

**CAPE**  
**ENVIRONMENTAL**  
**MANAGEMENT**  
**I N C**

**TRANSMITTAL**  
**LETTER**

ENVIRONMENTAL  
PROTECTION  
SECTION - 1 PH 2-13

Juliet Shin  
Attn:

Date Oct. 30, 1995

Dept. of Environmental Health  
Co. name

RE: Addenda

1131 Harbor Bay Parkway # 250  
Address

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| <u>1</u> | <u>Addenda to Second Quarter Groundwater Monitoring Report, Aug. 1995 - Alameda Federal Center STID 4655</u> |
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|          |  |
|          |  |
|          |  |

REMARKS

20280 South Vermont Ave.  
Suite 250  
Torrance, CA 90502

Phone 310/532-4500  
Fax 310/532-6022

From Larry Harlan

Cape Job. # 24036.24

**C A P E**  
**ENVIRONMENTAL**  
**MANAGEMENT**  
**I N C**

ENVIRONMENTAL  
PROTECTION  
951201-1 P# 2-13

October 30, 1995

Ms. Juliet Shin  
Senior Hazardous Materials Specialist  
Alameda County Department of Environmental Health  
Environmental Protection Division  
1131 Harbor Bay Parkway, #250  
Alameda, California 94502-6577

SUBJECT: Addenda to Second Quarter Groundwater Monitoring Report, August 1995  
Alameda Federal Center  
620 Central Avenue, Alameda, California  
STID 4655

Dear Ms. Shin:

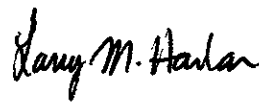
Please find enclosed an addenda to the second quarter, August 1995, groundwater monitoring report for the above-referenced project. This addenda includes analytical results of water samples obtained from MW-1 and water level measurements for the month of September.

If you have further questions or require additional information, please contact the undersigned at (310) 532-4500.

Respectfully Submitted,

**CAPE ENVIRONMENTAL MANAGEMENT, INC.**

Prepared by:



Larry M. Harlan  
Project Geologist

Reviewed by:



William W. Millar, RG  
Senior Geologist

Attachment

cc James Lew/GSA Region 9  
Project File

2025 RELEASE UNDER E.O. 14176

**C A P E**

**ENVIRONMENTAL  
MANAGEMENT**

**I N C**

**Addenda to Second Quarter  
Groundwater Monitoring Report  
(August, 1995)**

**Alameda Federal Center  
620 Central Avenue  
Alameda, California**

GSA Project No. RCA21602  
Cape Project No. 2403C.24

prepared for:

**General Services Administration, Pacific Rim Region**  
525 Market Street  
San Francisco, California 94105-2799

---

prepared by:

**Cape Environmental Management Inc**  
20280 South Vermont Avenue  
Suite 250  
Torrance, California 90502

October 1995

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Appendix A - Groundwater Monitor Well Sampling and Field Data Sheet  
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## 1.0 INTRODUCTION

On behalf of General Services Administration (GSA), Cape Environmental Management Inc (Cape) is performing quarterly groundwater monitoring and testing at the Alameda Federal Center, located at 620 Central Avenue, Alameda, California. The purpose of the groundwater monitoring program is to investigate the extent and severity of impacted groundwater due to underground storage tank (UST) releases. This addendum contains results of volatile organic analyses for groundwater sampled at MW-1 and static water level measurements for all monitoring wells conducted on October 5, 1995. Also, this addendum supplements the Second Quarter Groundwater Monitoring Report (August 1995), which was prepared by Cape and submitted to the Alameda County Department of Environmental Health (DEH) on October 2, 1995.

## 2.0 ANALYTICAL AND MONITORING RESULTS

On October 5, 1995 Cape collected water samples from monitoring well MW-1 and recorded water level measurements of wells MW-1, MW-2R, MW-3, MW-4, TW/MW-5, and MW-6. Prior to collection of the water sample, MW-1 was purged of approximately 15 gallons. Appendix A contains the groundwater monitor well sampling and field data sheet for MW-1.

### 2.1 Analytical Results

Concentrations of total volatile hydrocarbons as gasoline (TVH) and benzene, toluene, ethylbenzene, and xylenes (BTEX) were reported to be below respective method detection limits (not detected) for groundwater samples collected at MW-1. Concentrations of volatile halocarbons (VH) was reported at 7.4 micrograms per liter ( $\mu\text{g/l}$ ) cis-1, 2-dichloroethene, 3.4  $\mu\text{g/l}$  trans-1, 2-dichloroethene, and 1.3  $\mu\text{g/l}$  trichloroethene. Second quarter groundwater sample analytical results, to include volatile organic analyses of MW-1, are tabulated in Tables 1 and 2. Table 3 presents a summary of groundwater sample analytical data for MW-1. Appendix B contains the certified laboratory analytical report and sample chain-of-custody documentation.

The principal change since the first quarter of groundwater monitoring at MW-1 is that water samples are not reported to contain concentrations of benzene, ethylbenzene, and total xylenes as detected in low concentrations previously. Concentration of the volatile halocarbon cis-1, 2-dichloroethene increased from 3 to 7.4  $\mu\text{g/l}$ , trans-1, 2-dichloroethene decreased from 7 to 1.3  $\mu\text{g/l}$ , and trichloroethene concentration was reported near the previous level of 3  $\mu\text{g/l}$ .

### 2.2 Groundwater Gradient Determination

Monthly static water level (SWL) gauging was performed in the groundwater monitoring wells. A summary of SWL data for the groundwater monitoring wells to date is presented in Table 4. Survey graphics used in determining groundwater gradient are provided on Figure 1 - Groundwater Gradient Map (October 5, 1995) All elevations determined for this study are reduced to mean sea level datum

Groundwater gradient at Tank 1 and 2 Area was detected by concurrent sounding of all five monitoring points. Depth to static groundwater from each reference point was then reduced to mean

sea level elevations and a graphic 3-point solution method used to establish groundwater gradient and direction. The result of the determination is an approximate groundwater gradient = 0.0029 ft/ft (approximately 15.3 ft/mile) with a flow direction compass bearing of approximately 186° (SSW).

### 3.0 RECOMMENDATIONS

Based on previous soil and groundwater investigation information, and in effort to reduce project costs, Cape is providing the following recommendations:

- ◆ To date the maximum concentration of total volatile hydrocarbons as gasoline (TVH) in soil was reported at 1.5 mg/kg and was obtained from a boring adjacent to Tank 1, reported by TKS Consulting Ltd. in May 1994. TVH has not been reported in subsequent soil and groundwater investigations to date; therefore, Cape recommends discontinuing laboratory analyses for TVH from the groundwater sampling program.
- ◆ Previous investigations have identified the presence of BTEX in soil samples obtained from borings adjacent to Tank 1 and in groundwater samples obtained from MW-1, down-gradient from Tank 1 based on groundwater gradient measurements for the past three (3) months. Analysis for BTEX in soil and groundwater samples from all other locations indicated that BTEX compounds are not present; therefore, Cape recommends discontinuing laboratory analyses for BTEX from the groundwater sampling program for monitoring wells MW-2R, MW-4, TW/MW-5, and MW-6. Sampling of monitoring well MW-1 for BTEX shall continue.
- ◆ Analytical results for total dissolved solids (TDS) was below the recommended state maximum contaminant level (MCL) of 500 mg/l for drinking water in all samples, indicating that a potential source for potable water exists at the site. Cape recommends discontinuing laboratory analysis for TDS in future monitoring.

**Table 1**  
**Second Quarter Analytical Results August 1995**  
**Petroleum Compounds and Total Dissolved Solids (TDS)**

| Sample ID | Date Sampled | O&G (mg/L) | TEPH (µg/L)           | TVH (µg/L) | B (µg/L) | T (µg/L) | E (µg/L) | X (µg/L) | TDS (mg/L) |
|-----------|--------------|------------|-----------------------|------------|----------|----------|----------|----------|------------|
| MW-1      | 8/31/95      | ND         | 840 (D)<br>1,400 (MO) | ND*        | ND*      | ND*      | ND*      | ND*      | 410        |
| MW-2R     | 8/31/95      | ND         | 140 (D)               | ND         | ND       | ND       | ND       | ND       | 390        |
| MW-4      | 8/31/95      | ND         | 190 (D)               | ND         | ND       | ND       | ND       | ND       | 410        |
| TW/MW-5   | 8/31/95      | ND         | 230 (D)               | ND         | ND       | ND       | ND       | ND       | 380        |
| MW-6      | 8/31/95      | ND         | 370 (D)               | ND         | ND       | ND       | ND       | ND       | 450        |

NOTES:

\* Date of sample collection October 5, 1995.

mg/L- Milligrams per liter.

µg/L- Micrograms per liter.

ND- Not detected at or above Reporting Limit (RL).

O&G- Hydrocarbon oil and grease using Test Method SMWW 5520 with RL of 5 mg/L.

TEPH-Total extractable petroleum hydrocarbon using California Department of Health Services (DOHS) Method with RL of 50 µg/L. Quantified ranges for diesel and motor oil are labeled D and MO, respectively.

TVH- Total volatile hydrocarbons as gasoline using California DOHS Method with RL of 50 µg/L.

BTEX-Benzene, toluene, ethyl benzene and total xylenes using EPA Test Method 8020 with RL of 0.5 µg/L.

TDS- Total dissolved solids using EPA Test Method 160.1 with RL of 10 µg/L.

**Table 2**  
**Second Quarter Analytical Results August 1995**  
**Volatile Halocarbons and Polynuclear Aromatic Hydrocarbons**

| Sample ID | Date Sampled | VH ( $\mu\text{g/L}$ )  | PNA ( $\mu\text{g/L}$ )             |
|-----------|--------------|---|-------------------------------------|
| MW-1      | 8/31/95      | * 7.4 cis-1, 2-Dichloroethane (1.0)<br>* 3.4 trans-1, 2-Dichloroethane (1.0)<br>* 1.3 trichloroethene (1.0) | ND                                  |
| MW-2R     | 8/31/95      | ND  | ND                                  |
| MW-4      | 8/31/95      | ND  | ND                                  |
| TW/MW-5   | 8/31/95      | ND  | 14 bis(2-Ethylhexyl)phthalate (9.4) |
| MW-6      | 8/31/95      | ND  | ND                                  |

NOTES: Results indicate concentration of compound detected and corresponding reporting limit (RL) in parenthesis following respective compound.

\* Date of sample collection October 5, 1995.

$\mu\text{g/L}$ - Micrograms per liter.

ND- Compounds not detected at or above RL.

VH- Volatile halocarbons for EPA Test Method 8010 compounds using EPA Test Method 8240 with compound RL's ranging from 1.0  $\mu\text{g/L}$  to 20  $\mu\text{g/L}$ .

PNA- Polynuclear aromatic hydrocarbons using EPA Test Method 8270 with RL's ranging from 9.4 to 47  $\mu\text{g/L}$ .



**Table 3**  
**Summary of Water Sample Analytical Results**  
**Alameda Federal Center, Groundwater Monitoring Well MW-1**

| Collection Date                                     | 5/18/95 | 8/31/95                       | 10/5/95 |  |
|---|---------|-------------------------------|---------|--|
| <b>Compound</b>                                     |         |                               |         |  |
| O&G (mg/l)(SMWW 5520)                               | ND      | ND                            | NA      |  |
| TEPH (µg/l)(DOHS 8015 mod.)                         | 5,500   | 840 diesel<br>1,400 motor oil | NA      |  |
| TVH (µg/l)(DOHS 8015 mod.)                          | ND      | NA                            | ND      |  |
| Benzene (µg/l)(EPA 8020)                            | 1.1     | NA                            | ND      |  |
| Toluene (µg/l)(EPA 8020)                            | ND      | NA                            | ND      |  |
| Ethyl Benzene (µg/l)(EPA8020)                       | 0.9     | NA                            | ND      |  |
| Total Xylenes (µg/l)(EPA 8020)                      | 1.6     | NA                            | ND      |  |
| Tot. dis. solids (mg/l)(EPA 160.1)                  | NA      | 410                           | NA      |  |
| <b>Volatile Halocarbons (EPA 8010)</b>              |         |                               |         |  |
| cis-1,2-dichloroethene (µg/l)                       | 3       | NA                            | 7.4     |  |
| trans-1,2-dichloroethene (µg/l)                     | 3       | NA                            | 3.4     |  |
| trichloroethene (µg/l)                              | 7       | NA                            | 1.3     |  |
| tetra-chloroethene (µg/l)                           | 1       | NA                            | ND      |  |
| chloroform (µg/l)                                   | 1       | NA                            | ND      |  |
| <b>Polynuclear Aromatic Hydrocarbons (EPA 8270)</b> |         |                               |         |  |
| bis(2-ethylhexyl)phthalate (µg/l)                   | ND      | ND                            | NA      |  |
| naphthalene (µg/l)                                  | ND      | ND                            | NA      |  |
| fluoranthene (µg/l)                                 | ND      | ND                            | NA      |  |
| pyrene (µg/l)                                       | ND      | ND                            | NA      |  |
| chrysene (µg/l)                                     | ND      | ND                            | NA      |  |
| benzo(a)pyrene (µg/l)                               | ND      | ND                            | NA      |  |

Notes:

|      |   |
|------|---|
| mg/l | milligrams per liter  |
| ug/l | micrograms per liter  |
| ND   | not detected at or above the method detection limit (MDL)   |
| NA   | Not Analyzed  |
| O&G  | hydrocarbon oil and grease using test method SMWW 5520  |
| TEPH | total extractable petroleum hydrocarbons using California Department of Health Services (DOHS) Method EPA 8015 modified |
| TVH  | total Volatile hydrocarbons as gasoline using California DOHS Method EPA 8015 modified                                  |
| TDS  | Total dissolved solids using EPA Method 160.1   |

**Table 4**  
**Summary of Static Water Level (SWL) Measurements**  
**Groundwater Monitoring Wells, Alameda Federal Center**  
**620 Central Avenue, Alameda, California**

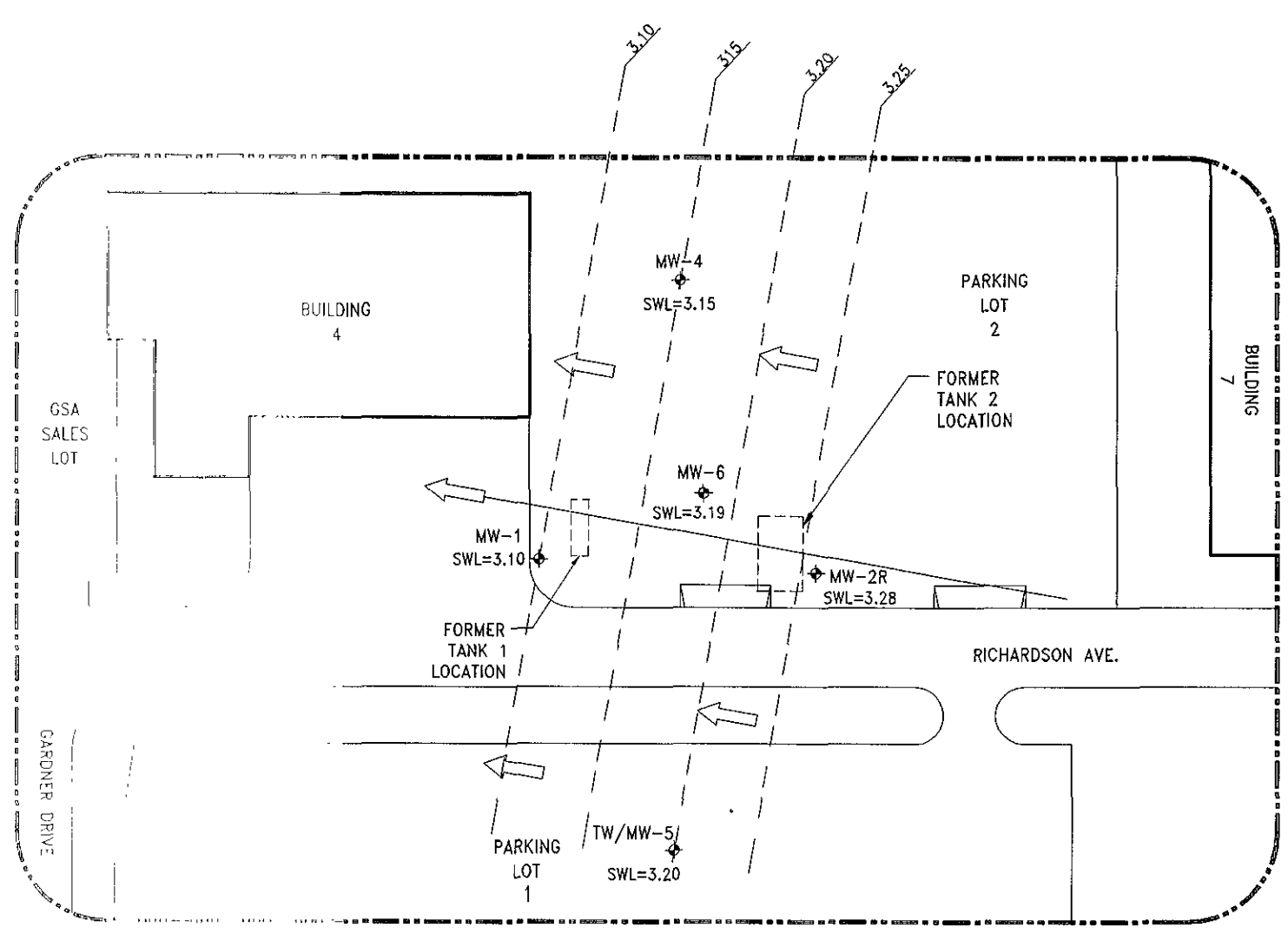
| Location | Date    | Time | SWL  | Casing Elevation | Water Elevation |
|----------|---------|------|------|------------------|-----------------|
| MW-1     | 5/18/95 | 1813 | 4.20 | 8.19             | 3.99            |
|          | 8/31/95 | 1125 | 4.93 | 8.19             | 3.26            |
|          | 10/5/95 | 1252 | 5.09 | 8.19             | 3.10            |
| MW-2R    | 5/18/95 | 1822 | 4.14 | 8.27             | 4.13            |
|          | 8/31/95 | 1110 | 4.78 | 8.27             | 3.49            |
|          | 10/5/95 | 1248 | 4.99 | 8.27             | 3.28            |
| MW-3     | 5/16/95 | 1415 | 4.72 | 9.00             | 4.28            |
|          | 8/31/95 | 1119 | 5.12 | 9.00             | 3.88            |
|          | 10/5/95 | 1225 | 5.20 | 9.00             | 3.80            |
| MW-4     | 5/18/95 | 1810 | 4.52 | 8.53             | 4.01            |
|          | 8/31/95 | 1114 | 5.18 | 8.53             | 3.35            |
|          | 10/5/95 | 1242 | 5.38 | 8.53             | 3.15            |
| TW/MW-5  | 5/18/95 | 1819 | 4.27 | 8.37             | 4.10            |
|          | 8/31/95 | 1107 | 4.98 | 8.37             | 3.39            |
|          | 10/5/95 | 1233 | 5.17 | 8.37             | 3.20            |
| MW-6     | 5/18/95 | 1819 | 4.27 | 8.61             | 4.10            |
|          | 8/31/95 | 1112 | 5.22 | 8.61             | 3.39            |
|          | 10/5/95 | 1239 | 5.42 | 8.61             | 3.19            |

NOTES:

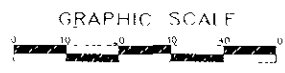
SWL in feet below top of well casing.  
Elevations in feet above mean sea level.

**FIGURES**

C A P E  
**ENVIRONMENTAL  
 MANAGEMENT**  
 I N C  
 20280 S Vermont Ave.  
 Suite 250  
 Torrance, CA 90502  
 (310) 532-4500



- LEGEND**
- MW EXISTING MONITORING WELL
  - [Dashed Box] APPROX. LOCATION OF REMOVED UST's
  - [Arrow] GROUNDWATER GRADIENT
  - SWL STATIC WATER LEVEL ELEVATIONS IN FEET ABOVE MEAN LEVEL
  - [Dashed Line] EQUIPOTENTIAL ELEVATION CONTOUR



|   |  |                          |                             |
|---|--|--------------------------|-----------------------------|
| SHEET TITLE:<br><b>FIGURE 1 - GROUNDWATER GRADIENT MAP (OCT. 5, 1995)</b> |  | CHECKED BY:<br>L. HARLAN | PROJECT NUMBER:<br>2403C.24 |
| PROJECT TITLE:<br>ALAMEDA FEDERAL CENTER, ALAMEDA, CA                     |  | DRAWN BY:<br>J. GONZALES | DATE:<br>OCT. 30, '95       |
|   |  |                          | SHEET:<br>1 OF 1            |

**APPENDIX A**

**GROUNDWATER MONITOR WELL  
SAMPLING AND FIELD DATA SHEET**

# Groundwater Monitor Well Sampling & Field Data Sheet

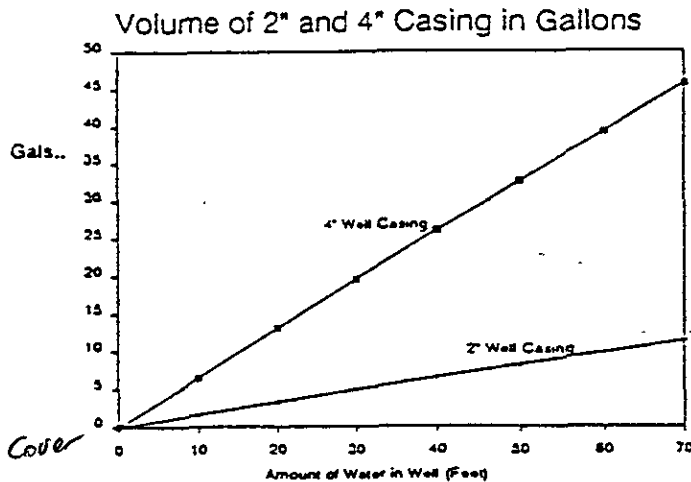
Location No. Alameda Federal Center  
 Sample No. \_\_\_\_\_  
 Project/Client: 2403C.24 / LSA  
 Location: Alameda  
 Job No. \_\_\_\_\_

Date: 10/5/95 Time: 1333  
 Weather: \_\_\_\_\_  
 Conditions: Calm clear ~ 74°  
 Air Temperature \_\_\_\_\_  
 Personnel: Larry Hartan

**WELL INFORMATION**

Casing, Dia.: 2" Ø  
 Stainless Steel  
 Steel  
 PVC  
 Teflon  
 Other \_\_\_\_\_  
 Water Level: 5.085  
 Total Depth: 13.8  
 Measuring Device  
 M-Scope  
 Other Solinst  
 Volume of Water in Casing: 8.7' = 1.5 gal  
 Datum:  
 Top of Surf. Casing  
 Top of Well Casing  
 Other \_\_\_\_\_

Intake, Diameter: 2" Ø  
 Stainless Steel  
 Steel  
 PVC  
 Teflon  
 Other \_\_\_\_\_  
 Well Conditions:  
 Well Clean to Bottom  
 yes,  no  
 Well in Good Condition  
 yes,  no  
 Surface Protection:  
 Clean  yes,  no  
 Condition  
Stripped bolt on Traffic Cover  
 Lock  yes,  no



**Purging Data:**

Method:  
 Bladder Pump  
 Bailer  
 Submersible Pump  
 Peristaltic Pump  
 Other \_\_\_\_\_  
 Materials:  
 Pump/Bailer  
 Teflon  
 Stainless Steel  
 PVC  
 Other \_\_\_\_\_

Tubing/rope  
 Teflon  
 Polypropylene  
 Nylon  
 Other \_\_\_\_\_  
 Pumping Rate ~ 1 gal./min.  
 Elapsed Time 15 minutes  
 Volume Pumped ~ 15 gallons  
 Well Evacuated  yes,  no  
 Number of Well Volumes \_\_\_\_\_  
 Purged \_\_\_\_\_

Purging Equipment  
 Dedicated  
 Prepared Off-Site  
 Field Cleaned

Time Series Data

| Measurement  | 1     | 2     | 3     | 4     |
|--------------|-------|-------|-------|-------|
| Well Volumes | _____ | _____ | _____ | _____ |
| Water Temp.  | _____ | _____ | _____ | _____ |
| pH           | _____ | _____ | _____ | _____ |
| Other        | _____ | _____ | _____ | _____ |

**Sampling Data:**

Method:  
 Bladder Pump  
 Bailer  
 Submersible Pump  
 Peristaltic Pump  
 Other \_\_\_\_\_  
 Materials: Pump/Bailer  
 Teflon  
 Stainless Steel  
 PVC  
 Other \_\_\_\_\_  
 Materials: Tubing/rope \_\_\_\_\_

Teflon  
 Polypropylene  
 Nylon  
 Other \_\_\_\_\_  
 Sampling Equipment  
 Dedicated  
 Prepared Off-Site  
 Field Cleaned  
 Metals Sample Field Filtered  
 Yes  
 No  
 Method \_\_\_\_\_

**Physical & Chemical Data:**

Appearance:  
 Clear  
 Turbid  
 Color \_\_\_\_\_  
 Immiscible Product  
 Other \_\_\_\_\_  
 Filed Condition of Sample  
 Temp \_\_\_\_\_  
 pH \_\_\_\_\_  
 Other \_\_\_\_\_

**Certification:**

This sample was collected and handled in accordance with standard regulatory and corporate procedures

**APPENDIX B**

**CERTIFIED LABORATORY REPORTS AND SAMPLE  
CHAIN OF CUSTODY DOCUMENTATION**



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

A N A L Y T I C A L   R E P O R T

Prepared for:

Cape Environmental INC.  
20280 South Vermont Ave  
Suite 250  
Torrance, CA 90502

Date: 11-OCT-95  
Lab Job Number: 122938  
Project ID: 2403C.24  
Location: Alameda

Reviewed by:

Reviewed by:

This package may be reproduced only in its entirety.





TVH-Total Volatile Hydrocarbons

Client: Cape Environmental INC.  
Project#: 2403C.24  
Location: Alameda

Analysis Method: CA LUFT (EPA 8015M)  
Prep Method: EPA 5030

| Sample #   | Client ID | Batch # | Sampled  | Extracted | Analyzed | Moisture |
|------------|-----------|---------|----------|-----------|----------|----------|
| 122938-001 | MW1       | 23764   | 10/05/95 | 10/11/95  | 10/11/95 |          |

|                  |       |            |
|------------------|-------|------------|
| Analyte          | Units | 122938-001 |
| Diln Fac:        |       | 1          |
| Gasoline         | ug/L  | <50        |
| Surrogate        |       |            |
| Trifluorotoluene | %REC  | 100        |
| Bromobenzene     | %REC  | 104        |



BTXE

Client: Cape Environmental INC.  
 Project#: 2403C.24  
 Location: Alameda

Analysis Method: BTXE  
 Prep Method: EPA 5030

| Sample #   | Client ID | Batch # | Sampled  | Extracted | Analyzed | Moisture |
|------------|-----------|---------|----------|-----------|----------|----------|
| 122938-001 | MW1       | 23764   | 10/05/95 | 10/11/95  | 10/11/95 |          |

| Analyte      | Units | 122938-001 |
|--------------|-------|------------|
| Diln Fac:    |       | 1          |
| Benzene      | ug/L  | <0.5       |
| Toluene      | ug/L  | <0.5       |
| Ethylbenzene | ug/L  | <0.5       |
| m,p-Xylenes  | ug/L  | <0.5       |
| o-Xylene     | ug/L  | <0.5       |

Surrogate

|                  |      |     |
|------------------|------|-----|
| Trifluorotoluene | %REC | 108 |
| Bromobenzene     | %REC | 116 |



Lab #: 122938

BATCH QC REPORT

| TVH-Total Volatile Hydrocarbons |                         |                  |                     |
|---------------------------------|-------------------------|------------------|---------------------|
| Client:                         | Cape Environmental INC. | Analysis Method: | CA LUFT (EPA 8015M) |
| Project#:                       | 2403C.24                | Prep Method:     | EPA 5030            |
| Location:                       | Alameda                 |                  |                     |
| METHOD BLANK                    |                         |                  |                     |
| Matrix:                         | Water                   | Prep Date:       | 10/10/95            |
| Batch#:                         | 23764                   | Analysis Date:   | 10/10/95            |
| Units:                          | ug/L                    |                  |                     |
| Diln Fac:                       | 1                       |                  |                     |

MB Lab ID: QC06340

| Analyte          | Result |                 |  |
|------------------|--------|-----------------|--|
| Gasoline         | <50    |                 |  |
| Surrogate        | %Rec   | Recovery Limits |  |
| Trifluorotoluene | 100    | 65-135          |  |
| Bromobenzene     | 100    | 65-135          |  |



Lab #: 122938

## BATCH QC REPORT

## BTXE

Client: Cape Environmental INC.  
 Project#: 2403C.24  
 Location: Alameda

Analysis Method: BTXE  
 Prep Method: EPA 5030

## METHOD BLANK

Matrix: Water  
 Batch#: 23764  
 Units: ug/L  
 Diln Fac: 1

Prep Date: 10/10/95  
 Analysis Date: 10/10/95

MB Lab ID: QC06340

| Analyte          | Result |                 |
|------------------|--------|-----------------|
| Benzene          | <0.5   |                 |
| Toluene          | <0.5   |                 |
| Ethylbenzene     | <0.5   |                 |
| m,p-Xylenes      | <0.5   |                 |
| o-Xylene         | <0.5   |                 |
| Surrogate        | %Rec   | Recovery Limits |
| Trifluorotoluene | 107    | 65-135          |
| Bromobenzene     | 113    | 65-135          |



Lab #: 122938

BATCH QC REPORT

BTXE

Client: Cape Environmental INC.  
 Project#: 2403C.24  
 Location: Alameda

Analysis Method: BTXE  
 Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Water  
 Batch#: 23764  
 Units: ug/L  
 Diln Fac: 1

Prep Date: 10/10/95  
 Analysis Date: 10/10/95

LCS Lab ID: QC06339

| Analyte          | Result | Spike Added | %Rec # | Limits |
|------------------|--------|-------------|--------|--------|
| Benzene          | 19.1   | 20          | 96     | 65-135 |
| Toluene          | 20.2   | 20          | 101    | 65-135 |
| Ethylbenzene     | 19.7   | 20          | 99     | 65-135 |
| m,p-Xylenes      | 38.1   | 40          | 95     | 65-135 |
| o-Xylene         | 19.9   | 20          | 100    | 65-135 |
| Surrogate        | %Rec   | Limits      |        |        |
| Trifluorotoluene | 107    | 65-135      |        |        |
| Bromobenzene     | 116    | 65-135      |        |        |

# Column to be used to flag recovery and RPD values with an asterisk

Values outside of QC limits

Spike Recovery: 0 out of 5 outside limits



Lab #: 122938

BATCH QC REPORT

TVH-Total Volatile Hydrocarbons

|                                 |                                      |
|---------------------------------|--------------------------------------|
| Client: Cape Environmental INC. | Analysis Method: CA LUFT (EPA 8015M) |
| Project#: 2403C.24              | Prep Method: EPA 5030                |
| Location: Alameda               |                                      |

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

|                    |                         |
|--------------------|-------------------------|
| Field ID: MW1      | Sample Date: 10/05/95   |
| Lab ID: 122938-001 | Received Date: 10/05/95 |
| Matrix: Water      | Prep Date: 10/10/95     |
| Batch#: 23764      | Analysis Date: 10/10/95 |
| Units: ug/L        |                         |
| Diln Fac: 1        |                         |

MS Lab ID: QC06341

| Analyte          | Spike Added | Sample | MS   | %Rec # | Limits |
|------------------|-------------|--------|------|--------|--------|
| Gasoline         | 2006        | <50.00 | 2164 | 108    | 75-125 |
| Surrogate        | %Rec        | Limits |      |        |        |
| Trifluorotoluene | 106         | 69-120 |      |        |        |
| Bromobenzene     | 113         | 70-122 |      |        |        |

MSD Lab ID: QC06342

| Analyte          | Spike Added | MSD    | %Rec # | Limits | RPD # | Limit |
|------------------|-------------|--------|--------|--------|-------|-------|
| Gasoline         | 2006        | 2190   | 109    | 75-125 | 35    | <35   |
| Surrogate        | %Rec        | Limits |        |        |       |       |
| Trifluorotoluene | 108         | 69-120 |        |        |       |       |
| Bromobenzene     | 113         | 70-122 |        |        |       |       |

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits



Curtis &amp; Tompkins, Ltd.

Lab #: 122938

## BATCH QC REPORT

Page 1 of 1

 EPA 8010 Purgeable Halocarbons  
 EPA 8010 Analyte List

 Client: Cape Environmental INC.  
 Project#: 2403C.24  
 Location: Alameda

 Analysis Method: EPA 8240  
 Prep Method: EPA 5030

## METHOD BLANK

 Matrix: Water  
 Batch#: 23699  
 Units: ug/L  
 Diln Fac: 1

 Prep Date: 10/06/95  
 Analysis Date: 10/06/95

MB Lab ID: QC06071

| Analyte                   | Result | Reporting Limit |
|---------------------------|--------|-----------------|
| Chloromethane             | ND     | 2.0             |
| Bromomethane              | ND     | 2.0             |
| Vinyl Chloride            | ND     | 2.0             |
| Chloroethane              | ND     | 2.0             |
| Methylene Chloride        | ND     | 20              |
| Trichlorofluoromethane    | ND     | 1.0             |
| 1,1-Dichloroethene        | ND     | 1.0             |
| 1,1-Dichloroethane        | ND     | 1.0             |
| cis-1,2-Dichloroethene    | ND     | 1.0             |
| trans-1,2-Dichloroethene  | ND     | 1.0             |
| Chloroform                | ND     | 1.0             |
| Freon 113                 | ND     | 1.0             |
| 1,2-Dichloroethane        | ND     | 1.0             |
| 1,1,1-Trichloroethane     | ND     | 1.0             |
| Carbon Tetrachloride      | ND     | 1.0             |
| Bromodichloromethane      | ND     | 1.0             |
| 1,2-Dichloropropane       | ND     | 1.0             |
| cis-1,3-Dichloropropene   | ND     | 1.0             |
| Trichloroethene           | ND     | 1.0             |
| 1,1,2-Trichloroethane     | ND     | 1.0             |
| trans-1,3-Dichloropropene | ND     | 1.0             |
| Dibromochloromethane      | ND     | 1.0             |
| Bromoform                 | ND     | 2.0             |
| Tetrachloroethene         | ND     | 1.0             |
| 1,1,2,2-Tetrachloroethane | ND     | 1.0             |
| Chlorobenzene             | ND     | 1.0             |
| 1,3-Dichlorobenzene       | ND     | 1.0             |
| 1,4-Dichlorobenzene       | ND     | 1.0             |
| 1,2-Dichlorobenzene       | ND     | 1.0             |
| Surrogate                 | %Rec   | Recovery Limits |
| Toluene-d8                | 97     | 87-125          |
| Bromofluorobenzene        | 96     | 79-122          |
| 1,2-Dichloroethane-d4     | 93     | 68-126          |



Curtis &amp; Tompkins, Ltd.

Lab #: 122938

## BATCH QC REPORT

Page 1 of 1

 EPA 8010 Purgeable Halocarbons  
 EPA 8010 Analyte List

 Client: Cape Environmental INC.  
 Project#: 2403C.24  
 Location: Alameda

 Analysis Method: EPA 8240  
 Prep Method: EPA 5030

## METHOD BLANK

 Matrix: Water  
 Batch#: 23699  
 Units: ug/L  
 Diln Fac: 1

 Prep Date: 10/06/95  
 Analysis Date: 10/06/95

MB Lab ID: QC06169

| Analyte                   | Result | Reporting Limit |
|---------------------------|--------|-----------------|
| Chloromethane             | ND     | 2.0             |
| Bromomethane              | ND     | 2.0             |
| Vinyl Chloride            | ND     | 2.0             |
| Chloroethane              | ND     | 2.0             |
| Methylene Chloride        | ND     | 20              |
| Trichlorofluoromethane    | ND     | 1.0             |
| 1,1-Dichloroethene        | ND     | 1.0             |
| 1,1-Dichloroethane        | ND     | 1.0             |
| cis-1,2-Dichloroethene    | ND     | 1.0             |
| trans-1,2-Dichloroethene  | ND     | 1.0             |
| Chloroform                | ND     | 1.0             |
| Freon 113                 | ND     | 1.0             |
| 1,2-Dichloroethane        | ND     | 1.0             |
| 1,1,1-Trichloroethane     | ND     | 1.0             |
| Carbon Tetrachloride      | ND     | 1.0             |
| Bromodichloromethane      | ND     | 1.0             |
| 1,2-Dichloropropane       | ND     | 1.0             |
| cis-1,3-Dichloropropene   | ND     | 1.0             |
| Trichloroethene           | ND     | 1.0             |
| 1,1,2-Trichloroethane     | ND     | 1.0             |
| trans-1,3-Dichloropropene | ND     | 1.0             |
| Dibromochloromethane      | ND     | 1.0             |
| Bromoform                 | ND     | 2.0             |
| Tetrachloroethene         | ND     | 1.0             |
| 1,1,2,2-Tetrachloroethane | ND     | 1.0             |
| Chlorobenzene             | ND     | 1.0             |
| 1,3-Dichlorobenzene       | ND     | 1.0             |
| 1,4-Dichlorobenzene       | ND     | 1.0             |
| 1,2-Dichlorobenzene       | ND     | 1.0             |
| Surrogate                 | %Rec   | Recovery Limits |
| Toluene-d8                | 99     | 87-125          |
| Bromofluorobenzene        | 99     | 79-122          |
| 1,2-Dichloroethane-d4     | 105    | 68-126          |





Halogenated Volatile Organics  
EPA 8010 Analyte List

|                                 |                           |
|---------------------------------|---------------------------|
| Client: Cape Environmental INC. | Analysis Method: EPA 8240 |
| Project#: 2403C.24              | Prep Method: EPA 5030     |
| Location: Alameda               |                           |

|                    |                     |
|--------------------|---------------------|
| Field ID: MW1      | Sampled: 10/05/95   |
| Lab ID: 122938-001 | Received: 10/05/95  |
| Matrix: Water      | Extracted: 10/07/95 |
| Batch#: 23699      | Analyzed: 10/07/95  |
| Units: ug/L        |                     |
| Diln Fac: 1        |                     |

| Analyte | Result | Reporting Limit |
|---------|--------|-----------------|
|---------|--------|-----------------|

|                           |     |     |
|---------------------------|-----|-----|
| Chloromethane             | ND  | 2.0 |
| Bromomethane              | ND  | 2.0 |
| Vinyl Chloride            | ND  | 2.0 |
| Chloroethane              | ND  | 2.0 |
| Methylene Chloride        | ND  | 20  |
| Trichlorofluoromethane    | ND  | 1.0 |
| 1,1-Dichloroethene        | ND  | 1.0 |
| 1,1-Dichloroethane        | ND  | 1.0 |
| cis-1,2-Dichloroethene    | 7.4 | 1.0 |
| trans-1,2-Dichloroethene  | 3.4 | 1.0 |
| Chloroform                | ND  | 1.0 |
| Freon 113                 | ND  | 1.0 |
| 1,2-Dichloroethane        | ND  | 1.0 |
| 1,1,1-Trichloroethane     | ND  | 1.0 |
| Carbon Tetrachloride      | ND  | 1.0 |
| Bromodichloromethane      | ND  | 1.0 |
| 1,2-Dichloropropane       | ND  | 1.0 |
| cis-1,3-Dichloropropene   | ND  | 1.0 |
| Trichloroethene           | 1.3 | 1.0 |
| 1,1,2-Trichloroethane     | ND  | 1.0 |
| trans-1,3-Dichloropropene | ND  | 1.0 |
| Dibromochloromethane      | ND  | 1.0 |
| Bromoform                 | ND  | 2.0 |
| Tetrachloroethene         | ND  | 1.0 |
| 1,1,2,2-Tetrachloroethane | ND  | 1.0 |
| Chlorobenzene             | ND  | 1.0 |
| 1,3-Dichlorobenzene       | ND  | 1.0 |
| 1,4-Dichlorobenzene       | ND  | 1.0 |
| 1,2-Dichlorobenzene       | ND  | 1.0 |

| Surrogate             | %Recovery | Recovery Limits |
|-----------------------|-----------|-----------------|
| Toluene-d8            | 100       | 87-125          |
| Bromofluorobenzene    | 99        | 79-122          |
| 1,2-Dichloroethane-d4 | 107       | 68-126          |



Curtis &amp; Tompkins, Ltd.

Lab #: 122938

## BATCH QC REPORT

Page 1 of 1

## EPA 8010 Purgeable Halocarbons

Client: Cape Environmental INC.  
 Project#: 2403C.24  
 Location: Alameda

Analysis Method: EPA 8240  
 Prep Method: EPA 5030

## LABORATORY CONTROL SAMPLE

Matrix: Water  
 Batch#: 23699  
 Units: ug/L  
 Diln Fac: 1

Prep Date: 10/06/95  
 Analysis Date: 10/06/95

LCS Lab ID: QC06070

| Analyte               | Result | Spike Added | %Rec # | Limits |
|-----------------------|--------|-------------|--------|--------|
| 1,1-Dichloroethene    | 50.14  | 50          | 100    | 51-180 |
| Trichloroethene       | 45.65  | 50          | 91     | 73-141 |
| Chlorobenzene         | 49.47  | 50          | 99     | 83-129 |
| Surrogate             | %Rec   | Limits      |        |        |
| Toluene-d8            | 97     | 87-125      |        |        |
| Bromofluorobenzene    | 102    | 79-122      |        |        |
| 1,2-Dichloroethane-d4 | 103    | 68-126      |        |        |

\* Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

Spike Recovery: 0 out of 3 outside limits



Lab #: 122938

BATCH QC REPORT

EPA 8010 Purgeable Halocarbons

|                                 |                           |
|---------------------------------|---------------------------|
| Client: Cape Environmental INC. | Analysis Method: EPA 8240 |
| Project#: 2403C.24              | Prep Method: EPA 5030     |
| Location: Alameda               |                           |

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

|                    |                         |
|--------------------|-------------------------|
| Field ID: ZZZZZZ   | Sample Date: 09/27/95   |
| Lab ID: 122874-001 | Received Date: 09/28/95 |
| Matrix: Water      | Prep Date: 10/06/95     |
| Batch#: 23699      | Analysis Date: 10/06/95 |
| Units: ug/L        |                         |
| Diln Fac: 1        |                         |

MS Lab ID: QC06165

| Analyte               | Spike Added | Sample | MS    | %Rec # | Limits |
|-----------------------|-------------|--------|-------|--------|--------|
| 1,1-Dichloroethene    | 50          | <5.000 | 49.31 | 99     | 51-180 |
| Trichloroethene       | 50          | <5.000 | 44.69 | 89     | 73-141 |
| Chlorobenzene         | 50          | <5.000 | 49.26 | 99     | 83-129 |
| Surrogate             | %Rec        | Limits |       |        |        |
| Toluene-d8            | 97          | 87-125 |       |        |        |
| Bromofluorobenzene    | 99          | 79-122 |       |        |        |
| 1,2-Dichloroethane-d4 | 95          | 68-126 |       |        |        |

MSD Lab ID: QC06166

| Analyte               | Spike Added | MSD    | %Rec # | Limits | RPD # | Limit |
|-----------------------|-------------|--------|--------|--------|-------|-------|
| 1,1-Dichloroethene    | 50          | 53.16  | 106    | 51-180 | 8     | <22   |
| Trichloroethene       | 50          | 47.22  | 94     | 73-141 | 5     | <24   |
| Chlorobenzene         | 50          | 52.24  | 104    | 83-129 | 6     | <21   |
| Surrogate             | %Rec        | Limits |        |        |       |       |
| Toluene-d8            | 98          | 87-125 |        |        |       |       |
| Bromofluorobenzene    | 99          | 79-122 |        |        |       |       |
| 1,2-Dichloroethane-d4 | 98          | 68-126 |        |        |       |       |

Column to be used to flag recovery and RPD values with an asterisk

Values outside of QC limits

RPD: 0 out of 3 outside limits

Spike Recovery: 0 out of 6 outside limits

122938

# CHAIN OF CUSTODY FORM

Analyses

**Curtis & Tompkins, Ltd.**

Analytical Laboratories, Since 1878



2323 Fifth Street  
Berkeley, CA 94710  
(510) 486-0900 Phone  
(510) 486-0532 Fax

C&T  
LOGIN # \_\_\_\_\_

Sampler: *Larry Hartman*

Project No: *2403C-24*

Report To: *Same*

Project Name: *GSA. Alameda*

Company: *Cape Env. Mgmt. Inc*

Project P.O.:

Telephone: *310 532 4500*

Turnaround Time: *5 day*

Fax: *310 532 6022*

| Lab Number | Sample ID. | Sampling Date Time        | Matrix |                                     |       | # of Containers | Preservative                        |       |      |     | Field Notes |  |
|------------|------------|---------------------------|--------|-------------------------------------|-------|-----------------|-------------------------------------|-------|------|-----|-------------|--|
|            |            |                           | Soil   | Water                               | Waste |                 | HCl                                 | H2SO4 | HNO3 | ICE |             |  |
|            | <i>MW1</i> | <i>10/5/95<br/>7:1350</i> |        | <input checked="" type="checkbox"/> |       | <i>5</i>        | <input checked="" type="checkbox"/> |       |      |     |             |  |
|            |            |                           |        |                                     |       |                 |                                     |       |      |     |             |  |
|            |            |                           |        |                                     |       |                 |                                     |       |      |     |             |  |
|            |            |                           |        |                                     |       |                 |                                     |       |      |     |             |  |
|            |            |                           |        |                                     |       |                 |                                     |       |      |     |             |  |
|            |            |                           |        |                                     |       |                 |                                     |       |      |     |             |  |
|            |            |                           |        |                                     |       |                 |                                     |       |      |     |             |  |
|            |            |                           |        |                                     |       |                 |                                     |       |      |     |             |  |
|            |            |                           |        |                                     |       |                 |                                     |       |      |     |             |  |
|            |            |                           |        |                                     |       |                 |                                     |       |      |     |             |  |
|            |            |                           |        |                                     |       |                 |                                     |       |      |     |             |  |
|            |            |                           |        |                                     |       |                 |                                     |       |      |     |             |  |
|            |            |                           |        |                                     |       |                 |                                     |       |      |     |             |  |
|            |            |                           |        |                                     |       |                 |                                     |       |      |     |             |  |
|            |            |                           |        |                                     |       |                 |                                     |       |      |     |             |  |
|            |            |                           |        |                                     |       |                 |                                     |       |      |     |             |  |
|            |            |                           |        |                                     |       |                 |                                     |       |      |     |             |  |
|            |            |                           |        |                                     |       |                 |                                     |       |      |     |             |  |
|            |            |                           |        |                                     |       |                 |                                     |       |      |     |             |  |
|            |            |                           |        |                                     |       |                 |                                     |       |      |     |             |  |
|            |            |                           |        |                                     |       |                 |                                     |       |      |     |             |  |
|            |            |                           |        |                                     |       |                 |                                     |       |      |     |             |  |
|            |            |                           |        |                                     |       |                 |                                     |       |      |     |             |  |
|            |            |                           |        |                                     |       |                 |                                     |       |      |     |             |  |

X TVH/BTEX  
X BOD

Notes:

RELINQUISHED BY:

*Larry M. Hartman* 10/5/95 1507  
DATE/TIME

RECEIVED BY:

*Damaris Moore* 10/5/95 1515  
DATE/TIME

DATE/TIME

DATE/TIME

DATE/TIME

DATE/TIME

Signature on this form constitutes a firm Purchase Order for the analyses requested.

F.14

OCT 13 1:29 14:13 CURTIS & TOMPKINS BERKELEY