

QUARTERLY GROUND WATER REPORT  
AUGUST 1990  
SUNNYSIDE NURSERY  
HAYWARD, CALIFORNIA  
PROJECT 4454/2

FOR

THE PLYMOUTH GROUP  
1616 NORTH SHORELINE BOULEVARD  
MOUNTAIN VIEW, CALIFORNIA 94043

BY

TERRATECH, INC.  
1365 VANDER WAY  
SAN JOSE, CALIFORNIA 95112

OCTOBER 4, 1990

90 OCT -9 AM 11:28





October 4, 1990  
Project 4454/2

Mr. Scott Ward  
The Plymouth Group  
1616 North Shoreline Boulevard  
Mountain View, California 94043

Subject: Quarterly Ground Water Report - August 1990  
Area of Former Diesel Tank  
Sunnyside Nursery  
Hayward, California

Dear Mr. Ward:

This letter report describes the field work performed and the findings gained from Terratech's recent ground water quality test at the Sunnyside Nursery site in Hayward, California.

The objective of this testing was document the continued absence of ground water impact after a nearby underground diesel tank (see Figure 1) and its associated backfill soil were removed (ref. Project 4454/2 letter reports dated February 26, March 13, and June 26, 1990). NOTE: A concurrent study on an adjacent site has confirmed our assumed westerly ground water gradient direction.

#### WORK PERFORMED

On August 28, 1990 MW-1 was purged and sampled using a pre-cleaned Teflon bailer. Approximately four well volumes of water were removed and drummed. Final pH measurements stabilized to  $\pm 0.01$  pH units; final temperature to within  $0.5^{\circ}\text{F}$ ; and final conductivity to  $\pm 30$  micromhos/cm. Water samples were placed in containers supplied by the laboratory - two volatile organic analysis (VOA) vials (no headspace) and two amber-colored glass bottles.

All samples were kept iced or refrigerated from the time of collection to the time of testing. Standard chain-of-custody records were prepared to document sample collection, handling and analysis requests (see Appendix).

#### FINDINGS AND COMMENTS

The analytical results to date are summarized in Table 1. The latest laboratory report is presented in the Appendix. No detectable amount of diesel or volatile organics was found in the collected sample.

October 4, 1990

This ground water finding continues to support our opinion that the trace amounts of methylene chloride and 1,1,1-trichloroethane (TCA) detected in the DH-2 grab sample from our original investigation were somehow introduced during the sampling or analytical processes. Further, there does not appear to be a ground water impact from the former diesel fuel system.

In accordance with the present California Regional Water Quality Control Board (RWQCB) guidelines, verification sampling and analysis of ground water should be continued for one more quarter (i.e. November). If these samples also indicate nondetectable amounts of contamination we would then recommend discontinuation of ground water monitoring and well closure (subject to RWQCB approval).

Sincerely,

TERRATECH, INC.

*Thomas C. Morin*  
Thomas C. Morin

Reviewed by:

*E. R. Lautenbach*  
Eric R. Lautenbach  
CE 42437, exp. 3/31/92

Attachments

cc: Hugh Murphy, Hayward Fire Department  
Rich Hiatt, California Regional Water  
Quality Control Board  
Pamela Evans, Alameda County Health Services



TABLE 1

## SUMMARY OF ANALYTICAL RESULTS FOR MONITORING WELL MW-1

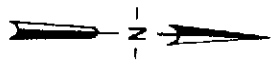
Sunnyside Nursery  
Hayward, California

SAMPLE & DATE	BENZENE (ppm)	TOLUENE (ppm)	ETHYL- BENZENE (ppm)	XYLENES (ppm)	TPH as DIESEL (ppm)	VOLATILE ORGANICS (ppm)
SOIL @ 12.5' 2/15/90	< 0.005	< 0.005	< 0.005	< 0.005	< 10	---
GROUND WATER 2/21/90	< 0.005	< 0.005	< 0.005	< 0.005	< 0.05	N.D.
5/18/90	< 0.005	< 0.005	< 0.005	< 0.005	< 0.05	N.D.
8/28/90	< 0.005	< 0.005	< 0.005	< 0.005	< 0.05	N.D.

## Note:

N.D. indicates that all compounds in the analysis were below the reporting limits of the method (see appended lab report).

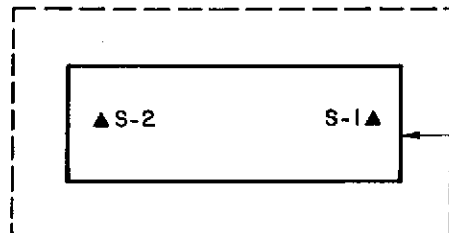
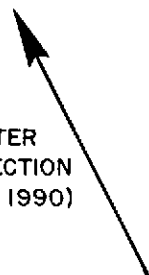




DH-2

MW-1

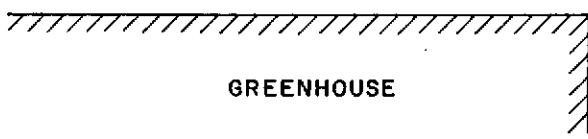
GROUND WATER  
GRADIENT DIRECTION  
(MAY AND AUG. 1990)



EXCAVATION AREA

FORMER UNDERGROUND  
DIESEL TANK

FORMER FUEL PUMP



GREENHOUSE

**LEGEND**

- DRILL HOLE (PHASE I STUDY)
- MONITORING WELL
- TANK REMOVAL SOIL SAMPLE

SCALE: 1" = 10'



10-90  
**TERRATECH**

SUNNYSIDE NURSERY  
HAYWARD, CALIFORNIA

LOCATION OF MONITORING WELL MW-1

FIGURE  
1  
PROJECT  
4454/2

**APPENDIX A**  
**CHAIN-OF-CUSTODY**  
**AND**  
**ANALYTICAL LABORATORY RESULTS**



TERRATECH

CHAIN OF CUSTODY RECORD

P.O. NO. 8500

TURNAROUND: 2 WEEK

PROJECT NUMBER: <u>4454/2</u>					Number of Containers	Analysis Required <u>TPH-DIESEL</u> <u>EPA 0240</u>	REMARKS					SAMPLE DEPTH
SAMPLERS (signature): <u>Thomas Morn</u>												
Station Number	Date	Time	Comp.	Grab								
<u>MW-1</u>	<u>8/28</u>	<u>AM</u>		<input checked="" type="checkbox"/>	<u>ADJACENT TO FORMER DIESEL TANK</u>	<u>2 LITERS</u> <u>3 VOLS</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<u>OK</u>
Relinquished by(signature): Company or Agency:		Date / Time		Received by (signature): Company or Agency:		Relinquished by(signature): Company or Agency:		Date / Time		Received by (signature): Company or Agency:		
Relinquished by(signature): Company or Agency:		Date / Time		Received by (signature): Company or Agency:		Relinquished by: Company or Agency:		Date / Time		Received by (signature): Company or Agency:		
Relinquished by(signature): <u>Thomas Morn</u> Company or Agency: TERRATECH, INC.		Date / Time <u>8/29/00 10:50</u>		Received for Laboratory by: (signature) <u>[Signature]</u>		Date / Time <u>8/29/00 10:50</u>		Remarks/Shipping Information Send reports to: Eric Lautenbach 1365 VANDER WAY, SAN JOSE 95112				

**ANAMETRIX INC**

Environmental & Analytical Chemistry  
 961 Concourse Drive, Suite E, San Jose, CA 95131  
 (408) 432-8192 • Fax (408) 432-8198

**REPORT**

**TERRATECH**  
**SEP 18 1990**  
**RECEIVED**

MR. ERIC LAUTENBACH  
 TERRATECH, INC. - SAN JOSE  
 1365 VANDER WAY  
 SAN JOSE, CA 95112

Workorder # : 9008307  
 Date Received : 08/29/90  
 Project ID : 4454/2  
 Purchase Order: 8500

The following samples were received at Anamatrix, Inc. for analysis :

ANAMETRIX ID	CLIENT SAMPLE ID
9008307- 1	MW-1

This report is paginated for your convenience and ease of review. It contains 8 pages excluding the cover letter. The report is organized into sections. Each section contains all analytical results and quality assurance data related to a specific group or section within Anamatrix. The Report Summary that precedes each section will help you determine which group at Anamatrix generated the data. The Report Summary will contain the signatures of the department supervisor and a chemist, both of whom reviewed the analytical data. Please refer all questions to the department supervisor that signed the form.

If you have any further questions or comments on this report, please give us a call as soon as possible. Thank you for using Anamatrix.

*Burt Sutherland*  
 \_\_\_\_\_  
 Burt Sutherland  
 Laboratory Director

09-17-90  
 \_\_\_\_\_  
 Date



REPORT SUMMARY  
ANAMETRIX, INC. (408)432-8192

MR. ERIC LAUTENBACH  
TERRATECH, INC. - SAN JOSE  
1365 VANDER WAY  
SAN JOSE, CA 95112

Workorder # : 9008307  
Date Received : 08/29/90  
Project ID : 4454/2  
Purchase Order: 8500  
Department : GC  
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9008307- 1	MW-1	H2O	08/28/90	TPHD

REPORT SUMMARY  
ANAMETRIX, INC. (408)432-8192

MR. ERIC LAUTENBACH  
TERRATECH, INC. - SAN JOSE  
1365 VANDER WAY  
SAN JOSE, CA 95112

Workorder # : 9008307  
Date Received : 08/29/90  
Project ID : 4454/2  
Purchase Order: 8500  
Department : GC  
Sub-Department: TPH

QA/QC SUMMARY :

- No QA/QC problems encountered for samples.

Cheryl Balmer 9/14/90  
Department Supervisor Date

Garth Vogt 9/14/90  
Chemist Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS AS DIESEL  
ANAMETRIX, INC. (408) 432-8192

Anamatrix W.O.: 9008307  
Matrix : WATER  
Date Sampled : 08/28/90  
Date Extracted: 08/31/90

Project Number : 4454/2  
Date released : 09/14/90  
Instrument I.D.: HP19

Anamatrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (ug/L)	Amount Found (ug/L)
9008307-01	MW-1	09/14/90	50	ND
DWBL083190	METHOD BLANK	09/14/90	50	ND

ND - Not detected at or above the practical quantitation limit for the method.

TPHd - Total Petroleum Hydrocarbons as diesel is determined by GCFID following sample extraction by EPA Method 3510.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Scott Vogel 9/14/90  
Analyst Date

Cheryl Belmer 9/14/90  
Supervisor Date

# ANAMETRIX REPORT DESCRIPTION

## GCMS

### Organic Analysis Data Sheets (OADS)

OADS forms contain tabulated results for target compounds. The OADS are grouped by method and, within each method, organized sequentially in order of increasing Anamatrix ID number.

### Tentatively Identified Compounds (TICs)

TIC forms contain tabulated results for non-target compounds detected in GC/MS analyses. TICs must be requested at the time samples are submitted at Anamatrix. TIC forms immediately follow the OADS form for each sample. If TICs are requested but not found, then TIC forms will not be included with the report.

### Surrogate Recovery Summary (SRS)

SRS forms contain quality assurance data. An SRS form will be printed for each method, if the method requires surrogate compounds. They will list surrogate percent recoveries for all samples and any method blanks. Any surrogate recovery outside the established limits will be flagged with an "\*", and the total number of surrogates outside the limits will be listed in the column labelled "Total Out".

### Matrix Spike Recovery Form (MSR)

MSR forms contain quality assurance data. They summarize percent recovery and relative percent difference information for matrix spikes and matrix spike duplicates. This information is a statement of both accuracy and precision. Any percent recovery or relative percent difference outside established limits will be flagged with an "\*", and the total number outside the limits will be listed at the bottom of the page. Not all reports will contain an MSR form.

### Qualifiers

Anamatrix uses several data qualifiers (Q) in its report forms. These qualifiers give additional information on the compounds reported. They should help a data reviewer to verify the integrity of the analytical results. The following is a list of qualifiers and their meanings:

- U - Indicates that the compound was analyzed for, but was not detected at or above the specified reporting limit.
- B - Indicates that the compound was detected in the associated method blank.
- J - Indicates that the compound was detected at an amount below the specified reporting limit. Consequently, the amount should be considered an approximate value. Tentatively identified compounds will always have a "J" qualifier because they are not included in the instrument calibration.
- E - Indicates that the amount reported exceeded the linear range of the instrument calibration.
- D - Indicates that the compound was detected in an analysis performed at a secondary dilution.
- A - Indicates that the tentatively identified compound is a suspected aldo1 condensation product. This is common in EPA Method 8270 soil analyses.

Absence of a qualifier indicates that the compound was detected at a concentration at or above the specified reporting limit.

### REPORTING CONVENTIONS

- ♦ Due to a size limitation in our data processing step, only the first eight (8) characters of your project ID and sample ID will be printed on the report forms. However, the report cover letter and report summary pages display up to twenty (20) characters of your project and sample IDs.
- ♦ Amounts reported are gross values, i.e., not corrected for method blank contamination.

REPORT SUMMARY  
ANAMETRIX, INC. (408)432-8192

MR. ERIC LAUTENBACH  
TERRATECH, INC. - SAN JOSE  
1365 VANDER WAY  
SAN JOSE, CA 95112

Workorder # : 9008307  
Date Received : 08/29/90  
Project ID : 4454/2  
Purchase Order: 8500  
Department : GCMS  
Sub-Department: GCMS

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9008307- 1	MW-1	H2O	08/28/90	8240

REPORT SUMMARY  
ANAMETRIX, INC. (408)432-8192

MR. ERIC LAUTENBACH  
TERRATECH, INC. - SAN JOSE  
1365 VANDER WAY  
SAN JOSE, CA 95112

Workorder # : 9008307  
Date Received : 08/29/90  
Project ID : 4454/2  
Purchase Order: 8500  
Department : GCMS  
Sub-Department: GCMS

QA/QC SUMMARY :

- No QA/QC problems encountered.

Paul Giovan                      9-12-90  
Department Supervisor                      Date

Marchetta                      9-12-90  
Chemist                                      Date

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 624/8240  
 ANAMETRIX, INC. (408)432-8192

Project ID : 4454/2  
 Sample ID : MW-1  
 Matrix : WATER  
 Date Sampled : 8/28/90  
 Date Analyzed : 9/11/90  
 Instrument ID : F3

Anamatrix ID : 9008307-01  
 Analyst : WJ  
 Supervisor : PG  
 Dilution Factor : 1.00  
 Conc. Units : ug/L

CAS NO.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	CHLOROMETHANE	10.	ND	U
75-01-4	VINYL CHLORIDE	10.	ND	U
74-83-9	BROMOMETHANE	10.	ND	U
75-00-3	CHLOROETHANE	10.	ND	U
75-69-4	TRICHLOROFLUOROMETHANE	5.	ND	U
75-35-4	1,1-DICHLOROETHENE	5.	ND	U
76-13-1	TRICHLOROTRIFLUOROETHANE	5.	ND	U
67-64-1	ACETONE	20.	ND	U
75-15-0	CARBON DISULFIDE	5.	ND	U
75-09-2	METHYLENE CHLORIDE	5.	ND	U
156-60-5	TRANS-1,2-DICHLOROETHENE	5.	ND	U
75-34-3	1,1-DICHLOROETHANE	5.	ND	U
78-93-3	2-BUTANONE	20.	ND	U
156-59-2	CIS-1,2-DICHLOROETHENE	5.	ND	U
67-66-3	CHLOROFORM	5.	ND	U
71-55-6	1,1,1-TRICHLOROETHANE	5.	ND	U
56-23-5	CARBON TETRACHLORIDE	5.	ND	U
71-43-2	BENZENE	5.	ND	U
107-06-2	1,2-DICHLOROETHANE	5.	ND	U
79-01-6	TRICHLOROETHENE	5.	ND	U
78-87-5	1,2-DICHLOROPROPANE	5.	ND	U
75-27-4	BROMODICHLOROMETHANE	5.	ND	U
110-75-8	2-CHLOROETHYL VINYL ETHER	5.	ND	U
108-05-4	VINYL ACETATE	10.	ND	U
10061-01-5	CIS-1,3-DICHLOROPROPENE	5.	ND	U
108-10-1	4-METHYL-2-PENTANONE	10.	ND	U
108-88-3	TOLUENE	5.	ND	U
10061-02-6	TRANS-1,3-DICHLOROPROPENE	5.	ND	U
79-00-5	1,1,2-TRICHLOROETHANE	5.	ND	U
127-18-4	TETRACHLOROETHENE	5.	ND	U
591-78-6	2-HEXANONE	10.	ND	U
124-48-1	DIBROMOCHLOROMETHANE	5.	ND	U
108-90-7	CHLORO BENZENE	5.	ND	U
100-41-4	ETHYLBENZENE	5.	ND	U
1330-20-7	XYLENE (TOTAL)	5.	ND	U
100-42-5	STYRENE	5.	ND	U
75-25-2	BROMOFORM	5.	ND	U
79-34-5	1,1,2,2-TETRACHLOROETHANE	5.	ND	U
541-73-1	1,3-DICHLOROBENZENE	5.	ND	U
106-46-7	1,4-DICHLOROBENZENE	5.	ND	U
95-50-1	1,2-DICHLOROBENZENE	5.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 624/8240  
 ANAMETRIX, INC. (408)432-8192

Project ID :  
 Sample ID : BLANK  
 Matrix : WATER  
 Date Sampled : 0/ 0/ 0  
 Date Analyzed : 9/10/90  
 Instrument ID : F3

Anamatrix ID : 3CB0910V00  
 Analyst : MCT  
 Supervisor : PG  
 Dilution Factor : 1.00  
 Conc. Units : ug/L

CAS NO.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	CHLOROMETHANE	10.	ND	U
75-01-4	VINYL CHLORIDE	10.	ND	U
74-83-9	BROMOMETHANE	10.	ND	U
75-00-3	CHLOROETHANE	10.	ND	U
75-69-4	TRICHLOROFLUOROMETHANE	5.	ND	U
75-35-4	1,1-DICHLOROETHENE	5.	ND	U
76-13-1	TRICHLOROTRIFLUOROETHANE	5.	ND	U
67-64-1	ACETONE	20.	ND	U
75-15-0	CARBON DISULFIDE	5.	ND	U
75-09-2	METHYLENE CHLORIDE	5.	ND	U
156-60-5	TRANS-1,2-DICHLOROETHENE	5.	ND	U
75-34-3	1,1-DICHLOROETHANE	5.	ND	U
78-93-3	2-BUTANONE	20.	ND	U
156-59-2	CIS-1,2-DICHLOROETHENE	5.	ND	U
67-66-3	CHLOROFORM	5.	ND	U
71-55-6	1,1,1-TRICHLOROETHANE	5.	ND	U
56-23-5	CARBON TETRACHLORIDE	5.	ND	U
71-43-2	BENZENE	5.	ND	U
107-06-2	1,2-DICHLOROETHANE	5.	ND	U
79-01-6	TRICHLOROETHENE	5.	ND	U
78-87-5	1,2-DICHLOROPROPANE	5.	ND	U
75-27-4	BROMODICHLOROMETHANE	5.	ND	U
110-75-8	2-CHLOROETHYL VINYL ETHER	5.	ND	U
108-05-4	VINYL ACETATE	10.	ND	U
10061-01-5	CIS-1,3-DICHLOROPROPENE	5.	ND	U
108-10-1	4-METHYL-2-PENTANONE	10.	ND	U
108-88-3	TOLUENE	5.	ND	U
10061-02-6	TRANS-1,3-DICHLOROPROPENE	5.	ND	U
79-00-5	1,1,2,-TRICHLOROETHANE	5.	ND	U
127-18-4	TETRACHLOROETHENE	5.	ND	U
591-78-6	2-HEXANONE	10.	ND	U
124-48-1	DIBROMOCHLOROMETHANE	5.	ND	U
108-90-7	CHLOROBENZENE	5.	ND	U
100-41-4	ETHYLBENZENE	5.	ND	U
1330-20-7	XYLENE (TOTAL)	5.	ND	U
100-42-5	STYRENE	5.	ND	U
75-25-2	BROMOFORM	5.	ND	U
79-34-5	1,1,2,2-TETRACHLOROETHANE	5.	ND	U
541-73-1	1,3-DICHLOROBENZENE	5.	ND	U
106-46-7	1,4-DICHLOROBENZENE	5.	ND	U
95-50-1	1,2-DICHLOROBENZENE	5.	ND	U



SURROGATE RECOVERY SUMMARY -- EPA METHOD 624/8240  
 ANAMETRIX, INC. (408)432-8192

Project ID : 4454/2  
 Matrix : WATER

Anamatrix ID : 9008307  
 Analyst : MJ  
 Supervisor : PG

	SAMPLE ID	SU1	SU2	SU3	TOTAL OUT
1	BLANK	93	102	99	0
2	MW-1	93	98	93	0
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
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19					
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21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

QC LIMITS

-----  
 SU1 = 1,2-DICHLOROETHANE-D4 (75-113)  
 SU2 = TOLUENE-D8 (83-110)  
 SU3 = BROMOFLUOROBENZENE (82-114)

\* Values outside of Anamatrix QC limits



TERRATECH

CHAIN OF CUSTODY RECORD

P.O. NO. 8500

TURNAROUND: 2 WEEK

10080307

270  
2:00  
CR

PROJECT NUMBER: <u>4454/2</u>						Number of Containers	Analysis Required					REMARKS	SAMPLE DEPTH	
SAMPLERS (signature): <u>Thomas Morin</u>							TPH-DIESEL EPA 0240							
Station Number	Date	Time	Comp.	Grab	Station Location									
<u>01MW-1</u>	<u>8/28</u>	<u>AM</u>		<input checked="" type="checkbox"/>	<u>ADJACENT TO FORMER DIESEL TANK</u>	<u>2 LITERS</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					<u>OK</u>	
Relinquished by(signature):		Date / Time		Received by (signature):		Relinquished by(signature):		Date / Time		Received by (signature):				
Company or Agency:				Company or Agency:		Company or Agency:				Company or Agency:				
Relinquished by(signature):		Date / Time		Received by (signature):		Relinquished by:		Date / Time		Received by (signature):				
Company or Agency:				Company or Agency:		Company or Agency:				Company or Agency:				
Relinquished by(signature):		Date / Time		Received for Laboratory by:		Date / Time		Remarks/Shipping Information						
<u>Thomas Morin</u>		<u>8/28/00 10:50</u>		<u>[Signature]</u>		<u>8/28/00 10:50</u>		Send reports to: Eric Laufenbach 1385 VANDER WAY, SAN JOSE 95112						
Company or Agency:		TERRATECH, INC.												