A Department of Ecology Report

WASHINGTON STAT
DEPARTMENT O
ECOLOGY

# Lakewood/Plaza Cleaners
# July 23-24, 1997

## Summary

This document is one in a series describing the results of ground water sampling at Lakewood/Plaza Cleaners. Ecology has conducted semi-annual ground water sampling at the site since 1991. The objective of this sampling is to collect ground water quality data for the Toxics Cleanup Program to evaluate the effectiveness of Lakewood supply wells H1 and H2 (Figure 1) to contain and remove contaminated ground water caused by Plaza Cleaners. Samples were collected on July 23-24, 1997 from one municipal well (H2) and seven monitoring wells: MW-16A, MW-20A, MW-20B, MW-27, MW-31, MW-33, and MW-19A (Figure 1). All samples were analyzed for volatile organics (VOAs). The quality assurance review and laboratory reporting sheets are presented in Appendix A.

Monitoring wells MW-20B and MW-16A, as well as municipal well H2, continue to have elevated PERC concentrations. PERC concentrations in these wells were: MW-20B (222 µg/L), MW-16A (47 µg/L) and H2 (8.8 µg/L). Cis-1,2-DCE was also detected in wells MW-20B and MW-16A at concentrations of 6.4 µg/L and 2.5 µg/L, respectively. TCE was detected in MW-20B at a concentration of 4 µg/L. Model Toxic Control Act (MTCA) cleanup levels were exceeded for PERC (5.0 µg/L) in MW-20B, MW-16A and H2. Overall, concentrations are similar to those reported in previous sample rounds.

## Results

### Field Observations

Table 1 lists field observation data for each of the sampled wells: static water level, pH, specific conductance, temperature, purged volume, well depth, and the geologic unit. Well MW-20A had a pH reading of 7.9 standard units, which is relatively high, but is consistent with previous measurements. High pH readings can be related to well construction. In the

by Pamela B. Marti
December 1997

Waterbody No. WA-12-1115GW
Segment No. 05-12-GW

Ecology Report #97-339

case of MW-20A it is most likely caused by bentonite inadvertently being placed within the screened interval during well construction. The specific conductance in well MW-20B (365 umhos/cm), which is screened in a fine-grained till unit, was greater than the other wells. Specific conductance readings are typically higher for water from fine-grained units.

### Laboratory Results

Table 2 summarizes laboratory results. The highest concentrations of tetrachloroethene (PERC) and cis-1,2-dichloroethene (cis-1,2-DCE) occurred in well MW-20B with 222 µg/L and 6.4 µg/L, respectively. Trichloroethene (TCE) was detected in MW-20B at a concentration of 4 µg/L. PERC and cis-1,2-DCE were also detected in MW-16A with concentrations of 47 µg/L and 2.5 µg/L, respectively. Municipal well H2 had a PERC concentration of 8.8 µg/L. PERC, TCE and cis-1,2-DCE were detected below the practical quantitation limit in the following wells: PERC was detected below 1 µg/L in wells MW-20A and MW-31; TCE was detected below 1 µg/L in wells MW-16A, MW-19A and H2; and cis-1,2-DCE was detected below 2 µg/L in wells MW-31 and H2.

Table 3 shows PERC, TCE, and cis-1,2-DCE concentrations for sampling events from January 1991 through July 1997. PERC and cis-1,2-DCE concentrations continue to be elevated in well MW-20B and MW-16A. Municipal wells H1/H2, which were added to the monitoring program in 1995, also have elevated PERC concentrations. Figure 2 shows PERC concentrations for MW-20B and MW-16A between 1984 and 1997. Since 1984, PERC concentrations in both wells have varied substantially. PERC concentrations decreased initially in MW-20B from March 1985 (4800 ppb) to May 1985 (570 ppb). Between May 1985 and November 1994, concentrations ranged between 86 ppb and 1,200 ppb. In July 1995 the monitoring program was shifted to a summer/winter rotation. Since then PERC concentrations in MW-20B have ranged between 222 ppb and 386 ppb. Over the monitoring period PERC concentrations in MW-16A have varied between 3 ppb and 110 ppb.

## Methods

### Ground Water Sampling

Samples were collected on July 23-24, 1997 from municipal well H2 and seven monitoring wells: MW-16A, MW-20A, MW-20B, MW-27, MW-31, MW-33, and MW-19A (Figure 1). Prior to sample collection, static water level measurements were obtained using an electronic water level probe. The probe was rinsed with deionized water after each use. All monitoring wells were purged a minimum of three well volumes and until pH, temperature, and specific conductance readings stabilized. Purge water was discharged to storm drains or to the ground near each well. All monitoring wells were purged and sampled using dedicated bladder pumps, except for MW-20B. Well MW-20B was purged and sampled with a decontaminated

teflon bailer. Municipal well H2, which pumps continuously, was sampled from a tap nearest the well. Samples collected for volatile organics were free of headspace and preserved with two drops of 1:1 hydrochloric acid.

The bailer was pre-cleaned with a Liquinox® wash and sequential rinses of hot tap water, 10% nitric acid, distilled/deionized water, and pesticide-grade acetone. After cleaning, the bailer was air-dried and wrapped in aluminum foil. Chain-of-custody procedures were followed in accordance with Manchester Laboratory protocol (Ecology, 1994).

**Quality Assurance Samples**

Quality control samples collected in the field for ground water monitoring consisted of a blind duplicate sample. A blind duplicate sample was collected from well MW-16A. Duplicate samples are two sets of samples collected from a well simultaneously and submitted to the laboratory with different identification. In addition to quality control samples collected in the field, laboratory quality control samples consisted of matrix spikes, matrix spike duplicates and surrogate compound recoveries. Volatile organic samples were analyzed using EPA SW-846 Method 8260 (U.S. EPA, 1986).

The quality of the data is acceptable for use. Volatile organic analyses were performed by the Manchester Laboratory. Karin Feddersen of the Manchester Laboratory conducted the quality assurance review. Duplicate samples collected at MW-16A provide an estimate of combined sampling and laboratory precision. The numeric comparison of duplicate results is expressed as the relative percent difference or RPD. RPDs are the ratio of the difference and the mean of the duplicate results expressed as a percentage. The RPDs for tetrachloroethene, trichloroethene and cis-1,2-dichloroethene were 7%, 6%, and 0%, respectively. All matrix spike and spike duplicate recoveries are within the QC limits of ±25% for water sample analysis.

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## Contacts

Pam Marti

Washington State Department of Ecology
Environmental Investigations and Laboratory Services
Toxics Investigations Section
(360) 407-6768

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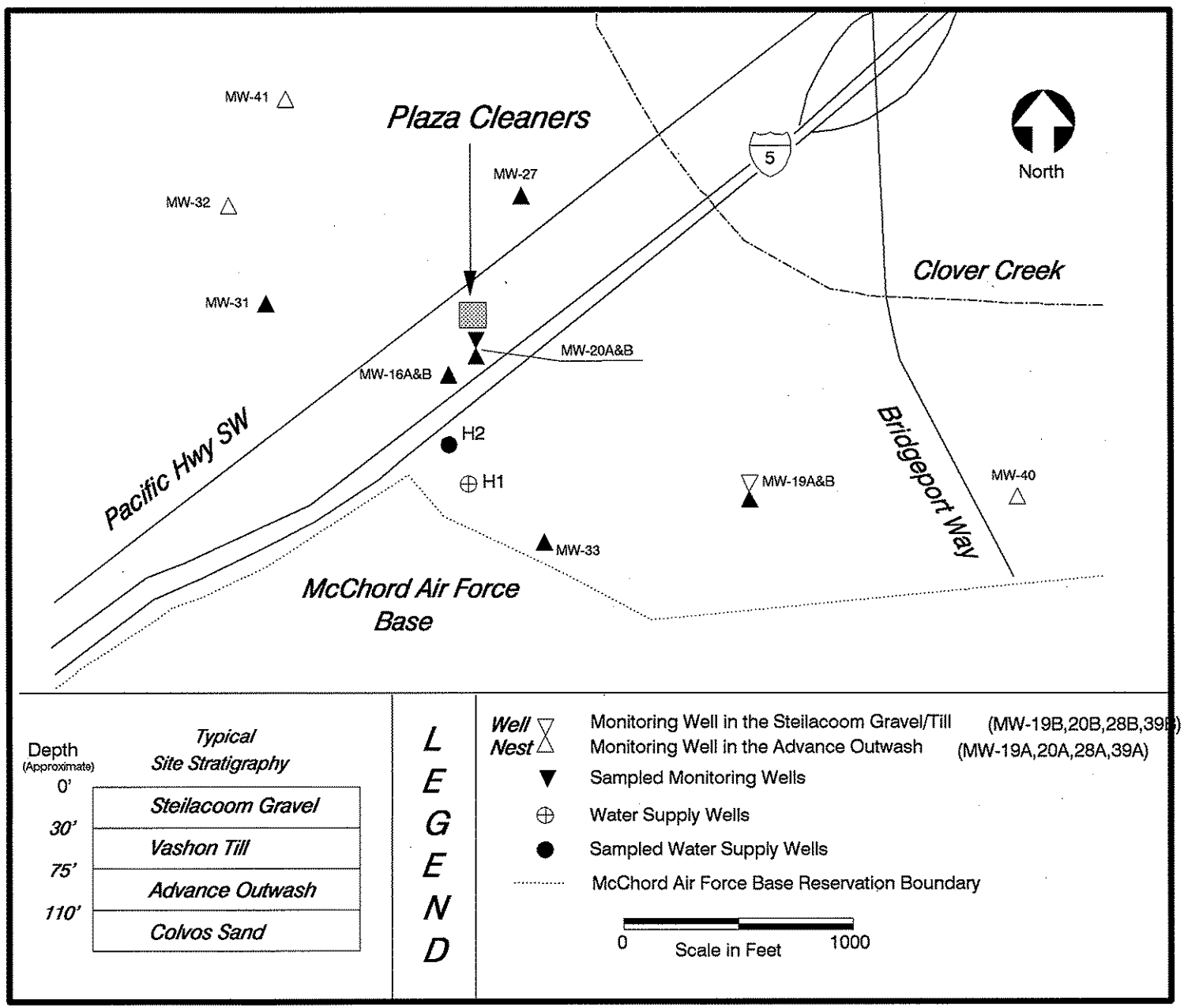



Figure 1: Well Location Map - Lakewood/Plaza Cleaners

Table 1: Field Parameter Results for July, 1997

| Monitoring Well | Total Depth (Feet) | Geologic Unit Screened | Depth to Water (Feet) | pH (s.u.) | Specific Conductance (umhos/cm) | Temperature (°C) | Purge Volume (gallons) |
|---|---|---|---|---|---|---|---|
| MW-16A | 109 | Advance Outwash | 39.07 | 6.0 | 260 | 12.8 | 152 |
| MW-19A | 97.5 | Advance Outwash | 35.94 | 6.5 | 208 | 11.6 | 30 |
| MW-20A | 97.3 | Advance Outwash | 30.78 | 7.9 | 245 | 12.3 | 33 |
| MW-20B | 50.4 | Vashon Till | 30.31 | 6.6 | 365 | 12.6 | 10 |
| MW-27 | 96.4 | Advance Outwash | ++ | 5.7 | 195 | 12.2 | 30 |
| MW-31 | 91.5 | Advance Outwash | ++ | 6.6 | 192 | 11.6 | 30 |
| MW-33 | 99.3 | Advance Outwash | ++ | 6.6 | 220 | 11.0 | 30 |
| H2 | 110 | Advance Outwash | ++ | 5.8 | 153 | 11.6 | >1000 |

++ = Dedicated pump obstructs water-level measurement.

Table 2: Summary of Analytes Detected in Samples Collected July 23-24, 1997

| Geologic Unit Screened | Vashon Till | Advance Outwash | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Upgradient Wells | | Municipal Well H2 |
| Monitoring Well | MW-20B | MW-16A | MW-16B (Duplicate) | MW-20A | MW-27 | MW-31 | MW-33 | MW-19A | |
| **Volatile Organics: (ug/L)** | | | | | | | | | |
| Tetrachloroethene (PERC) | 222 | 47 | 44 | 0.34 J | 1 U | 0.89 J | 1 U | 1 U | 8.8 |
| Trichloroethene (TCE) | 4 | 0.69 J | 0.65 J | 1 U | 1 U | 1 U | 1 U | 0.34 J | 0.25 J |
| cis-1,2-Dichloroethene (cis-1,2-DCE) | 6.4 | 2.5 | 2.5 | 2 U | 2 U | 0.92 J | 2 U | 2 U | 0.61 J |
| 1,1,1-Trichloroethane | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U<br>Toluene 0.11J | 1 U |

U = The analyte was not detected at or above the reported value.
J = The analyte was positively identified. The associated numerical result is an estimate.
-- = Not Tested
▒ = The analyte was positively identified.

Table 3: Summary of Sample Results (ug/L) from January 1991 to July 1997

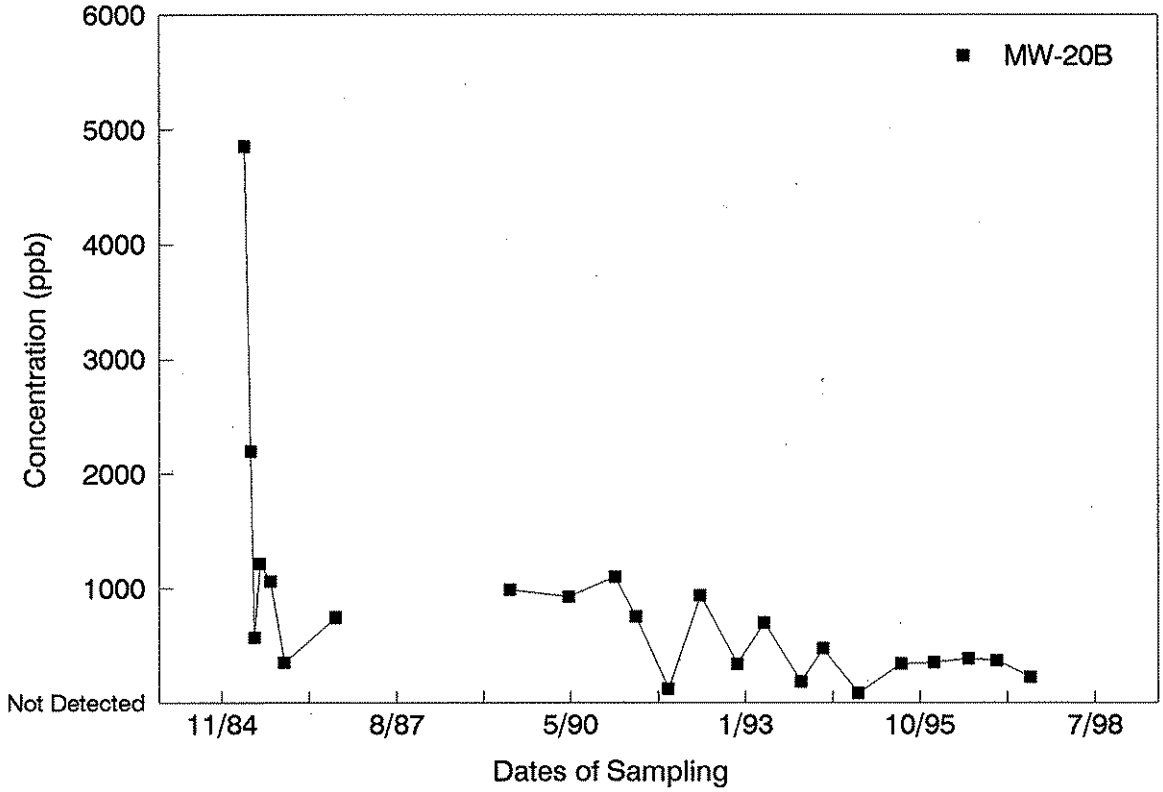
| Well | January 1991 | | | May 1991 | | | November 1991 | | | May 1992 | | | December 1992 | | | May 1993 | | | December 1993 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Number | PERC | TCE | cis-1,2-DCE | PERC | TCE | cis-1,2-DCE | PERC | TCE | cis-1,2-DCE | PERC | TCE | cis-1,2-DCE | PERC | TCE | cis-1,2-DCE | PERC | TCE | cis-1,2-DCE | PERC | TCE | cis-1,2-DCE |
| MW-16A | 28 | 1 J | 2.4 J | 26 | 0.6 J | 2 | 2.7 J | 1 U | 0.6 J | 7 | 1 U | 1 | 9 J | 0.3 J | 0.8 J | 44 | 10 U | 2 J | 13 | 0.3 J | 0.7 J |
| MW-20A | 1 U | 1 U | 1 U | 0.4 J | 1 U | 1 U | 0.4 J | 1 U | 1 U | 0.5 J | 1 U | 1 U | 0.8 J | 1 UJ | 1 UJ | 10 U | 10 U | 10 U | 0.3 J | 1 U | 1 U |
| MW-20B | 1100 D | 18 | 33 | 752 | 16 | 30 | 120 | 2.6 J | 6.7 | 940 | 13 | 32 | 340 J | 14 J | 20 J | 700 D | 12 | 21 | 187 | 50 U | 8.2 J |
| MW-21 | 2.1 J | 1 U | 1 J | 2 | 1 U | 0.7 J | 2.2 J | 1 U | 1.0 J | 2 | 1 U | 0.6 J | 2 | 0.2 J | 0.3 J | 1 J | 10 U | 10 U | 1.6 | 1 U | 0.4 J |
| MW-27 | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 UJ | 1 UJ | 10 U | 10 U | 10 U | 1 U | 1 U | 1 U |
| MW-28A | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW-31 | 1 J | 1 U | 1.9 J | 0.6 J | 1 U | 2 | 0.9 J | 1 U | 2.2 J | 0.8 J | 1 U | 1 | 0.5 J | 1 UJ | 0.9 J | 10 U | 10 U | 10 U | 0.8 J | 1 U | 1.2 J |
| MW-32 | 1 J | 1 U | 1.1 J | 1 | 1 U | 2 | 0.6 J | 1 U | 0.6 J | 0.7 J | 1 U | 1 | 0.7 J | 1 UJ | 0.5 J | 10 U | 10 U | 10 U | 0.7 J | 1 U | 0.6 J |
| MW-41 | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 UJ | 1 UJ | 10 U | 10 U | 10 U | 1 U | 1 U | 1 U |
| MW-19A | -- | -- | -- | -- | -- | -- | 1 U | 0.5 J | 1 U | -- | -- | -- | 1 U | 1 UJ | 1 UJ | -- | -- | -- | 1 U | 0.4 | 1 U |
| MW-33 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW-40 | 1 U | 1 U | 1 U | -- | -- | -- | 1 U | 1 U | 1 U | -- | -- | -- | 1 U | 1 UJ | 1 UJ | -- | -- | -- | 1 U | 1 U | 1 U |
| H1/H2 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

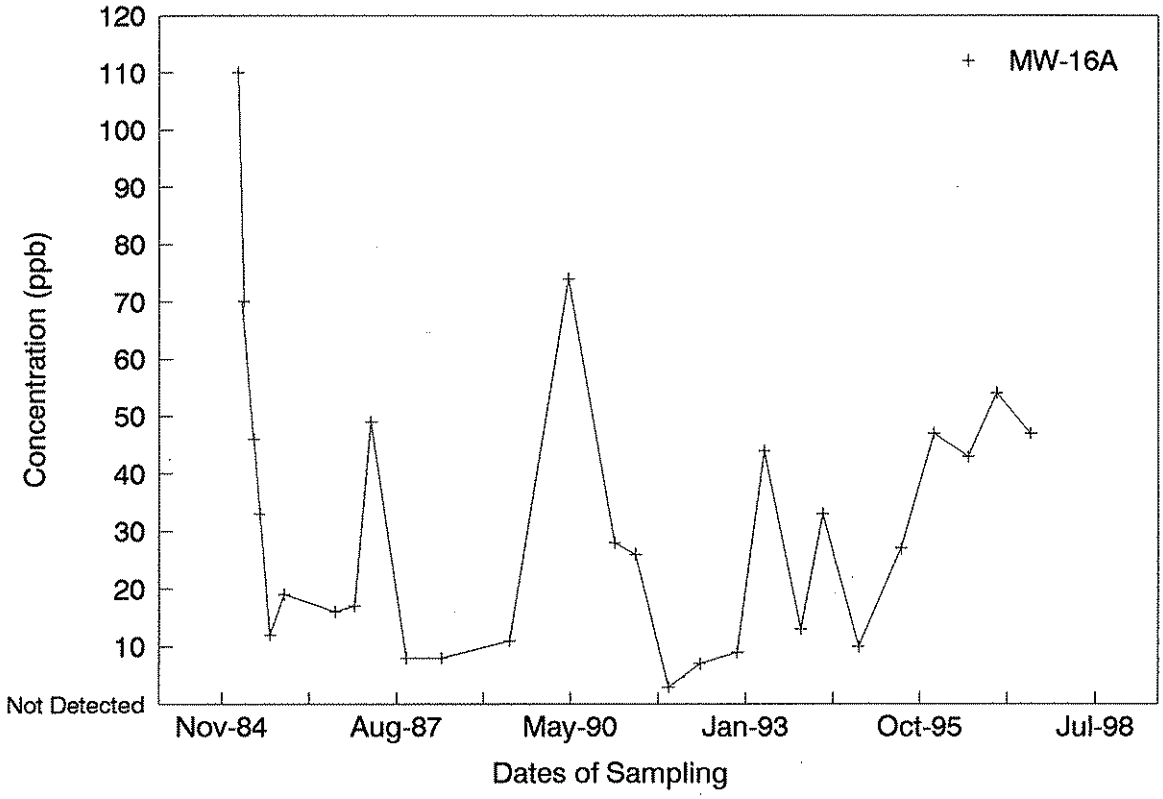
| Well | April 1994 | | | November 1994 | | | July 1995 | | | January 1996 | | | July 1996 | | | January 1997 | | | July 1997 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Number | PERC | TCE | cis-1,2-DCE | PERC | TCE | cis-1,2-DCE | PERC | TCE | cis-1,2-DCE | PERC | TCE | cis-1,2-DCE | PERC | TCE | cis-1,2-DCE | PERC | TCE | cis-1,2-DCE | PERC | TCE | cis-1,2-DCE |
| MW-16A | 33 | 0.6 | 1.4 | 9.7 | 0.3 J | 0.5 J | 27 | 0.5 J | 0.8 J | 47 E | 0.8 J | 1.5 | 43 | 0.7 J | 1.9 | 54 | 1.1 | 3.1 | 47 | 0.7 J | 2.5 |
| MW-20A | 0.4 | 0.2 U | 0.2 U | 0.3 J | 1 U | 1 U | 0.4 J | 1 U | 1 U | 0.2 J | 1 U | 1 U | 0.4 J | 1 U | 1 U | 0.4 J | 1 U | 1 U | 0.3 J | 1 U | 2 U |
| MW-20B | 472 | 8.6 J | 12.6 | 86 | 50 U | 3 J | 340 D | 8.4 | 17 | 353 | 7.2 | 15 | 387 | 7.6 | 15 | 371 | 100 U | 6.4 J | 222 | 4 | 6.4 |
| MW-21 | 1.5 | 0.2 J | 0.3 | 1.8 | 0.2 J | 0.3 J | -- | -- | -- | -- | -- | -- | Well Decommissioned | | | | | | | | |
| MW-27 | 0.2 U | 0.2 U | 0.2 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 2 U |
| MW-28A | -- | -- | -- | -- | -- | -- | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | Well Decommissioned | | | | | | | | |
| MW-31 | 0.7 | 0.2 U | 1.0 | 0.8 J | 1 U | 1 | 0.6 J | 1 U | 0.5 J | 0.6 J | 1 U | 0.7 J | -- | -- | -- | -- | -- | -- | 0.9 J | 1 U | 0.9 J |
| MW-32 | 0.7 | 0.2 U | 0.6 | 0.6 J | 1 U | 0.5 J | 0.7 J | 1 U | 0.5 J | 0.8 J | 1 U | 0.6 J | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW-41 | 0.2 U | 0.2 U | 0.2 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW-19A | 0.2 U | 0.5 | 0.2 U | -- | -- | -- | 1 U | 0.4 J | 1 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1 U | 0.3 J | 2 U |
| MW-33 | -- | -- | -- | -- | -- | -- | 1 U | 1 U | 1 U | -- | -- | -- | 1 U | 1 U | 1 U | -- | -- | -- | 1 U | 1 U | 2 U |
| MW-40 | 0.2 U | 0.2 U | 0.2 U | -- | -- | -- | 1 U | 1 U | 1 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| H1/H2 | -- | -- | -- | -- | -- | -- | 9 | 0.3 J | 1 U | 8.4 | 0.2 J | 0.2 J | 0.1 J | 1 U | 1 U | 18 | 0.4 J | 0.4 J | 8.8 | 0.3 J | 0.6 J |

U = The analyte was not detected at or above the reported result.
J = The analyte was positively identified. The associated numerical result is an estimate.
UJ = The analyte was not detected at or above the reported estimated result.
D = Analysis performed at secondary dilution.
E = The concentration of the associated value exceeds the known calibration range.
-- = Not Tested
= The analyte was positively identified.

Figure 2

PERC Concentrations for Wells MW-20B and MW-16A from 1984 to 1997



# APPENDIX A

Analytical Results
Lakewood/Plaza Cleaners
July 23-24, 1997

# Manchester Environmental Laboratory

7411 Beach Dr E, Port Orchard Washington 98366

CASE NARRATIVE

August 19, 1997

| | |
|---|---|
| Subject: | **Lakewood Plaza Cleaners** |
| Samples: | 97308162 through 97308170 |
| Project ID: | 142597 |
| Project Officer: | P. Marti |
| By: | Karin Feddersen KF |

## VOLATILE ORGANIC ANALYSIS

### SUMMARY:

Sample 97308167 contained a high concentration of Tetrachloroethene. Use the result from dilution analysis of this sample for this analyte. Use the undiluted results for all other analytes.

The data is usable as reported.

### ANALYTICAL METHODS:

Volatile organic compounds were analyzed using Manchester modification of the EPA Method 8260 purge-trap procedure with capillary GC/MS analysis. Typical QA/QC procedures were performed on the sample.

### BLANKS:

Low levels of certain target compounds were detected in the laboratory blanks. These compounds are considered native to the sample if their concentration is at least five times greater than the amount detected in the associated blank.

### SURROGATES:

Surrogate recoveries were within acceptable limits for the samples.

### HOLDING TIMES:

The samples were analyzed within the recommended 14 day holding time.

### MATRIX SPIKE AND MATRIX SPIKE DUPLICATE:

Matrix spikes recoveries were within acceptable limits.

**DATA QUALIFIER CODES:**

| | | |
|---|---|---|
| U | - | The analyte was not detected at or above the reported value. |
| J | - | The analyte was positively identified. The associated numerical value is an estimate. |
| UJ | - | The analyte was not detected at or above the reported estimated result. |
| REJ | - | The data are unusable for all purposes. |
| NAF | - | Not analyzed for. |
| N | - | There is evidence the analyte is present in the sample. |
| NJ | - | There is evidence that the analyte is present. The associated numerical result is an estimate. |
| E | - | This qualifier is used when the concentration of the associated value exceeds the known calibration range. |
| **bold** | - | The analyte was present in the sample. (Visual Aid to locate detected compounds on report sheet.) |

# Manchester Environmental Laboratory

## Department of Ecology

## Analysis Report for

## Volatile Organic Analysis

**Project Name:** Plaza Cleaners **LIMS Project ID:** 1425-97

**Sample:** 97308162 **Date Received:** 07/25/97 **Method:** SW8260
**Field ID:** H2 **Matrix:** Water
**Project Officer:** P. Marti **Date Analyzed:** 08/04/97 **Units:** ug/L

| Analyte | Result | Qualifier | Analyte | Result | Qualifier |
|---|---|---|---|---|---|
| Dichlorodifluoromethane | 2 | U | 1,1-Dichloropropanone | 5 | U |
| Chloromethane | 1 | U | Cis-1,3-Dichloropropene | 1.1 | U |
| Vinyl Chloride | 1 | U | 4-Methyl-2-Pentanone | 4 | U |
| Bromomethane | 1 | U | Trans-1,3-Dichloropropene | .94 | U |
| Chloroethane | 1 | U | 1,1,2-Trichloroethane | 1 | U |
| Trichlorofluoromethane | 5 | U | Toluene | 1 | U |
| Acetone | 5 | U | 1,3-Dichloropropane | 1 | U |
| Ethyl Ether | 1 | U | Ethylmethacrylate | 1 | U |
| 1,1-Dichloroethene | 1 | U | 2-Hexanone | 2 | U |
| Acrylonitrile | 5 | U | Dibromochloromethane | 1 | U |
| Methyl Iodide | 1 | U | 1,2-Dibromoethane (EDB) | 1 | U |
| Methylene Chloride | 5 | U | **Tetrachloroethene** | **8.8** | |
| 1,1,2 Trichlorotrifluoroethane | 1 | U | 1,1,1,2-Tetrachloroethane | 1 | U |
| Allyl Chloride | 1 | U | Chlorobenzene | 1 | U |
| Carbon Disulfide | 2 | U | Ethylbenzene | 1 | U |
| Trans-1,2-Dichloroethene | 1 | U | m & p-Xylene | 2 | U |
| 2-Methyoxy-2-Methylpropane | 1 | U | Bromoform | 1 | U |
| 1,1-Dichloroethane | 1 | U | Styrene | 1 | U |
| 2-Butanone | 2 | U | 1,1,2,2-Tetrachloroethane | 1 | U |
| Methyacrilonitrile | 2 | U | o-Xylene | 1 | U |
| **Cis-1,2-Dichloroethene** | **.61** | **J** | 1,2,3-Trichloropropane | 1 | U |
| Bromochloromethane | 1 | U | Trans-1,4-Dichloro-2-butene | 1 | U |
| Chloroform | 2 | U | Isopropylbenzene (Cumene) | 1 | U |
| Methyl acrylate | 1 | U | Bromobenzene | 1 | U |
| 2,2-Dichloropropane | 2 | U | n-Propylbenzene | 1 | U |
| Tetrahydrofuran | 5 | U | 2-Chlorotoluene | 1 | U |
| 1,2-Dichloroethane | 1 | U | 4-Chlorotoluene | 1 | U |
| 1-Chlorobutane | 1 | U | 1,2,4-Trimethylbenzene | 2 | U |
| 1,1,1-Trichloroethane | 1 | U | Pentachloroethane | 5 | U |
| 1,1-Dichloropropene | 1 | U | Tert-Butylbenzene | 2 | U |
| Carbon Tetrachloride | 1 | U | 1,3,5-Trimethylbenzene | 1 | U |
| Benzene | 1 | U | Sec-Butylbenzene | 1 | U |
| Dibromomethane | 1 | U | 1,3-Dichlorobenzene | 1 | U |
| 1,2-Dichloropropane | 1 | U | 1,4-Dichlorobenzene | 1 | U |
| **Trichloroethene** | **.25** | **J** | p-Isopropyltoluene | 1 | U |
| 2-Nitropropane | 2 | U | 1,2-Dichlorobenzene | 1 | U |
| Bromodichloromethane | 1 | U | n-Butylbenzene | 2 | U |
| Methyl Methacrylate | 1 | U | 1,2-Dibromo-3-Chloropropane | 1 | U |

Authorized By: _____ Release Date: 9/11/97 Page: 1

# Manchester Environmental Laboratory

## Department of Ecology

## Analysis Report for

## Volatile Organic Analysis

**Project Name:** Plaza Cleaners **LIMS Project ID:** 1425-97

**Sample:** 97308162 **Date Received:** 07/25/97 **Method:** SW8260
**Field ID:** H2 **Matrix:** Water
**Project Officer:** P. Marti **Date Analyzed:** 08/04/97 **Units:** ug/L

| Analyte | Result | Qualifier |
|---|---|---|
| Hexachloroethane | 1 | U |
| 1,2,4-Trichlorobenzene | 2 | U |
| Naphthalene | 2 | U |
| Hexachlorobutadiene | 1 | U |
| 1,2,3-Trichlorobenzene | 2 | U |

**Surrogate Recoveries**

| | | |
|---|---|---|
| **1,2-Dichloroethane-D4** | **102** | **%** |
| **1,4-Difluorobenzene** | **100** | **%** |
| **Toluene-D8** | **97** | **%** |
| **p-Bromofluorobenzene** | **96** | **%** |
| **1,2-Dichlorobenzene-D4** | **102** | **%** |

Authorized By: _____ Release Date: 9/11/97

# Manchester Environmental Laboratory

## Department of Ecology

## Analysis Report for

## Volatile Organic Analysis

**Project Name:** Plaza Cleaners **LIMS Project ID:** 1425-97

**Sample:** 97308163 **Date Received:** 07/25/97 **Method:** SW8260
**Field ID:** MW-16A **Matrix:** Water
**Project Officer:** P. Marti **Date Analyzed:** 08/04/97 **Units:** ug/L

| Analyte | Result | Qualifier | Analyte | Result | Qualifier |
|---|---|---|---|---|---|
| Dichlorodifluoromethane | 2 | U | 1,1-Dichloropropanone | 5 | U |
| Chloromethane | 1 | U | Cis-1,3-Dichloropropene | 1.1 | U |
| Vinyl Chloride | 1 | U | 4-Methyl-2-Pentanone | 4 | U |
| Bromomethane | 1 | U | Trans-1,3-Dichloropropene | .94 | U |
| Chloroethane | 1 | U | 1,1,2-Trichloroethane | 1 | U |
| Trichlorofluoromethane | 5 | U | Toluene | 1 | U |
| Acetone | 5 | U | 1,3-Dichloropropane | 1 | U |
| Ethyl Ether | 1 | U | Ethylmethacrylate | 1 | U |
| 1,1-Dichloroethene | 1 | U | 2-Hexanone | 2 | U |
| Acrylonitrile | 5 | U | Dibromochloromethane | 1 | U |
| Methyl Iodide | 1 | U | 1,2-Dibromoethane (EDB) | 1 | U |
| Methylene Chloride | 5 | U | **Tetrachloroethene** | **47** | |
| 1,1,2 Trichlorotrifluoroethane | 1 | U | 1,1,1,2-Tetrachloroethane | 1 | U |
| Allyl Chloride | 1 | U | Chlorobenzene | 1 | U |
| Carbon Disulfide | 2 | U | Ethylbenzene | 1 | U |
| Trans-1,2-Dichloroethene | 1 | U | m & p-Xylene | 2 | U |
| 2-Methyoxy-2-Methylpropane | 1 | U | Bromoform | 1 | U |
| 1,1-Dichloroethane | 1 | U | Styrene | 1 | U |
| 2-Butanone | 2 | U | 1,1,2,2-Tetrachloroethane | 1 | U |
| Methyacrilonitrile | 2 | U | o-Xylene | 1 | U |
| **Cis-1,2-Dichloroethene** | **2.5** | | 1,2,3-Trichloropropane | 1 | U |
| Bromochloromethane | 1 | U | Trans-1,4-Dichloro-2-butene | 1 | U |
| Chloroform | 2 | U | Isopropylbenzene (Cumene) | 1 | U |
| Methyl acrylate | 1 | U | Bromobenzene | 1 | U |
| 2,2-Dichloropropane | 2 | U | n-Propylbenzene | 1 | U |
| Tetrahydrofuran | 5 | U | 2-Chlorotoluene | 1 | U |
| 1,2-Dichloroethane | 1 | U | 4-Chlorotoluene | 1 | U |
| 1-Chlorobutane | 1 | U | 1,2,4-Trimethylbenzene | 2 | U |
| 1,1,1-Trichloroethane | 1 | U | Pentachloroethane | 5 | U |
| 1,1-Dichloropropene | 1 | U | Tert-Butylbenzene | 2 | U |
| Carbon Tetrachloride | 1 | U | 1,3,5-Trimethylbenzene | 1 | U |
| Benzene | 1 | U | Sec-Butylbenzene | 1 | U |
| Dibromomethane | 1 | U | 1,3-Dichlorobenzene | 1 | U |
| 1,2-Dichloropropane | 1 | U | 1,4-Dichlorobenzene | 1 | U |
| **Trichloroethene** | **.69** | **J** | p-Isopropyltoluene | 1 | U |
| 2-Nitropropane | 2 | U | 1,2-Dichlorobenzene | 1 | U |
| Bromodichloromethane | 1 | U | n-Butylbenzene | 2 | U |
| Methyl Methacrylate | 1 | U | 1,2-Dibromo-3-Chloropropane | 1 | U |

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# Manchester Environmental Laboratory

## Department of Ecology

## Analysis Report for

## Volatile Organic Analysis

**Project Name:** Plaza Cleaners **LIMS Project ID:** 1425-97

**Sample:** 97308163 **Date Received:** 07/25/97 **Method:** SW8260
**Field ID:** MW-16A **Matrix:** Water
**Project Officer:** P. Marti **Date Analyzed:** 08/04/97 **Units:** ug/L

| Analyte | Result | Qualifier |
|---|---|---|
| Hexachloroethane | 1 | U |
| 1,2,4-Trichlorobenzene | 2 | U |
| Naphthalene | 2 | U |
| Hexachlorobutadiene | 1 | U |
| 1,2,3-Trichlorobenzene | 2 | U |

**Surrogate Recoveries**

| | | |
|---|---|---|
| **1,2-Dichloroethane-D4** | **104** | **%** |
| **1,4-Difluorobenzene** | **101** | **%** |
| **Toluene-D8** | **102** | **%** |
| **p-Bromofluorobenzene** | **94** | **%** |
| **1,2-Dichlorobenzene-D4** | **105** | **%** |

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# Manchester Environmental Laboratory

## Department of Ecology

## Analysis Report for

## Volatile Organic Analysis

**Project Name:** Plaza Cleaners **LIMS Project ID:** 1425-97

**Sample:** 97308164 **Date Received:** 07/25/97 **Method:** SW8260
**Field ID:** MW-16B **Matrix:** Water
**Project Officer:** P. Marti **Date Analyzed:** 08/04/97 **Units:** ug/L

| Analyte | Result | Qualifier | Analyte | Result | Qualifier |
|---|---|---|---|---|---|
| Dichlorodifluoromethane | 2 | U | 1,1-Dichloropropanone | 5 | U |
| Chloromethane | 1 | U | Cis-1,3-Dichloropropene | 1.1 | U |
| Vinyl Chloride | 1 | U | 4-Methyl-2-Pentanone | 4 | U |
| Bromomethane | 1 | U | Trans-1,3-Dichloropropene | .94 | U |
| Chloroethane | 1 | U | 1,1,2-Trichloroethane | 1 | U |
| Trichlorofluoromethane | 5 | U | Toluene | 1 | U |
| Acetone | 5 | U | 1,3-Dichloropropane | 1 | U |
| Ethyl Ether | 1 | U | Ethylmethacrylate | 1 | U |
| 1,1-Dichloroethene | 1 | U | 2-Hexanone | 2 | U |
| Acrylonitrile | 5 | U | Dibromochloromethane | 1 | U |
| Methyl Iodide | 1 | U | 1,2-Dibromoethane (EDB) | 1 | U |
| Methylene Chloride | 5 | U | **Tetrachloroethene** | **44** | |
| 1,1,2 Trichlorotrifluoroethane | 1 | U | 1,1,1,2-Tetrachloroethane | 1 | U |
| Allyl Chloride | 1 | U | Chlorobenzene | 1 | U |
| Carbon Disulfide | 2 | U | Ethylbenzene | 1 | U |
| Trans-1,2-Dichloroethene | 1 | U | m & p-Xylene | 2 | U |
| 2-Methyoxy-2-Methylpropane | 1 | U | Bromoform | 1 | U |
| 1,1-Dichloroethane | 1 | U | Styrene | 1 | U |
| 2-Butanone | 2 | U | 1,1,2,2-Tetrachloroethane | 1 | U |
| Methyacrilonitrile | 2 | U | o-Xylene | 1 | U |
| **Cis-1,2-Dichloroethene** | **2.5** | | 1,2,3-Trichloropropane | 1 | U |
| **Bromochloromethane** | **.1** | **J** | Trans-1,4-Dichloro-2-butene | 1 | U |
| Chloroform | 2 | U | Isopropylbenzene (Cumene) | 1 | U |
| Methyl acrylate | 1 | U | Bromobenzene | 1 | U |
| 2,2-Dichloropropane | 2 | U | n-Propylbenzene | 1 | U |
| Tetrahydrofuran | 5 | U | 2-Chlorotoluene | 1 | U |
| 1,2-Dichloroethane | 1 | U | 4-Chlorotoluene | 1 | U |
| 1-Chlorobutane | 1 | U | 1,2,4-Trimethylbenzene | 2 | U |
| 1,1,1-Trichloroethane | 1 | U | Pentachloroethane | 5 | U |
| 1,1-Dichloropropene | 1 | U | Tert-Butylbenzene | 2 | U |
| Carbon Tetrachloride | 1 | U | 1,3,5-Trimethylbenzene | 1 | U |
| Benzene | 1 | U | Sec-Butylbenzene | 1 | U |
| Dibromomethane | 1 | U | 1,3-Dichlorobenzene | 1 | U |
| 1,2-Dichloropropane | 1 | U | 1,4-Dichlorobenzene | 1 | U |
| **Trichloroethene** | **.65** | **J** | p-Isopropyltoluene | 1 | U |
| 2-Nitropropane | 2 | U | 1,2-Dichlorobenzene | 1 | U |
| Bromodichloromethane | 1 | U | n-Butylbenzene | 2 | U |
| Methyl Methacrylate | 1 | U | 1,2-Dibromo-3-Chloropropane | 1 | U |

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# Manchester Environmental Laboratory

## Department of Ecology

## Analysis Report for

## Volatile Organic Analysis

**Project Name:** Plaza Cleaners **LIMS Project ID:** 1425-97

**Sample:** 97308164 **Date Received:** 07/25/97 **Method:** SW8260
**Field ID:** MW-16B **Matrix:** Water
**Project Officer:** P. Marti **Date Analyzed:** 08/04/97 **Units:** ug/L

| Analyte | Result | Qualifier |
|---|---|---|
| Hexachloroethane | 1 | U |
| 1,2,4-Trichlorobenzene | 2 | U |
| Naphthalene | 2 | U |
| Hexachlorobutadiene | 1 | U |
| 1,2,3-Trichlorobenzene | 2 | U |

**Surrogate Recoveries**

| | | |
|---|---|---|
| **1,2-Dichloroethane-D4** | **105** | **%** |
| **1,4-Difluorobenzene** | **101** | **%** |
| **Toluene-D8** | **101** | **%** |
| **p-Bromofluorobenzene** | **97** | **%** |
| **1,2-Dichlorobenzene-D4** | **105** | **%** |

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# Manchester Environmental Laboratory

## Department of Ecology

## Analysis Report for

## Volatile Organic Analysis

**Project Name:** Plaza Cleaners **LIMS Project ID:** 1425-97

**Sample:** 97308165 **Date Received:** 07/25/97 **Method:** SW8260
**Field ID:** MS-27 **Matrix:** Water
**Project Officer:** P. Marti **Date Analyzed:** 08/04/97 **Units:** ug/L

| Analyte | Result | Qualifier | Analyte | Result | Qualifier |
|---|---|---|---|---|---|
| Dichlorodifluoromethane | 2 | U | 1,1-Dichloropropanone | 5 | U |
| Chloromethane | 1 | U | Cis-1,3-Dichloropropene | 1.1 | U |
| Vinyl Chloride | 1 | U | 4-Methyl-2-Pentanone | 4 | U |
| Bromomethane | 1 | U | Trans-1,3-Dichloropropene | .94 | U |
| Chloroethane | 1 | U | 1,1,2-Trichloroethane | 1 | U |
| Trichlorofluoromethane | 5 | U | Toluene | 1 | U |
| Acetone | 5 | U | 1,3-Dichloropropane | 1 | U |
| Ethyl Ether | 1 | U | Ethylmethacrylate | 1 | U |
| 1,1-Dichloroethene | 1 | U | 2-Hexanone | 2 | U |
| Acrylonitrile | 5 | U | Dibromochloromethane | 1 | U |
| Methyl Iodide | 1 | U | 1,2-Dibromoethane (EDB) | 1 | U |
| Methylene Chloride | 5 | U | Tetrachloroethene | 1 | U |
| 1,1,2 Trichlorotrifluoroethane | 1 | U | 1,1,1,2-Tetrachloroethane | 1 | U |
| Allyl Chloride | 1 | U | Chlorobenzene | 1 | U |
| Carbon Disulfide | 2 | U | Ethylbenzene | 1 | U |
| Trans-1,2-Dichloroethene | 1 | U | m & p-Xylene | 2 | U |
| 2-Methyoxy-2-Methylpropane | 1 | U | Bromoform | 1 | U |
| 1,1-Dichloroethane | 1 | U | Styrene | 1 | U |
| 2-Butanone | 2 | U | 1,1,2,2-Tetrachloroethane | 1 | U |
| Methyacrilonitrile | 2 | U | o-Xylene | 1 | U |
| Cis-1,2-Dichloroethene | 2 | U | 1,2,3-Trichloropropane | 1 | U |
| Bromochloromethane | 1 | U | Trans-1,4-Dichloro-2-butene | 1 | U |
| Chloroform | 2 | U | Isopropylbenzene (Cumene) | 1 | U |
| Methyl acrylate | 1 | U | Bromobenzene | 1 | U |
| 2,2-Dichloropropane | 2 | U | n-Propylbenzene | 1 | U |
| Tetrahydrofuran | 5 | U | 2-Chlorotoluene | 1 | U |
| 1,2-Dichloroethane | 1 | U | 4-Chlorotoluene | 1 | U |
| 1-Chlorobutane | 1 | U | 1,2,4-Trimethylbenzene | 2 | U |
| 1,1,1-Trichloroethane | 1 | U | Pentachloroethane | 5 | U |
| 1,1-Dichloropropene | 1 | U | Tert-Butylbenzene | 2 | U |
| Carbon Tetrachloride | 1 | U | 1,3,5-Trimethylbenzene | 1 | U |
| Benzene | 1 | U | Sec-Butylbenzene | 1 | U |
| Dibromomethane | 1 | U | 1,3-Dichlorobenzene | 1 | U |
| 1,2-Dichloropropane | 1 | U | 1,4-Dichlorobenzene | 1 | U |
| Trichloroethene | 1 | U | p-Isopropyltoluene | 1 | U |
| 2-Nitropropane | 2 | U | 1,2-Dichlorobenzene | 1 | U |
| Bromodichloromethane | 1 | U | n-Butylbenzene | 2 | U |
| Methyl Methacrylate | 1 | U | 1,2-Dibromo-3-Chloropropane | 1 | U |

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## Department of Ecology

## Analysis Report for

## Volatile Organic Analysis

**Project Name:** Plaza Cleaners **LIMS Project ID:** 1425-97

**Sample:** 97308165 **Date Received:** 07/25/97 **Method:** SW8260
**Field ID:** MS-27 **Matrix:** Water
**Project Officer:** P. Marti **Date Analyzed:** 08/04/97 **Units:** ug/L

| Analyte | Result | Qualifier |
|---|---|---|
| Hexachloroethane | 1 | U |
| 1,2,4-Trichlorobenzene | 2 | U |
| Naphthalene | 2 | U |
| Hexachlorobutadiene | 1 | U |
| 1,2,3-Trichlorobenzene | 2 | U |

**Surrogate Recoveries**

| | | |
|---|---|---|
| **1,2-Dichloroethane-D4** | **103** | % |
| **1,4-Difluorobenzene** | **98** | % |
| **Toluene-D8** | **100** | % |
| **p-Bromofluorobenzene** | **97** | % |
| **1,2-Dichlorobenzene-D4** | **105** | % |

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# Manchester Environmental Laboratory

## Department of Ecology

## Analysis Report for

## Volatile Organic Analysis

**Project Name:** Plaza Cleaners **LIMS Project ID:** 1425-97

**Sample:** 97308166 **Date Received:** 07/25/97 **Method:** SW8260
**Field ID:** MW-20A **Matrix:** Water
**Project Officer:** P. Marti **Date Analyzed:** 08/04/97 **Units:** ug/L

| Analyte | Result | Qualifier | Analyte | Result | Qualifier |
|---|---|---|---|---|---|
| Dichlorodifluoromethane | 2 | U | 1,1-Dichloropropanone | 5 | U |
| Chloromethane | 1 | U | Cis-1,3-Dichloropropene | 1.1 | U |
| Vinyl Chloride | 1 | U | 4-Methyl-2-Pentanone | 4 | U |
| Bromomethane | 1 | U | Trans-1,3-Dichloropropene | .94 | U |
| Chloroethane | 1 | U | 1,1,2-Trichloroethane | 1 | U |
| Trichlorofluoromethane | 5 | U | Toluene | 1 | U |
| Acetone | 5 | U | 1,3-Dichloropropane | 1 | U |
| Ethyl Ether | 1 | U | Ethylmethacrylate | 1 | U |
| 1,1-Dichloroethene | 1 | U | 2-Hexanone | 2 | U |
| Acrylonitrile | 5 | U | Dibromochloromethane | 1 | U |
| Methyl Iodide | 1 | U | 1,2-Dibromoethane (EDB) | 1 | U |
| Methylene Chloride | 5 | U | **Tetrachloroethene** | **.34** | **J** |
| 1,1,2 Trichlorotrifluoroethane | 1 | U | 1,1,1,2-Tetrachloroethane | 1 | U |
| Allyl Chloride | 1 | U | Chlorobenzene | 1 | U |
| Carbon Disulfide | 2 | U | Ethylbenzene | 1 | U |
| Trans-1,2-Dichloroethene | 1 | U | m & p-Xylene | 2 | U |
| 2-Methyoxy-2-Methylpropane | 1 | U | Bromoform | 1 | U |
| 1,1-Dichloroethane | 1 | U | Styrene | 1 | U |
| 2-Butanone | 2 | U | 1,1,2,2-Tetrachloroethane | 1 | U |
| Methyacrilonitrile | 2 | U | o-Xylene | 1 | U |
| Cis-1,2-Dichloroethene | 2 | U | 1,2,3-Trichloropropane | 1 | U |
| Bromochloromethane | 1 | U | Trans-1,4-Dichloro-2-butene | 1 | U |
| Chloroform | 2 | U | Isopropylbenzene (Cumene) | 1 | U |
| Methyl acrylate | 1 | U | Bromobenzene | 1 | U |
| 2,2-Dichloropropane | 2 | U | n-Propylbenzene | 1 | U |
| Tetrahydrofuran | 5 | U | 2-Chlorotoluene | 1 | U |
| 1,2-Dichloroethane | 1 | U | 4-Chlorotoluene | 1 | U |
| 1-Chlorobutane | 1 | U | 1,2,4-Trimethylbenzene | 2 | U |
| 1,1,1-Trichloroethane | 1 | U | Pentachloroethane | 5 | U |
| 1,1-Dichloropropene | 1 | U | Tert-Butylbenzene | 2 | U |
| Carbon Tetrachloride | 1 | U | 1,3,5-Trimethylbenzene | 1 | U |
| Benzene | 1 | U | Sec-Butylbenzene | 1 | U |
| Dibromomethane | 1 | U | 1,3-Dichlorobenzene | 1 | U |
| 1,2-Dichloropropane | 1 | U | 1,4-Dichlorobenzene | 1 | U |
| Trichloroethene | 1 | U | p-Isopropyltoluene | 1 | U |
| 2-Nitropropane | 2 | U | 1,2-Dichlorobenzene | 1 | U |
| Bromodichloromethane | 1 | U | n-Butylbenzene | 2 | U |
| Methyl Methacrylate | 1 | U | 1,2-Dibromo-3-Chloropropane | 1 | U |

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# Manchester Environmental Laboratory

## Department of Ecology

## Analysis Report for

## Volatile Organic Analysis

**Project Name:** Plaza Cleaners **LIMS Project ID:** 1425-97

**Sample:** 97308166 **Date Received:** 07/25/97 **Method:** SW8260
**Field ID:** MW-20A **Matrix:** Water
**Project Officer:** P. Marti **Date Analyzed:** 08/04/97 **Units:** ug/L

| Analyte | Result | Qualifier |
|---|---|---|
| Hexachloroethane | 1 | U |
| 1,2,4-Trichlorobenzene | 2 | U |
| Naphthalene | 2 | U |
| Hexachlorobutadiene | 1 | U |
| 1,2,3-Trichlorobenzene | 2 | U |

**Surrogate Recoveries**

| | | |
|---|---|---|
| **1,2-Dichloroethane-D4** | **104** | **%** |
| **1,4-Difluorobenzene** | **102** | **%** |
| **Toluene-D8** | **99** | **%** |
| **p-Bromofluorobenzene** | **95** | **%** |
| **1,2-Dichlorobenzene-D4** | **105** | **%** |

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# Manchester Environmental Laboratory

## Department of Ecology

## Analysis Report for

## Volatile Organic Analysis

**Project Name:** Plaza Cleaners **LIMS Project ID:** 1425-97

**Sample:** 97308166 (Matrix Spike - LMX2) **Date Received:** 07/25/97 **Method:** SW8260
**Field ID:** MW-20A **Matrix:** Water
**Project Officer:** P. Marti **Date Analyzed:** 08/04/97 **Units:** % Recovery

| Analyte | Result | Qualifier | Analyte | Result | Qualifier |
|---|---|---|---|---|---|
| Dichlorodifluoromethane | 123 | | 1,1-Dichloropropanone | 77 | |
| Chloromethane | 83 | | Cis-1,3-Dichloropropene | 80 | |
| Vinyl Chloride | 78 | | 4-Methyl-2-Pentanone | 79 | |
| Bromomethane | 80 | | Trans-1,3-Dichloropropene | 71 | |
| Chloroethane | 81 | | 1,1,2-Trichloroethane | 87 | |
| Trichlorofluoromethane | 85 | | Toluene | 90 | |
| Acetone | 58 | | 1,3-Dichloropropane | 87 | |
| Ethyl Ether | 76 | | Ethylmethacrylate | 78 | |
| 1,1-Dichloroethene | 94 | | 2-Hexanone | 80 | |
| Acrylonitrile | 86 | | Dibromochloromethane | 80 | |
| Methyl Iodide | 92 | | 1,2-Dibromoethane (EDB) | 86 | |
| Methylene Chloride | 114 | | Tetrachloroethene | 86 | |
| 1,1,2 Trichlorotrifluoroethane | 83 | | 1,1,1,2-Tetrachloroethane | 83 | |
| Allyl Chloride | 81 | | Chlorobenzene | 100 | |
| Carbon Disulfide | 85 | | Ethylbenzene | 107 | |
| Trans-1,2-Dichloroethene | 88 | | m & p-Xylene | 109 | |
| 2-Methyoxy-2-Methylpropane | 88 | | Bromoform | 76 | |
| 1,1-Dichloroethane | 95 | | Styrene | 97 | |
| 2-Butanone | 79 | | 1,1,2,2-Tetrachloroethane | 85 | |
| Methyacrilonitrile | 86 | | o-Xylene | 109 | |
| Cis-1,2-Dichloroethene | 85 | | 1,2,3-Trichloropropane | 92 | |
| Bromochloromethane | 78 | | Trans-1,4-Dichloro-2-butene | 79 | |
| Chloroform | 85 | | Isopropylbenzene (Cumene) | 117 | |
| Methyl acrylate | 82 | | Bromobenzene | 95 | |
| 2,2-Dichloropropane | 68 | | n-Propylbenzene | 111 | |
| Tetrahydrofuran | 62 | | 2-Chlorotoluene | 120 | |
| 1,2-Dichloroethane | 86 | | 4-Chlorotoluene | 117 | |
| 1-Chlorobutane | 85 | | 1,2,4-Trimethylbenzene | 109 | |
| 1,1,1-Trichloroethane | 87 | | Pentachloroethane | 82 | |
| 1,1-Dichloropropene | 83 | | Tert-Butylbenzene | 115 | |
| Carbon Tetrachloride | 83 | | 1,3,5-Trimethylbenzene | 118 | |
| Benzene | 83 | | Sec-Butylbenzene | 105 | |
| Dibromomethane | 84 | | 1,3-Dichlorobenzene | 114 | |
| 1,2-Dichloropropane | 86 | | 1,4-Dichlorobenzene | 107 | |
| Trichloroethene | 87 | | p-Isopropyltoluene | 110 | |
| 2-Nitropropane | 64 | | 1,2-Dichlorobenzene | 109 | |
| Bromodichloromethane | 85 | | n-Butylbenzene | 100 | |
| Methyl Methacrylate | 76 | | 1,2-Dibromo-3-Chloropropane | 77 | |

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# Manchester Environmental Laboratory

## Department of Ecology

## Analysis Report for

## Volatile Organic Analysis

**Project Name:** Plaza Cleaners **LIMS Project ID:** 1425-97

**Sample:** 97308166 (Matrix Spike - LMX2) **Date Received:** 07/25/97 **Method:** SW8260
**Field ID:** MW-20A **Matrix:** Water
**Project Officer:** P. Marti **Date Analyzed:** 08/04/97 **Units:** % Recovery

| Analyte | Result | Qualifier |
|---|---|---|
| Hexachloroethane | 77 | |
| 1,2,4-Trichlorobenzene | 94 | |
| Naphthalene | 80 | |
| Hexachlorobutadiene | 89 | |
| 1,2,3-Trichlorobenzene | 93 | |

**Surrogate Recoveries**

| | | |
|---|---|---|
| 1,2-Dichloroethane-D4 | 102 | % |
| 1,4-Difluorobenzene | 97 | % |
| Toluene-D8 | 100 | % |
| p-Bromofluorobenzene | 101 | % |
| 1,2-Dichlorobenzene-D4 | 97 | % |

Authorized By: _____ Release Date: 9/4/97

# Manchester Environmental Laboratory

## Department of Ecology

## Analysis Report for

## Volatile Organic Analysis

**Project Name:** Plaza Cleaners **LIMS Project ID:** 1425-97

**Sample:** 97308166 (Matrix Spike - LMX1) **Date Received:** 07/25/97 **Method:** SW8260
**Field ID:** MW-20A **Matrix:** Water
**Project Officer:** P. Marti **Date Analyzed:** 08/04/97 **Units:** % Recovery

| Analyte | Result | Qualifier | Analyte | Result | Qualifier |
|---|---|---|---|---|---|
| Dichlorodifluoromethane | 127 | | 1,1-Dichloropropanone | 88 | |
| Chloromethane | 86 | | Cis-1,3-Dichloropropene | 83 | |
| Vinyl Chloride | 81 | | 4-Methyl-2-Pentanone | 84 | |
| Bromomethane | 83 | | Trans-1,3-Dichloropropene | 71 | |
| Chloroethane | 91 | | 1,1,2-Trichloroethane | 91 | |
| Trichlorofluoromethane | 86 | | Toluene | 94 | |
| Acetone | 61 | | 1,3-Dichloropropane | 92 | |
| Ethyl Ether | 91 | | Ethylmethacrylate | 79 | |
| 1,1-Dichloroethene | 100 | | 2-Hexanone | 82 | |
| Acrylonitrile | 107 | | Dibromochloromethane | 83 | |
| Methyl Iodide | 100 | | 1,2-Dibromoethane (EDB) | 88 | |
| Methylene Chloride | 113 | | Tetrachloroethene | 90 | |
| 1,1,2 Trichlorotrifluoroethane | 101 | | 1,1,1,2-Tetrachloroethane | 89 | |
| Allyl Chloride | 88 | | Chlorobenzene | 106 | |
| Carbon Disulfide | 91 | | Ethylbenzene | 117 | |
| Trans-1,2-Dichloroethene | 95 | | m & p-Xylene | 115 | |
| 2-Methyoxy-2-Methylpropane | 89 | | Bromoform | 83 | |
| 1,1-Dichloroethane | 100 | | Styrene | 99 | |
| 2-Butanone | 82 | | 1,1,2,2-Tetrachloroethane | 90 | |
| Methyacrilonitrile | 92 | | o-Xylene | 118 | |
| Cis-1,2-Dichloroethene | 85 | | 1,2,3-Trichloropropane | 96 | |
| Bromochloromethane | 84 | | Trans-1,4-Dichloro-2-butene | 78 | |
| Chloroform | 90 | | Isopropylbenzene (Cumene) | 121 | |
| Methyl acrylate | 84 | | Bromobenzene | 102 | |
| 2,2-Dichloropropane | 74 | | n-Propylbenzene | 115 | |
| Tetrahydrofuran | 64 | | 2-Chlorotoluene | 120 | |
| 1,2-Dichloroethane | 93 | | 4-Chlorotoluene | 127 | |
| 1-Chlorobutane | 89 | | 1,2,4-Trimethylbenzene | 113 | |
| 1,1,1-Trichloroethane | 93 | | Pentachloroethane | 85 | |
| 1,1-Dichloropropene | 87 | | Tert-Butylbenzene | 114 | |
| Carbon Tetrachloride | 90 | | 1,3,5-Trimethylbenzene | 122 | |
| Benzene | 88 | | Sec-Butylbenzene | 107 | |
| Dibromomethane | 87 | | 1,3-Dichlorobenzene | 116 | |
| 1,2-Dichloropropane | 92 | | 1,4-Dichlorobenzene | 119 | |
| Trichloroethene | 91 | | p-Isopropyltoluene | 114 | |
| 2-Nitropropane | 73 | | 1,2-Dichlorobenzene | 113 | |
| Bromodichloromethane | 89 | | n-Butylbenzene | 103 | |
| Methyl Methacrylate | 83 | | 1,2-Dibromo-3-Chloropropane | 85 | |

Authorized By: _____ Release Date: 8/11/97

# Manchester Environmental Laboratory

## Department of Ecology

## Analysis Report for

## Volatile Organic Analysis

**Project Name:** Plaza Cleaners **LIMS Project ID:** 1425-97

**Sample:** 97308166 (Matrix Spike - LMX1) **Date Received:** 07/25/97 **Method:** SW8260
**Field ID:** MW-20A **Matrix:** Water
**Project Officer:** P. Marti **Date Analyzed:** 08/04/97 **Units:** % Recovery

| Analyte | Result | Qualifier |
|---|---|---|
| Hexachloroethane | 84 | |
| 1,2,4-Trichlorobenzene | 97 | |
| Naphthalene | 81 | |
| Hexachlorobutadiene | 94 | |
| 1,2,3-Trichlorobenzene | 97 | |

**Surrogate Recoveries**

| | | |
|---|---|---|
| 1,2-Dichloroethane-D4 | 106 | % |
| 1,4-Difluorobenzene | 100 | % |
| Toluene-D8 | 102 | % |
| p-Bromofluorobenzene | 104 | % |
| 1,2-Dichlorobenzene-D4 | 99 | % |

Authorized By: _____ Release Date: 9/11/97

# Manchester Environmental Laboratory

## Department of Ecology

## Analysis Report for

## Volatile Organic Analysis

**Project Name:** Plaza Cleaners **LIMS Project ID:** 1425-97

**Sample:** 97308167 **Date Received:** 07/25/97 **Method:** SW8260
**Field ID:** MW-20B **Matrix:** Water
**Project Officer:** P. Marti **Date Analyzed:** 08/04/97 **Units:** ug/L

| Analyte | Result | Qualifier | Analyte | Result | Qualifier |
|---|---|---|---|---|---|
| Dichlorodifluoromethane | 2 | U | 1,1-Dichloropropanone | 5 | U |
| Chloromethane | 1 | U | Cis-1,3-Dichloropropene | 1.1 | U |
| Vinyl Chloride | 1 | U | 4-Methyl-2-Pentanone | 4 | U |
| Bromomethane | 1 | U | Trans-1,3-Dichloropropene | .94 | U |
| Chloroethane | 1 | U | 1,1,2-Trichloroethane | 1 | U |
| Trichlorofluoromethane | 5 | U | Toluene | 1 | U |
| Acetone | 5 | U | 1,3-Dichloropropane | 1 | U |
| Ethyl Ether | 1 | U | Ethylmethacrylate | 1 | U |
| 1,1-Dichloroethene | 1 | U | 2-Hexanone | 2 | U |
| Acrylonitrile | 5 | U | Dibromochloromethane | 1 | U |
| Methyl Iodide | 1 | U | 1,2-Dibromoethane (EDB) | 1 | U |
| Methylene Chloride | 5 | U | **Tetrachloroethene** | **328** | **E** |
| 1,1,2 Trichlorotrifluoroethane | 1 | U | 1,1,1,2-Tetrachloroethane | 1 | U |
| Allyl Chloride | 1 | U | Chlorobenzene | 1 | U |
| Carbon Disulfide | 2 | U | Ethylbenzene | 1 | U |
| Trans-1,2-Dichloroethene | 1 | U | m & p-Xylene | 2 | U |
| 2-Methyoxy-2-Methylpropane | 1 | U | Bromoform | 1 | U |
| 1,1-Dichloroethane | 1 | U | Styrene | 1 | U |
| 2-Butanone | 2 | U | 1,1,2,2-Tetrachloroethane | 1 | U |
| Methyacrilonitrile | 2 | U | o-Xylene | 1 | U |
| **Cis-1,2-Dichloroethene** | **6.4** | | 1,2,3-Trichloropropane | 1 | U |
| Bromochloromethane | 1 | U | Trans-1,4-Dichloro-2-butene | 1 | U |
| Chloroform | 2 | U | Isopropylbenzene (Cumene) | 1 | U |
| Methyl acrylate | 1 | U | Bromobenzene | 1 | U |
| 2,2-Dichloropropane | 2 | U | n-Propylbenzene | 1 | U |
| Tetrahydrofuran | 5 | U | 2-Chlorotoluene | 1 | U |
| 1,2-Dichloroethane | 1 | U | 4-Chlorotoluene | 1 | U |
| 1-Chlorobutane | 1 | U | 1,2,4-Trimethylbenzene | 2 | U |
| 1,1,1-Trichloroethane | 1 | U | Pentachloroethane | 5 | U |
| 1,1-Dichloropropene | 1 | U | Tert-Butylbenzene | 2 | U |
| Carbon Tetrachloride | 1 | U | 1,3,5-Trimethylbenzene | 1 | U |
| Benzene | 1 | U | Sec-Butylbenzene | 1 | U |
| Dibromomethane | 1 | U | 1,3-Dichlorobenzene | 1 | U |
| 1,2-Dichloropropane | 1 | U | 1,4-Dichlorobenzene | 1 | U |
| **Trichloroethene** | **4** | | p-Isopropyltoluene | 1 | U |
| 2-Nitropropane | 2 | U | 1,2-Dichlorobenzene | 1 | U |
| Bromodichloromethane | 1 | U | n-Butylbenzene | 2 | U |
| Methyl Methacrylate | 1 | U | 1,2-Dibromo-3-Chloropropane | 1 | U |

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# Manchester Environmental Laboratory

## Department of Ecology

## Analysis Report for

## Volatile Organic Analysis

**Project Name:** Plaza Cleaners **LIMS Project ID:** 1425-97

**Sample:** 97308167 **Date Received:** 07/25/97 **Method:** SW8260
**Field ID:** MW-20B **Matrix:** Water
**Project Officer:** P. Marti **Date Analyzed:** 08/04/97 **Units:** ug/L

| Analyte | Result | Qualifier |
|---|---|---|
| Hexachloroethane | 1 | U |
| 1,2,4-Trichlorobenzene | 2 | U |
| Naphthalene | 2 | U |
| Hexachlorobutadiene | 1 | U |
| 1,2,3-Trichlorobenzene | 2 | U |

**Surrogate Recoveries**

| | | |
|---|---|---|
| **1,2-Dichloroethane-D4** | **101** | % |
| **1,4-Difluorobenzene** | **99** | % |
| **Toluene-D8** | **100** | % |
| **p-Bromofluorobenzene** | **95** | % |
| **1,2-Dichlorobenzene-D4** | **104** | % |

Authorized By: _____ Release Date: 9/11/97

# Manchester Environmental Laboratory

## Department of Ecology

## Analysis Report for

## Volatile Organic Analysis

**Project Name:** Plaza Cleaners **LIMS Project ID:** 1425-97

**Sample:** 97308167 (Dilution - DIL1) **Date Received:** 07/25/97 **Method:** SW8260
**Field ID:** MW-20B **Matrix:** Water
**Project Officer:** P. Marti **Date Analyzed:** 08/04/97 **Units:** ug/L
5 KC

| Analyte | Result | Qualifier | Analyte | Result | Qualifier |
|---|---|---|---|---|---|
| Dichlorodifluoromethane | 100 | U | 1,1-Dichloropropanone | 250 | U |
| Chloromethane | 50 | U | Cis-1,3-Dichloropropene | 53 | U |
| Vinyl Chloride | 50 | U | 4-Methyl-2-Pentanone | 200 | U |
| Bromomethane | 50 | U | Trans-1,3-Dichloropropene | 47 | U |
| Chloroethane | 50 | U | 1,1,2-Trichloroethane | 50 | U |
| Trichlorofluoromethane | 250 | U | Toluene | 50 | U |
| Acetone | 250 | U | 1,3-Dichloropropane | 50 | U |
| Ethyl Ether | 50 | U | Ethylmethacrylate | 50 | U |
| 1,1-Dichloroethene | 50 | U | 2-Hexanone | 100 | U |
| Acrylonitrile | 250 | U | Dibromochloromethane | 50 | U |
| Methyl Iodide | 50 | U | 1,2-Dibromoethane (EDB) | 50 | U |
| Methylene Chloride | 250 | U | **Tetrachloroethene** | **222** | |
| 1,1,2 Trichlorotrifluoroethane | 50 | U | 1,1,1,2-Tetrachloroethane | 50 | U |
| Allyl Chloride | 50 | U | Chlorobenzene | 50 | U |
| Carbon Disulfide | 100 | U | Ethylbenzene | 50 | U |
| Trans-1,2-Dichloroethene | 50 | U | m & p-Xylene | 100 | U |
| 2-Methyoxy-2-Methylpropane | 50 | U | Bromoform | 50 | U |
| 1,1-Dichloroethane | 50 | U | Styrene | 50 | U |
| 2-Butanone | 100 | U | 1,1,2,2-Tetrachloroethane | 50 | U |
| Methyacrilonitrile | 100 | U | o-Xylene | 50 | U |
| Cis-1,2-Dichloroethene | 100 | U | 1,2,3-Trichloropropane | 50 | U |
| Bromochloromethane | 50 | U | Trans-1,4-Dichloro-2-butene | 50 | U |
| Chloroform | 100 | U | Isopropylbenzene (Cumene) | 50 | U |
| Methyl acrylate | 50 | U | Bromobenzene | 50 | U |
| 2,2-Dichloropropane | 100 | U | n-Propylbenzene | 50 | U |
| Tetrahydrofuran | 250 | U | 2-Chlorotoluene | 50 | U |
| 1,2-Dichloroethane | 50 | U | 4-Chlorotoluene | 50 | U |
| 1-Chlorobutane | 50 | U | 1,2,4-Trimethylbenzene | 100 | U |
| 1,1,1-Trichloroethane | 50 | U | Pentachloroethane | 250 | U |
| 1,1-Dichloropropene | 50 | U | Tert-Butylbenzene | 100 | U |
| Carbon Tetrachloride | 50 | U | 1,3,5-Trimethylbenzene | 50 | U |
| Benzene | 50 | U | Sec-Butylbenzene | 50 | U |
| Dibromomethane | 50 | U | 1,3-Dichlorobenzene | 50 | U |
| 1,2-Dichloropropane | 50 | U | 1,4-Dichlorobenzene | 50 | U |
| Trichloroethene | 50 | U | p-Isopropyltoluene | 50 | U |
| 2-Nitropropane | 100 | U | 1,2-Dichlorobenzene | 50 | U |
| Bromodichloromethane | 50 | U | n-Butylbenzene | 100 | U |
| Methyl Methacrylate | 50 | U | 1,2-Dibromo-3-Chloropropane | 50 | U |

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# Manchester Environmental Laboratory

## Department of Ecology

## Analysis Report for

## Volatile Organic Analysis

**Project Name:** Plaza Cleaners **LIMS Project ID:** 1425-97

**Sample:** 97308167 (Dilution - DIL1) **Date Received:** 07/25/97 **Method:** SW8260
**Field ID:** MW-20B **Matrix:** Water
**Project Officer:** P. Marti **Date Analyzed:** 08/04/97 5 KF **Units:** ug/L

| Analyte | Result | Qualifier |
|---|---|---|
| Hexachloroethane | 50 | U |
| 1,2,4-Trichlorobenzene | 100 | U |
| Naphthalene | 100 | U |
| Hexachlorobutadiene | 50 | U |
| 1,2,3-Trichlorobenzene | 100 | U |

**Surrogate Recoveries**

| | | |
|---|---|---|
| **1,2-Dichloroethane-D4** | **102** | **%** |
| **1,4-Difluorobenzene** | **100** | **%** |
| **Toluene-D8** | **101** | **%** |
| **p-Bromofluorobenzene** | **96** | **%** |
| **1,2-Dichlorobenzene-D4** | **103** | **%** |

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# Manchester Environmental Laboratory

## Department of Ecology

## Analysis Report for

## Volatile Organic Analysis

**Project Name:** Plaza Cleaners **LIMS Project ID:** 1425-97

**Sample:** 97308168 **Date Received:** 07/25/97 **Method:** SW8260
**Field ID:** MW-31 **Matrix:** Water
**Project Officer:** P. Marti **Date Analyzed:** 08/04/97 **Units:** ug/L

| Analyte | Result | Qualifier | Analyte | Result | Qualifier |
|---|---|---|---|---|---|
| Dichlorodifluoromethane | 2 | U | 1,1-Dichloropropanone | 5 | U |
| Chloromethane | 1 | U | Cis-1,3-Dichloropropene | 1.1 | U |
| Vinyl Chloride | 1 | U | 4-Methyl-2-Pentanone | 4 | U |
| Bromomethane | 1 | U | Trans-1,3-Dichloropropene | .94 | U |
| Chloroethane | 1 | U | 1,1,2-Trichloroethane | 1 | U |
| Trichlorofluoromethane | 5 | U | Toluene | 1 | U |
| Acetone | 5 | U | 1,3-Dichloropropane | 1 | U |
| Ethyl Ether | 1 | U | Ethylmethacrylate | 1 | U |
| 1,1-Dichloroethene | 1 | U | 2-Hexanone | 2 | U |
| Acrylonitrile | 5 | U | Dibromochloromethane | 1 | U |
| Methyl Iodide | 1 | U | 1,2-Dibromoethane (EDB) | 1 | U |
| Methylene Chloride | 5 | U | **Tetrachloroethene** | **.89** | **J** |
| 1,1,2 Trichlorotrifluoroethane | 1 | U | 1,1,1,2-Tetrachloroethane | 1 | U |
| Allyl Chloride | 1 | U | Chlorobenzene | 1 | U |
| Carbon Disulfide | 2 | U | Ethylbenzene | 1 | U |
| Trans-1,2-Dichloroethene | 1 | U | m & p-Xylene | 2 | U |
| 2-Methyoxy-2-Methylpropane | 1 | U | Bromoform | 1 | U |
| 1,1-Dichloroethane | 1 | U | Styrene | 1 | U |
| 2-Butanone | 2 | U | 1,1,2,2-Tetrachloroethane | 1 | U |
| Methyacrilonitrile | 2 | U | o-Xylene | 1 | U |
| **Cis-1,2-Dichloroethene** | **.92** | **J** | 1,2,3-Trichloropropane | 1 | U |
| Bromochloromethane | 1 | U | Trans-1,4-Dichloro-2-butene | 1 | U |
| Chloroform | 2 | U | Isopropylbenzene (Cumene) | 1 | U |
| Methyl acrylate | 1 | U | Bromobenzene | 1 | U |
| 2,2-Dichloropropane | 2 | U | n-Propylbenzene | 1 | U |
| Tetrahydrofuran | 5 | U | 2-Chlorotoluene | 1 | U |
| 1,2-Dichloroethane | 1 | U | 4-Chlorotoluene | 1 | U |
| 1-Chlorobutane | 1 | U | 1,2,4-Trimethylbenzene | 2 | U |
| 1,1,1-Trichloroethane | 1 | U | Pentachloroethane | 5 | U |
| 1,1-Dichloropropene | 1 | U | Tert-Butylbenzene | 2 | U |
| Carbon Tetrachloride | 1 | U | 1,3,5-Trimethylbenzene | 1 | U |
| Benzene | 1 | U | Sec-Butylbenzene | 1 | U |
| Dibromomethane | 1 | U | 1,3-Dichlorobenzene | 1 | U |
| 1,2-Dichloropropane | 1 | U | 1,4-Dichlorobenzene | 1 | U |
| Trichloroethene | 1 | U | p-Isopropyltoluene | 1 | U |
| 2-Nitropropane | 2 | U | 1,2-Dichlorobenzene | 1 | U |
| Bromodichloromethane | 1 | U | n-Butylbenzene | 2 | U |
| Methyl Methacrylate | 1 | U | 1,2-Dibromo-3-Chloropropane | 1 | U |

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## Department of Ecology

## Analysis Report for

## Volatile Organic Analysis

**Project Name:** Plaza Cleaners **LIMS Project ID:** 1425-97

**Sample:** 97308168 **Date Received:** 07/25/97 **Method:** SW8260
**Field ID:** MW-31 **Matrix:** Water
**Project Officer:** P. Marti **Date Analyzed:** 08/04/97 **Units:** ug/L

| Analyte | Result | Qualifier |
|---|---|---|
| Hexachloroethane | 1 | U |
| 1,2,4-Trichlorobenzene | 2 | U |
| Naphthalene | 2 | U |
| Hexachlorobutadiene | 1 | U |
| 1,2,3-Trichlorobenzene | 2 | U |

**Surrogate Recoveries**

| | | |
|---|---|---|
| **1,2-Dichloroethane-D4** | **100** | **%** |
| **1,4-Difluorobenzene** | **100** | **%** |
| **Toluene-D8** | **102** | **%** |
| **p-Bromofluorobenzene** | **95** | **%** |
| **1,2-Dichlorobenzene-D4** | **104** | **%** |

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# Manchester Environmental Laboratory

## Department of Ecology

## Analysis Report for

## Volatile Organic Analysis

**Project Name:** Plaza Cleaners **LIMS Project ID:** 1425-97

**Sample:** 97308169 **Date Received:** 07/25/97 **Method:** SW8260
**Field ID:** MW-33 **Matrix:** Water
**Project Officer:** P. Marti **Date Analyzed:** 08/04/97 **Units:** ug/L

| Analyte | Result | Qualifier | Analyte | Result | Qualifier |
|---|---|---|---|---|---|
| Dichlorodifluoromethane | 2 | U | 1,1-Dichloropropanone | 5 | U |
| Chloromethane | 1 | U | Cis-1,3-Dichloropropene | 1.1 | U |
| Vinyl Chloride | 1 | U | 4-Methyl-2-Pentanone | 4 | U |
| Bromomethane | 1 | U | Trans-1,3-Dichloropropene | .94 | U |
| Chloroethane | 1 | U | 1,1,2-Trichloroethane | 1 | U |
| Trichlorofluoromethane | 5 | U | Toluene | 1 | U |
| Acetone | 5 | U | 1,3-Dichloropropane | 1 | U |
| Ethyl Ether | 1 | U | Ethylmethacrylate | 1 | U |
| 1,1-Dichloroethene | 1 | U | 2-Hexanone | 2 | U |
| Acrylonitrile | 5 | U | Dibromochloromethane | 1 | U |
| Methyl Iodide | 1 | U | 1,2-Dibromoethane (EDB) | 1 | U |
| Methylene Chloride | 5 | U | Tetrachloroethene | 1 | U |
| 1,1,2 Trichlorotrifluoroethane | 1 | U | 1,1,1,2-Tetrachloroethane | 1 | U |
| Allyl Chloride | 1 | U | Chlorobenzene | 1 | U |
| Carbon Disulfide | 2 | U | Ethylbenzene | 1 | U |
| Trans-1,2-Dichloroethene | 1 | U | m & p-Xylene | 2 | U |
| 2-Methyoxy-2-Methylpropane | 1 | U | Bromoform | 1 | U |
| 1,1-Dichloroethane | 1 | U | Styrene | 1 | U |
| 2-Butanone | 2 | U | 1,1,2,2-Tetrachloroethane | 1 | U |
| Methyacrilonitrile | 2 | U | o-Xylene | 1 | U |
| Cis-1,2-Dichloroethene | 2 | U | 1,2,3-Trichloropropane | 1 | U |
| Bromochloromethane | 1 | U | Trans-1,4-Dichloro-2-butene | 1 | U |
| Chloroform | 2 | U | Isopropylbenzene (Cumene) | 1 | U |
| Methyl acrylate | 1 | U | Bromobenzene | 1 | U |
| 2,2-Dichloropropane | 2 | U | n-Propylbenzene | 1 | U |
| Tetrahydrofuran | 5 | U | 2-Chlorotoluene | 1 | U |
| 1,2-Dichloroethane | 1 | U | 4-Chlorotoluene | 1 | U |
| 1-Chlorobutane | 1 | U | 1,2,4-Trimethylbenzene | 2 | U |
| 1,1,1-Trichloroethane | 1 | U | Pentachloroethane | 5 | U |
| 1,1-Dichloropropene | 1 | U | Tert-Butylbenzene | 2 | U |
| Carbon Tetrachloride | 1 | U | 1,3,5-Trimethylbenzene | 1 | U |
| Benzene | 1 | U | Sec-Butylbenzene | 1 | U |
| Dibromomethane | 1 | U | 1,3-Dichlorobenzene | 1 | U |
| 1,2-Dichloropropane | 1 | U | 1,4-Dichlorobenzene | 1 | U |
| Trichloroethene | 1 | U | p-Isopropyltoluene | 1 | U |
| 2-Nitropropane | 2 | U | 1,2-Dichlorobenzene | 1 | U |
| Bromodichloromethane | 1 | U | n-Butylbenzene | 2 | U |
| Methyl Methacrylate | 1 | U | 1,2-Dibromo-3-Chloropropane | 1 | U |

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# Manchester Environmental Laboratory

## Department of Ecology

## Analysis Report for

## Volatile Organic Analysis

**Project Name:** Plaza Cleaners **LIMS Project ID:** 1425-97

**Sample:** 97308169 **Date Received:** 07/25/97 **Method:** SW8260
**Field ID:** MW-33 **Matrix:** Water
**Project Officer:** P. Marti **Date Analyzed:** 08/04/97 **Units:** ug/L

| Analyte | Result | Qualifier |
|---|---|---|
| Hexachloroethane | 1 | U |
| 1,2,4-Trichlorobenzene | 2 | U |
| Naphthalene | 2 | U |
| Hexachlorobutadiene | 1 | U |
| 1,2,3-Trichlorobenzene | 2 | U |

**Surrogate Recoveries**

| | | |
|---|---|---|
| **1,2-Dichloroethane-D4** | **101** | **%** |
| **1,4-Difluorobenzene** | **100** | **%** |
| **Toluene-D8** | **99** | **%** |
| **p-Bromofluorobenzene** | **96** | **%** |
| **1,2-Dichlorobenzene-D4** | **103** | **%** |

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# Manchester Environmental Laboratory

## Department of Ecology

## Analysis Report for

## Volatile Organic Analysis

**Project Name:** Plaza Cleaners **LIMS Project ID:** 1425-97

**Sample:** 97308170 **Date Received:** 07/25/97 **Method:** SW8260
**Field ID:** MW-19A **Matrix:** Water
**Project Officer:** P. Marti **Date Analyzed:** 08/04/97 **Units:** ug/L

| Analyte | Result | Qualifier | Analyte | Result | Qualifier |
|---|---|---|---|---|---|
| Dichlorodifluoromethane | 2 | U | 1,1-Dichloropropanone | 5 | U |
| Chloromethane | 1 | U | Cis-1,3-Dichloropropene | 1.1 | U |
| Vinyl Chloride | 1 | U | 4-Methyl-2-Pentanone | 4 | U |
| Bromomethane | 1 | U | Trans-1,3-Dichloropropene | .94 | U |
| Chloroethane | 1 | U | 1,1,2-Trichloroethane | 1 | U |
| Trichlorofluoromethane | 5 | U | **Toluene** | **.11** | **J** |
| Acetone | 5 | U | 1,3-Dichloropropane | 1 | U |
| Ethyl Ether | 1 | U | Ethylmethacrylate | 1 | U |
| 1,1-Dichloroethene | 1 | U | 2-Hexanone | 2 | U |
| Acrylonitrile | 5 | U | Dibromochloromethane | 1 | U |
| Methyl Iodide | 1 | U | 1,2-Dibromoethane (EDB) | 1 | U |
| Methylene Chloride | 5 | U | Tetrachloroethene | 1 | U |
| 1,1,2 Trichlorotrifluoroethane | 1 | U | 1,1,1,2-Tetrachloroethane | 1 | U |
| Allyl Chloride | 1 | U | Chlorobenzene | 1 | U |
| Carbon Disulfide | 2 | U | Ethylbenzene | 1 | U |
| Trans-1,2-Dichloroethene | 1 | U | m & p-Xylene | 2 | U |
| 2-Methyoxy-2-Methylpropane | 1 | U | Bromoform | 1 | U |
| 1,1-Dichloroethane | 1 | U | Styrene | 1 | U |
| 2-Butanone | 2 | U | 1,1,2,2-Tetrachloroethane | 1 | U |
| Methyacrilonitrile | 2 | U | o-Xylene | 1 | U |
| Cis-1,2-Dichloroethene | 2 | U | 1,2,3-Trichloropropane | 1 | U |
| Bromochloromethane | 1 | U | Trans-1,4-Dichloro-2-butene | 1 | U |
| Chloroform | 2 | U | Isopropylbenzene (Cumene) | 1 | U |
| Methyl acrylate | 1 | U | Bromobenzene | 1 | U |
| 2,2-Dichloropropane | 2 | U | n-Propylbenzene | 1 | U |
| Tetrahydrofuran | 5 | U | 2-Chlorotoluene | 1 | U |
| 1,2-Dichloroethane | 1 | U | 4-Chlorotoluene | 1 | U |
| 1-Chlorobutane | 1 | U | 1,2,4-Trimethylbenzene | 2 | U |
| 1,1,1-Trichloroethane | 1 | U | Pentachloroethane | 5 | U |
| 1,1-Dichloropropene | 1 | U | Tert-Butylbenzene | 2 | U |
| Carbon Tetrachloride | 1 | U | 1,3,5-Trimethylbenzene | 1 | U |
| Benzene | 1 | U | Sec-Butylbenzene | 1 | U |
| Dibromomethane | 1 | U | 1,3-Dichlorobenzene | 1 | U |
| 1,2-Dichloropropane | 1 | U | 1,4-Dichlorobenzene | 1 | U |
| **Trichloroethene** | **.34** | **J** | p-Isopropyltoluene | 1 | U |
| 2-Nitropropane | 2 | U | 1,2-Dichlorobenzene | 1 | U |
| Bromodichloromethane | 1 | U | n-Butylbenzene | 2 | U |
| Methyl Methacrylate | 1 | U | 1,2-Dibromo-3-Chloropropane | 1 | U |

Authorized By: _____ Release Date: 9/11/97

# Manchester Environmental Laboratory

## Department of Ecology

## Analysis Report for

## Volatile Organic Analysis

**Project Name:** Plaza Cleaners **LIMS Project ID:** 1425-97

**Sample:** 97308170 **Date Received:** 07/25/97 **Method:** SW8260
**Field ID:** MW-19A **Matrix:** Water
**Project Officer:** P. Marti **Date Analyzed:** 08/04/97 **Units:** ug/L

| Analyte | Result | Qualifier |
|---|---|---|
| Hexachloroethane | 1 | U |
| 1,2,4-Trichlorobenzene | 2 | U |
| Naphthalene | 2 | U |
| Hexachlorobutadiene | 1 | U |
| 1,2,3-Trichlorobenzene | 2 | U |

**Surrogate Recoveries**

| | | |
|---|---|---|
| **1,2-Dichloroethane-D4** | **100** | **%** |
| **1,4-Difluorobenzene** | **99** | **%** |
| **Toluene-D8** | **98** | **%** |
| **p-Bromofluorobenzene** | **95** | **%** |
| **1,2-Dichlorobenzene-D4** | **104** | **%** |

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# Manchester Environmental Laboratory

## Department of Ecology

## Analysis Report for

## Volatile Organic Analysis

**Project Name:** Plaza Cleaners **LIMS Project ID:** 1425-97

**Sample:** BLN72002 **Method:** SW8260
**Blank ID:** ODBW7216 **Matrix:** Water
**Project Officer:** P. Marti **Date Analyzed:** 08/04/97 **Units:** ug/L

| Analyte | Result | Qualifier | Analyte | Result | Qualifier |
|---|---|---|---|---|---|
| Dichlorodifluoromethane | 2 | U | 1,1-Dichloropropanone | 5 | U |
| Chloromethane | 1 | U | Cis-1,3-Dichloropropene | 1.1 | U |
| Vinyl Chloride | 1 | U | 4-Methyl-2-Pentanone | 4 | U |
| Bromomethane | 1 | U | Trans-1,3-Dichloropropene | .94 | U |
| Chloroethane | 1 | U | 1,1,2-Trichloroethane | 1 | U |
| Trichlorofluoromethane | 5 | U | Toluene | 1 | U |
| Acetone | 5 | U | 1,3-Dichloropropane | 1 | U |
| Ethyl Ether | 1 | U | Ethylmethacrylate | 1 | U |
| 1,1-Dichloroethene | 1 | U | 2-Hexanone | 2 | U |
| Acrylonitrile | 5 | U | Dibromochloromethane | 1 | U |
| Methyl Iodide | 1 | U | 1,2-Dibromoethane (EDB) | 1 | U |
| **Methylene Chloride** | **2.2** | **J** | Tetrachloroethene | 1 | U |
| 1,1,2 Trichlorotrifluoroethane | 1 | U | 1,1,1,2-Tetrachloroethane | 1 | U |
| Allyl Chloride | 1 | U | Chlorobenzene | 1 | U |
| Carbon Disulfide | 2 | U | Ethylbenzene | 1 | U |
| Trans-1,2-Dichloroethene | 1 | U | m & p-Xylene | 2 | U |
| 2-Methyoxy-2-Methylpropane | 1 | U | Bromoform | 1 | U |
| 1,1-Dichloroethane | 1 | U | Styrene | 1 | U |
| 2-Butanone | 2 | U | 1,1,2,2-Tetrachloroethane | 1 | U |
| Methyacrilonitrile | 2 | U | o-Xylene | 1 | U |
| Cis-1,2-Dichloroethene | 2 | U | 1,2,3-Trichloropropane | 1 | U |
| Bromochloromethane | 1 | U | Trans-1,4-Dichloro-2-butene | 1 | U |
| Chloroform | 2 | U | Isopropylbenzene (Cumene) | 1 | U |
| Methyl acrylate | 1 | U | Bromobenzene | 1 | U |
| 2,2-Dichloropropane | 2 | U | n-Propylbenzene | 1 | U |
| Tetrahydrofuran | 5 | U | 2-Chlorotoluene | 1 | U |
| 1,2-Dichloroethane | 1 | U | 4-Chlorotoluene | 1 | U |
| 1-Chlorobutane | 1 | U | 1,2,4-Trimethylbenzene | 2 | U |
| 1,1,1-Trichloroethane | 1 | U | Pentachloroethane | 5 | U |
| 1,1-Dichloropropene | 1 | U | Tert-Butylbenzene | 2 | U |
| Carbon Tetrachloride | 1 | U | 1,3,5-Trimethylbenzene | 1 | U |
| Benzene | 1 | U | Sec-Butylbenzene | 1 | U |
| Dibromomethane | 1 | U | 1,3-Dichlorobenzene | 1 | U |
| 1,2-Dichloropropane | 1 | U | 1,4-Dichlorobenzene | 1 | U |
| Trichloroethene | 1 | U | p-Isopropyltoluene | 1 | U |
| 2-Nitropropane | 2 | U | 1,2-Dichlorobenzene | 1 | U |
| Bromodichloromethane | 1 | U | n-Butylbenzene | 2 | U |
| Methyl Methacrylate | 1 | U | 1,2-Dibromo-3-Chloropropane | 1 | U |

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# Manchester Environmental Laboratory

## Department of Ecology

## Analysis Report for

## Volatile Organic Analysis

**Project Name:** Plaza Cleaners **LIMS Project ID:** 1425-97

**Sample:** BLN72002
**Blank ID:** ODBW7216
**Project Officer:** P. Marti **Date Analyzed:** 08/04/97

**Method:** SW8260
**Matrix:** Water
**Units:** ug/L

| Analyte | Result | Qualifier |
|---|---|---|
| Hexachloroethane | 1 | U |
| 1,2,4-Trichlorobenzene | 2 | U |
| Naphthalene | 2 | U |
| Hexachlorobutadiene | 1 | U |
| 1,2,3-Trichlorobenzene | 2 | U |

**Surrogate Recoveries**

| | | |
|---|---|---|
| **1,2-Dichloroethane-D4** | **101** | % |
| **1,4-Difluorobenzene** | **99** | % |
| **Toluene-D8** | **101** | % |
| **p-Bromofluorobenzene** | **97** | % |
| **1,2-Dichlorobenzene-D4** | **103** | % |

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# Manchester Environmental Laboratory

## Department of Ecology

## Analysis Report for

## Volatile Organic Analysis

**Project Name:** Plaza Cleaners **LIMS Project ID:** 1425-97

**Sample:** BLN72243 **Method:** SW8260
**Blank ID:** ODBW7217 **Matrix:** Water
**Project Officer:** P. Marti **Date Analyzed:** 08/05/97 **Units:** ug/L

| Analyte | Result | Qualifier | Analyte | Result | Qualifier |
|---|---|---|---|---|---|
| Dichlorodifluoromethane | 2 | U | 1,1-Dichloropropanone | 5 | U |
| Chloromethane | 1 | U | Cis-1,3-Dichloropropene | 1.1 | U |
| Vinyl Chloride | 1 | U | 4-Methyl-2-Pentanone | 4 | U |
| Bromomethane | 1 | U | Trans-1,3-Dichloropropene | .94 | U |
| Chloroethane | 1 | U | 1,1,2-Trichloroethane | 1 | U |
| Trichlorofluoromethane | 5 | U | Toluene | 1 | U |
| Acetone | 5 | U | 1,3-Dichloropropane | 1 | U |
| Ethyl Ether | 1 | U | Ethylmethacrylate | 1 | U |
| 1,1-Dichloroethene | 1 | U | 2-Hexanone | 2 | U |
| Acrylonitrile | 5 | U | Dibromochloromethane | 1 | U |
| Methyl Iodide | 1 | U | 1,2-Dibromoethane (EDB) | 1 | U |
| **Methylene Chloride** | **2.2** | **J** | Tetrachloroethene | 1 | U |
| 1,1,2 Trichlorotrifluoroethane | 1 | U | 1,1,1,2-Tetrachloroethane | 1 | U |
| Allyl Chloride | 1 | U | Chlorobenzene | 1 | U |
| Carbon Disulfide | 2 | U | Ethylbenzene | 1 | U |
| Trans-1,2-Dichloroethene | 1 | U | m & p-Xylene | 2 | U |
| 2-Methyoxy-2-Methylpropane | 1 | U | Bromoform | 1 | U |
| 1,1-Dichloroethane | 1 | U | Styrene | 1 | U |
| 2-Butanone | 2 | U | 1,1,2,2-Tetrachloroethane | 1 | U |
| Methyacrilonitrile | 2 | U | o-Xylene | 1 | U |
| Cis-1,2-Dichloroethene | 2 | U | 1,2,3-Trichloropropane | 1 | U |
| Bromochloromethane | 1 | U | Trans-1,4-Dichloro-2-butene | 1 | U |
| Chloroform | 2 | U | Isopropylbenzene (Cumene) | 1 | U |
| Methyl acrylate | 1 | U | Bromobenzene | 1 | U |
| 2,2-Dichloropropane | 2 | U | n-Propylbenzene | 1 | U |
| Tetrahydrofuran | 5 | U | 2-Chlorotoluene | 1 | U |
| 1,2-Dichloroethane | 1 | U | 4-Chlorotoluene | 1 | U |
| 1-Chlorobutane | 1 | U | 1,2,4-Trimethylbenzene | 2 | U |
| 1,1,1-Trichloroethane | 1 | U | Pentachloroethane | 5 | U |
| 1,1-Dichloropropene | 1 | U | Tert-Butylbenzene | 2 | U |
| Carbon Tetrachloride | 1 | U | 1,3,5-Trimethylbenzene | 1 | U |
| Benzene | 1 | U | Sec-Butylbenzene | 1 | U |
| Dibromomethane | 1 | U | 1,3-Dichlorobenzene | 1 | U |
| 1,2-Dichloropropane | 1 | U | 1,4-Dichlorobenzene | 1 | U |
| Trichloroethene | 1 | U | p-Isopropyltoluene | 1 | U |
| 2-Nitropropane | 2 | U | 1,2-Dichlorobenzene | 1 | U |
| Bromodichloromethane | 1 | U | n-Butylbenzene | 2 | U |
| Methyl Methacrylate | 1 | U | 1,2-Dibromo-3-Chloropropane | 1 | U |

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## Analysis Report for

## Volatile Organic Analysis

**Project Name:** Plaza Cleaners

**LIMS Project ID:** 1425-97

**Sample:** BLN72243
**Blank ID:** ODBW7217
**Project Officer:** P. Marti

**Date Analyzed:** 08/05/97

**Method:** SW8260
**Matrix:** Water
**Units:** ug/L

| Analyte | Result | Qualifier |
|---|---|---|
| Hexachloroethane | 1 | U |
| 1,2,4-Trichlorobenzene | 2 | U |
| Naphthalene | 2 | U |
| Hexachlorobutadiene | 1 | U |
| 1,2,3-Trichlorobenzene | 2 | U |

**Surrogate Recoveries**

| | | |
|---|---|---|
| **1,2-Dichloroethane-D4** | **105** | % |
| **1,4-Difluorobenzene** | **100** | % |
| **Toluene-D8** | **104** | % |
| **p-Bromofluorobenzene** | **96** | % |
| **1,2-Dichlorobenzene-D4** | **104** | % |

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