzene		ND		1.0
1,1,1-trichloroethane		ND		1.0
1,1,2-trichloroethane		ND		1.0
trichloroethylene		ND		1.0
trichlorofluoromethane		ND		1.0
1,2,3-trichloropropane		ND		1.0
vinyl acetate		ND		3.0
vinyl chloride		ND		1.0
xylenes		ND		1.0
Freon113		ND		2.0
Surrogate Compounds	**% Recovery**	**% Control Limits**		
1,2-Dichloroethane-D4	119	76-114		
Toluene-D8	106	86-110		
4-bromofluorobenzene	97	84-115		

ND = Not Detected at Methold Detection Limit

Reviewed By: **ELAP #: 2132**

Lei Chen, Laboratory Director

624/8240 TEST QA/QC TABLE

GLOBAL PROJECT #: 970523B

Lab I.D.:	970523B-MSP	Analytical Method	EPA 8260
Client Project:	7-92-514-SA	Analysis date:	05-27-97
Ext/Prep. Method:	EPA 5030	Matrix:	Water
Date:	05-27-97	Unit:	ug/L

Analyte	Sample Result	Spike Level	MSP Result	MSP %R	MSPD Result	MSPD %R	AVE. %R	LCL %R	UCL %R	RPD %	UCL %RPD
1,1-Dichloroethene	0	50.0	46.2	92.5	46.4	92.8	92.6	61	145	0.4	14
Benzene	0	50.0	45.6	91.2	44.8	89.6	90.4	71	120	1.8	14
Trichloroethene	0	50.0	46.8	93.7	46.1	92.3	93.0	75	130	1.5	13
Toluene	0	50.0	46.1	92.2	44.9	89.8	91.0	76	125	2.7	13
Chlorobenzene	0	50.0	46.8	93.7	44.7	89.3	91.5	76	127	4.8	11

Notes:
Sample Result-Concentration of Sample which is to used for Sample Spike & Sample Spike Duplicate
Spike Level- Level of Concentration Added to the Sample
MSP Result- Matrix Spike Result
MSP %R- Matrix Spike Percent Recovery
MSPD Result- Matrix Spike Duplicate Result
MSPD %R- Matrix Spike Dublicate Percent Recovery
AVG. %R - Average Recovery for MSP & MSPD % Recovery
LCL- Lower Criteria Level
UCL- Upper Criteria Level
RPD- Relative Percent Difference

Global Environmental Laboratory, Inc.
4118 CLIPPER COURT, FREMONT, CA 94539 PHONE: (510) 498-1991 FAX: (510) 498-1994

EPA METHOD 352.1 REPORT
(mg/L)

Client: Soil Tech Engineering
1761 Junson Avenue
San Jose, CA 95112

Project: 7-92-514-SA
Matrix: Water

Date Sampled: 05-21-97
Date Received: 05-23-97
Date Analyzed: 05-29-97
Date Reported: 06-02-97
Lab Job #: 970523B
Analysis: Nitrate Nitrogen

Client ID	Lab ID	Result		Reporting Limit
STMW-1	970523B01	ND		0.5
STMW-2	970523B02	0.7		0.5
STMW-3	970523B03	0.5		0.5
STMW-4	970523B04	ND		0.5
STMW-5	970523B05	5.8		0.5
STMW-6	970523B06	ND		0.5
STMW-7	970523B07	ND		0.5
STMW-8	970523B08	0.75		0.5
STMW-10	970523B09	2.85		0.5
STMW-11	970523B10	5.2		0.5

ND = Not Detected at or below Reporting Limit

Reviewed By:

ELAP#: 2132

Lei Chen, Laboratory Director

Global Environmental Laboratory, Inc.
4118 CLIPPER COURT, FREMONT, CA 94539 PHONE: (510) 498-1991 FAX: (510) 498-1994

EPA METHOD 365.2 REPORT
(mg/L)

Client:	Soil Tech Engineering 1761 Junson Avenue San Jose, CA 95112	Date Sampled: Date Received: Date Analyzed: Date Reported:	05-21-97 05-23-97 05-29-97 06-02-97
Project:	7-92-514-SA	Lab Job #:	970523B
Matrix:	Water	Analysis:	Ortho Phosphorus Phosphorus

Client ID	Lab ID	Result		Reporting Limit
STMW-1	970523B01	ND		0.05
STMW-2	970523B02	ND		0.05
STMW-3	970523B03	ND		0.05
STMW-4	970523B04	ND		0.05
STMW-5	970523B05	ND		0.05
STMW-6	970523B06	ND		0.05
STMW-7	970523B07	ND		0.05
STMW-8	970523B08	ND		0.05
STMW-10	970523B09	ND		0.05
STMW-11	970523B10	ND		0.05

ND = Not Detected at or below Reporting Limit

Reviewed By:

ELAP#: 2132

Lei Chen, Laboratory Director

CHAIN OF CUSTODY RECORD

GEL

PROJ. NO.	NAME
7-92-514-SA	3609 E. 14th. St. OAKLAND

SAMPLERS: *(Signature)* N. Amal.

NO.	DATE	TIME	SOIL	WATER	LOCATION	CONTAINER	Analyses Requested (2) 8260	352.1	365.2					REMARKS
1	5/21/97	10:55		✓	STMW-1	5	✓	✓	✓					
2		13:30		✓	STMW-2	5	✓	✓	✓					
3		14:10		✓	STMW-3	5	✓	✓	✓					
4		9:50		✓	STMW-4	5	✓	✓	✓					
5		10:20		✓	STMW-5	5	✓	✓	✓					
6		12:35		✓	STMW-6	5	✓	✓	✓					
7		11:50		✓	STMW-7	5	✓	✓	✓					
8		12:25		✓	STMW-8	5	✓	✓	✓					
9		11:20		✓	STMW-10	5	✓	✓	✓					
10	↓	9:25		✓	STMW-11	5	✓	✓	✓					

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Receive by: *(Signature)*
N. Amal.	5/23/97 8:55				
Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
Relinquished by: *(Signature)*	Date / Time	Received for Laboratory by: *(Signature)*	Date / Time	Remarks	

SOIL TECH ENGINEERING

Environmental and Geotechnical Engineers

1761 Junction Ave. San Jose CA 95112 (408)441-1881

File No. 7-92-514-SA

A P P E N D I X "D"

SOIL TECH ENGINEERING, INC.

DRILLING AND SOIL SAMPLING PROCEDURE

Mobile drill rig B-40L, using a continuous, solid-flight, hollow stem auger will be used in drilling the soil borings to the desired depths.

Prior to drilling, all drilling equipment (auger, pin, drilling head) will be thoroughly steam-cleaned to minimize the possibility of cross-contamination and/or vertical migration of possible contaminants.

In addition, prior to obtaining each individual soil sample, all sampling tools, including the split-spoon sampler and brass liners will be thoroughly washed in a Tridsodium Phosphate (TSP) solution followed by a rinse in distilled water.

During the drilling operation, relatively undisturbed soil samples will be taken from the required depth by forcing a 2-inch I.D. split-spoon sampler insert with a brass liner into the ground at various depths by means of a 140 lb. hammer falling 30-inches or by hydraulic forces.

The samplers will contain relatively undisturbed soil. In general, the first section of soil from the sampler (shoe) will be used in the field for lithologic inspection and evidence of contamination. The selected brass liner will be immediately trimmed, the ends of the brass liner will be covered tightly with aluminum foil and plastic caps, sealed with tape, labeled, placed in a plastic bag and stored in a cold ice chest in order to minimize the escape of any volatile present in the samples. Soil samples for analysis will then be sent to a state-certified hazardous waste laboratory accompanied by a chain-of-custody record.

Soil samples collected at each sampling interval will be inspected for possible contamination (odor or peculiar colors). Soil vapor concentrations will be measured in the field by using a Photoionization Detector (PID), Photovac Tip Air Analyzer. The soil sample will be sealed in a Zip-Loc plastic bag and placed in the sun to enhance volatilization of the hydrocarbons from the sample. The purpose of this field analysis is to qualitatively determine the presence or absence of hydrocarbons and to establish which soil samples will be analyzed at the laboratory. The data will be recorded on the drilling log at the depth corresponding to the sampling point.

Other soil samples may be collected to document the stratigraphy and estimate relative permeability of the subsurface materials.

Soil tailings that are obtained during drilling will be stored at the site, pending the analytical test results to determine proper disposal.

SOIL TECH ENGINEERING
Environmental & Geotechnical Engineers
1761Junction Av.
SAN JOSE CA 95112

File No. _____

Date _____

By _____

Job _____

Site Description _____ (continued on reverse side)

Type of Drill Rig _____ Hole Dia. _____

(NOTE WATER LEVEL, TIME, DATE AT END OF LOG, CAVING, ETC.)

mple ity	Blows/6 inches	Sample Loc.	Sample No.	Depth		Soil Classification	Penetrometer
				1			
				2			
				3			
				4			
				5			
				6			
				7			
				8			
				9			
				0			
				1			
				2			
				3			
				4			
				5			
				6			
				7			
				8			
				9			
				0			
				1			
				2			

SOP3

MONITORING WELL INSTALLATION

The boreholes for the monitoring wells were hand augered with a diameter of at least two inches larger than the casing outside diameter (O.D.).

The monitoring wells will be cased with threaded, factory-perforated and blank, schedule 40 PVC. The perforated interval consisted of slotted casing, generally 0.010 to 0.040 inch wide by 1.5 inch long slot size, with 42 slots per foot (slots which match formation grain size as determined by field grain-size distribution analysis). A PVC cap will be fastened to the bottom of the casing (no solvents, adhesive, or cements were used), the well casing will be thoroughly washed and steam-cleaned.

After setting the casing inside the borehole, kiln-dried sand or gravel-filter material will be poured into the annular space to fill from the bottom of the boring to two feet above the perforated interval. A one to two feet thick bentonite plug will be placed above this filter material to prevent grout from infiltrating down into the filter material. Approximately one to two gallons of distilled water will be added to hydrate the bentonite pellets. Then the well will be sealed from the top of the bentonite seal to the surface with concrete or neat cement containing about 5% bentonite (see Well Construction Detail).

To protect the well from vandalism and surface water contamination, Christy box with a special type of Allen screw will be installed around the well head, (for wells in parking lots, driveways and building areas). Steel stove pipes with padlocks will be usually set over well-heads in landscaped areas.

In general, groundwater monitoring wells extend to the base of the upper aquifer, as defined by the consistent (less than 5 feet thick) clay layer below the upper aquifer, or at least 10 to 15 feet below the top of the upper aquifer, whichever is shallower. The wells do not extend through the laterally extensive clay layer below the upper aquifer. The wells are terminated one to two feet into such a clay layer.

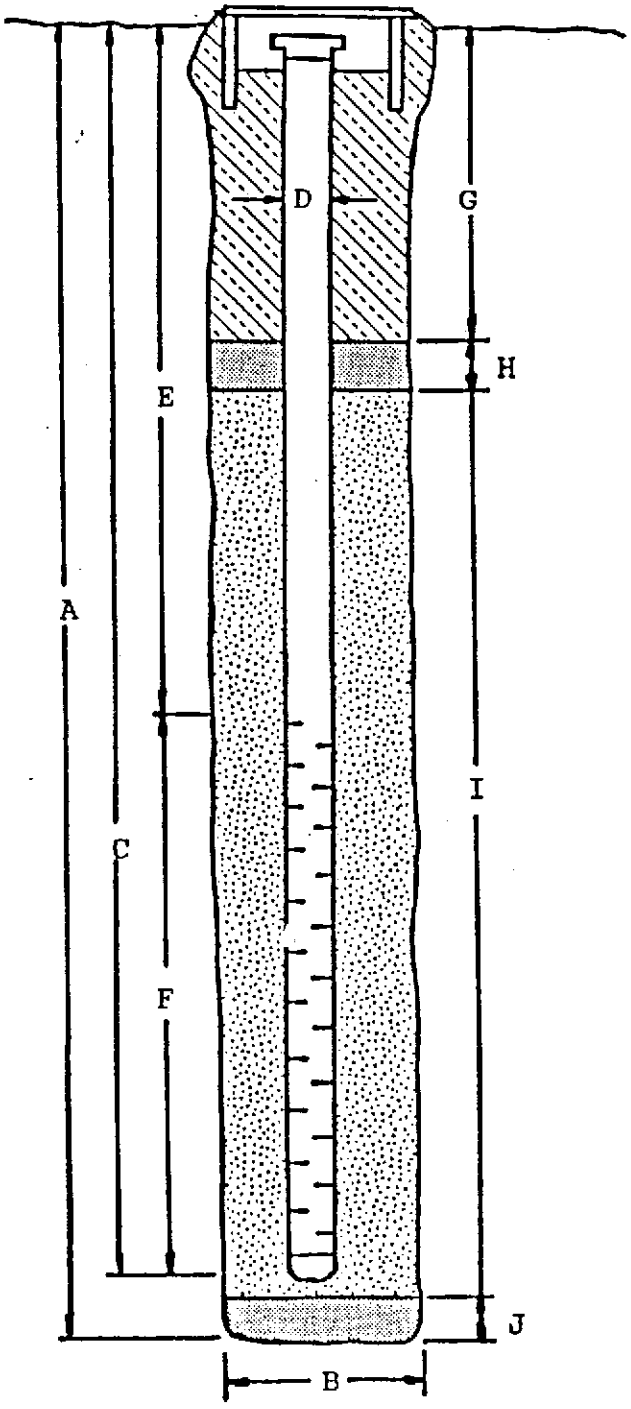
WELL DETAILS

PROJECT NAME:_____ BORING/WELL NO._____

PROJECT NUMBER:_____ CASING ELEVATION:_____

WELL PERMIT NO.:_____ SURFACE ELEVATION:_____

G-5 Vault Box



A. Total Depth:_____

B. Boring Diameter:_____

Drilling method:_____

C. Casing Length:_____

Material:_____

D. Casing Diameter:_____

E. Depth to Perforations:_____

F. Perforated Length:_____

Perforated Interval:_____

Perforation Type:_____

Perforation Size:_____

G. Surface Seal:_____

Seal Material:_____

H. Seal:_____

Seal Material:_____

I. Gravel Pack:_____

Pack Material:_____

Size:_____

J. Bottom Seal:_____

Seal Material:_____

WELL DEVELOPMENT

For all newly installed groundwater monitoring wells, the well casing, filter pack and adjacent formations were cleared of disturbed sediment and water.

Well development techniques including pumping, bailing, surging, swabbing, jetting, flushing or air lifting by using a stainless steel or Teflon bailer, a submersible stainless steel pump, or air lift pump. The well development will continued until the discharged water appeared to be relatively free of all turbidity.

All water and sediment generated by well development will be collected in 55-gallon steel drums (Department of Transportation approved), closed head (17-H) for temporarily storage, and then will be disposed of properly, depending on analytical results.

to assure that cross-contamination did not occur between wells, all well development tools will be steam-cleaned or thoroughly washed in a Trisodium Phosphate (TSP) solution followed by a rinse in distilled water before each well development.

SOIL TECH ENGINEERING

Soil, Foundation and Geological Engineers

1761 JUNCTION AVE. SAN JOSE, CA 95112 (408)441-1881

FILE NO.:_____ WELL NO.:_____

DATE:_____ SAMPLER:_____

DEPTH TO WELL:_____ 1 WELL VOLUME:_____

DEPTH TO WATER:_____ 5 WELL VOLUMES:_____

HEIGHT OF WATER COLUMN:_____ ACTUAL PURGED VOLUME:_____

CASING DIAMETER: _____ 2" _____ 4"

CALCULATIONS:

2" - x 0.1632 _____

4" - 0.653 _____

PURGE METHOD: _____ BAILER _____ DISPLACEMENT PUMP _____ OTHER

SAMPLE METHOD: _____ BAILER _____ OTHER

SHEEN: _____ NO _____ YES, DESCRIBE:_____

ODOR: _____ NO _____ YES, DESCRIBE:_____

FIELD MEASUREMENTS

TIME	VOLUME	pH	TEMP.	E.C.

SOP8

GROUNDWATER SAMPLING

Prior to collection of groundwater samples, all of the sampling equipment (i.e. bailer, cables, bladder pump, discharge lines and etc...) will be cleaned by pumping TSP water solution followed by distilled water.

Prior to purging, the well "Water Sampling Field Survey Forms" will be filled out (depth to water and total depth of water column will be measured and recorded). The well then will be bailed or pumped to remove four to ten well volumes or until the discharged water temperature, conductivity and pH stabilized. "Stabilized" is defined as three consecutive readings within 15% of one another.

The groundwater sample will be collected when the water level in the well recovered to 80% of its static level.

Forty milliliter (ml.) glass volatile organic analysis (VOA) vials with Teflon septa will be used as sample containers. The groundwater sample will be decanted into each VOA vial in such a manner that there will be a meniscus at the top. The cap quickly will be placed over the top of the vial and securely tightened. The VOA vial will then be inverted and tapped to see if air bubbles is present. If none is present, then the sample will be labeled and refrigerated for delivery under chain-of-custody to the laboratory. The label information should include a sample identification number, job identification number, date, time, type of analysis requested and the sampler's name.

SOIL TECH ENGINEERING

Soil, Foundation and Geological Engineers

1761 JUNCTION AVE. SAN JOSE CA 95112 (408)441-1881

MONITORING WELL SURVEY SHEET

NAME: _____ DATE: _____

FACILITY NAME AND ADDRESS: _____

_____

PROJECT NO.: _____

FIELD ACTIVITIES

WELL NUMBER	ROD READING	RIM ELEVATION	WATER ELEVATION

WARNING: HAVE YOU SURVEYED ALL WELLS? LOCATED ALL WELLS?

HAVE YOU CHECKED FOR AND SURVEYED EXISTING MONITORING WELLS ON ADJACENT PROPERTIES OR PROPERTIES ACROSS THE STREET?

DO WE HAVE ACCURATE SKETCHES AT 1"=30' (AND 1"=100' IF NECESSARY)? IF NOT, MAKE THEM.

\SURVEY

VOLUME OF WATER IN CASING OR HOLE

Diameter of Casing or Hole (Inch)	Gallons per foot of Depth	Cubic Feet per foot of Depth	Liter per Meter of Depth	Cubic Meters per Meter of Depth
1	0.041	0.0055	0.509	0.509×10^{-3}
1½	0.092	0.0123	1.142	1.142×10^{-3}
2	0.163	0.0218	2.024	2.024×10^{-3}
2½	0.255	0.0341	3.167	3.167×10^{-3}
3	0.367	0.0491	4.558	4.558×10^{-3}
3½	0.500	0.0668	6.209	6.209×10^{-3}
4	0.653	0.0873	8.110	8.110×10^{-3}
4½	0.826	0.1104	10.26	10.26×10^{-3}
5	1.020	0.1364	12.67	12.67×10^{-3}
5½	1.234	0.1650	15.33	15.33×10^{-3}
6	1.469	0.1963	18.24	18.24×10^{-3}
7	2.000	0.2673	24.84	24.84×10^{3}
8	2.611	0.3491	32.43	32.43×10^{3}
9	3.305	0.4418	41.04	41.04×10^{3}
10	4.080	0.5454	50.67	50.67×10^{3}
11	4.937	0.6600	61.31	61.31×10^{3}
12	5.875	0.7854	72.96	72.96×10^{3}
14	8.000	1.069	99.35	99.35×10^{3}
16	10.44	1.396	129.65	129.65×10^{3}
18	13.22	1.767	164.18	164.18×10^{3}
20	16.32	2.182	202.68	202.68×10^{3}
22	19.75	2.640	245.28	245.28×10^{3}
24	23.50	3.142	291.85	291.85×10^{3}
26	27.58	3.687	342.52	342.52×10^{3}
28	32.00	4.276	397.41	397.41×10^{3}
30	36.72	4.909	456.02	456.02×10^{3}
32	41.78	5.585	518.87	518.87×10^{3}
34	47.16	6.305	585.68	585.68×10^{3}
36	52.88	7.069	656.72	656.72×10^{3}

CHAIN OF CUSTODY RECORD

PROJ. NO.	NAME
SAMPLERS: *(Signature)*	

NO.	DATE	TIME	SOIL	WATER	LOCATION	CONTAINER	ANALYSES REQUESTED (2)	REMARKS

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Receive by: *(Signature)*
Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
Relinquished by: *(Signature)*	Date / Time	Received for Laboratory by: *(Signature)*	Date / Time	Remarks	

SOP12

SOIL TECH ENGINEERING

Environmental and Geotechnical Engineers

1761 Junction Ave, San Jose CA 95112 (408)441-1881

Sample Type: Soils, Oils, Solvents, Polids, Highly Contaminated Liquids (c)

General Composition	Sample Volume	Sample Container	Preservative	Holding Time (recommended/regulatory)
Weak Acids and Bases		plastic or glass		
Photosensitive materials		amber glass		
Volatile organics		40 ml glass vial with TFE lined septum		
Non-volatile organics		glass with TFE lined cap		
Measurement - General Chemical Categories, Inorganic				
Inorganics, general		plastic or glass		
Metals, total		plastic or glass		
Measurement - General Chemical Categories, Organic				
Acid extractables		glass with TFE lined cap		
Base/neutral extractables		glass with TFE lined cap		
Measurement Specific Chemicals - Inorganic				
Hydrofluoric acid		plastic		
Phosphoric acid		plastic		

Sample Type: Waste

General Composition	Sample Volume	Sample Container	Preservative	Holding Time (d) (recommended/regulatory)
Measurement - Specific Chemicals, Inorganic				
Ammonia			add 1 ml conc H_3PO_4	24 hrs
Arsenic			add 6 ml conc HNO_3/L	6 months
Chlorine			cool 4°C	24 hrs
Chromium VI			add 6 ml conc H_2SO_4/L	24 Hrs
Cyanide, total			add 2.5 ml of 50% NaOH/L, cool 4°C	24 hrs
Fluoride			cool 4°C	7 days
Mercury, total			add 5 ml conc HNO_3L	38 days
Mercury, dissolved			filter, add 5 ml conc HNO_3/L	38 days
Selenius			add 5 ml conc HNO_3/L	6 months
Sulfide			add 2 ml conc HC1/1	24 hrs
Zinc			add 2 ml conc HC1/1	-

Sample Type: Soils, Oils, Solvents, Solids, Highly Contaminated Liquids (c)

Strong acids, pH<2	glass
Strong bases, pH>12.5	plastic

Sample Type: Water and Wastewater

General Composition	Sample Volume	Sample Container	Preservative	Holding Time (d) (recommended/regulatory)
Sulfate	50 ml	plastic or glass	cool 4°C	7 days/28 days
Sulfide	500 ml	plastic or glass	cool 4°C, add 4 drops 2N Zn acetate/100 ml	24 hrs/28 days
Sulfite	50 ml	plastic or glass	determine on site	no holding
Measurement - Specific Chemicals, Organic				
NTA	50 ml	plastic or glass waterline & center	cool 4°C	24 hrs
Measurement - Physical Properties				
Acidity			cool 4°C	24 hrs
Alkalinity			cool 4°C	24 hrs
pH			determine on site	6 hrs
			cool 4°C	
Measurement - General Chemical Categories, Inorganic				
Metals, dissolved			filter on site, add 5 ml conc HNO_3/L	6 months
Metals, total			add 5 ml conc HNO_3/L	6 months
Measurement - General Chemical Categories, Organic				
Phenolics			add H_3PO_4 to pH 4 and 1 g $CuSO_4$/L, cool 4°C	24 hrs

SAMPLE MANAGEMENT

Sample Type: Water and Wastewater

General Composition	Sample Volume	Sample Container	Preservative	Holding Time (d) (recommended/regulatory)
Measurements - Specific Chemicals, Inorganic				
Ammonium	500 ml	plastic or glass	cool, 4°C, add H_2SO_4 to pH<2	24 hr/28 days
Boron	100 ml	plastic	none required	28 days/28 days
Chlorine	200 ml	plastic or glass	determine on site	no holding
Chromium VI	300 ml	plastic or glass, rinse with 1:1 HNO_3	cool, 4°C	24 hrs/28 days
Cyanide, total	500 ml	plastic or glass add NaOH to pH>12	cool, 4°C, dark	24 hrs/14 days
Cyanide, amenable to chlorination	50 ml	plastic or glass	add 100 mg NaS_2O_3	
Fluoride	300 ml	plastic	none required	7 days/28 days
Iodide	100 ml	plastic or glass	cool, 4°C	24 hrs/ -
Iodine	500 ml	plastic or glass	determine on site	1/2 hr/ -
Mercury, total	500 ml	plastic or glass rinsed with 1:1 HNO_3	cool, 4°C add HNO_3 to pH<2	28 days/28 days
Mercury, dissolved	100 ml	plastic or glass	filter on site add HNO_3 to pH<1	glass: 38 days hard plastic: 13 days
Nitrate	100 ml	plastic or glass	cool, 4°C add H_2SO_4 to pH<2	24 hrs/48 hrs
Nitrate & nitrate	200 ml	plastic or glass	cool, 4°C add H_2SO_4	24 hrs/28 days
Nitrate	100 ml	plastic or glass	cool, 4°C or freeze	

SAMPLE MANAGEMENT

Sample Type: Water and Wastewater

General Composition	Sample Volume	Sample Container	Preservative	Holding Time (d) (recommended/regulatory)
Measurement - General Chemical Categories, Organic				
Acid extractables		2 liter glass with TFE lined cap		
Base/neutral extractable		2 liter glass with TFE lined cap		
MBA's	250 ml	plastic or glass	cool, 4°C	24 hr
Oil and Grease	1000 ml	glass, wide mouthed, calibrated	cool, 4°C, H_2SO_4 to pH<2	24 hr/28 days 24 hr/28 days
Organics		glass rinsed with organic solvents, TFE cap		
Phenolics	500 ml	glass		24 hr/28 days
Purgeables by purge and trap	50 ml	glass, TFE lined cap		

Sample Type: Water and Wastewater (a,b,c)

General Composition	Sample Volume	Sample Container	Preservative	Holdin Time (d) (recommended/regulatory)
Nonvolatile organics		2 liter glass with TFE lined cap		
Photosensitive materials		1 liter amber glass		
Volatile organics		40 ml glass vial with TFE lined cap (collect in duplicate)		
Volatile	100 ml	Plastic or glass	cool, 4°C	7 days
Measurement - Physical Properties				
Acidity	100 ml	plastic or borosilicate glass	cool, 4°C	24 hr/14/days
Alkalinity	200 ml	plastic or glass	cool, 4°C	24 hr/14/days
pH	25 ml	plastic or glass	determine on site	2 hr/2 hr
Temperature	1000 ml	plastic or glass	determine on site	no holding
Measurement - General Chemical Categories, Inorganic				
metals, dissolved	200 ml	plastic(g) or glass	filter on site (f)	6 mos (e)
metals, total	100 ml	plastic(g) or glass rinsed with 1:1 HNO_3	HNO_3 to pH<2 (g)	6 mos/6 mos (e)

File No. 7-92-514-SA

A P P E N D I X "E"

SOIL TECH ENGINEERING, INC.

OUTLINE OF DRUM HANDLING PROCEDURES FOR THE PROPERTY LOCATED AT 3609 EAST 14TH STREET OAKLAND, CALIFORNIA

1. Test material per site-specific test requirements.

2. Classify Material as : Clean/Non-Hazardous.

3. Labeling of Drums:

   * Pending Label: Used to describe material pending final analytical testing. Labels must be immediately affixed to drum during field work.

   * Non-Hazardous Label: Required within 24 hours after analytical results are received.

   * Hazardous Label: Required within 24 hours after analytical results are received.

   * For Pick-Up Label: Must be affixed to drum prior to arranged pick-up date by certified hauler.

4. Remove within 21 days of generation. Empty drums, where material was disposed in bulk, must be removed the same day they are emptied.

5. Disposal of Material:

   * Clean: Any local landfill.

   * Non-Hazardous: Class III Landfill.

   * Hazardous: Class I landfill.

6. Manifests may be signed by the on-site contractor or consultant, owner, or other authorized representatives. The transporter should not sign the manifest.

It is the responsibility of the contractor, consultant and owner to arrange for a person to sign the manifest on the day of pick-up.

7. Reporting:

Reports shall include the following:

* Completed soil and water work sheets.

* Copy of the analytical results.

* State how and where material was disposed.

* If drums are emptied and material was disposed of in bulk, state how empty drums were handled.

* The signed blue and yellow copies of the hazardous waste manifest.

SOIL:

1. Test Requirements and Methods: Per STE site-specific test requirements.

* TPH: EPA Method 8015.

* BTEX: EPA Method 8020.

* TOG: 503 D&E.

* Lead:

- Total Lead - EPA Method 7421.

- Inorganic (soluble) Lead: DOS Title 22, Waste Extraction Test, 22-66700.

- Organic - EPA Method 8240.

* Ignitable:

2. Classification:

   * Clean: TPH, BTEX, TOG, VOC and non-detectable (<100 ppm).

   * Non-Hazardous if any are true:

     - TPH less than 1,000 ppm.

     - Lead - Inorganic (soluble) Lead less than 5 ppm (STLC) or less than 100 ppm (TTLC).

       - Organic Lead less than 13 ppm (TTLC).

   * Hazardous if any are true:

     - TPH greater than 1,000 ppm.

     - Lead - Inorganic (soluble) Lead greater than 5 ppm (STLC) or greater than 1,000 ppm (TTLC).

       - Organic Lead greater than 13 ppm (TTLC).

     - Ignitable - If TPH>1,000 ppm, then conduct Bunsen Burner Test.
       - If soil bums vigorously and persistently soils are RCRA D001.

   * VOC - less than 1,000 ppm.

3. Responsibility for Disposal:

   * Clean: Consultant, contractor or owner.

   * Non-Hazardous: Consultant, contractor or owner.

4. Types of Drums: DOT-17H for a solid, solidified, or sludge material.

5. Disposal Facility:

   * Clean: Any local landfill.

   * Non-Hazardous: Class III or II landfill.

* Hazardous: Class I landfill.

WATER:

1. Test Requirements and Methods: Per site-specific test requirements.

   * TPH: EPA Method 8015.

   * BTEX: EPA Method 602. (w/ say 8260)

2. Classification:

   * Clean Water: TPH and BTEX non-detectable.

   * Hazardous:

     - Water with dissolved product and detectable TPH and BTEX.

     - Water with free product.

     - Free product only.

3. Responsibility for Disposal:

   * Clean: Consultant/Contractor.

   * Non-Hazardous: Consultant, contractor or owner.

4. Types of Drums: DOT-17C or DOT-17E for liquid or slurry.

5. Disposal Facility:

   * Clean Water: Into sanitary sewer per Local Sewer District approval or into storm sewer with proper approval from Water Board.

   * Non-Hazardous:

     - Water with TPH and BTEX only.

- Water with free product.
- Arrange certified waste hauler to pick and dispose.

* Hazardous:
  - Free product only.
  - Arrange disposal by a certified hazardous waste hauler.

File No. 7-92-514-SA

A P P E N D I X "F"

SOIL TECH ENGINEERING, INC.

HEALTH AND SAFETY PLAN FOR THE PROPERTY LOCATED AT 3609 EAST 14TH STREET OAKLAND, CALIFORNIA

GENERAL:

This Health and Safety Plan (HSP) contains the minimum requirements for the subject site field work. The field activities include drilling, soil sampling and water sampling. All personnel and contractors will be required to strictly adhere with this HSP requirements.

The objective of the HSP plan is describe procedures and actions to protect the worker, as well as unauthorized person, from inhalation and ingestion of and direct skin contact with potentially hazardous materials that may be encountered at the site. The plan describes (1) personnel responsibilities and (2) protective equipment to be used as deemed when working on the site. At a minimum, all personnel working at the site must read and understand the requirements of this HSP. A copy of this HSP will be on-site easily accessible to all staff and government field representative.

HAZARD ASSESSMENT:

The major contaminants expected to be encountered on the project are gasoline and its hydrocarbon constituents.. The anticipated contaminants and their exposure standards are listed in Table 1. It is not anticipated that the potential levels of exposure will reach the permissible exposure limits (PEL) or threshold limit values (TLV). Inhalation and dermal contact are the potential exposure pathways. Protective clothing

will be mandatory for field personnel specified in this Plan. In addition, respiratory protective devices are required to be worn by each person on-site or to be within easy reach should irritating odors be detected or irritation of the respiratory tract occur.

TABLE 1
EXPOSURE LIMITS OF ANTICIPATED CHEMICAL CONTAMINANTS IN PARTS PER MILLION (ppm)

Contaminant	PEL	EL	ED	CL	TWA	STEL
Benzene*[skin] & [carc]	1	---	---------	---	10	5
Ethylbenzene	100	---	---------	---	100	125
Toluene [skin]	100	200	10 min per 8 hours	500	100	150
Xylene (o, m & p isomers) [skin]	100	200	30 min per 8 hours	300	100	150

PEL - permissible exposure limit: 8 hours, time-weighted average, California Occupational Safety and Health Administration Standard (CAL-OSHA).

EL - excursion limit: maximum concentration of an airborne contaminant to which an employee may be exposed without regard to duration provided the 8 hours time-weighted average for PEL is not exceeded (CAL-OSHA).

ED - excursion duration: maximum time period permitted for an exposure above the excursion limit but not exceeding the ceiling limit (CAL-OSHA).

CL - Ceiling limit: maximum concentration of airborne contaminant which employees may be exposed permitted (CAL-OSHA).

TWA - time-weighted average: 8 hours, [same as threshold limit value (TLV)], American Conference of Governmental Industrial Hygienists (ACGIH).

STEL - Short-term exposure limit: 15 minutes time-weighted average (ACGIH).

[carc] - substance identified as a suspected or confirmed carcinogen.

[skin] - substance may be absorbed into the bloodstream through the skin, mucous membranes or eyes.

* - Federal OSHA Benzene limits given for PEL and STEL; STEL has a 50 minutes duration limit.

A brief description of the physical characteristics, incompatibilities, toxic effects, routes of entry and target organs has been summarized from the NIOSH Pocket Guide to Chemical Hazards for the contaminants anticipated to be encountered. This information is used in on-site safety meetings to alert personnel to the hazards associated with the expected contaminants.

Benzene:

Benzene is a colorless, aromatic liquid. Benzene may create an explosion hazard. Benzene is incompatible with strong oxidizers, chlorine and bromine with iron. Benzene is irritating to the eyes, nose and respiratory system. Prolonged exposure may result in giddiness, headache, nausea, staggering gait, fatigue, bone marrow depression or abdominal pain. Routes of entry include inhalation, absorption, ingestion and skin or eye contact. The target organs are blood, the central nervous system (CNS), skin, bone marrow, eyes and respiratory system. Benzene is carcinogenic.

Ethylbenzene:

Ethylbenzene is a colorless, aromatic liquid. Ethylbenzene may create an explosion hazard. Ethylbenzene is incompatible with strong oxidizers. Ethylbenzene is irritating to the eyes and mucous membranes. Prolonged exposure may result in headache, dermatitis, narcosis or coma. Routes of entry include inhalation, ingestion and skin or eye contact. The target organs are the eyes, upper respiratory system, skin and the CNS.

Toluene:

Toluene is a colorless, aromatic liquid. Toluene may create an explosion hazard. Toluene is incompatible with strong oxidizers. Prolonged exposure may result in fatigue, confusion, euphoria, dizziness, headache, dilation of pupils, lacrimation, insomnia, dermatitis or photophobia. Routes of entry are inhalation, absorption, ingestion and skin or eye contact. The target organs are the CNS, liver, kidneys and skin.

Xylene Isomers:

Xylene is a colorless, aromatic liquid. Xylene may create an explosion hazard. Xylene is incompatible with strong oxidizers. Xylene is irritating to the eyes, nose and throat. Prolonged exposure may result in dizziness, excitement, drowsiness, staggering gait, corneal vacuolization, vomiting, abdominal pain or dermatitis. Routes of entry are inhalation, absorption, ingestion and skin or eye contact. The target organs are the CNS, eyes, gastrointestinal tract, blood, liver, kidneys and skin.

GENERAL PROJECT SAFETY RESPONSIBILITIES:

Key personnel directly involved in the investigation will be responsible for monitoring the implementation of safe work practices and the provisions of this plan are (1) the drilling project supervisor and (2) Soil Tech Engineering, Inc. *(STE)* project field engineer. These personnel are responsible for knowing the provisions of the plan, communicating plan requirements to workers under their supervision and regulatory agencies inspectors and for enforcing the plan.

The personnel-protective equipment will be selected to prevent field personnel from exposure to fuel hydrocarbons that may be present at the site. To prevent direct skin contact, the following protective clothing will be worn as appropriate while working at the site:

1. Tyvek coveralls.
2. Butyl rubber or disposable vinyl gloves.
3. Hard hat with optional face shield.
4. Steel toe boots.
5. Goggles or safety glasses.

The type of gloves used will be determined by the type of work being performed. Drilling personnel will be required to wear butyl rubber gloves because they may have long duration contact with the subsurface materials. *STE* sampling staff will wear disposable gloves when handling any sample. These gloves will be changed between each sample.

Personnel protective equipment shall be put on before entering the immediate work area. The sleeves of the overalls shall be outside of the cuffs of the gloves to facilitate removal of clothing with the least potential contamination of personnel. If at any time protective clothing (coveralls, boots and gloves) become torn, wet or excessively soiled, it will be replaced immediately.

Total organic vapors will be monitored at the site with a portable PID. should the total organic vapor content approach that of the threshold limit value (TLV) for any of the substances listed in Table 1, appropriate safety measures will be implemented under the supervision of the site project engineer. These precautions include, but are not limited to, the following: (1) donning of respirators (with appropriate cartridges) by site personnel, (2) forced ventilation of the site, (3) shutdown of work until such time as appropriate safety measures sufficient to insure the health and safety of site personnel can be implemented.

No eating, drinking or smoking will be allowed in the vicinity of the drilling operations. *STE* will designate a separate area on site for eating and drinking. Smoking will not be allowed at the vicinity of the site except in designated areas. No contact lenses will be worn by field personnel.

WORK ZONES AND SECURITY MEASURES:

The project engineer will call Underground Service Alert (USA), and the utilities will be marked before any drilling is conducted on-site, and the borings will be drilled at safe distances from the utilities. The client will also be advised to have a representative on-site to advise us in selecting locations of borings with respect to utilities or underground structures. Soil Tech Engineering, Inc. assumes no responsibility to utilities

not so located. The first 5 feet will be hand augered before any drilling equipment is operated.

Each of the areas where the borings will be drilled will be designated as Exclusion Zones. Only essential personnel will be allowed into an Exclusion Zone. When it is practical and local topography allows, approximately 25 to 75 feet of space surrounding those Exclusion Zones will be designated as Contamination Reduction Zones.

Cones, wooden barricades or a suitable alternative will be used to deny public access to these Contamination Reduction Zones. The general public will not be allowed close to the work area under any conditions. If for any reason the safety of a member of the public (e.g. motorist or pedestrian) may be endangered, work will cease until the situation is remedied. Cones and warning signs will be used when necessary to redirect motorists or pedestrians.

LOCATION AND PHONE NUMBERS OF EMERGENCY FACILITIES:

For emergency reasons, the closest facilities addresses and phone numbers are listed below:

How about Oakland facilities?

City of Santa Clara Fire Department	911
San Jose Medical Center 675 East Santa Clara Street, San Jose, CA	(408) 977-4444

ADDITIONAL CONTINGENCY TELEPHONE NUMBERS:

Poison Control Center. . . . . (800) 523-2222

Soil Tech Engineering Administrative Office. . . . . (408) 441-1881

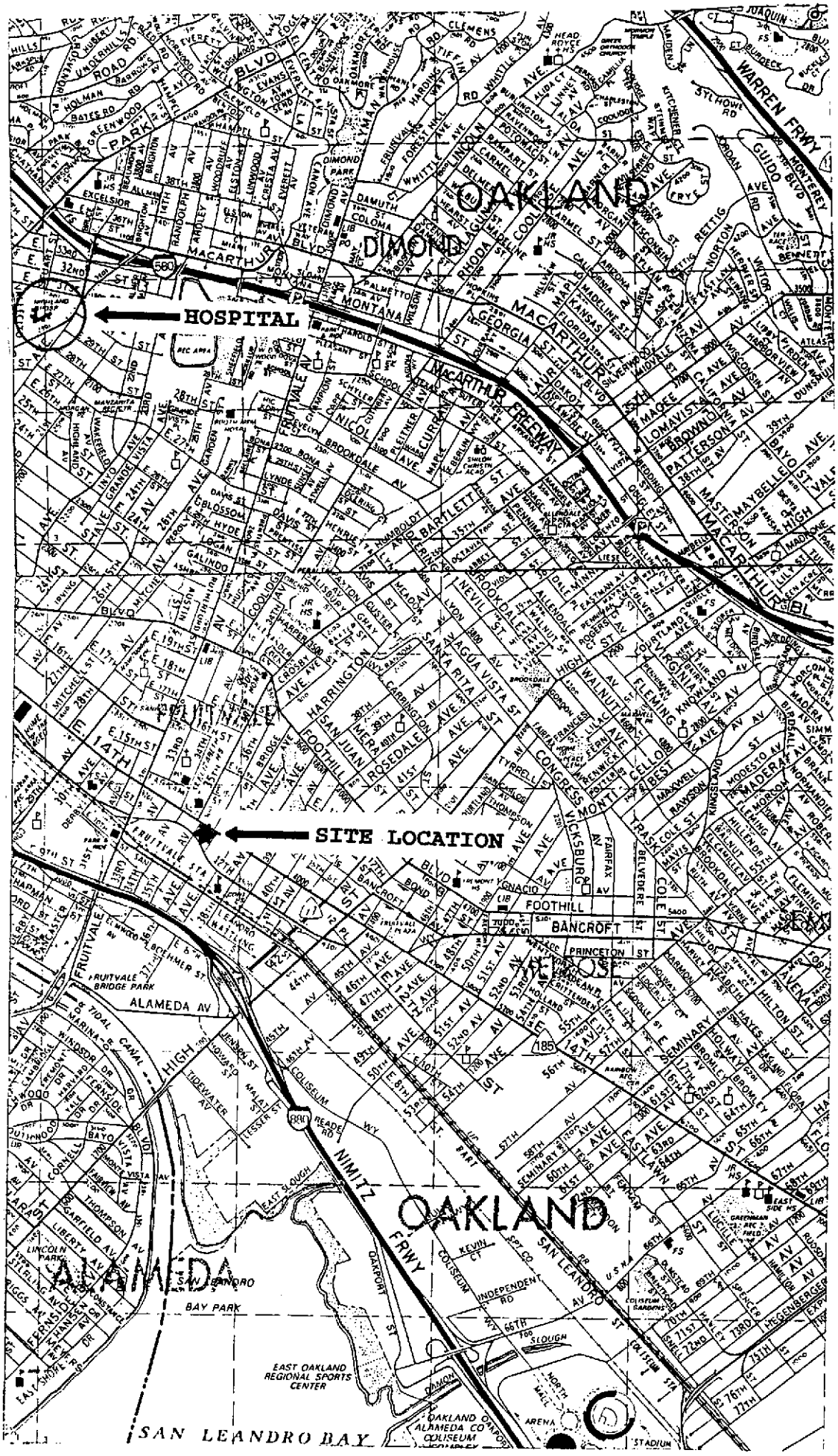
CHEMTREC. . . . . (800) 424-9300

NOTE: Only call CHEMTREC stands for Chemical Transportation Emergency Center, a public service of the Chemical Manufacturer's Association. CHEMTREC can usually provide hazard information, warnings and guidance when given the identification number or the name of the product and the nature of the problem. CHEMTREC can also contact the appropriate experts.

This Site Safety Plan has been reviewed by the project engineer, *STE*'s field personnel and all subcontractors.

Amendments or modifications to this Plan may be written on a separate page and attached to this Plan. Any amendments or modifications must be reviewed and approved by the personnel name above.

File No. 7-92-514-SA



DIRECTION TO THE HOSPITAL: Take north 23rd Avenue from East 14th Street. Turn west (left) at 31st Street. The Highland Hospital is located at the corner of 31st Street and 14th Avenue.

HSP9

SOIL TECH ENGINEERING, INC.

TYPES OF PROTECTIVE CLOTHING AND RESPIRATION THAT SHOULD BE USED AT HAZARDOUS WASTE SITES LOCATED AT 3609 EAST 14TH STREET OAKLAND, CALIFORNIA

The degree of hazard is based on the waste material's physical, chemical, biological properties and anticipated concentrations of the waste. The level of protective clothing and equipment worn must be sufficient to safeguard the individual. A four category system is described below.

LEVEL A:

Level A consists of pressure-demand SCBA (air supplying respirator with back mounted cylinders), fully encapsulated resistant suit, inner and outer chemical resistant steel safety boots (toe, shank and metatarsal protection), and hard hat. Optional equipment might include cooling systems, abrasive resistant gloves, disposable oversuit and boot covers, communication equipment and safety line. Level A is worn when the highest level of respiratory, skin, and eye protection is required. Most samplers will never wear Level A protection.

LEVEL B:

Level B protection is utilized in areas where full respiratory protection is warranted, but a lower level of skin and eye protection is sufficient (only a small area of head and neck is exposed). Level B consists of SCBA, splash suit (one or two piece) or disposable chemical resistant coveralls, inner and outer chemical resistant gloves, chemical

resistant safety boots, and hard hat with face shield. Optional items include glove and boot covers and inner chemical resistant fabric coveralls.

LEVEL C:

Level C permits the utilization of air-purifying respirators. Level B body, foot and hand protection is normally maintained. Many organizations will permit only the use of approved full-face masks equipped with a chin or harness-mounted canister. However, many sites are visited by personnel wearing a half-mask cartridge respirator.

LEVEL D:

Level D protection consists of a standard work uniform of coveralls, gloves, safety shoes or boots, hard hat and goggles or safety glasses.

Two basic types of respirators are air-purifying and air-supplying. Air-purifying respirators are designed to remove specific contaminants by means of filters and/or sorbents. Air-purifying respirators come in various sizes, shapes and models, and can be outfitted with a variety of filters, cartridges and canisters. Each mask and cartridge or canister is designed for protection against certain contaminant concentrations. Just because a cartridge says it is for use against organic vapors does not mean that it is good for all organic vapors.

Air-supplying respirators are utilized in oxygen-deficient atmospheres (less than 19.5 percent) or when an air-purifying device is not sufficient. air is supplied to a face-mask from an uncontaminated source of air via and air line from stationary tanks, from a compressor or from air cylinders worn on the back (SCBA). Rated capacities of the

SCBA's are normally between 30 and 60 minutes. Only positive pressure (pressure demand) respirators should be used in high concentration hazardous environments.

Respirators often malfunction during cold weather or after continued use. Only NIOSH (National Institute for Occupational Safety and Health) and MSHA (Mine Safety and Health Administration) approved respirators should be used.

Contact lenses are not permitted for use with an respirator. Contact lenses should not be worn at any site since they tend to concentrate organic materials around the eyes; soft plastic contact lenses can absorb chemicals directly. In addition, rapid removal of contact lenses may be difficult in an emergency. Since eye glasses can prevent a good seal around the temple when wearing goggles or full face masks, spectacle adapters are available for masks and goggles.