City of Alameda • California

96 FEB -2 PM 1:47

February 1, 1996

Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Bay Parkway
Alameda, California 94502-6577

Attention: Ms. Juliet Shin

Re: 2263 Santa Clara Ave., Alameda, CA

Dear Ms. Shin:

The City of Alameda has received the Ground Water Sampling and Analysis Report for the above referenced project and has attached a copy for your review.

If you have any questions or comments, please contact me at (510) 748-4512.

Sincerely,

Wants closure 2/28/96
- JWS

Wesley Adams
Assistant Engineer

\projects\ustank\ltr2196.ltr

Public Works Department, Engineering Division

East Wing, Historic Alameda High School
2250 Central Avenue, Room 250 • 94501
510 748.4510 • Fax 510 748.4697 • TDD 510 522.7538

SMITH
ENVIRONMENTAL TECHNOLOGIES CORPORATION

19 December 1995

Mr. Lance Bryant
City of Alameda
Maintenance Service Center
1616 Fortman Way
Alameda, CA 94501

Subject: Semi-Annual Ground Water Sampling and Analysis
Alameda City Hall, Alameda, California

Dear Mr. Bryant:

Smith Environmental Technologies Corporation has completed the semi-annual sampling and analysis of ground water monitoring wells located at City of Alameda facilities (Figures 1 and 2). Ground water sampling of the two wells (wells CH-MW1 and CH-MW2) located at the Alameda City Hall was conducted on 14 November 1995 to satisfy the underground fuel storage compliance requirements of the County of Alameda. Water levels in these two wells and the well located on the Police Station (well PS-MW1) were measured prior to sampling. In addition to the semi-annual ground water sampling, monthly odor and sheen monitoring has been conducted at the City Hall and Police Station wells and three additional wells located at Fire Stations No. 2 and No. 3 (Wells FS2-MW1, FS3-MW1, and FS3-MW2). No sheen or odor were observed in any of the monitoring wells during the last six months.

Ground water samples were obtained in accordance with ground water sampling protocol (Attachment A). Prior to sampling, wells CH-MW1 and CH-MW2 were checked for the presence of free-floating product with a clear bailer: no free-floating product was observed. The wells were then purged of approximately four well-casing volumes of water before sampling. Ground water samples were collected in dedicated polyethylene bailers, preserved in laboratory-supplied bottles, and stored in a chilled ice chest for shipment to a state-certified laboratory following proper Chain of Custody procedures.

The two ground water samples were analyzed following Environmental Protection Agency (EPA) approved methods for the presence of total petroleum hydrocarbons as gasoline (TPHg), the fuel components benzene, toluene, ethylbenzene, total xylenes (BTEX), and total petroleum hydrocarbons as diesel (TPHd). Laboratory results indicated that no TPHg, TPHd, or BTEX were present in the samples from the two City Hall wells at concentrations at or above the laboratory detection limits.

A summary of the ground water analytical results is presented in the Table 1. The resultant ground water gradient and gradient direction determined from the ground water elevation monitoring are presented on Figure 3. Copies of the ground water sampling logs are included in Appendix A. Copies of the laboratory report and Chain of Custody record are provided in Attachment B.

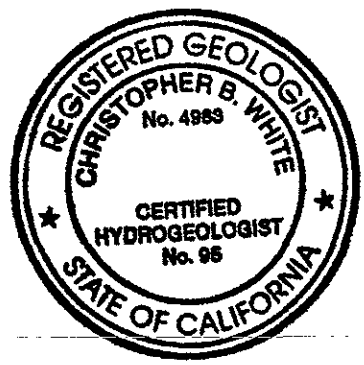
We recommend that a copy of this report be forwarded by City of Alameda to the following agency:

Ms. Juliet Shin
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Bay Parkway
Alameda, California 94502-6577

If you have questions or comments, please call me at (510) 748-3800.

Very truly yours,

Christopher B. White
Project Supervisor



Attachments:

Table 1: Summary of Ground Water Analytical Results

Figure 1: Site Vicinity Map
Figure 2: Site Plan (City Hall and Police Station)
Figure 3: Ground Water Elevations and Gradient

Attachment A: Ground Water Sampling Protocol, Ground Water Sampling Logs
Attachment B: Analytical Report Sheets, Chain of Custody Record

Table 1
SUMMARY OF GROUND WATER ANALYTICAL RESULTS
CITY OF ALAMEDA WELLS
ALAMEDA, CALIFORNIA

Well	Date Sampled	TPHg (ppb)	TPHd (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Total Xylenes (ppb)
FS3-MW1	8/5/87	<20	NA	<0.7	<0.7	<0.7	<0.7
	2/16/88	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	8/24/88	**36**	NA	<0.1	<0.1	<0.1	<0.2
	2/8/89	<50	NA	<0.5	<0.5	**0.86**	<0.5
	8/7/89	**93**	NA	**3**	<0.3	<0.3	**0.38**
	2/6/90	<30	NA	<0.3	<0.3	<0.3	<0.3
	8/28/90	<30	<50	<0.3	<0.3	<0.3	<0.3
	2/8/91	<30	NA	<0.3	<0.3	<0.3	<0.3
	3/4/92	<50	NA	<0.5	<0.5	<0.5	<0.5
	9/8/92	<50	NA	NA	NA	NA	NA
	3/11/93	<50	NA	<0.5	<0.5	<0.5	<0.5
	9/29/93	<50	NA	<0.5	<0.5	<0.5	<0.5
	3/30/94	<50	NA	<0.5	<0.5	<0.5	<0.5
	9/20/94	<50	NA	<0.5	<0.5	<0.5	<0.5
	3/31/95	<50	NA	<0.5	<0.5	<0.5	<0.5
	3/31/95	<50	NA	<0.5	<0.5	<0.5	<0.5
	11/14/95	NA	NA	NA	NA	NA	NA
FS3-MW2	8/5/87	NA	<10	NA	NA	NA	NA
	2/16/88	NA	<50	NA	NA	NA	NA
	8/7/89	NA	<50	NA	NA	NA	NA
	2/6/90	<30	<50	<0.3	<0.3	<0.3	<0.3
	8/28/90	<30	<50	<0.3	<0.3	<0.3	<0.3
	2/8/91	NA	<50	NA	NA	NA	NA
	3/4/92	<50	<100	<0.5	<0.5	<0.5	<0.5
	9/8/92	<50	<50	NA	NA	NA	NA
	3/11/93	<50	<50	<0.5	<0.5	<0.5	<0.5
	9/29/93	<50	<50	<0.5	<0.5	<0.5	<0.5
	3/30/94	<50	<50	<0.5	<0.5	<0.5	<0.5
	9/20/94	<50	<50	<0.5	<0.5	<0.5	<0.5
	3/31/95	<50	<50	<0.5	<0.5	<0.5	<0.5
	11/14/95	NA	NA	NA	NA	NA	NA

Notes:

TPHg	Total petroleum hydrocarbons as gasoline
TPHd	Total petroleum hydrocarbons as diesel
NA	Not sampled/not analyzed
*	Laboratory indicated that chromatogram pattern consisted of a "Non-Diesel Mix; C13-C20"
**	Laboratory indicated that chromatogram pattern consisted of a "Non-Diesel Mix; C14-C20"

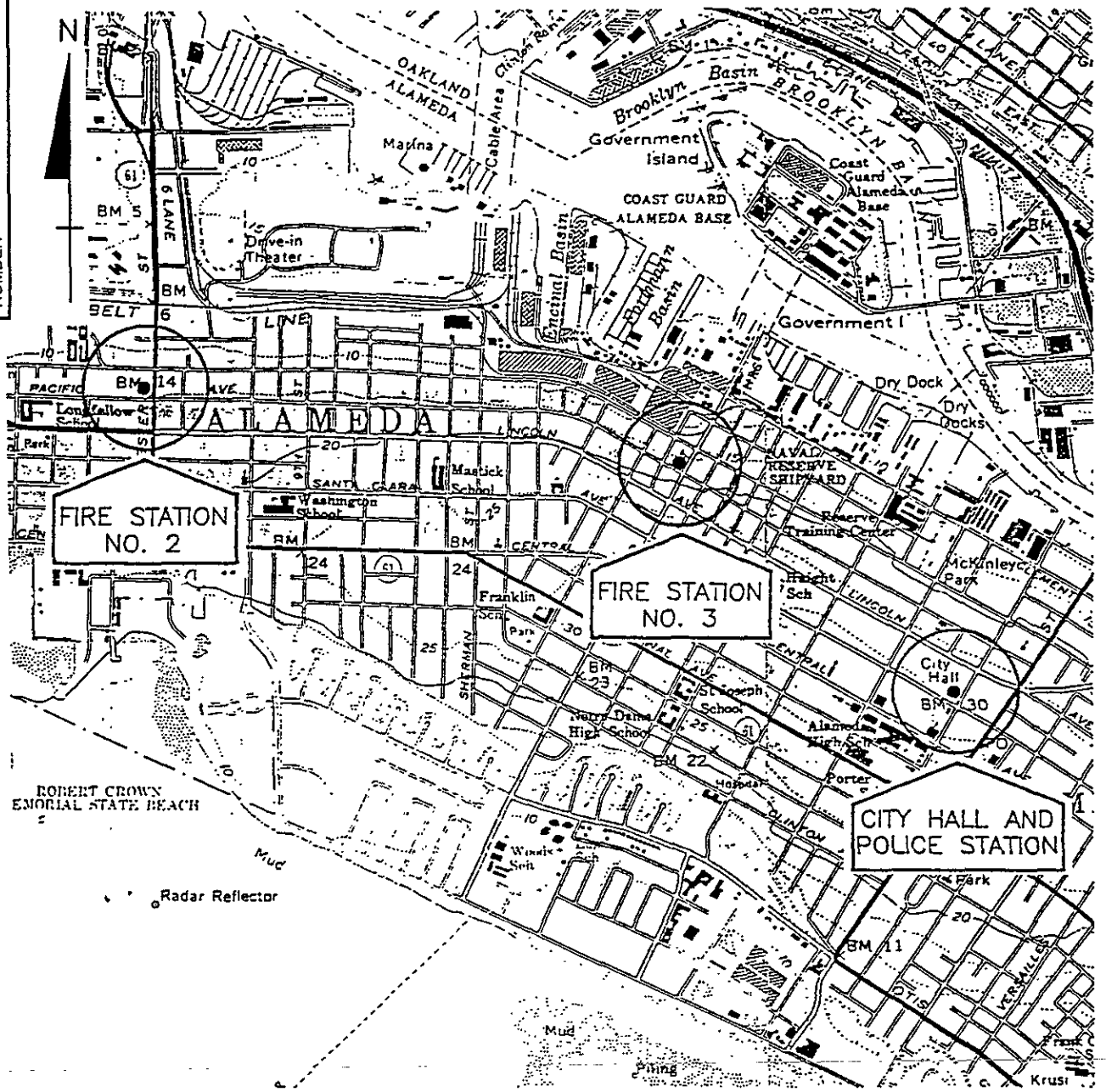
Table 1
SUMMARY OF GROUND WATER ANALYTICAL RESULTS
CITY OF ALAMEDA WELLS
ALAMEDA, CALIFORNIA

Well	Date Sampled	TPHg (ppb)	TPHd (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Total Xylenes (ppb)
CH-MW1	8/5/87	<20	NA	<0.4	<0.4	NA	<0.4
	2/16/88	<50	NA	<0.5	<0.5	NA	<0.5
	8/24/88	<7	NA	<0.1	<0.1	<0.1	<0.2
	2/8/89	<50	NA	<0.5	<0.5	<0.5	<0.5
	8/7/89	<30	NA	<0.3	<0.3	<0.3	<0.3
	2/9/90	<30	NA	<0.3	<0.3	<0.3	<0.3
	8/28/90	<30	NA	<0.3	<0.3	<0.3	<0.3
	2/8/91	<30	NA	<0.3	<0.3	<0.3	<0.3
	3/4/92	<50	NA	<0.5	<0.5	<0.5	<0.5
	9/8/92	<50	NA	NA	NA	NA	NA
	3/11/93	<50	NA	<0.5	<0.5	<0.5	<0.5
	9/29/93	<50	NA	<0.5	<0.5	<0.5	<0.5
	3/30/94	<50	NA	<0.5	<0.5	<0.5	<0.5
	9/20/94	<50	NA	<0.5	<0.5	<0.5	<0.5
	3/31/95	<50	NA	<0.5	<0.5	<0.5	<0.5
	11/14/95	<50	**70**	<0.5	<0.5	<0.5	<2
CH-MW2	8/5/87	<20	NA	<0.4	<0.4	NA	**0.4**
	2/16/88	<50	NA	<0.5	<0.5	NA	<0.5
	8/24/88	**36**	NA	<0.1	<0.1	<0.1	<0.2
	2/8/89	<50	NA	**0.55**	<0.5	<0.5	<0.5
	8/7/89	<30	NA	<0.3	<0.3	<0.3	<0.3
	2/9/90	<30	NA	<0.3	<0.3	<0.3	<0.3
	8/28/90	<30	NA	<0.3	<0.3	<0.3	<0.3
	2/8/91	<30	NA	<0.3	<0.3	<0.3	<0.3
	3/4/92	<50	<50	<0.5	<0.5	<0.5	<0.5
	9/8/92	<50	NA	NA	NA	NA	NA
	3/11/93	<50	<50	<0.5	<0.5	<0.5	<0.5
	9/29/93	<50	<50	<0.5	<0.5	<0.5	<0.5
	3/30/94	<50	<50	<0.5	<0.5	<0.5	<0.5
	9/20/94	<50	<50	<0.5	<0.5	<0.5	<0.5
	3/31/95	<50	NA	<0.5	<0.5	<0.5	<0.5
	11/14/95	<50	<50	<0.5	<0.5	<0.5	<2

Table 1
SUMMARY OF GROUND WATER ANALYTICAL RESULTS
CITY OF ALAMEDA WELLS
ALAMEDA, CALIFORNIA

Well	Date Sampled	TPHg (ppb)	TPHd (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Total Xylenes (ppb)
PS-MW1	8/5/87	NA	**160**	NA	NA	NA	NA
	2/16/88	NA	<50	NA	NA	NA	NA
	8/24/88	NA	<60	NA	NA	NA	NA
	2/8/89	NA	<50	NA	NA	NA	NA
	8/7/89	NA	<50	NA	NA	NA	NA
	2/9/90	NA	<50	NA	NA	NA	NA
	8/28/90	NA	<50	NA	NA	NA	NA
	2/8/91	NA	NA	NA	NA	NA	NA
	3/4/92	NA	<100	NA	NA	NA	NA
	9/8/92	NA	**57**	NA	NA	NA	NA
	3/11/93	NA	<50	NA	NA	NA	NA
	9/29/93	NA	**470***	NA	NA	NA	NA
	3/30/94	NA	**110****	NA	NA	NA	NA
	9/20/94	NA	**540**	NA	NA	NA	NA
	3/31/95	NA	**130**	NA	NA	NA	NA
	11/14/95	NA	NA	NA	NA	NA	NA
FS2-MW1	5/5/87	NA	**120**	NA	NA	NA	NA
	2/16/88	NA	<50	NA	NA	NA	NA
	8/24/88	NA	<60	NA	NA	NA	NA
	2/8/89	NA	<50	NA	NA	NA	NA
	8/7/89	NA	<50	NA	NA	NA	NA
	2/6/90	NA	<50	NA	NA	NA	NA
	8/28/90	NA	<50	NA	NA	NA	NA
	2/8/91	NA	<50	NA	NA	NA	NA
	3/4/92	NA	<100	NA	NA	NA	NA
	9/8/92	NA	<50	NA	NA	NA	NA
	3/11/93	NA	<50	NA	NA	NA	NA
	9/29/93	NA	<50	NA	NA	NA	NA
	3/30/94	NA	NA	NA	NA	NA	NA
	9/20/94	NA	NA	NA	NA	NA	NA
	3/31/95	NA	NA	NA	NA	NA	NA
	11/14/95	NA	NA	NA	NA	NA	NA

DRAWING NUMBER 4356-A1



REFERENCE:
U.S. GEOLOGICAL SURVEY
7.5-MINUTE QUADRANGLE
OAKLAND EAST, OAKLAND WEST, CALIFORNIA
PHOTOREVISED 1980

SITE VICINITY MAP
CITY HALL AND POLICE STATION
2263 SANTA CLARA AVENUE
ALAMEDA, CALIFORNIA

No.	DATE	ISSUE / REVISION	DWN. BY	CK'D BY	AP'D BY
1		ISSUED FOR REPORT	VZC		

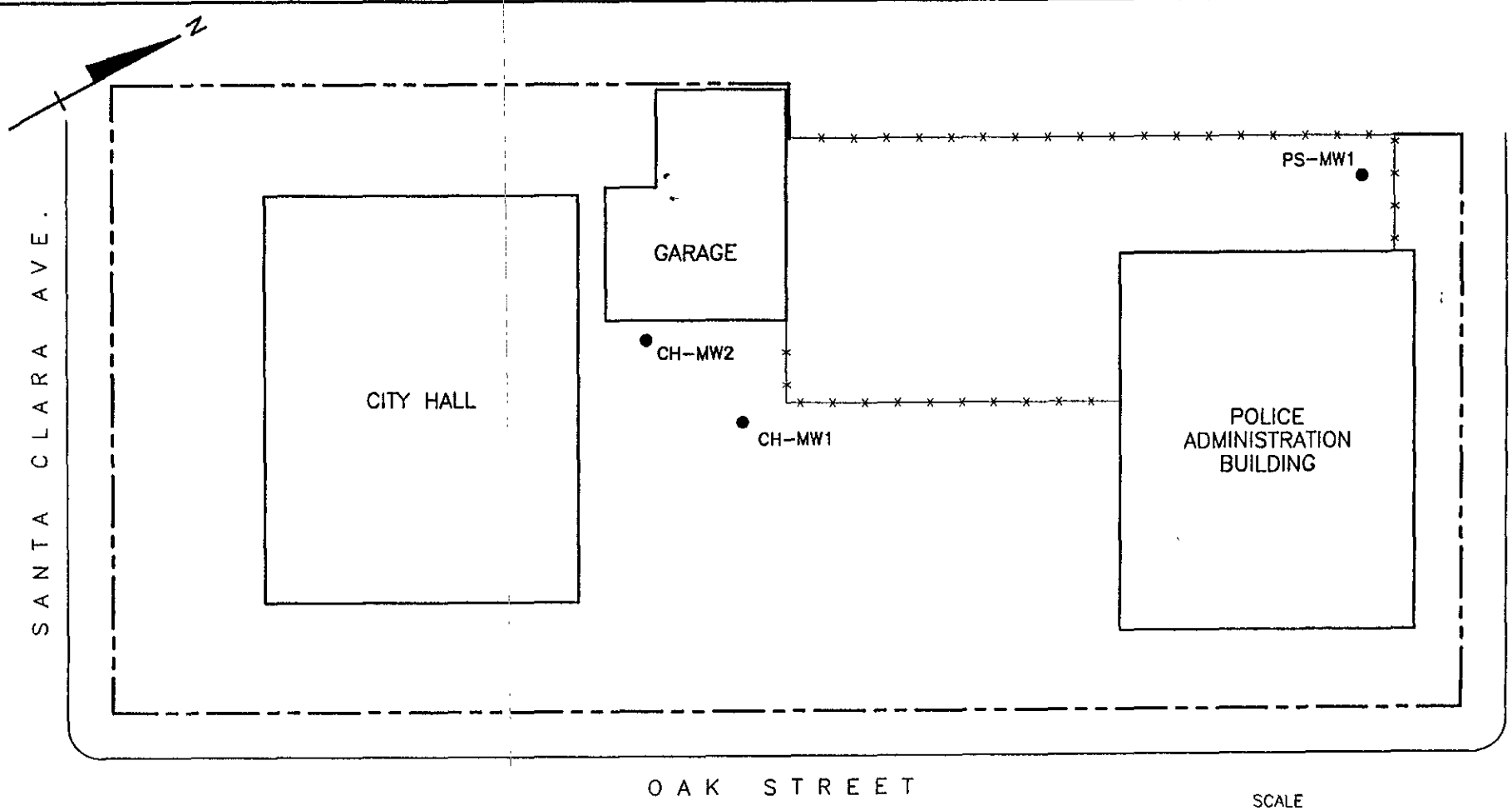
SMITH

DATE: 12-26-95
SCALE: AS SHOWN

FIGURE 1

DRAWING NUMBER 4356-A1

DRAWING NUMBER 4356-A2



SCALE

50 0 50 FEET

LEGEND:

SECURITY FENCE

PROPERTY LINE

SITE PLAN
CITY HALL AND POLICE STATION
2263 SANTA CLARA AVENUE
ALAMEDA, CALIFORNIA

No.	DATE	ISSUE / REVISION	DWN. BY	CK'D BY	AP'D BY
1		ISSUED FOR REPORT	VZC		

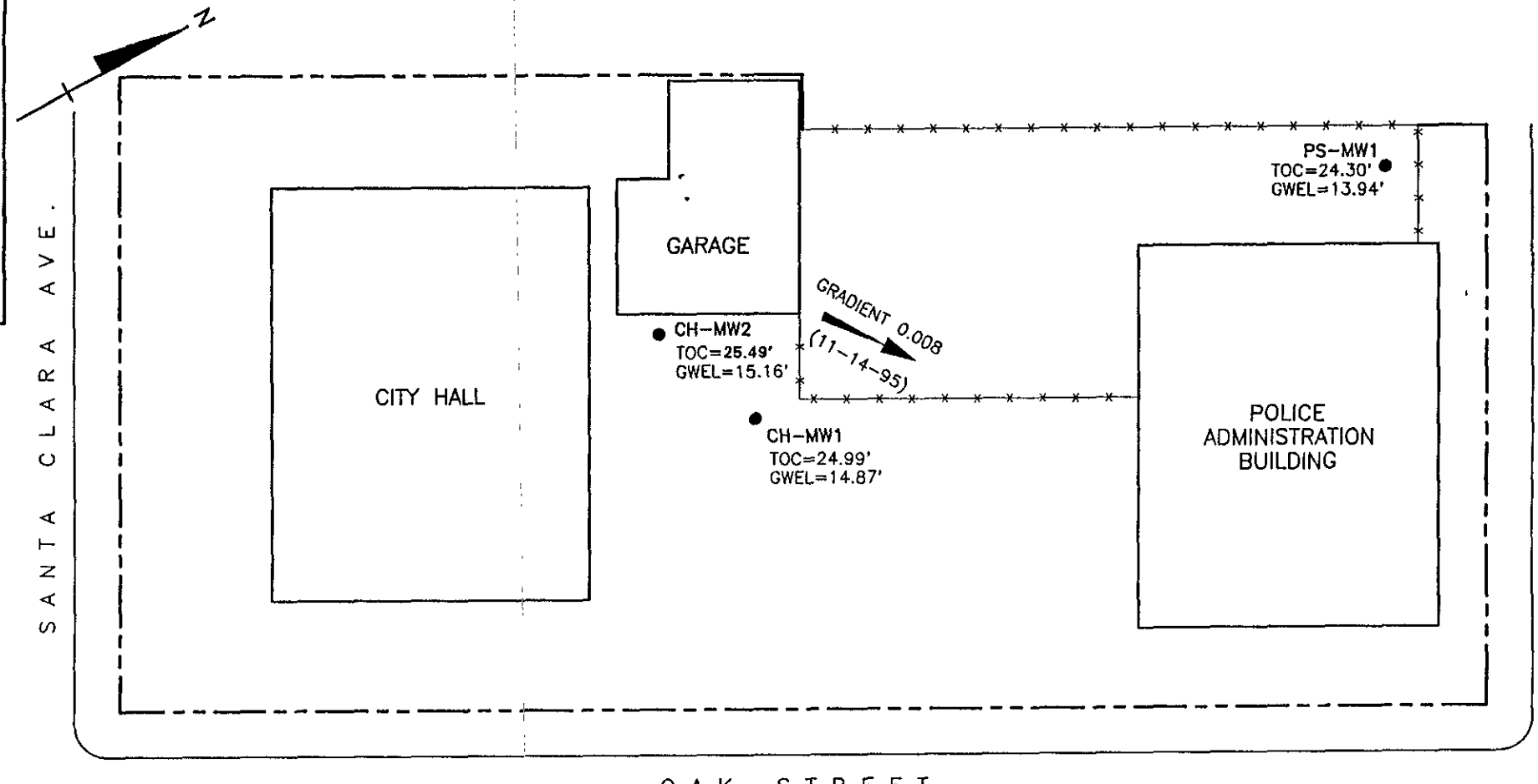
SMITH

DATE: 12-26-95
SCALE: AS SHOWN

FIGURE 2

DRAWING NUMBER 4356-A2

DRAWING NUMBER 4356-A3



LEGEND:

- SECURITY FENCE
- PROPERTY LINE
- CH-MW2 — GROUND WATER MONITORING WELL
- TOC — TOP OF CASING ELEVATION (FEET)
- GWEL — GROUND WATER ELEVATION (FEET)
- GRADIENT DIRECTION

SCALE

50 0 50 FEET

GROUND WATER ELEVATIONS AND GRADIENT CITY HALL AND POLICE STATION 2263 SANTA CLARA AVENUE ALAMEDA, CALIFORNIA

SMITH

No.	DATE	ISSUE / REVISION	DWN. BY	CK'D BY	AP'D BY
1		ISSUED FOR REPORT	VZC		

DATE: 12-26-95
SCALE: AS SHOWN

FIGURE 3

DRAWING NUMBER 4356-A3

ATTACHMENT A

Ground Water Sampling Protocol
Ground Water Sampling Logs

SMITH

STANDARD OPERATING PROCEDURE:
GROUND WATER SAMPLING

Prior to ground water sampling, a measurement is made of the static water level using a water level probe. At sites where the presence of separate-phase hydrocarbons is suspected, an interface probe, product bailer or product-measuring paste is used to measure product thickness. Water level and interface probes are cleaned with Liquinox™ solution and rinsed with de-ionized (DI) water between wells. The static water level and well depth are used to calculate the well casing volume. A minimum of 3 to 4 well casing volumes of water are purged from the well prior to sampling in order to obtain a representative sample of the ground water from the formation surrounding the well. Wells should be purged and sampled in order of least to highest suspected concentrations.

Purging equipment can consist of PVC, Teflon™, or stainless steel bailers; or bladder, airlift, mechanical, or electric submersible pumps. Purging and sampling systems may be portable or dedicated to (installed in) the well. Appropriate personal protective equipment is always worn during purging. The well is purged until the clarity, temperature, pH, and conductivity of the discharge water has stabilized. These parameters are measured and recorded initially, after every well casing volume is removed, and after the sample is collected. In some localities, turbidity, Eh, and dissolved oxygen measurements may also be required. If possible, the purge rate is low enough to avoid dewatering the well. Purged water is stored on-site in labeled drums or tanks pending proper disposal. If the well is purged dry prior to the removal of three or four casing volumes of water, the water level is allowed to recover to 80% of the static level before sampling. This is to minimize volatilization of hydrocarbons. Slow recovering wells may be sampled before the 80% recovery if a minimum of two hours, or 48 hours if necessary, have elapsed since the end of purging.

Sampling equipment may consist of Teflon™ bailers, inert polyethylene disposable bailers, or bladder pumps. New sampling gloves are worn during each sample collection. Sample containers typically consist, depending on the analysis, of 40-milliliter volatile organic analysis (VOA) vials with Teflon™ septa, 1-liter amber glass bottles, or plastic bottles. HCl, H_2SO_4, HNO_3, or other preservatives are added to sample containers as appropriate to prevent biodegradation of samples. The ground water sample is decanted into each VOA vial to form a meniscus at the top to eliminate air bubbles when capped. Usually at least 3 VOA vials are filled from each well to ensure a duplicate. The sample is labeled with date, time, sample number, project number, and analysis. The samples are refrigerated to 4° C, and delivered under chain-of-custody to the analytical laboratory. For quality control purposes, duplicate samples, trip blanks, and equipment blanks are usually collected. The duplicate sample is given a different number than the original sample from the same well. Trip blanks are prepared by the laboratory using DI water and remain in the cooler. Equipment blanks are collected from sampling equipment using DI water after the equipment has been decontaminated and rinsed.

All non-dedicated purging and sampling equipment is washed in Liquinox™ solution and triple-rinsed with DI water after use in every well to avoid cross-contamination. Equipment is steam-cleaned at sites where free product is present.

SMITH
ENVIRONMENTAL TECHNOLOGIES CORPORATION

GROUND WATER SAMPLING FIELD DATA SHEET

Well ID	Depth to Water:
CH MW4	10.12 ft
Date: 11-14-95	Time: 1514S
Project: RAMCO SAMPLING	Project #: 4356

PURGE VOLUME CALCULATION

		Volume per Linear foot (dia)		Well Casing Volume	Purge factor (casing volumes)	Volume to Purge
Casing Depth:	15.50 ft	1.5 gal/ft (6")				
Depth to Water:	10.12 ft	0.66 gal/ft (4")				
Height of Water Column:	5.38 ft	X 0.17 gal/ft (2")	=	.91 gal	X 4	= 3.65 gal

WELL PURGING

Purging Equipment/Methods:

Time	Temp	Cond.	pH	Turbidity	Gallons	Time	Temp	Cond.	pH	Turbidity	Gallons
DID NOT OBTAIN - CONTRACTOR											
WISHED TO LOCK UP SITE.											

Purged dry? (No) Yes Recovery: _____ Volume purged prior to sampling: 3.75 gal

Purge Water Disposal:

SAMPLING

Sampling Equipment/Methods:

Sample Containers	Qty	Preserved?	Filtered?	Comments
40-ml VOAs	3	Y	N	
1-liter amber bottles	1	N	N	
1-liter plastic bottles				
500-ml plastic bottles				
250-ml plastic bottles				

Sample ID: CHMW4.495

Time Sampled: _____

Comments/Problems:

Witnesses:

SMITH
ENVIRONMENTAL TECHNOLOGIES CORPORATION

GROUND WATER SAMPLING FIELD DATA SHEET

Well ID:	Depth to Water:
CH/MW2	10.33 ft
Date:	Time:
11-14-95	15:45
Project: ALAMEDA SAMPLING	Project #: 4356

PURGE VOLUME CALCULATION

		Volume per Linear foot (dia)		Well Casing Volume	Purge factor (casing volumes)	Volume to Purge
Casing Depth:	15.05 ft	1.5 gal/ft (6")				
Depth to Water:	10.33 ft	0.66 gal/ft (4")				
Height of Water Column:	4.72 ft	X 0.17 gal/ft (2")	=	.80 gal	X 4	= 3.2 gal

WELL PURGING

Purging Equipment/Methods:

Time	Temp	Cond.	pH	Turbidity	Gallons	Time	Temp	Cond.	pH	Turbidity	Gallons
1611	69.4	.58	8.90	SLT	INIT						
1612	69.7	.56	4.27	MOD	1.0						
1615	68.7	.55	7.70	MOD	2.0						
1622	69.2	.56	7.46	MOD	3.2						

Purged dry? (No) Yes Recovery: _____ Volume purged prior to sampling: 3.5 gal

Purge Water Disposal:

SAMPLING

Sampling Equipment/Methods:

Sample Containers	Qty	Preserved?	Filtered?	Comments
40-ml VOAs	3	Y	N	
1-liter amber bottles	1	N	N	
1-liter plastic bottles				
500-ml plastic bottles				
250-ml plastic bottles				

Sample ID: CHMW2.495

Time Sampled: _____

Comments/Problems:

Witnesses:

HYDRODATA

Date: 11-14-95

PROJECT: ALAMEDA MONITORING EVENT: _____ SAMPLER: CM

No.	Well or Location	Date	Time		Measurement	Comments
			Hr.	Min.		
1	FS2-MW	11/14/95	14	20		NO ODOR OR SHEEN
2	FS3-MW1		14	56		NO ODOR OR SHEEN
3	FS3-MW-2		15	02		NO ODOR OR SHEEN
4	CH-MW-1				10.33'	NO ODOR OR SHEEN
5	CH MW 2				10.12'	NO ODOR OR SHEEN
6	PS MW-1				10.36'	NO ODOR OR SHEEN
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

[1] All levels are depth from inner casing - describe any other reference points in comments column; when in doubt, describe reference point.
Note in comments column if well is not: properly labeled, locked, or able to be locked. Describe corrective action.
Note flooding of vault box, odor, access problems.

ATTACHMENT B

Laboratory Report Sheets
Chain of Custody Record

American Environmental Network

Certificate of Analysis

DOHS Certification: 1172 AIHA Accreditation: 11134

RIEDEL/SMITH ENVIRONMENTAL
2900 MAIN STREET, BLDG. 140
ALAMEDA, CA 94501

ATTN: CHRIS MERRITT
CLIENT PROJ. ID: 4356
CLIENT PROJ. NAME: ALAMEDA

REPORT DATE: 11/28/95

DATE(S) SAMPLED: 11/14/95

DATE RECEIVED: 11/14/95

AEN WORK ORDER: 9511223

PROJECT SUMMARY:

On November 14, 1995, this laboratory received 2 water sample(s).

Client requested sample(s) be analyzed for organic parameters. Results of analysis are summarized on the following page(s). Please see quality control report for a summary of QC data pertaining to this project.

Samples will be stored for 30 days after completion of analysis, then disposed of in accordance with State and Federal regulations. Samples may be archived by prior arrangement.

If you have any questions, please contact Client Services at (510) 930-9090.

Larry Klein
Laboratory Director

RIEDEL/SMITH ENVIRONMENTAL

SAMPLE ID: CH-MW1.495
AEN LAB NO: 9511223-01
AEN WORK ORDER: 9511223
CLIENT PROJ. ID: 4356

DATE SAMPLED: 11/14/95
DATE RECEIVED: 11/14/95
REPORT DATE: 11/28/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	ND	0.5	ug/L	11/21/95
Toluene	108-88-3	ND	0.5	ug/L	11/21/95
Ethylbenzene	100-41-4	ND	0.5	ug/L	11/21/95
Xylenes, Total	1330-20-7	ND	2	ug/L	11/21/95
Purgeable HCs as Gasoline	5030/GCFID	ND	0.05	mg/L	11/21/95
#Extraction for TPH	EPA 3510	-		Extrn Date	11/17/95
TPH as Diesel	GC-FID	0.07 *	0.05	mg/L	11/19/95

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

RIEDEL/SMITH ENVIRONMENTAL

SAMPLE ID: CH-MW2.495
AEN LAB NO: 9511223-02
AEN WORK ORDER: 9511223
CLIENT PROJ. ID: 4356

DATE SAMPLED: 11/14/95
DATE RECEIVED: 11/14/95
REPORT DATE: 11/28/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	ND	0.5	ug/L	11/18/95
Toluene	108-88-3	ND	0.5	ug/L	11/18/95
Ethylbenzene	100-41-4	ND	0.5	ug/L	11/18/95
Xylenes, Total	1330-20-7	ND	2	ug/L	11/18/95
Purgeable HCs as Gasoline	5030/GCFID	ND	0.05	mg/L	11/18/95
#Extraction for TPH	EPA 3510	-		Extrn Date	11/17/95
TPH as Diesel	GC-FID	ND	0.05	mg/L	11/19/95

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

AEN (CALIFORNIA)
QUALITY CONTROL REPORT

AEN JOB NUMBER: 9511223

CLIENT PROJECT ID: 4356

Quality Control and Project Summary

All laboratory quality control parameters were found to be within established limits.

Definitions

Laboratory Control Sample (LCS)/Method Spike(s): Control samples of known composition. LCS and Method Spike data are used to validate batch analytical results.

Matrix Spike(s): Aliquot of a sample (aqueous or solid) with added quantities of specific compounds and subjected to the entire analytical procedure. Matrix spike and matrix spike duplicate QC data are advisory.

Method Blank: An analytical control consisting of all reagents, internal standards, and surrogate standards carried through the entire analytical process. Used to monitor laboratory background and reagent contamination.

Not Detected (ND): Not detected at or above the reporting limit.

Relative Percent Difference (RPD): An indication of method precision based on duplicate analysis.

Reporting Limit (RL): The lowest concentration routinely determined during laboratory operations. The RL is generally 1 to 10 times the Method Detection Limit (MDL). Reporting limits are matrix, method, and analyte dependent and take into account any dilutions performed as part of the analysis.

Surrogates: Organic compounds which are similar to analytes of interest in chemical behavior, but are not found in environmental samples. Surrogates are added to all blanks, calibration and check standards, samples, and spiked samples. Surrogate recovery is monitored as an indication of acceptable sample preparation and instrumental performance.

D: Surrogates diluted out.

#: Indicates result outside of established laboratory QC limits.

QUALITY CONTROL DATA

METHOD: EPA 3510 GCFID

AEN JOB NO: 9511223
DATE EXTRACTED: 11/17/95
INSTRUMENT: C
MATRIX: WATER

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery n-Pentacosane
11/19/95	CH-MW1.495	01	85
11/19/95	CH-MW2.495	02	82
QC Limits:			59-118

DATE EXTRACTED: 11/15/95
DATE ANALYZED: 11/16/95
SAMPLE SPIKED: DI WATER
INSTRUMENT: C

Method Spike Recovery Summary

Analyte	Spike Added (mg/L)	Average Percent Recovery	RPD	QC Limits Percent Recovery	QC Limits RPD
Diesel	2.06	79	5	58-107	15

Daily method blanks for all associated analytical runs showed no contamination at or above the reporting limit.

QUALITY CONTROL DATA

METHOD: EPA 8020, 5030 GCFID

AEN JOB NO: 9511223
INSTRUMENT: F
MATRIX: WATER

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery Fluorobenzene
11/21/95	CH-MW1.495	01	94
11/18/95	CH-MW2.495	02	97
QC Limits:			92-109

DATE ANALYZED: 11/18/95
SAMPLE SPIKED: LCS
INSTRUMENT: F

Laboratory Control Sample Recovery

Analyte	Spike Added (ug/L)	Average Percent Recovery	RPD	QC Limits Percent Recovery	QC Limits RPD
Benzene	19.2	83	8	60-120	20
Toluene	56.5	93	7	60-120	20
Hydrocarbons as Gasoline	500	107	11	60-120	20

Daily method blanks for all associated analytical runs showed no contamination at or above the reporting limit.

*** END OF REPORT ***

R-3,5-2
R-7,5-L
9511223

SMITH
ENVIRONMENTAL TECHNOLOGIES CORPORATION

2900 Main Street, Bldg. 140
Alameda, CA 94501
Phone: (510) 748-3800
Fax: (510) 748-3812

CHAIN OF CUSTODY REQUEST FOR ANALYSIS

Laboratory: NEN
Contact: ROBIN
Phone: 930 9090

Date: 11/14/95
Page: 1
of: 1

PROJECT INFORMATION

Project Manager: CHRIS MERRITT
Fax Results to: SAME
Samplers: CHRIS MERRITT

Project Name: ALAMEDA
748-3812
Project # 4356
P.O. #

Turn Around Time: 10 Day (5 Day) 48 Hr. 24 Hr. Other:

Sample ID	Lab ID	Date	Time	Matrix	Preserv.	TPH Gasoline / BTEX (EPA 5030/8015/602/8020)	TPH Diesel (EPA 3510/3550/8015)	TEPH Kerosene/Diesel/Motor Oil (EPA 3510/3550/8015)	Purgeable Aromatics / BTEX (EPA 602/8020)	Purgeable Halocarbons (EPA 601/8010)	Volatile Organics (EPA 624/8240)	Semivolatile Organics (EPA 525/627/8270/525)	TOG - TRPH (SM 5520) (EPA 418.1)			Title 22 Metals Total or Soluble	Soluble Extraction TCLP or STLC (WET)			Number of Containers
CH-MW1.495	01A-D	11/14/95	1600	H_2O	HCl	X	X													4
CH-MW2.495	02A-D	↓	1620	↓	↓	X	X													4

SPECIAL INSTRUCTIONS / COMMENTS:

Relinquished by (Sampler):
CHRIS MERRITT 6:13PM
(Signature) (Time)
CHRIS MERRITT 11/14/95
(Printed Name) (Date)
SMITH
(Company)

Received by:
(Signature) (Time)
(Printed Name) (Date)
(Company)

Relinquished by:
(Signature) (Time)
(Printed Name) (Date)
(Company)

Received by:
(Signature) (Time)
(Printed Name) (Date)
(Company)

Relinquished by:
(Signature) (Time)
(Printed Name) (Date)
(Company)

Received by (Laboratory):
Lori L Pruitt 1813
(Signature) (Time)
Lori L Pruitt 11/14/95
(Printed Name) (Date)
NEN
(Company)

CONTAINERS

Total Number of Containers →

Head Space? Y / N

Received in good Condition (Cold)? Y / N

Conforms to Record? Y / N

SAMPLE RECEIPT