

ALFA ENVIRONMENTAL REMEDIATION SERVICES

P.O. BOX 1630

Pleasanton, CA 94566

(510) 462-9763 Fax: (510) 462-9726

*1/19 orig. T. Iwamura w/SA  
D. J. Chesterman  
B. Goldie  
Z. Diaz*

January 9, 1995

Dr. Ibrahim Hefni  
Western Microwave, Inc.  
495 Mercury Drive  
Sunnyvale, California 94086

Subject: Quarterly Groundwater Monitoring Report  
December 1994  
1271 Reamwood Avenue  
Sunnyvale, California

Dear Dr. Hefni:

Enclosed is the subject report required by the California Regional Water Quality Control Board, San Francisco Bay Region (RWQCB), for Western Microwave's former Reamwood Avenue Facility.

Copies of this report should be sent to Mr. Stephen I. Morse at the RWQCB, to Mr. Tom Iwamura at the Santa Clara Valley Water District, to Mr. Lee Esquibel at the Santa Clara County Health Department and to Mr. Ben Gikis at the City of Sunnyvale Department of Public Safety.

We appreciate the opportunity to provide our consulting engineering and hydrogeologic services to Western Microwave. Please contact either of the undersigned if you have questions or require additional information.

Sincerely,

ALFA ENVIRONMENTAL REMEDIATION SERVICES

*Valentin N. Constantinescu*

Valentin N. Constantinescu, R.E.A.  
Senior Environmental Geologist

*Marvin D. Kirkeby*

Marvin D. Kirkeby, P.E.  
Registered Civil Engineer

VNC/MDK/avc  
Enclosure



SUNNYVALE VALLEY  
HISTORICAL SOCIETY

05 JAN 19 11:24

15

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**QUARTERLY GROUNDWATER  
MONITORING REPORT**

**NOVEMBER 1994**

Former Western Microwave Facility  
1271 Reamwood Avenue  
Sunnyvale, California

Prepared for

Western Microwave, Inc.  
495 Mercury Drive  
Sunnyvale, California

January 5, 1995

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**ALFA ENVIRONMENTAL REMEDIATION SERVICES**

## **INTRODUCTION AND SUMMARY**

This is a continuation of a series of quarterly groundwater monitoring reports for the former Western Microwave site located at 1271 Reamwood Avenue, Sunnyvale, California (see Figure 1). The reports are required by the Regional Water Quality Control Board (RWQCB) (Order # 93-048). This report presents the data for groundwater-level measurements and the chemical analyses obtained on November 3, 1994.

In the well designated P-3, Vinyl Chloride and trans-1,2-Dichloroethene are above the Maximum Contaminant Level (MCL). PCE exceeds the MCL in wells P-1, P-2, and P-3. TCE exceeds the MCL in all four wells (see Table II). Traces of Toluene were detected in P-2 and traces of 1,3-Dichlorobenzene and 1,2-Dichlorobenzene were detected in P-3. All other analyzed chemicals are below laboratory detection limits (ND).

The detected concentrations are fairly consistent with previous data except for P2 which continue to exhibit large variation in the PCE level. From January 1987 till June 1988 the PCE level was ND or very low. In August 1988 the level suddenly spiked at 12,000 ppb, the values then decreased to an average of 3,000 ppb. Recently, the average value was less than 1,000 ppb.

## **QUARTERLY GROUNDWATER LEVEL MEASUREMENTS**

Groundwater levels for P1, P2, P3, and MW-1 were measured and groundwater level data are presented in Table 1. We also measured the groundwater level in the extraction and piezo wells. A groundwater potentiometric map is presented in Plate 2.

## **SAMPLING AND CHEMICAL ANALYSES**

The wells designated P1, P2, and P3 were purged and sampled by ALFA. Well MW-1 was purged by McLaren/Hart and sampled by McLaren/Hart and by ALFA. The samples were analyzed by Trace Analysis Laboratory using EPA Test Methods 624. Laboratory reports are provided in Appendix and summarized in Table 2.

## **METHODOLOGY AND QUALITY ASSURANCE/QUALITY CONTROL**

Depth to static groundwater within the wells were measured with an electrical tape prior to development. Following calculations to determine well casing volumes, the wells designated P-1, P-2, and P-3 were then purged of more than three well volumes using a peristaltic pump until temperature, pH, and electrical conductivity measurements stabilized and the water was observed to be relatively non-turbid. Water samples from all four (4) wells were acquired within a clean polyethylene

bailer lowered to a point just below the surface of the water table. Upon bringing the bailer to grade, the sample was promptly transferred to two (2) Volatile Organic Analysis (VOA) vials with care given to minimize off-gassing. The vials were filled so no headspace bubbles formed when inverted. Each container was labeled, placed on ice for transport to Trace Analysis Laboratory, a State Certified hazardous waste analytical laboratory, under chain of custody and analyzed for VOCs using EPA Methods 624. Measurements of pH, conductivity and temperature were acquired and recorded. Extracted groundwater, in addition to that acquired for laboratory analysis, was placed into a covered DOT drum and stored on site pending receipt of laboratory data for the determination of proper disposal.

The survey benchmark is indicated by a 3-inch brass disk in concrete at the centerline of Mountain View and Alviso Road, 28 feet west of the end of the bridge over Calabazas Creek per Santa Clara Valley Water District datum, elevation 16.4 feet relative to the National Geodetic Vertical Datum (NGVD) of 1929.

Quality Assurance/Quality Control (QA/QC) measures included the following. Sample blank was taken prior to sampling and analyzed by the lab. All sampling equipment was steam cleaned or thoroughly scrubbed followed by a distilled water rinse prior to being brought on site and between all sampling events.

**TABLE 1**  
**GROUNDWATER ELEVATION DATA**  
November 3, 1994

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Well No.	Elevation of Measuring Point (MP)	Depth to Water Below MP	Water-level Elevation
P1	6.12	8.66	-2.54
P2	6.18	8.85	-2.67
P3	5.96	9.35	-3.39
MW-1	5.25	7.67	-2.42

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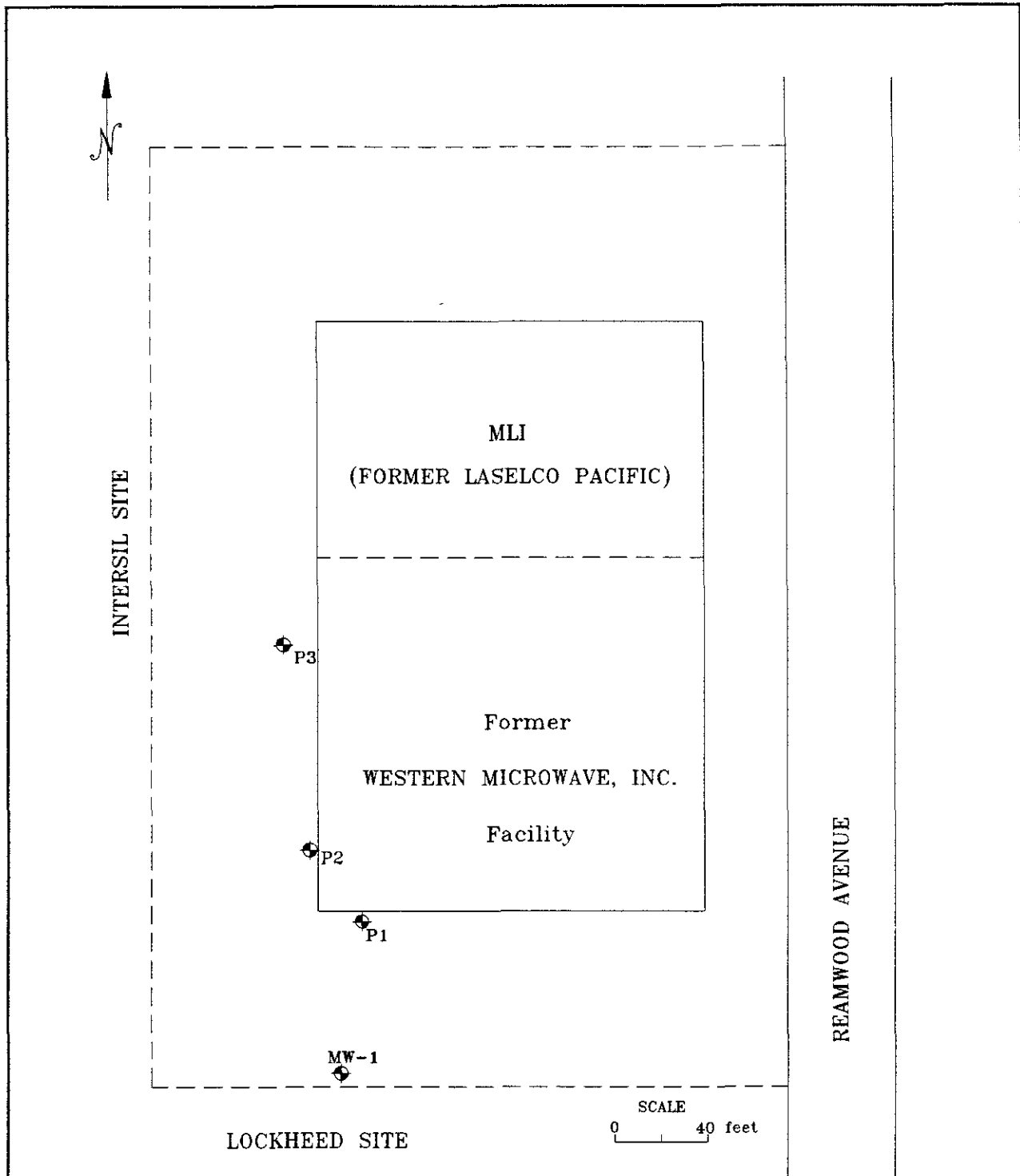
**TABLE 2**


**SUMMARY OF CHEMICALS DETECTED IN GROUNDWATER SAMPLES  
COLLECTED IN NOVEMBER 1994  
AT 1271 REAMWOOD AVENUE, SUNNYVALE, CALIFORNIA**


CHEMICAL	WELL ID					MCL
	P1	P2	P3	MW-1		
PCE	35	910	53	ND	5	
TCE	210	610	190	160	5	
trans-1,2-DCE	ND	ND	15	ND	10	
Vinyl Chloride	ND	ND	14	ND	0.5	
Toluene	ND	33	ND	ND	-	
1,3-DCB	ND	ND	30	ND	-	
1,2-DCB	ND	ND	5.9	ND	-	

ND...Not Detected  
PCE...Tetrachloroethene  
TCE...Trichloroethene  
trans-1,2-DCE...trans-1,2-Dichloroethylene  
1,3-DCB...1,3-Dichlorobenzene  
1,2-DCB...1,2-Dichlorobenzene  
MCL...Maximum Contaminant Level

Note: All values in parts per billion (ppb).



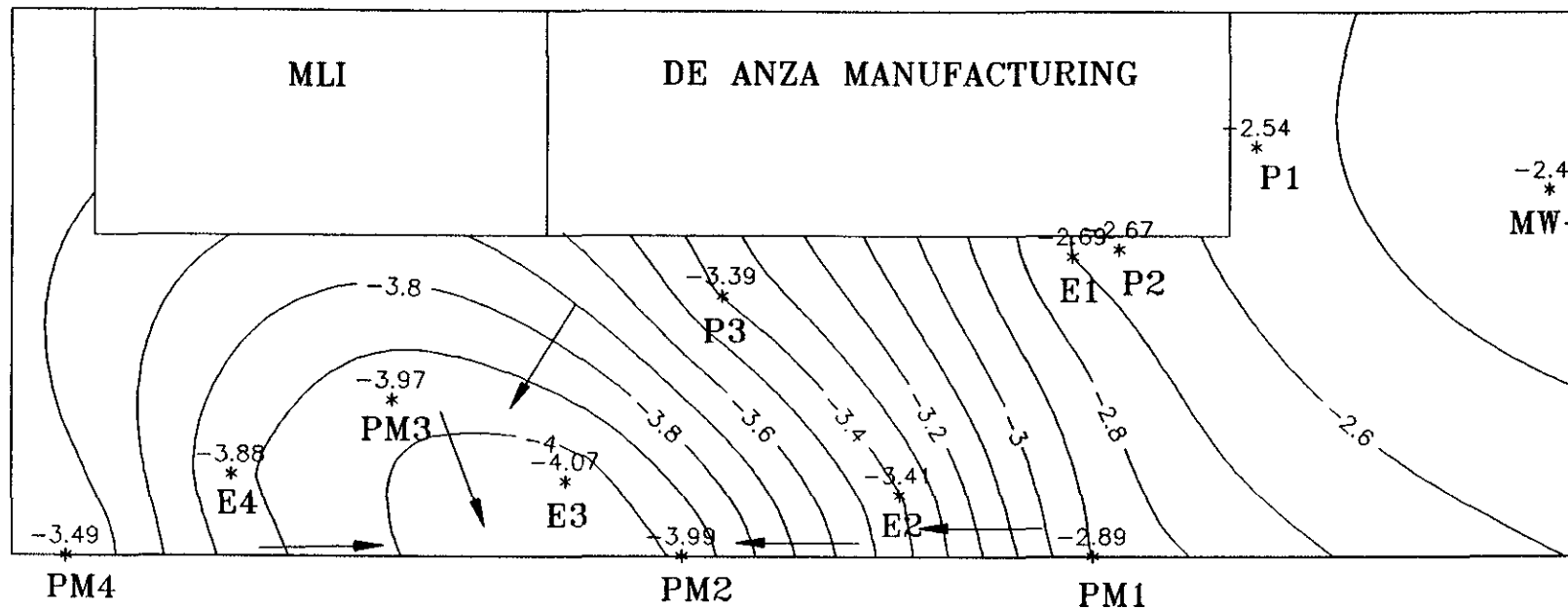
EXPLANATION	
	GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION

 ALFA ENVIRONMENTAL REMEDIATION SERVICES	
Project No. 7714	Drawn by: V.N.C.
Date: 11/11/94	Checked by: M.D.K.

**SITE PLAN**  
 1271 REAMWOOD AVENUE,  
 SUNNYVALE, CALIFORNIA

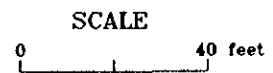
Figure  
1



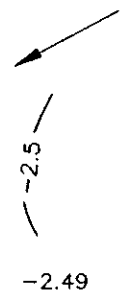


INTERSIL SITE

NORTH



EXPLANATION



- GROUNDWATER FLOW DIRECTION
- GROUNDWATER ELEVATION CONTOUR
- GROUNDWATER ELEVATION IN FEET REFERENCED TO MEAN SEA LEVEL (MSL)
- P2 \* GROUNDWATER MONITORING WELL
- E1 \* EXTRACTION WELL
- PM1 \* PIEZOMETER

BASE MAP: FIELD OBSERVATIONS

**ALFA ENVIRONMENTAL REMEDIATION SERVICES**

Project No.: 7713      Drawn by: V. N. C.  
Date: 11/15/94      Checked by: M. D. K.

1271-1273 REAMWOOD AVENUE  
SUNNYVALE, CALIFORNIA  
GROUNDWATER POTENTIOMETRIC MAP  
NOVEMBER 3, 1994

Plate  
2

**Trace Analysis Laboratory, Inc.**

3423 Investment Boulevard, #8 • Hayward, California 94545

Telephone (510) 783-6960

Facsimile (510) 783-1512



November 9, 1994

Mr. Valentin Constantinescu  
Western Microwave, Inc.  
495 Mercury Drive  
Sunnyvale, CA 94086

Dear Mr. Constantinescu:

Trace Analysis Laboratory received five water samples on November 4, 1994, for your Project W.M.I. (our custody log number 4905).

These samples were analyzed by EPA 624. Our analytical report and the completed chain of custody form are enclosed for your review.

Trace Analysis Laboratory is certified under the California Environmental Laboratory Accreditation Program. Our certification number is 1199.

If you should have any questions or require additional information, please call me.

Sincerely yours,

A handwritten signature in cursive script, appearing to read 'Scott T. Ferriman'.

Scott T. Ferriman  
Project Specialist

Enclosures

## Trace Analysis Laboratory, Inc.

3423 Investment Boulevard, #8 • Hayward, California 94545

Telephone (510) 783-6960

Facsimile (510) 783-1512



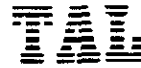
LOG NUMBER: 4905  
 DATE SAMPLED: 11/03/94  
 DATE RECEIVED: 11/04/94  
 DATE ANALYZED: 11/05/94  
 DATE REPORTED: 11/09/94

CUSTOMER: Western Microwave, Inc.  
 REQUESTER: Valentin Constantinescu of Alfa Environmental Services, Inc.  
 PROJECT: W.M.I.

Sample Type: Water

Method and Constituent:	Units	P1		P2		P3	
		Concen- tration	Reporting Limit	Concen- tration	Reporting Limit	Concen- tration	Reporting Limit
EPA Method 624:							
Chloromethane	ug/l	ND	5.0	ND	25	ND	5.0
Bromomethane	ug/l	ND	5.0	ND	25	ND	5.0
Dichlorodifluoromethane	ug/l	ND	5.0	ND	25	ND	5.0
Vinyl Chloride	ug/l	ND	10	ND	50	14	10
Chloroethane	ug/l	ND	10	ND	50	ND	10
Iodomethane	ug/l	ND	100	ND	500	ND	100
Methylene Chloride	ug/l	ND	20	ND	100	ND	20
Acetone	ug/l	ND	100	ND	500	ND	100
Carbon Disulfide	ug/l	ND	100	ND	500	ND	100
Trichlorofluoromethane	ug/l	ND	10	ND	50	ND	10
1,1-Dichloroethene	ug/l	ND	5.0	ND	25	ND	5.0
Allyl Chloride	ug/l	ND	5.0	ND	25	ND	5.0
1,1-Dichloroethane	ug/l	ND	5.0	ND	25	ND	5.0
Trans-1,2-Dichloroethene	ug/l	ND	5.0	ND	25	15	5.0
Chloroform	ug/l	ND	5.0	ND	25	ND	5.0
2-Butanone (MEK)	ug/l	ND	100	ND	500	ND	100
1,2-Dichloroethane	ug/l	ND	5.0	ND	25	ND	5.0
Dibromomethane	ug/l	ND	5.0	ND	25	ND	5.0
1,1,1-Trichloroethane	ug/l	ND	5.0	ND	25	ND	5.0
Carbon Tetrachloride	ug/l	ND	5.0	ND	25	ND	5.0

Concentrations reported as ND were not detected at or above the reporting limit.



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DATE SAMPLED: 11/03/94  
DATE RECEIVED: 11/04/94  
DATE ANALYZED: 11/05/94  
DATE REPORTED: 11/09/94  
PAGE: Two

Sample Type: Water

<u>Method and Constituent</u>	<u>Units</u>	<u>P1</u>		<u>P2</u>		<u>P3</u>	
		<u>Concen- tration</u>	<u>Reporting Limit</u>	<u>Concen- tration</u>	<u>Reporting Limit</u>	<u>Concen- tration</u>	<u>Reporting Limit</u>
EPA Method 624 (Continued):							
Vinyl Acetate	ug/l	ND	50	ND	250	ND	50
Bromodichloromethane	ug/l	ND	5.0	ND	25	ND	5.0
1,2-Dichloropropane	ug/l	ND	5.0	ND	25	ND	5.0
Cis-1 3-Dichloropropene	ug/l	ND	5.0	ND	25	ND	5.0
Bromoacetone	ug/l	ND	100	ND	500	ND	100
Trichloroethene	ug/l	210	5.0	610	25	190	5.0
Benzene	ug/l	ND	5.0	ND	25	ND	5.0
Chlorodibromomethane	ug/l	ND	5.0	ND	25	ND	5.0
1,1,2-Trichloroethane	ug/l	ND	5.0	ND	25	ND	5.0
Trans-1 3-Dichloropropene	ug/l	ND	5.0	ND	25	ND	5.0
1 2-Dibromoethane (EDB)	ug/l	ND	5.0	ND	25	ND	5.0
2-Chloroethylvinyl Ether	ug/l	ND	10	ND	50	ND	10
Acrolein	ug/l	ND	100	ND	500	ND	100
Bromoform	ug/l	ND	5.0	ND	25	ND	5.0
1,1,1,2-Tetrachloroethane	ug/l	ND	5.0	ND	25	ND	5.0
4-Methyl-2-Pentanone (MIBK)	ug/l	ND	50	ND	250	ND	50
2-Hexanone	ug/l	ND	50	ND	250	ND	50
1,2,3-Trichloropropane	ug/l	ND	5.0	ND	25	ND	5.0
1,1,2,2-Tetrachloroethane	ug/l	ND	5.0	ND	25	ND	5.0
Tetrachloroethene	ug/l	35	5.0	910	25	53	5.0
Toluene	ug/l	ND	5.0	33	25	ND	5.0
Chlorobenzene	ug/l	ND	5.0	ND	25	ND	5.0
Ethyl Benzene	ug/l	ND	5.0	ND	25	ND	5.0

Concentrations reported as ND were not detected at or above the reporting limit.



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 PAGE: Three

Sample Type: Water

Method and Constituent	Units	P1		P2		P3	
		Concen- tration	Reporting Limit	Concen- tration	Reporting Limit	Concen- tration	Reporting Limit
EPA Method 624 (Continued):							
1,2-Dibromo 3-Chloropropane	ug/l	ND	100	ND	500	ND	100
Benzyl Chloride	ug/l	ND	100	ND	500	ND	100
Styrene	ug/l	ND	5.0	ND	25	ND	5.0
Xylenes	ug/l	ND	15	ND	75	ND	15
1,3-Dichlorobenzene	ug/l	ND	5.0	ND	25	30	5.0
1,2-Dichlorobenzene	ug/l	ND	5.0	ND	25	5.9	5.0
1,4-Dichlorobenzene	ug/l	ND	5.0	ND	25	ND	5.0

Surrogate % Recovery

1,2-Dichloroethane-d4	113	125	117
Toluene-d8	108	119	114
4-Bromofluorobenzene	99	114	102

Concentrations reported as ND were not detected at or above the reporting limit.

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 DATE RECEIVED: 11/04/94  
 DATE ANALYZED: 11/05/94  
 DATE REPORTED: 11/09/94  
 PAGE: Four

Sample Type: Water

Method and Constituent:	Units	MW-1		Blank		Method Blank	
		Concen- tration	Reporting Limit	Concen- tration	Reporting Limit	Concen- tration	Reporting Limit
EPA Method 624:							
Chloromethane	ug/l	ND	5.0	ND	5.0	ND	5.0
Bromomethane	ug/l	ND	5.0	ND	5.0	ND	5.0
Dichlorodifluoromethane	ug/l	ND	5.0	ND	5.0	ND	5.0
Vinyl Chloride	ug/l	ND	10	ND	10	ND	10
Chloroethane	ug/l	ND	10	ND	10	ND	10
Iodomethane	ug/l	ND	100	ND	100	ND	100
Methylene Chloride	ug/l	ND	20	ND	20	ND	20
Acetone	ug/l	ND	100	ND	100	ND	100
Carbon Disulfide	ug/l	ND	100	ND	100	ND	100
Trichlorofluoromethane	ug/l	ND	10	ND	10	ND	10
1,1-Dichloroethene	ug/l	ND	5.0	ND	5.0	ND	5.0
Allyl Chloride	ug/l	ND	5.0	ND	5.0	ND	5.0
1,1-Dichloroethane	ug/l	ND	5.0	ND	5.0	ND	5.0
Trans-1,2-Dichloroethene	ug/l	ND	5.0	ND	5.0	ND	5.0
Chloroform	ug/l	ND	5.0	ND	5.0	ND	5.0
2-Butanone (MEK)	ug/l	ND	100	ND	100	ND	100
1,2-Dichloroethane	ug/l	ND	5.0	ND	5.0	ND	5.0
Dibromomethane	ug/l	ND	5.0	ND	5.0	ND	5.0
1,1,1-Trichloroethane	ug/l	ND	5.0	ND	5.0	ND	5.0
Carbon Tetrachloride	ug/l	ND	5.0	ND	5.0	ND	5.0

Concentrations reported as ND were not detected at or above the reporting limit.

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 PAGE: Five

Sample Type: Water

Method and Constituent	Units	MW-1		Blank		Method Blank	
		Concen- tration	Reporting Limit	Concen- tration	Reporting Limit	Concen- tration	Reporting Limit
EPA Method 624 (Continued):							
Vinyl Acetate	ug/l	ND	50	ND	50	ND	50
Bromodichloromethane	ug/l	ND	5.0	ND	5.0	ND	5.0
1,2-Dichloropropane	ug/l	ND	5.0	ND	5.0	ND	5.0
Cis-1 3-Dichloropropene	ug/l	ND	5.0	ND	5.0	ND	5.0
Bromoacetone	ug/l	ND	100	ND	100	ND	100
Trichloroethene	ug/l	160	5.0	ND	5.0	ND	5.0
Benzene	ug/l	ND	5.0	ND	5.0	ND	5.0
Chlorodibromomethane	ug/l	ND	5.0	ND	5.0	ND	5.0
1,1,2-Trichloroethane	ug/l	ND	5.0	ND	5.0	ND	5.0
Trans-1 3-Dichloropropene	ug/l	ND	5.0	ND	5.0	ND	5.0
1 2-Dibromoethane (EDB)	ug/l	ND	5.0	ND	5.0	ND	5.0
2-Chloroethylvinyl Ether	ug/l	ND	10	ND	10	ND	10
Acrolein	ug/l	ND	100	ND	100	ND	100
Bromoform	ug/l	ND	5.0	ND	5.0	ND	5.0
1,1,1,2-Tetrachloroethane	ug/l	ND	5.0	ND	5.0	ND	5.0
4-Methyl-2-Pentanone (MIBK)	ug/l	ND	50	ND	50	ND	50
2-Hexanone	ug/l	ND	50	ND	50	ND	50
1,2,3-Trichloropropane	ug/l	ND	5.0	ND	5.0	ND	5.0
1,1,2,2-Tetrachloroethane	ug/l	ND	5.0	ND	5.0	ND	5.0
Tetrachloroethene	ug/l	ND	5.0	ND	5.0	ND	5.0
Toluene	ug/l	ND	5.0	ND	5.0	ND	5.0
Chlorobenzene	ug/l	ND	5.0	ND	5.0	ND	5.0
Ethyl Benzene	ug/l	ND	5.0	ND	5.0	ND	5.0

Concentrations reported as ND were not detected at or above the reporting limit.



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 PAGE: Six

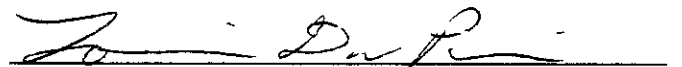
Sample Type: Water

Method and Constituent	Units	MW-1		Blank		Method Blank	
		Concen- tration	Reporting Limit	Concen- tration	Reporting Limit	Concen- tration	Reporting Limit
EPA Method 624 (Continued):							
1,2-Dibromo 3-Chloropropane	ug/l	ND	100	ND	100	ND	100
Benzyl Chloride	ug/l	ND	100	ND	100	ND	100
Styrene	ug/l	ND	5.0	ND	5.0	ND	5.0
Xylenes	ug/l	ND	15	ND	15	ND	15
1,3-Dichlorobenzene	ug/l	ND	5.0	ND	5.0	ND	5.0
1,2-Dichlorobenzene	ug/l	ND	5.0	ND	5.0	ND	5.0
1,4-Dichlorobenzene	ug/l	ND	5.0	ND	5.0	ND	5.0

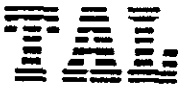
Surrogate % Recovery

1,2-Dichloroethane-d4	109	106	106
Toluene-d8	112	105	99
4-Bromofluorobenzene	98	97	100

Concentrations reported as ND were not detected at or above the reporting limit.

  
 Louis W. DuPuis  
 Quality Assurance/Quality Control Manager





CHAIN OF CUSTODY RECORD

4905

Proj.No.		Project Name <i>W.M.I.</i>		No. of Con- tainers	Analyses: <i>VOLEATILE ORGANICS EPA 824</i>					REMARKS
Company Name and Address: <i>WESTERN 495 MERCURY DR. MICROWAVE, INC. SUNNYVALE, CA 94086</i>										
Project Manager: <i>VALENTIN CONSTANTINESCU</i>										
Sample ID	Date	Time	Site Location							
<i>BLANK</i>	<i>11/3/94</i>	<i>11:10</i>	<i>1271 REAMWOOD</i>	<i>2</i>	<i>X</i>					
<i>P1</i>	<i>11/3/94</i>	<i>11:53</i>		<i>2</i>	<i>X</i>					
<i>P2</i>	<i>11/3/94</i>	<i>12:38</i>		<i>2</i>	<i>X</i>					
<i>P3</i>	<i>11/3/94</i>	<i>13:07</i>		<i>2</i>	<i>X</i>					
<i>MW-1</i>	<i>11/3/94</i>	<i>13:42</i>		<i>2</i>	<i>X</i>					
Sampled by: (signature) <i>Valentin Constantinescu</i>		Date/Time <i>11/3/94 13:42</i>		Relinquished by: (signature) <i>Valentin Constantinescu</i>		Date/Time <i>11/4/94 8:45</i>				
Received by: (signature) _____		Date/Time		Relinquished by: (signature) _____		Date/Time				
Received for Laboratory by: (signature) <i>Scott J. Ferrin</i>			Date/Time <i>11/4/94 8:45 AM</i>		TURNAROUND TIME <i>NORMAL</i>					
REMARKS <i>NORMAL TURNAROUND TIME</i>										
<i>walk in water, 2 VOAs HCl, each, which, tray 4, by T&amp;V</i>										