



90 JUL -2 AM 11:30

June 29, 1990

Ms. Pam Evans
Alameda County Department of Environmental Health
80 Swan Way Room 200
Oakland, CA 94621

Re: Sunnyside Commons II

Dear Ms. Evans:

Enclosed is a copy of the supplemental environmental investigation on the Sunnyside Commons II project located at Mohr Drive in Hayward.

The Plymouth Group is requesting that the City of Hayward Hazardous Materials Division provide clearance for the Planning Department to prepare the Negative Declaration for this project.

If you have any questions, please contact me at (415) 691-4314. Thank you for your cooperation.

Sincerely,

THE PLYMOUTH GROUP

Millie Allred
Assistant Project Manager

SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION
SUNNYSIDE COMMONS II
HAYWARD, CALIFORNIA
6/90
PROJECT 4454/3

for

The Plymouth Group
1616 North Shoreline Boulevard
Mountain View, California

by

Terratech, Inc.
1365 Vander Way
San Jose, California

June 26, 1990



SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION
SUNNYSIDE COMMONS II
HAYWARD, CALIFORNIA

INTRODUCTION

This report describes the field work performed and the findings gained from Terratech's recent supplemental environmental investigation at the Sunnyside Commons II parcel in Hayward, California (see Figure 1).

The objectives of this assessment were as follows: 1) to define the horizontal and vertical extent of soils containing low levels of poly-chlorinated biphenyls (PCBs) around the on-site garage; and 2) to determine the extent of ground water contamination from pesticides downgradient of an old supply well.

BACKGROUND

During Terratech's initial investigation of the subject parcel (see Terratech's report titled "Environmental/Toxics Investigation...", dated February 16, 1989) two cases of residual low-level contamination were detected; one involving the near-surface soils and the other shallow ground water.

Analysis of a shallow soil sample collected near an on-site garage detected low-level concentrations of the PCB Aroclor 1254. Additional soil sampling to determine the extent of the soil contamination was required by the Hayward Fire Department.

A grab sample of ground water collected from an abandoned supply well indicated that the shallow ground water collected contained small amounts of Endosulfan pesticides. Accordingly, two additional ground water monitoring wells were requested by the Hayward Fire Department and the Alameda County Health Services Agency to formally assess the hydrogeologic conditions in the area and the impact of pesticides on the ground water.

WORK PERFORMED

Soil Sampling

A total of nine additional soil samples were collected in two phases in the area of HS-3 (see Figure 2 - PCB Area). HS-3 was collected during previous sampling and was found to contain 4.1 ppm of Aroclor 1254. The horizontal extent of the soil contamination was defined by collecting samples from a depth of 12 to 18 inches in successive 5-foot increments from HS-3 until

*H6 - western most sample had .34 ppm - > safe soil level of .05 ppm set forth in Risk Assessment.
Have not defined lateral extent of contamination*



laboratory analysis confirmed the absence of detectable PCBs. Locations which were found to contain elevated PCB levels in shallow samples were resampled at a depth of 30 to 36 inches to document the lack of vertical migration.

*where are
sampling
results for
beneath H56
7
8*

Closure of Supply Well

On May 17, 1990 Garcia Well and Pump closed the abandoned supply well. All required permits were obtained and work was performed in accordance with Zone 7 Water District guidelines (see Appendix A).

Installation of Monitoring Wells

In order to triangulate the local ground water flow direction, we installed two monitoring wells, MW-2 and MW-3. MW-1, a pre-existing well on the adjacent Sunnyside Nursery property, was utilized for the triangulation (see Figure 1 - Site Plan and Gradient).

On May 17, 1990 MW-2 was constructed adjacent to Mohr Drive in the northwest corner of the subject parcel and MW-3 was constructed about five feet from the former supply well. Analysis of a water sample collected from MW-3 confirmed trace amounts of Endosulfans to be present in the ground water. MW-4 was subsequently installed on June 11, 1990, 35 feet downgradient (southwest) from MW-3, to investigate the extent of the Endosulfan contamination.

The drilling and soil sampling for MW-2 and MW-3 were performed by Aqua Science Engineering, a licensed drilling contractor from San Ramon. MW-4 was constructed by West Tek Drilling, a licensed drilling contractor from San Jose. Prior to these well installations a Zone 7 Water District well permit was obtained (see Appendix B).

An environmental geologist from our staff provided professional guidance to the drilling crews during well construction. Soil conditions encountered at each location were logged and as-built well diagrams were prepared. These are included in Appendix B.

Drilling and sampling equipment were cleaned prior to use to avoid the introduction of contamination. Drilling spoils from MW-3 and MW-4 were placed in labeled 55-gallon drums and left on-site. Spoils from MW-2 were not drummed since there were no indications of contamination in the immediate area of this triangulation well.

Ground Water Sampling

Development, purging and sampling of MW-3 and MW-4 occurred on May 18 and June 11, respectively. Teflon™ bailers which had been steam-cleaned at our office prior to travelling to the site were used for sampling and purging activities. During purging pH, conductivity and temperature readings were taken until consecutive readings indicated that water being drawn into the wells had stabilized. Approximately 8 well volumes were extracted from MW-3 and consecutive readings of the stabilization



parameters varied by less than 0.02 pH units, 0.1 °F and 10 micromhos/cm. Approximately 10 well volumes were extracted from MW-4 and consecutive readings of stabilization parameters varied by less than 0.12 pH units, 0.4 °F and 11 micromhos/cm. The samples were placed in containers supplied by the laboratory; two amber colored one-liter bottles.

Extracted ground water was containerized in labeled 55-gallon drums and left on-site. The water samples were kept iced or refrigerated from the time of collection to the time of analysis. Standard chain-of-custody records were kept to document sample collection, handling and analytical requests (see Appendix C).

The ground water samples were transported to Anametrix, Inc. a state certified laboratory in San Jose for analysis for organochloride pesticides. EPA Method 8080 also happens to include poly-chlorinated biphenyls (PCBs).

Determination of Ground Water Gradient

While on-site to sample MW-3 the elevations of the tops of the three monitoring well casings were established by Underwood & Associates, a licensed surveyor from San Jose. The known rim elevation of a nearby manhole in Mohr Drive was used for reference. Ground water levels were measured in each well and converted to elevations. The corresponding contours and ground water gradient were then interpolated (see Figure 1). The top of casing elevation for MW-4 has not yet been determined.

FINDINGS

Soil Contamination

Soil sample analysis results for supplemental samples collected in the PCB area are summarized in Table 1. The lateral and vertical boundary sampling in the area of PCB impacted soils indicates that an area of about 15 feet by 20 feet (see Figure 2) contains detectable amounts of PCBs to a depth of less than 36 inches. This corresponds to a soil volume of about 30 cubic yards.

Hydrogeologic Conditions

During drilling activities our environmental geologist prepared descriptive logs of the conditions encountered. Soils were described using the Unified Soil Classification System with visual-manual procedures (ASTM 2488-84).

The general soil stratigraphy at the three well locations consisted of a black, FAT CLAY in the upper three feet. Below this we encountered alternating strata which graded between SANDY LEAN CLAY and POORLY-GRADED SAND with CLAY. This stratigraphy is generally consistent with the findings of previous exploratory borings on the Sunnyside Nursery site.



Ground water was initially encountered at about 13 to 13 1/2 feet below grade in each of the borings. A summary of the May 18, 1990 water level measurements is presented in the following table:

LOCATION	CASING ELEVATION	DEPTH TO WATER	WATER ELEVATION
MW-1	33.32'	13.05'	20.27'
MW-2	33.48'	13.78'	19.70'
MW-3	36.51'	16.52'	19.99'

The calculated ground water gradient direction for these data is southwesterly at about 0.002 ft/ft (see Figure 1). The depth to ground water at MW-4 on June 11th was 15.83 feet.

Ground Water Contamination

Table 2 presents a summary of ground water sample analysis results. (By convention concentrations are presented in parts per billion (ppb); 1000 ppb = 1 ppm). Laboratory analysis of the ground water sample collected from MW-3 indicated that trace amounts of Endosulfan I, Endosulfan II and Endosulfan Sulfate are present in the ground water in the area of the closed supply well. No Endosulfan compounds were found in the follow-up analysis of the shallow ground water sample from the downgradient well, MW-4. The sample did, however, contain a minute amount of DDD, a degradation product of the pesticide DDT.

COMMENTS AND RECOMMENDATIONS

The 30± cubic yards of PCB tainted soil should be excavated prior to site development and transported to a landfill for disposal. We do not feel that other mitigation measures would be cost effective for such a small quantity of soil.

0.05 mg/kg = "safe soil level" + .34 is above this - how can you say you've investigated full lateral extent in westerly direction.

Although the Regional Water Quality Control Board (RWQCB) has not set a formal action level for Endosulfan or DDD pesticides in ground water, under their "non-degradation" policy, any detected ground water contamination requires further evaluation. We recommend that a risk assessment be prepared and that wells MW-3 and MW-4 be resampled and tested in August 1990.

LIMITATIONS

This report and the associated work have been provided in accordance with the general principles and practices currently employed in the environmental consulting profession. This is in lieu of all warranties, express or implied.



Project 4454/3

June 26, 1990

Our opinions and comments have been primarily based on data obtained from subsurface exploration, sampling and testing that is necessarily limited. Information from future work may lead to modifications thereof.

Report Prepared by:

TERRATECH, INC.

Thomas C. Morin

Thomas C. Morin
Environmental Geologist

Reviewed by:

E.R. Lautenbach

Eric R. Lautenbach
CE 42437

cc: Mr. Lester Feldman; California Regional Water Quality Control Board
Ms. Pam Evans; Alameda County Health Services
Mr. Hugh Murphy; Hayward Fire Department



TABLE 1

SUMMARY OF SUPPLEMENTAL SOIL ANALYSIS RESULTS

PCB AREA OF SUNNYSIDE COMMONS II
Hayward, California

(results in parts per million - ppm)

COMPOUND	SAMPLE LOCATION								
	HS-5 (12-18")	HS-6 (12-18")	HS-7 (12-18")	HS-8 (12-18")	HS-9 (30-36")	HS-10 (12-18")	HS-11 (12-18")	HS-12 (30-36")	HS-13 (12-18")
POLYCHLORINATED BI-PHENYLS (PCB's)									
Aroclor 1254	< 0.16	0.34	4.1	1.2	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16
others	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

NOTE: N.D. - Not Detected; see laboratory reports for specific detection limits.



TABLE 2

CUMULATIVE SUMMARY OF GROUND WATER ANALYSIS RESULTS

SUNNYSIDE COMMONS II
Hayward, California

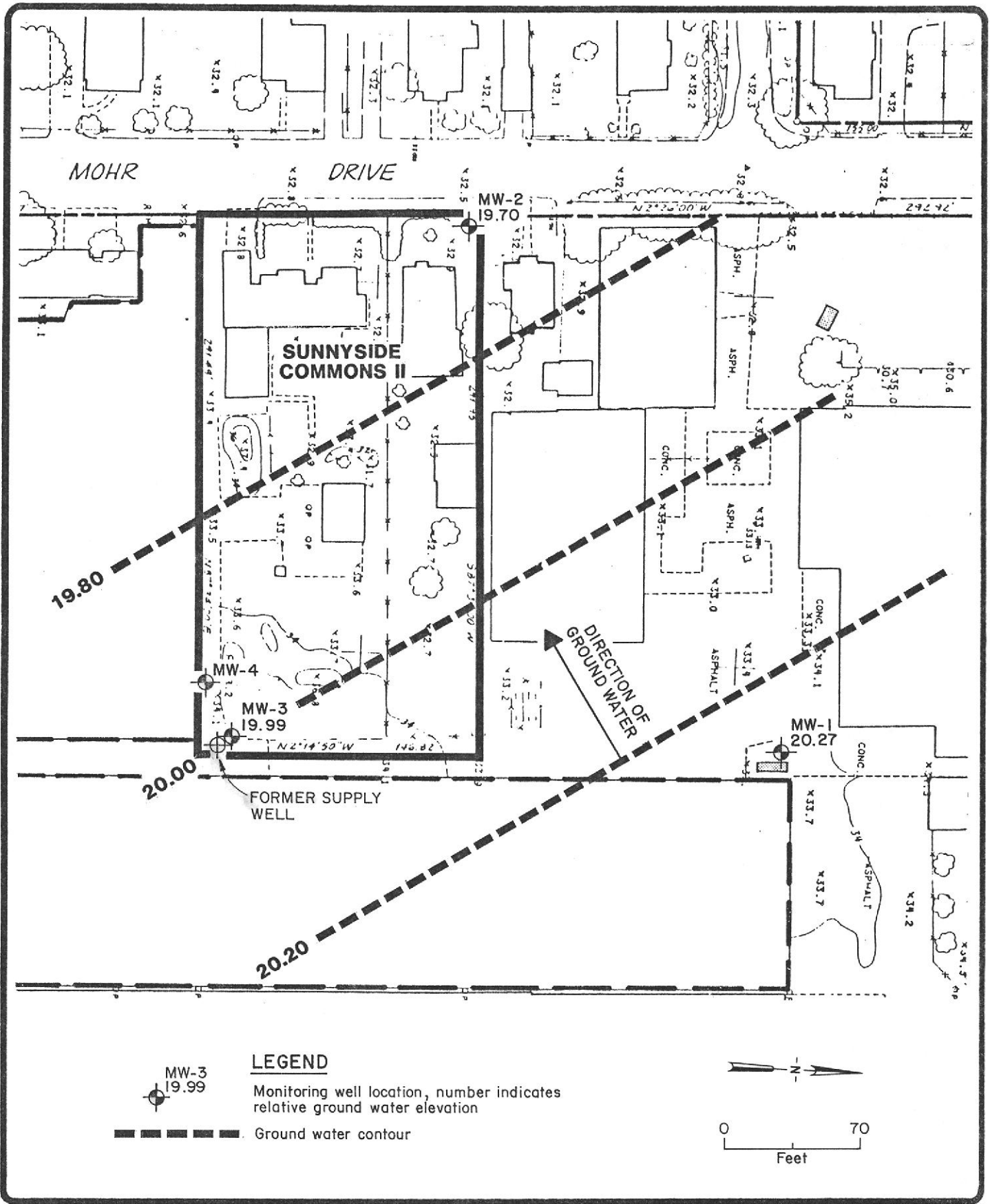
(results in parts per billion - ppb)

COMPOUND	SAMPLING LOCATION & DATE		
	SW-1 * (1-25-90)	MW-3 (5-18-90)	MW-4 (6-11-90)
CHLORINATED PESTICIDES			
DDD	< 0.5	< 0.1	0.14
DDE	< 0.5	< 0.1	< 0.1
DDT	< 0.5	< 0.1	< 0.1
DIELDRIN	< 0.5	< 0.1	< 0.1
ENDOSULFAN I	5.0	0.37	< 0.05
ENDOSULFAN II	4.5	0.17	< 0.1
ENDOSULFAN SUL.	5.1	0.16	< 0.1
ENDRIN	< 0.5	< 0.1	< 0.1
others	N.D.	N.D.	N.D.
PCB's	N.D.	N.D.	N.D.
VOLATILE ORGANICS	N.D.	---	---


NOTES: * - Grab sample of ground water from inactive well


N.D. - Not Detected; see laboratory reports for limits

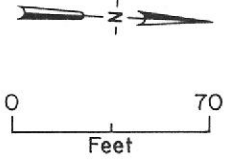




LEGEND

 MW-3 19.99
 Monitoring well location, number indicates relative ground water elevation

 Ground water contour



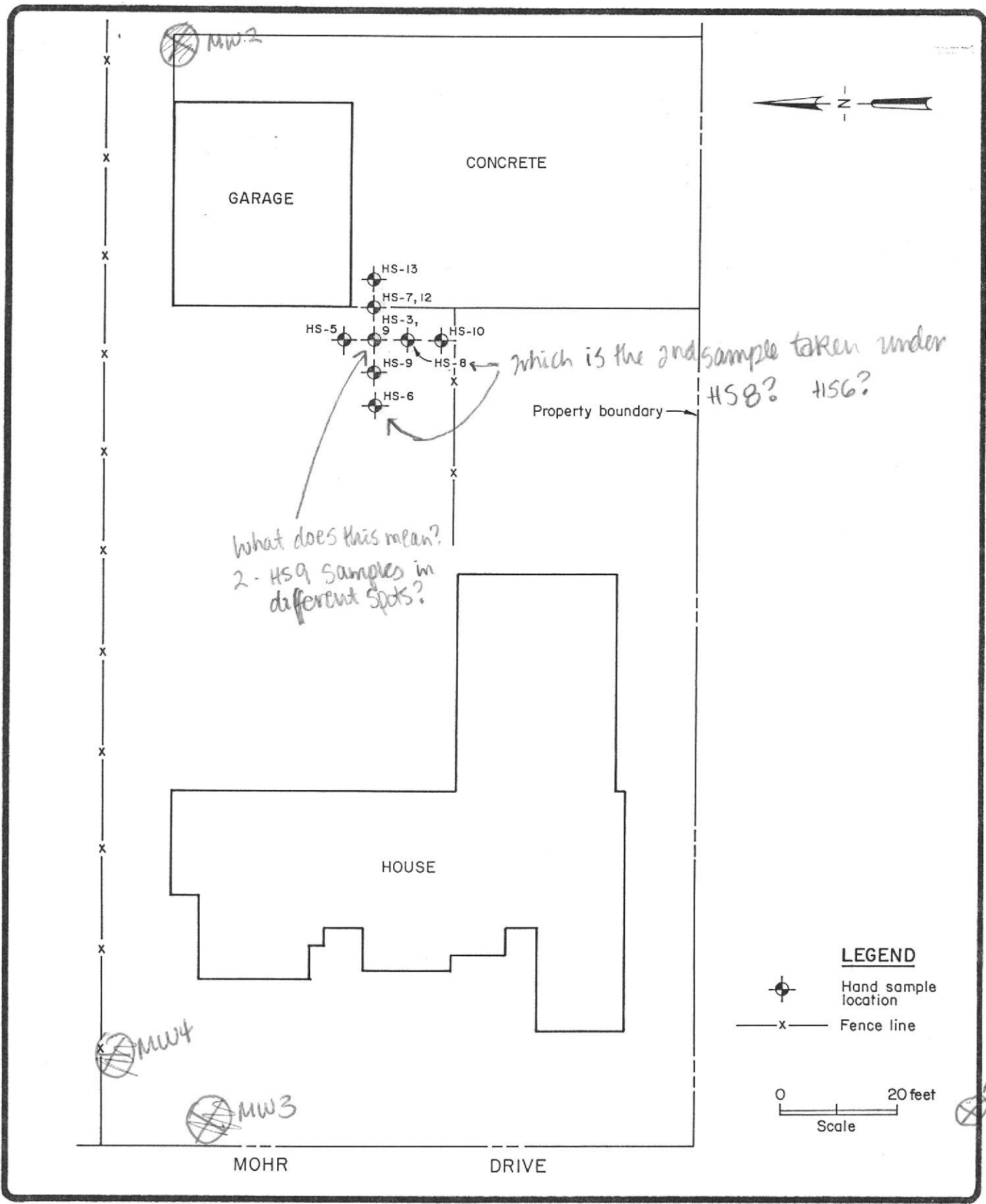

June 1990
TERRATECH

SUNNYSIDE COMMONS II
 HAYWARD, CALIFORNIA

GROUND WATER GRADIENT 5-18-90

FIGURE
 I

PROJECT
 4454/3



June 1990

TERRATECH

SUNNYSIDE COMMONS II
HAYWARD, CALIFORNIA

PCB AREA

**FIGURE
2**

**PROJECT
4454/3**

APPENDIX A

SUPPLY WELL CLOSURE PERMITS

GARCIA WELL & PUMP COMPANY
P.O. Box 52041
Palo Alto, California 94303
(415) 322-2803

State License No. 384167

Shop Location: 1045 Weeks Street
E. Palo Alto, Ca.
94303

Date: May 23, 1990

Client/Owner: TERRATECH, INC.
1365 Vander Way
San Jose, California 95112

Attention: Eric Lautenbach

Services and Supplies

Job Location: 25054 Mohr Drive, Hayward

Project: Well Development
Your Job Number: 4454/3

Date of Service: May 15, 1990

As arranged with Eric Lautenbach, Terratech, we visited the job location to abandon a shallow well set inside a 4' x 4' pit. The well itself consists of a 6-inch diameter transite casing with a total well depth of 24 feet. There is a standing water level of one foot in the well.

We filled the cased well with 1/4 inch pea gravel up to within 3 feet of the 4 x 4 pit bottom. A cement grout was then pumped into the remaining hole depth and mushroomed over the top of the casing. Native soil was placed in the pit and hand tamped. The 4 x 4 concrete lined pit was demolished and left beside the former well location.

Well Abandonment -----

As requested, we are enclosing copies of the zone-7 ordinance, permit, and our driller's log.

10 May 1990

ZONE 7
WATER RESOURCES ENGINEERING
GROUNDWATER PROTECTION ORDINANCE

SUNNYSIDE NURSERY
25054 MOHR DRIVE
HAYWARD
WELL 3S/2W 29M80
PERMIT 90293

Destruction Requirements

1. Remove from the well any appurtenances and debris.
2. Remove any lining to 2 feet below finished grade or original ground, whichever is the lower elevation.
3. Remove small diameter casing to 3 feet below finished grade or original ground, whichever is the lower elevation.
4. Fill well to 3 feet below finished grade or original ground, whichever is the lower elevation, with pea gravel.
5. Fill the hole from 3 feet to 2 feet with neat cement, cement grout or concrete.
6. After seal has set, backfill the remaining hole with compacted material.



ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94566 (415) 484-2600

GROUNDWATER PROTECTION ORDINANCE PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT SUNNYSIDE NURSERY
25054 MAHR LN. HAYWARD, CA

PERMIT NUMBER 90293
LOCATION NUMBER 3S/2W 29M80

CLIENT
Name TERAA TECH
Address 1365 VANDER WAY Phone 408-297-6969
City SAN JOSE Zip 95112
Project No. 4454/3

PERMIT CONDITIONS

Circled Permit Requirements Apply

APPLICANT
GARCIA WELL + PUMP
Address 1045 WEEKS ST. Phone 415-322-2800
City E. POLO ALTO Zip 94303

- A. GENERAL
 1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
 2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects.
 3. Permit is void if project not begun within 90 days of approval date.
- B. WATER WELLS, INCLUDING PIEZOMETERS
 1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
 2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.
- C. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.
- D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.
- E. WELL DESTRUCTION. See attached.

TYPE OF PROJECT
Well Construction Geotechnical Investigation
Cathodic Protection General
Water Supply Contamination
Monitoring Well Destruction

PROPOSED WATER SUPPLY WELL USE
Domestic Industrial Other
Municipal Irrigation

DRILLING METHOD:
Auger Rotary Air Rotary Auger
Cable Other

DRILLER'S LICENSE NO. 384167

WELL PROJECTS
Drill Hole Diameter in. Maximum
Casing Diameter in. Depth ft.
Surface Seal Depth ft. Number

GEOTECHNICAL PROJECTS
Number of Borings Maximum
Hole Diameter in. Depth ft.

ESTIMATED STARTING DATE 15 MAY 90
ESTIMATED COMPLETION DATE

24' Depth 1' STANDING WATER LEVEL
TRANSIT. CASING

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

Approved Wyman Hong Date 10 May 90
Wyman Hong

APPLICANT'S SIGNATURE Wend Wang Date 5/10/90

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

APPENDIX B
MONITORING WELL PERMIT, DRILL HOLE LOGS
AND
AS-BUILT WELL DIAGRAMS



ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94566 (415) 484-2600

GROUNDWATER PROTECTION ORDINANCE PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT SUNNYSIDE NURSERY
MOHR & LAGUNA DRIVES
HAYWARD CA

PERMIT NUMBER 90279
LOCATION NUMBER

CLIENT
Name THE PLYMOUTH GROUP
Address 1616 N. SHORELINE Phone (415) 691-4319
City MT. VIEW CA Zip 94043-5619

PERMIT CONDITIONS

Circled Permit Requirements Apply

APPLICANT
Name TERRATECH, INC.
Address 1365 VANDER WAY Phone (408) 297-6969
City SAN JOSE CA Zip 95112

TYPE OF PROJECT
All Construction Geotechnical Investigation
Cathodic Protection General
Water Supply Contamination X
Monitoring X Well Destruction

PROPOSED WATER SUPPLY WELL USE
Domestic Industrial Other
Municipal Irrigation

DRILLING METHOD:
Cable Air Rotary Auger X
Other

DRILLER'S LICENSE NO. 057-487000

WELL PROJECTS
Drill Hole Diameter 8" in. Maximum
Casing Diameter 2" in. Depth 35' ft.
Surface Seal Depth 15' ft. Number 2

GEOTECHNICAL PROJECTS
Number of Borings Maximum
Hole Diameter in. Depth ft.

ESTIMATED STARTING DATE 5/16/90
ESTIMATED COMPLETION DATE 5/16/90

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE Thomas C. Marin Date 5/3/90

- A. GENERAL
1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.
B. WATER WELLS, INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.
C. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.
D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.
E. WELL DESTRUCTION. See attached.

Approved Todd N. Wendler Date 7 May 90

EXPLORATION DRILL HOLE LOG

HOLE No. MW-2

PROJECT **SUNNYSIDE COMMONS II** DATE **05-17-90** LOGGED BY **TCM**

DRILL RIG **Mobile Drill B57;
Hollow Stem** HOLE DIA. **8"** SAMPLER **X = Cal.
* = Std. Pen.**

GROUNDWATER DEPTH INITIAL **13.0'** FINAL **11.23'** HOLE ELEV. **33.48***

DESCRIPTION	SOIL TYPE	DEPTH	SAMPLE	BLOWS PER FOOT	POCKET PEN. (tsf)	TORVANE (tsf)	LIQUID LIMIT	WATER CONTENT	PLASTIC LIMIT	DRY DENSITY (pcf)	FAILURE STRAIN (%)	UNCONFINED SHEAR STRENGTH (psf)
FAT CLAY; black, moist, stiff; 90% clay, 10% silt; odorless rootlets	CH	1										
		2										
		3										
SANDY LEAN CLAY; brown, moist; very stiff; 60% clay and silt; 40% sand	CL	4	*									
		5	*	17								
		6										
		7										
		8										
-----?-----?-----?-----?												
CLAYEY SAND; light brown, moist to wet, loose; 70% fine sand, 20% clay and silt	SC	9	X	6								
		10	X	9								
		11	X									
		12	*									
SANDY LEAN CLAY; brown, moist to wet, soft to firm; 70% clay and silt, 30% sand wet grayish brown	CL	13	*	5			▽					
		14	X	5								
		15	X	9								
		16	*	8								
		17										
		18										
		19	X									
		20	X	3								

sand fraction increases
* Top of casing elevation

EXPLORATION DRILL HOLE LOG

HOLE No. MW-2

PROJECT **SUNNYSIDE COMMONS II**

DATE **05-17-90**

LOGGED BY **TCM**

DRILL RIG **Mobile Drill B57;
Hollow Stem**

HOLE DIA **8"**

SAMPLER **X = Cal.
* = Std. Pen.**

GROUNDWATER DEPTH INITIAL **13.0'**

FINAL **11.23'**

HOLE ELEV **33.48***

DESCRIPTION	SOIL TYPE	DEPTH	SAMPLE	BLOWS PER FOOT	POCKET PEN (tsf)	TORVANE (tsf)	LIQUID LIMIT	WATER CONTENT	PLASTIC LIMIT	DRY DENSITY (pcf)	FAILURE STRAIN (%)	UNCONFINED SHEAR STRENGTH (psf)
SANDY LEAN CLAY; brown, wet, firm; 60% clay, 30% sand	CL	21	X	6								
CLAYEY SAND; tan, wet, loose; 70% sand, 30% clay and silt	SC	22										
		23										
		24	X	8								
BOTTOM OF BORING @ 24.5' Monitoring well installed		25	X									
		26										
		27										
		28										
		29										
		30										
		31										
		32										
		33										
		34										
		35										
		36										
		37										
		38										
		39										
		40										

EXPLORATION DRILL HOLE LOG

HOLE No. MW-3

PROJECT SUNNYSIDE COMMONS II

DATE 05-17-90

LOGGED BY TCM

DRILL RIG Mobile Drill B57;
Hollow Stem

HOLE DIA. 8"

SAMPLER X = Cal.
* = Std. Pen.

GROUNDWATER DEPTH INITIAL 13.5'

FINAL 13.5'

HOLE ELEV. 36.51*

DESCRIPTION	SOIL TYPE	DEPTH	SAMPLE	BLOWS PER FOOT	POCKET PEN. (tsf)	TORVANE (tsf)	LIQUID LIMIT	WATER CONTENT	PLASTIC LIMIT	DRY DENSITY (pcf)	FAILURE STRAIN (%)	UNCONFINED SHEAR STRENGTH (psf)	
FAT CLAY; black, damp, very stiff 90% clay, 10% fine sand, trace gravel; odorless abundant rootlets less plastic	CH	1											
		2											
		3											
SANDY LEAN CLAY; dark brown, damp, very stiff; 55% clay and silt, 45% sand sand increases firm	CL	4	*										
		5	*	26									
		6											
		7											
		8	*										
		9	*										
		10	*	6									
		11	X	4									
		12	X	6									
		13	*										
POORLY-GRADED SAND WITH CLAY; light brown with orange and gray mottles, moist to wet, loose; 75% sand, 25% clay and silt; low PI fines more plastic wet, very loose	SP	14	*	3									
		15	X	4									
		16	X	9									
SANDY LEAN CLAY; tan, wet, stiff; 75% clay and silt, 25% sand grayish with black mottles	CL	17											
		18											
		19	*										
		20	*	5									
		20	*	5									

* Top of casing elevation

EXPLORATION DRILL HOLE LOG

HOLE No. MW-3

PROJECT **SUNNYSIDE COMMONS II**

DATE **05-17-90**

LOGGED BY **TCM**

DRILL RIG **Mobile Drill B57;
Hollow Stem**

HOLE DIA **8"**

SAMPLER **X = Cal.
* = Std. Pen.**

GROUNDWATER DEPTH INITIAL **13.5'**

FINAL **13.5'**

HOLE ELEV **35.51**

DESCRIPTION	SOIL TYPE	DEPTH	SAMPLE	BLOWS PER FOOT	POCKET PEN (tsf)	TORVANE (tsf)	LIQUID LIMIT	WATER CONTENT	PLASTIC LIMIT	DRY DENSITY (pcf)	FAILURE STRAIN (%)	UNCONFINED SHEAR STRENGTH (psf)	
SANDY LEAN CLAY; tan, wet, stiff; 75% clay and silt, 25% sand	CL	21											
		22											
		23											
POORLY-GRADED SAND WITH CLAY; light brown, wet, loose; 60% sand, 40% clay and silt <u>sand increases</u>	SP	24	*										
		25	*	5									
BOTTOM OF BORING @ 25' Monitoring well installed		26											
		27											
		28											
		29											
		30											
		31											
		32											
		33											
		34											
		35											
		36											
		37											
		38											
		39											
		40											

EXPLORATION DRILL HOLE LOG

HOLE No. MW-4

PROJECT SUNNYSIDE COMMONS II

DATE 06-11-90

LOGGED BY TCM

DRILL RIG CME 850 - Hollow Stem

HOLE DIA. 8"

SAMPLER 2" Mod. Cal.

GROUNDWATER DEPTH INITIAL 13.0' FINAL

HOLE ELEV.

DESCRIPTION	SOIL TYPE	DEPTH	SAMPLE	BLOWS PER FOOT	POCKET PEN. (tsf)	TORVANE (tsf)	LIQUID LIMIT	WATER CONTENT	PLASTIC LIMIT	DRY DENSITY (pcf)	FAILURE STRAIN (%)	UNCONFINED SHEAR STRENGTH (psf)
6" of CONCRETE												
FAT CLAY; black, damp; 90% clay, 10% silt	CH	1										
		2										
		3										
-----?-----?-----?-----?												
SANDY LEAN CLAY; tan, damp; 75% clay, 25% fine sand	CL	4										
		5										
		6										
		7										
		8										
tan, moist, firm		9	X									
		10	X	6								
-----?-----?-----?-----?												
CLAYEY SAND; tan with grey mottles, moist, firm; 60% medium sand, 40% silt and clay	SC	11										
more plastic		12	X									
		13	X	5								
CLAY WITH SAND; tan with grey mottles, moist, firm; 70% clay, 30% fine sand	CI	13	X	5								
wet		14	X									
		15	X	5								
		16										
		17										
		18										
less plastic		19	X									
SANDY LEAN CLAY; (see next page)	CL	20	X	5								

EXPLORATION DRILL HOLE LOG

HOLE No. MW-4

PROJECT **SUNNYSIDE COMMONS II**

DATE **06-11-90**

LOGGED BY **TCM**

DRILL RIG **CME 850 - Hollow Stem**

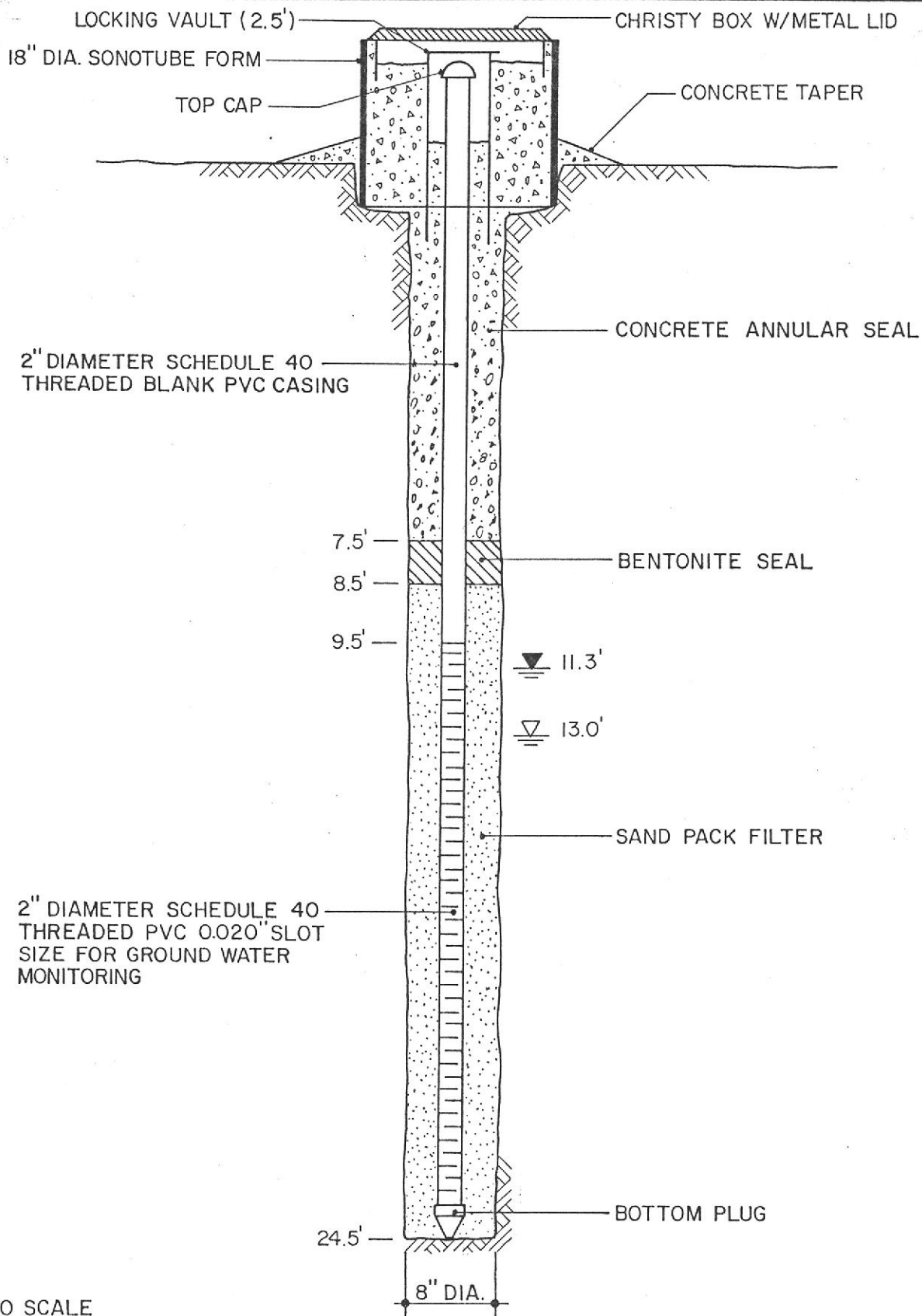
HOLE DIA **8"**

SAMPLER **2" Mod. Cal.**

GROUNDWATER DEPTH INITIAL **13.0'** FINAL **---**

HOLE ELEV **---**

DESCRIPTION	SOIL TYPE	DEPTH	SAMPLE	BLOWS PER FOOT	POCKET PEN (tsf)	TORVANE (tsf)	LIQUID LIMIT	WATER CONTENT	PLASTIC LIMIT	DRY DENSITY (pcf)	FAILURE STRAIN (%)	UNCONFINED SHEAR STRENGTH (psf)
SANDY LEAN CLAY; tan with grey mottles, wet, firm; 60% clay and silt, 40% medium sand	CL	21										
		22										
		23										
POORLY-GRADED SAND; brown, wet, medium dense; 90% medium sand, 10% silt and clay	SC	24	X									
		25	X	16								
BOTTOM OF BORING @ 25.0' Monitoring Well Installed		26										
		27										
		28										
		29										
		30										
		31										
		32										
		33										
		34										
		35										
		36										
		37										
		38										
		39										
		40										



NOT TO SCALE



MAY 1990

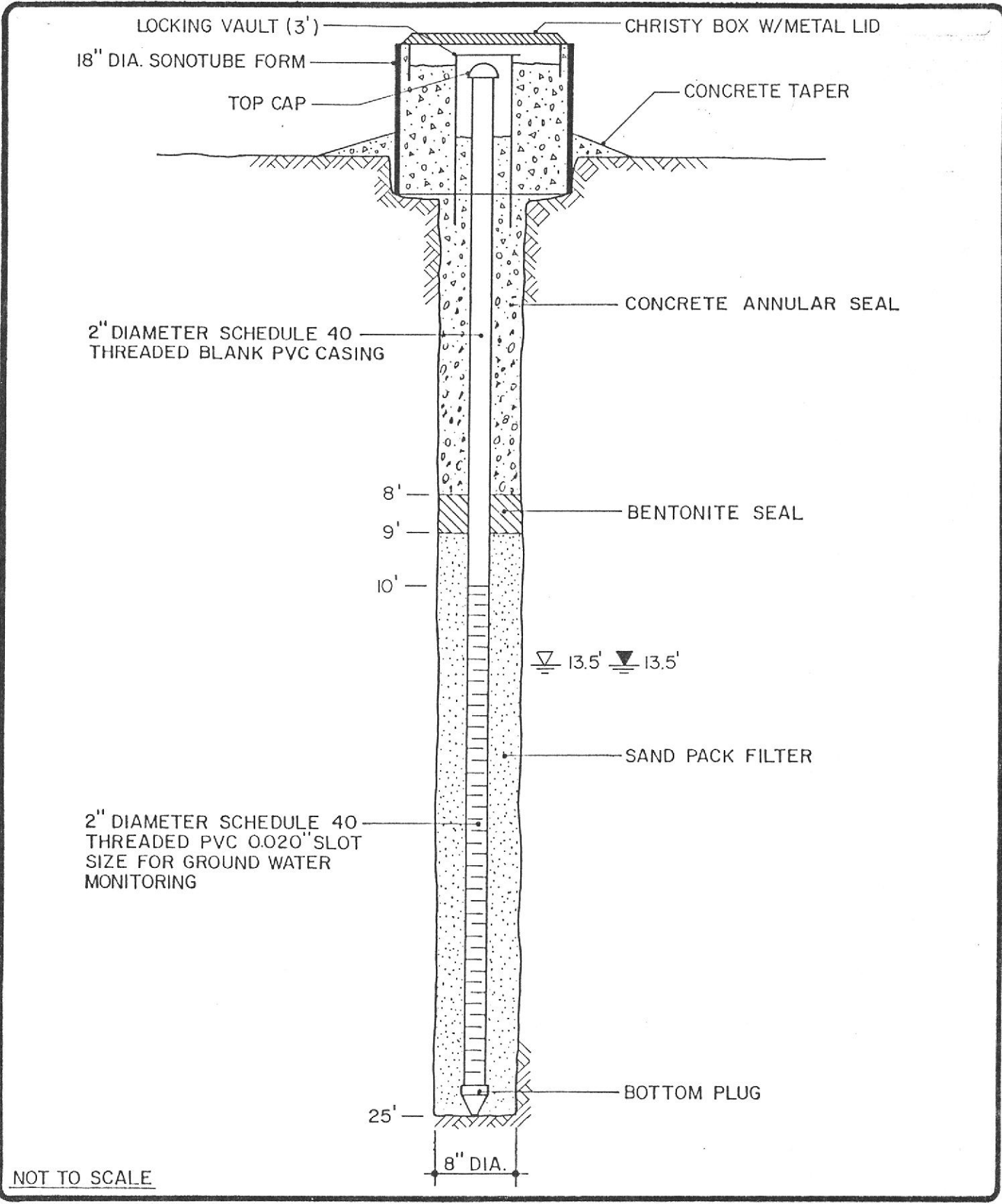
TERRATECH

SUNNYSIDE COMMONS II
HAYWARD, CALIFORNIA

MW-2 AS-BUILT DIAGRAM

FIGURE
3

PROJECT
4454/3




MAY 1990

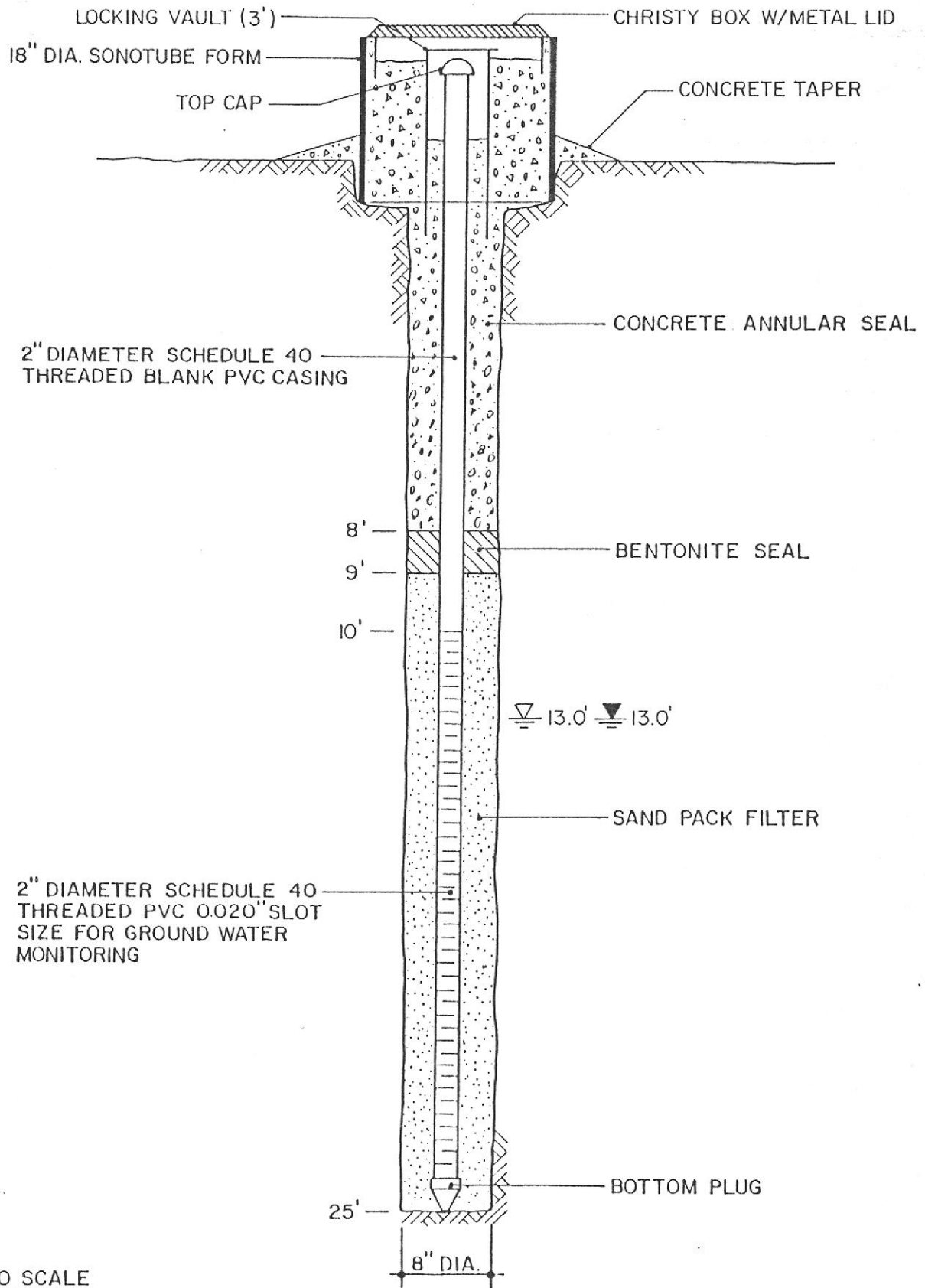
TERRATECH

SUNNYSIDE COMMONS II
HAYWARD, CALIFORNIA

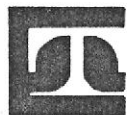
MW-3 AS-BUILT DIAGRAM

FIGURE
4

PROJECT
4454/3



NOT TO SCALE



June 1990

TERRATECH

SUNNYSIDE COMMONS II
HAYWARD, CALIFORNIA

MW-4 AS-BUILT DIAGRAM

FIGURE
5

PROJECT
4454/3

APPENDIX C
ANALYTICAL LABORATORY RESULTS
AND
CHAIN-OF-CUSTODY RECORDS



TERRATECH

CHAIN OF CUSTODY RECORD

P.O. NO. 0473

TURNAROUND: 2-week

PROJECT NUMBER: # 4454/3					Number of Containers	Analysis Required PCBs (COB)					REMARKS			
SAMPLERS (signature): Jeff Blair														
Station Number	Date 1990	Time	Comp.	Grab									Station Location	
HS-5	5/3	AM				1 Glass liner	X						North	12"-18"
HS-6							X						WEST	12"-18"
HS-7							X						EAST	12"-18"
HS-8							X						SOUTH	12"-18"
HS-9							X						CENTRAL	30"-36"
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): Jeff Blair Company or Agency: TERRATECH, INC.		Date / Time 5/3/90 12:30		Received for Laboratory by (signature) 		Date / Time 05/03/90 12:30		Remarks/Shipping Information Send reports to: Eric Lautenbach 1365 VANDER WAY, SAN JOSE 95112						

ANAMETRIX INC

Environmental & Analytical Chemistry
1961 Concourse Drive, Suite E, San Jose, CA 95131
(408) 432-8192 • Fax (408) 432-8198



REPORT

Eric Lautenbach
Terratech, Inc.
1365 Vander Way
San Jose, CA 95112

May 17, 1990
Anamatrix W.O.#: 9005024
Date Received : 05/03/90
Purchase Order#: 0473
Project Number : 4454/3

Dear Mr. Lautenbach:

Your samples have been received for analysis. The REPORT SUMMARY lists your sample identifications and the analytical methods you requested. The following sections are included in this report: RESULTS and QUALITY ASSURANCE.

NOTE: Amounts reported are net values, i.e. corrected for method blank contamination.

If there is any more that we can do, please give us a call. Thank you for using ANAMETRIX, INC.

Sincerely,

ANAMETRIX, INC.

Stratos Dimas

Stratos Dimas, Ph.D.
Pesticides Supervisor

SD/dmt

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

Client : Terratech, Inc.
Address : 1365 Vander Way
City : San Jose, CA 95112
Attn. : Eric Lautenbach

Anamatrix W.O.#: 9005024
Date Received : 05/03/90
Purchase Order#: 0473
Project No. : 4454/3
Date Released : 05/17/90

Anamatrix I.D.	Sample I.D.	Matrix	Date Sampled	Method	Date Extract	Date Analyzed	Inst I.D.
----------------	-------------	--------	--------------	--------	--------------	---------------	-----------

RESULTS

9005024-01	HS-5	SOIL	05/03/90	8080	05/04/90	05/10/90	HP16
9005024-02	HS-6	SOIL	05/03/90	8080	05/04/90	05/10/90	HP16
9005024-03	HS-7	SOIL	05/03/90	8080	05/04/90	05/10/90	HP16
9005024-04	HS-8	SOIL	05/03/90	8080	05/04/90	05/10/90	HP16
9005024-05	HS-9	SOIL	05/03/90	8080	05/04/90	05/10/90	HP16

QUALITY ASSURANCE (QA)

PSBL050490	METHOD BLANK	SOIL	N/A	8080	05/04/90	05/10/90	HP16
9005024-01	HS-5	SOIL	05/03/90	SPIKE	05/04/90	05/10/90	HP16

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 608/8080
 ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 4454/3 HS-5
 Matrix : SOIL
 Date sampled : 05/03/90
 Date ext. : 05/04/90
 Date analyzed: 05/10/90
 Dilution : NONE

Anamatrix I.D. : 9005024-01
 Analyst : *ST*
 Supervisor : *MS*
 Date released : 05/17/90
 Weight ext. : 10g
 Instrument ID : HP16

CAS #	Compound Name	Reporting Limit (ug/Kg)	Amount Found (ug/Kg)
1104-28-2	Aroclor 1221	80	ND
11141-16-5	Aroclor 1232	80	ND
53469-21-9	Aroclor 1242	80	ND
12672-29-6	Aroclor 1248	80	ND
11097-69-1	Aroclor 1254	160	ND
11096-82-5	Aroclor 1260	160	ND
12674-11-2	Aroclor 1016	80	ND
	Dibutylchlorendate	20-150%	82%

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

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 608/8080
 ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 4454/3 HS-6
 Matrix : SOIL
 Date sampled : 05/03/90
 Date ext. : 05/04/90
 Date analyzed: 05/10/90
 Dilution : NONE

Anamatrix I.D. : 9005024-02
 Analyst : *ST*
 Supervisor : *SW*
 Date released : 05/17/90
 Weight ext. : 10g
 Instrument ID : HP16

CAS #	Compound Name	Reporting Limit (ug/Kg)	Amount Found (ug/Kg)
1104-28-2	Aroclor 1221	80	ND
11141-16-5	Aroclor 1232	80	ND
53469-21-9	Aroclor 1242	80	ND
12672-29-6	Aroclor 1248	80	ND
11097-69-1	Aroclor 1254	160	340
11096-82-5	Aroclor 1260	160	ND
12674-11-2	Aroclor 1016	80	ND
	Dibutylchlorendate	20-150%	121%

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

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 608/8080
 ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 4454/3 HS-7
 Matrix : SOIL
 Date sampled : 05/03/90
 Date ext. : 05/04/90
 Date analyzed: 05/10/90
 Dilution : NONE

Anamatrix I.D. : 9005024-03
 Analyst : ST
 Supervisor : DJ
 Date released : 05/17/90
 Weight ext. : 10g
 Instrument ID : HP16

CAS #	Compound Name	Reporting Limit (ug/Kg)	Amount Found (ug/Kg)
1104-28-2	Aroclor 1221	80	ND
11141-16-5	Aroclor 1232	80	ND
53469-21-9	Aroclor 1242	80	ND
12672-29-6	Aroclor 1248	80	ND
11097-69-1	Aroclor 1254	160	4100
11096-82-5	Aroclor 1260	160	ND
12674-11-2	Aroclor 1016	80	ND
	Dibutylchlorendate	20-150%	125%

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

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 608/8080
 ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 4454/3 HS-8
 Matrix : SOIL
 Date sampled : 05/03/90
 Date ext. : 05/04/90
 Date analyzed: 05/10/90
 Dilution : NONE

Anamatrix I.D. : 9005024-04
 Analyst : ST
 Supervisor : AS
 Date released : 05/17/90
 Weight ext. : 10g
 Instrument ID : HP16

CAS #	Compound Name	Reporting Limit (ug/Kg)	Amount Found (ug/Kg)
1104-28-2	Aroclor 1221	80	ND
11141-16-5	Aroclor 1232	80	ND
53469-21-9	Aroclor 1242	80	ND
12672-29-6	Aroclor 1248	80	ND
11097-69-1	Aroclor 1254	160	1200
11096-82-5	Aroclor 1260	160	ND
12674-11-2	Aroclor 1016	80	ND
	Dibutylchlorendate	20-150%	108%

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

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 608/8080
 ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 4454/3 HS-9
 Matrix : SOIL
 Date sampled : 05/03/90
 Date ext. : 05/04/90
 Date analyzed: 05/10/90
 Dilution : NONE

Anamatrix I.D. : 9005024-05
 Analyst : J
 Supervisor : JMS
 Date released : 05/17/90
 Weight ext. : 10g
 Instrument ID : HP16

CAS #	Compound Name	Reporting Limit (ug/Kg)	Amount Found (ug/Kg)
1104-28-2	Aroclor 1221	80	ND
11141-16-5	Aroclor 1232	80	ND
53469-21-9	Aroclor 1242	80	ND
12672-29-6	Aroclor 1248	80	ND
11097-69-1	Aroclor 1254	160	ND
11096-82-5	Aroclor 1260	160	ND
12674-11-2	Aroclor 1016	80	ND
	Dibutylchloroendate	20-150%	95%

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

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 608/8080
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : METHOD BLANK	Anamatrix I.D. : PSBL050490
Matrix : SOIL	Analyst : ST
Date sampled : N/A	Supervisor : ON
Date ext. : 05/04/90	Date released : 05/17/90
Date analyzed: 05/10/90	Weight ext. : 10g
Dilution : NONE	Instrument ID : HP16

CAS #	Compound Name	Reporting Limit (ug/Kg)	Amount Found (ug/Kg)
1104-28-2	Aroclor 1221	80	ND
11141-16-5	Aroclor 1232	80	ND
53469-21-9	Aroclor 1242	80	ND
12672-29-6	Aroclor 1248	80	ND
11097-69-1	Aroclor 1254	160	ND
11096-82-5	Aroclor 1260	160	ND
12674-11-2	Aroclor 1016	80	ND
	Dibutylchlorendate	20-150%	92%

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

PCB MATRIX SPIKE REPORT
 EPA METHOD 608/8080
 ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 4454/3 HS-5
 Matrix : SOIL
 Date sampled : 05/03/90
 Date analyzed : 05/10/90
 Date extracted: 05/04/90

Anamatrix I.D. : 9005024-01
 Analyst : ST
 Supervisor : *smj*
 Date released : 05/17/90
 Instrument I.D.: HP16

COMPOUND	SPIKE AMT. (UG/KG)	MS (UG/KG)	%REC MS	MSD (UG/KG)	%REC MSD	RPD	%REC LIMITS
AROCLOR 1248	1000	1200	120%	1400	140%	15%	38-158%

* Limits established by EPA, SW-846, 3rd ed.



TERRATECH

CHAIN OF CUSTODY RECORD

P.O. NO. 0489

TURNAROUND: 48-HOUR

PROJECT NUMBER: <u>4454/3</u>						Number of Containers	Analysis Required <u>EPA 8080</u>	REMARKS								SAMPLE DEPTH			
SAMPLERS (signature): <u>T. Morin</u>																			
Station Number	Date 1990	Time	Comp.	Grab	Station Location														
<u>MW-3</u>	<u>5/18</u>	<u>930</u>		<input checked="" type="checkbox"/>	<u>SUNNYSIDE II</u>	<u>2 LITERS</u>	<input checked="" type="checkbox"/>												
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): <u>T. Morin</u>		Date / Time <u>5/18/90 13:10</u>		Received by (signature): <u>[Signature]</u>		Relinquished by:		Date / Time		Received by (signature):									
Company or Agency: <u>TERRATECH</u>				Company or Agency: <u>TERRATECH</u>		Company or Agency:				Company or Agency:									
Relinquished by(signature): <u>[Signature]</u>		Date / Time <u>5/18/90 15:15</u>		Received for Laboratory by (signature): <u>[Signature]</u>		Date / Time <u>5-18-90 15:15</u>		Remarks/Shipping Information Send reports to: Eric Laufenbach 1385 VANDER WAY, SAN JOSE 95112											
Company or Agency: <u>TERRATECH, INC.</u>																			

ANAMETRIX INC

Environmental & Analytical Chemistry
1964 Concourse Drive, Suite E, San Jose, CA 95131
(408) 432-8192 • Fax (408) 432-8198

**REPORT**

TERRATECH
MAY 24 1990
RECEIVED
RECEIVED

1964 Concourse Drive, Suite E
San Jose, CA 95131
(408) 432-8192 • Fax (408) 432-8198

Eric Lautenbach
Terratech, Inc.
1365 Vander Way
San Jose, CA 95112

May 22, 1990
Anamatrix W.O.#: 9005243
Date Received : 05/18/90
Purchase Order#: 0489
Project number : 4454/3

Dear Mr. Lautenbach:

Your sample has been received for analysis. The REPORT SUMMARY lists your sample identifications and the analytical methods you requested. The following sections are included in this report: RESULTS and QUALITY ASSURANCE.

NOTE: Amounts reported are net values, i.e. corrected for method blank contamination.

If there is any more that we can do, please give us a call. Thank you for using ANAMETRIX, INC.

Sincerely,

ANAMETRIX, INC.

Stratos Dimas

Stratos Dimas
Pesticides Supervisor

SD/dmt

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

Client : Terratech, Inc.
Address : 1365 Vander Way
City : San Jose, CA 95112
Attn. : Eric Lautenbach

Anamatrix W.O.#: 9005243
Date Received : 05/18/90
Purchase Order#: 0489
Project No. : 4454/3
Date Released : 05/22/90

Anamatrix I.D.	Sample I.D.	Matrix	Date Sampled	Method	Date Extract	Date Analyzed	Inst I.D.
RESULTS							
9005243-01	MW-3	WATER	05/18/90	8080	05/21/90	05/21/90	HP5
QUALITY ASSURANCE (QA)							
PWBL052190	METHOD BLANK	WATER	N/A	8080	05/21/90	05/21/90	HP5

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 608/8080
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 4454/3 MW-3
Matrix : WATER
Date sampled : 05/18/90
Date ext. : 05/21/90
Date analyzed: 05/21/90
Dilution : NONE

Anamatrix I.D. : 9005243-01
Analyst : ST
Supervisor : SD
Date released : 05/22/90
Volume ext. : 920 ml
Instrument ID : HP5

CAS #	Compound Name	Reporting Limit (ug/l)	Amount Found (ug/l)
319-84-6	alpha-BHC	0.05	ND
319-85-7	beta-BHC	0.05	ND
58-89-9	gamma-BHC (Lindane)	0.05	ND
319-86-8	delta-BHC	0.05	ND
76-44-8	Heptachlor	0.05	ND
309-00-2	Aldrin	0.05	ND
1024-57-3	Heptachlor epoxide	0.05	ND
959-98-8	Endosulfan I	0.05	0.37
72-55-9	p,p'-DDE	0.1	ND
60-57-1	Dieldrin	0.1	ND
72-20-8	Endrin	0.1	ND
72-54-8	p,p'-DDD	0.1	ND
33212-65-9	Endosulfan II	0.1	0.17
50-29-3	p,p'-DDT	0.1	ND
7421-93-4	Endrin aldehyde	0.1	ND
1031-07-8	Endosulfan sulfate	0.1	0.16
72-43-5	p,p'-Methoxychlor	0.5	ND
53494-70-5	Endrin ketone	0.1	ND
12789-03-6	Technical chlordane	0.5	ND
8001-35-2	Toxaphene	1	ND
1104-28-2	Aroclor 1221	0.5	ND
11141-16-5	Aroclor 1232	0.5	ND
53469-21-9	Aroclor 1242	0.5	ND
12672-29-6	Aroclor 1248	0.5	ND
11097-69-1	Aroclor 1254	1	ND
11096-82-5	Aroclor 1260	1	ND
12674-11-2	Aroclor 1016	0.5	ND
	Dibutylchlorendate	24-154%	96%

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

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 608/8080
 ANAMETRIX, INC. (408) 432-8192

Sample I.D. : METHOD BLANK
 Matrix : WATER
 Date sampled : N/A
 Date ext. : 05/21/90
 Date analyzed: 05/21/90
 Dilution : NONE

Anamatrix I.D. : PWBL052190
 Analyst : ~~S~~
 Supervisor : SP
 Date released : 05/22/90
 Volume ext. : 1 LITER
 Instrument ID : HP5

CAS #	Compound Name	Reporting Limit (ug/l)	Amount Found (ug/l)
319-84-6	alpha-BHC	0.05	ND
319-85-7	beta-BHC	0.05	ND
58-89-9	gamma-BHC (Lindane)	0.05	ND
319-86-8	delta-BHC	0.05	ND
76-44-8	Heptachlor	0.05	ND
309-00-2	Aldrin	0.05	ND
1024-57-3	Heptachlor epoxide	0.05	ND
959-98-8	Endosulfan I	0.05	ND
72-55-9	p,p'-DDE	0.1	ND
60-57-1	Dieldrin	0.1	ND
72-20-8	Endrin	0.1	ND
72-54-8	p,p'-DDD	0.1	ND
33212-65-9	Endosulfan II	0.1	ND
50-29-3	p,p'-DDT	0.1	ND
7421-93-4	Endrin aldehyde	0.1	ND
1031-07-8	Endosulfan sulfate	0.1	ND
72-43-5	p,p'-Methoxychlor	0.5	ND
53494-70-5	Endrin ketone	0.1	ND
12789-03-6	Technical chlordane	0.5	ND
8001-35-2	Toxaphene	1	ND
1104-28-2	Aroclor 1221	0.5	ND
11141-16-5	Aroclor 1232	0.5	ND
53469-21-9	Aroclor 1242	0.5	ND
12672-29-6	Aroclor 1248	0.5	ND
11097-69-1	Aroclor 1254	1	ND
11096-82-5	Aroclor 1260	1	ND
12674-11-2	Aroclor 1016	0.5	ND
	Dibutylchlorendate	24-154%	92%

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



TERRATECH

CHAIN OF CUSTODY RECORD

9005243

10/17

Mr 17:35

P.O. NO. 0489

TURNAROUND: 48-HOUR

PROJECT NUMBER: 4454/3						Number of Containers	Analysis Required EPA 8080										REMARKS	SAMPLE DEPTH	
SAMPLERS (signature): T. Morin																			
Station Number	Date 1990	Time	Comp.	Grab	Station Location														
MW-3	5/18	930		X	SUNNYSIDE II	2 LITERS	X												
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											
Company or Agency:		5/18/90		(signature)		5-18-90		Send reports to: Eric Lautenbach 1365 VANDER WAY, SAN JOSE 95112											
TERRATECH, INC.		15:15		Jgh/Memph		15:15													



TERRATECH

CHAIN OF CUSTODY RECORD

P.O. NO. 8424

TURNAROUND: 48 HOUR RUSH

PROJECT NUMBER: 4454/3						Number of Containers	Analysis Required					REMARKS	SAMPLE DEPTH
SAMPLERS (signature): T. Moran							EPA 8080 PESTICIDES	PCBs (BY EPA 8080)					
Station Number	Date 1990	Time	Comp.	Grab	Station Location								
MW-4	6/11	1400		X		2 LITRES	X						
HS-10	6/11	1200		X		1 LITER		X				12-18"	
HS-11	6/11	1215		X		"		X				12-18"	
HS-12	6/11	1230		X		"		X				30-36"	
HS-13	6/11	1330		X		"		X				12-18"	
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				
Thomas Moran Company or Agency: TERRATECH, INC.			6/11/90 16:25		Michael Gehlin, (signature)		6/11/90 16:25		Send reports to: Eric Lautenbach 1365 VANDER WAY, SAN JOSE 95112				

ANAMETRIX INC

Environmental & Analytical Chemistry
1961 Concourse Drive, Suite E, San Jose, CA 95131
(408) 432-8192 • Fax: (408) 432-8198



REPORT

Terratech Inc.
1365 Vander Way
San Jose, CA 95112

June 18, 1990
Anamatrix W.O.#: 9006125
Date Received : 06/11/90
Purchase Order#: 8424
Project No. : 4454/3

Dear Mr. Lautenbach:

Your samples have been received for analysis. The REPORT SUMMARY lists your sample identifications and the analytical methods you requested. The following sections are included in this report: RESULTS and QUALITY ASSURANCE.

NOTE: Amounts reported are net values, i.e. corrected for method blank contamination.

If there is any more that we can do, please give us a call. Thank you for using ANAMETRIX, INC.

Sincerely,

ANAMETRIX, INC.

Stratos Dimas

Stratos Dimas Ph.D.
Pesticides Supervisor

SD/lm

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

Client : Terratech Inc.
Address : 1365 Vander Way
City : San Jose, CA 95112
Attn. :

Anamatrix W.O.#: 9006125
Date Received : 06/11/90
Purchase Order#: 8424
Project No. : 4454/3
Date Released : 06/18/90

Anamatrix I.D.	Sample I.D.	Matrix	Date Sampled	Method	Date Extract	Date Analyzed	Inst I.D.
RESULTS							
9006125-01	MW-4	WATER	06/11/90	8080	06/12/90	06/13/90	HP5
9006125-02	HS-10	SOIL	06/11/90	8080	06/11/90	06/12/90	HP16
9006125-03	HS-11	SOIL	06/11/90	8080	06/11/90	06/12/90	HP16
9006125-04	HS-12	SOIL	06/11/90	8080	06/11/90	06/12/90	HP16
9006125-05	HS-13	SOIL	06/11/90	8080	06/11/90	06/12/90	HP16
QUALITY ASSURANCE (QA)							
PWBL061290	METHOD BLANK	WATER	N/A	8080	06/12/90	06/13/90	HP5
PSBL061190	METHOD BLANK	WATER	N/A	8080	06/12/90	06/12/90	HP16

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 608/8080
 ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 4454/3 MW-4
 Matrix : WATER
 Date sampled : 06/11/90
 Date ext. : 06/12/90
 Date analyzed: 06/13/90
 Dilution : NONE

Anamatrix I.D. : 9006125-01
 Analyst : ST
 Supervisor : SD
 Date released : 06/18/90
 Volume ext. : 810 ml
 Instrument ID : HP5

CAS #	Compound Name	Reporting Limit (ug/l)	Amount Found (ug/l)
319-84-6	alpha-BHC	0.05	ND
319-85-7	beta-BHC	0.05	ND
58-89-9	gamma-BHC (Lindane)	0.05	ND
319-86-8	delta-BHC	0.05	ND
76-44-8	Heptachlor	0.05	ND
309-00-2	Aldrin	0.05	ND
1024-57-3	Heptachlor epoxide	0.05	ND
959-98-8	Endosulfan I	0.05	ND
72-55-9	p,p'-DDE	0.1	ND
60-57-1	Dieldrin	0.1	ND
72-20-8	Endrin	0.1	ND
72-54-8	p,p'-DDD	0.1	0.14
33212-65-9	Endosulfan II	0.1	ND
50-29-3	p,p'-DDT	0.1	ND
7421-93-4	Endrin aldehyde	0.1	ND
1031-07-8	Endosulfan sulfate	0.1	ND
72-43-5	p,p'-Methoxychlor	0.5	ND
53494-70-5	Endrin ketone	0.1	ND
12789-03-6	Technical chlordane	0.5	ND
8001-35-2	Toxaphene	1	ND
1104-28-2	Aroclor 1221	0.5	ND
11141-16-5	Aroclor 1232	0.5	ND
53469-21-9	Aroclor 1242	0.5	ND
12672-29-6	Aroclor 1248	0.5	ND
11097-69-1	Aroclor 1254	1	ND
11096-82-5	Aroclor 1260	1	ND
12674-11-2	Aroclor 1016	0.5	ND
	Dibutylchlorendate	24-154%	132%

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

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 608/8080
 ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 4454/3 HS-10
 Matrix : SOIL
 Date sampled : 06/11/90
 Date ext. : 06/11/90
 Date analyzed: 06/12/90
 Dilution : NONE

Anamatrix I.D. : 9006125-02
 Analyst : ~~ST~~
 Supervisor : SD
 Date released : 06/18/90
 Weight ext. : 10 g
 Instrument ID : HP16

CAS #	Compound Name	Reporting Limit (ug/Kg)	Amount Found (ug/Kg)
1104-28-2	Aroclor 1221	80	ND
11141-16-5	Aroclor 1232	80	ND
53469-21-9	Aroclor 1242	80	ND
12672-29-6	Aroclor 1248	80	ND
11097-69-1	Aroclor 1254	160	ND
11096-82-5	Aroclor 1260	160	ND
12674-11-2	Aroclor 1016	80	ND
	Dibutylchlorendate	20-150%	96%

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

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 608/8080
 ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 4454/3 HS-11
 Matrix : SOIL
 Date sampled : 06/11/90
 Date ext. : 06/11/90
 Date analyzed: 06/12/90
 Dilution : NONE

Anamatrix I.D. : 9006125-03
 Analyst : *JS*
 Supervisor : *SD*
 Date released : 06/18/90
 Weight ext. : 10 g
 Instrument ID : HP16

CAS #	Compound Name	Reporting Limit (ug/Kg)	Amount Found (ug/Kg)
1104-28-2	Aroclor 1221	80	ND
11141-16-5	Aroclor 1232	80	ND
53469-21-9	Aroclor 1242	80	ND
12672-29-6	Aroclor 1248	80	ND
11097-69-1	Aroclor 1254	160	ND
11096-82-5	Aroclor 1260	160	ND
12674-11-2	Aroclor 1016	80	ND
	Dibutylchloroendate	20-150%	103%

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

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 608/8080
 ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 4454/3 HS-12
 Matrix : SOIL
 Date sampled : 06/11/90
 Date ext. : 06/11/90
 Date analyzed: 06/12/90
 Dilution : NONE

Anamatrix I.D. : 9006125-04
 Analyst : *ST*
 Supervisor : *SD*
 Date released : 06/18/90
 Weight ext. : 10 g
 Instrument ID : HP16

CAS #	Compound Name	Reporting Limit (ug/Kg)	Amount Found (ug/Kg)
1104-28-2	Aroclor 1221	80	ND
11141-16-5	Aroclor 1232	80	ND
53469-21-9	Aroclor 1242	80	ND
12672-29-6	Aroclor 1248	80	ND
11097-69-1	Aroclor 1254	160	ND
11096-82-5	Aroclor 1260	160	ND
12674-11-2	Aroclor 1016	80	ND
	Dibutylchlorendate	20-150%	94%

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

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 608/8080
 ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 4454/3 HS-13
 Matrix : SOIL
 Date sampled : 06/11/90
 Date ext. : 06/11/90
 Date analyzed: 06/12/90
 Dilution : NONE

Anamatrix I.D. : 9006125-05
 Analyst : SK
 Supervisor : SD
 Date released : 06/18/90
 Weight ext. : 10 g
 Instrument ID : HP16

CAS #	Compound Name	Reporting Limit (ug/Kg)	Amount Found (ug/Kg)
1104-28-2	Aroclor 1221	80	ND
11141-16-5	Aroclor 1232	80	ND
53469-21-9	Aroclor 1242	80	ND
12672-29-6	Aroclor 1248	80	ND
11097-69-1	Aroclor 1254	160	ND
11096-82-5	Aroclor 1260	160	ND
12674-11-2	Aroclor 1016	80	ND
	Dibutylchlorendate	20-150%	101%

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

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 608/8080
 ANAMETRIX, INC. (408) 432-8192

Sample I.D. : METHOD BLANK
 Matrix : WATER
 Date sampled : N/A
 Date ext. : 06/12/90
 Date analyzed: 06/13/90
 Dilution : NONE

Anamatrix I.D. : PWBL061290
 Analyst : ST
 Supervisor : JMS
 Date released : 06/18/90
 Volume ext. : 1000 ml
 Instrument ID : HP5

CAS #	Compound Name	Reporting Limit (ug/l)	Amount Found (ug/l)
319-84-6	alpha-BHC	0.05	ND
319-85-7	beta-BHC	0.05	ND
58-89-9	gamma-BHC (Lindane)	0.05	ND
319-86-8	delta-BHC	0.05	ND
76-44-8	Heptachlor	0.05	ND
309-00-2	Aldrin	0.05	ND
1024-57-3	Heptachlor epoxide	0.05	ND
959-98-8	Endosulfan I	0.05	ND
72-55-9	p,p'-DDE	0.1	ND
60-57-1	Dieldrin	0.1	ND
72-20-8	Endrin	0.1	ND
72-54-8	p,p'-DDD	0.1	ND
33212-65-9	Endosulfan II	0.1	ND
50-29-3	p,p'-DDT	0.1	ND
7421-93-4	Endrin aldehyde	0.1	ND
1031-07-8	Endosulfan sulfate	0.1	ND
72-43-5	p,p'-Methoxychlor	0.5	ND
53494-70-5	Endrin ketone	0.1	ND
12789-03-6	Technical chlordane	0.5	ND
8001-35-2	Toxaphene	1	ND
1104-28-2	Aroclor 1221	0.5	ND
11141-16-5	Aroclor 1232	0.5	ND
53469-21-9	Aroclor 1242	0.5	ND
12672-29-6	Aroclor 1248	0.5	ND
11097-69-1	Aroclor 1254	1	ND
11096-82-5	Aroclor 1260	1	ND
12674-11-2	Aroclor 1016	0.5	ND
	Dibutylchlorendate	24-154%	118%

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

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 608/8080
 ANAMETRIX, INC. (408) 432-8192

Sample I.D. : METHOD BLANK	Anamatrix I.D. : PSBL061190
Matrix : WATER	Analyst : ST
Date sampled : N/A	Supervisor : SD
Date ext. : 06/12/90	Date released : 06/18/90
Date analyzed: 06/12/90	Weight ext. : 10 g
Dilution : NONE	Instrument ID : HP16

CAS #	Compound Name	Reporting Limit (ug/Kg)	Amount Found (ug/Kg)
1104-28-2	Aroclor 1221	80	ND
11141-16-5	Aroclor 1232	80	ND
53469-21-9	Aroclor 1242	80	ND
12672-29-6	Aroclor 1248	80	ND
11097-69-1	Aroclor 1254	160	ND
11096-82-5	Aroclor 1260	160	ND
12674-11-2	Aroclor 1016	80	ND
	Dibutylchloroendate	20-150%	101%

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