Columbia Analytical Services INC.
An Employee-Owned Company

PROJ # Western
COPIES TO EOS

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GEOTRANS

May 31, 2002

Christian Culbertson
GeoTrans
4665 S. Ash Avenue, Suite G-1
Tempe, AZ 85285

**Re: Western Avenue / Project #E049-106**

Dear Christian:

Enclosed are the results of the samples submitted to our laboratory on May 16, 2002. The samples were analyzed for Arsenic by our Canoga Park, CA facility (L2201213). For your reference, the 8260 analyses have been assigned our service request number X2200453.

All analyses were performed according to our laboratory's quality assurance program. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Columbia Analytical Services, Inc. is certified for environmental analyses by the Arizona Department of Health Services (Certificate #AZ0136; and #AZ0497).

Please call if you have any questions. My extension is 224.

Respectfully submitted,

**Columbia Analytical Services, Inc.**

Greg Jordan
Project Chemist

GRJ/lm



3902 East University Drive, Suite 4 ▪ Phoenix, AZ 85034 ▪ (602) 437-2001 ▪ Fax (602) 437-5308

## COLUMBIA ANALYTICAL SERVICES, INC.

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans, Inc. | **Service Request No.:** | X2200453 |
| **Project:** | Western Avenue / #E049-106 | **Date Received:** | 5/16/02 |
| **Sample Matrix:** | Water | | |

## CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for sample(s) designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix/Duplicate Matrix Spike (MS/DMS) and Laboratory Control Sample (LCS).

All EPA recommended holding times have been met for analyses in this sample delivery group.

The following difficulties were experienced during analysis of this batch:

The associated blank spike (XWG0200678-1 and XWG0200678-2) recovery of 1,1-Dichloroethene and Iodomethane, Method 8260B, was above laboratory acceptance limits.

Surrogate recovery of Dibromofluoromethane and Toluene-d8, Method 8260B, was above laboratory acceptance limits, but within method acceptance limits for sample GMW-5MS (XWG0200678-4).

Surrogate recovery of Dibromofluoromethane, Method 8260B, was above laboratory acceptance limits, but within method acceptance limits for sample GMW-5DMS (XWG0200678-5).

Matrix spike (XWG0200678-4 and XWG0200678-5) recovery of several analytes for Method 8260B was high. The method control sample recovery was acceptable.

Matrix spike (XWG0200678-4 and XWG0200678-5) recovery of 2-Butanone (MEK), Method 8260B, was low. The method control sample recovery was acceptable.

LCS/DLCS (XWG0200678-1 and XWG0200678-2) RPD for Chloromethane, Method 8260B, exceeded the laboratory control limit. Recovery met acceptance criteria.

RPD for Iodomethane, Method 8260B, exceeded the method control limit for LCS/DLCS (XWG0200678-1 and XWG0200678-2).

Approved by Jerry Jordan Date 5/31/02

COLUMBIA ANALYTICAL SERVICES, INC.

**Client:** GeoTrans
**Project:** Western Ave/#E049-106

**Service Request:** X2200453

## Cover Page - Organic Analysis Data Package
## Volatile Organic Compounds

| Sample Name | Lab Code | Date Collected | Date Received |
|---|---|---|---|
| MW-7 | X2200453-001 | 05/15/2002 | 05/16/2002 |
| MW-5 | X2200453-002 | 05/15/2002 | 05/16/2002 |
| ADEQA-MW5 | X2200453-003 | 05/15/2002 | 05/16/2002 |
| MW-6 | X2200453-004 | 05/15/2002 | 05/16/2002 |
| MW-1 | X2200453-005 | 05/15/2002 | 05/16/2002 |
| MW-4 | X2200453-006 | 05/15/2002 | 05/16/2002 |
| MW-3 | X2200453-007 | 05/15/2002 | 05/16/2002 |
| GMW-5 | X2200453-008 | 05/14/2002 | 05/16/2002 |
| GMW-4 | X2200453-009 | 05/14/2002 | 05/16/2002 |
| ADEQG-MW4 | X2200453-010 | 05/14/2002 | 05/16/2002 |
| GMW-5MS | XWG0200678-4 | 05/14/2002 | 05/16/2002 |
| GMW-5DMS | XWG0200678-5 | 05/14/2002 | 05/16/2002 |

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Greg Jordan

Name: Greg Jordan

Date: 5/31/02

Title: Project Chemist

# COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| Client: | GeoTrans | Service Request: | X2200453 |
| Project: | Western Ave/#E049-106 | Date Collected: | 05/15/2002 |
| Sample Matrix: | Water | Date Received: | 05/16/2002 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| Sample Name: | MW-7 | Units: | ug/L |
| Lab Code: | X2200453-001 | Basis: | NA |
| Extraction Method: | EPA 5030B | Level: | Low |
| Analysis Method: | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | ND | U | 3.0 | 1 | 05/28/02 | 05/28/02 | |
| Chloromethane | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| Vinyl Chloride | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Bromomethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Chloroethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Trichlorofluoromethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,2-Trichlorotrifluoroethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,1-Dichloroethene | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | L1 |
| Acetone | ND | U | 10 | 1 | 05/28/02 | 05/28/02 | |
| Iodomethane | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| Carbon Disulfide | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| Methylene Chloride | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Methyl tert-Butyl Ether | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| trans-1,2-Dichloroethene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,1-Dichloroethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Vinyl Acetate | ND | U | 3.0 | 1 | 05/28/02 | 05/28/02 | |
| 2,2-Dichloropropane | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| 2-Butanone (MEK) | ND | U | 5.0 | 1 | 05/28/02 | 05/28/02 | |
| cis-1,2-Dichloroethene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Bromochloromethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Chloroform | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,1-Trichloroethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Carbon Tetrachloride | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,1-Dichloropropene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Benzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dichloroethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Trichloroethene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dichloropropane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Dibromomethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Bromodichloromethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| cis-1,3-Dichloropropene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 4-Methyl-2-pentanone (MIBK) | ND | U | 5.0 | 1 | 05/28/02 | 05/28/02 | |
| Toluene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |

Comments:

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# COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200453 |
| **Project:** | Western Ave/#E049-106 | **Date Collected:** | 05/15/2002 |
| **Sample Matrix:** | Water | **Date Received:** | 05/16/2002 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | MW-7 | **Units:** | ug/L |
| **Lab Code:** | X2200453-001 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| trans-1,3-Dichloropropene | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,2-Trichloroethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| **Tetrachloroethene** | **0.97** | | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 2-Hexanone | ND | U | 5.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,3-Dichloropropane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Dibromochloromethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dibromoethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Chlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,1,2-Tetrachloroethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Ethylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| m,p-Xylenes | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| o-Xylene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Styrene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Isopropylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Bromobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2,3-Trichloropropane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| n-Propylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 2-Chlorotoluene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 4-Chlorotoluene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,3,5-Trimethylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| tert-Butylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2,4-Trimethylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| sec-Butylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,3-Dichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 4-Isopropyltoluene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Bromoform | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,2,2-Tetrachloroethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,4-Dichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| n-Butylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dibromo-3-chloropropane | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,2,4-Trichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Hexachlorobutadiene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |

Comments:

# COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200453 |
| **Project:** | Western Ave/#E049-106 | **Date Collected:** | 05/15/2002 |
| **mple Matrix:** | Water | **Date Received:** | 05/16/2002 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | MW-7 | **Units:** | ug/L |
| **Lab Code:** | X2200453-001 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| Naphthalene | ND | U | 3.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,2,3-Trichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |

| Surrogate Name | %Rec | Control Limits | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|
| Dibromofluoromethane | 105 | 84-113 | 05/28/02 | |
| Toluene-d8 | 110 | 68-126 | 05/28/02 | |
| 4-Bromofluorobenzene | 98 | 79-113 | 05/28/02 | |

**Comments:**

# COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200453 |
| **Project:** | Western Ave/#E049-106 | **Date Collected:** | 05/15/2002 |
| **Sample Matrix:** | Water | **Date Received:** | 05/16/2002 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | MW-5 | **Units:** | ug/L |
| **Lab Code:** | X2200453-002 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | ND | U | 3.0 | 1 | 05/28/02 | 05/28/02 | |
| Chloromethane | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| Vinyl Chloride | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Bromomethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Chloroethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Trichlorofluoromethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,2-Trichlorotrifluoroethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,1-Dichloroethene | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | L1 |
| Acetone | ND | U | 10 | 1 | 05/28/02 | 05/28/02 | |
| Iodomethane | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| Carbon Disulfide | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| Methylene Chloride | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Methyl tert-Butyl Ether | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| trans-1,2-Dichloroethene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,1-Dichloroethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Vinyl Acetate | ND | U | 3.0 | 1 | 05/28/02 | 05/28/02 | |
| 2,2-Dichloropropane | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| 2-Butanone (MEK) | ND | U | 5.0 | 1 | 05/28/02 | 05/28/02 | |
| cis-1,2-Dichloroethene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Bromochloromethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Chloroform | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,1-Trichloroethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Carbon Tetrachloride | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,1-Dichloropropene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Benzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dichloroethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Trichloroethene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dichloropropane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Dibromomethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Bromodichloromethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| cis-1,3-Dichloropropene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 4-Methyl-2-pentanone (MIBK) | ND | U | 5.0 | 1 | 05/28/02 | 05/28/02 | |
| Toluene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |

**Comments:**

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| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200453 |
| **Project:** | Western Ave/#E049-106 | **Date Collected:** | 05/15/2002 |
| **Sample Matrix:** | Water | **Date Received:** | 05/16/2002 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | MW-5 | **Units:** | ug/L |
| **Lab Code:** | X2200453-002 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| trans-1,3-Dichloropropene | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,2-Trichloroethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| **Tetrachloroethene** | **3.5** | | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 2-Hexanone | ND | U | 5.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,3-Dichloropropane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Dibromochloromethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dibromoethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Chlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,1,2-Tetrachloroethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Ethylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| m,p-Xylenes | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| o-Xylene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Styrene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Isopropylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Bromobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2,3-Trichloropropane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| n-Propylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 2-Chlorotoluene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 4-Chlorotoluene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,3,5-Trimethylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| tert-Butylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2,4-Trimethylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| sec-Butylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,3-Dichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 4-Isopropyltoluene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Bromoform | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,2,2-Tetrachloroethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,4-Dichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| n-Butylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dibromo-3-chloropropane | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,2,4-Trichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Hexachlorobutadiene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |

**Comments:**

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200453 |
| **Project:** | Western Ave/#E049-106 | **Date Collected:** | 05/15/2002 |
| **Sample Matrix:** | Water | **Date Received:** | 05/16/2002 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | MW-5 | **Units:** | ug/L |
| **Lab Code:** | X2200453-002 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| Naphthalene | ND | U | 3.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,2,3-Trichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |

| Surrogate Name | %Rec | Control Limits | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|
| Dibromofluoromethane | 112 | 84-113 | 05/28/02 | |
| Toluene-d8 | 115 | 68-126 | 05/28/02 | |
| 4-Bromofluorobenzene | 104 | 79-113 | 05/28/02 | |

**Comments:**

# COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200453 |
| **Project:** | Western Ave/#E049-106 | **Date Collected:** | 05/15/2002 |
| **Sample Matrix:** | Water | **Date Received:** | 05/16/2002 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | ADEQA-MW5 | **Units:** | ug/L |
| **Lab Code:** | X2200453-003 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | ND | U | 3.0 | 1 | 05/28/02 | 05/28/02 | |
| Chloromethane | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| Vinyl Chloride | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Bromomethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Chloroethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Trichlorofluoromethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,2-Trichlorotrifluoroethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,1-Dichloroethene | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | L1 |
| Acetone | ND | U | 10 | 1 | 05/28/02 | 05/28/02 | |
| Iodomethane | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| Carbon Disulfide | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| Methylene Chloride | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Methyl tert-Butyl Ether | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| trans-1,2-Dichloroethene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,1-Dichloroethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Vinyl Acetate | ND | U | 3.0 | 1 | 05/28/02 | 05/28/02 | |
| 2,2-Dichloropropane | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| 2-Butanone (MEK) | ND | U | 5.0 | 1 | 05/28/02 | 05/28/02 | |
| cis-1,2-Dichloroethene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Bromochloromethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Chloroform | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,1-Trichloroethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Carbon Tetrachloride | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,1-Dichloropropene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Benzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dichloroethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Trichloroethene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dichloropropane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Dibromomethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Bromodichloromethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| cis-1,3-Dichloropropene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 4-Methyl-2-pentanone (MIBK) | ND | U | 5.0 | 1 | 05/28/02 | 05/28/02 | |
| Toluene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |

**Comments:**

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200453 |
| **Project:** | Western Ave/#E049-106 | **Date Collected:** | 05/15/2002 |
| **Sample Matrix:** | Water | **Date Received:** | 05/16/2002 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | ADEQA-MW5 | **Units:** | ug/L |
| **Lab Code:** | X2200453-003 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| trans-1,3-Dichloropropene | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,2-Trichloroethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| **Tetrachloroethene** | **3.5** | | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 2-Hexanone | ND | U | 5.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,3-Dichloropropane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Dibromochloromethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dibromoethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Chlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,1,2-Tetrachloroethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Ethylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| m,p-Xylenes | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| o-Xylene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Styrene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Isopropylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Bromobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2,3-Trichloropropane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| n-Propylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 2-Chlorotoluene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 4-Chlorotoluene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,3,5-Trimethylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| tert-Butylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2,4-Trimethylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| sec-Butylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,3-Dichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 4-Isopropyltoluene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Bromoform | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,2,2-Tetrachloroethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,4-Dichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| n-Butylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dibromo-3-chloropropane | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,2,4-Trichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Hexachlorobutadiene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |

**Comments:**

# COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200453 |
| **Project:** | Western Ave/#E049-106 | **Date Collected:** | 05/15/2002 |
| **Sample Matrix:** | Water | **Date Received:** | 05/16/2002 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | ADEQA-MW5 | **Units:** | ug/L |
| **Lab Code:** | X2200453-003 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| Naphthalene | ND | U | 3.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,2,3-Trichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |

| Surrogate Name | %Rec | Control Limits | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|
| Dibromofluoromethane | 104 | 84-113 | 05/28/02 | |
| Toluene-d8 | 113 | 68-126 | 05/28/02 | |
| 4-Bromofluorobenzene | 95 | 79-113 | 05/28/02 | |

**Comments:**

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200453 |
| **Project:** | Western Ave/#E049-106 | **Date Collected:** | 05/15/2002 |
| **Sample Matrix:** | Water | **Date Received:** | 05/16/2002 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | MW-6 | **Units:** | ug/L |
| **Lab Code:** | X2200453-004 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | ND | U | 3.0 | 1 | 05/28/02 | 05/28/02 | |
| Chloromethane | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| Vinyl Chloride | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Bromomethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Chloroethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Trichlorofluoromethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,2-Trichlorotrifluoroethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,1-Dichloroethene | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | L1 |
| Acetone | ND | U | 10 | 1 | 05/28/02 | 05/28/02 | |
| Iodomethane | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| Carbon Disulfide | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| Methylene Chloride | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Methyl tert-Butyl Ether | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| trans-1,2-Dichloroethene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,1-Dichloroethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Vinyl Acetate | ND | U | 3.0 | 1 | 05/28/02 | 05/28/02 | |
| 2,2-Dichloropropane | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| 2-Butanone (MEK) | ND | U | 5.0 | 1 | 05/28/02 | 05/28/02 | |
| cis-1,2-Dichloroethene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Bromochloromethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Chloroform | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,1-Trichloroethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Carbon Tetrachloride | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,1-Dichloropropene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Benzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dichloroethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Trichloroethene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dichloropropane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Dibromomethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Bromodichloromethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| cis-1,3-Dichloropropene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 4-Methyl-2-pentanone (MIBK) | ND | U | 5.0 | 1 | 05/28/02 | 05/28/02 | |
| Toluene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |

**Comments:**

000013

# COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200453 |
| **Project:** | Western Ave/#E049-106 | **Date Collected:** | 05/15/2002 |
| **Sample Matrix:** | Water | **Date Received:** | 05/16/2002 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | MW-6 | **Units:** | ug/L |
| **Lab Code:** | X2200453-004 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| trans-1,3-Dichloropropene | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,2-Trichloroethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Tetrachloroethene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 2-Hexanone | ND | U | 5.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,3-Dichloropropane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Dibromochloromethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dibromoethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Chlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,1,2-Tetrachloroethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Ethylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| m,p-Xylenes | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| o-Xylene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| ene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Isopropylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Bromobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2,3-Trichloropropane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| n-Propylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 2-Chlorotoluene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 4-Chlorotoluene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,3,5-Trimethylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| tert-Butylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2,4-Trimethylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| sec-Butylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,3-Dichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 4-Isopropyltoluene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Bromoform | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,2,2-Tetrachloroethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,4-Dichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| n-Butylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dibromo-3-chloropropane | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,2,4-Trichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Hexachlorobutadiene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |

nments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200453 |
| **Project:** | Western Ave/#E049-106 | **Date Collected:** | 05/15/2002 |
| **Sample Matrix:** | Water | **Date Received:** | 05/16/2002 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | MW-6 | **Units:** | ug/L |
| **Lab Code:** | X2200453-004 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| Naphthalene | ND | U | 3.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,2,3-Trichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |

| Surrogate Name | %Rec | Control Limits | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|
| Dibromofluoromethane | 108 | 84-113 | 05/28/02 | |
| Toluene-d8 | 112 | 68-126 | 05/28/02 | |
| 4-Bromofluorobenzene | 98 | 79-113 | 05/28/02 | |

**Comments:**

# COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200453 |
| **Project:** | Western Ave/#E049-106 | **Date Collected:** | 05/15/2002 |
| **Sample Matrix:** | Water | **Date Received:** | 05/16/2002 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | MW-1 | **Units:** | ug/L |
| **Lab Code:** | X2200453-005 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | ND | U | 3.0 | 1 | 05/28/02 | 05/28/02 | |
| Chloromethane | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| Vinyl Chloride | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Bromomethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Chloroethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Trichlorofluoromethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,2-Trichlorotrifluoroethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,1-Dichloroethene | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | L1 |
| Acetone | ND | U | 10 | 1 | 05/28/02 | 05/28/02 | |
| Iodomethane | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| Carbon Disulfide | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| Methylene Chloride | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Methyl tert-Butyl Ether | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| trans-1,2-Dichloroethene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,1-Dichloroethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Vinyl Acetate | ND | U | 3.0 | 1 | 05/28/02 | 05/28/02 | |
| 2,2-Dichloropropane | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| 2-Butanone (MEK) | ND | U | 5.0 | 1 | 05/28/02 | 05/28/02 | |
| cis-1,2-Dichloroethene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Bromochloromethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Chloroform | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,1-Trichloroethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Carbon Tetrachloride | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,1-Dichloropropene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Benzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dichloroethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Trichloroethene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dichloropropane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Dibromomethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Bromodichloromethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| cis-1,3-Dichloropropene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 4-Methyl-2-pentanone (MIBK) | ND | U | 5.0 | 1 | 05/28/02 | 05/28/02 | |
| Toluene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| Client: | GeoTrans | Service Request: | X2200453 |
| Project: | Western Ave/#E049-106 | Date Collected: | 05/15/2002 |
| mple Matrix: | Water | Date Received: | 05/16/2002 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| Sample Name: | MW-1 | Units: | ug/L |
| Lab Code: | X2200453-005 | Basis: | NA |
| Extraction Method: | EPA 5030B | Level: | Low |
| Analysis Method: | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| trans-1,3-Dichloropropene | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,2-Trichloroethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| **Tetrachloroethene** | **12** | | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 2-Hexanone | ND | U | 5.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,3-Dichloropropane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Dibromochloromethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dibromoethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Chlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,1,2-Tetrachloroethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Ethylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| m,p-Xylenes | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| o-Xylene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| rene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Isopropylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Bromobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2,3-Trichloropropane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| n-Propylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 2-Chlorotoluene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 4-Chlorotoluene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,3,5-Trimethylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| tert-Butylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2,4-Trimethylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| sec-Butylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,3-Dichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 4-Isopropyltoluene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Bromoform | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,2,2-Tetrachloroethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,4-Dichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| n-Butylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dibromo-3-chloropropane | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,2,4-Trichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Hexachlorobutadiene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |

mments:

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# COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200453 |
| **Project:** | Western Ave/#E049-106 | **Date Collected:** | 05/15/2002 |
| **Sample Matrix:** | Water | **Date Received:** | 05/16/2002 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | MW-1 | **Units:** | ug/L |
| **Lab Code:** | X2200453-005 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| Naphthalene | ND | U | 3.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,2,3-Trichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |

| Surrogate Name | %Rec | Control Limits | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|
| Dibromofluoromethane | 104 | 84-113 | 05/28/02 | |
| Toluene-d8 | 107 | 68-126 | 05/28/02 | |
| 4-Bromofluorobenzene | 91 | 79-113 | 05/28/02 | |

**Comments:**

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200453 |
| **Project:** | Western Ave/#E049-106 | **Date Collected:** | 05/15/2002 |
| **Sample Matrix:** | Water | **Date Received:** | 05/16/2002 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | MW-4 | **Units:** | ug/L |
| **Lab Code:** | X2200453-006 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | ND | U | 3.0 | 1 | 05/28/02 | 05/28/02 | |
| Chloromethane | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| Vinyl Chloride | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Bromomethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Chloroethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Trichlorofluoromethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,2-Trichlorotrifluoroethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,1-Dichloroethene | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | L1 |
| Acetone | ND | U | 10 | 1 | 05/28/02 | 05/28/02 | |
| Iodomethane | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| Carbon Disulfide | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| Methylene Chloride | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Methyl tert-Butyl Ether | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| trans-1,2-Dichloroethene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,1-Dichloroethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Vinyl Acetate | ND | U | 3.0 | 1 | 05/28/02 | 05/28/02 | |
| 2,2-Dichloropropane | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| 2-Butanone (MEK) | ND | U | 5.0 | 1 | 05/28/02 | 05/28/02 | |
| cis-1,2-Dichloroethene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Bromochloromethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Chloroform | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,1-Trichloroethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Carbon Tetrachloride | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,1-Dichloropropene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Benzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dichloroethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Trichloroethene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dichloropropane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Dibromomethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Bromodichloromethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| cis-1,3-Dichloropropene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 4-Methyl-2-pentanone (MIBK) | ND | U | 5.0 | 1 | 05/28/02 | 05/28/02 | |
| Toluene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |

**Comments:**

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| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200453 |
| **Project:** | Western Ave/#E049-106 | **Date Collected:** | 05/15/2002 |
| **Sample Matrix:** | Water | **Date Received:** | 05/16/2002 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | MW-4 | **Units:** | ug/L |
| **Lab Code:** | X2200453-006 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| trans-1,3-Dichloropropene | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,2-Trichloroethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| **Tetrachloroethene** | 1.9 | | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 2-Hexanone | ND | U | 5.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,3-Dichloropropane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Dibromochloromethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dibromoethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Chlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,1,2-Tetrachloroethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Ethylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| m,p-Xylenes | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| o-Xylene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Styrene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Isopropylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Bromobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2,3-Trichloropropane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| n-Propylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 2-Chlorotoluene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 4-Chlorotoluene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,3,5-Trimethylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| tert-Butylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2,4-Trimethylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| sec-Butylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,3-Dichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 4-Isopropyltoluene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Bromoform | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,2,2-Tetrachloroethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,4-Dichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| n-Butylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dibromo-3-chloropropane | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,2,4-Trichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Hexachlorobutadiene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |

**Comments:**

# COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200453 |
| **Project:** | Western Ave/#E049-106 | **Date Collected:** | 05/15/2002 |
| **mple Matrix:** | Water | **Date Received:** | 05/16/2002 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | MW-4 | **Units:** | ug/L |
| **Lab Code:** | X2200453-006 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| Naphthalene | ND | U | 3.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,2,3-Trichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |

| Surrogate Name | %Rec | Control Limits | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|
| Dibromofluoromethane | 106 | 84-113 | 05/28/02 | |
| Toluene-d8 | 111 | 68-126 | 05/28/02 | |
| 4-Bromofluorobenzene | 93 | 79-113 | 05/28/02 | |

**Comments:**

# COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200453 |
| **Project:** | Western Ave/#E049-106 | **Date Collected:** | 05/15/2002 |
| **Sample Matrix:** | Water | **Date Received:** | 05/16/2002 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | MW-3 | **Units:** | ug/L |
| **Lab Code:** | X2200453-007 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | ND | U | 3.0 | 1 | 05/28/02 | 05/28/02 | |
| Chloromethane | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| Vinyl Chloride | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Bromomethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Chloroethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Trichlorofluoromethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,2-Trichlorotrifluoroethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,1-Dichloroethene | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | L1 |
| Acetone | ND | U | 10 | 1 | 05/28/02 | 05/28/02 | |
| Iodomethane | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| Carbon Disulfide | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| Methylene Chloride | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Methyl tert-Butyl Ether | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| trans-1,2-Dichloroethene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,1-Dichloroethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Vinyl Acetate | ND | U | 3.0 | 1 | 05/28/02 | 05/28/02 | |
| 2,2-Dichloropropane | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| 2-Butanone (MEK) | ND | U | 5.0 | 1 | 05/28/02 | 05/28/02 | |
| cis-1,2-Dichloroethene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Bromochloromethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Chloroform | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,1-Trichloroethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Carbon Tetrachloride | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,1-Dichloropropene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Benzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dichloroethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Trichloroethene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dichloropropane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Dibromomethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Bromodichloromethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| cis-1,3-Dichloropropene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 4-Methyl-2-pentanone (MIBK) | ND | U | 5.0 | 1 | 05/28/02 | 05/28/02 | |
| Toluene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |

Comments:

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# COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200453 |
| **Project:** | Western Ave/#E049-106 | **Date Collected:** | 05/15/2002 |
| **Sample Matrix:** | Water | **Date Received:** | 05/16/2002 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | MW-3 | **Units:** | ug/L |
| **Lab Code:** | X2200453-007 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| trans-1,3-Dichloropropene | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,2-Trichloroethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Tetrachloroethene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 2-Hexanone | ND | U | 5.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,3-Dichloropropane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Dibromochloromethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dibromoethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Chlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,1,2-Tetrachloroethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Ethylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| m,p-Xylenes | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| o-Xylene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Styrene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Isopropylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Bromobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2,3-Trichloropropane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| n-Propylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 2-Chlorotoluene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 4-Chlorotoluene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,3,5-Trimethylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| tert-Butylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2,4-Trimethylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| sec-Butylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,3-Dichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 4-Isopropyltoluene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Bromoform | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,2,2-Tetrachloroethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,4-Dichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| n-Butylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dibromo-3-chloropropane | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,2,4-Trichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Hexachlorobutadiene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |

**Comments:**

# COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200453 |
| **Project:** | Western Ave/#E049-106 | **Date Collected:** | 05/15/2002 |
| **Sample Matrix:** | Water | **Date Received:** | 05/16/2002 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | MW-3 | **Units:** | ug/L |
| **Lab Code:** | X2200453-007 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| Naphthalene | ND | U | 3.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,2,3-Trichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |

| Surrogate Name | %Rec | Control Limits | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|
| Dibromofluoromethane | 106 | 84-113 | 05/28/02 | |
| Toluene-d8 | 108 | 68-126 | 05/28/02 | |
| 4-Bromofluorobenzene | 94 | 79-113 | 05/28/02 | |

**Comments:**

# COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200453 |
| **Project:** | Western Ave/#E049-106 | **Date Collected:** | 05/14/2002 |
| **Sample Matrix:** | Water | **Date Received:** | 05/16/2002 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | GMW-5 | **Units:** | ug/L |
| **Lab Code:** | X2200453-008 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | ND | U | 3.0 | 1 | 05/28/02 | 05/28/02 | |
| Chloromethane | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| Vinyl Chloride | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Bromomethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Chloroethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Trichlorofluoromethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,2-Trichlorotrifluoroethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,1-Dichloroethene | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | L1 |
| Acetone | ND | U | 10 | 1 | 05/28/02 | 05/28/02 | |
| Iodomethane | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| Carbon Disulfide | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| Methylene Chloride | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Methyl tert-Butyl Ether | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| trans-1,2-Dichloroethene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,1-Dichloroethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Vinyl Acetate | ND | U | 3.0 | 1 | 05/28/02 | 05/28/02 | |
| 2,2-Dichloropropane | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| 2-Butanone (MEK) | ND | U | 5.0 | 1 | 05/28/02 | 05/28/02 | |
| cis-1,2-Dichloroethene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Bromochloromethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Chloroform | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,1-Trichloroethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Carbon Tetrachloride | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,1-Dichloropropene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Benzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dichloroethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Trichloroethene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dichloropropane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Dibromomethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Bromodichloromethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| cis-1,3-Dichloropropene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 4-Methyl-2-pentanone (MIBK) | ND | U | 5.0 | 1 | 05/28/02 | 05/28/02 | |
| Toluene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |

**Comments:**

# COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200453 |
| **Project:** | Western Ave/#E049-106 | **Date Collected:** | 05/14/2002 |
| **Sample Matrix:** | Water | **Date Received:** | 05/16/2002 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | GMW-5 | **Units:** | ug/L |
| **Lab Code:** | X2200453-008 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| trans-1,3-Dichloropropene | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,2-Trichloroethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| **Tetrachloroethene** | **2.4** | | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 2-Hexanone | ND | U | 5.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,3-Dichloropropane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Dibromochloromethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dibromoethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Chlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,1,2-Tetrachloroethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Ethylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| m,p-Xylenes | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| o-Xylene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Styrene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Isopropylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Bromobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2,3-Trichloropropane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| n-Propylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 2-Chlorotoluene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 4-Chlorotoluene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,3,5-Trimethylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| tert-Butylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2,4-Trimethylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| sec-Butylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,3-Dichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 4-Isopropyltoluene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Bromoform | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,2,2-Tetrachloroethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,4-Dichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| n-Butylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dibromo-3-chloropropane | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,2,4-Trichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Hexachlorobutadiene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| Client: | GeoTrans | Service Request: | X2200453 |
| Project: | Western Ave/#E049-106 | Date Collected: | 05/14/2002 |
| Sample Matrix: | Water | Date Received: | 05/16/2002 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| Sample Name: | GMW-5 | Units: | ug/L |
| Lab Code: | X2200453-008 | Basis: | NA |
| Extraction Method: | EPA 5030B | Level: | Low |
| Analysis Method: | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| Naphthalene | ND | U | 3.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,2,3-Trichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |

| Surrogate Name | %Rec | Control Limits | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|
| Dibromofluoromethane | 106 | 84-113 | 05/28/02 | |
| Toluene-d8 | 113 | 68-126 | 05/28/02 | |
| 4-Bromofluorobenzene | 97 | 79-113 | 05/28/02 | |

Comments:

# COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200453 |
| **Project:** | Western Ave/#E049-106 | **Date Collected:** | 05/14/2002 |
| **Sample Matrix:** | Water | **Date Received:** | 05/16/2002 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | GMW-4 | **Units:** | ug/L |
| **Lab Code:** | X2200453-009 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | ND | U | 3.0 | 1 | 05/28/02 | 05/28/02 | |
| Chloromethane | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| Vinyl Chloride | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Bromomethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Chloroethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Trichlorofluoromethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,2-Trichlorotrifluoroethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,1-Dichloroethene | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | L1 |
| Acetone | ND | U | 10 | 1 | 05/28/02 | 05/28/02 | |
| Iodomethane | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| Carbon Disulfide | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| Methylene Chloride | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Methyl tert-Butyl Ether | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| trans-1,2-Dichloroethene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,1-Dichloroethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Vinyl Acetate | ND | U | 3.0 | 1 | 05/28/02 | 05/28/02 | |
| 2,2-Dichloropropane | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| 2-Butanone (MEK) | ND | U | 5.0 | 1 | 05/28/02 | 05/28/02 | |
| cis-1,2-Dichloroethene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Bromochloromethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Chloroform | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,1-Trichloroethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Carbon Tetrachloride | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,1-Dichloropropene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Benzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dichloroethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Trichloroethene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dichloropropane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Dibromomethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Bromodichloromethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| cis-1,3-Dichloropropene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 4-Methyl-2-pentanone (MIBK) | ND | U | 5.0 | 1 | 05/28/02 | 05/28/02 | |
| Toluene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |

**Comments:**

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200453 |
| **Project:** | Western Ave/#E049-106 | **Date Collected:** | 05/14/2002 |
| **Sample Matrix:** | Water | **Date Received:** | 05/16/2002 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | GMW-4 | **Units:** | ug/L |
| **Lab Code:** | X2200453-009 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| trans-1,3-Dichloropropene | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,2-Trichloroethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| **Tetrachloroethene** | **8.9** | | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 2-Hexanone | ND | U | 5.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,3-Dichloropropane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Dibromochloromethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dibromoethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Chlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,1,2-Tetrachloroethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Ethylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| m,p-Xylenes | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| -Xylene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Styrene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Isopropylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Bromobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2,3-Trichloropropane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| n-Propylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 2-Chlorotoluene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 4-Chlorotoluene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,3,5-Trimethylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| tert-Butylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2,4-Trimethylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| sec-Butylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,3-Dichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 4-Isopropyltoluene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Bromoform | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,2,2-Tetrachloroethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,4-Dichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| n-Butylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dibromo-3-chloropropane | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,2,4-Trichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Hexachlorobutadiene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |

**Comments:**

# COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200453 |
| **Project:** | Western Ave/#E049-106 | **Date Collected:** | 05/14/2002 |
| **Sample Matrix:** | Water | **Date Received:** | 05/16/2002 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | GMW-4 | **Units:** | ug/L |
| **Lab Code:** | X2200453-009 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| Naphthalene | ND | U | 3.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,2,3-Trichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |

| Surrogate Name | %Rec | Control Limits | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|
| Dibromofluoromethane | 104 | 84-113 | 05/28/02 | |
| Toluene-d8 | 106 | 68-126 | 05/28/02 | |
| 4-Bromofluorobenzene | 98 | 79-113 | 05/28/02 | |

**Comments:**

# COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200453 |
| **Project:** | Western Ave/#E049-106 | **Date Collected:** | 05/14/2002 |
| **Sample Matrix:** | Water | **Date Received:** | 05/16/2002 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | ADEQG-MW4 | **Units:** | ug/L |
| **Lab Code:** | X2200453-010 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | ND | U | 3.0 | 1 | 05/28/02 | 05/28/02 | |
| Chloromethane | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| Vinyl Chloride | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Bromomethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Chloroethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Trichlorofluoromethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,2-Trichlorotrifluoroethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,1-Dichloroethene | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | L1 |
| Acetone | ND | U | 10 | 1 | 05/28/02 | 05/28/02 | |
| Iodomethane | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| Carbon Disulfide | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| Methylene Chloride | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Methyl tert-Butyl Ether | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| trans-1,2-Dichloroethene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,1-Dichloroethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Vinyl Acetate | ND | U | 3.0 | 1 | 05/28/02 | 05/28/02 | |
| 2,2-Dichloropropane | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| 2-Butanone (MEK) | ND | U | 5.0 | 1 | 05/28/02 | 05/28/02 | |
| cis-1,2-Dichloroethene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Bromochloromethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Chloroform | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,1-Trichloroethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Carbon Tetrachloride | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,1-Dichloropropene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Benzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dichloroethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Trichloroethene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dichloropropane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Dibromomethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Bromodichloromethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| cis-1,3-Dichloropropene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 4-Methyl-2-pentanone (MIBK) | ND | U | 5.0 | 1 | 05/28/02 | 05/28/02 | |
| Toluene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |

**Comments:**

# COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200453 |
| **Project:** | Western Ave/#E049-106 | **Date Collected:** | 05/14/2002 |
| **Sample Matrix:** | Water | **Date Received:** | 05/16/2002 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | ADEQG-MW4 | **Units:** | ug/L |
| **Lab Code:** | X2200453-010 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| trans-1,3-Dichloropropene | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,2-Trichloroethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| **Tetrachloroethene** | **9.2** | | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 2-Hexanone | ND | U | 5.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,3-Dichloropropane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Dibromochloromethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dibromoethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Chlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,1,2-Tetrachloroethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Ethylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| m,p-Xylenes | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| o-Xylene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Styrene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Isopropylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Bromobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2,3-Trichloropropane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| n-Propylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 2-Chlorotoluene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 4-Chlorotoluene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,3,5-Trimethylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| tert-Butylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2,4-Trimethylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| sec-Butylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,3-Dichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 4-Isopropyltoluene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Bromoform | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,2,2-Tetrachloroethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,4-Dichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| n-Butylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dibromo-3-chloropropane | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,2,4-Trichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Hexachlorobutadiene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |

Comments:

000032

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200453 |
| **Project:** | Western Ave/#E049-106 | **Date Collected:** | 05/14/2002 |
| **Sample Matrix:** | Water | **Date Received:** | 05/16/2002 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | ADEQG-MW4 | **Units:** | ug/L |
| **Lab Code:** | X2200453-010 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| Naphthalene | ND | U | 3.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,2,3-Trichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |

| Surrogate Name | %Rec | Control Limits | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|
| Dibromofluoromethane | 110 | 84-113 | 05/28/02 | |
| Toluene-d8 | 115 | 68-126 | 05/28/02 | |
| 4-Bromofluorobenzene | 103 | 79-113 | 05/28/02 | |

**Comments:**

# COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200453 |
| **Project:** | Western Ave/#E049-106 | **Date Collected:** | NA |
| **Sample Matrix:** | Water | **Date Received:** | NA |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | Method Blank | **Units:** | ug/L |
| **Lab Code:** | XWG0200678-3 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | ND | U | 3.0 | 1 | 05/28/02 | 05/28/02 | |
| Chloromethane | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| Vinyl Chloride | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Bromomethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Chloroethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Trichlorofluoromethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,2-Trichlorotrifluoroethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,1-Dichloroethene | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | L1 |
| Acetone | ND | U | 10 | 1 | 05/28/02 | 05/28/02 | |
| Iodomethane | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| Carbon Disulfide | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| Methylene Chloride | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Methyl tert-Butyl Ether | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| trans-1,2-Dichloroethene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,1-Dichloroethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Vinyl Acetate | ND | U | 3.0 | 1 | 05/28/02 | 05/28/02 | |
| 2,2-Dichloropropane | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| 2-Butanone (MEK) | ND | U | 5.0 | 1 | 05/28/02 | 05/28/02 | |
| cis-1,2-Dichloroethene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Bromochloromethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Chloroform | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,1-Trichloroethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Carbon Tetrachloride | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,1-Dichloropropene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Benzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dichloroethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Trichloroethene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dichloropropane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Dibromomethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Bromodichloromethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| cis-1,3-Dichloropropene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 4-Methyl-2-pentanone (MIBK) | ND | U | 5.0 | 1 | 05/28/02 | 05/28/02 | |
| Toluene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |

**Comments:**

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200453 |
| **Project:** | Western Ave/#E049-106 | **Date Collected:** | NA |
| **Sample Matrix:** | Water | **Date Received:** | NA |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | Method Blank | **Units:** | ug/L |
| **Lab Code:** | XWG0200678-3 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| trans-1,3-Dichloropropene | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,2-Trichloroethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Tetrachloroethene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 2-Hexanone | ND | U | 5.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,3-Dichloropropane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| Dibromochloromethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dibromoethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Chlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,1,2-Tetrachloroethane | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Ethylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| m,p-Xylenes | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| o-Xylene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Styrene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Isopropylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Bromobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2,3-Trichloropropane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| n-Propylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 2-Chlorotoluene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 4-Chlorotoluene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,3,5-Trimethylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| tert-Butylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2,4-Trimethylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| sec-Butylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,3-Dichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 4-Isopropyltoluene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Bromoform | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,1,2,2-Tetrachloroethane | ND | U | 1.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,4-Dichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| n-Butylbenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| 1,2-Dibromo-3-chloropropane | ND | U | 2.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,2,4-Trichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |
| Hexachlorobutadiene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |

Comments:

# COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200453 |
| **Project:** | Western Ave/#E049-106 | **Date Collected:** | NA |
| **Sample Matrix:** | Water | **Date Received:** | NA |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | Method Blank | **Units:** | ug/L |
| **Lab Code:** | XWG0200678-3 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| Naphthalene | ND | U | 3.0 | 1 | 05/28/02 | 05/28/02 | |
| 1,2,3-Trichlorobenzene | ND | U | 0.50 | 1 | 05/28/02 | 05/28/02 | |

| Surrogate Name | %Rec | Control Limits | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|
| Dibromofluoromethane | 113 | 84-113 | 05/28/02 | |
| Toluene-d8 | 112 | 68-126 | 05/28/02 | |
| 4-Bromofluorobenzene | 109 | 79-113 | 05/28/02 | |

**Comments:**

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

**Client:** GeoTrans
**Project:** Western Ave/#E049-106
**Sample Matrix:** Water

**Service Request:** X2200453

## Surrogate Recovery Summary
## Volatile Organic Compounds

**Extraction Method:** EPA 5030B
**Analysis Method:** 8260B

**Units:** PERCENT
**Level:** Low

| Sample Name | Lab Code | Sur1 | Sur2 | Sur3 |
|---|---|---|---|---|
| MW-7 | X2200453-001 | 105 | 110 | 98 |
| MW-5 | X2200453-002 | 112 | 115 | 104 |
| ADEQA-MW5 | X2200453-003 | 104 | 113 | 95 |
| MW-6 | X2200453-004 | 108 | 112 | 98 |
| MW-1 | X2200453-005 | 104 | 107 | 91 |
| MW-4 | X2200453-006 | 106 | 111 | 93 |
| MW-3 | X2200453-007 | 106 | 108 | 94 |
| GMW-5 | X2200453-008 | 106 | 113 | 97 |
| GMW-4 | X2200453-009 | 104 | 106 | 98 |
| ADEQG-MW4 | X2200453-010 | 110 | 115 | 103 |
| Method Blank | XWG0200678-3 | 113 | 112 | 109 |
| GMW-5MS | XWG0200678-4 | 114 S1 | 127 S1 | 108 |
| GMW-5DMS | XWG0200678-5 | 114 S1 | 123 | 108 |
| Lab Control Sample | XWG0200678-1 | 99 | 102 | 97 |
| Duplicate Lab Control Sample | XWG0200678-2 | 105 | 108 | 102 |

**Surrogate Recovery Control Limits (%)**

| | | |
|---|---|---|
| Sur1 = | Dibromofluoromethane | 84-113 |
| Sur2 = | Toluene-d8 | 68-126 |
| Sur3 = | 4-Bromofluorobenzene | 79-113 |

Results flagged with an asterisk (*) indicate values outside control criteria.
Results flagged with a pound (#) indicate the control criteria is not applicable.

# COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200453 |
| **Project:** | Western Ave/#E049-106 | **Date Extracted:** | 05/28/2002 |
| **mple Matrix:** | Water | **Date Analyzed:** | 05/28/2002 |

## Matrix Spike/Duplicate Matrix Spike Summary
## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | GMW-5 | **Units:** | ug/L |
| **Lab Code:** | X2200453-008 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | **Extraction Lot:** | XWG0200678 |

| Analyte Name | Sample Result | GMW-5MS XWG0200678-4 Matrix Spike Result | Expected | %Rec | GMW-5DMS XWG0200678-5 Duplicate Matrix Spike Result | Expected | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | ND | 14.7 | 10.0 | 147 | 14.0 | 10.0 | 140 | 78-207 | 5 | 20 |
| Chloromethane | ND | 8.53 | 10.0 | 85 | 8.84 | 10.0 | 88 | 70-157 | 4 | 20 |
| Vinyl Chloride | ND | 13.4 | 10.0 | 134 | 12.1 | 10.0 | 121 | 79-174 | 11 | 20 |
| Bromomethane | ND | 7.38 | 10.0 | 74 | 7.57 | 10.0 | 76 | 44-150 | 3 | 20 |
| Chloroethane | ND | 12.6 | 10.0 | 126 | 11.8 | 10.0 | 118 | 74-150 | 7 | 20 |
| Trichlorofluoromethane | ND | 17.5 | 10.0 | 175 M1 | 17.0 | 10.0 | 170 M1 | 80-134 | 3 | 20 |
| 1,1,2-Trichlorotrifluoroethane | ND | 14.9 | 10.0 | 149 M1 | 14.6 | 10.0 | 146 M1 | 67-128 | 2 | 20 |
| 1,1-Dichloroethene | ND | 11.9 | 10.0 | 119 | 11.4 | 10.0 | 114 | 71-142 | 4 | 20 |
| cetone | ND | 34.3 | 40.0 | 86 | 34.8 | 40.0 | 87 | 1-155 | 2 | 20 |
| domethane | ND | 71.7 | 40.0 | 179 M1 | 70.5 | 40.0 | 176 M1 | 47-120 | 2 | 20 |
| Carbon Disulfide | ND | 58.7 | 40.0 | 147 M1 | 57.2 | 40.0 | 143 M1 | 77-126 | 3 | 20 |
| Methylene Chloride | ND | 10.0 | 10.0 | 100 | 9.99 | 10.0 | 100 | 83-106 | 0 | 20 |
| Methyl tert-Butyl Ether | ND | 9.98 | 10.0 | 100 | 9.74 | 10.0 | 97 | 70-118 | 2 | 20 |
| trans-1,2-Dichloroethene | ND | 10.9 | 10.0 | 109 | 10.6 | 10.0 | 106 | 86-115 | 3 | 20 |
| 1,1-Dichloroethane | ND | 11.1 | 10.0 | 111 | 11.1 | 10.0 | 111 | 77-127 | 0 | 20 |
| Vinyl Acetate | ND | 57.9 | 40.0 | 145 | 56.0 | 40.0 | 140 | 8-187 | 3 | 20 |
| 2,2-Dichloropropane | ND | 13.1 | 10.0 | 131 | 12.9 | 10.0 | 129 | 25-154 | 2 | 20 |
| 2-Butanone (MEK) | ND | 34.6 | 40.0 | 87 M1 M2 | 36.4 | 40.0 | 91 | 90-112 | 5 | 20 |
| cis-1,2-Dichloroethene | ND | 10.9 | 10.0 | 109 J10 | 10.9 | 10.0 | 109 | 69-118 | 1 | 20 |
| Bromochloromethane | ND | 11.0 | 10.0 | 110 | 10.8 | 10.0 | 108 | 47-136 | 2 | 20 |
| Chloroform | ND | 11.0 | 10.0 | 110 | 10.8 | 10.0 | 108 | 48-143 | 2 | 20 |
| 1,1,1-Trichloroethane | ND | 12.6 | 10.0 | 126 M1 | 12.3 | 10.0 | 123 M1 | 84-122 | 2 | 20 |
| Carbon Tetrachloride | ND | 12.9 | 10.0 | 129 M1 | 13.1 | 10.0 | 131 M1 | 79-120 | 1 | 20 |
| 1,1-Dichloropropene | ND | 12.3 | 10.0 | 123 M1 | 12.2 | 10.0 | 122 M1 | 85-117 | 0 | 20 |
| Benzene | ND | 11.2 | 10.0 | 112 | 11.3 | 10.0 | 113 | 88-114 | 0 | 20 |
| 1,2-Dichloroethane | ND | 9.88 | 10.0 | 99 | 9.81 | 10.0 | 98 | 75-112 | 1 | 20 |
| Trichloroethene | ND | 11.5 | 10.0 | 115 | 11.3 | 10.0 | 113 | 76-115 | 2 | 20 |
| 1,2-Dichloropropane | ND | 10.4 | 10.0 | 104 | 10.2 | 10.0 | 102 | 85-107 | 2 | 20 |
| Dibromomethane | ND | 9.97 | 10.0 | 100 | 10.1 | 10.0 | 101 | 82-106 | 1 | 20 |
| Bromodichloromethane | ND | 11.0 | 10.0 | 110 M1 | 10.7 | 10.0 | 107 | 83-107 | 2 | 20 |
| cis-1,3-Dichloropropene | ND | 10.6 | 10.0 | 106 | 10.4 | 10.0 | 104 | 70-114 | 3 | 20 |
| 4-Methyl-2-pentanone (MIBK) | ND | 36.9 | 40.0 | 92 | 36.8 | 40.0 | 92 | 54-129 | 0 | 20 |
| Toluene | ND | 11.8 | 10.0 | 118 M1 | 11.5 | 10.0 | 115 M1 | 86-114 | 3 | 20 |

esults flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

| | | | |
|---|---|---|---|
| Client: | GeoTrans | Service Request: | X2200453 |
| Project: | Western Ave/#E049-106 | Date Extracted: | 05/28/2002 |
| Sample Matrix: | Water | Date Analyzed: | 05/28/2002 |

## Matrix Spike/Duplicate Matrix Spike Summary
## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| Sample Name: | GMW-5 | Units: | ug/L |
| Lab Code: | X2200453-008 | Basis: | NA |
| Extraction Method: | EPA 5030B | Level: | Low |
| Analysis Method: | 8260B | Extraction Lot: | XWG0200678 |

| Analyte Name | Sample Result | GMW-5MS XWG0200678-4 Matrix Spike | | | GMW-5DMS XWG0200678-5 Duplicate Matrix Spike | | | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Result | Expected | %Rec | Result | Expected | %Rec | | | |
| trans-1,3-Dichloropropene | ND | 10.6 | 10.0 | 106 | 10.1 | 10.0 | 101 | 73-112 | 5 | 20 |
| 1,1,2-Trichloroethane | ND | 9.49 | 10.0 | 95 | 9.26 | 10.0 | 93 | 79-112 | 2 | 20 |
| Tetrachloroethene | 2.4 | 15.1 | 10.0 | 127 | 14.6 | 10.0 | 122 | 78-130 | 4 | 20 |
| 2-Hexanone | ND | 36.1 | 40.0 | 90 | 35.9 | 40.0 | 90 | 77-112 | 0 | 20 |
| 1,3-Dichloropropane | ND | 9.77 | 10.0 | 98 | 9.66 | 10.0 | 97 | 45-133 | 1 | 20 |
| Dibromochloromethane | ND | 10.0 | 10.0 | 100 | 9.84 | 10.0 | 98 | 74-108 | 2 | 20 |
| 1,2-Dibromoethane | ND | 9.64 | 10.0 | 96 | 9.42 | 10.0 | 94 | 73-113 | 2 | 20 |
| Chlorobenzene | ND | 10.8 | 10.0 | 108 | 11.0 | 10.0 | 110 | 84-111 | 2 | 20 |
| 1,1,2-Tetrachloroethane | ND | 10.8 | 10.0 | 108 | 11.1 | 10.0 | 111 | 84-119 | 2 | 20 |
| Ethylbenzene | ND | 12.3 | 10.0 | 123 | 12.5 | 10.0 | 125 | 47-136 | 1 | 20 |
| m,p-Xylenes | ND | 24.9 | 20.0 | 124 M1 | 24.8 | 20.0 | 124 M1 | 84-120 | 0 | 20 |
| o-Xylene | ND | 11.5 | 10.0 | 115 | 11.4 | 10.0 | 114 | 47-143 | 0 | 20 |
| Styrene | ND | 11.3 | 10.0 | 113 | 11.3 | 10.0 | 113 | 72-121 | 0 | 20 |
| Isopropylbenzene | ND | 12.4 | 10.0 | 124 M1 | 12.5 | 10.0 | 125 M1 | 63-108 | 1 | 20 |
| Bromobenzene | ND | 10.6 | 10.0 | 106 | 10.8 | 10.0 | 108 | 80-113 | 2 | 20 |
| 1,2,3-Trichloropropane | ND | 9.29 | 10.0 | 93 | 9.76 | 10.0 | 98 | 78-119 | 5 | 20 |
| n-Propylbenzene | ND | 12.9 | 10.0 | 129 M1 | 12.9 | 10.0 | 129 M1 | 76-117 | 0 | 20 |
| 2-Chlorotoluene | ND | 11.7 | 10.0 | 117 | 11.8 | 10.0 | 118 | 79-121 | 1 | 20 |
| 4-Chlorotoluene | ND | 11.3 | 10.0 | 113 | 11.3 | 10.0 | 113 | 70-133 | 0 | 20 |
| 1,3,5-Trimethylbenzene | ND | 12.3 | 10.0 | 123 M1 | 12.4 | 10.0 | 124 M1 | 79-118 | 1 | 20 |
| tert-Butylbenzene | ND | 12.6 | 10.0 | 126 M1 | 12.6 | 10.0 | 126 M1 | 77-120 | 0 | 20 |
| 1,2,4-Trimethylbenzene | ND | 11.3 | 10.0 | 113 | 11.2 | 10.0 | 112 | 68-127 | 1 | 20 |
| sec-Butylbenzene | ND | 12.9 | 10.0 | 129 M1 | 12.8 | 10.0 | 128 M1 | 78-123 | 0 | 20 |
| 1,3-Dichlorobenzene | ND | 10.8 | 10.0 | 108 | 10.6 | 10.0 | 106 | 78-127 | 2 | 20 |
| 4-Isopropyltoluene | ND | 13.0 | 10.0 | 130 | 12.9 | 10.0 | 129 | 79-142 | 1 | 20 |
| Bromoform | ND | 9.37 | 10.0 | 94 | 9.79 | 10.0 | 98 | 83-111 | 4 | 20 |
| 1,1,2,2-Tetrachloroethane | ND | 9.35 | 10.0 | 94 | 9.80 | 10.0 | 98 | 66-133 | 5 | 20 |
| 1,4-Dichlorobenzene | ND | 10.5 | 10.0 | 105 | 10.6 | 10.0 | 106 | 48-139 | 0 | 20 |
| 1,2-Dichlorobenzene | ND | 10.4 | 10.0 | 104 | 10.4 | 10.0 | 104 | 64-109 | 1 | 20 |
| n-Butylbenzene | ND | 13.1 | 10.0 | 131 M1 | 13.0 | 10.0 | 130 M1 | 69-122 | 1 | 20 |
| 1,2-Dibromo-3-chloropropane | ND | 8.52 | 10.0 | 85 | 8.39 | 10.0 | 84 | 54-160 | 2 | 20 |
| 1,2,4-Trichlorobenzene | ND | 10.6 | 10.0 | 106 | 10.7 | 10.0 | 107 | 39-145 | 1 | 20 |
| Hexachlorobutadiene | ND | 13.7 | 10.0 | 137 M1 | 13.6 | 10.0 | 136 M1 | 74-113 | 1 | 20 |

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

| | | | |
|---|---|---|---|
| Client: | GeoTrans | Service Request: | X2200453 |
| Project: | Western Ave/#E049-106 | Date Extracted: | 05/28/2002 |
| Sample Matrix: | Water | Date Analyzed: | 05/28/2002 |

## Matrix Spike/Duplicate Matrix Spike Summary
## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| Sample Name: | GMW-5 | Units: | ug/L |
| Lab Code: | X2200453-008 | Basis: | NA |
| Extraction Method: | EPA 5030B | Level: | Low |
| Analysis Method: | 8260B | Extraction Lot: | XWG0200678 |

| Analyte Name | Sample Result | GMW-5MS XWG0200678-4 Matrix Spike | | | GMW-5DMS XWG0200678-5 Duplicate Matrix Spike | | | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Result | Expected | %Rec | Result | Expected | %Rec | | | |
| Naphthalene | ND | 9.33 | 10.0 | 93 | 9.39 | 10.0 | 94 | 44-167 | 1 | 20 |
| 1,2,3-Trichlorobenzene | ND | 10.0 | 10.0 | 100 | 10.4 | 10.0 | 104 | 37-158 | 4 | 20 |

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

**Client:** GeoTrans
**Project:** Western Ave/#E049-106
**Sample Matrix:** Water

**Service Request:** X2200453
**Date Extracted:** 05/28/2002
**Date Analyzed:** 05/28/2002

## Lab Control Spike/Duplicate Lab Control Spike Summary
## Volatile Organic Compounds

**Extraction Method:** EPA 5030B
**Analysis Method:** 8260B

**Units:** ug/L
**Basis:** NA
**Level:** Low
**Extraction Lot:** XWG0200678

| | Lab Control Sample XWG0200678-1 Lab Control Spike | | | Duplicate Lab Control Sample XWG0200678-2 Duplicate Lab Control Spike | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Analyte Name** | **Result** | **Expected** | **%Rec** | **Result** | **Expected** | **%Rec** | **%Rec Limits** | **RPD** | **RPD Limit** |
| Dichlorodifluoromethane | 12.1 | 10.0 | 121 | 10.6 | 10.0 | 106 | 1-224 | 13 | 20 |
| Chloromethane | 9.20 | 10.0 | 92 | 6.93 | 10.0 | 69 | 21-153 | 28 R7 | 20 |
| Vinyl Chloride | 10.8 | 10.0 | 108 | 10.1 | 10.0 | 101 | 32-159 | 6 | 20 |
| Bromomethane | 8.63 | 10.0 | 86 | 8.16 | 10.0 | 82 | 37-148 | 6 | 20 |
| Chloroethane | 9.84 | 10.0 | 98 | 11.6 | 10.0 | 116 | 52-139 | 16 | 20 |
| Trichlorofluoromethane | 13.3 | 10.0 | 133 | 13.0 | 10.0 | 130 | 56-139 | 2 | 20 |
| 1,1,2-Trichlorotrifluoroethane | 12.3 | 10.0 | 123 | 11.7 | 10.0 | 117 | 84-131 | 5 | 20 |
| 1,1-Dichloroethene | 10.2 | 10.0 | 102 L1 | 9.43 | 10.0 | 94 | 68-100 | 8 | 20 |
| Acetone | 36.0 | 40.0 | 90 | 41.0 | 40.0 | 103 | 65-129 | 13 | 20 |
| Iodomethane | 41.6 | 40.0 | 104 | 67.5 | 40.0 | 169 L1 | 55-121 | 48 R2 | 20 |
| Carbon Disulfide | 45.2 | 40.0 | 113 | 48.2 | 40.0 | 120 | 78-121 | 6 | 20 |
| Methylene Chloride | 8.59 | 10.0 | 86 | 10.3 | 10.0 | 103 | 74-103 | 18 | 20 |
| Methyl tert-Butyl Ether | 9.56 | 10.0 | 96 | 10.6 | 10.0 | 106 | 71-129 | 10 | 20 |
| trans-1,2-Dichloroethene | 9.58 | 10.0 | 96 | 9.57 | 10.0 | 96 | 76-105 | 0 | 20 |
| 1,1-Dichloroethane | 10.3 | 10.0 | 103 | 10.2 | 10.0 | 102 | 79-114 | 1 | 20 |
| Vinyl Acetate | 52.5 | 40.0 | 131 | 61.1 | 40.0 | 153 | 48-160 | 15 | 39 |
| 2,2-Dichloropropane | 11.4 | 10.0 | 114 | 10.6 | 10.0 | 106 | 79-122 | 7 | 20 |
| 2-Butanone (MEK) | 38.1 | 40.0 | 95 | 39.8 | 40.0 | 99 | 64-131 | 4 | 20 |
| cis-1,2-Dichloroethene | 10.1 | 10.0 | 101 | 10.3 | 10.0 | 103 | 84-115 | 2 | 20 |
| Bromochloromethane | 10.0 | 10.0 | 100 | 11.2 | 10.0 | 112 | 77-112 | 11 | 20 |
| Chloroform | 10.2 | 10.0 | 102 | 10.1 | 10.0 | 101 | 80-114 | 1 | 20 |
| 1,1,1-Trichloroethane | 11.1 | 10.0 | 111 | 9.78 | 10.0 | 98 | 74-118 | 13 | 20 |
| Carbon Tetrachloride | 11.8 | 10.0 | 118 | 9.80 | 10.0 | 98 | 72-121 | 19 | 20 |
| 1,1-Dichloropropene | 11.0 | 10.0 | 110 | 9.27 | 10.0 | 93 | 77-116 | 17 | 20 |
| Benzene | 10.5 | 10.0 | 105 | 9.75 | 10.0 | 98 | 81-110 | 8 | 20 |
| 1,2-Dichloroethane | 9.54 | 10.0 | 95 | 9.85 | 10.0 | 99 | 67-125 | 3 | 20 |
| Trichloroethene | 10.5 | 10.0 | 105 | 9.36 | 10.0 | 94 | 78-111 | 11 | 20 |
| 1,2-Dichloropropane | 9.83 | 10.0 | 98 | 9.44 | 10.0 | 94 | 80-112 | 4 | 20 |
| Dibromomethane | 9.75 | 10.0 | 98 | 9.74 | 10.0 | 97 | 75-119 | 0 | 20 |
| Bromodichloromethane | 10.4 | 10.0 | 104 | 10.5 | 10.0 | 105 | 79-123 | 1 | 20 |
| cis-1,3-Dichloropropene | 10.1 | 10.0 | 101 | 10.2 | 10.0 | 102 | 77-115 | 1 | 20 |
| 4-Methyl-2-pentanone (MIBK) | 38.0 | 40.0 | 95 | 37.3 | 40.0 | 93 | 64-132 | 2 | 20 |
| Toluene | 10.7 | 10.0 | 107 | 10.0 | 10.0 | 100 | 79-114 | 7 | 20 |
| trans-1,3-Dichloropropene | 10.0 | 10.0 | 100 | 10.3 | 10.0 | 103 | 71-122 | 3 | 20 |
| 1,1,2-Trichloroethane | 9.40 | 10.0 | 94 | 9.51 | 10.0 | 95 | 74-123 | 1 | 20 |

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200453 |
| **Project:** | Western Ave/#E049-106 | **Date Extracted:** | 05/28/2002 |
| **Sample Matrix:** | Water | **Date Analyzed:** | 05/28/2002 |

## Lab Control Spike/Duplicate Lab Control Spike Summary
## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Extraction Method:** | EPA 5030B | **Units:** | ug/L |
| **Analysis Method:** | 8260B | **Basis:** | NA |
| | | **Level:** | Low |
| | | **Extraction Lot:** | XWG0200678 |

| | Lab Control Sample XWG0200678-1 Lab Control Spike | | | Duplicate Lab Control Sample XWG0200678-2 Duplicate Lab Control Spike | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Analyte Name** | **Result** | **Expected** | **%Rec** | **Result** | **Expected** | **%Rec** | **%Rec Limits** | **RPD** | **RPD Limit** |
| Tetrachloroethene | 11.1 | 10.0 | 111 | 10.1 | 10.0 | 101 | 82-116 | 9 | 20 |
| 2-Hexanone | 38.5 | 40.0 | 96 | 37.7 | 40.0 | 94 | 58-125 | 2 | 20 |
| 1,3-Dichloropropane | 9.59 | 10.0 | 96 | 9.86 | 10.0 | 99 | 77-123 | 3 | 20 |
| Dibromochloromethane | 9.67 | 10.0 | 97 | 10.1 | 10.0 | 101 | 71-125 | 4 | 20 |
| 1,2-Dibromoethane | 9.47 | 10.0 | 95 | 9.75 | 10.0 | 98 | 83-109 | 3 | 20 |
| Chlorobenzene | 10.4 | 10.0 | 104 | 9.78 | 10.0 | 98 | 83-109 | 6 | 20 |
| 1,1,1,2-Tetrachloroethane | 10.8 | 10.0 | 108 | 10.1 | 10.0 | 101 | 82-114 | 7 | 20 |
| Ethylbenzene | 11.5 | 10.0 | 115 | 10.4 | 10.0 | 104 | 84-116 | 10 | 20 |
| m,p-Xylenes | 22.8 | 20.0 | 114 | 21.4 | 20.0 | 107 | 83-117 | 7 | 20 |
| o-Xylene | 10.7 | 10.0 | 107 | 10.5 | 10.0 | 105 | 78-120 | 2 | 20 |
| Styrene | 10.6 | 10.0 | 106 | 10.5 | 10.0 | 105 | 80-122 | 1 | 20 |
| Isopropylbenzene | 11.3 | 10.0 | 113 | 10.4 | 10.0 | 104 | 83-119 | 8 | 20 |
| Bromobenzene | 10.4 | 10.0 | 104 | 10.4 | 10.0 | 104 | 82-121 | 0 | 20 |
| 1,2,3-Trichloropropane | 9.77 | 10.0 | 98 | 9.61 | 10.0 | 96 | 74-124 | 2 | 20 |
| n-Propylbenzene | 11.7 | 10.0 | 117 | 11.1 | 10.0 | 111 | 83-121 | 5 | 20 |
| 2-Chlorotoluene | 10.9 | 10.0 | 109 | 10.8 | 10.0 | 108 | 83-119 | 1 | 20 |
| 4-Chlorotoluene | 10.5 | 10.0 | 105 | 10.5 | 10.0 | 105 | 82-118 | 1 | 20 |
| 1,3,5-Trimethylbenzene | 11.3 | 10.0 | 113 | 10.9 | 10.0 | 109 | 77-127 | 3 | 20 |
| tert-Butylbenzene | 11.3 | 10.0 | 113 | 10.9 | 10.0 | 109 | 83-120 | 4 | 20 |
| 1,2,4-Trimethylbenzene | 10.4 | 10.0 | 104 | 10.3 | 10.0 | 103 | 74-123 | 0 | 20 |
| sec-Butylbenzene | 11.4 | 10.0 | 114 | 10.9 | 10.0 | 109 | 83-121 | 5 | 20 |
| 1,3-Dichlorobenzene | 10.1 | 10.0 | 101 | 10.4 | 10.0 | 104 | 82-117 | 3 | 20 |
| 4-Isopropyltoluene | 11.6 | 10.0 | 116 | 11.2 | 10.0 | 112 | 84-130 | 3 | 20 |
| Bromoform | 10.2 | 10.0 | 102 | 9.36 | 10.0 | 94 | 74-106 | 9 | 20 |
| 1,1,2,2-Tetrachloroethane | 10.0 | 10.0 | 100 | 9.36 | 10.0 | 94 | 77-114 | 7 | 20 |
| 1,4-Dichlorobenzene | 10.1 | 10.0 | 101 | 9.79 | 10.0 | 98 | 79-114 | 3 | 20 |
| 1,2-Dichlorobenzene | 10.2 | 10.0 | 102 | 9.75 | 10.0 | 98 | 80-116 | 4 | 20 |
| n-Butylbenzene | 11.6 | 10.0 | 116 | 10.7 | 10.0 | 107 | 77-122 | 8 | 20 |
| 1,2-Dibromo-3-chloropropane | 9.11 | 10.0 | 91 | 7.89 | 10.0 | 79 | 59-121 | 14 | 20 |
| 1,2,4-Trichlorobenzene | 10.4 | 10.0 | 104 | 10.0 | 10.0 | 100 | 69-124 | 4 | 20 |
| Hexachlorobutadiene | 12.6 | 10.0 | 126 | 11.1 | 10.0 | 111 | 71-126 | 13 | 20 |
| Naphthalene | 9.63 | 10.0 | 96 | 9.00 | 10.0 | 90 | 63-134 | 7 | 20 |
| 1,2,3-Trichlorobenzene | 10.2 | 10.0 | 102 | 9.95 | 10.0 | 100 | 70-126 | 2 | 20 |

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

# COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans, Inc. | **Service Request:** | L2201213 |
| **Project:** | Western Ave./E049-106 | **Date Collected:** | 5/14/02 |
| **Sample Matrix:** | Water | **Date Received:** | 5/16/02 |

Arsenic,Total

| | | | |
|---|---|---|---|
| Prep Method: | EPA 3020A | Units: | mg/L (ppm) |
| Analysis Method: | 7060A | Basis: | NA |
| Test Notes: | | | |

| Sample Name | Lab Code | MRL | Dilution Factor | Date Digested | Date Analyzed | Result | Result Notes |
|---|---|---|---|---|---|---|---|
| GMW-5 | L2201213-001 | 0.005 | 1 | 5/20/02 | 5/21/02 | 0.005 | |
| Method Blank | L220520-MB3 | 0.005 | 1 | 5/20/02 | 5/21/02 | ND | |

Approved By: Kay Jonlin Date: 5/31/02

1A/020597p

L2201213.XLS - Sample 5/24/02

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

**Client:** GeoTrans, Inc.
**Project:** Western Ave./E049-106
**Sample Matrix:** Water

**Service Request:** L2201213
**Date Collected:** NA
**Date Received:** NA
**Date Digested:** 5/20/02
**Date Analyzed:** 5/21/02

Matrix Spike/Duplicate Matrix Spike Summary
Arsenic,Total

Sample Name: Batch QC
Lab Code: L2201190-001MS, L2201190-001DMS
Test Notes:

Units: mg/L (ppm)
Basis: NA

| Analyte | Prep Method | Analysis Method | MRL | Spike Level MS | Spike Level DMS | Sample Result | Spike Result MS | Spike Result DMS | Percent Recovery MS | Percent Recovery DMS | CAS Acceptance Limits | Relative Percent Difference | Result Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic,Total | EPA 3020A | 7060A | 0.005 | 0.0400 | 0.0400 | ND | 0.0220 | 0.0190 | 55 | 48 | 18-130 | 15 | |

Approved By: [signature] Date: 5/31/02

DMS/020597p

L2201213.XLS - DMS 5/24/02

Columbia Analytical Services INC.
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# CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

3902 E. University Dr., Suite 4 • Phoenix, AZ 85034 • (602) 437-2001 • 800-695-7222 x09 • FAX (602) 437-5308



SR # X220 152

CAS Contact

Project Name: WESTERN AVENUE
Project Number: E049-106
Project Manager: CHRISTIAAN COLBERTSON
Report CC:
Company/Address: GEOTRANS, INC.
4665 S. ASH AVE STE-6
TEMPE AZ 85282
Phone #: 480-839-2800
FAX#: 480-839-2828
Sampler's Signature: Matt Lavigne
Sampler's Printed Name: MATT LAVIGNE

ANALYSIS REQUESTED (Include Method Number and Container Preservative)

PRESERVATIVE: 1

Preservative Key
0. NONE
1. HCL
2. $HNO_3$
3. $H_2SO_4$
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other ACID

| CLIENT SAMPLE ID | LAB ID | SAMPLING DATE | SAMPLING TIME | MATRIX | NUMBER OF CONTAINERS | BTEX 602 / 8021 | Volatile Organics GC/MS 8260/624 524.2 | 8015 AZ/HT C-10-C-32 | PAH 8310 | Halogenated & Aromatic 601 / 602 8021 | 8 RCRA Metals Total TCLP | Lead Total TCLP | Flash Point pH Paint Filter | REMARKS/ ALTERNATE DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-7 | 453 452-001 | 5/15/02 | 1145 | $H_2O$ | 3 | | X | | | | | | | |
| MW-5 | 453 452-002 | | 1320 | | | | X | | | | | | | |
| ADEQA-MW5 | 453 452-003 | | 1321 | | | | X | | | | | | | |
| MW-6 | 453 452-004 | | 1231 | | | | X | | | | | | | |
| MW-1 | 453 452-005 | | 1352 | | | | X | | | | | | | |
| MW-4 | 453 452-006 | | 1435 | | | | X | | | | | | | |
| MW-3 | 453 452-007 | | 1525 | | | | X | | | | | | | |

SPECIAL INSTRUCTIONS/COMMENTS

See QAPP ☐

TURNAROUND REQUIREMENTS
____ RUSH (SURCHARGES APPLY)
X STANDARD
REQUESTED FAX DATE
REQUESTED REPORT DATE

REPORT REQUIREMENTS
X I. Results Only
X II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
____ III. Results + QC and Calibration Summaries
____ IV. Data Validation Report with Raw Data
____ V. Specialized Forms / Custom Report
Edata X Yes ____ No

INVOICE INFORMATION
PO#
BILL TO:

SAMPLE RECEIPT: CONDITION/COOLER TEMP: _____ CUSTODY SEALS: Y N

| RELINQUISHED BY | RECEIVED BY | RELINQUISHED BY | RECEIVED BY | RELINQUISHED BY | RECEIVED BY |
|---|---|---|---|---|---|
| Signature: Matthew Lavigne | Signature: Andy Jamison | Signature | Signature | Signature | Signature |
| Printed Name: MATT LAVIGNE | Printed Name: CAS | Printed Name | Printed Name | Printed Name | Printed Name |
| Firm: GEOTRANS, INC. | Firm: CAS | Firm | Firm | Firm | Firm |
| Date/Time: 5/16/02 1130 | Date/Time: 5/16/02 1130 | Date/Time | Date/Time | Date/Time | Date/Time |

Distribution: White - Return to Originator; Yellow - Lab Copy; Pink - Retained by Client

SCOC-0101-06

000045

Colorado Analytical Services INC.
An Employee-Owned Company
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# CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

3902 E. University Dr., Suite 4 • Phoenix, AZ 85034 • (602) 437-2001 • 800-695-7222 x09 • FAX (602) 437-5308

PAGE 1 OF 1

SR # Y22001 25
CAS Contact

| | |
|---|---|
| Project Name: WESTERN AVE | Project Number: E049-106 |
| Project Manager: CHRISTIAAN CULBERTSON | Report CC: |
| Company/Address: GEOTRANS, 4665 S ASH AVE STE G-1, TEMPE AZ 85282 | |
| Phone # 480-839-2800 | FAX# 480-839-2828 |
| Sampler's Signature: | Sampler's Printed Name: |

ANALYSIS REQUESTED (Include Method Number and Container Preservative)

| CLIENT SAMPLE ID | LAB ID | SAMPLING DATE | SAMPLING TIME | MATRIX | NUMBER OF CONTAINERS | BTEX 602/8021 | Volatile Organics GC/MS 8260 624 524.2 | 8015 AZR1 C-10-C-32 | PAH 8310 | Halogenated & Aromatic 601/602 8021 | 8 RCRA Metals Total TCLP | Lead Total TCLP | Flash Point pH Paint Filter | ARSENIC | | | | | | REMARKS/ ALTERNATE DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PRESERVATIVE | | | | | | | 1 | | | | | | | 2 | | | | | | |
| GMW-5 453 | ~~452-008~~ 453-16 | 05-14-02 | 1404 | GW | 4 | | X | | | | | | | X | | | | | | |
| GMW-4 453 | ~~452-009~~ | ↓ | 1521 | GW | 3 | | X | | | | | | | | | | | | | |
| ADEQG-MW4 453 | ~~452-010~~ | ↓ | 1621 | GW | 3 | | X | | | | | | | | | | | | | |

Preservative Key
0. NONE
1. HCL
2. $HNO_3$
3. $H_2SO_4$
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other ACID

SPECIAL INSTRUCTIONS/COMMENTS

See QAPP ☐

TURNAROUND REQUIREMENTS
____ RUSH (SURCHARGES APPLY)
X STANDARD
REQUESTED FAX DATE
REQUESTED REPORT DATE

REPORT REQUIREMENTS
X I. Results Only
X II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
____ III. Results + QC and Calibration Summaries
____ IV. Data Validation Report with Raw Data
____ V. Specialized Forms / Custom Report
Edata X Yes ____ No

INVOICE INFORMATION
PO#
BILL TO:

SAMPLE RECEIPT: CONDITION/COOLER TEMP: _____ CUSTODY SEALS: Y N

| RELINQUISHED BY | RECEIVED BY | RELINQUISHED BY | RECEIVED BY | RELINQUISHED BY | RECEIVED BY |
|---|---|---|---|---|---|
| Signature: [signature] | Signature: [signature] | Signature: [signature] | Signature: [signature] | Signature: | Signature: |
| Printed Name: CHRIS WTM Jr | Printed Name: MATT LAVIGNE | Printed Name: MATT LAVIGNE | Printed Name: Jordan | Printed Name: | Printed Name: |
| Firm: GEOTRANS | Firm: GEOTRANS, INC. | Firm: GEOTRANS, INC. | Firm: CAS | Firm: | Firm: |
| Date/Time: 5-16-02 401 | Date/Time: 5/16/02 1101 | Date/Time: 5/16/02 1135 | Date/Time: 5/16/02 1130 | Date/Time: | Date/Time: |

000046

Distribution: White - Return to Originator; Yellow - Lab Copy; Pink - Retained by Client

SCOC-0101-06

X220 0453

**Columbia Analytical Services, Inc.**
**Phoenix, AZ**

# Sample Receipt and Preservation Form

Client: GeoTrans Project Name: Western Avenue

Sample(s) Received on: 5/16/02 date 1130 time

VOA's ☐ Glass Bottles ☐ Plastic Bottles ☐ Jars ☐ Sleeves ☐

MATRIX: SOIL ☐ WATER ☒

First Extraction Holding Time Expiration: _____ date _____ time (soils only)

Is first extraction/analysis holding time expiration LESS THAN 24 HOURS(soil)/7 DAYS (water)? Yes ☐ No ☐

If YES, chemist notified on: _____ date _____ time _____ Chemist's Initials

| | | |
|---|---|---|
| 1. Rush or standard turn-a-round time? | RUSH | STANDARD |
| 2. Are the custody seals present? If yes, how many and where? _____ | Yes ☐ | No ☒ |
| 3. Are the signature and date correct? | Yes ☒ | No ☐ |
| 4. Did all containers arrive in good condition? | Yes ☒ | No ☐ |
| 5. Are all container labels complete (i.e. preservation, sample ID)? | Yes ☒ | No ☐ |
| 6. Were the correct containers used for the tests indicated? | Yes ☒ | No ☐ |
| 7. Have VOA's been checked for the presence of air bubbles? (note problems in comments) | Yes ☒ | No ☐ N/A ☐ |
| 8. Temperature of sample(s) upon receipt: 5.8°C | | |

Explaination of discrepancies: _____

| | | YES | NO |
|---|---|---|---|
| pH | Reagent | | |
| 12 | NaOH | | |
| 2 | $HNO_3$ | | |
| 2 | $H_2SO_4$ | | |

VOA Vial pH Verification
(Tested After Analysis)
☐ All Samples pH ≤ 2
☐ Following Samples Exhibited pH > 2

| | | |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

Comments: _____

Form Completed and Sample(s) Received by (initials): GM

r:\common\forms\samprev.doc
Revised: 02/07/02 2:58 PM

# ARIZONA DATA QUALIFIERS

**Method Blank:**

| | |
|---|---|
| B1 | Target analyte detected in method blank at or above the method reporting limit. |
| B2 | Non-target analyte detected in method blank and sample, producing interference. |
| B3 | Target analyte detected in calibration blank at or above the method reporting limit. |
| B4 | Target analyte detected in blank at/above method acceptance criteria. |

**Confirmation:**

| | |
|---|---|
| C1 | Confirmatory analysis not performed as required by the method. |
| C2 | Confirmatory analysis not performed. Confirmation of analyte presence established by site historical data. |
| C3 | Qualitative confirmation performed. See case narrative. |
| C4 | Confirmatory analysis was past holding time. |
| C5 | Confirmatory analysis was past holding time. Original result not confirmed. |

**Dilution:**

| | |
|---|---|
| D1 | Sample required dilution due to matrix interference. See case narrative. |
| D2 | Sample required dilution due to high concentration of target analyte. |
| D3 | Sample dilution required due to insufficient sample. |
| D4 | Minimum reporting level (MRL) adjusted to reflect sample amount received and analyzed. |

**Estimated concentration:**

| | |
|---|---|
| E1 | Concentration estimated. Analyte exceeded calibration range. Reanalysis not possible due to insufficient sample. |
| E2 | Concentration estimated. Analyte exceeded calibration range. Reanalysis not performed due to sample matrix. |
| E3 | Concentration estimated. Analyte exceeded calibration range. Reanalysis not performed due to holding time requirements. |
| E4 | Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL). |
| E5 | Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL), but not confirmed by alternate analysis. |
| E6 | Confirmation estimated. Internal standard recoveries did not meet method acceptance criteria. |
| E7 | Confirmation estimated. Internal standard recoveries did not meet laboratory acceptance criteria. |

**Hold Time:**

| | |
|---|---|
| H1 | Sample analysis performed past holding time. See case narrative. |
| H2 | Initial analysis within holding time. Reanalysis for the required dilution was past holding time. |
| H3 | Sample was received and analyzed past holding time. |
| H4 | Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative. |

**BOD:**

| | |
|---|---|
| K1 | The sample dilutions set-up for the BOD analysis did not meet the oxygen depletion criteria of at least 2mg/L. Any reported result is an estimated value. |
| K2 | The sample dilutions set up for the BOD analysis did not meet the criteria of a residual dissolved oxygen of at least 1 mg/L. Any reported result is an estimated value. |
| K3 | The seed depletion was outside the method acceptance limits. |

K4 The seed depletion was outside the method and laboratory acceptance limits. The reported result is an estimated value.

K5 The dilution water D.O. depletion was >0.2 mg/L.

K6 Glucose/glutamic acid BOD was below method acceptance criteria.

K7 The discrepancy between the BOD and COD results has been verified by reanalysis of the sample for COD.

Laboratory fortified blank/blank spike:

L1 The associated blank spike recovery was above laboratory acceptance limits. See case narrative.

L2 The associated blank spike recovery was below laboratory acceptance limits. See case narrative.

L3 The associated blank spike recovery was above method acceptance limits. See case narrative.

L4 The associated blank spike recovery was below method acceptance limits. See case narrative.

**Note: The L1, L2, L3, & L4 footnotes need to be added to all corresponding analytes for a sample.**

Matrix spike:

M1 Matrix spike recovery was high, the method control sample recovery was acceptable.

M2 Matrix spike recovery was low, the method control sample was acceptable.

M3 The accuracy of the spike recovery value is reduced since the analyte concentration in the sample is disproportionate to spike level. The method control sample recovery was acceptable.

M4 The analysis of the spiked sample required a dilution such that the spike concentrations was diluted below the reporting limit. The method control sample recovery was acceptable.

M5 Analyte concentration was determined by the method of standard addition (MSA).

General:

N1 See case narrative.

N2 See corrective action report.

Sample quality:

Q1 Sample integrity was not maintained. See case narrative.

Q2 Sample received with head space.

Q3 Sample received with improper chemical preservation.

Q4 Sample received and analyzed without chemical preservation.

Q5 Sample received with inadequate chemical preservation, but preserved by the laboratory.

Q6 Sample was received above recommended temperature.

Q7 Sample inadequately dechlorinated.

Q8 Insufficient sample received to meet QC requirements. QC requirements satisfy ADEQ policies 0154 and 0155.

Q9 Insufficient sample received to meet QC requirements.

Q10 Sample received in inappropriate sample container.

Q11 Sample is heterogeneous. Sample homogeneity could not be readily achieved using routine laboratory practices.

Duplicates:

R1 RPD exceeded the method control limit. See case narrative.

R2 RPD exceeded the laboratory control limit. See case narrative.

R3 Sample RPD between the primary and confirmatory analysis exceeded 40%. Per Method 8000B, the higher value was reported.

R4 MS/MSD RPD exceeded the method control limit. Recovery met acceptance criteria.

R5 MS/MSD RPD exceeded the laboratory control limit. Recovery met acceptance criteria.

R6 LFB/LFBD RPD exceeded the method control limit. Recovery met acceptance criteria.

R7 LFB/LFBD RPD exceeded the laboratory control limit. Recovery met acceptance criteria.

R8 Sample RPD exceeded the method control limit.

R9 Sample RPD exceeded the laboratory control limit.

**Surrogate:**

S1 Surrogate recovery was above laboratory acceptance limits, but within method acceptance limits.

S2 Surrogate recovery was above laboratory and method acceptance limits.

S3 Surrogate recovery was above laboratory acceptance limits, but within method acceptance limits. No target analytes were detected in the sample.

S4 Surrogate recovery was above laboratory and method acceptance limits. No target analytes were detected in the sample.

S5 Surrogate recovery was below laboratory acceptance limits, but within method acceptance limits.

S6 Surrogate recovery was below laboratory and method acceptance limits. Reextraction and/or reanalysis confirms low recovery caused by matrix effect.

S7 Surrogate recovery was below laboratory and method acceptance limits. Unable to confirm matrix effect.

S8 The analysis of the sample required a dilution such that the surrogate concentration was diluted below the method acceptance criteria. The method control sample recovery was acceptable.

S9 The analysis of the sample required a dilution such that the surrogate concentration was diluted below the laboratory acceptance criteria. The method control sample recovery was acceptable.

S10 Surrogate recovery was above laboratory and method acceptance limits. See case narrative.

**Method/analyte discrepancies:**

T1 Method promulgated by EPA, but not ADHS at this time.

T2 Cited ADHS licensed method does not contain this analyte as part of method compound list.

T3 Method not promulgated either by EPA or ADHS.

T4 Tentatively identified compound. Concentration is estimated and based on the closest internal standard.

**Calibration verification:**

V1 CCV recovery was above method acceptance limits. This target analyte was not detected in the sample.

V2 CCV recovery was above method acceptance limits. This target analyte was detected in the sample. The sample could not be reanalyzed due to insufficient sample.

V3 CCV recovery was above method acceptance limits. This target analyte was detected in the sample, but the sample was not reanalyzed. See case narrative.

V4 CCV recovery was below method acceptance limits. The sample could not be reanalyzed due to insufficient sample.

V5 CCV recovery after a group of samples was above acceptance limits. This target analyte was not detected in the sample. Acceptable per EPA Method 8000B.

## Inorganic Data Qualifiers

| | |
|---|---|
| * | The result is an outlier. See case narrative. |
| # | The control limit criteria is not applicable. See case narrative. |
| | The analyte was found in the associated method blank at a level that is significant relative to the sample result. |
| E | The result is an estimate amount because the value exceeded the instrument calibration range. |
| J | The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL. |
| U | The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. |
| i | The MRL/MDL has been elevated due to a matrix interference. |
| X | See case narrative. |

## Metals Data Qualifiers

| | |
|---|---|
| # | The control limit criteria is not applicable. See case narrative. |
| B | The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL. |
| E | The reported value is estimated because of the presence of matrix interference. |
| M | The duplicate injection precision was not met. |
| N | The Matrix Spike sample recovery is not within control limits. See case narrative. |
| S | The reported value was determined by the Method of Standard Additions (MSA). |
| U | The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. |
| W | The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance. |
| i | The MRL/MDL has been elevated due to a matrix interference. |
| X | See case narrative. |
| * | The duplicate analysis not within control limits. See case narrative. |
| + | The correlation coefficient for the MSA is less than 0.995. |

## Organic Data Qualifiers

| | |
|---|---|
| * | The result is an outlier. See case narrative. |
| # | The control limit criteria is not applicable. See case narrative. |
| A | A tentatively identified compound, a suspected aldol-condensation product. |
| B | The analyte was found in the associated method blank at a level that is significant relative to the sample result. |
| C | The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data. |
| D | The reported result is from a dilution. |
| E | The result is an estimate amount because the value exceeded the instrument calibration range. |
| J | The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL. |
| N | The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed. |
| P | The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results (25% for CLP Pesticides). |
| U | The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. |
| i | The MRL/MDL has been elevated due to a chromatographic interference. |
| X | See case narrative. |

## Additional Petroleum Hydrocarbon Specific Qualifiers

| | |
|---|---|
| F | The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard. |
| L | The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard. |
| H | The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard. |
| O | The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard. |
| Y | The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard. |
| Z | The chromatographic fingerprint does not resemble a petroleum product. |

PROJ # Western
COPIES TO EOS

Columbia Analytical Services INC.
An Employee-Owned Company

June 3, 2002

RECEIVED
JUN - 6 2002
GEOTRANS

Christian Culbertson
GeoTrans
4665 S. Ash Avenue, Suite G-1
Tempe, AZ 85285

**Re: Western Ave / Project #E049-106**

Dear Christian:

Enclosed are the results of the samples submitted to our laboratory on May 16, 2002. For your reference, these analyses have been assigned our service request number X2200452.

All analyses were performed according to our laboratory's quality assurance program. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the samples analyzed.Columbia Analytical Services, Inc. is certified for environmental analyses by the Arizona Department of Health Services (Certificate #AZ0497).

Please call if you have any questions. My extension is 223.

Respectfully submitted,

**Columbia Analytical Services, Inc.**

Greg Jordan
Project Chemist

GRJ/lm



3902 East University Drive, Suite 4 ▪ Phoenix, AZ 85034 ▪ (602) 437-2001 ▪ Fax (602) 437-5308

COLUMBIA ANALYTICAL SERVICES, INC.

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request No.:** | X2200452 |
| **Project:** | Western Ave / #E049-106 | **Date Received:** | 5/16/02 |
| **Sample Matrix:** | Water | | |

## CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for sample(s) designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix/Duplicate Matrix Spike (MS/DMS) and Laboratory Control Sample (LCS).

All EPA recommended holding times have been met for analyses in this sample delivery group.

The following difficulties were experienced during analysis of this batch:

Marix spike (XWG0200681-5) recovery of Methylene Chloride, trans-1,2-Dichloroethene, and m,p-Xylenes, Method 8260B, was low. The method control sample recovery was acceptable.

**Approved by** _____ **Date** 6/4/02

# Organic Analysis:
# Volatile Organic Compounds

## Summary Package

### Sample and QC Results

COLUMBIA ANALYTICAL SERVICES, INC.

**Client:** GeoTrans
**Project:** Western Ave/#E049-106

**Service Request:** X2200452

## Cover Page - Organic Analysis Data Package
## Volatile Organic Compounds

| Sample Name | Lab Code | Date Collected | Date Received |
|---|---|---|---|
| COG-MW3 | X2200452-001 | 05/15/2002 | 05/16/2002 |
| COG-MW3MS | XWG0200681-4 | 05/15/2002 | 05/16/2002 |
| COG-MW3DMS | XWG0200681-5 | 05/15/2002 | 05/16/2002 |

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Greg Jordan

Name: Greg Jordan

Date: 6/4/02

Title: Project Chemist

# COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200452 |
| **Project:** | Western Ave/#E049-106 | **Date Collected:** | 05/15/2002 |
| **Sample Matrix:** | Water | **Date Received:** | 05/16/2002 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | COG-MW3 | **Units:** | ug/L |
| **Lab Code:** | X2200452-001 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | ND | U | 3.0 | 1 | 05/29/02 | 05/29/02 | |
| Chloromethane | ND | U | 2.0 | 1 | 05/29/02 | 05/29/02 | |
| Vinyl Chloride | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Bromomethane | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Chloroethane | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Trichlorofluoromethane | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,1,2-Trichlorotrifluoroethane | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,1-Dichloroethene | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Acetone | ND | U | 10 | 1 | 05/29/02 | 05/29/02 | |
| Iodomethane | ND | U | 2.0 | 1 | 05/29/02 | 05/29/02 | |
| Carbon Disulfide | ND | U | 2.0 | 1 | 05/29/02 | 05/29/02 | |
| Methylene Chloride | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| ethyl tert-Butyl Ether | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| trans-1,2-Dichloroethene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,1-Dichloroethane | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Vinyl Acetate | ND | U | 3.0 | 1 | 05/29/02 | 05/29/02 | |
| 2,2-Dichloropropane | ND | U | 2.0 | 1 | 05/29/02 | 05/29/02 | |
| 2-Butanone (MEK) | ND | U | 5.0 | 1 | 05/29/02 | 05/29/02 | |
| cis-1,2-Dichloroethene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Bromochloromethane | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Chloroform | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,1,1-Trichloroethane | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Carbon Tetrachloride | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,1-Dichloropropene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Benzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2-Dichloroethane | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Trichloroethene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2-Dichloropropane | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Dibromomethane | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Bromodichloromethane | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| cis-1,3-Dichloropropene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 4-Methyl-2-pentanone (MIBK) | ND | U | 5.0 | 1 | 05/29/02 | 05/29/02 | |
| Toluene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |

**mments:**

# COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

**Client:** GeoTrans
**Project:** Western Ave/#E049-106
**Sample Matrix:** Water

**Service Request:** X2200452
**Date Collected:** 05/15/2002
**Date Received:** 05/16/2002

## Volatile Organic Compounds

**Sample Name:** COG-MW3
**Lab Code:** X2200452-001

**Units:** ug/L
**Basis:** NA

**Extraction Method:** EPA 5030B
**Analysis Method:** 8260B

**Level:** Low

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| trans-1,3-Dichloropropene | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,1,2-Trichloroethane | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| **Tetrachloroethene** | **14** | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 2-Hexanone | ND | U | 5.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,3-Dichloropropane | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Dibromochloromethane | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2-Dibromoethane | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Chlorobenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,1,1,2-Tetrachloroethane | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Ethylbenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| m,p-Xylenes | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| o-Xylene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Styrene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Isopropylbenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Bromobenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2,3-Trichloropropane | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| n-Propylbenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 2-Chlorotoluene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 4-Chlorotoluene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,3,5-Trimethylbenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| tert-Butylbenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2,4-Trimethylbenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| sec-Butylbenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,3-Dichlorobenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 4-Isopropyltoluene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Bromoform | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,1,2,2-Tetrachloroethane | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,4-Dichlorobenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2-Dichlorobenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| n-Butylbenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2-Dibromo-3-chloropropane | ND | U | 2.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,2,4-Trichlorobenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Hexachlorobutadiene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |

**Comments:**

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200452 |
| **Project:** | Western Ave/#E049-106 | **Date Collected:** | 05/15/2002 |
| **Sample Matrix:** | Water | **Date Received:** | 05/16/2002 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | COG-MW3 | **Units:** | ug/L |
| **Lab Code:** | X2200452-001 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| Naphthalene | ND | U | 3.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,2,3-Trichlorobenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |

| Surrogate Name | %Rec | Control Limits | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|
| Dibromofluoromethane | 94 | 84-113 | 05/29/02 | |
| Toluene-d8 | 100 | 68-126 | 05/29/02 | |
| 4-Bromofluorobenzene | 97 | 79-113 | 05/29/02 | |

ments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

**Client:** GeoTrans
**Project:** Western Ave/#E049-106
**Sample Matrix:** Water

**Service Request:** X2200452
**Date Collected:** NA
**Date Received:** NA

## Volatile Organic Compounds

**Sample Name:** Method Blank
**Lab Code:** XWG0200681-3

**Extraction Method:** EPA 5030B
**Analysis Method:** 8260B

**Units:** ug/L
**Basis:** NA

**Level:** Low

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | ND | U | 3.0 | 1 | 05/29/02 | 05/29/02 | |
| Chloromethane | ND | U | 2.0 | 1 | 05/29/02 | 05/29/02 | |
| Vinyl Chloride | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Bromomethane | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Chloroethane | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Trichlorofluoromethane | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,1,2-Trichlorotrifluoroethane | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,1-Dichloroethene | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Acetone | ND | U | 10 | 1 | 05/29/02 | 05/29/02 | |
| Iodomethane | ND | U | 2.0 | 1 | 05/29/02 | 05/29/02 | |
| Carbon Disulfide | ND | U | 2.0 | 1 | 05/29/02 | 05/29/02 | |
| Methylene Chloride | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Methyl tert-Butyl Ether | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| trans-1,2-Dichloroethene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,1-Dichloroethane | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Vinyl Acetate | ND | U | 3.0 | 1 | 05/29/02 | 05/29/02 | |
| 2,2-Dichloropropane | ND | U | 2.0 | 1 | 05/29/02 | 05/29/02 | |
| 2-Butanone (MEK) | ND | U | 5.0 | 1 | 05/29/02 | 05/29/02 | |
| cis-1,2-Dichloroethene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Bromochloromethane | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Chloroform | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,1,1-Trichloroethane | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Carbon Tetrachloride | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,1-Dichloropropene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Benzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2-Dichloroethane | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Trichloroethene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2-Dichloropropane | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Dibromomethane | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Bromodichloromethane | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| cis-1,3-Dichloropropene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 4-Methyl-2-pentanone (MIBK) | ND | U | 5.0 | 1 | 05/29/02 | 05/29/02 | |
| Toluene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |

**Comments:**

# COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200452 |
| **Project:** | Western Ave/#E049-106 | **Date Collected:** | NA |
| **Sample Matrix:** | Water | **Date Received:** | NA |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | Method Blank | **Units:** | ug/L |
| **Lab Code:** | XWG0200681-3 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| trans-1,3-Dichloropropene | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,1,2-Trichloroethane | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Tetrachloroethene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 2-Hexanone | ND | U | 5.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,3-Dichloropropane | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Dibromochloromethane | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2-Dibromoethane | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Chlorobenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,1,1,2-Tetrachloroethane | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Ethylbenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| m,p-Xylenes | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| o-Xylene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Styrene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Isopropylbenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Bromobenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2,3-Trichloropropane | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| n-Propylbenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 2-Chlorotoluene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 4-Chlorotoluene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,3,5-Trimethylbenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| tert-Butylbenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2,4-Trimethylbenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| sec-Butylbenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,3-Dichlorobenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 4-Isopropyltoluene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Bromoform | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,1,2,2-Tetrachloroethane | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,4-Dichlorobenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2-Dichlorobenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| n-Butylbenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2-Dibromo-3-chloropropane | ND | U | 2.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,2,4-Trichlorobenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Hexachlorobutadiene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |

**Comments:**

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200452 |
| **Project:** | Western Ave/#E049-106 | **Date Collected:** | NA |
| **Sample Matrix:** | Water | **Date Received:** | NA |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | Method Blank | **Units:** | ug/L |
| **Lab Code:** | XWG0200681-3 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| Naphthalene | ND | U | 3.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,2,3-Trichlorobenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |

| Surrogate Name | %Rec | Control Limits | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|
| Dibromofluoromethane | 89 | 84-113 | 05/29/02 | |
| Toluene-d8 | 98 | 68-126 | 05/29/02 | |
| 4-Bromofluorobenzene | 96 | 79-113 | 05/29/02 | |

**Comments:**

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

**Client:** GeoTrans
**Project:** Western Ave/#E049-106
**Sample Matrix:** Water

**Service Request:** X2200452

## Surrogate Recovery Summary
## Volatile Organic Compounds

**Extraction Method:** EPA 5030B
**Analysis Method:** 8260B

**Units:** PERCENT
**Level:** Low

| Sample Name | Lab Code | Sur1 | Sur2 | Sur3 |
|---|---|---|---|---|
| COG-MW3 | X2200452-001 | 94 | 100 | 97 |
| Method Blank | XWG0200681-3 | 89 | 98 | 96 |
| COG-MW3MS | XWG0200681-4 | 91 | 100 | 101 |
| COG-MW3DMS | XWG0200681-5 | 92 | 101 | 100 |
| Lab Control Sample | XWG0200681-1 | 91 | 99 | 100 |
| Duplicate Lab Control Sample | XWG0200681-2 | 90 | 99 | 97 |

**Surrogate Recovery Control Limits (%)**

| | | |
|---|---|---|
| Sur1 = | Dibromofluoromethane | 84-113 |
| Sur2 = | Toluene-d8 | 68-126 |
| Sur3 = | 4-Bromofluorobenzene | 79-113 |

Results flagged with an asterisk (*) indicate values outside control criteria.
Results flagged with a pound (#) indicate the control criteria is not applicable.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

**Client:** GeoTrans
**Project:** Western Ave/#E049-106

**Service Request:** X2200452
**Date Analyzed:** 05/29/2002
**Time Analyzed:** 11:18

## Internal Standard Area and RT Summary
## Volatile Organic Compounds

**File ID:** J:\MS03\MAY02\MAY2902\29MAY005.D
**Instrument ID:** MS03
**Analysis Method:** 8260B

**Lab Code:** XWG0200680-2
**Analysis Lot:** XWG0200680

| | | 1,4-Difluorobenzene | | Chlorobenzene-d5 | | 1,4-Dichlorobenzene-d4 | |
|---|---|---|---|---|---|---|---|
| | | Area | RT | Area | RT | Area | RT |
| | Results ==> | 270,950 | 12.49 | 213,360 | 16.20 | 104,933 | 18.66 |
| | Upper Limit ==> | 541,900 | 12.99 | 426,720 | 16.70 | 209,866 | 19.16 |
| | Lower Limit ==> | 135,475 | 11.99 | 106,680 | 15.70 | 52,467 | 18.16 |
| | ICAL Result == | 228,574 | NA | 182,807 | NA | 86,010 | NA |
| *Associated Analyses* | | | | | | | |
| Lab Control Sample | XWG0200681-1 | 277,490 | 12.48 | 221,125 | 16.20 | 106,005 | 18.66 |
| Duplicate Lab Control Sample | XWG0200681-2 | 274,323 | 12.49 | 217,872 | 16.20 | 102,258 | 18.66 |
| Method Blank | XWG0200681-3 | 275,929 | 12.48 | 219,843 | 16.20 | 88,182 | 18.66 |
| COG-MW3 | X2200452-001 | 263,416 | 12.48 | 209,426 | 16.20 | 86,987 | 18.66 |
| COG-MW3MS | XWG0200681-4 | 280,126 | 12.48 | 240,874 | 16.20 | 107,953 | 18.66 |
| COG-MW3DMS | XWG0200681-5 | 275,107 | 12.49 | 240,310 | 16.21 | 107,267 | 18.66 |

sults flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200452 |
| **Project:** | Western Ave/#E049-106 | **Date Extracted:** | 05/29/2002 |
| **Sample Matrix:** | Water | **Date Analyzed:** | 05/29/2002 |

## Matrix Spike/Duplicate Matrix Spike Summary
## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | COG-MW3 | **Units:** | ug/L |
| **Lab Code:** | X2200452-001 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | **Extraction Lot:** | XWG0200681 |

| Analyte Name | Sample Result | COG-MW3MS XWG0200681-4 Matrix Spike | | | COG-MW3DMS XWG0200681-5 Duplicate Matrix Spike | | | | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Result | Expected | %Rec | Result | Expected | %Rec | | | | |
| Dichlorodifluoromethane | ND | 10.7 | 10.0 | 107 | 10.1 | 10.0 | 101 | | 78-207 | 6 | 20 |
| Chloromethane | ND | 9.04 | 10.0 | 90 | 8.33 | 10.0 | 83 | | 70-157 | 8 | 20 |
| Vinyl Chloride | ND | 8.47 | 10.0 | 85 | 7.89 | 10.0 | 79 | | 79-174 | 7 | 20 |
| Bromomethane | ND | 7.33 | 10.0 | 73 | 7.15 | 10.0 | 72 | | 44-150 | 2 | 20 |
| Chloroethane | ND | 7.93 | 10.0 | 79 | 7.47 | 10.0 | 75 | | 74-150 | 6 | 20 |
| Trichlorofluoromethane | ND | 9.58 | 10.0 | 96 | 9.07 | 10.0 | 91 | | 80-134 | 5 | 20 |
| 1,1,2-Trichlorotrifluoroethane | ND | 10.2 | 10.0 | 102 | 9.72 | 10.0 | 97 | | 67-128 | 5 | 20 |
| 1,1-Dichloroethene | ND | 8.37 | 10.0 | 84 | 7.65 | 10.0 | 77 | | 71-142 | 9 | 20 |
| Acetone | ND | 43.4 | 40.0 | 108 | 38.8 | 40.0 | 97 | | 1-155 | 11 | 20 |
| Iodomethane | ND | 39.1 | 40.0 | 98 | 37.7 | 40.0 | 94 | | 47-120 | 4 | 20 |
| Carbon Disulfide | ND | 38.9 | 40.0 | 97 | 36.8 | 40.0 | 92 | | 77-126 | 6 | 20 |
| Methylene Chloride | ND | 8.45 | 10.0 | 85 | 8.19 | 10.0 | 82 | M2 | 83-106 | 3 | 20 |
| Methyl tert-Butyl Ether | ND | 10.4 | 10.0 | 104 | 10.2 | 10.0 | 102 | | 70-118 | 2 | 20 |
| trans-1,2-Dichloroethene | ND | 8.85 | 10.0 | 89 | 8.44 | 10.0 | 84 | M2 | 86-115 | 5 | 20 |
| 1,1-Dichloroethane | ND | 9.26 | 10.0 | 93 | 8.90 | 10.0 | 89 | | 77-127 | 4 | 20 |
| Vinyl Acetate | ND | 54.1 | 40.0 | 135 | 53.5 | 40.0 | 134 | | 8-187 | 1 | 20 |
| 2,2-Dichloropropane | ND | 9.10 | 10.0 | 91 | 8.43 | 10.0 | 84 | | 25-154 | 8 | 20 |
| 2-Butanone (MEK) | ND | 42.9 | 40.0 | 107 | 43.5 | 40.0 | 109 | | 90-112 | 1 | 20 |
| cis-1,2-Dichloroethene | ND | 9.19 | 10.0 | 92 | 8.80 | 10.0 | 88 | | 69-118 | 4 | 20 |
| Bromochloromethane | ND | 9.81 | 10.0 | 98 | 9.54 | 10.0 | 95 | | 47-136 | 3 | 20 |
| Chloroform | ND | 9.26 | 10.0 | 93 | 8.99 | 10.0 | 90 | | 48-143 | 3 | 20 |
| 1,1,1-Trichloroethane | ND | 9.14 | 10.0 | 91 | 8.80 | 10.0 | 88 | | 84-122 | 4 | 20 |
| Carbon Tetrachloride | ND | 9.44 | 10.0 | 94 | 8.89 | 10.0 | 89 | | 79-120 | 6 | 20 |
| 1,1-Dichloropropene | ND | 9.11 | 10.0 | 91 | 8.54 | 10.0 | 85 | | 85-117 | 6 | 20 |
| Benzene | ND | 9.38 | 10.0 | 94 | 8.85 | 10.0 | 89 | | 88-114 | 6 | 20 |
| 1,2-Dichloroethane | ND | 8.56 | 10.0 | 86 | 8.48 | 10.0 | 85 | | 75-112 | 1 | 20 |
| Trichloroethene | ND | 9.14 | 10.0 | 91 | 8.60 | 10.0 | 86 | | 76-115 | 6 | 20 |
| 1,2-Dichloropropane | ND | 9.41 | 10.0 | 94 | 8.84 | 10.0 | 88 | | 85-107 | 6 | 20 |
| Dibromomethane | ND | 9.67 | 10.0 | 97 | 9.43 | 10.0 | 94 | | 82-106 | 3 | 20 |
| Bromodichloromethane | ND | 9.66 | 10.0 | 97 | 9.57 | 10.0 | 96 | | 83-107 | 1 | 20 |
| cis-1,3-Dichloropropene | ND | 9.78 | 10.0 | 98 | 9.40 | 10.0 | 94 | | 70-114 | 4 | 20 |
| 4-Methyl-2-pentanone (MIBK) | ND | 44.6 | 40.0 | 111 | 41.5 | 40.0 | 104 | | 54-129 | 7 | 20 |
| Toluene | ND | 9.50 | 10.0 | 95 | 9.06 | 10.0 | 91 | | 86-114 | 5 | 20 |

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200452 |
| **Project:** | Western Ave/#E049-106 | **Date Extracted:** | 05/29/2002 |
| **Sample Matrix:** | Water | **Date Analyzed:** | 05/29/2002 |

## Matrix Spike/Duplicate Matrix Spike Summary
## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | COG-MW3 | **Units:** | ug/L |
| **Lab Code:** | X2200452-001 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | **Extraction Lot:** | XWG0200681 |

| Analyte Name | Sample Result | COG-MW3MS XWG0200681-4 Matrix Spike | | | COG-MW3DMS XWG0200681-5 Duplicate Matrix Spike | | | | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Result | Expected | %Rec | Result | Expected | %Rec | | | | |
| trans-1,3-Dichloropropene | ND | 9.98 | 10.0 | 100 | 9.52 | 10.0 | 95 | | 73-112 | 5 | 20 |
| 1,1,2-Trichloroethane | ND | 10.2 | 10.0 | 102 | 9.66 | 10.0 | 97 | | 79-112 | 5 | 20 |
| Tetrachloroethene | 14 | 25.0 | 10.0 | 108 | 23.7 | 10.0 | 96 | | 78-130 | 5 | 20 |
| 2-Hexanone | ND | 41.4 | 40.0 | 104 | 40.2 | 40.0 | 100 | | 77-112 | 3 | 20 |
| 1,3-Dichloropropane | ND | 9.93 | 10.0 | 99 | 9.75 | 10.0 | 98 | | 45-133 | 2 | 20 |
| Dibromochloromethane | ND | 10.3 | 10.0 | 103 | 10.0 | 10.0 | 100 | | 74-108 | 3 | 20 |
| 1,2-Dibromoethane | ND | 10.8 | 10.0 | 108 | 10.3 | 10.0 | 103 | | 73-113 | 5 | 20 |
| Chlorobenzene | ND | 9.34 | 10.0 | 93 | 8.79 | 10.0 | 88 | | 84-111 | 6 | 20 |
| 1,1,2-Tetrachloroethane | ND | 9.38 | 10.0 | 94 | 9.03 | 10.0 | 90 | | 84-119 | 4 | 20 |
| Ethylbenzene | ND | 9.22 | 10.0 | 92 | 8.68 | 10.0 | 87 | | 47-136 | 6 | 20 |
| m,p-Xylenes | ND | 17.2 | 20.0 | 86 | 16.4 | 20.0 | 82 | M2 | 84-120 | 5 | 20 |
| o-Xylene | ND | 8.71 | 10.0 | 87 | 8.40 | 10.0 | 84 | | 47-143 | 4 | 20 |
| Styrene | ND | 8.63 | 10.0 | 86 | 8.32 | 10.0 | 83 | | 72-121 | 4 | 20 |
| Isopropylbenzene | ND | 8.61 | 10.0 | 86 | 8.18 | 10.0 | 82 | | 63-108 | 5 | 20 |
| Bromobenzene | ND | 10.1 | 10.0 | 101 | 9.54 | 10.0 | 95 | | 80-113 | 6 | 20 |
| 1,2,3-Trichloropropane | ND | 9.13 | 10.0 | 91 | 8.76 | 10.0 | 88 | | 78-119 | 4 | 20 |
| n-Propylbenzene | ND | 8.60 | 10.0 | 86 | 8.22 | 10.0 | 82 | | 76-117 | 5 | 20 |
| 2-Chlorotoluene | ND | 8.38 | 10.0 | 84 | 8.02 | 10.0 | 80 | | 79-121 | 4 | 20 |
| 4-Chlorotoluene | ND | 9.32 | 10.0 | 93 | 8.86 | 10.0 | 89 | | 70-133 | 5 | 20 |
| 1,3,5-Trimethylbenzene | ND | 8.38 | 10.0 | 84 | 7.94 | 10.0 | 79 | | 79-118 | 5 | 20 |
| tert-Butylbenzene | ND | 8.74 | 10.0 | 87 | 8.35 | 10.0 | 84 | | 77-120 | 5 | 20 |
| 1,2,4-Trimethylbenzene | ND | 8.27 | 10.0 | 83 | 7.79 | 10.0 | 78 | | 68-127 | 6 | 20 |
| sec-Butylbenzene | ND | 8.25 | 10.0 | 83 | 7.89 | 10.0 | 79 | | 78-123 | 4 | 20 |
| 1,3-Dichlorobenzene | ND | 9.78 | 10.0 | 98 | 9.18 | 10.0 | 92 | | 78-127 | 6 | 20 |
| 4-Isopropyltoluene | ND | 8.41 | 10.0 | 84 | 7.88 | 10.0 | 79 | | 79-142 | 7 | 20 |
| Bromoform | ND | 10.2 | 10.0 | 102 | 9.87 | 10.0 | 99 | | 83-111 | 3 | 20 |
| 1,1,2,2-Tetrachloroethane | ND | 11.1 | 10.0 | 111 | 10.5 | 10.0 | 105 | | 66-133 | 5 | 20 |
| 1,4-Dichlorobenzene | ND | 9.30 | 10.0 | 93 | 8.78 | 10.0 | 88 | | 48-139 | 6 | 20 |
| 1,2-Dichlorobenzene | ND | 10.0 | 10.0 | 100 | 9.50 | 10.0 | 95 | | 64-109 | 5 | 20 |
| n-Butylbenzene | ND | 9.14 | 10.0 | 91 | 8.55 | 10.0 | 86 | | 69-122 | 7 | 20 |
| 1,2-Dibromo-3-chloropropane | ND | 10.5 | 10.0 | 105 | 10.5 | 10.0 | 105 | | 54-160 | 0 | 20 |
| 1,2,4-Trichlorobenzene | ND | 10.5 | 10.0 | 105 | 9.94 | 10.0 | 99 | | 39-145 | 5 | 20 |
| Hexachlorobutadiene | ND | 9.77 | 10.0 | 98 | 9.65 | 10.0 | 97 | | 74-113 | 1 | 20 |

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200452 |
| **Project:** | Western Ave/#E049-106 | **Date Extracted:** | 05/29/2002 |
| **Sample Matrix:** | Water | **Date Analyzed:** | 05/29/2002 |

## Matrix Spike/Duplicate Matrix Spike Summary
## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | COG-MW3 | **Units:** | ug/L |
| **Lab Code:** | X2200452-001 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | **Extraction Lot:** | XWG0200681 |

| Analyte Name | Sample Result | COG-MW3MS XWG0200681-4 Matrix Spike | | | COG-MW3DMS XWG0200681-5 Duplicate Matrix Spike | | | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Result | Expected | %Rec | Result | Expected | %Rec | | | |
| Naphthalene | ND | 11.0 | 10.0 | 110 | 10.6 | 10.0 | 106 | 44-167 | 3 | 20 |
| 1,2,3-Trichlorobenzene | ND | 10.9 | 10.0 | 109 | 10.4 | 10.0 | 104 | 37-158 | 4 | 20 |

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200452 |
| **Project:** | Western Ave/#E049-106 | **Date Extracted:** | 05/29/2002 |
| **Sample Matrix:** | Water | **Date Analyzed:** | 05/29/2002 |

## Lab Control Spike/Duplicate Lab Control Spike Summary
## Volatile Organic Compounds

**Extraction Method:** EPA 5030B
**Analysis Method:** 8260B

**Units:** ug/L
**Basis:** NA
**Level:** Low
**Extraction Lot:** XWG0200681

| Analyte Name | Lab Control Sample XWG0200681-1 Lab Control Spike | | | Duplicate Lab Control Sample XWG0200681-2 Duplicate Lab Control Spike | | | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| | Result | Expected | %Rec | Result | Expected | %Rec | | | |
| Dichlorodifluoromethane | 11.0 | 10.0 | 110 | 10.6 | 10.0 | 106 | 1-224 | 3 | 20 |
| Chloromethane | 8.78 | 10.0 | 88 | 8.84 | 10.0 | 88 | 21-153 | 1 | 20 |
| Vinyl Chloride | 8.45 | 10.0 | 85 | 8.30 | 10.0 | 83 | 32-159 | 2 | 20 |
| Bromomethane | 7.96 | 10.0 | 80 | 7.80 | 10.0 | 78 | 37-148 | 2 | 20 |
| Chloroethane | 8.07 | 10.0 | 81 | 7.94 | 10.0 | 79 | 52-139 | 2 | 20 |
| Trichlorofluoromethane | 9.63 | 10.0 | 96 | 9.31 | 10.0 | 93 | 56-139 | 3 | 20 |
| 1,1,2-Trichlorotrifluoroethane | 10.6 | 10.0 | 106 | 10.3 | 10.0 | 103 | 84-131 | 3 | 20 |
| 1,1-Dichloroethene | 8.23 | 10.0 | 82 | 7.92 | 10.0 | 79 | 68-100 | 4 | 20 |
| Acetone | 44.2 | 40.0 | 111 | 42.6 | 40.0 | 106 | 65-129 | 4 | 20 |
| Iodomethane | 40.1 | 40.0 | 100 | 39.8 | 40.0 | 100 | 55-121 | 1 | 20 |
| Carbon Disulfide | 38.9 | 40.0 | 97 | 37.9 | 40.0 | 95 | 78-121 | 3 | 20 |
| Methylene Chloride | 8.64 | 10.0 | 86 | 8.65 | 10.0 | 87 | 74-103 | 0 | 20 |
| Methyl tert-Butyl Ether | 10.4 | 10.0 | 104 | 10.2 | 10.0 | 102 | 71-129 | 2 | 20 |
| trans-1,2-Dichloroethene | 9.04 | 10.0 | 90 | 8.69 | 10.0 | 87 | 76-105 | 4 | 20 |
| 1,1-Dichloroethane | 9.55 | 10.0 | 96 | 9.29 | 10.0 | 93 | 79-114 | 3 | 20 |
| Vinyl Acetate | 51.9 | 40.0 | 130 | 48.3 | 40.0 | 121 | 48-160 | 7 | 39 |
| 2,2-Dichloropropane | 10.2 | 10.0 | 102 | 9.65 | 10.0 | 97 | 79-122 | 5 | 20 |
| 2-Butanone (MEK) | 43.3 | 40.0 | 108 | 42.5 | 40.0 | 106 | 64-131 | 2 | 20 |
| cis-1,2-Dichloroethene | 9.49 | 10.0 | 95 | 9.28 | 10.0 | 93 | 84-115 | 2 | 20 |
| Bromochloromethane | 10.0 | 10.0 | 100 | 9.89 | 10.0 | 99 | 77-112 | 1 | 20 |
| Chloroform | 9.52 | 10.0 | 95 | 9.48 | 10.0 | 95 | 80-114 | 0 | 20 |
| 1,1,1-Trichloroethane | 9.23 | 10.0 | 92 | 8.96 | 10.0 | 90 | 74-118 | 3 | 20 |
| Carbon Tetrachloride | 9.48 | 10.0 | 95 | 9.23 | 10.0 | 92 | 72-121 | 3 | 20 |
| 1,1-Dichloropropene | 9.12 | 10.0 | 91 | 9.00 | 10.0 | 90 | 77-116 | 1 | 20 |
| Benzene | 9.34 | 10.0 | 93 | 9.45 | 10.0 | 95 | 81-110 | 1 | 20 |
| 1,2-Dichloroethane | 8.88 | 10.0 | 89 | 8.81 | 10.0 | 88 | 67-125 | 1 | 20 |
| Trichloroethene | 9.33 | 10.0 | 93 | 9.37 | 10.0 | 94 | 78-111 | 0 | 20 |
| 1,2-Dichloropropane | 9.44 | 10.0 | 94 | 9.65 | 10.0 | 97 | 80-112 | 2 | 20 |
| Dibromomethane | 9.43 | 10.0 | 94 | 9.79 | 10.0 | 98 | 75-119 | 4 | 20 |
| Bromodichloromethane | 9.76 | 10.0 | 98 | 9.90 | 10.0 | 99 | 79-123 | 1 | 20 |
| cis-1,3-Dichloropropene | 9.90 | 10.0 | 99 | 10.2 | 10.0 | 102 | 77-115 | 3 | 20 |
| 4-Methyl-2-pentanone (MIBK) | 40.8 | 40.0 | 102 | 41.3 | 40.0 | 103 | 64-132 | 1 | 20 |
| Toluene | 9.71 | 10.0 | 97 | 9.55 | 10.0 | 96 | 79-114 | 2 | 20 |
| trans-1,3-Dichloropropene | 10.2 | 10.0 | 102 | 10.2 | 10.0 | 102 | 71-122 | 0 | 20 |
| 1,1,2-Trichloroethane | 9.67 | 10.0 | 97 | 10.3 | 10.0 | 103 | 74-123 | 6 | 20 |

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

**Client:** GeoTrans
**Project:** Western Ave/#E049-106
**Sample Matrix:** Water

**Service Request:** X2200452
**Date Extracted:** 05/29/2002
**Date Analyzed:** 05/29/2002

## Lab Control Spike/Duplicate Lab Control Spike Summary
## Volatile Organic Compounds

**Extraction Method:** EPA 5030B
**Analysis Method:** 8260B

**Units:** ug/L
**Basis:** NA
**Level:** Low
**Extraction Lot:** XWG0200681

| Analyte Name | Lab Control Sample XWG0200681-1 Lab Control Spike | | | Duplicate Lab Control Sample XWG0200681-2 Duplicate Lab Control Spike | | | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| | Result | Expected | %Rec | Result | Expected | %Rec | | | |
| Tetrachloroethene | 9.48 | 10.0 | 95 | 10.1 | 10.0 | 101 | 82-116 | 6 | 20 |
| 2-Hexanone | 41.1 | 40.0 | 103 | 39.2 | 40.0 | 98 | 58-125 | 5 | 20 |
| 1,3-Dichloropropane | 9.84 | 10.0 | 98 | 9.84 | 10.0 | 98 | 77-123 | 0 | 20 |
| Dibromochloromethane | 9.98 | 10.0 | 100 | 10.0 | 10.0 | 100 | 71-125 | 0 | 20 |
| 1,2-Dibromoethane | 9.92 | 10.0 | 99 | 10.2 | 10.0 | 102 | 83-109 | 3 | 20 |
| Chlorobenzene | 9.58 | 10.0 | 96 | 9.48 | 10.0 | 95 | 83-109 | 1 | 20 |
| 1,1,1,2-Tetrachloroethane | 9.79 | 10.0 | 98 | 9.69 | 10.0 | 97 | 82-114 | 1 | 20 |
| Ethylbenzene | 9.68 | 10.0 | 97 | 9.29 | 10.0 | 93 | 84-116 | 4 | 20 |
| m,p-Xylenes | 18.1 | 20.0 | 91 | 17.5 | 20.0 | 87 | 83-117 | 4 | 20 |
| o-Xylene | 8.82 | 10.0 | 88 | 8.57 | 10.0 | 86 | 78-120 | 3 | 20 |
| Styrene | 8.90 | 10.0 | 89 | 8.57 | 10.0 | 86 | 80-122 | 4 | 20 |
| Isopropylbenzene | 8.79 | 10.0 | 88 | 8.37 | 10.0 | 84 | 83-119 | 5 | 20 |
| Bromobenzene | 10.4 | 10.0 | 104 | 10.3 | 10.0 | 103 | 82-121 | 1 | 20 |
| 1,2,3-Trichloropropane | 9.59 | 10.0 | 96 | 9.87 | 10.0 | 99 | 74-124 | 3 | 20 |
| n-Propylbenzene | 8.90 | 10.0 | 89 | 8.63 | 10.0 | 86 | 83-121 | 3 | 20 |
| 2-Chlorotoluene | 9.05 | 10.0 | 91 | 8.84 | 10.0 | 88 | 83-119 | 2 | 20 |
| 4-Chlorotoluene | 10.3 | 10.0 | 103 | 9.96 | 10.0 | 100 | 82-118 | 4 | 20 |
| 1,3,5-Trimethylbenzene | 8.85 | 10.0 | 89 | 8.90 | 10.0 | 89 | 77-127 | 1 | 20 |
| tert-Butylbenzene | 9.39 | 10.0 | 94 | 9.00 | 10.0 | 90 | 83-120 | 4 | 20 |
| 1,2,4-Trimethylbenzene | 8.99 | 10.0 | 90 | 8.88 | 10.0 | 89 | 74-123 | 1 | 20 |
| sec-Butylbenzene | 9.08 | 10.0 | 91 | 8.66 | 10.0 | 87 | 83-121 | 5 | 20 |
| 1,3-Dichlorobenzene | 10.7 | 10.0 | 107 | 10.4 | 10.0 | 104 | 82-117 | 3 | 20 |
| 4-Isopropyltoluene | 9.22 | 10.0 | 92 | 8.95 | 10.0 | 90 | 84-130 | 3 | 20 |
| Bromoform | 9.55 | 10.0 | 96 | 9.77 | 10.0 | 98 | 74-106 | 2 | 20 |
| 1,1,2,2-Tetrachloroethane | 9.87 | 10.0 | 99 | 10.0 | 10.0 | 100 | 77-114 | 1 | 20 |
| 1,4-Dichlorobenzene | 9.57 | 10.0 | 96 | 9.59 | 10.0 | 96 | 79-114 | 0 | 20 |
| 1,2-Dichlorobenzene | 10.3 | 10.0 | 103 | 10.2 | 10.0 | 102 | 80-116 | 1 | 20 |
| n-Butylbenzene | 9.62 | 10.0 | 96 | 9.68 | 10.0 | 97 | 77-122 | 1 | 20 |
| 1,2-Dibromo-3-chloropropane | 11.6 | 10.0 | 116 | 10.5 | 10.0 | 105 | 59-121 | 10 | 20 |
| 1,2,4-Trichlorobenzene | 9.42 | 10.0 | 94 | 9.88 | 10.0 | 99 | 69-124 | 5 | 20 |
| Hexachlorobutadiene | 9.72 | 10.0 | 97 | 9.72 | 10.0 | 97 | 71-126 | 0 | 20 |
| Naphthalene | 9.89 | 10.0 | 99 | 10.1 | 10.0 | 101 | 63-134 | 2 | 20 |
| 1,2,3-Trichlorobenzene | 9.98 | 10.0 | 100 | 10.4 | 10.0 | 104 | 70-126 | 4 | 20 |

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

# COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200452 |
| **Project:** | Western Ave/#E049-106 | **Date Extracted:** | 05/29/2002 |
| **Sample Matrix:** | Water | **Date Analyzed:** | 05/29/2002 |
| | | **Time Analyzed:** | 13:51 |

## Method Blank Summary
## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | Method Blank | **File ID:** | J:\MS03\MAY02\MAY2902\29MAY010.D |
| **Lab Code:** | XWG0200681-3 | **Instrument ID:** | MS03 |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | **Extraction Lot:** | XWG0200681 |

This Method Blank applies to the following analyses:

| Sample Name | Lab Code | File ID | Date Analyzed | Time Analyzed |
|---|---|---|---|---|
| Lab Control Sample | XWG0200681-1 | J:\MS03\MAY02\MAY2902\29MAY006.D | 05/29/02 | 11:49 |
| Duplicate Lab Control Sample | XWG0200681-2 | J:\MS03\MAY02\MAY2902\29MAY007.D | 05/29/02 | 12:19 |
| COG-MW3 | X2200452-001 | J:\MS03\MAY02\MAY2902\29MAY011.D | 05/29/02 | 14:21 |
| COG-MW3MS | XWG0200681-4 | J:\MS03\MAY02\MAY2902\29MAY020.D | 05/29/02 | 19:00 |
| COG-MW3DMS | XWG0200681-5 | J:\MS03\MAY02\MAY2902\29MAY021.D | 05/29/02 | 19:31 |

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

**Client:** GeoTrans
**Project:** Western Ave/#E049-106
**Sample Matrix:** Water

**Service Request:** X2200452

## Lab Control Sample/Duplicate Lab Control Sample Summary
## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | Lab Control Sample | **Sample Name:** | Duplicate Lab Control Sample |
| **Lab Code:** | XWG0200681-1 | **Lab Code:** | XWG0200681-2 |
| **File ID:** | J:\MS03\MAY02\MAY2902\29MAY006.D | **File ID:** | J:\MS03\MAY02\MAY2902\29MAY007.D |
| **Instrument ID:** | MS03 | **Instrument ID:** | MS03 |
| **Date Extracted:** | 05/29/2002 | **Date Extracted:** | 05/29/2002 |
| **Date Analyzed:** | 05/29/2002 | **Date Analyzed:** | 05/29/2002 |
| **Time Analyzed:** | 11:49 | **Time Analyzed:** | 12:19 |

| | | | |
|---|---|---|---|
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | **Extraction Lot:** | XWG0200681 |

These Lab Control Samples apply to the following analyses:

| Sample Name | Lab Code | File ID | Date Analyzed | Time Analyzed |
|---|---|---|---|---|
| Method Blank | XWG0200681-3 | J:\MS03\MAY02\MAY2902\29MAY010.D | 05/29/02 | 13:51 |
| COG-MW3 | X2200452-001 | J:\MS03\MAY02\MAY2902\29MAY011.D | 05/29/02 | 14:21 |
| COG-MW3MS | XWG0200681-4 | J:\MS03\MAY02\MAY2902\29MAY020.D | 05/29/02 | 19:00 |
| COG-MW3DMS | XWG0200681-5 | J:\MS03\MAY02\MAY2902\29MAY021.D | 05/29/02 | 19:31 |

# COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

**Client:** GeoTrans
**Project:** Western Ave/#E049-106

**Service Request:** X2200452
**Date Analyzed:** 05/29/2002
**Time Analyzed:** 10:18

## Tune Summary
## Volatile Organic Compounds

**File ID:** J:\MS03\MAY02\MAY2902\29MAY003.D
**Instrument ID:** MS03
**Column:**

**Analysis Method:** 8260B
**Analysis Lot:** XWG0200680

| Target Mass | Relative to Mass | Lower Limit% | Upper Limit% | Relative Abundance % | Raw Abundance | Result Pass/Fail |
|---|---|---|---|---|---|---|
| 50 | 95 | 15 | 40 | 29.5 | 1585 | PASS |
| 75 | 95 | 30 | 60 | 61.0 | 3280 | FAIL |
| 95 | 95 | 100 | 100 | 100.0 | 5381 | PASS |
| 96 | 95 | 5 | 9 | 7.0 | 376 | PASS |
| 173 | 174 | 0 | 2 | 0.0 | 0 | PASS |
| 174 | 95 | 50 | 100 | 71.8 | 3865 | PASS |
| 175 | 174 | 5 | 9 | 5.9 | 229 | PASS |
| 176 | 174 | 95 | 101 | 95.1 | 3676 | PASS |
| 177 | 176 | 5 | 9 | 6.9 | 253 | PASS |

| Sample Name | Lab Code | File ID | Date Analyzed | Time Analyzed | Q |
|---|---|---|---|---|---|
| Continuing Calibration Verification | XWG0200680-2 | J:\MS03\MAY02\MAY2902\29MAY | 05/29/2002 | 11:18 | |
| Lab Control Sample | XWG0200681-1 | J:\MS03\MAY02\MAY2902\29MAY | 05/29/2002 | 11:49 | |
| Duplicate Lab Control Sample | XWG0200681-2 | J:\MS03\MAY02\MAY2902\29MAY | 05/29/2002 | 12:19 | |
| Method Blank | XWG0200681-3 | J:\MS03\MAY02\MAY2902\29MAY | 05/29/2002 | 13:51 | |
| COG-MW3 | X2200452-001 | J:\MS03\MAY02\MAY2902\29MAY | 05/29/2002 | 14:21 | |
| COG-MW3MS | XWG0200681-4 | J:\MS03\MAY02\MAY2902\29MAY | 05/29/2002 | 19:00 | |
| COG-MW3DMS | XWG0200681-5 | J:\MS03\MAY02\MAY2902\29MAY | 05/29/2002 | 19:31 | |

Results flagged with an asterisk (*) indicate the analysis performed outside specified tune window

# COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

**Client:** GeoTrans
**Project:** Western Ave/#E049-106

**Service Request:** X2200452
**ICAL Date:** 05/28/2002

## Initial Calibration Summary
## Volatile Organic Compounds

**ICAL ID:** CAL292
**Instrument ID:** MS03

**Column:** MS

| Level ID | File ID | Level ID | File ID |
|---|---|---|---|
| A | J:\MS03\MAY02\MAY2802\28MAY016.D | E | J:\MS03\MAY02\MAY2802\28MAY020.D |
| B | J:\MS03\MAY02\MAY2802\28MAY017.D | F | J:\MS03\MAY02\MAY2802\28MAY021.D |
| C | J:\MS03\MAY02\MAY2802\28MAY018.D | G | J:\MS03\MAY02\MAY2802\28MAY022.D |
| D | J:\MS03\MAY02\MAY2802\28MAY019.D | H | J:\MS03\MAY02\MAY2802\28MAY023.D |

| Analyte Name | Level ID | Amt | RRF | Level ID | Amt | RRF | Level ID | Am | RRF | Level ID | Amt | RRF | Level ID | Amt | RRF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | A | 0.50 | 0.353 | B | 1.0 | 0.323 | C | 2.0 | 0.294 | D | 5.0 | 0.298 | E | 10 | 0.318 |
| | F | 20 | 0.306 | G | 50 | 0.302 | H | 100 | 0.299 | | | | | | |
| † Chloromethane | A | 0.50 | 0.558 | B | 1.0 | 0.590 | C | 2.0 | 0.566 | D | 5.0 | 0.603 | E | 10 | 0.603 |
| | F | 20 | 0.560 | G | 50 | 0.537 | H | 100 | 0.527 | | | | | | |
| ‡ Vinyl Chloride | A | 0.50 | 0.681 | B | 1.0 | 0.623 | C | 2.0 | 0.633 | D | 5.0 | 0.640 | E | 10 | 0.680 |
| | F | 20 | 0.631 | G | 50 | 0.613 | H | 100 | 0.577 | | | | | | |
| Bromomethane | A | 0.50 | 0.654 | B | 1.0 | 0.554 | C | 2.0 | 0.558 | D | 5.0 | 0.508 | E | 10 | 0.513 |
| | F | 20 | 0.491 | G | 50 | 0.486 | H | 100 | 0.474 | | | | | | |
| Chloroethane | A | 0.50 | 0.458 | B | 1.0 | 0.446 | C | 2.0 | 0.435 | D | 5.0 | 0.441 | E | 10 | 0.441 |
| | F | 20 | 0.407 | G | 50 | 0.401 | H | 100 | 0.372 | | | | | | |
| Trichlorofluoromethane | A | 0.50 | 0.594 | B | 1.0 | 0.597 | C | 2.0 | 0.603 | D | 5.0 | 0.594 | E | 10 | 0.621 |
| | F | 20 | 0.572 | G | 50 | 0.561 | H | 100 | 0.565 | | | | | | |
| 1,1,2-Trichlorotrifluoroethane | A | 0.50 | 0.391 | B | 1.0 | 0.403 | C | 2.0 | 0.391 | D | 5.0 | 0.396 | E | 10 | 0.412 |
| | F | 20 | 0.383 | G | 50 | 0.388 | H | 100 | 0.409 | | | | | | |
| ‡ 1,1-Dichloroethene | A | 0.50 | 0.388 | B | 1.0 | 0.433 | C | 2.0 | 0.406 | D | 5.0 | 0.376 | E | 10 | 0.389 |
| | F | 20 | 0.368 | G | 50 | 0.378 | H | 100 | 0.404 | | | | | | |
| Acetone | | | | B | 4.0 | 0.0296 | C | 8.0 | 0.0297 | D | 20 | 0.0207 | E | 40 | 0.0181 |
| | F | 80 | 0.0152 | G | 200 | 0.0146 | H | 400 | 0.0142 | | | | | | |
| Iodomethane | A | 2.0 | 0.561 | B | 4.0 | 0.578 | C | 8.0 | 0.612 | D | 20 | 0.652 | E | 40 | 0.703 |
| | F | 80 | 0.691 | G | 200 | 0.763 | H | 400 | 0.791 | | | | | | |
| Carbon Disulfide | A | 2.0 | 1.39 | B | 4.0 | 1.41 | C | 8.0 | 1.46 | D | 20 | 1.51 | E | 40 | 1.63 |
| | F | 80 | 1.56 | G | 200 | 1.66 | H | 400 | 1.69 | | | | | | |
| Methylene Chloride | A | 0.50 | 0.599 | B | 1.0 | 0.554 | C | 2.0 | 0.513 | D | 5.0 | 0.507 | E | 10 | 0.502 |
| | F | 20 | 0.481 | G | 50 | 0.483 | H | 100 | 0.491 | | | | | | |
| Methyl tert-Butyl Ether | A | 0.50 | 0.932 | B | 1.0 | 0.834 | C | 2.0 | 0.832 | D | 5.0 | 0.817 | E | 10 | 0.825 |
| | F | 20 | 0.785 | G | 50 | 0.767 | H | 100 | 0.755 | | | | | | |
| trans-1,2-Dichloroethene | A | 0.50 | 0.538 | B | 1.0 | 0.460 | C | 2.0 | 0.460 | D | 5.0 | 0.451 | E | 10 | 0.470 |
| | F | 20 | 0.447 | G | 50 | 0.473 | H | 100 | 0.479 | | | | | | |

...ults flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

**Client:** GeoTrans
**Project:** Western Ave/#E049-106

**Service Request:** X2200452
**ICAL Date:** 05/28/2002

## Initial Calibration Summary
## Volatile Organic Compounds

**ICAL ID:** CAL292
**Instrument ID:** MS03

**Column:** MS

| Analyte Name | Level ID | Amt | RRF | Level ID | Amt | RRF | Level ID | Am | RRF | Level ID | Amt | RRF | Level ID | Amt | RRF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| † 1,1-Dichloroethane | A | 0.50 | 0.885 | B | 1.0 | 0.873 | C | 2.0 | 0.852 | D | 5.0 | 0.846 | E | 10 | 0.874 |
| | F | 20 | 0.844 | G | 50 | 0.836 | H | 100 | 0.845 | | | | | | |
| Vinyl Acetate | A | 2.0 | 0.486 | B | 4.0 | 0.425 | C | 8.0 | 0.406 | D | 20 | 0.405 | E | 40 | 0.376 |
| | F | 80 | 0.319 | G | 200 | 0.340 | H | 400 | 0.338 | | | | | | |
| 2,2-Dichloropropane | A | 0.50 | 0.678 | B | 1.0 | 0.600 | C | 2.0 | 0.598 | D | 5.0 | 0.585 | E | 10 | 0.598 |
| | F | 20 | 0.562 | G | 50 | 0.569 | H | 100 | 0.575 | | | | | | |
| 2-Butanone (MEK) | | | | B | 4.0 | 0.0322 | C | 8.0 | 0.0257 | D | 20 | 0.0222 | E | 40 | 0.0218 |
| | F | 80 | 0.0210 | G | 200 | 0.0206 | H | 400 | 0.0201 | | | | | | |
| cis-1,2-Dichloroethene | A | 0.50 | 0.581 | B | 1.0 | 0.505 | C | 2.0 | 0.513 | D | 5.0 | 0.494 | E | 10 | 0.509 |
| | F | 20 | 0.503 | G | 50 | 0.531 | H | 100 | 0.542 | | | | | | |
| Bromochloromethane | A | 0.50 | 0.225 | B | 1.0 | 0.206 | C | 2.0 | 0.200 | D | 5.0 | 0.203 | E | 10 | 0.202 |
| | F | 20 | 0.193 | G | 50 | 0.190 | H | 100 | 0.195 | | | | | | |
| ‡ Chloroform | A | 0.50 | 0.892 | B | 1.0 | 0.870 | C | 2.0 | 0.851 | D | 5.0 | 0.848 | E | 10 | 0.870 |
| | F | 20 | 0.821 | G | 50 | 0.822 | H | 100 | 0.845 | | | | | | |
| 1,1-Trichloroethane | A | 0.50 | 0.604 | B | 1.0 | 0.606 | C | 2.0 | 0.636 | D | 5.0 | 0.637 | E | 10 | 0.659 |
| | F | 20 | 0.624 | G | 50 | 0.631 | H | 100 | 0.648 | | | | | | |
| Carbon Tetrachloride | A | 0.50 | 0.472 | B | 1.0 | 0.459 | C | 2.0 | 0.479 | D | 5.0 | 0.482 | E | 10 | 0.506 |
| | F | 20 | 0.487 | G | 50 | 0.499 | H | 100 | 0.521 | | | | | | |
| 1,1-Dichloropropene | A | 0.50 | 0.612 | B | 1.0 | 0.561 | C | 2.0 | 0.582 | D | 5.0 | 0.597 | E | 10 | 0.616 |
| | F | 20 | 0.590 | G | 50 | 0.619 | H | 100 | 0.650 | | | | | | |
| Benzene | A | 0.50 | 1.47 | B | 1.0 | 1.52 | C | 2.0 | 1.51 | D | 5.0 | 1.57 | E | 10 | 1.64 |
| | F | 20 | 1.61 | G | 50 | 1.68 | H | 100 | 1.76 | | | | | | |
| 1,2-Dichloroethane | A | 0.50 | 0.665 | B | 1.0 | 0.643 | C | 2.0 | 0.567 | D | 5.0 | 0.559 | E | 10 | 0.538 |
| | F | 20 | 0.511 | G | 50 | 0.491 | H | 100 | 0.483 | | | | | | |
| Trichloroethene | A | 0.50 | 0.497 | B | 1.0 | 0.438 | C | 2.0 | 0.436 | D | 5.0 | 0.435 | E | 10 | 0.452 |
| | F | 20 | 0.440 | G | 50 | 0.448 | H | 100 | 0.476 | | | | | | |
| ‡ 1,2-Dichloropropane | A | 0.50 | 0.501 | B | 1.0 | 0.459 | C | 2.0 | 0.458 | D | 5.0 | 0.453 | E | 10 | 0.444 |
| | F | 20 | 0.432 | G | 50 | 0.434 | H | 100 | 0.453 | | | | | | |
| Dibromomethane | A | 0.50 | 0.277 | B | 1.0 | 0.276 | C | 2.0 | 0.265 | D | 5.0 | 0.255 | E | 10 | 0.247 |
| | F | 20 | 0.234 | G | 50 | 0.228 | H | 100 | 0.233 | | | | | | |
| Bromodichloromethane | A | 0.50 | 0.642 | B | 1.0 | 0.584 | C | 2.0 | 0.577 | D | 5.0 | 0.568 | E | 10 | 0.563 |
| | F | 20 | 0.542 | G | 50 | 0.538 | H | 100 | 0.558 | | | | | | |
| cis-1,3-Dichloropropene | A | 0.50 | 0.659 | B | 1.0 | 0.611 | C | 2.0 | 0.613 | D | 5.0 | 0.612 | E | 10 | 0.606 |
| | F | 20 | 0.594 | G | 50 | 0.606 | H | 100 | 0.628 | | | | | | |

ults flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

**Client:** GeoTrans
**Project:** Western Ave/#E049-106

**Service Request:** X2200452
**ICAL Date:** 05/28/2002

## Initial Calibration Summary
## Volatile Organic Compounds

**ICAL ID:** CAL292
**Instrument ID:** MS03

**Column:** MS

| Analyte Name | Level ID | Amt | RRF | Level ID | Amt | RRF | Level ID | Am | RRF | Level ID | Amt | RRF | Level ID | Amt | RRF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4-Methyl-2-pentanone (MIBK) | | | | B | 4.0 | 0.0287 | C | 8.0 | 0.0209 | D | 20 | 0.0255 | E | 40 | 0.0234 |
| | F | 80 | 0.0229 | G | 200 | 0.0226 | H | 400 | 0.0229 | | | | | | |
| ‡ Toluene | A | 0.50 | 0.828 | B | 1.0 | 0.812 | C | 2.0 | 0.831 | D | 5.0 | 0.880 | E | 10 | 0.928 |
| | F | 20 | 0.950 | G | 50 | 0.983 | H | 100 | 1.02 | | | | | | |
| trans-1,3-Dichloropropene | A | 0.50 | 0.530 | B | 1.0 | 0.474 | C | 2.0 | 0.466 | D | 5.0 | 0.442 | E | 10 | 0.459 |
| | F | 20 | 0.445 | G | 50 | 0.460 | H | 100 | 0.460 | | | | | | |
| 1,1,2-Trichloroethane | A | 0.50 | 0.271 | B | 1.0 | 0.244 | C | 2.0 | 0.232 | D | 5.0 | 0.227 | E | 10 | 0.225 |
| | F | 20 | 0.220 | G | 50 | 0.228 | H | 100 | 0.225 | | | | | | |
| Tetrachloroethene | A | 0.50 | 0.256 | B | 1.0 | 0.250 | C | 2.0 | 0.237 | D | 5.0 | 0.246 | E | 10 | 0.259 |
| | F | 20 | 0.259 | G | 50 | 0.279 | H | 100 | 0.306 | | | | | | |
| 2-Hexanone | A | 2.0 | 0.153 | B | 4.0 | 0.137 | C | 8.0 | 0.128 | D | 20 | 0.137 | E | 40 | 0.130 |
| | F | 80 | 0.124 | G | 200 | 0.122 | H | 400 | 0.119 | | | | | | |
| 1,3-Dichloropropane | A | 0.50 | 0.508 | B | 1.0 | 0.468 | C | 2.0 | 0.472 | D | 5.0 | 0.456 | E | 10 | 0.458 |
| | F | 20 | 0.450 | G | 50 | 0.453 | H | 100 | 0.461 | | | | | | |
| bromochloromethane | A | 0.50 | 0.307 | B | 1.0 | 0.280 | C | 2.0 | 0.271 | D | 5.0 | 0.280 | E | 10 | 0.283 |
| | F | 20 | 0.278 | G | 50 | 0.290 | H | 100 | 0.310 | | | | | | |
| 1,2-Dibromoethane | A | 0.50 | 0.260 | B | 1.0 | 0.248 | C | 2.0 | 0.239 | D | 5.0 | 0.240 | E | 10 | 0.233 |
| | F | 20 | 0.230 | G | 50 | 0.234 | H | 100 | 0.254 | | | | | | |
| † Chlorobenzene | A | 0.50 | 1.10 | B | 1.0 | 0.980 | C | 2.0 | 1.01 | D | 5.0 | 1.07 | E | 10 | 1.09 |
| | F | 20 | 1.06 | G | 50 | 1.19 | H | 100 | 1.21 | | | | | | |
| 1,1,1,2-Tetrachloroethane | A | 0.50 | 0.406 | B | 1.0 | 0.368 | C | 2.0 | 0.369 | D | 5.0 | 0.366 | E | 10 | 0.377 |
| | F | 20 | 0.369 | G | 50 | 0.410 | H | 100 | 0.420 | | | | | | |
| ‡ Ethylbenzene | A | 0.50 | 1.67 | B | 1.0 | 1.59 | C | 2.0 | 1.68 | D | 5.0 | 1.83 | E | 10 | 1.95 |
| | F | 20 | 1.93 | G | 50 | 2.20 | H | 100 | 2.25 | | | | | | |
| m,p-Xylenes | A | 1.0 | 0.528 | B | 2.0 | 0.539 | C | 4.0 | 0.569 | D | 10 | 0.635 | E | 20 | 0.702 |
| | F | 40 | 0.690 | G | 100 | 0.801 | H | 200 | 0.862 | | | | | | |
| o-Xylene | A | 0.50 | 0.521 | B | 1.0 | 0.524 | C | 2.0 | 0.516 | D | 5.0 | 0.568 | E | 10 | 0.644 |
| | F | 20 | 0.640 | G | 50 | 0.743 | H | 100 | 0.804 | | | | | | |
| Styrene | A | 0.50 | 0.850 | B | 1.0 | 0.830 | C | 2.0 | 0.883 | D | 5.0 | 1.01 | E | 10 | 1.12 |
| | F | 20 | 1.11 | G | 50 | 1.31 | H | 100 | 1.40 | | | | | | |
| Isopropylbenzene | A | 0.50 | 1.25 | B | 1.0 | 1.24 | C | 2.0 | 1.29 | D | 5.0 | 1.46 | E | 10 | 1.64 |
| | F | 20 | 1.64 | G | 50 | 1.92 | H | 100 | 1.98 | | | | | | |
| Bromobenzene | A | 0.50 | 0.335 | B | 1.0 | 0.328 | C | 2.0 | 0.326 | D | 5.0 | 0.364 | E | 10 | 0.395 |
| | F | 20 | 0.401 | G | 50 | 0.458 | | | | | | | | | |

ults flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

**Client:** GeoTrans
**Project:** Western Ave/#E049-106

**Service Request:** X2200452
**ICAL Date:** 05/28/2002

## Initial Calibration Summary
## Volatile Organic Compounds

**ICAL ID:** CAL292
**Instrument ID:** MS03

**Column:** MS

| Analyte Name | Level ID | Amt | RRF | Level ID | Amt | RRF | Level ID | Am | RRF | Level ID | Amt | RRF | Level ID | Amt | RRF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,3-Trichloropropane | A | 0.50 | 0.417 | B | 1.0 | 0.317 | C | 2.0 | 0.318 | D | 5.0 | 0.315 | E | 10 | 0.311 |
| | F | 20 | 0.298 | G | 50 | 0.312 | H | 100 | 0.300 | | | | | | |
| n-Propylbenzene | A | 0.50 | 1.71 | B | 1.0 | 1.64 | C | 2.0 | 1.74 | D | 5.0 | 1.93 | E | 10 | 2.17 |
| | F | 20 | 2.16 | G | 50 | 2.46 | H | 100 | 2.59 | | | | | | |
| 2-Chlorotoluene | A | 0.50 | 1.10 | B | 1.0 | 1.14 | C | 2.0 | 1.19 | D | 5.0 | 1.34 | E | 10 | 1.48 |
| | F | 20 | 1.51 | G | 50 | 1.66 | H | 100 | 1.74 | | | | | | |
| 4-Chlorotoluene | A | 0.50 | 1.03 | B | 1.0 | 0.998 | C | 2.0 | 1.05 | D | 5.0 | 1.17 | E | 10 | 1.29 |
| | F | 20 | 1.28 | G | 50 | 1.40 | H | 100 | 1.45 | | | | | | |
| 1,3,5-Trimethylbenzene | A | 0.50 | 1.01 | B | 1.0 | 1.02 | C | 2.0 | 1.12 | D | 5.0 | 1.23 | E | 10 | 1.39 |
| | F | 20 | 1.46 | G | 50 | 1.65 | H | 100 | 1.71 | | | | | | |
| tert-Butylbenzene | A | 0.50 | 0.775 | B | 1.0 | 0.760 | C | 2.0 | 0.821 | D | 5.0 | 0.929 | E | 10 | 1.06 |
| | F | 20 | 1.04 | G | 50 | 1.20 | H | 100 | 1.25 | | | | | | |
| 1,2,4-Trimethylbenzene | A | 0.50 | 1.01 | B | 1.0 | 1.03 | C | 2.0 | 1.13 | D | 5.0 | 1.26 | E | 10 | 1.40 |
| | F | 20 | 1.45 | G | 50 | 1.61 | H | 100 | 1.64 | | | | | | |
| c-Butylbenzene | A | 0.50 | 1.27 | B | 1.0 | 1.26 | C | 2.0 | 1.39 | D | 5.0 | 1.57 | E | 10 | 1.76 |
| | F | 20 | 1.81 | G | 50 | 1.98 | H | 100 | 2.04 | | | | | | |
| 1,3-Dichlorobenzene | A | 0.50 | 0.571 | B | 1.0 | 0.587 | C | 2.0 | 0.634 | D | 5.0 | 0.671 | E | 10 | 0.741 |
| | F | 20 | 0.796 | G | 50 | 0.826 | | | | | | | | | |
| 4-Isopropyltoluene | A | 0.50 | 0.961 | B | 1.0 | 1.02 | C | 2.0 | 1.05 | D | 5.0 | 1.19 | E | 10 | 1.38 |
| | F | 20 | 1.45 | G | 50 | 1.60 | H | 100 | 1.64 | | | | | | |
| † Bromoform | A | 0.50 | 0.413 | B | 1.0 | 0.419 | C | 2.0 | 0.382 | D | 5.0 | 0.349 | E | 10 | 0.341 |
| | F | 20 | 0.317 | G | 50 | 0.378 | H | 100 | 0.373 | | | | | | |
| † 1,1,2,2-Tetrachloroethane | A | 0.50 | 0.804 | B | 1.0 | 0.685 | C | 2.0 | 0.698 | D | 5.0 | 0.616 | E | 10 | 0.589 |
| | F | 20 | 0.526 | G | 50 | 0.613 | H | 100 | 0.584 | | | | | | |
| 1,4-Dichlorobenzene | A | 0.50 | 1.74 | B | 1.0 | 1.63 | C | 2.0 | 1.61 | D | 5.0 | 1.62 | E | 10 | 1.64 |
| | F | 20 | 1.57 | G | 50 | 1.66 | H | 100 | 1.72 | | | | | | |
| 1,2-Dichlorobenzene | A | 0.50 | 1.31 | B | 1.0 | 1.26 | C | 2.0 | 1.29 | D | 5.0 | 1.31 | E | 10 | 1.32 |
| | F | 20 | 1.23 | G | 50 | 1.39 | H | 100 | 1.41 | | | | | | |
| n-Butylbenzene | A | 0.50 | 2.70 | B | 1.0 | 2.62 | C | 2.0 | 2.91 | D | 5.0 | 2.93 | E | 10 | 3.12 |
| | F | 20 | 2.90 | G | 50 | 3.36 | H | 100 | 3.45 | | | | | | |
| 1,2-Dibromo-3-chloropropane | | | | | | | C | 2.0 | 0.101 | D | 5.0 | 0.114 | E | 10 | 0.0948 |
| | F | 20 | 0.0708 | G | 50 | 0.0746 | H | 100 | 0.0784 | | | | | | |
| 1,2,4-Trichlorobenzene | A | 0.50 | 0.847 | B | 1.0 | 0.780 | C | 2.0 | 0.775 | D | 5.0 | 0.745 | E | 10 | 0.743 |
| | F | 20 | 0.694 | G | 50 | 0.796 | H | 100 | 0.840 | | | | | | |

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

**Client:** GeoTrans
**Project:** Western Ave/#E049-106

**Service Request:** X2200452
**ICAL Date:** 05/28/2002

## Initial Calibration Summary
## Volatile Organic Compounds

**ICAL ID:** CAL292
**Instrument ID:** MS03

**Column:** MS

| Analyte Name | Level ID | Amt | RRF | Level ID | Amt | RRF | Level ID | Am | RRF | Level ID | Amt | RRF | Level ID | Amt | RRF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hexachlorobutadiene | A | 0.50 | 0.308 | B | 1.0 | 0.266 | C | 2.0 | 0.298 | D | 5.0 | 0.283 | E | 10 | 0.296 |
| | F | 20 | 0.263 | G | 50 | 0.316 | H | 100 | 0.329 | | | | | | |
| Naphthalene | A | 0.50 | 1.20 | B | 1.0 | 1.18 | C | 2.0 | 1.14 | D | 5.0 | 1.12 | E | 10 | 1.12 |
| | F | 20 | 1.03 | G | 50 | 1.16 | H | 100 | 1.19 | | | | | | |
| 1,2,3-Trichlorobenzene | A | 0.50 | 0.648 | B | 1.0 | 0.605 | C | 2.0 | 0.612 | D | 5.0 | 0.579 | E | 10 | 0.576 |
| | F | 20 | 0.536 | G | 50 | 0.606 | H | 100 | 0.638 | | | | | | |
| Dibromofluoromethane | A | 0.50 | 0.434 | B | 1.0 | 0.409 | C | 2.0 | 0.391 | D | 5.0 | 0.395 | E | 10 | 0.435 |
| | F | 20 | 0.408 | G | 40 | 0.422 | H | 5 | 0.434 | | | | | | |
| Toluene-d8 | A | 0.50 | 0.899 | B | 1.0 | 0.837 | C | 2.0 | 0.821 | D | 5.0 | 0.916 | E | 10 | 1.07 |
| | F | 20 | 1.05 | G | 40 | 1.14 | H | 5 | 1.14 | | | | | | |
| 4-Bromofluorobenzene | A | 0.50 | 0.426 | B | 1.0 | 0.361 | C | 2.0 | 0.361 | D | 5.0 | 0.408 | E | 10 | 0.456 |
| | F | 20 | 0.452 | G | 40 | 0.527 | H | 5 | 0.515 | | | | | | |

ults flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

**Client:** GeoTrans
**Project:** Western Ave/#E049-106

**Service Request:** X2200452
**ICAL Date:** 05/28/2002

## Initial Calibration Summary
## Volatile Organic Compounds

**ICAL ID:** CAL292
**Instrument ID:** MS03

**Column:** MS

| Analyte Name | Compound Type | Calibration Evaluation | | | | | RRF Evaluation | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Fit Type | Eval. | Eval. Result | Q | Control Criteria | Average RRF | Q | Minimum RRF |
| Dichlorodifluoromethane | MS | AverageRF | % RSD | 6.2 | | ≤ 15 | 0.312 | | 0.01 |
| † Chloromethane | MS | AverageRF | % RSD | 5.1 | | ≤ 15 | 0.568 | | 0.1 |
| ‡ Vinyl Chloride | MS | AverageRF | % RSD | 5.4 | | ≤ 15 | 0.635 | | 0.01 |
| Bromomethane | MS | AverageRF | % RSD | 11.1 | | ≤ 15 | 0.530 | | 0.01 |
| Chloroethane | MS | AverageRF | % RSD | 6.8 | | ≤ 15 | 0.425 | | 0.01 |
| Trichlorofluoromethane | MS | AverageRF | % RSD | 3.5 | | ≤ 15 | 0.588 | | 0.01 |
| 1,1,2-Trichlorotrifluoroethane | MS | AverageRF | % RSD | 2.6 | | ≤ 15 | 0.397 | | 0.01 |
| ‡ 1,1-Dichloroethene | MS | AverageRF | % RSD | 5.3 | | ≤ 15 | 0.393 | | 0.01 |
| Acetone | MS | Linear | R2 | 1.000 | | ≥ 0.990 | 0.0203 | | 0.01 |
| Iodomethane | MS | AverageRF | % RSD | 12.5 | | ≤ 15 | 0.669 | | 0.01 |
| Carbon Disulfide | MS | AverageRF | % RSD | 7.4 | | ≤ 15 | 1.54 | | 0.01 |
| Methylene Chloride | MS | AverageRF | % RSD | 7.9 | | ≤ 15 | 0.516 | | 0.01 |
| Methyl tert-Butyl Ether | MS | AverageRF | % RSD | 6.7 | | ≤ 15 | 0.818 | | 0.01 |
| trans-1,2-Dichloroethene | MS | AverageRF | % RSD | 6.0 | | ≤ 15 | 0.472 | | 0.01 |
| † 1,1-Dichloroethane | MS | AverageRF | % RSD | 2.1 | | ≤ 15 | 0.857 | | 0.1 |
| Vinyl Acetate | MS | AverageRF | % RSD | 14.3 | | ≤ 15 | 0.387 | | 0.01 |
| 2,2-Dichloropropane | MS | AverageRF | % RSD | 6.1 | | ≤ 15 | 0.596 | | 0.01 |
| 2-Butanone (MEK) | MS | Linear | R2 | 1.000 | | ≥ 0.990 | 0.0234 | | 0.01 |
| cis-1,2-Dichloroethene | MS | AverageRF | % RSD | 5.4 | | ≤ 15 | 0.522 | | 0.01 |
| Bromochloromethane | MS | AverageRF | % RSD | 5.3 | | ≤ 15 | 0.202 | | 0.01 |
| ‡ Chloroform | MS | AverageRF | % RSD | 2.9 | | ≤ 15 | 0.852 | | 0.01 |
| 1,1,1-Trichloroethane | MS | AverageRF | % RSD | 3.0 | | ≤ 15 | 0.631 | | 0.01 |
| Carbon Tetrachloride | MS | AverageRF | % RSD | 4.1 | | ≤ 15 | 0.488 | | 0.01 |
| 1,1-Dichloropropene | MS | AverageRF | % RSD | 4.5 | | ≤ 15 | 0.603 | | 0.01 |
| Benzene | MS | AverageRF | % RSD | 6.0 | | ≤ 15 | 1.59 | | 0.01 |
| 1,2-Dichloroethane | MS | AverageRF | % RSD | 12.0 | | ≤ 15 | 0.557 | | 0.01 |
| Trichloroethene | MS | AverageRF | % RSD | 4.9 | | ≤ 15 | 0.453 | | 0.01 |
| ‡ 1,2-Dichloropropane | MS | AverageRF | % RSD | 4.7 | | ≤ 15 | 0.454 | | 0.01 |
| Dibromomethane | MS | AverageRF | % RSD | 7.7 | | ≤ 15 | 0.252 | | 0.01 |
| Bromodichloromethane | MS | AverageRF | % RSD | 5.7 | | ≤ 15 | 0.572 | | 0.01 |
| cis-1,3-Dichloropropene | MS | AverageRF | % RSD | 3.2 | | ≤ 15 | 0.616 | | 0.01 |
| 4-Methyl-2-pentanone (MIBK) | MS | AverageRF | % RSD | 10.7 | | ≤ 15 | 0.0238 | | 0.01 |
| ‡ Toluene | MS | AverageRF | % RSD | 8.7 | | ≤ 15 | 0.904 | | 0.01 |
| trans-1,3-Dichloropropene | MS | AverageRF | % RSD | 5.9 | | ≤ 15 | 0.467 | | 0.01 |
| 1,1,2-Trichloroethane | MS | AverageRF | % RSD | 7.0 | | ≤ 15 | 0.234 | | 0.01 |
| Tetrachloroethene | MS | AverageRF | % RSD | 8.4 | | ≤ 15 | 0.262 | | 0.01 |
| 2-Hexanone | MS | AverageRF | % RSD | 8.4 | | ≤ 15 | 0.131 | | 0.01 |
| 1,3-Dichloropropane | MS | AverageRF | % RSD | 4.0 | | ≤ 15 | 0.466 | | 0.01 |
| Dibromochloromethane | MS | AverageRF | % RSD | 4.9 | | ≤ 15 | 0.288 | | 0.01 |
| 1,2-Dibromoethane | MS | AverageRF | % RSD | 4.4 | | ≤ 15 | 0.242 | | 0.01 |
| † Chlorobenzene | MS | AverageRF | % RSD | 7.3 | | ≤ 15 | 1.09 | | 0.3 |

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

**Client:** GeoTrans
**Project:** Western Ave/#E049-106

**Service Request:** X2200452
**ICAL Date:** 05/28/2002

## Initial Calibration Summary
## Volatile Organic Compounds

**ICAL ID:** CAL292
**Instrument ID:** MS03

**Column:** MS

| Analyte Name | Compound Type | Calibration Evaluation | | | | | RRF Evaluation | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Fit Type | Eval. | Eval. Result | Q | Control Criteria | Average RRF | Q | Minimum RRF |
| 1,1,1,2-Tetrachloroethane | MS | AverageRF | % RSD | 5.9 | | ≤ 15 | 0.386 | | 0.01 |
| ‡ Ethylbenzene | MS | AverageRF | % RSD | 13.0 | | ≤ 15 | 1.89 | | 0.01 |
| m,p-Xylenes | MS | Linear | R2 | 0.998 | | ≥ 0.990 | 0.666 | | 0.01 |
| o-Xylene | MS | Linear | R2 | 0.998 | | ≥ 0.990 | 0.620 | | 0.01 |
| Styrene | MS | Linear | R2 | 0.998 | | ≥ 0.990 | 1.06 | | 0.01 |
| Isopropylbenzene | MS | Linear | R2 | 0.999 | | ≥ 0.990 | 1.55 | | 0.01 |
| Bromobenzene | MS | AverageRF | % RSD | 13.1 | | ≤ 15 | 0.373 | | 0.01 |
| 1,2,3-Trichloropropane | MS | AverageRF | % RSD | 11.9 | | ≤ 15 | 0.323 | | 0.01 |
| n-Propylbenzene | MS | Linear | R2 | 0.999 | | ≥ 0.990 | 2.05 | | 0.01 |
| 2-Chlorotoluene | MS | Linear | R2 | 0.999 | | ≥ 0.990 | 1.40 | | 0.01 |
| 4-Chlorotoluene | MS | AverageRF | % RSD | 14.4 | | ≤ 15 | 1.21 | | 0.01 |
| 1,3,5-Trimethylbenzene | MS | Linear | R2 | 0.999 | | ≥ 0.990 | 1.32 | | 0.01 |
| tert-Butylbenzene | MS | Linear | R2 | 0.999 | | ≥ 0.990 | 0.979 | | 0.01 |
| 1,2,4-Trimethylbenzene | MS | Linear | R2 | 1.000 | | ≥ 0.990 | 1.32 | | 0.01 |
| sec-Butylbenzene | MS | Linear | R2 | 1.000 | | ≥ 0.990 | 1.63 | | 0.01 |
| 1,3-Dichlorobenzene | MS | AverageRF | % RSD | 14.6 | | ≤ 15 | 0.690 | | 0.01 |
| 4-Isopropyltoluene | MS | Linear | R2 | 1.000 | | ≥ 0.990 | 1.29 | | 0.01 |
| Bromoform | MS | AverageRF | % RSD | 9.4 | | ≤ 15 | 0.372 | | 0.1 |
| † 1,1,2,2-Tetrachloroethane | MS | AverageRF | % RSD | 13.5 | | ≤ 15 | 0.639 | | 0.3 |
| 1,4-Dichlorobenzene | MS | AverageRF | % RSD | 3.4 | | ≤ 15 | 1.65 | | 0.01 |
| 1,2-Dichlorobenzene | MS | AverageRF | % RSD | 4.7 | | ≤ 15 | 1.31 | | 0.01 |
| n-Butylbenzene | MS | AverageRF | % RSD | 9.8 | | ≤ 15 | 3.00 | | 0.01 |
| 1,2-Dibromo-3-chloropropane | MS | Linear | R2 | 0.998 | | ≥ 0.990 | 0.0889 | | 0.01 |
| 1,2,4-Trichlorobenzene | MS | AverageRF | % RSD | 6.6 | | ≤ 15 | 0.778 | | 0.01 |
| Hexachlorobutadiene | MS | AverageRF | % RSD | 7.8 | | ≤ 15 | 0.295 | | 0.01 |
| Naphthalene | MS | AverageRF | % RSD | 4.8 | | ≤ 15 | 1.14 | | 0.01 |
| 1,2,3-Trichlorobenzene | MS | AverageRF | % RSD | 6.0 | | ≤ 15 | 0.600 | | 0.01 |
| Dibromofluoromethane | SURR | AverageRF | % RSD | 4.3 | | ≤ 15 | 0.416 | | 0.01 |
| Toluene-d8 | SURR | AverageRF | % RSD | 13.3 | | ≤ 15 | 0.984 | | 0.01 |
| 4-Bromofluorobenzene | SURR | AverageRF | % RSD | 14.2 | | ≤ 15 | 0.438 | | 0.01 |

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound ‡ CCC Compound

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

**Client:** GeoTrans
**Project:** Western Ave/#E049-106

**Service Request:** X2200452
**ICAL Date:** 05/28/2002
**Date Analyzed:** 05/28/2002

## Second Source Calibration Verification
## Volatile Organic Compounds

**ICAL Type:** Internal Standard
**Analysis Method:** 8260B

**ICAL ID:** CAL292
**Units:** ug/L

**File ID:** J:\MS03\MAY02\MAY2802\28MAY027.D

| Analyte Name | Expected | Result | Average RF | SSV RF | %D | %Drift | Criteria | Curve Fit |
|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | 10 | 11 | 0.312 | 0.340 | 9 | NA | ± 30 % | AverageRF |
| † Chloromethane | 10 | 9.9 | 0.568 | 0.561 | -1 | NA | ± 30 % | AverageRF |
| ‡ Vinyl Chloride | 10 | 9.4 | 0.635 | 0.598 | -6 | NA | ± 30 % | AverageRF |
| Bromomethane | 10 | 9.3 | 0.530 | 0.491 | -7 | NA | ± 30 % | AverageRF |
| Chloroethane | 10 | 9.4 | 0.425 | 0.399 | -6 | NA | ± 30 % | AverageRF |
| Trichlorofluoromethane | 10 | 9.6 | 0.588 | 0.565 | -4 | NA | ± 30 % | AverageRF |
| 1,1,2-Trichlorotrifluoroethane | 10 | 9.8 | 0.397 | 0.390 | -2 | NA | ± 30 % | AverageRF |
| ‡ 1,1-Dichloroethene | 10 | 7.7 | 0.393 | 0.303 | -23 | NA | ± 30 % | AverageRF |
| Acetone | 40 | 32 | 0.0203 | 0.0141 | NA | -20 | ± 30 % | Linear |
| Iodomethane | 40 | 37 | 0.669 | 0.620 | -7 | NA | ± 30 % | AverageRF |
| Carbon Disulfide | 40 | 37 | 1.54 | 1.43 | -7 | NA | ± 30 % | AverageRF |
| Methylene Chloride | 10 | 8.2 | 0.516 | 0.424 | -18 | NA | ± 30 % | AverageRF |
| Methyl tert-Butyl Ether | 10 | 8.8 | 0.818 | 0.721 | -12 | NA | ± 30 % | AverageRF |
| trans-1,2-Dichloroethene | 10 | 8.5 | 0.472 | 0.399 | -16 | NA | ± 30 % | AverageRF |
| 1,1-Dichloroethane | 10 | 9.6 | 0.857 | 0.819 | -4 | NA | ± 30 % | AverageRF |
| Vinyl Acetate | 40 | 31 | 0.387 | 0.304 | -22 | NA | ± 30 % | AverageRF |
| 2,2-Dichloropropane | 10 | 8.4 | 0.596 | 0.502 | -16 | NA | ± 30 % | AverageRF |
| 2-Butanone (MEK) | 40 | 34 | 0.0234 | 0.0185 | NA | -15 | ± 30 % | Linear |
| cis-1,2-Dichloroethene | 10 | 8.9 | 0.522 | 0.464 | -11 | NA | ± 30 % | AverageRF |
| Bromochloromethane | 10 | 9.0 | 0.202 | 0.181 | -10 | NA | ± 30 % | AverageRF |
| ‡ Chloroform | 10 | 9.2 | 0.852 | 0.784 | -8 | NA | ± 30 % | AverageRF |
| 1,1,1-Trichloroethane | 10 | 9.2 | 0.631 | 0.580 | -8 | NA | ± 30 % | AverageRF |
| Carbon Tetrachloride | 10 | 9.2 | 0.488 | 0.448 | -8 | NA | ± 30 % | AverageRF |
| 1,1-Dichloropropene | 10 | 9.0 | 0.603 | 0.545 | -10 | NA | ± 30 % | AverageRF |
| Benzene | 10 | 9.4 | 1.59 | 1.49 | -6 | NA | ± 30 % | AverageRF |
| 1,2-Dichloroethane | 10 | 8.5 | 0.557 | 0.472 | -15 | NA | ± 30 % | AverageRF |
| Trichloroethene | 10 | 9.5 | 0.453 | 0.428 | -6 | NA | ± 30 % | AverageRF |
| ‡ 1,2-Dichloropropane | 10 | 9.1 | 0.454 | 0.415 | -9 | NA | ± 30 % | AverageRF |
| Dibromomethane | 10 | 8.8 | 0.252 | 0.222 | -12 | NA | ± 30 % | AverageRF |
| Bromodichloromethane | 10 | 9.5 | 0.572 | 0.544 | -5 | NA | ± 30 % | AverageRF |
| cis-1,3-Dichloropropene | 10 | 9.2 | 0.616 | 0.567 | -8 | NA | ± 30 % | AverageRF |
| 4-Methyl-2-pentanone (MIBK) | 40 | 35 | 0.0238 | 0.0210 | -12 | NA | ± 30 % | AverageRF |
| ‡ Toluene | 10 | 9.7 | 0.904 | 0.878 | -3 | NA | ± 30 % | AverageRF |
| trans-1,3-Dichloropropene | 10 | 9.1 | 0.467 | 0.423 | -9 | NA | ± 30 % | AverageRF |
| 1,1,2-Trichloroethane | 10 | 8.6 | 0.234 | 0.202 | -14 | NA | ± 30 % | AverageRF |
| Tetrachloroethene | 10 | 9.4 | 0.262 | 0.245 | -6 | NA | ± 30 % | AverageRF |
| 2-Hexanone | 40 | 32 | 0.131 | 0.106 | -19 | NA | ± 30 % | AverageRF |
| 1,3-Dichloropropane | 10 | 9.0 | 0.466 | 0.420 | -10 | NA | ± 30 % | AverageRF |
| Dibromochloromethane | 10 | 8.9 | 0.288 | 0.257 | -11 | NA | ± 30 % | AverageRF |

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound ‡ CCC Compound

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: GeoTrans
Project: Western Ave/#E049-106

Service Request: X2200452
ICAL Date: 05/28/2002
Date Analyzed: 05/28/2002

Second Source Calibration Verification
Volatile Organic Compounds

ICAL Type: Internal Standard
Analysis Method: 8260B

ICAL ID: CAL292
Units: ug/L

| Analyte Name | Expected | Result | Average RF | SSV RF | %D | %Drift | Criteria | Curve Fit |
|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromoethane | 10 | 8.8 | 0.242 | 0.212 | -12 | NA | ± 30 % | AverageRF |
| † Chlorobenzene | 10 | 9.3 | 1.09 | 1.01 | -8 | NA | ± 30 % | AverageRF |
| 1,1,1,2-Tetrachloroethane | 10 | 9.3 | 0.386 | 0.358 | -7 | NA | ± 30 % | AverageRF |
| ‡ Ethylbenzene | 10 | 9.7 | 1.89 | 1.82 | -3 | NA | ± 30 % | AverageRF |
| m,p-Xylenes | 20 | 18 | 0.666 | 0.646 | NA | -10 | ± 30 % | Linear |
| o-Xylene | 10 | 8.9 | 0.620 | 0.589 | NA | -11 | ± 30 % | Linear |
| Styrene | 10 | 8.8 | 1.06 | 1.02 | NA | -12 | ± 30 % | Linear |
| Isopropylbenzene | 10 | 8.8 | 1.55 | 1.51 | NA | -12 | ± 30 % | Linear |
| Bromobenzene | 10 | 9.7 | 0.373 | 0.363 | -3 | NA | ± 30 % | AverageRF |
| 1,2,3-Trichloropropane | 10 | 8.6 | 0.323 | 0.277 | -14 | NA | ± 30 % | AverageRF |
| n-Propylbenzene | 10 | 8.9 | 2.05 | 1.98 | NA | -11 | ± 30 % | Linear |
| 2-Chlorotoluene | 10 | 9.0 | 1.40 | 1.38 | NA | -10 | ± 30 % | Linear |
| 4-Chlorotoluene | 10 | 9.9 | 1.21 | 1.19 | -1 | NA | ± 30 % | AverageRF |
| 1,3,5-Trimethylbenzene | 10 | 8.9 | 1.32 | 1.31 | NA | -11 | ± 30 % | Linear |
| tert-Butylbenzene | 10 | 9.0 | 0.979 | 0.963 | NA | -11 | ± 30 % | Linear |
| 1,2,4-Trimethylbenzene | 10 | 8.9 | 1.32 | 1.29 | NA | -12 | ± 30 % | Linear |
| [illegible]-Butylbenzene | 10 | 8.8 | 1.63 | 1.59 | NA | -12 | ± 30 % | Linear |
| [illegible],3-Dichlorobenzene | 10 | 9.9 | 0.690 | 0.683 | -1 | NA | ± 30 % | AverageRF |
| 4-Isopropyltoluene | 10 | 8.9 | 1.29 | 1.29 | NA | -11 | ± 30 % | Linear |
| † Bromoform | 10 | 8.3 | 0.372 | 0.308 | -17 | NA | ± 30 % | AverageRF |
| † 1,1,2,2-Tetrachloroethane | 10 | 8.3 | 0.639 | 0.530 | -17 | NA | ± 30 % | AverageRF |
| 1,4-Dichlorobenzene | 10 | 9.4 | 1.65 | 1.54 | -7 | NA | ± 30 % | AverageRF |
| 1,2-Dichlorobenzene | 10 | 9.5 | 1.31 | 1.25 | -5 | NA | ± 30 % | AverageRF |
| n-Butylbenzene | 10 | 9.9 | 3.00 | 2.97 | -1 | NA | ± 30 % | AverageRF |
| 1,2-Dibromo-3-chloropropane | 10 | 10 | 0.0889 | 0.0862 | NA | 5 | ± 30 % | Linear |
| 1,2,4-Trichlorobenzene | 10 | 9.0 | 0.778 | 0.702 | -10 | NA | ± 30 % | AverageRF |
| Hexachlorobutadiene | 10 | 10 | 0.295 | 0.300 | 2 | NA | ± 30 % | AverageRF |
| Naphthalene | 10 | 8.7 | 1.14 | 0.994 | -13 | NA | ± 30 % | AverageRF |
| 1,2,3-Trichlorobenzene | 10 | 9.1 | 0.600 | 0.544 | -9 | NA | ± 30 % | AverageRF |

[illegible]ults flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

**Client:** GeoTrans
**Project:** Western Ave/#E049-106

**Service Request:** X2200452
**Date Analyzed:** 05/29/2002

## Continuing Calibration Verification Summary
## Volatile Organic Compounds

**ICAL Type:** Internal Standard
**Analysis Method:** 8260B

**ICAL Date:** 05/28/2002
**ICAL ID:** CAL292
**Analysis Lot:** XWG0200680
**Units:** ug/L

**File ID:** J:\MS03\MAY02\MAY2902\29MAY005.D

| Analyte Name | Expected | Result | Min RF | Average RF | CCV RF | %D | %Drift | Criteria | Curve Fit |
|---|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | 10 | 9.4 | 0.01 | 0.312 | 0.293 | -6 | NA | ± 28 % | AverageRF |
| † Chloromethane | 10 | 9.0 | 0.1 | 0.568 | 0.510 | -10 | NA | ± 36 % | AverageRF |
| ‡ Vinyl Chloride | 10 | 9.1 | 0.01 | 0.635 | 0.575 | -9 | NA | ± 20 % | AverageRF |
| Bromomethane | 10 | 8.2 | 0.01 | 0.530 | 0.435 | -18 | NA | ± 86 % | AverageRF |
| Chloroethane | 10 | 8.8 | 0.01 | 0.425 | 0.374 | -12 | NA | ± 31 % | AverageRF |
| Trichlorofluoromethane | 10 | 9.6 | 0.01 | 0.588 | 0.564 | -4 | NA | ± 32 % | AverageRF |
| 1,1,2-Trichlorotrifluoroethane | 10 | 10 | 0.01 | 0.397 | 0.396 | 0 | NA | ± 33 % | AverageRF |
| ‡ 1,1-Dichloroethene | 10 | 9.5 | 0.01 | 0.393 | 0.374 | -5 | NA | ± 20 % | AverageRF |
| Acetone | 40 | 39 | 0.01 | 0.0203 | 0.0165 | NA | -3 | ± 62 % | Linear |
| Iodomethane | 40 | 39 | 0.01 | 0.669 | 0.658 | -2 | NA | ± 59 % | AverageRF |
| Carbon Disulfide | 40 | 40 | 0.01 | 1.54 | 1.53 | -1 | NA | ± 30 % | AverageRF |
| Methylene Chloride | 10 | 9.4 | 0.01 | 0.516 | 0.486 | -6 | NA | ± 23 % | AverageRF |
| Methyl tert-Butyl Ether | 10 | 10 | 0.01 | 0.818 | 0.826 | 1 | NA | ± 22 % | AverageRF |
| trans-1,2-Dichloroethene | 10 | 9.3 | 0.01 | 0.472 | 0.439 | -7 | NA | ± 20 % | AverageRF |
| 1,1-Dichloroethane | 10 | 9.8 | 0.1 | 0.857 | 0.838 | -2 | NA | ± 20 % | AverageRF |
| Vinyl Acetate | 40 | 47 | 0.01 | 0.387 | 0.454 | 17 | NA | ± 114 % | AverageRF |
| 2,2-Dichloropropane | 10 | 11 | 0.01 | 0.596 | 0.649 | 9 | NA | ± 30 % | AverageRF |
| 2-Butanone (MEK) | 40 | 43 | 0.01 | 0.0234 | 0.0230 | NA | 7 | ± 28 % | Linear |
| cis-1,2-Dichloroethene | 10 | 9.8 | 0.01 | 0.522 | 0.511 | -2 | NA | ± 14 % | AverageRF |
| Bromochloromethane | 10 | 9.6 | 0.01 | 0.202 | 0.194 | -4 | NA | ± 20 % | AverageRF |
| ‡ Chloroform | 10 | 9.7 | 0.01 | 0.852 | 0.823 | -3 | NA | ± 20 % | AverageRF |
| 1,1,1-Trichloroethane | 10 | 9.8 | 0.01 | 0.631 | 0.619 | -2 | NA | ± 22 % | AverageRF |
| Carbon Tetrachloride | 10 | 9.7 | 0.01 | 0.488 | 0.474 | -3 | NA | ± 24 % | AverageRF |
| 1,1-Dichloropropene | 10 | 9.6 | 0.01 | 0.603 | 0.579 | -4 | NA | ± 18 % | AverageRF |
| Benzene | 10 | 9.7 | 0.01 | 1.59 | 1.55 | -3 | NA | ± 20 % | AverageRF |
| 1,2-Dichloroethane | 10 | 9.2 | 0.01 | 0.557 | 0.510 | -8 | NA | ± 20 % | AverageRF |
| Trichloroethene | 10 | 9.1 | 0.01 | 0.453 | 0.413 | -9 | NA | ± 20 % | AverageRF |
| ‡ 1,2-Dichloropropane | 10 | 9.4 | 0.01 | 0.454 | 0.429 | -6 | NA | ± 20 % | AverageRF |
| Dibromomethane | 10 | 9.7 | 0.01 | 0.252 | 0.245 | -3 | NA | ± 20 % | AverageRF |
| Bromodichloromethane | 10 | 9.6 | 0.01 | 0.572 | 0.548 | -4 | NA | ± 20 % | AverageRF |
| cis-1,3-Dichloropropene | 10 | 9.8 | 0.01 | 0.616 | 0.606 | -2 | NA | ± 20 % | AverageRF |
| 4-Methyl-2-pentanone (MIBK) | 40 | 39 | 0.01 | 0.0238 | 0.0235 | -1 | NA | ± 29 % | AverageRF |
| ‡ Toluene | 10 | 10 | 0.01 | 0.904 | 0.924 | 2 | NA | ± 20 % | AverageRF |
| trans-1,3-Dichloropropene | 10 | 10 | 0.01 | 0.467 | 0.470 | 1 | NA | ± 20 % | AverageRF |
| 1,1,2-Trichloroethane | 10 | 9.8 | 0.01 | 0.234 | 0.230 | -2 | NA | ± 19 % | AverageRF |
| Tetrachloroethene | 10 | 9.7 | 0.01 | 0.262 | 0.252 | -3 | NA | ± 21 % | AverageRF |
| 2-Hexanone | 40 | 40 | 0.01 | 0.131 | 0.131 | 0 | NA | ± 22 % | AverageRF |
| 1,3-Dichloropropane | 10 | 9.6 | 0.01 | 0.466 | 0.449 | -4 | NA | ± 34 % | AverageRF |

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound ‡ CCC Compound

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

**Client:** GeoTrans
**Project:** Western Ave/#E049-106

**Service Request:** X2200452
**Date Analyzed:** 05/29/2002

## Continuing Calibration Verification Summary
## Volatile Organic Compounds

**ICAL Type:** Internal Standard
**Analysis Method:** 8260B

**ICAL Date:** 05/28/2002
**ICAL ID:** CAL292
**Analysis Lot:** XWG0200680
**Units:** ug/L

| Analyte Name | Expected | Result | Min RF | Average RF | CCV RF | %D | %Drift | Criteria | Curve Fit |
|---|---|---|---|---|---|---|---|---|---|
| Dibromochloromethane | 10 | 9.8 | 0.01 | 0.288 | 0.283 | -2 | NA | ± 20 % | AverageRF |
| 1,2-Dibromoethane | 10 | 9.9 | 0.01 | 0.242 | 0.240 | -1 | NA | ± 20 % | AverageRF |
| † Chlorobenzene | 10 | 10 | 0.3 | 1.09 | 1.08 | -1 | NA | ± 20 % | AverageRF |
| 1,1,1,2-Tetrachloroethane | 10 | 9.9 | 0.01 | 0.386 | 0.380 | -1 | NA | ± 20 % | AverageRF |
| ‡ Ethylbenzene | 10 | 10 | 0.01 | 1.89 | 1.88 | 0 | NA | ± 20 % | AverageRF |
| m,p-Xylenes | 20 | 18 | 0.01 | 0.666 | 0.662 | NA | -8 | ± 22 % | Linear |
| o-Xylene | 10 | 9.2 | 0.01 | 0.620 | 0.615 | NA | -8 | ± 25 % | Linear |
| Styrene | 10 | 9.3 | 0.01 | 1.06 | 1.08 | NA | -8 | ± 24 % | Linear |
| Isopropylbenzene | 10 | 9.2 | 0.01 | 1.55 | 1.57 | NA | -8 | ± 25 % | Linear |
| Bromobenzene | 10 | 11 | 0.01 | 0.373 | 0.398 | 7 | NA | ± 35 % | AverageRF |
| 1,2,3-Trichloropropane | 10 | 9.6 | 0.01 | 0.323 | 0.311 | -4 | NA | ± 30 % | AverageRF |
| n-Propylbenzene | 10 | 9.3 | 0.01 | 2.05 | 2.09 | NA | -7 | ± 22 % | Linear |
| 2-Chlorotoluene | 10 | 9.4 | 0.01 | 1.40 | 1.44 | NA | -6 | ± 22 % | Linear |
| 4-Chlorotoluene | 10 | 11 | 0.01 | 1.21 | 1.30 | 8 | NA | ± 23 % | AverageRF |
| 3,5-Trimethylbenzene | 10 | 9.1 | 0.01 | 1.32 | 1.33 | NA | -10 | ± 31 % | Linear |
| rt-Butylbenzene | 10 | 9.2 | 0.01 | 0.979 | 1.00 | NA | -8 | ± 22 % | Linear |
| 1,2,4-Trimethylbenzene | 10 | 9.4 | 0.01 | 1.32 | 1.38 | NA | -6 | ± 20 % | Linear |
| sec-Butylbenzene | 10 | 9.6 | 0.01 | 1.63 | 1.75 | NA | -5 | ± 23 % | Linear |
| 1,3-Dichlorobenzene | 10 | 11 | 0.01 | 0.690 | 0.774 | 12 | NA | ± 21 % | AverageRF |
| 4-Isopropyltoluene | 10 | 9.5 | 0.01 | 1.29 | 1.39 | NA | -5 | ± 22 % | Linear |
| † Bromoform | 10 | 9.4 | 0.1 | 0.372 | 0.348 | -6 | NA | ± 24 % | AverageRF |
| † 1,1,2,2-Tetrachloroethane | 10 | 9.8 | 0.3 | 0.639 | 0.624 | -2 | NA | ± 30 % | AverageRF |
| 1,4-Dichlorobenzene | 10 | 9.8 | 0.01 | 1.65 | 1.61 | -2 | NA | ± 20 % | AverageRF |
| 1,2-Dichlorobenzene | 10 | 10 | 0.01 | 1.31 | 1.36 | 3 | NA | ± 29 % | AverageRF |
| n-Butylbenzene | 10 | 10 | 0.01 | 3.00 | 3.00 | 0 | NA | ± 20 % | AverageRF |
| 1,2-Dibromo-3-chloropropane | 10 | 12 | 0.01 | 0.0889 | 0.0972 | NA | 19 | ± 31 % | Linear |
| 1,2,4-Trichlorobenzene | 10 | 9.3 | 0.01 | 0.778 | 0.726 | -7 | NA | ± 23 % | AverageRF |
| Hexachlorobutadiene | 10 | 9.7 | 0.01 | 0.295 | 0.285 | -3 | NA | ± 49 % | AverageRF |
| Naphthalene | 10 | 9.4 | 0.01 | 1.14 | 1.07 | -6 | NA | ± 27 % | AverageRF |
| 1,2,3-Trichlorobenzene | 10 | 9.3 | 0.01 | 0.600 | 0.560 | -7 | NA | ± 20 % | AverageRF |
| Dibromofluoromethane | 20 | 18 | 0.01 | 0.416 | 0.369 | -11 | NA | ± 78 % | AverageRF |
| Toluene-d8 | 20 | 20 | 0.01 | 0.984 | 0.969 | -2 | NA | ± 81 % | AverageRF |
| 4-Bromofluorobenzene | 20 | 20 | 0.01 | 0.438 | 0.441 | 1 | NA | ± 20 % | AverageRF |

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

**Client:** GeoTrans
**Project:** Western Ave/#E049-106

**Service Request:** X2200452

## Analysis Run Log
## Volatile Organic Compounds

**Analysis Method:** 8260B

**Analysis Lot:** XWG0200680
**Instrument ID:** MS03

| File ID | Sample Name | Lab Code | Date Analysis Started | Start Time | Q | Date Analysis Finished | Finish Time |
|---|---|---|---|---|---|---|---|
| 29MAY003.D | GC/MS Tuning - Bromofluorobenzene | XWG0200680-1 | 5/29/02 | 10:18 | | 5/29/02 | 10:42 |
| 29MAY005.D | Continuing Calibration Verification | XWG0200680-2 | 5/29/02 | 11:18 | | 5/29/02 | 11:42 |
| 29MAY006.D | Lab Control Sample | XWG0200681-1 | 5/29/02 | 11:49 | | 5/29/02 | 12:13 |
| 29MAY007.D | Duplicate Lab Control Sample | XWG0200681-2 | 5/29/02 | 12:19 | | 5/29/02 | 12:43 |
| 29MAY010.D | Method Blank | XWG0200681-3 | 5/29/02 | 13:51 | | 5/29/02 | 14:15 |
| 29MAY011.D | COG-MW3 | X2200452-001 | 5/29/02 | 14:21 | | 5/29/02 | 14:45 |
| 29MAY012.D | ZZZZZZ | ZZZZZZ | 5/29/02 | 14:51 | | 5/29/02 | 15:15 |
| 29MAY013.D | ZZZZZZ | ZZZZZZ | 5/29/02 | 15:22 | | 5/29/02 | 15:46 |
| 29MAY014.D | ZZZZZZ | ZZZZZZ | 5/29/02 | 15:52 | | 5/29/02 | 16:20 |
| 29MAY016.D | ZZZZZZ | ZZZZZZ | 5/29/02 | 16:58 | | 5/29/02 | 17:22 |
| 29MAY017.D | ZZZZZZ | ZZZZZZ | 5/29/02 | 17:29 | | 5/29/02 | 17:53 |
| 29MAY018.D | ZZZZZZ | ZZZZZZ | 5/29/02 | 17:59 | | 5/29/02 | 18:23 |
| [illegible]MAY019.D | ZZZZZZ | ZZZZZZ | 5/29/02 | 18:30 | | 5/29/02 | 18:54 |
| 29MAY020.D | COG-MW3MS | XWG0200681-4 | 5/29/02 | 19:00 | | 5/29/02 | 19:24 |
| 29MAY021.D | COG-MW3DMS | XWG0200681-5 | 5/29/02 | 19:31 | | 5/29/02 | 19:55 |
| 29MAY022.D | ZZZZZZ | ZZZZZZ | 5/29/02 | 20:01 | | 5/29/02 | 20:25 |
| 29MAY023.D | ZZZZZZ | ZZZZZZ | 5/29/02 | 20:31 | | 5/29/02 | 20:55 |
| 29MAY024.D | ZZZZZZ | ZZZZZZ | 5/29/02 | 21:01 | | 5/29/02 | 21:25 |
| 29MAY026.D | ZZZZZZ | ZZZZZZ | 5/29/02 | 22:01 | | 5/29/02 | 22:25 |
| 29MAY027.D | ZZZZZZ | ZZZZZZ | 5/29/02 | 22:31 | | 5/29/02 | 22:55 |

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

# COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

**Client:** GeoTrans
**Project:** Western Ave/#E049-106
**Sample Matrix:** Water

**Service Request:** X2200452
**Date Extracted:** 05/29/2002

## Extraction Prep Log
## Volatile Organic Compounds

**Extraction Method:** EPA 5030B
**Analysis Method:** 8260B

**Extraction Lot:** XWG0200681
**Level:** Low

| Sample Name | Lab Code | Date Collected | Date Received | Sample Amount | Final Volume | % Solids | Arizon |
|---|---|---|---|---|---|---|---|
| COG-MW3 | X2200452-001 | 05/15/02 | 05/16/02 | 10ml | 10ml | NA | |
| Method Blank | XWG0200681-3 | NA | NA | 10ml | 10ml | NA | |
| COG-MW3MS | XWG0200681-4 | 05/15/02 | 05/16/02 | 10ml | 10ml | NA | |
| COG-MW3DMS | XWG0200681-5 | 05/15/02 | 05/16/02 | 10ml | 10ml | NA | |
| Lab Control Sample | XWG0200681-1 | NA | NA | 10ml | 10ml | NA | |
| Duplicate Lab Control Sample | XWG0200681-2 | NA | NA | 10ml | 10ml | NA | |

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

# Organic Analysis:
# Volatile Organic Compounds

## Validation Package

# Organic Analysis:
# Volatile Organic Compounds

## Validation Package

## QC Reports

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

**Client:** GeoTrans
**Project:** Western Ave/#E049-106
**Sample Matrix:** Water

**Service Request:** X2200452

## Surrogate Recovery Summary
## Volatile Organic Compounds

**Extraction Method:** EPA 5030B
**Analysis Method:** 8260B

**Units:** PERCENT
**Level:** Low

| Sample Name | Lab Code | Sur1 | Sur2 | Sur3 |
|---|---|---|---|---|
| COG-MW3 | X2200452-001 | 94 | 100 | 97 |
| Method Blank | XWG0200681-3 | 89 | 98 | 96 |
| COG-MW3MS | XWG0200681-4 | 91 | 100 | 101 |
| COG-MW3DMS | XWG0200681-5 | 92 | 101 | 100 |
| Lab Control Sample | XWG0200681-1 | 91 | 99 | 100 |
| Duplicate Lab Control Sample | XWG0200681-2 | 90 | 99 | 97 |

**Surrogate Recovery Control Limits (%)**

| | | |
|---|---|---|
| Sur1 = | Dibromofluoromethane | 84-113 |
| Sur2 = | Toluene-d8 | 68-126 |
| Sur3 = | 4-Bromofluorobenzene | 79-113 |

Results flagged with an asterisk (*) indicate values outside control criteria.
Results flagged with a pound (#) indicate the control criteria is not applicable.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

**Client:** GeoTrans
**Project:** Western Ave/#E049-106

**Service Request:** X2200452
**Date Analyzed:** 05/29/2002
**Time Analyzed:** 11:18

## Internal Standard Area and RT Summary
## Volatile Organic Compounds

**File ID:** J:\MS03\MAY02\MAY2902\29MAY005.D
**Instrument ID:** MS03
**Analysis Method:** 8260B

**Lab Code:** XWG0200680-2
**Analysis Lot:** XWG0200680

| | | 1,4-Difluorobenzene | | Chlorobenzene-d5 | | 1,4-Dichlorobenzene-d4 | |
|---|---|---|---|---|---|---|---|
| | | Area | RT | Area | RT | Area | RT |
| | Results ==> | 270,950 | 12.49 | 213,360 | 16.20 | 104,933 | 18.66 |
| | Upper Limit ==> | 541,900 | 12.99 | 426,720 | 16.70 | 209,866 | 19.16 |
| | Lower Limit ==> | 135,475 | 11.99 | 106,680 | 15.70 | 52,467 | 18.16 |
| | ICAL Result == | 228,574 | NA | 182,807 | NA | 86,010 | NA |
| *Associated Analyses* | | | | | | | |
| Lab Control Sample | XWG0200681-1 | 277,490 | 12.48 | 221,125 | 16.20 | 106,005 | 18.66 |
| Duplicate Lab Control Sample | XWG0200681-2 | 274,323 | 12.49 | 217,872 | 16.20 | 102,258 | 18.66 |
| Method Blank | XWG0200681-3 | 275,929 | 12.48 | 219,843 | 16.20 | 88,182 | 18.66 |
| COG-MW3 | X2200452-001 | 263,416 | 12.48 | 209,426 | 16.20 | 86,987 | 18.66 |
| COG-MW3MS | XWG0200681-4 | 280,126 | 12.48 | 240,874 | 16.20 | 107,953 | 18.66 |
| COG-MW3DMS | XWG0200681-5 | 275,107 | 12.49 | 240,310 | 16.21 | 107,267 | 18.66 |

ults flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200452 |
| **Project:** | Western Ave/#E049-106 | **Date Extracted:** | 05/29/2002 |
| **Sample Matrix:** | Water | **Date Analyzed:** | 05/29/2002 |

## Matrix Spike/Duplicate Matrix Spike Summary
## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | COG-MW3 | **Units:** | ug/L |
| **Lab Code:** | X2200452-001 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | **Extraction Lot:** | XWG0200681 |

| Analyte Name | Sample Result | COG-MW3MS XWG0200681-4 Matrix Spike | | | COG-MW3DMS XWG0200681-5 Duplicate Matrix Spike | | | | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Result | Expected | %Rec | Result | Expected | %Rec | | | | |
| Dichlorodifluoromethane | ND | 10.7 | 10.0 | 107 | 10.1 | 10.0 | 101 | | 78-207 | 6 | 20 |
| Chloromethane | ND | 9.04 | 10.0 | 90 | 8.33 | 10.0 | 83 | | 70-157 | 8 | 20 |
| Vinyl Chloride | ND | 8.47 | 10.0 | 85 | 7.89 | 10.0 | 79 | | 79-174 | 7 | 20 |
| Bromomethane | ND | 7.33 | 10.0 | 73 | 7.15 | 10.0 | 72 | | 44-150 | 2 | 20 |
| Chloroethane | ND | 7.93 | 10.0 | 79 | 7.47 | 10.0 | 75 | | 74-150 | 6 | 20 |
| Trichlorofluoromethane | ND | 9.58 | 10.0 | 96 | 9.07 | 10.0 | 91 | | 80-134 | 5 | 20 |
| 1,1,2-Trichlorotrifluoroethane | ND | 10.2 | 10.0 | 102 | 9.72 | 10.0 | 97 | | 67-128 | 5 | 20 |
| 1,1-Dichloroethene | ND | 8.37 | 10.0 | 84 | 7.65 | 10.0 | 77 | | 71-142 | 9 | 20 |
| Acetone | ND | 43.4 | 40.0 | 108 | 38.8 | 40.0 | 97 | | 1-155 | 11 | 20 |
| [illegible]domethane | ND | 39.1 | 40.0 | 98 | 37.7 | 40.0 | 94 | | 47-120 | 4 | 20 |
| Carbon Disulfide | ND | 38.9 | 40.0 | 97 | 36.8 | 40.0 | 92 | | 77-126 | 6 | 20 |
| Methylene Chloride | ND | 8.45 | 10.0 | 85 | 8.19 | 10.0 | 82 | M2 | 83-106 | 3 | 20 |
| Methyl tert-Butyl Ether | ND | 10.4 | 10.0 | 104 | 10.2 | 10.0 | 102 | | 70-118 | 2 | 20 |
| trans-1,2-Dichloroethene | ND | 8.85 | 10.0 | 89 | 8.44 | 10.0 | 84 | M2 | 86-115 | 5 | 20 |
| 1,1-Dichloroethane | ND | 9.26 | 10.0 | 93 | 8.90 | 10.0 | 89 | | 77-127 | 4 | 20 |
| Vinyl Acetate | ND | 54.1 | 40.0 | 135 | 53.5 | 40.0 | 134 | | 8-187 | 1 | 20 |
| 2,2-Dichloropropane | ND | 9.10 | 10.0 | 91 | 8.43 | 10.0 | 84 | | 25-154 | 8 | 20 |
| 2-Butanone (MEK) | ND | 42.9 | 40.0 | 107 | 43.5 | 40.0 | 109 | | 90-112 | 1 | 20 |
| cis-1,2-Dichloroethene | ND | 9.19 | 10.0 | 92 | 8.80 | 10.0 | 88 | | 69-118 | 4 | 20 |
| Bromochloromethane | ND | 9.81 | 10.0 | 98 | 9.54 | 10.0 | 95 | | 47-136 | 3 | 20 |
| Chloroform | ND | 9.26 | 10.0 | 93 | 8.99 | 10.0 | 90 | | 48-143 | 3 | 20 |
| 1,1,1-Trichloroethane | ND | 9.14 | 10.0 | 91 | 8.80 | 10.0 | 88 | | 84-122 | 4 | 20 |
| Carbon Tetrachloride | ND | 9.44 | 10.0 | 94 | 8.89 | 10.0 | 89 | | 79-120 | 6 | 20 |
| 1,1-Dichloropropene | ND | 9.11 | 10.0 | 91 | 8.54 | 10.0 | 85 | | 85-117 | 6 | 20 |
| Benzene | ND | 9.38 | 10.0 | 94 | 8.85 | 10.0 | 89 | | 88-114 | 6 | 20 |
| 1,2-Dichloroethane | ND | 8.56 | 10.0 | 86 | 8.48 | 10.0 | 85 | | 75-112 | 1 | 20 |
| Trichloroethene | ND | 9.14 | 10.0 | 91 | 8.60 | 10.0 | 86 | | 76-115 | 6 | 20 |
| 1,2-Dichloropropane | ND | 9.41 | 10.0 | 94 | 8.84 | 10.0 | 88 | | 85-107 | 6 | 20 |
| Dibromomethane | ND | 9.67 | 10.0 | 97 | 9.43 | 10.0 | 94 | | 82-106 | 3 | 20 |
| Bromodichloromethane | ND | 9.66 | 10.0 | 97 | 9.57 | 10.0 | 96 | | 83-107 | 1 | 20 |
| cis-1,3-Dichloropropene | ND | 9.78 | 10.0 | 98 | 9.40 | 10.0 | 94 | | 70-114 | 4 | 20 |
| 4-Methyl-2-pentanone (MIBK) | ND | 44.6 | 40.0 | 111 | 41.5 | 40.0 | 104 | | 54-129 | 7 | 20 |
| Toluene | ND | 9.50 | 10.0 | 95 | 9.06 | 10.0 | 91 | | 86-114 | 5 | 20 |

[illegible]ults flagged with an asterisk (*) indicate values outside control criteria.

[illegible]esults flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200452 |
| **Project:** | Western Ave/#E049-106 | **Date Extracted:** | 05/29/2002 |
| **Sample Matrix:** | Water | **Date Analyzed:** | 05/29/2002 |

## Matrix Spike/Duplicate Matrix Spike Summary
## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | COG-MW3 | **Units:** | ug/L |
| **Lab Code:** | X2200452-001 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | **Extraction Lot:** | XWG0200681 |

| Analyte Name | Sample Result | COG-MW3MS XWG0200681-4 Matrix Spike | | | COG-MW3DMS XWG0200681-5 Duplicate Matrix Spike | | | | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Result | Expected | %Rec | Result | Expected | %Rec | | | | |
| trans-1,3-Dichloropropene | ND | 9.98 | 10.0 | 100 | 9.52 | 10.0 | 95 | | 73-112 | 5 | 20 |
| 1,1,2-Trichloroethane | ND | 10.2 | 10.0 | 102 | 9.66 | 10.0 | 97 | | 79-112 | 5 | 20 |
| Tetrachloroethene | 14 | 25.0 | 10.0 | 108 | 23.7 | 10.0 | 96 | | 78-130 | 5 | 20 |
| 2-Hexanone | ND | 41.4 | 40.0 | 104 | 40.2 | 40.0 | 100 | | 77-112 | 3 | 20 |
| 1,3-Dichloropropane | ND | 9.93 | 10.0 | 99 | 9.75 | 10.0 | 98 | | 45-133 | 2 | 20 |
| Dibromochloromethane | ND | 10.3 | 10.0 | 103 | 10.0 | 10.0 | 100 | | 74-108 | 3 | 20 |
| 1,2-Dibromoethane | ND | 10.8 | 10.0 | 108 | 10.3 | 10.0 | 103 | | 73-113 | 5 | 20 |
| Chlorobenzene | ND | 9.34 | 10.0 | 93 | 8.79 | 10.0 | 88 | | 84-111 | 6 | 20 |
| 1,1,2-Tetrachloroethane | ND | 9.38 | 10.0 | 94 | 9.03 | 10.0 | 90 | | 84-119 | 4 | 20 |
| Ethylbenzene | ND | 9.22 | 10.0 | 92 | 8.68 | 10.0 | 87 | | 47-136 | 6 | 20 |
| m,p-Xylenes | ND | 17.2 | 20.0 | 86 | 16.4 | 20.0 | 82 | M2 | 84-120 | 5 | 20 |
| o-Xylene | ND | 8.71 | 10.0 | 87 | 8.40 | 10.0 | 84 | | 47-143 | 4 | 20 |
| Styrene | ND | 8.63 | 10.0 | 86 | 8.32 | 10.0 | 83 | | 72-121 | 4 | 20 |
| Isopropylbenzene | ND | 8.61 | 10.0 | 86 | 8.18 | 10.0 | 82 | | 63-108 | 5 | 20 |
| Bromobenzene | ND | 10.1 | 10.0 | 101 | 9.54 | 10.0 | 95 | | 80-113 | 6 | 20 |
| 1,2,3-Trichloropropane | ND | 9.13 | 10.0 | 91 | 8.76 | 10.0 | 88 | | 78-119 | 4 | 20 |
| n-Propylbenzene | ND | 8.60 | 10.0 | 86 | 8.22 | 10.0 | 82 | | 76-117 | 5 | 20 |
| 2-Chlorotoluene | ND | 8.38 | 10.0 | 84 | 8.02 | 10.0 | 80 | | 79-121 | 4 | 20 |
| 4-Chlorotoluene | ND | 9.32 | 10.0 | 93 | 8.86 | 10.0 | 89 | | 70-133 | 5 | 20 |
| 1,3,5-Trimethylbenzene | ND | 8.38 | 10.0 | 84 | 7.94 | 10.0 | 79 | | 79-118 | 5 | 20 |
| tert-Butylbenzene | ND | 8.74 | 10.0 | 87 | 8.35 | 10.0 | 84 | | 77-120 | 5 | 20 |
| 1,2,4-Trimethylbenzene | ND | 8.27 | 10.0 | 83 | 7.79 | 10.0 | 78 | | 68-127 | 6 | 20 |
| sec-Butylbenzene | ND | 8.25 | 10.0 | 83 | 7.89 | 10.0 | 79 | | 78-123 | 4 | 20 |
| 1,3-Dichlorobenzene | ND | 9.78 | 10.0 | 98 | 9.18 | 10.0 | 92 | | 78-127 | 6 | 20 |
| 4-Isopropyltoluene | ND | 8.41 | 10.0 | 84 | 7.88 | 10.0 | 79 | | 79-142 | 7 | 20 |
| Bromoform | ND | 10.2 | 10.0 | 102 | 9.87 | 10.0 | 99 | | 83-111 | 3 | 20 |
| 1,1,2,2-Tetrachloroethane | ND | 11.1 | 10.0 | 111 | 10.5 | 10.0 | 105 | | 66-133 | 5 | 20 |
| 1,4-Dichlorobenzene | ND | 9.30 | 10.0 | 93 | 8.78 | 10.0 | 88 | | 48-139 | 6 | 20 |
| 1,2-Dichlorobenzene | ND | 10.0 | 10.0 | 100 | 9.50 | 10.0 | 95 | | 64-109 | 5 | 20 |
| n-Butylbenzene | ND | 9.14 | 10.0 | 91 | 8.55 | 10.0 | 86 | | 69-122 | 7 | 20 |
| 1,2-Dibromo-3-chloropropane | ND | 10.5 | 10.0 | 105 | 10.5 | 10.0 | 105 | | 54-160 | 0 | 20 |
| 1,2,4-Trichlorobenzene | ND | 10.5 | 10.0 | 105 | 9.94 | 10.0 | 99 | | 39-145 | 5 | 20 |
| Hexachlorobutadiene | ND | 9.77 | 10.0 | 98 | 9.65 | 10.0 | 97 | | 74-113 | 1 | 20 |

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200452 |
| **Project:** | Western Ave/#E049-106 | **Date Extracted:** | 05/29/2002 |
| **Sample Matrix:** | Water | **Date Analyzed:** | 05/29/2002 |

## Matrix Spike/Duplicate Matrix Spike Summary
## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | COG-MW3 | **Units:** | ug/L |
| **Lab Code:** | X2200452-001 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | **Extraction Lot:** | XWG0200681 |

| | | COG-MW3MS XWG0200681-4 Matrix Spike | | | COG-MW3DMS XWG0200681-5 Duplicate Matrix Spike | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Analyte Name** | **Sample Result** | **Result** | **Expected** | **%Rec** | **Result** | **Expected** | **%Rec** | **%Rec Limits** | **RPD** | **RPD Limit** |
| Naphthalene | ND | 11.0 | 10.0 | 110 | 10.6 | 10.0 | 106 | 44-167 | 3 | 20 |
| 1,2,3-Trichlorobenzene | ND | 10.9 | 10.0 | 109 | 10.4 | 10.0 | 104 | 37-158 | 4 | 20 |

ults flagged with an asterisk (*) indicate values outside control criteria.

results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200452 |
| **Project:** | Western Ave/#E049-106 | **Date Extracted:** | 05/29/2002 |
| **Sample Matrix:** | Water | **Date Analyzed:** | 05/29/2002 |

## Lab Control Spike/Duplicate Lab Control Spike Summary
## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Extraction Method:** | EPA 5030B | **Units:** | ug/L |
| **Analysis Method:** | 8260B | **Basis:** | NA |
| | | **Level:** | Low |
| | | **Extraction Lot:** | XWG0200681 |

| | Lab Control Sample XWG0200681-1 Lab Control Spike | | | Duplicate Lab Control Sample XWG0200681-2 Duplicate Lab Control Spike | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Analyte Name** | **Result** | **Expected** | **%Rec** | **Result** | **Expected** | **%Rec** | **%Rec Limits** | **RPD** | **RPD Limit** |
| Dichlorodifluoromethane | 11.0 | 10.0 | 110 | 10.6 | 10.0 | 106 | 1-224 | 3 | 20 |
| Chloromethane | 8.78 | 10.0 | 88 | 8.84 | 10.0 | 88 | 21-153 | 1 | 20 |
| Vinyl Chloride | 8.45 | 10.0 | 85 | 8.30 | 10.0 | 83 | 32-159 | 2 | 20 |
| Bromomethane | 7.96 | 10.0 | 80 | 7.80 | 10.0 | 78 | 37-148 | 2 | 20 |
| Chloroethane | 8.07 | 10.0 | 81 | 7.94 | 10.0 | 79 | 52-139 | 2 | 20 |
| Trichlorofluoromethane | 9.63 | 10.0 | 96 | 9.31 | 10.0 | 93 | 56-139 | 3 | 20 |
| 1,1,2-Trichlorotrifluoroethane | 10.6 | 10.0 | 106 | 10.3 | 10.0 | 103 | 84-131 | 3 | 20 |
| 1,1-Dichloroethene | 8.23 | 10.0 | 82 | 7.92 | 10.0 | 79 | 68-100 | 4 | 20 |
| Acetone | 44.2 | 40.0 | 111 | 42.6 | 40.0 | 106 | 65-129 | 4 | 20 |
| Iodomethane | 40.1 | 40.0 | 100 | 39.8 | 40.0 | 100 | 55-121 | 1 | 20 |
| Carbon Disulfide | 38.9 | 40.0 | 97 | 37.9 | 40.0 | 95 | 78-121 | 3 | 20 |
| Methylene Chloride | 8.64 | 10.0 | 86 | 8.65 | 10.0 | 87 | 74-103 | 0 | 20 |
| Methyl tert-Butyl Ether | 10.4 | 10.0 | 104 | 10.2 | 10.0 | 102 | 71-129 | 2 | 20 |
| trans-1,2-Dichloroethene | 9.04 | 10.0 | 90 | 8.69 | 10.0 | 87 | 76-105 | 4 | 20 |
| 1,1-Dichloroethane | 9.55 | 10.0 | 96 | 9.29 | 10.0 | 93 | 79-114 | 3 | 20 |
| Vinyl Acetate | 51.9 | 40.0 | 130 | 48.3 | 40.0 | 121 | 48-160 | 7 | 39 |
| 2,2-Dichloropropane | 10.2 | 10.0 | 102 | 9.65 | 10.0 | 97 | 79-122 | 5 | 20 |
| 2-Butanone (MEK) | 43.3 | 40.0 | 108 | 42.5 | 40.0 | 106 | 64-131 | 2 | 20 |
| cis-1,2-Dichloroethene | 9.49 | 10.0 | 95 | 9.28 | 10.0 | 93 | 84-115 | 2 | 20 |
| Bromochloromethane | 10.0 | 10.0 | 100 | 9.89 | 10.0 | 99 | 77-112 | 1 | 20 |
| Chloroform | 9.52 | 10.0 | 95 | 9.48 | 10.0 | 95 | 80-114 | 0 | 20 |
| 1,1,1-Trichloroethane | 9.23 | 10.0 | 92 | 8.96 | 10.0 | 90 | 74-118 | 3 | 20 |
| Carbon Tetrachloride | 9.48 | 10.0 | 95 | 9.23 | 10.0 | 92 | 72-121 | 3 | 20 |
| 1,1-Dichloropropene | 9.12 | 10.0 | 91 | 9.00 | 10.0 | 90 | 77-116 | 1 | 20 |
| Benzene | 9.34 | 10.0 | 93 | 9.45 | 10.0 | 95 | 81-110 | 1 | 20 |
| 1,2-Dichloroethane | 8.88 | 10.0 | 89 | 8.81 | 10.0 | 88 | 67-125 | 1 | 20 |
| Trichloroethene | 9.33 | 10.0 | 93 | 9.37 | 10.0 | 94 | 78-111 | 0 | 20 |
| 1,2-Dichloropropane | 9.44 | 10.0 | 94 | 9.65 | 10.0 | 97 | 80-112 | 2 | 20 |
| Dibromomethane | 9.43 | 10.0 | 94 | 9.79 | 10.0 | 98 | 75-119 | 4 | 20 |
| Bromodichloromethane | 9.76 | 10.0 | 98 | 9.90 | 10.0 | 99 | 79-123 | 1 | 20 |
| cis-1,3-Dichloropropene | 9.90 | 10.0 | 99 | 10.2 | 10.0 | 102 | 77-115 | 3 | 20 |
| 4-Methyl-2-pentanone (MIBK) | 40.8 | 40.0 | 102 | 41.3 | 40.0 | 103 | 64-132 | 1 | 20 |
| Toluene | 9.71 | 10.0 | 97 | 9.55 | 10.0 | 96 | 79-114 | 2 | 20 |
| trans-1,3-Dichloropropene | 10.2 | 10.0 | 102 | 10.2 | 10.0 | 102 | 71-122 | 0 | 20 |
| 1,1,2-Trichloroethane | 9.67 | 10.0 | 97 | 10.3 | 10.0 | 103 | 74-123 | 6 | 20 |

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200452 |
| **Project:** | Western Ave/#E049-106 | **Date Extracted:** | 05/29/2002 |
| **Sample Matrix:** | Water | **Date Analyzed:** | 05/29/2002 |

## Lab Control Spike/Duplicate Lab Control Spike Summary
## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Extraction Method:** | EPA 5030B | **Units:** | ug/L |
| **Analysis Method:** | 8260B | **Basis:** | NA |
| | | **Level:** | Low |
| | | **Extraction Lot:** | XWG0200681 |

| | Lab Control Sample XWG0200681-1 Lab Control Spike | | | Duplicate Lab Control Sample XWG0200681-2 Duplicate Lab Control Spike | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Analyte Name** | **Result** | **Expected** | **%Rec** | **Result** | **Expected** | **%Rec** | **%Rec Limits** | **RPD** | **RPD Limit** |
| Tetrachloroethene | 9.48 | 10.0 | 95 | 10.1 | 10.0 | 101 | 82-116 | 6 | 20 |
| 2-Hexanone | 41.1 | 40.0 | 103 | 39.2 | 40.0 | 98 | 58-125 | 5 | 20 |
| 1,3-Dichloropropane | 9.84 | 10.0 | 98 | 9.84 | 10.0 | 98 | 77-123 | 0 | 20 |
| Dibromochloromethane | 9.98 | 10.0 | 100 | 10.0 | 10.0 | 100 | 71-125 | 0 | 20 |
| 1,2-Dibromoethane | 9.92 | 10.0 | 99 | 10.2 | 10.0 | 102 | 83-109 | 3 | 20 |
| Chlorobenzene | 9.58 | 10.0 | 96 | 9.48 | 10.0 | 95 | 83-109 | 1 | 20 |
| 1,1,1,2-Tetrachloroethane | 9.79 | 10.0 | 98 | 9.69 | 10.0 | 97 | 82-114 | 1 | 20 |
| Ethylbenzene | 9.68 | 10.0 | 97 | 9.29 | 10.0 | 93 | 84-116 | 4 | 20 |
| m,p-Xylenes | 18.1 | 20.0 | 91 | 17.5 | 20.0 | 87 | 83-117 | 4 | 20 |
| o-Xylene | 8.82 | 10.0 | 88 | 8.57 | 10.0 | 86 | 78-120 | 3 | 20 |
| Styrene | 8.90 | 10.0 | 89 | 8.57 | 10.0 | 86 | 80-122 | 4 | 20 |
| Isopropylbenzene | 8.79 | 10.0 | 88 | 8.37 | 10.0 | 84 | 83-119 | 5 | 20 |
| Bromobenzene | 10.4 | 10.0 | 104 | 10.3 | 10.0 | 103 | 82-121 | 1 | 20 |
| 1,2,3-Trichloropropane | 9.59 | 10.0 | 96 | 9.87 | 10.0 | 99 | 74-124 | 3 | 20 |
| n-Propylbenzene | 8.90 | 10.0 | 89 | 8.63 | 10.0 | 86 | 83-121 | 3 | 20 |
| 2-Chlorotoluene | 9.05 | 10.0 | 91 | 8.84 | 10.0 | 88 | 83-119 | 2 | 20 |
| 4-Chlorotoluene | 10.3 | 10.0 | 103 | 9.96 | 10.0 | 100 | 82-118 | 4 | 20 |
| 1,3,5-Trimethylbenzene | 8.85 | 10.0 | 89 | 8.90 | 10.0 | 89 | 77-127 | 1 | 20 |
| tert-Butylbenzene | 9.39 | 10.0 | 94 | 9.00 | 10.0 | 90 | 83-120 | 4 | 20 |
| 1,2,4-Trimethylbenzene | 8.99 | 10.0 | 90 | 8.88 | 10.0 | 89 | 74-123 | 1 | 20 |
| sec-Butylbenzene | 9.08 | 10.0 | 91 | 8.66 | 10.0 | 87 | 83-121 | 5 | 20 |
| 1,3-Dichlorobenzene | 10.7 | 10.0 | 107 | 10.4 | 10.0 | 104 | 82-117 | 3 | 20 |
| 4-Isopropyltoluene | 9.22 | 10.0 | 92 | 8.95 | 10.0 | 90 | 84-130 | 3 | 20 |
| Bromoform | 9.55 | 10.0 | 96 | 9.77 | 10.0 | 98 | 74-106 | 2 | 20 |
| 1,1,2,2-Tetrachloroethane | 9.87 | 10.0 | 99 | 10.0 | 10.0 | 100 | 77-114 | 1 | 20 |
| 1,4-Dichlorobenzene | 9.57 | 10.0 | 96 | 9.59 | 10.0 | 96 | 79-114 | 0 | 20 |
| 1,2-Dichlorobenzene | 10.3 | 10.0 | 103 | 10.2 | 10.0 | 102 | 80-116 | 1 | 20 |
| n-Butylbenzene | 9.62 | 10.0 | 96 | 9.68 | 10.0 | 97 | 77-122 | 1 | 20 |
| 1,2-Dibromo-3-chloropropane | 11.6 | 10.0 | 116 | 10.5 | 10.0 | 105 | 59-121 | 10 | 20 |
| 1,2,4-Trichlorobenzene | 9.42 | 10.0 | 94 | 9.88 | 10.0 | 99 | 69-124 | 5 | 20 |
| Hexachlorobutadiene | 9.72 | 10.0 | 97 | 9.72 | 10.0 | 97 | 71-126 | 0 | 20 |
| Naphthalene | 9.89 | 10.0 | 99 | 10.1 | 10.0 | 101 | 63-134 | 2 | 20 |
| 1,2,3-Trichlorobenzene | 9.98 | 10.0 | 100 | 10.4 | 10.0 | 104 | 70-126 | 4 | 20 |

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200452 |
| **Project:** | Western Ave/#E049-106 | **Date Extracted:** | 05/29/2002 |
| **Sample Matrix:** | Water | **Date Analyzed:** | 05/29/2002 |
| | | **Time Analyzed:** | 13:51 |

## Method Blank Summary
## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | Method Blank | **File ID:** | J:\MS03\MAY02\MAY2902\29MAY010.D |
| **Lab Code:** | XWG0200681-3 | **Instrument ID:** | MS03 |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | **Extraction Lot:** | XWG0200681 |

This Method Blank applies to the following analyses:

| Sample Name | Lab Code | File ID | Date Analyzed | Time Analyzed |
|---|---|---|---|---|
| Lab Control Sample | XWG0200681-1 | J:\MS03\MAY02\MAY2902\29MAY006.D | 05/29/02 | 11:49 |
| Duplicate Lab Control Sample | XWG0200681-2 | J:\MS03\MAY02\MAY2902\29MAY007.D | 05/29/02 | 12:19 |
| COG-MW3 | X2200452-001 | J:\MS03\MAY02\MAY2902\29MAY011.D | 05/29/02 | 14:21 |
| COG-MW3MS | XWG0200681-4 | J:\MS03\MAY02\MAY2902\29MAY020.D | 05/29/02 | 19:00 |
| COG-MW3DMS | XWG0200681-5 | J:\MS03\MAY02\MAY2902\29MAY021.D | 05/29/02 | 19:31 |

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

**Client:** GeoTrans
**Project:** Western Ave/#E049-106
**Sample Matrix:** Water

**Service Request:** X2200452

## Lab Control Sample/Duplicate Lab Control Sample Summary
## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | Lab Control Sample | **Sample Name:** | Duplicate Lab Control Sample |
| **Lab Code:** | XWG0200681-1 | **Lab Code:** | XWG0200681-2 |
| **File ID:** | J:\MS03\MAY02\MAY2902\29MAY006.D | **File ID:** | J:\MS03\MAY02\MAY2902\29MAY007.D |
| **Instrument ID:** | MS03 | **Instrument ID:** | MS03 |
| **Date Extracted:** | 05/29/2002 | **Date Extracted:** | 05/29/2002 |
| **Date Analyzed:** | 05/29/2002 | **Date Analyzed:** | 05/29/2002 |
| **Time Analyzed:** | 11:49 | **Time Analyzed:** | 12:19 |

| | | | |
|---|---|---|---|
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | **Extraction Lot:** | XWG0200681 |

These Lab Control Samples apply to the following analyses:

| Sample Name | Lab Code | File ID | Date Analyzed | Time Analyzed |
|---|---|---|---|---|
| Method Blank | XWG0200681-3 | J:\MS03\MAY02\MAY2902\29MAY010.D | 05/29/02 | 13:51 |
| COG-MW3 | X2200452-001 | J:\MS03\MAY02\MAY2902\29MAY011.D | 05/29/02 | 14:21 |
| COG-MW3MS | XWG0200681-4 | J:\MS03\MAY02\MAY2902\29MAY020.D | 05/29/02 | 19:00 |
| COG-MW3DMS | XWG0200681-5 | J:\MS03\MAY02\MAY2902\29MAY021.D | 05/29/02 | 19:31 |

# Organic Analysis:
# Volatile Organic Compounds

## Validation Package

## Raw Data

# COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200452 |
| **Project:** | Western Ave/#E049-106 | **Date Collected:** | 05/15/2002 |
| **Sample Matrix:** | Water | **Date Received:** | 05/16/2002 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | COG-MW3 | **Units:** | ug/L |
| **Lab Code:** | X2200452-001 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | ND | U | 3.0 | 1 | 05/29/02 | 05/29/02 | |
| Chloromethane | ND | U | 2.0 | 1 | 05/29/02 | 05/29/02 | |
| Vinyl Chloride | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Bromomethane | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Chloroethane | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Trichlorofluoromethane | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,1,2-Trichlorotrifluoroethane | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,1-Dichloroethene | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Acetone | ND | U | 10 | 1 | 05/29/02 | 05/29/02 | |
| Iodomethane | ND | U | 2.0 | 1 | 05/29/02 | 05/29/02 | |
| Carbon Disulfide | ND | U | 2.0 | 1 | 05/29/02 | 05/29/02 | |
| Methylene Chloride | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Methyl tert-Butyl Ether | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| trans-1,2-Dichloroethene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,1-Dichloroethane | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Vinyl Acetate | ND | U | 3.0 | 1 | 05/29/02 | 05/29/02 | |
| 2,2-Dichloropropane | ND | U | 2.0 | 1 | 05/29/02 | 05/29/02 | |
| 2-Butanone (MEK) | ND | U | 5.0 | 1 | 05/29/02 | 05/29/02 | |
| cis-1,2-Dichloroethene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Bromochloromethane | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Chloroform | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,1,1-Trichloroethane | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Carbon Tetrachloride | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,1-Dichloropropene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Benzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2-Dichloroethane | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Trichloroethene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2-Dichloropropane | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Dibromomethane | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Bromodichloromethane | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| cis-1,3-Dichloropropene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 4-Methyl-2-pentanone (MIBK) | ND | U | 5.0 | 1 | 05/29/02 | 05/29/02 | |
| Toluene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |

Comments:

# COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200452 |
| **Project:** | Western Ave/#E049-106 | **Date Collected:** | 05/15/2002 |
| **Sample Matrix:** | Water | **Date Received:** | 05/16/2002 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | COG-MW3 | **Units:** | ug/L |
| **Lab Code:** | X2200452-001 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| trans-1,3-Dichloropropene | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,1,2-Trichloroethane | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| **Tetrachloroethene** | **14** | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 2-Hexanone | ND | U | 5.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,3-Dichloropropane | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Dibromochloromethane | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2-Dibromoethane | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Chlorobenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,1,1,2-Tetrachloroethane | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Ethylbenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| m,p-Xylenes | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| o-Xylene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Styrene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Isopropylbenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Bromobenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2,3-Trichloropropane | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| n-Propylbenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 2-Chlorotoluene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 4-Chlorotoluene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,3,5-Trimethylbenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| tert-Butylbenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2,4-Trimethylbenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| sec-Butylbenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,3-Dichlorobenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 4-Isopropyltoluene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Bromoform | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,1,2,2-Tetrachloroethane | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,4-Dichlorobenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2-Dichlorobenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| n-Butylbenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2-Dibromo-3-chloropropane | ND | U | 2.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,2,4-Trichlorobenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Hexachlorobutadiene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200452 |
| **Project:** | Western Ave/#E049-106 | **Date Collected:** | 05/15/2002 |
| **Sample Matrix:** | Water | **Date Received:** | 05/16/2002 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | COG-MW3 | **Units:** | ug/L |
| **Lab Code:** | X2200452-001 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| Naphthalene | ND | U | 3.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,2,3-Trichlorobenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |

| Surrogate Name | %Rec | Control Limits | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|
| Dibromofluoromethane | 94 | 84-113 | 05/29/02 | |
| Toluene-d8 | 100 | 68-126 | 05/29/02 | |
| 4-Bromofluorobenzene | 97 | 79-113 | 05/29/02 | |

mments:

# Quantitation Report

| | | | | | |
|---|---|---|---|---|---|
| Bottle ID: | | Tier: | IV | Matrix: | WATER |
| Prod Code: | 8260 | Collect Date: | 05/15/2002 | Receive Date: | 05/16/2002 |

| | | | | | |
|---|---|---|---|---|---|
| Analysis Lot: | XWG0200680 | Prep Lot: | XWG0200681 | Report Group: | X2200452 |
| Analysis Method: | 8260B | Prep Method: | EPA 5030B | | |
| Prep Ref: | 12579 | Prep Date: | 05/29/2002 | | |

| | | | |
|---|---|---|---|
| Quant Method: | J:\MS03\METHODS\82600528.M | Calibration ID: | CAL292 |
| Title: | Volatile Organic Compounds | Report List ID: | LJ129 |
| Tune Ref: | J:\MS03\MAY02\MAY2902\29MAY003.D | Method ID: | MJ103 |
| MB Ref: | J:\MS03\MAY02\MAY2902\29MAY010.D | Quant based on Report List | |

| | | | | | |
|---|---|---|---|---|---|
| Data File: | J:\MS03\MAY02\MAY2902\29MAY011.D | | | Instrument: | MS03 |
| Acqu Date: | 05/29/2002 14:21 | Quant Date: | 05/29/2002 14:56 | Vial: | 9 |
| Run Type: | SMPL | | | Dilution: | 1.0 |
| Lab ID: | X2200452-001 | | | Soln Conc. Units: | ug/L |

## *Internal Standard Compounds*

| IS Ref | Parameter Name | RT | Quant Mass | Response | Solution Conc | Area Criteria |
|---|---|---|---|---|---|---|
| 1 | 1,4-Difluorobenzene | 12.48 | 114 | 263416 | 20.00 | OK |
| 2 | Chlorobenzene-d5 | 16.20 | 117 | 209426 | 20.00 | OK |
| 3 | 1,4-Dichlorobenzene-d4 | 18.66 | 152 | 86987 | 20.00 | OK |

## *Surrogate Compounds*

| IS Ref | Parameter Name | RT | RT Dev | RRT Dev | Quant Mass | Response | Solution Conc | %Rec | %Rec Limits | Rpt? |
|---|---|---|---|---|---|---|---|---|---|---|
| | Dibromofluoromethane | 11.41 | 0.00 | 0.00 | 113 | 103196 | 18.84 | 94 | 84-113 | OK |
| 1 | Toluene-d8 | 14.50 | -0.01 | 0.00 | 98 | 258476 | 19.95 | 100 | 68-126 | OK |
| 2 | 4-Bromofluorobenzene | 17.42 | 0.00 | 0.00 | 95 | 88558 | 19.30 | 97 | 79-113 | OK |

## *Target Compounds*

Final Conc. Units: ug/L

| IS Ref | Parameter Name | RT | RT Dev | RRT Dev | QuantMass | Response | Solution Conc | Final Conc | Q | Rpt? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Dichlorodifluoromethane | 4.58 | | 0.00 | 85 | 352 | 0.09 | 0.90 | U | |
| 1 | Chloromethane | 5.00 | -0.09 | -0.01 | 50 | 606 | 0.08 | 2.0 | U | |
| 1 | Vinyl Chloride | 5.26 | -0.09 | -0.01 | 62 | 474 | 0.06 | 0.50 | U | |
| 1 | Bromomethane | 6.19 | 0.02 | 0.00 | 94 | 628 | 0.09 | 0.70 | U | |
| 1 | Chloroethane | | | | 64 | 0 | | 0.80 | U | |
| 1 | Trichlorofluoromethane | | | | 101 | 0 | | 0.40 | U | |
| 1 | 1,1,2-Trichlorotrifluoroethane | | | | 101 | 0 | | 0.50 | U | |
| 1 | 1,1-Dichloroethene | 7.94 | 0.05 | 0.00 | 96 | 1071 | 0.21 | 0.30 | U | |
| 1 | Acetone | | | | 58 | 654 | | 8.0 | U | |
| 1 | Iodomethane | | | | 142 | 0 | | 0.60 | U | |
| 1 | Carbon Disulfide | 8.33 | | 0.00 | 76 | 725 | 0.04 | 0.40 | U | |
| 1 | Methylene Chloride | | | | 84 | 0 | | 0.80 | U | |
| 1 | Methyl tert-Butyl Ether | 9.09 | | 0.00 | 73 | 2707 | 0.25 | 0.80 | U | |
| 1 | trans-1,2-Dichloroethene | 9.09 | -0.07 | -0.01 | 96 | 1077 | 0.17 | 0.30 | U | |
| 1 | 1,1-Dichloroethane | 9.83 | -0.05 | 0.00 | 63 | 488 | 0.04 | 0.20 | U | |

Selected at or above MDL
Analyte detected above MDL, but below MRL
... above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

| | | | | | |
|---|---|---|---|---|---|
| Data File: | J:\MS03\MAY02\MAY2902\29MAY011.D | | | Instrument: | MS03 |
| Acqu Date: | 05/29/2002 14:21 | Quant Date: | 05/29/2002 14:56 | Vial: | 9 |
| Run Type: | SMPL | | | Dilution: | 1.0 |
| Lab ID: | X2200452-001 | | | Soln Conc. Units: | ug/L |

*Target Compounds* Final Conc. Units: ug/L

| S ef | Parameter Name | RT | RT Dev | RRT Dev | QuantM ass | Response | Solution Conc | Final Conc | Q | Rpt? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Vinyl Acetate | 9.84 | | 0.00 | 43 | 432 | 0.08 | 3.0 | U | |
| 1 | 2,2-Dichloropropane | | | | 77 | 0 | | 0.70 | U | |
| 1 | 2-Butanone (MEK) | | | | 72 | 417 | | 3.0 | U | |
| 1 | cis-1,2-Dichloroethene | 10.72 | -0.03 | 0.00 | 96 | 444 | 0.06 | 0.20 | U | |
| 1 | Bromochloromethane | | | | 128 | 0 | | 0.40 | U | |
| 1 | Chloroform | 11.16 | -0.01 | 0.00 | 83 | 496 | 0.04 | 0.60 | U | |
| 1 | 1,1,1-Trichloroethane | | | | 97 | 0 | | 0.40 | U | |
| 1 | Carbon Tetrachloride | | | | 117 | 0 | | 0.50 | U | |
| 1 | 1,1-Dichloropropene | 11.68 | | 0.00 | 75 | 317 | 0.04 | 0.40 | U | |
| 1 | Benzene | 12.10 | 0.11 | 0.01 | 78 | 514 | 0.02 | 0.30 | U | |
| 1 | 1,2-Dichloroethane | 12.05 | -0.03 | 0.00 | 62 | 620 | 0.08 | 0.50 | U | |
| 1 | Trichloroethene | 12.87 | | 0.00 | 95 | 581 | 0.10 | 0.30 | U | |
| 1 | 1,2-Dichloropropane | 13.28 | 0.02 | 0.00 | 63 | 339 | 0.06 | 0.40 | U | |
| 1 | Dibromomethane | 13.43 | -0.02 | 0.00 | 93 | 483 | 0.15 | 0.50 | U | |
| 1 | Bromodichloromethane | | | | 83 | 0 | | 0.40 | U | |
| 1 | cis-1,3-Dichloropropene | | | | 75 | 0 | | 0.40 | U | |
| 1 | 4-Methyl-2-pentanone (MIBK) | | | | 100 | 0 | | 2.0 | U | |
| 1 | Toluene | | | | 92 | 0 | | 0.20 | U | |
| 1 | trans-1,3-Dichloropropene | 14.79 | -0.09 | -0.01 | 75 | 323 | 0.05 | 0.40 | U | |
| 1 | 1,1,2-Trichloroethane | | | | 83 | 0 | | 0.50 | U | |
| 1 | Tetrachloroethene | 15.23 | | 0.00 | 164 | 48665 | 14.13 | 14 | | |
| | 2-Hexanone | | | | 43 | 0d | | 2.0 | U | |
| 1 | 1,3-Dichloropropane | | | | 76 | 0 | | 0.40 | U | |
| 1 | Dibromochloromethane | | | | 129 | 0 | | 0.40 | U | |
| 1 | 1,2-Dibromoethane | | | | 107 | 0 | | 0.30 | U | |
| 2 | Chlorobenzene | | | | 112 | 0 | | 0.090 | U | |
| 2 | 1,1,1,2-Tetrachloroethane | 16.36 | 0.06 | 0.00 | 131 | 326 | 0.08 | 0.30 | U | |
| 2 | Ethylbenzene | 16.20 | -0.08 | 0.00 | 91 | 833 | 0.04 | 0.20 | U | |
| 2 | m,p-Xylenes | | | | 106 | 0 | | 0.60 | U | |
| 2 | o-Xylene | | | | 106 | 0 | | 0.30 | U | |
| 2 | Styrene | | | | 104 | 0 | | 0.40 | U | |
| 2 | Isopropylbenzene | | | | 105 | 0 | | 0.40 | U | |
| 2 | Bromobenzene | | | | 156 | 0 | | 0.20 | U | |
| 2 | 1,2,3-Trichloropropane | 17.59 | -0.03 | 0.00 | 75 | 309 | 0.09 | 0.60 | U | |
| 2 | n-Propylbenzene | | | | 91 | 0d | | 0.40 | U | |
| 2 | 2-Chlorotoluene | | | | 91 | 0d | | 0.30 | U | |
| 2 | 4-Chlorotoluene | 17.83 | -0.06 | 0.00 | 91 | 467 | 0.04 | 0.30 | U | |
| 2 | 1,3,5-Trimethylbenzene | | | | 105 | 0 | | 0.30 | U | |
| 2 | tert-Butylbenzene | | | | 119 | 0 | | 0.40 | U | |
| 2 | 1,2,4-Trimethylbenzene | | | | 105 | 0 | | 0.30 | U | |
| 2 | sec-Butylbenzene | | | | 105 | 0d | | 0.40 | U | |
| 2 | 1,3-Dichlorobenzene | | | | 146 | 0 | | 0.30 | U | |

detected at or above MDL
lyte detected above MDL, but below MRL
above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

| | | | | | |
|---|---|---|---|---|---|
| Data File: | J:\MS03\MAY02\MAY2902\29MAY011.D | | | Instrument: | MS03 |
| Acqu Date: | 05/29/2002 14:21 | Quant Date: | 05/29/2002 14:56 | Vial: | 9 |
| Run Type: | SMPL | | | Dilution: | 1.0 |
| Lab ID: | X2200452-001 | | | Soln Conc. Units: | ug/L |

*Target Compounds* Final Conc. Units: ug/L

| | Parameter Name | RT | RT Dev | RRT Dev | QuantMass | Response | Solution Conc | Final Conc | Q | Rpt? |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 4-Isopropyltoluene | | | | 119 | 0d | | 0.40 | U | |
| 3 | Bromoform | | | | 173 | 0 | | 0.40 | U | |
| 3 | 1,1,2,2-Tetrachloroethane | | | | 83 | 0 | | 0.30 | U | |
| 3 | 1,4-Dichlorobenzene | | | | 146 | 0 | | 0.20 | U | |
| 3 | 1,2-Dichlorobenzene | | | | 146 | 0 | | 0.20 | U | |
| 3 | n-Butylbenzene | 18.94 | | 0.00 | 91 | 631 | 0.05 | 0.40 | U | |
| 3 | 1,2-Dibromo-3-chloropropane | | | | 75 | 0d | | 0.90 | U | |
| 3 | 1,2,4-Trichlorobenzene | | | | 180 | 0 | | 0.40 | U | |
| 3 | Hexachlorobutadiene | | | | 225 | 0 | | 0.40 | U | |
| 3 | Naphthalene | | | | 128 | 0 | | 0.90 | U | |
| 3 | 1,2,3-Trichlorobenzene | | | | 180 | 0 | | 0.40 | U | |

| | | | |
|---|---|---|---|
| Prep Amount: | 10 ml | Dilution: | 1.0 |
| Prep Final Vol: | 10 ml | Unit Factor: | 1 |

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

detected at or above MDL
yte detected above MDL, but below MRL
above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

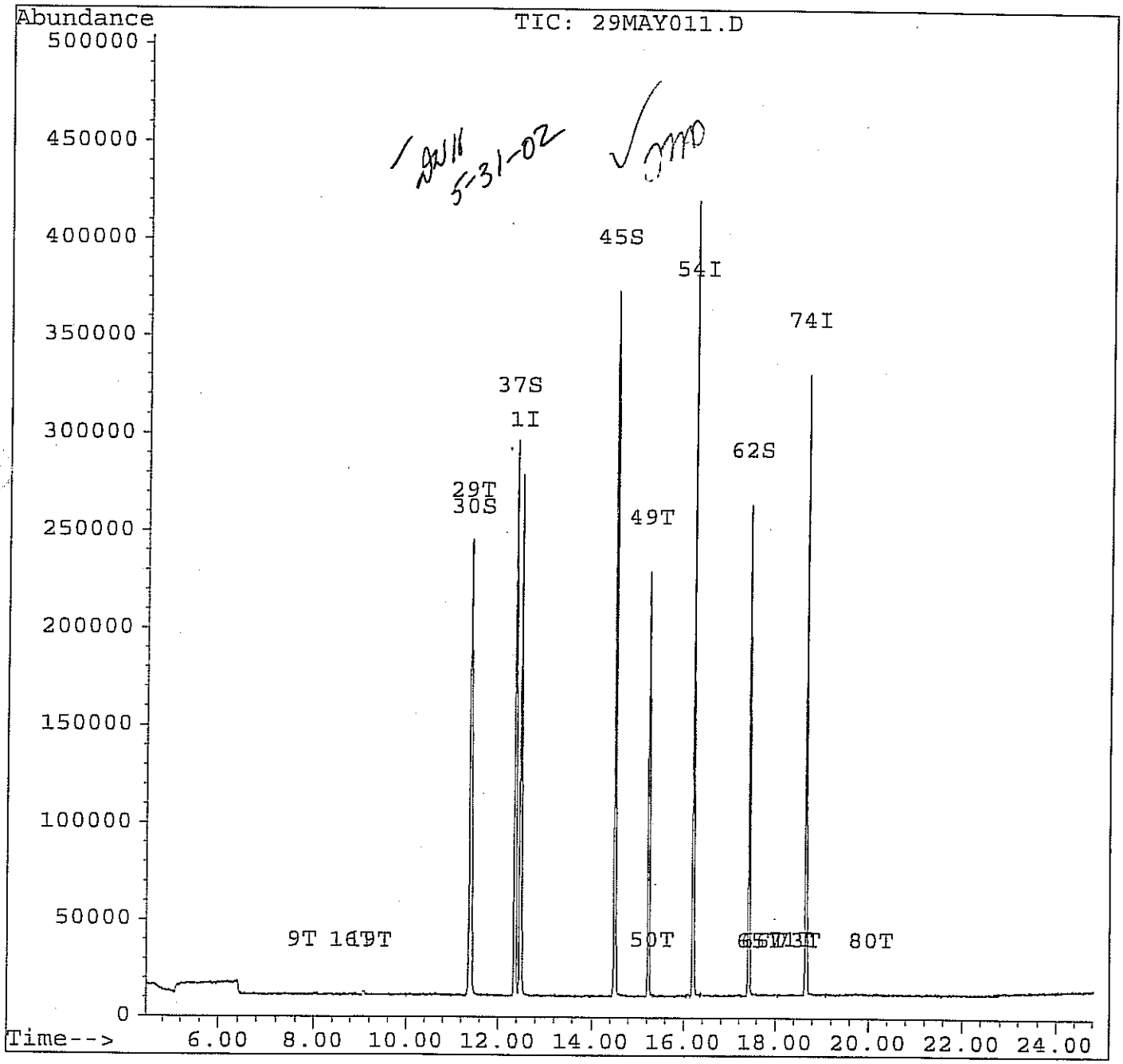
D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

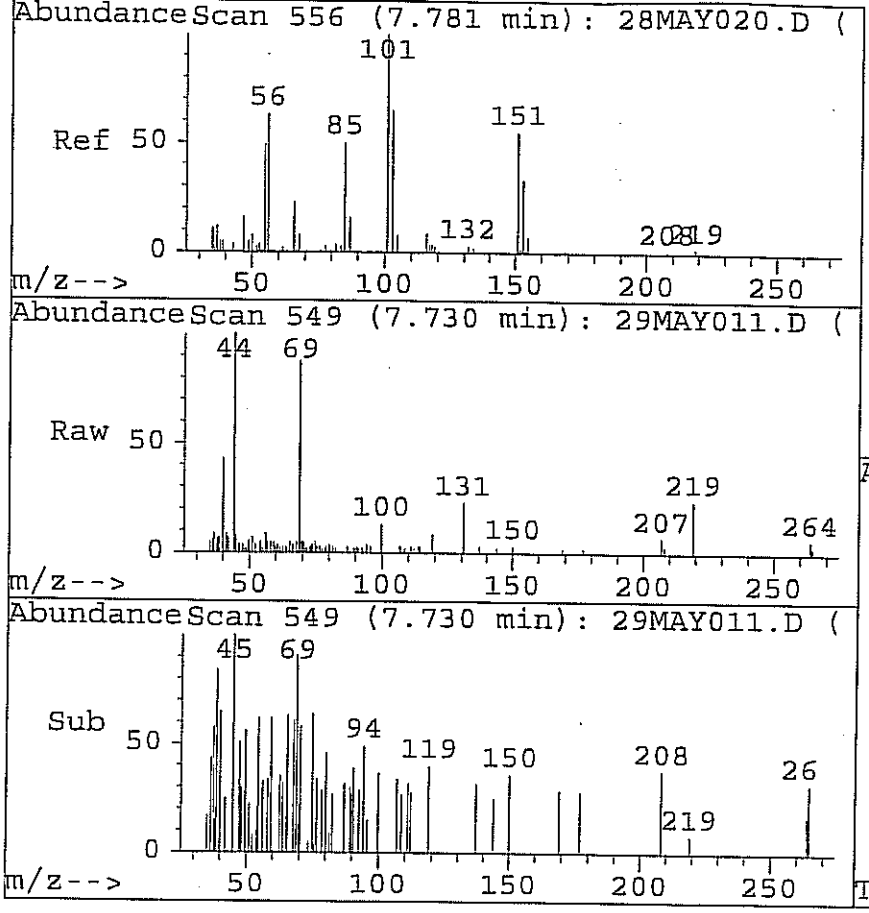
*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : J:\MS03\MAY02\MAY2902\29MAY011.D
Acq On : 29 May 102 2:21 pm
Sample : x2200452-001 x1 water
Misc :
Quant Time: May 29 14:55 19102

Vial: 9
Operator: dnh
Inst : MS03
Multiplr: 1.00

Method : J:\MS03\METHODS\82600528.M
Title : Volatiles by GC/MS
Last Update : Wed May 29 12:10:58 2002
Response via : Multiple Level Calibration

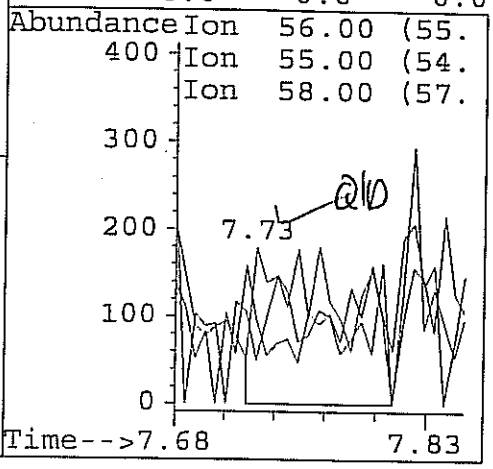


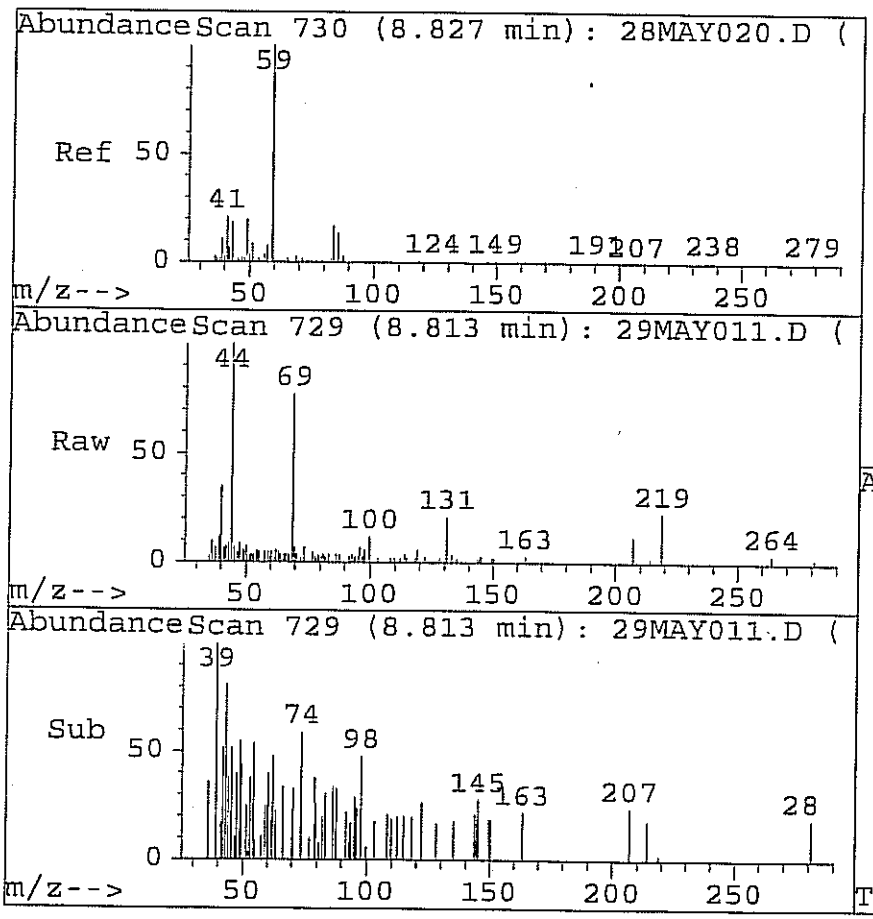



#9
Acrolein
Concen: 2.07 ug/L
RT: 7.73 min Scan# 549
Delta R.T. -0.05 min
Lab File: 29MAY011.D
Acq: 29 May 102 2:21 pm

Tgt Ion:56 Resp: 504

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 56 | 100 | | |
| 55 | 27.9 | 59.4 | 99.4# |
| 58 | 19.0 | 0.0 | 29.8 |
| 0 | 0.0 | 0.0 | 0.0 |

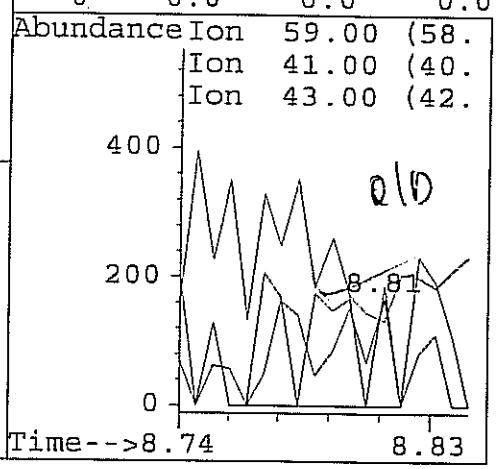


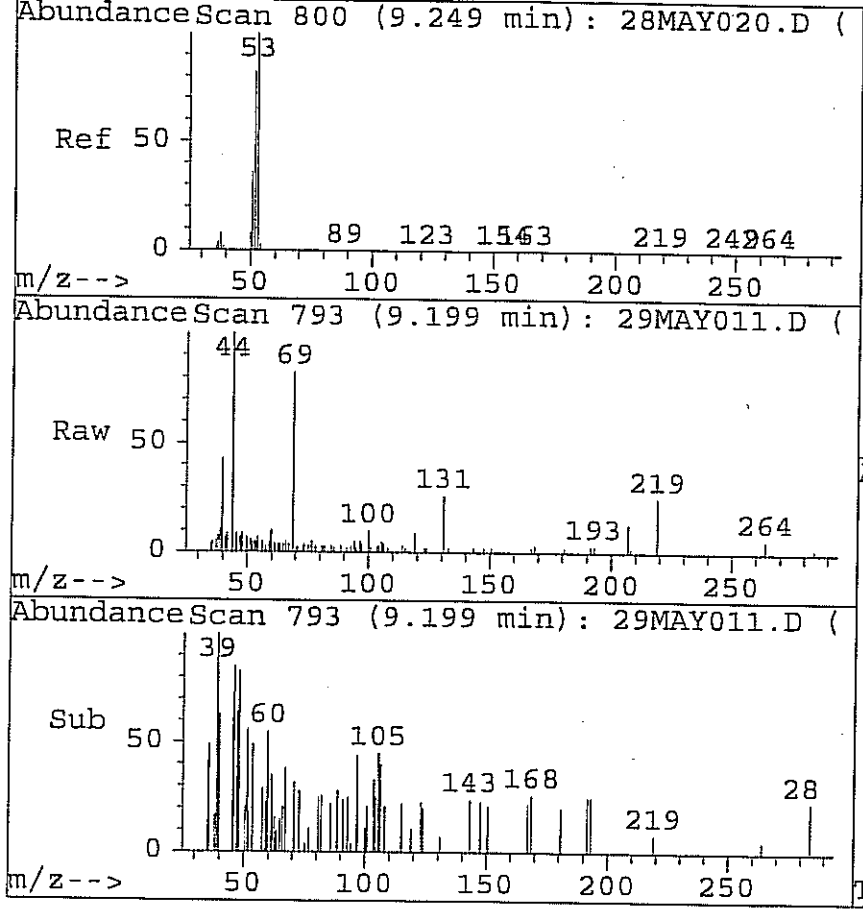




#16
t-Butanol
Concen: 1.69 ug/L
RT: 8.81 min Scan# 729
Delta R.T. -0.01 min
Lab File: 29MAY011.D
Acq: 29 May 102 2:21 pm

Tgt Ion:59 Resp: 313

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 59 | 100 | | |
| 41 | 0.0 | 6.7 | 46.7# |
| 43 | 112.7 | 0.0 | 36.4# |
| 0 | 0.0 | 0.0 | 0.0 |

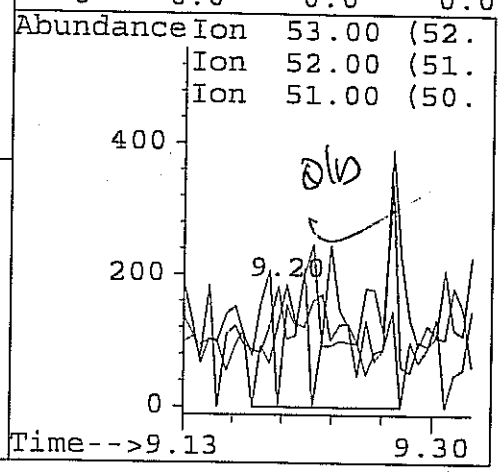


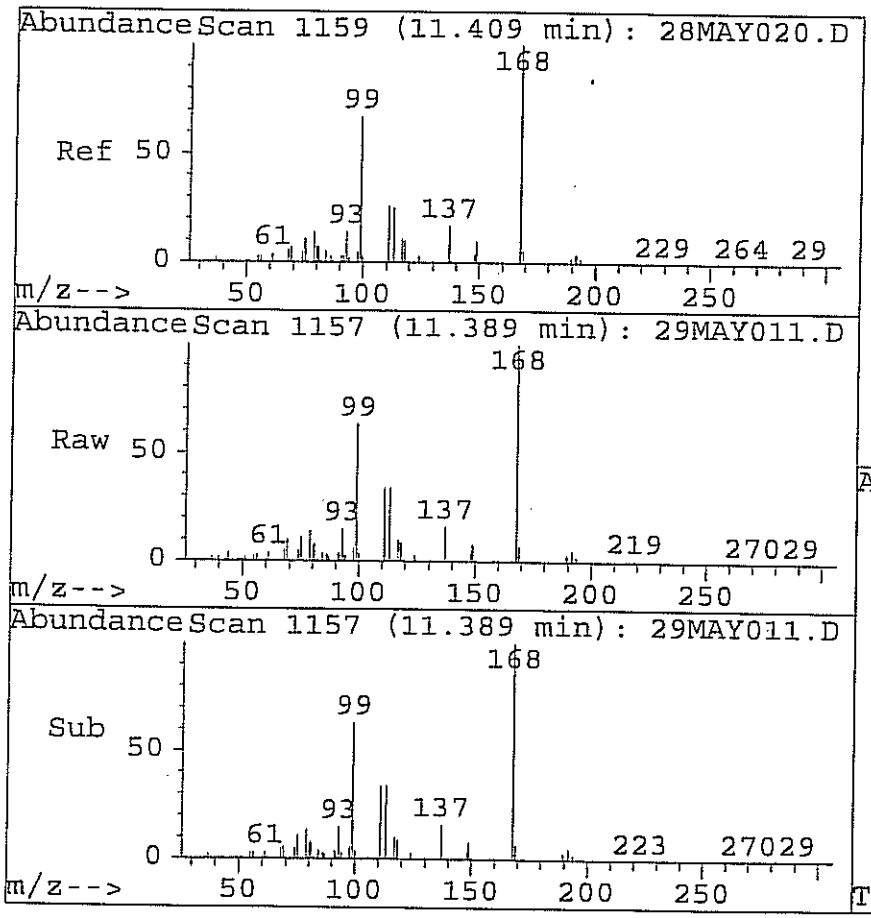



#19
Acrylonitrile
Concen: 0.72 ug/L
RT: 9.20 min Scan# 793
Delta R.T. -0.05 min
Lab File: 29MAY011.D
Acq: 29 May 102 2:21 pm

Tgt Ion:53 Resp: 671

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 53 | 100 | | |
| 52 | 22.2 | 64.0 | 104.0# |
| 51 | 41.1 | 16.1 | 56.1 |
| 0 | 0.0 | 0.0 | 0.0 |

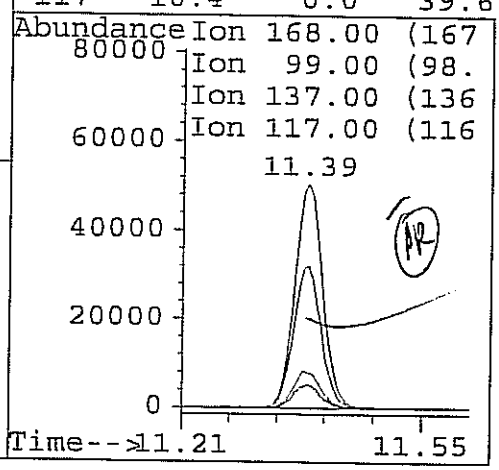


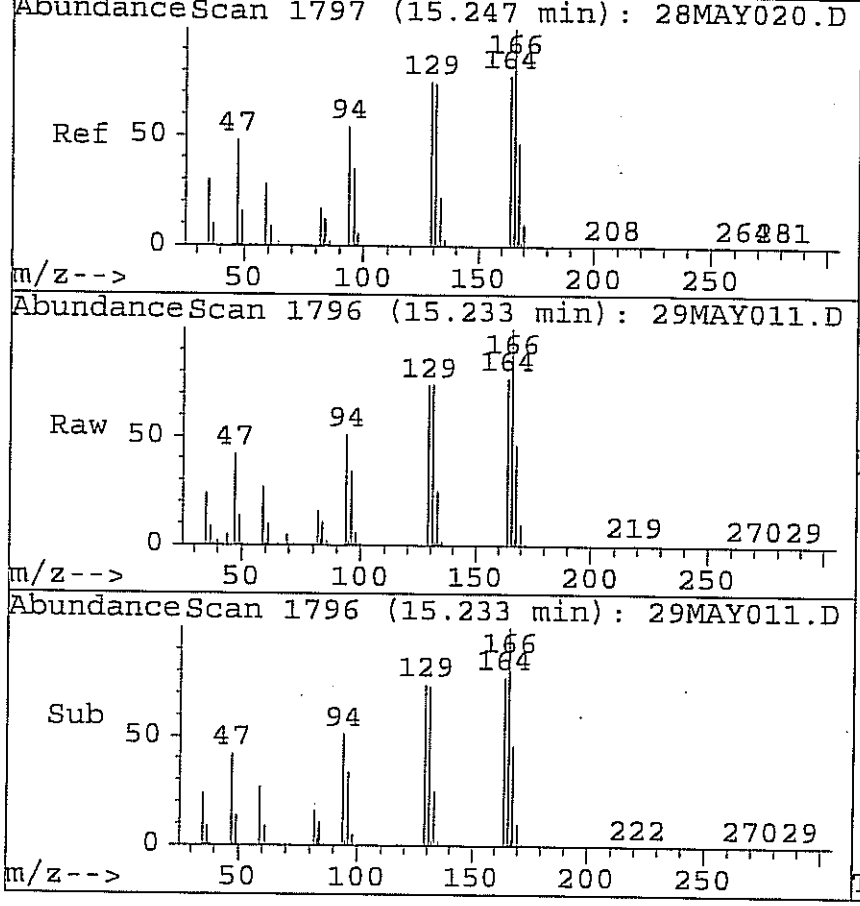




#29
Pentafluorobenzene
Concen: 20.45 ug/L
RT: 11.39 min Scan# 1157
Delta R.T. -0.02 min
Lab File: 29MAY011.D
Acq: 29 May 102 2:21 pm

Tgt Ion:168 Resp: 137450

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 168 | 100 | | |
| 99 | 63.2 | 34.2 | 94.2 |
| 137 | 15.7 | 0.0 | 45.9 |
| 117 | 10.4 | 0.0 | 39.6 |

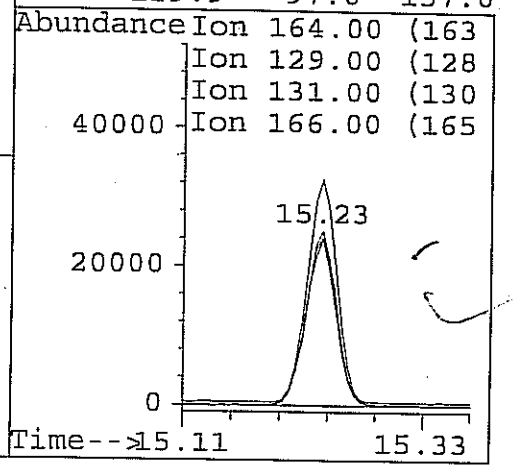


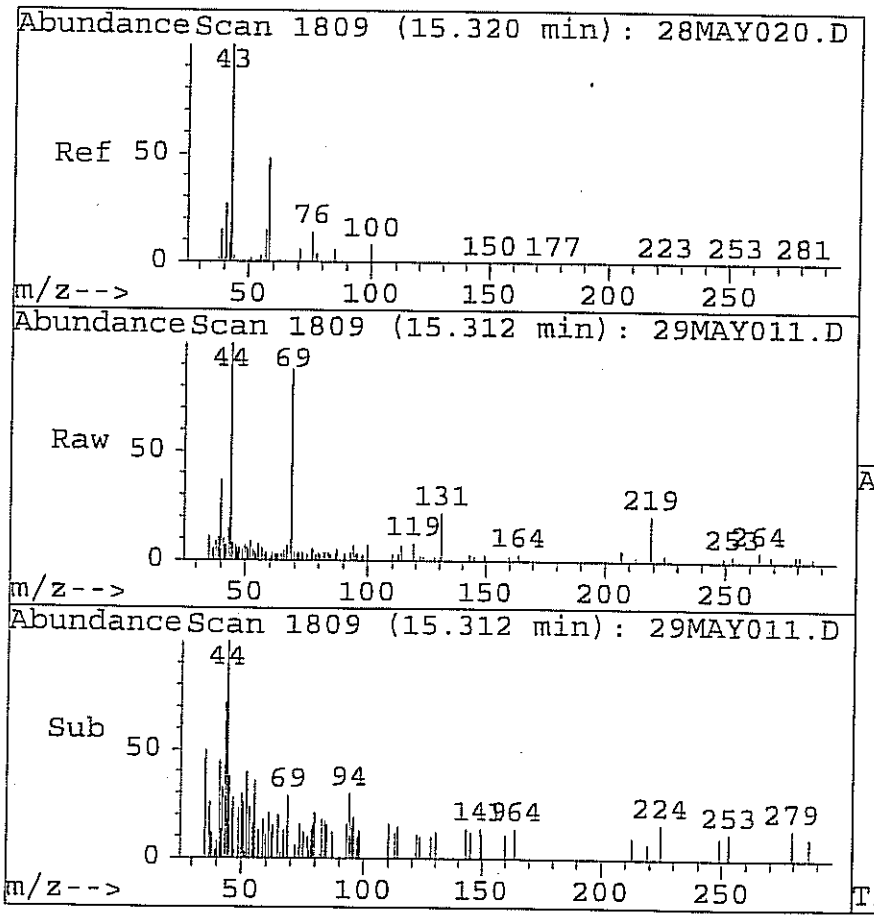



#49
Tetrachloroethene
Concen: 14.13 ug/L
RT: 15.23 min Scan# 1796
Delta R.T. -0.01 min
Lab File: 29MAY011.D
Acq: 29 May 102 2:21 pm

Tgt Ion:164 Resp: 48665

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 164 | 100 | | |
| 129 | 96.1 | 63.6 | 123.6 |
| 131 | 94.1 | 60.1 | 120.1 |
| 166 | 129.9 | 97.0 | 157.0 |

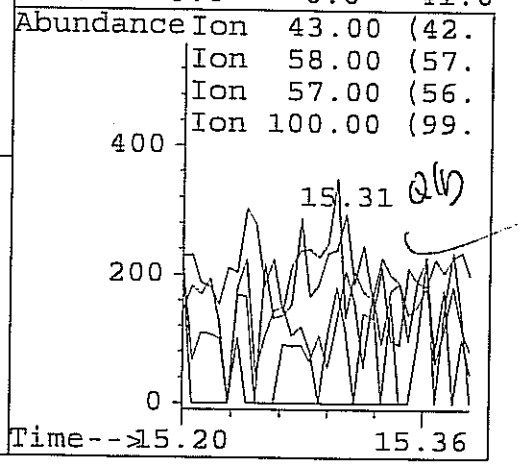


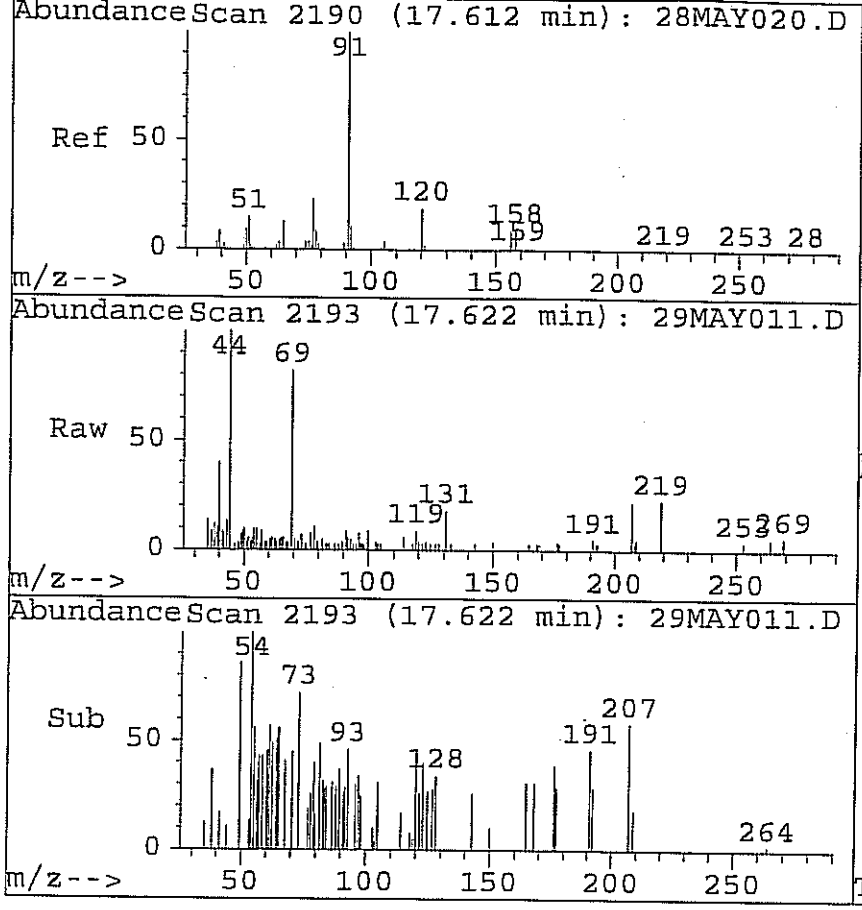




#50
2-Hexanone
Concen: 0.58 ug/L
RT: 15.31 min Scan# 1809
Delta R.T. -0.01 min
Lab File: 29MAY011.D
Acq: 29 May 102 2:21 pm

Tgt Ion:43 Resp: 1007

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 43 | 100 | | |
| 58 | 70.1 | 23.3 | 83.3 |
| 57 | 21.4 | 0.0 | 46.5 |
| 100 | 0.0 | 0.0 | 41.0 |

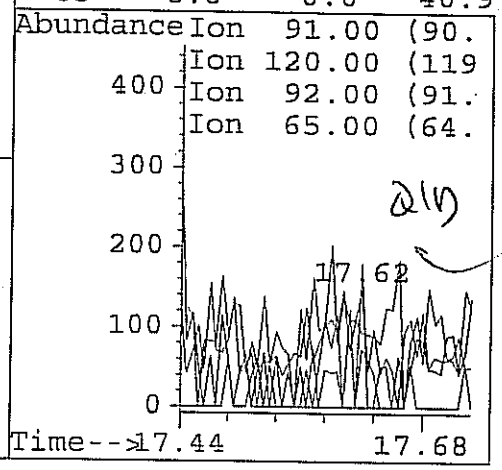


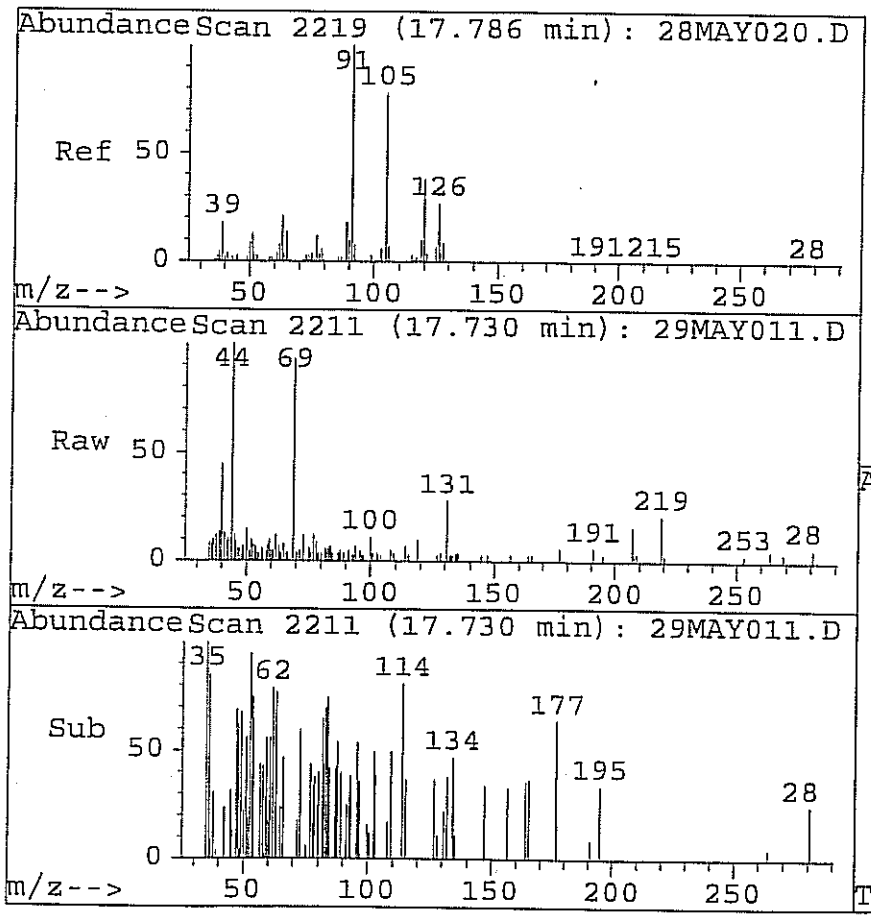



#65
n-Propylbenzene
Concen: 1.31 ug/L
RT: 17.62 min Scan# 2193
Delta R.T. 0.01 min
Lab File: 29MAY011.D
Acq: 29 May 102 2:21 pm

Tgt Ion:91 Resp: 644

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 91 | 100 | | |
| 120 | 49.7 | 0.0 | 49.6# |
| 92 | 78.2 | 0.0 | 40.8# |
| 65 | 8.8 | 0.0 | 40.9 |

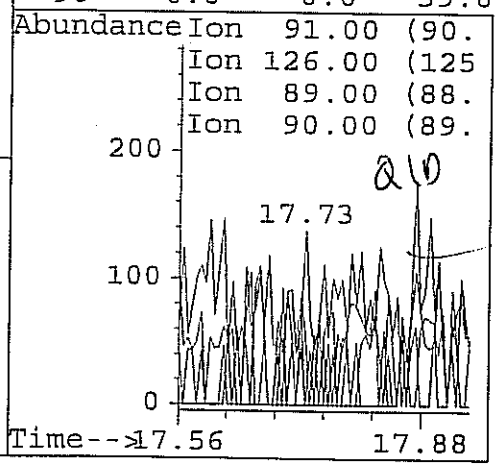


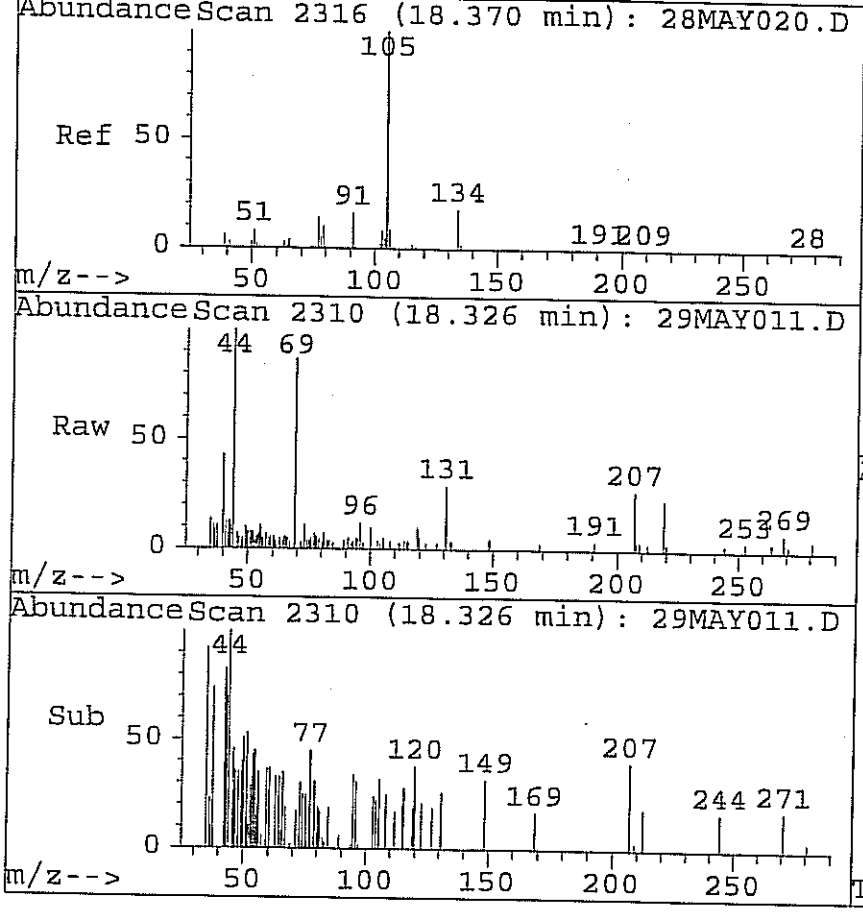




#66
2-Chlorotoluene
Concen: 1.16 ug/L
RT: 17.73 min Scan# 2211
Delta R.T. -0.06 min
Lab File: 29MAY011.D
Acq: 29 May 102 2:21 pm

Tgt Ion:91 Resp: 874

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 91 | 100 | | |
| 126 | 0.0 | 0.0 | 57.5 |
| 89 | 38.7 | 0.0 | 47.3 |
| 90 | 0.0 | 0.0 | 39.6 |

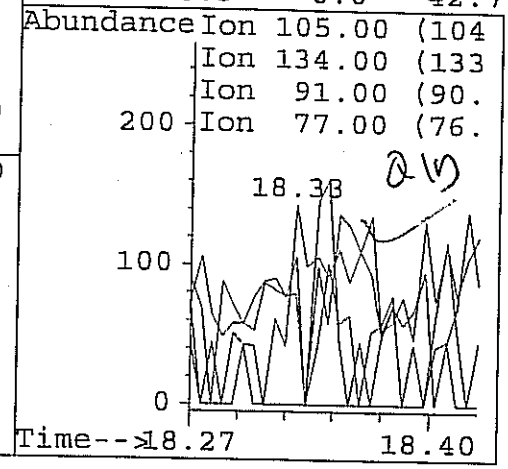


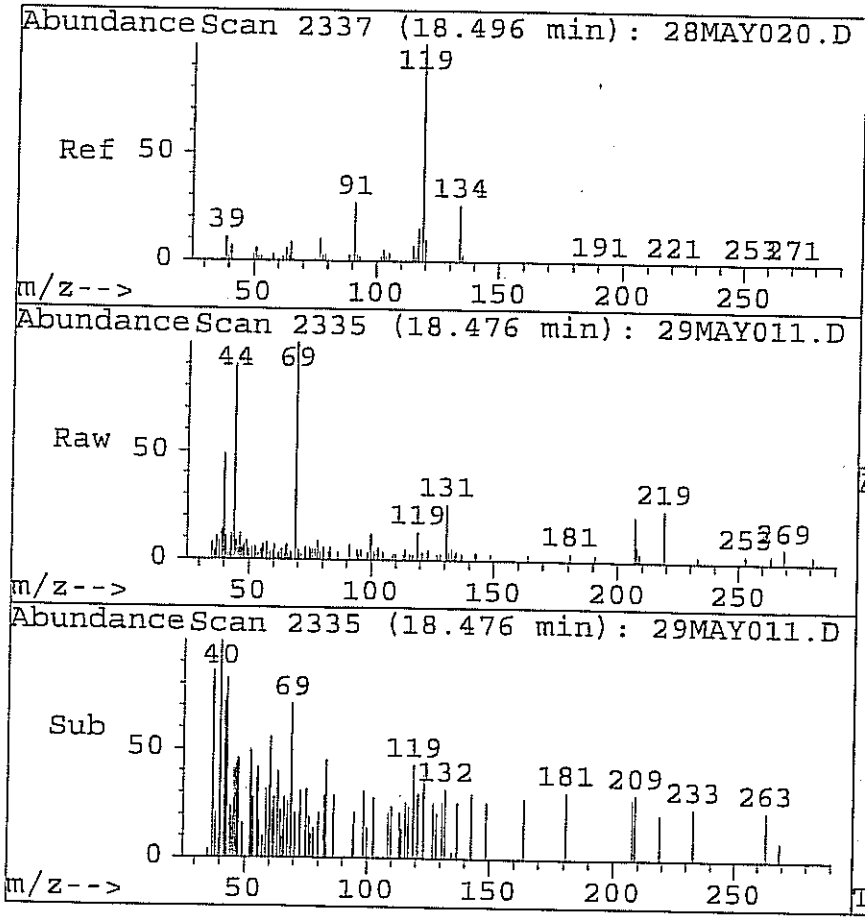



#71
sec-Butylbenzene
Concen: 1.05 ug/L
RT: 18.33 min Scan# 2310
Delta R.T. -0.04 min
Lab File: 29MAY011.D
Acq: 29 May 102 2:21 pm

Tgt Ion:105 Resp: 385

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 105 | 100 | | |
| 134 | 0.0 | 0.0 | 47.1 |
| 91 | 15.4 | 0.0 | 45.6 |
| 77 | 20.3 | 0.0 | 42.7 |

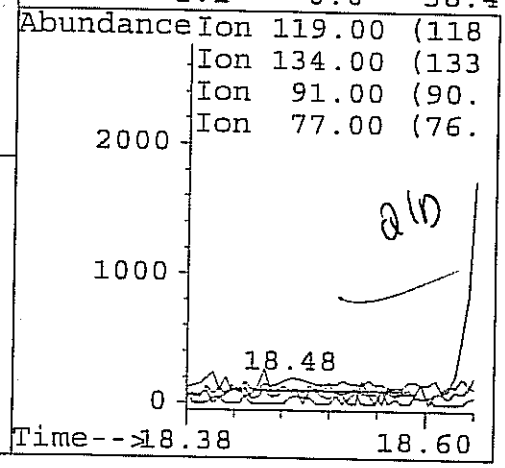


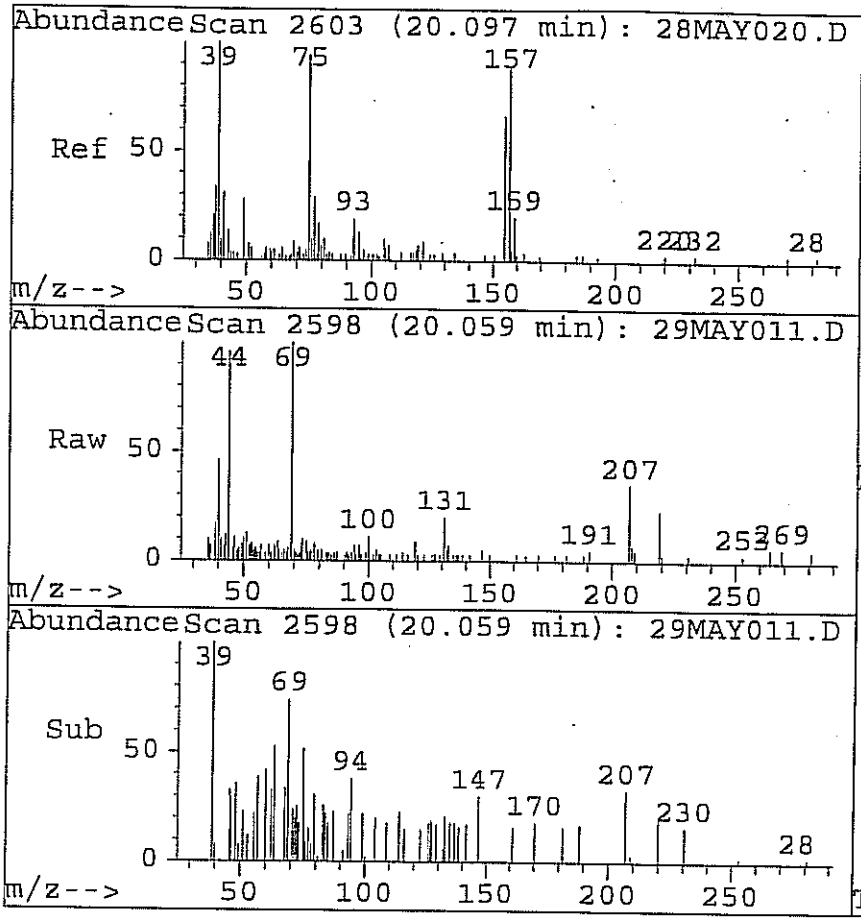




#73
4-Isopropyltoluene
Concen: 1.15 ug/L
RT: 18.48 min Scan# 2335
Delta R.T. -0.02 min
Lab File: 29MAY011.D
Acq: 29 May 102 2:21 pm

Tgt Ion:119 Resp: 429

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 119 | 100 | | |
| 134 | 51.6 | 0.0 | 54.9 |
| 91 | 60.0 | 0.0 | 55.1# |
| 77 | 2.1 | 0.0 | 38.4 |

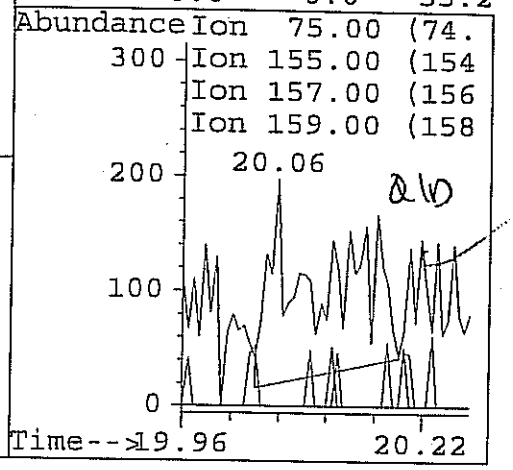





#80
1,2-Dibromo-3-chloropropane
Concen: 1.45 ug/L
RT: 20.06 min Scan# 2598
Delta R.T. -0.04 min
Lab File: 29MAY011.D
Acq: 29 May 102 2:21 pm

Tgt Ion:75 Resp: 736

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 75 | 100 | | |
| 155 | 0.0 | 54.9 | 114.9# |
| 157 | 0.0 | 79.2 | 139.2# |
| 159 | 0.0 | 0.0 | 55.2 |



# COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

**Client:** GeoTrans
**Project:** Western Ave/#E049-106
**Sample Matrix:** Water

**Service Request:** X2200452
**Date Collected:** NA
**Date Received:** NA

## Volatile Organic Compounds

**Sample Name:** Method Blank
**Lab Code:** XWG0200681-3

**Extraction Method:** EPA 5030B
**Analysis Method:** 8260B

**Units:** ug/L
**Basis:** NA

**Level:** Low

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | ND | U | 3.0 | 1 | 05/29/02 | 05/29/02 | |
| Chloromethane | ND | U | 2.0 | 1 | 05/29/02 | 05/29/02 | |
| Vinyl Chloride | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Bromomethane | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Chloroethane | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Trichlorofluoromethane | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,1,2-Trichlorotrifluoroethane | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,1-Dichloroethene | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Acetone | ND | U | 10 | 1 | 05/29/02 | 05/29/02 | |
| Iodomethane | ND | U | 2.0 | 1 | 05/29/02 | 05/29/02 | |
| Carbon Disulfide | ND | U | 2.0 | 1 | 05/29/02 | 05/29/02 | |
| Methylene Chloride | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| ethyl tert-Butyl Ether | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| trans-1,2-Dichloroethene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,1-Dichloroethane | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Vinyl Acetate | ND | U | 3.0 | 1 | 05/29/02 | 05/29/02 | |
| 2,2-Dichloropropane | ND | U | 2.0 | 1 | 05/29/02 | 05/29/02 | |
| 2-Butanone (MEK) | ND | U | 5.0 | 1 | 05/29/02 | 05/29/02 | |
| cis-1,2-Dichloroethene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Bromochloromethane | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Chloroform | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,1,1-Trichloroethane | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Carbon Tetrachloride | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,1-Dichloropropene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Benzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2-Dichloroethane | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Trichloroethene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2-Dichloropropane | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Dibromomethane | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Bromodichloromethane | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| cis-1,3-Dichloropropene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 4-Methyl-2-pentanone (MIBK) | ND | U | 5.0 | 1 | 05/29/02 | 05/29/02 | |
| Toluene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |

nments:

# COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200452 |
| **Project:** | Western Ave/#E049-106 | **Date Collected:** | NA |
| **Sample Matrix:** | Water | **Date Received:** | NA |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | Method Blank | **Units:** | ug/L |
| **Lab Code:** | XWG0200681-3 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| trans-1,3-Dichloropropene | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,1,2-Trichloroethane | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Tetrachloroethene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 2-Hexanone | ND | U | 5.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,3-Dichloropropane | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Dibromochloromethane | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2-Dibromoethane | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Chlorobenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,1,1,2-Tetrachloroethane | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Ethylbenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| m,p-Xylenes | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| o-Xylene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| yrene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Isopropylbenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Bromobenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2,3-Trichloropropane | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| n-Propylbenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 2-Chlorotoluene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 4-Chlorotoluene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,3,5-Trimethylbenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| tert-Butylbenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2,4-Trimethylbenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| sec-Butylbenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,3-Dichlorobenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 4-Isopropyltoluene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Bromoform | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,1,2,2-Tetrachloroethane | ND | U | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,4-Dichlorobenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2-Dichlorobenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| n-Butylbenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2-Dibromo-3-chloropropane | ND | U | 2.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,2,4-Trichlorobenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Hexachlorobutadiene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |

aments:

# COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| Client: | GeoTrans | Service Request: | X2200452 |
| Project: | Western Ave/#E049-106 | Date Collected: | NA |
| Sample Matrix: | Water | Date Received: | NA |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| Sample Name: | Method Blank | Units: | ug/L |
| Lab Code: | XWG0200681-3 | Basis: | NA |
| Extraction Method: | EPA 5030B | Level: | Low |
| Analysis Method: | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| Naphthalene | ND | U | 3.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,2,3-Trichlorobenzene | ND | U | 0.50 | 1 | 05/29/02 | 05/29/02 | |

| Surrogate Name | %Rec | Control Limits | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|
| Dibromofluoromethane | 89 | 84-113 | 05/29/02 | |
| Toluene-d8 | 98 | 68-126 | 05/29/02 | |
| 4-Bromofluorobenzene | 96 | 79-113 | 05/29/02 | |

Comments:

# Quantitation Report

| | | | | | |
|---|---|---|---|---|---|
| Bottle ID: | | Tier: | | Matrix: | WATER |
| Prod Code: | 8260 | Collect Date: | | Receive Date: | 05/29/2002 |

| | | | | | |
|---|---|---|---|---|---|
| Analysis Lot: | XWG0200680 | Prep Lot: | XWG0200681 | Report Group: | |
| Analysis Method: | 8260B | Prep Method: | EPA 5030B | | |
| Prep Ref: | 12584 | Prep Date: | 05/29/2002 | | |

| | | | |
|---|---|---|---|
| Quant Method: | J:\MS03\METHODS\82600528.M | Calibration ID: | CAL292 |
| Title: | | | |
| Tune Ref: | J:\MS03\MAY02\MAY2902\29MAY003.D | Method ID: | MJ103 |
| MB Ref: | | Quant based on Method | |

| | | | | | |
|---|---|---|---|---|---|
| Data File: | J:\MS03\MAY02\MAY2902\29MAY010.D | | | Instrument: | MS03 |
| Acqu Date: | 05/29/2002 13:51 | Quant Date: | 05/29/2002 14:54 | Vial: | 8 |
| Run Type: | MB | | | Dilution: | 1.0 |
| Lab ID: | XWG0200681-3 | | | Soln Conc. Units: | ug/L |

## Internal Standard Compounds

| IS Ref | Parameter Name | RT | Quant Mass | Response | Solution Conc | Area Criteria |
|---|---|---|---|---|---|---|
| 1 | 1,4-Difluorobenzene | 12.48 | 114 | 275929 | 20.00 | OK |
| 2 | Chlorobenzene-d5 | 16.20 | 117 | 219843 | 20.00 | OK |
| 3 | 1,4-Dichlorobenzene-d4 | 18.66 | 152 | 88182 | 20.00 | OK |

## Surrogate Compounds

| IS Ref | Parameter Name | RT | RT Dev | RRT Dev | Quant Mass | Response | Solution Conc | %Rec | %Rec Limits | Rpt? |
|---|---|---|---|---|---|---|---|---|---|---|
| | Dibromofluoromethane | 11.41 | 0.00 | 0.00 | 113 | 102632 | 17.89 | 89 | 84-113 | OK |
| 1 | Fluorobenzene | 12.36 | -0.01 | 0.00 | 96 | 342380 | 19.55 | 98 | 70-130 | OK |
| 1 | Toluene-d8 | 14.49 | -0.02 | 0.00 | 98 | 267115 | 19.68 | 98 | 68-126 | OK |
| 2 | 4-Bromofluorobenzene | 17.41 | -0.01 | 0.00 | 95 | 92208 | 19.15 | 96 | 79-113 | OK |

## Target Compounds

Final Conc. Units: ug/L

| IS Ref | Parameter Name | RT | RT Dev | RRT Dev | QuantMass | Response | Solution Conc | Final Conc | Q | Rpt? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Dichlorodifluoromethane | | | | 85 | 0 | | 0.90 | U | |
| 1 | Chloromethane | 5.02 | -0.07 | -0.01 | 50 | 305 | 0.04 | 2.0 | U | |
| 1 | Vinyl Chloride | 5.34 | -0.01 | 0.00 | 62 | 414 | 0.05 | 0.50 | U | |
| 1 | Bromomethane | 6.12 | -0.05 | 0.00 | 94 | 836 | 0.11 | 0.70 | U | |
| 1 | Chloroethane | 6.27 | -0.11 | -0.01 | 64 | 453 | 0.08 | 0.80 | U | |
| 1 | Trichlorofluoromethane | | | | 101 | 0 | | 0.40 | U | |
| 1 | 1,1,2-Trichlorotrifluoroethane | | | | 101 | 0 | | 0.50 | U | |
| 1 | Acrolein | | | | 56 | 0d | | 8.0 | U | |
| 1 | 1,1-Dichloroethene | 7.85 | -0.04 | 0.00 | 96 | 349 | 0.06 | 0.30 | U | |
| 1 | Acetone | | | | 58 | 1014 | | 8.0 | U | |
| 1 | Iodomethane | | | | 142 | 0 | | 0.60 | U | |
| 1 | Carbon Disulfide | 8.32 | -0.01 | 0.00 | 76 | 1019 | 0.05 | 0.40 | U | |
| 1 | Acetonitrile | | | | 41 | 0d | | 16 | U | |
| 1 | Methylene Chloride | 8.76 | -0.02 | 0.00 | 84 | 492 | 0.07 | 0.80 | U | |

[illegible]tected at or above MDL
[illegible]yte detected above MDL, but below MRL
B: [illegible]nt above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

| | | | | | |
|---|---|---|---|---|---|
| Data File: | J:\MS03\MAY02\MAY2902\29MAY010.D | | | Instrument: | MS03 |
| Acqu Date: | 05/29/2002 13:51 | Quant Date: | 05/29/2002 14:54 | Vial: | 8 |
| Run Type: | MB | | | Dilution: | 1.0 |
| Lab ID: | XWG0200681-3 | | | Soln Conc. Units: | ug/L |

*Target Compounds*

Final Conc. Units: ug/L

| IS Ref | Parameter Name | RT | RT Dev | RRT Dev | QuantMass | Response | Solution Conc | Final Conc | Q | Rpt? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | tert-Butyl Alcohol | | | | 59 | 0d | | 10 | U | |
| 1 | Methyl tert-Butyl Ether | 8.96 | -0.13 | -0.01 | 73 | 759 | 0.07 | 0.80 | U | |
| 1 | trans-1,2-Dichloroethene | 9.24 | 0.08 | 0.01 | 96 | 449 | 0.07 | 0.30 | U | |
| 1 | Acrylonitrile | | | | 53 | 0d | | 8.0 | U | |
| 1 | Diisopropyl Ether | 9.74 | -0.04 | 0.00 | 45 | 439 | 0.02 | 0.40 | U | |
| 1 | 1,1-Dichloroethane | 9.90 | 0.02 | 0.00 | 63 | 517 | 0.04 | 0.20 | U | |
| 1 | Vinyl Acetate | 9.81 | -0.03 | 0.00 | 43 | 315 | 0.06 | 3.0 | U | |
| 1 | tert-Butyl Ethyl Ether | | | | 59 | 0 | | 0.30 | U | |
| 1 | 2,2-Dichloropropane | 10.73 | | 0.00 | 77 | 300 | 0.04 | 0.70 | U | |
| 1 | 2-Butanone (MEK) | | | | 72 | 0 | | 3.0 | U | |
| 1 | cis-1,2-Dichloroethene | 10.73 | -0.02 | 0.00 | 96 | 613 | 0.09 | 0.20 | U | |
| 1 | Bromochloromethane | | | | 128 | 0 | | 0.40 | U | |
| 1 | Chloroform | 11.17 | | 0.00 | 83 | 340 | 0.03 | 0.60 | U | |
| 1 | Pentafluorobenzene | 11.38 | -0.02 | 0.00 | 168 | 141639 | 20.12 | 20.1 | E | |
| 1 | 1,1,1-Trichloroethane | | | | 97 | 0 | | 0.40 | U | |
| 1 | Carbon Tetrachloride | | | | 117 | 0 | | 0.50 | U | |
| 1 | 1,1-Dichloropropene | 11.74 | 0.06 | 0.01 | 75 | 342 | 0.04 | 0.40 | U | |
| 1 | Benzene | 11.95 | -0.04 | 0.00 | 78 | 859 | 0.04 | 0.30 | U | |
| 1 | tert-Amyl Methyl Ether | | | | 73 | 0 | | 0.30 | U | |
| 1 | 1,2-Dichloroethane | | | | 62 | 0 | | 0.50 | U | |
| | Trichloroethene | | | | 95 | 0 | | 0.30 | U | |
| 1 | 1,2-Dichloropropane | 13.25 | -0.01 | 0.00 | 63 | 511 | 0.08 | 0.40 | U | |
| 1 | Dibromomethane | 13.47 | 0.02 | 0.00 | 93 | 569 | 0.16 | 0.50 | U | |
| 1 | Bromodichloromethane | 13.57 | -0.03 | 0.00 | 83 | 430 | 0.05 | 0.40 | U | |
| 1 | 2-Chloroethyl Vinyl Ether | 13.81 | -0.12 | -0.01 | 63 | 799 | 0.33 | 0.60 | U | |
| 1 | cis-1,3-Dichloropropene | 14.22 | 0.03 | 0.00 | 75 | 508 | 0.06 | 0.40 | U | |
| 1 | 4-Methyl-2-pentanone (MIBK) | | | | 100 | 0d | | 2.0 | U | |
| 1 | Toluene | | | | 92 | 0 | | 0.20 | U | |
| 1 | trans-1,3-Dichloropropene | | | | 75 | 0 | | 0.40 | U | |
| 1 | 1,1,2-Trichloroethane | | | | 83 | 0 | | 0.50 | U | |
| 1 | Tetrachloroethene | | | | 164 | 0 | | 0.30 | U | |
| 1 | 2-Hexanone | 15.23 | -0.08 | -0.01 | 43 | 457 | 0.25 | 2.0 | U | |
| 1 | 1,3-Dichloropropane | 15.28 | -0.05 | 0.00 | 76 | 310 | 0.05 | 0.40 | U | |
| 1 | Dibromochloromethane | | | | 129 | 0 | | 0.40 | U | |
| 1 | 1,2-Dibromoethane | | | | 107 | 0 | | 0.30 | U | |
| 2 | Chlorobenzene | | | | 112 | 0 | | 0.090 | U | |
| 2 | 1,1,1,2-Tetrachloroethane | 16.38 | 0.08 | 0.00 | 131 | 688 | 0.16 | 0.30 | U | |
| 2 | Ethylbenzene | 16.20 | -0.08 | 0.00 | 91 | 1713 | 0.08 | 0.20 | U | |
| 2 | m,p-Xylenes | | | | 106 | 0 | | 0.60 | U | |
| 2 | o-Xylene | | | | 106 | 0 | | 0.30 | U | |
| 2 | Styrene | | | | 104 | 0 | | 0.40 | U | |
| 2 | Isopropylbenzene | | | | 105 | 0 | | 0.40 | U | |

Detected at or above MDL
Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

| | | | | | |
|---|---|---|---|---|---|
| Data File: | J:\MS03\MAY02\MAY2902\29MAY010.D | | | Instrument: | MS03 |
| Acqu Date: | 05/29/2002 13:51 | Quant Date: | 05/29/2002 14:54 | Vial: | 8 |
| Run Type: | MB | | | Dilution: | 1.0 |
| Lab ID: | XWG0200681-3 | | | Soln Conc. Units: | ug/L |

*Target Compounds* Final Conc. Units: ug/L

| S Ref | Parameter Name | RT | RT Dev | RRT Dev | QuantMass | Response | Solution Conc | Final Conc | Q | Rpt? |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | Bromobenzene | | | | 156 | 0 | | 0.20 | U | |
| 2 | 1,2,3-Trichloropropane | 17.54 | -0.08 | 0.00 | 75 | 766 | 0.22 | 0.60 | U | |
| 2 | n-Propylbenzene | | | | 91 | 0d | | 0.40 | U | |
| 2 | 2-Chlorotoluene | | | | 91 | 0d | | 0.30 | U | |
| 2 | 4-Chlorotoluene | 17.84 | -0.05 | 0.00 | 91 | 752 | 0.06 | 0.30 | U | |
| 2 | 1,3,5-Trimethylbenzene | | | | 105 | 0 | | 0.30 | U | |
| 2 | tert-Butylbenzene | | | | 119 | 0 | | 0.40 | U | |
| 2 | 1,2,4-Trimethylbenzene | | | | 105 | 0 | | 0.30 | U | |
| 2 | sec-Butylbenzene | | | | 105 | 0d | | 0.40 | U | |
| 2 | 1,3-Dichlorobenzene | | | | 146 | 0 | | 0.30 | U | |
| 2 | 4-Isopropyltoluene | | | | 119 | 0 | | 0.40 | U | |
| 3 | Bromoform | | | | 173 | 0 | | 0.40 | U | |
| 3 | 1,1,2,2-Tetrachloroethane | | | | 83 | 0 | | 0.30 | U | |
| 3 | 1,4-Dichlorobenzene | | | | 146 | 0 | | 0.20 | U | |
| 3 | 1,2-Dichlorobenzene | | | | 146 | 0 | | 0.20 | U | |
| 3 | n-Butylbenzene | 18.93 | -0.01 | 0.00 | 91 | 477 | 0.04 | 0.40 | U | |
| 3 | 1,2-Dibromo-3-chloropropane | 20.15 | 0.06 | 0.00 | 75 | 357 | 0.31 | 0.90 | U | |
| 3 | 1,2,4-Trichlorobenzene | | | | 180 | 0 | | 0.40 | U | |
| 3 | Hexachlorobutadiene | | | | 225 | 0 | | 0.40 | U | |
| 3 | Naphthalene | | | | 128 | 0 | | 0.90 | U | |
| | 1,2,3-Trichlorobenzene | | | | 180 | 0 | | 0.40 | U | |

| | | | |
|---|---|---|---|
| Prep Amount: | 10 ml | Dilution: | 1.0 |
| Prep Final Vol: | 10 ml | Unit Factor: | 1 |

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

...tected at or above MDL
J: ...alyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

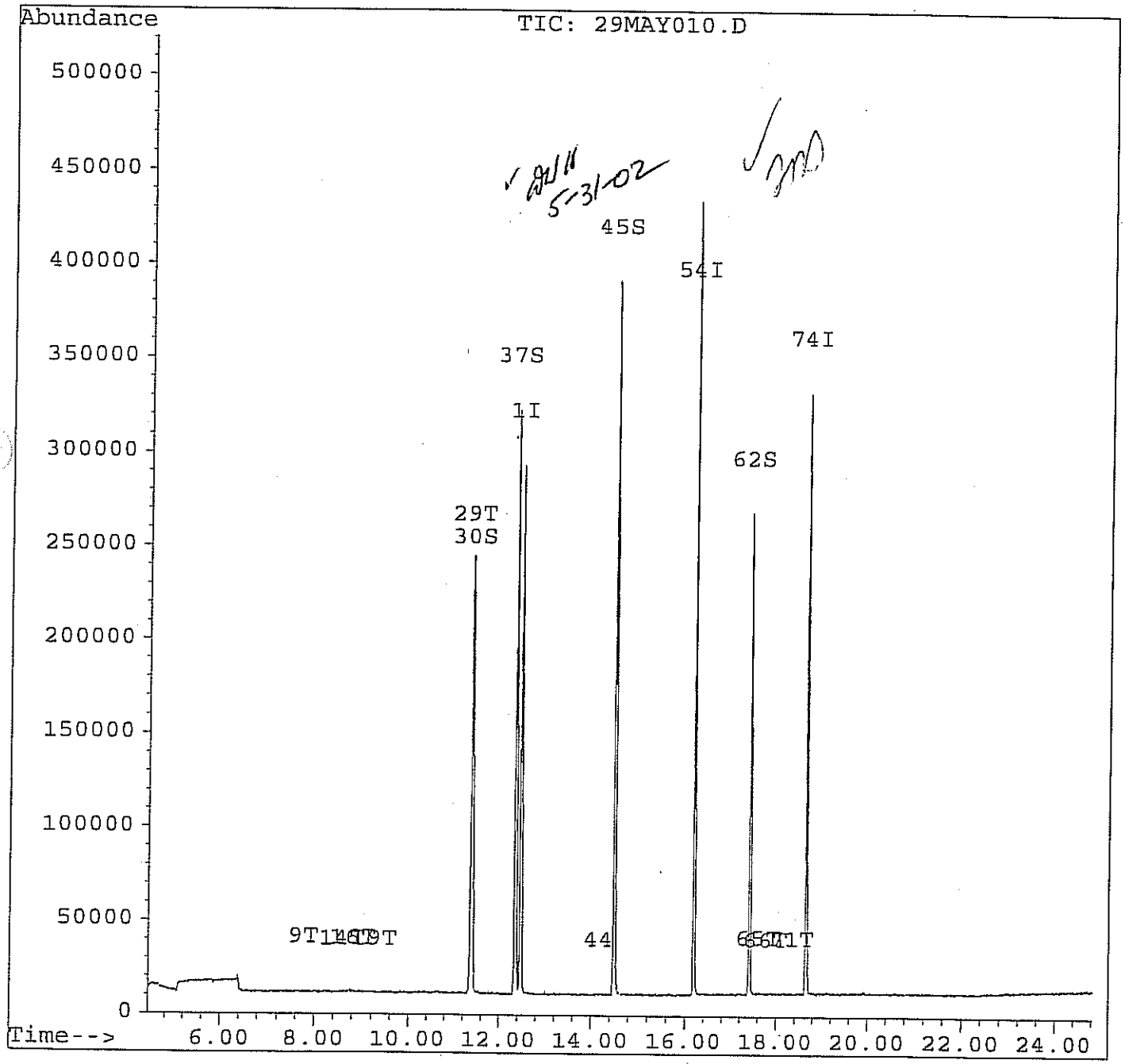
*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

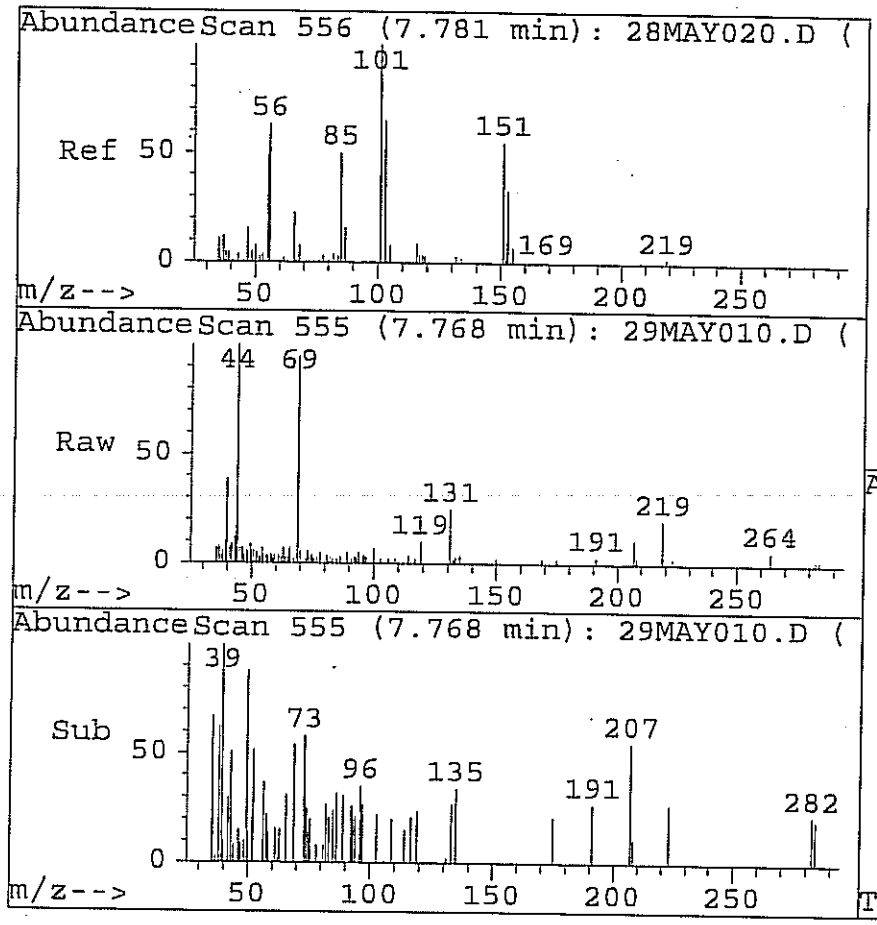
Quantitation Report

Data File : J:\MS03\MAY02\MAY2902\29MAY010.D
Acq On : 29 May 102 1:51 pm
Sample : mb02 052902 water
Misc :
Quant Time: May 29 14:54 19102

Vial: 8
Operator: dnh
Inst : MS03
Multiplr: 1.00

Method : J:\MS03\METHODS\82600528.M
Title : Volatiles by GC/MS
Last Update : Wed May 29 12:10:58 2002
Response via : Multiple Level Calibration

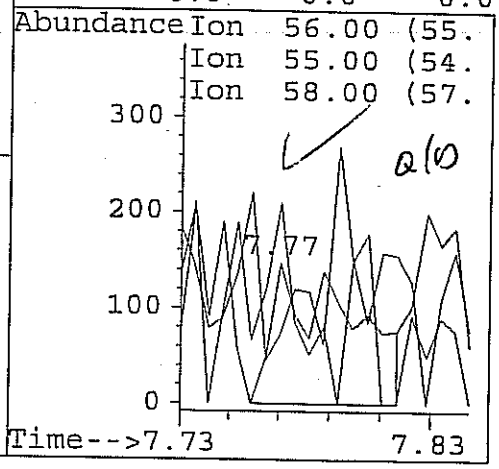


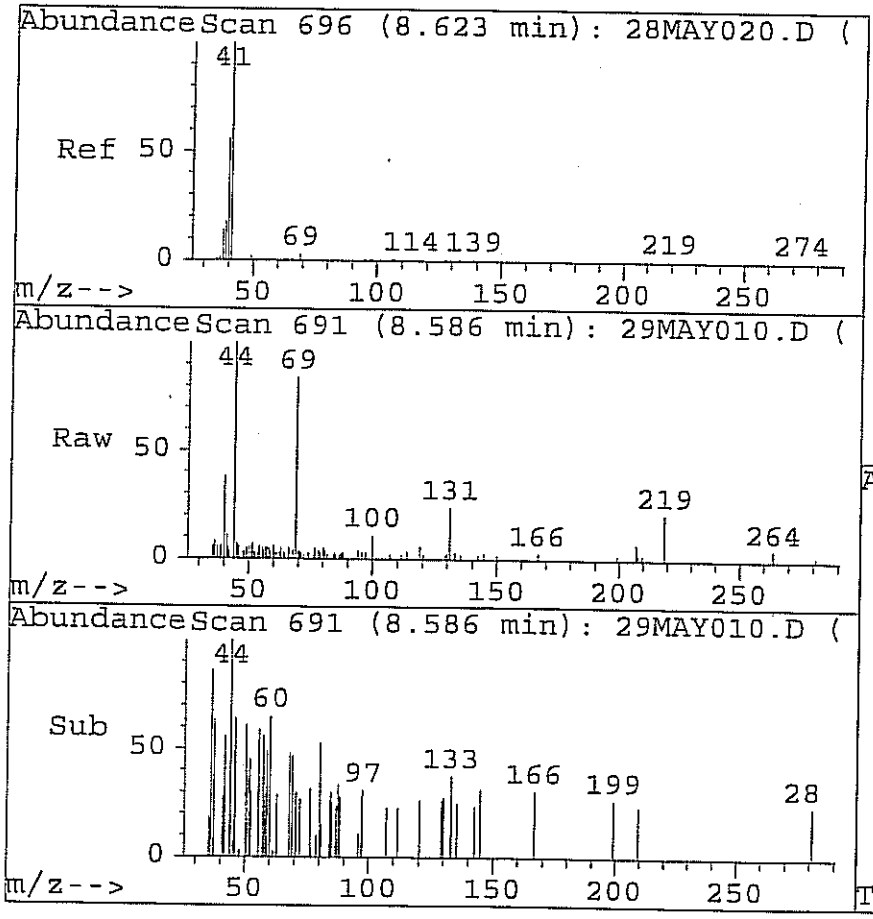



#9
Acrolein
Concen: 1.31 ug/L
RT: 7.77 min Scan# 555
Delta R.T. -0.01 min
Lab File: 29MAY010.D
Acq: 29 May 102 1:51 pm

Tgt Ion:56 Resp: 334

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 56 | 100 | | |
| 55 | 0.0 | 59.4 | 99.4# |
| 58 | 142.9 | 0.0 | 29.8# |
| 0 | 0.0 | 0.0 | 0.0 |

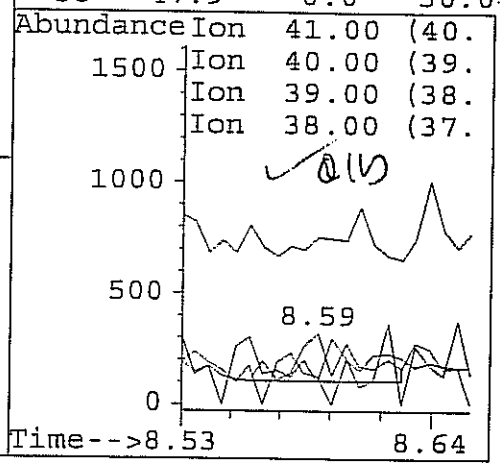


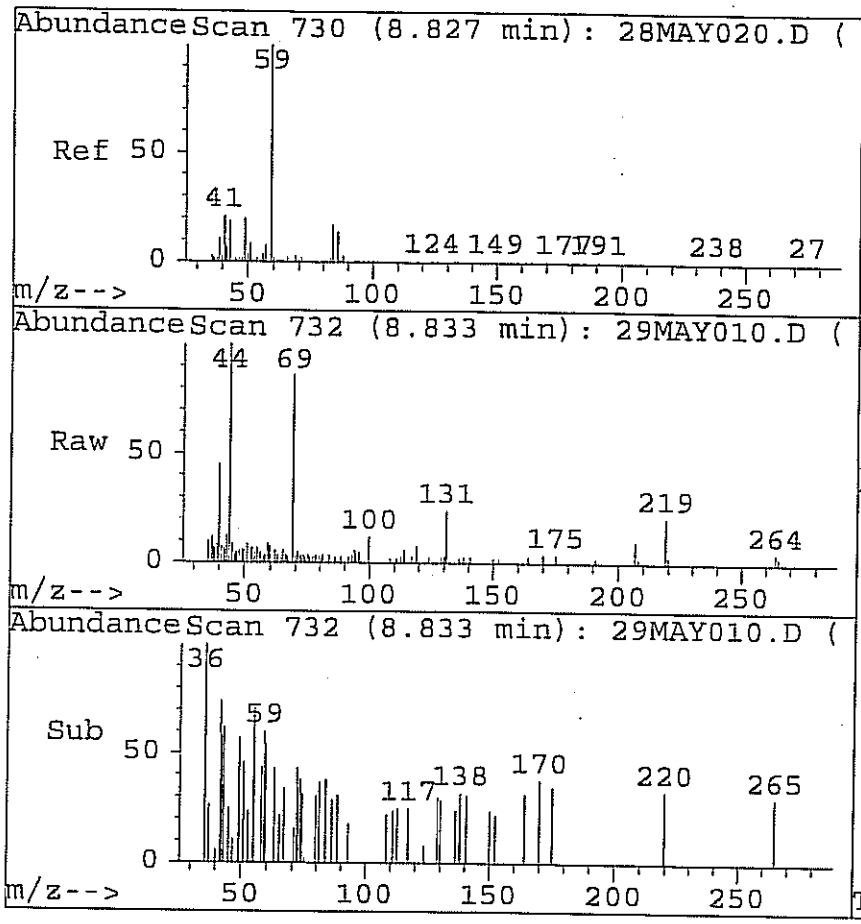




#14
Acetonitrile
Concen: 1.00 ug/L
RT: 8.59 min Scan# 691
Delta R.T. -0.04 min
Lab File: 29MAY010.D
Acq: 29 May 102 1:51 pm

Tgt Ion:41 Resp: 346

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 41 | 100 | | |
| 40 | 46.5 | 0.0 | 54.3 |
| 39 | 0.0 | 0.0 | 37.2 |
| 38 | 47.9 | 0.0 | 30.0# |

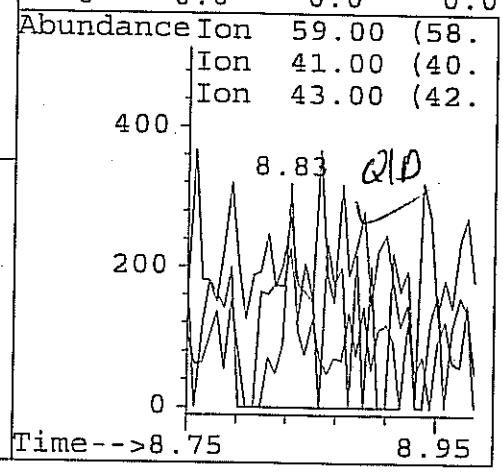


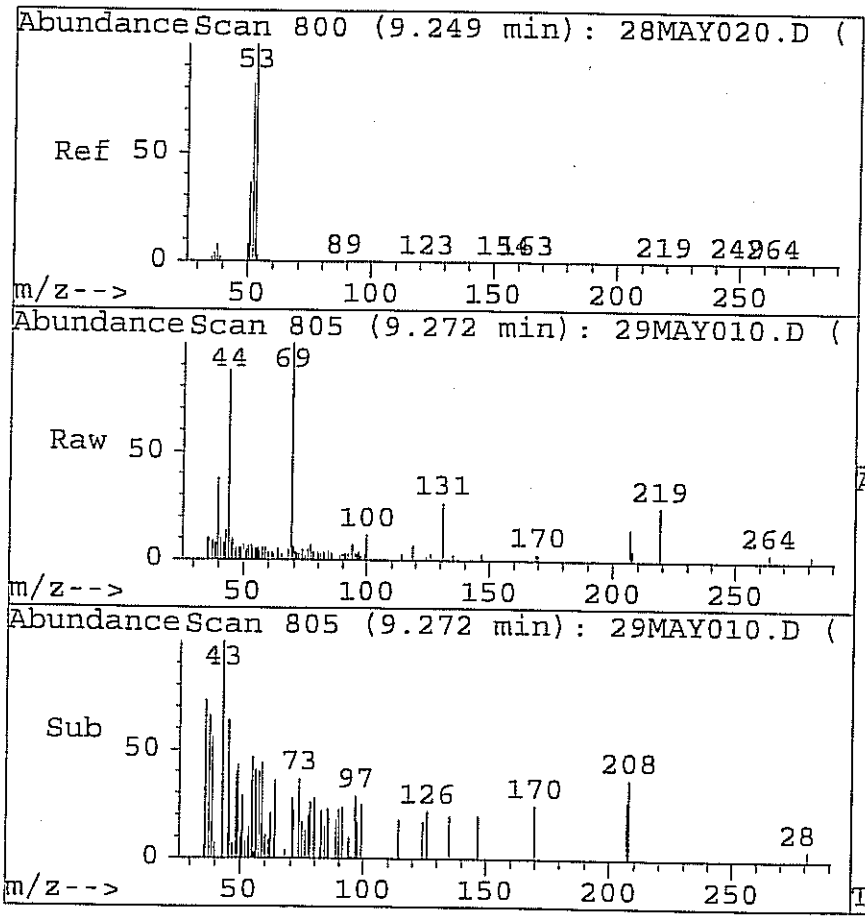



#16
t-Butanol
Concen: 3.38 ug/L
RT: 8.83 min Scan# 732
Delta R.T. 0.01 min
Lab File: 29MAY010.D
Acq: 29 May 102 1:51 pm

Tgt Ion:59 Resp: 657

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 59 | 100 | | |
| 41 | 49.5 | 6.7 | 46.7# |
| 43 | 19.4 | 0.0 | 36.4 |
| 0 | 0.0 | 0.0 | 0.0 |

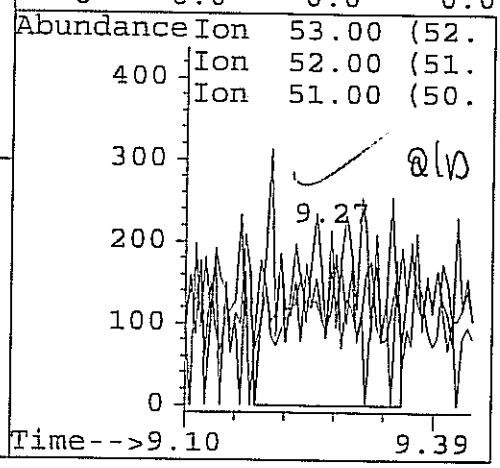


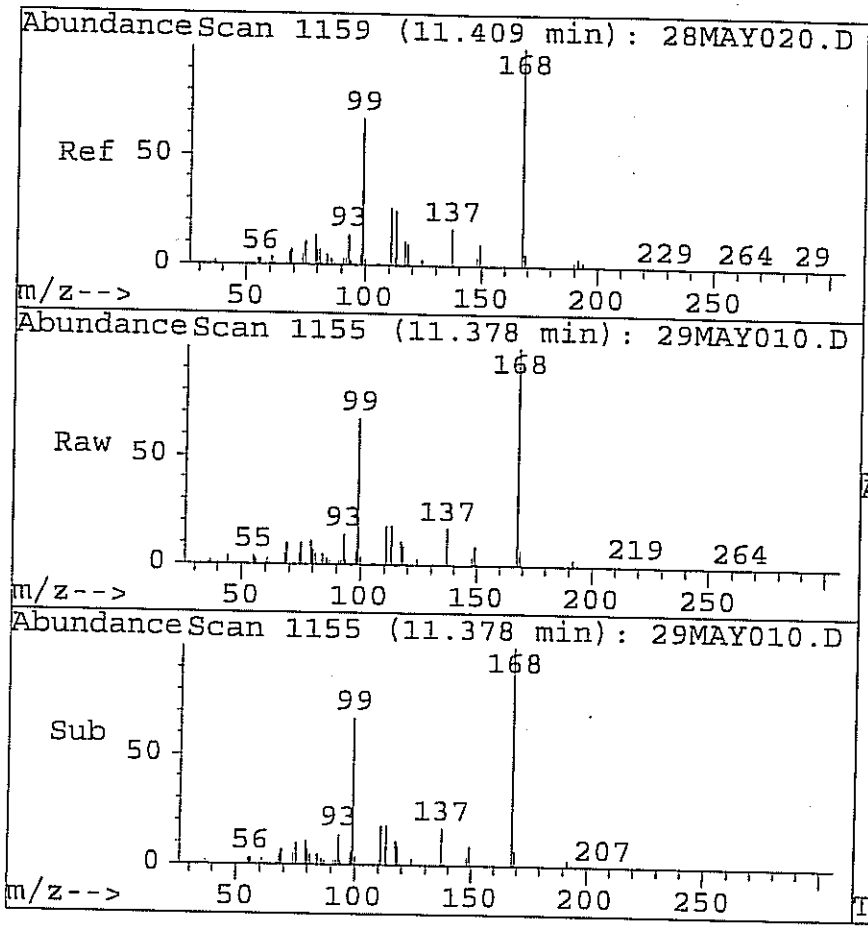




#19
Acrylonitrile
Concen: 1.27 ug/L
RT: 9.27 min Scan# 805
Delta R.T. 0.02 min
Lab File: 29MAY010.D
Acq: 29 May 102 1:51 pm

Tgt Ion:53 Resp: 1241

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 53 | 100 | | |
| 52 | 34.6 | 64.0 | 104.0# |
| 51 | 43.9 | 16.1 | 56.1 |
| 0 | 0.0 | 0.0 | 0.0 |

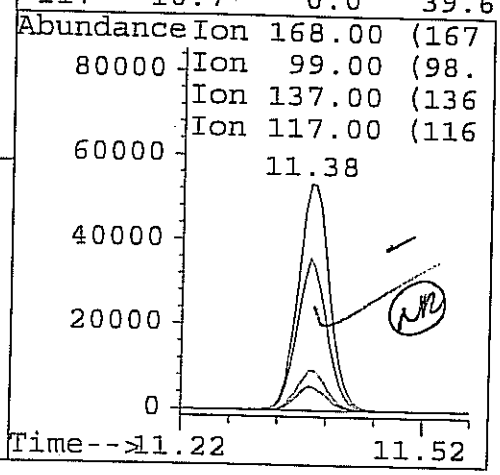


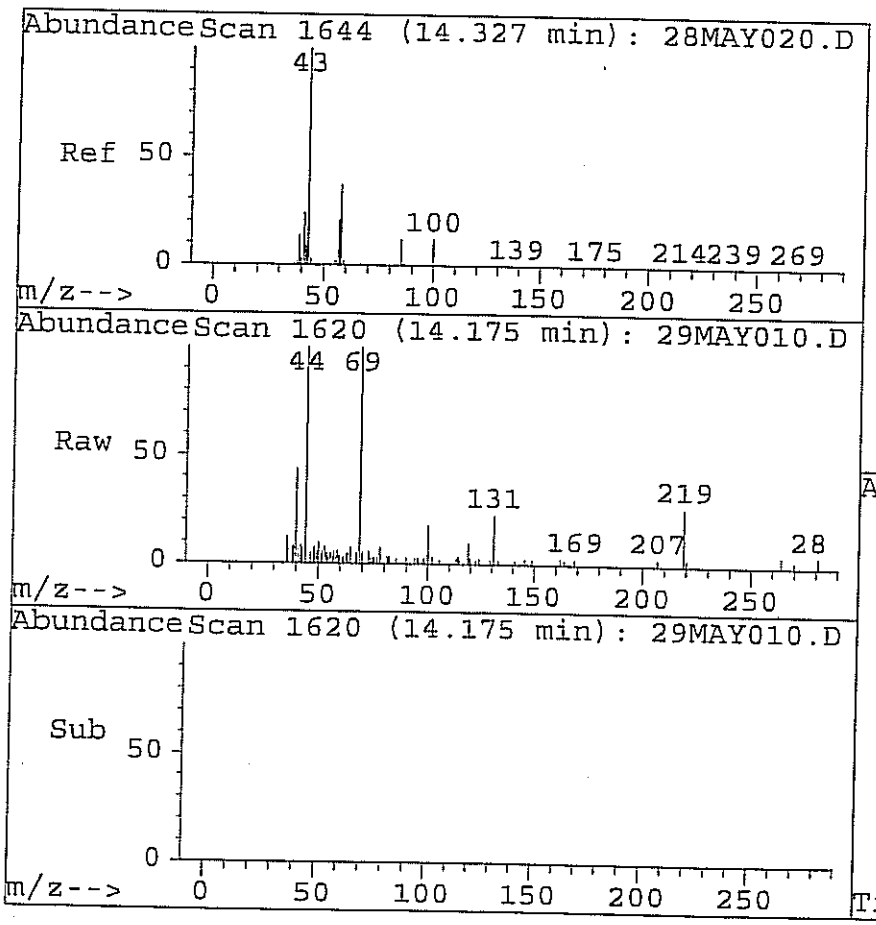



#29
Pentafluorobenzene
Concen: 20.12 ug/L
RT: 11.38 min Scan# 1155
Delta R.T. -0.03 min
Lab File: 29MAY010.D
Acq: 29 May 102 1:51 pm

Tgt Ion:168 Resp: 141639

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 168 | 100 | | |
| 99 | 67.4 | 34.2 | 94.2 |
| 137 | 17.5 | 0.0 | 45.9 |
| 117 | 10.7 | 0.0 | 39.6 |

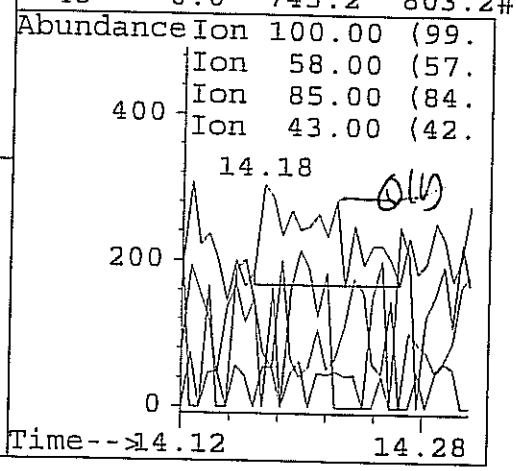


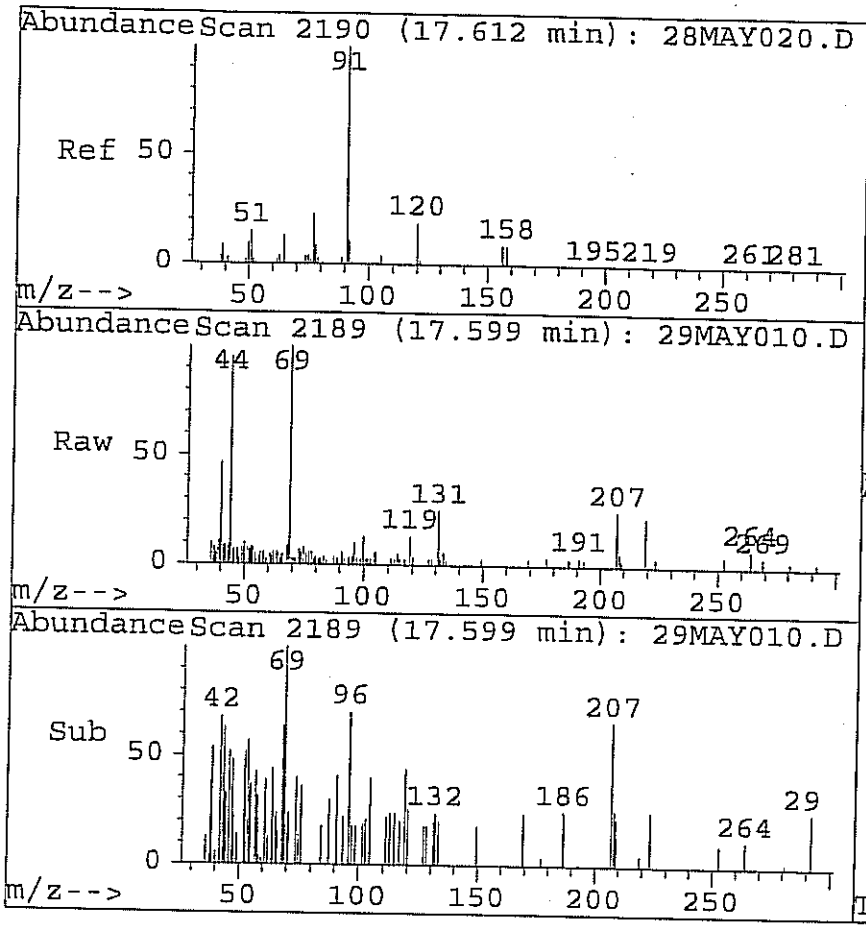




#44
4-methyl-2-pentanone
Concen: 1.20 ug/L
RT: 14.18 min Scan# 1620
Delta R.T. -0.15 min
Lab File: 29MAY010.D
Acq: 29 May 102 1:51 pm

Tgt Ion:100 Resp: 395

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 100 | 100 | | |
| 58 | 55.1 | 255.5 | 315.5# |
| 85 | 40.4 | 81.9 | 141.9# |
| 43 | 0.0 | 743.2 | 803.2# |

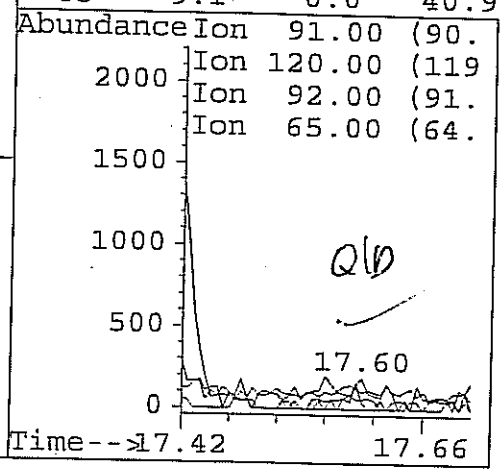


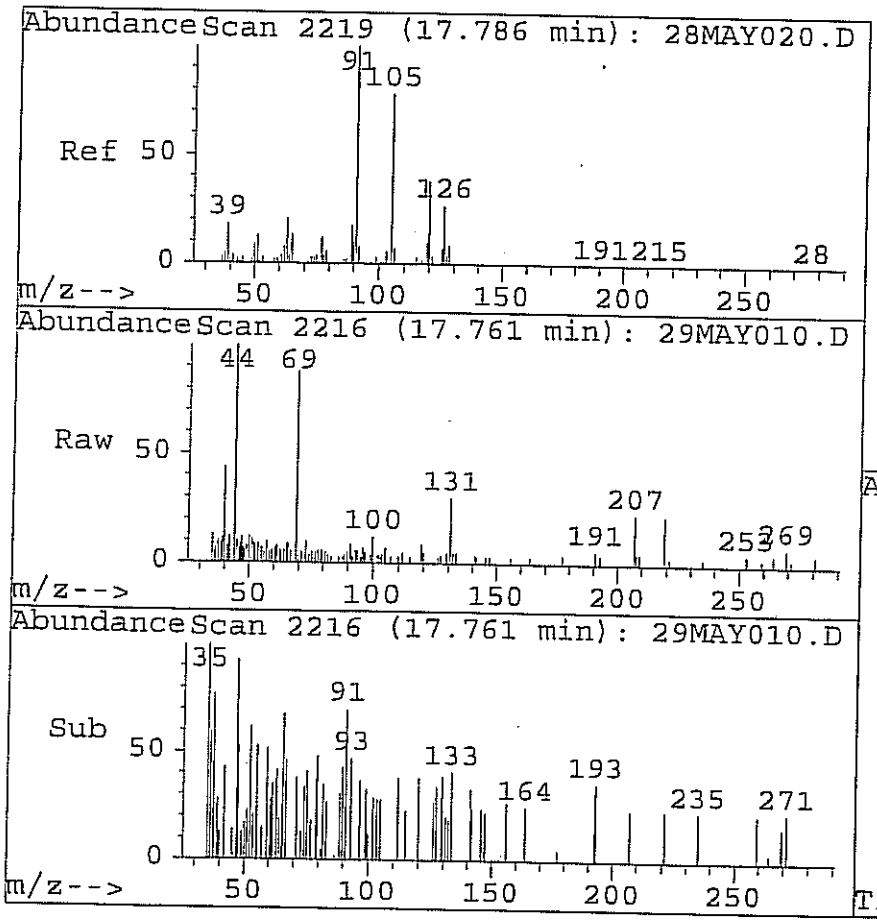



#65
n-Propylbenzene
Concen: 1.31 ug/L
RT: 17.60 min Scan# 2189
Delta R.T. -0.01 min
Lab File: 29MAY010.D
Acq: 29 May 102 1:51 pm

Tgt Ion:91 Resp: 803

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 91 | 100 | | |
| 120 | 31.2 | 0.0 | 49.6 |
| 92 | 0.0 | 0.0 | 40.8 |
| 65 | 9.1 | 0.0 | 40.9 |

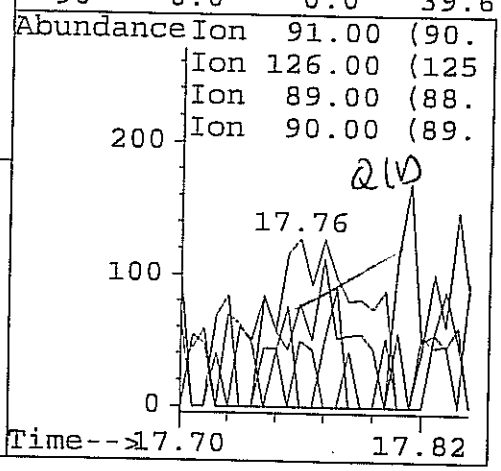


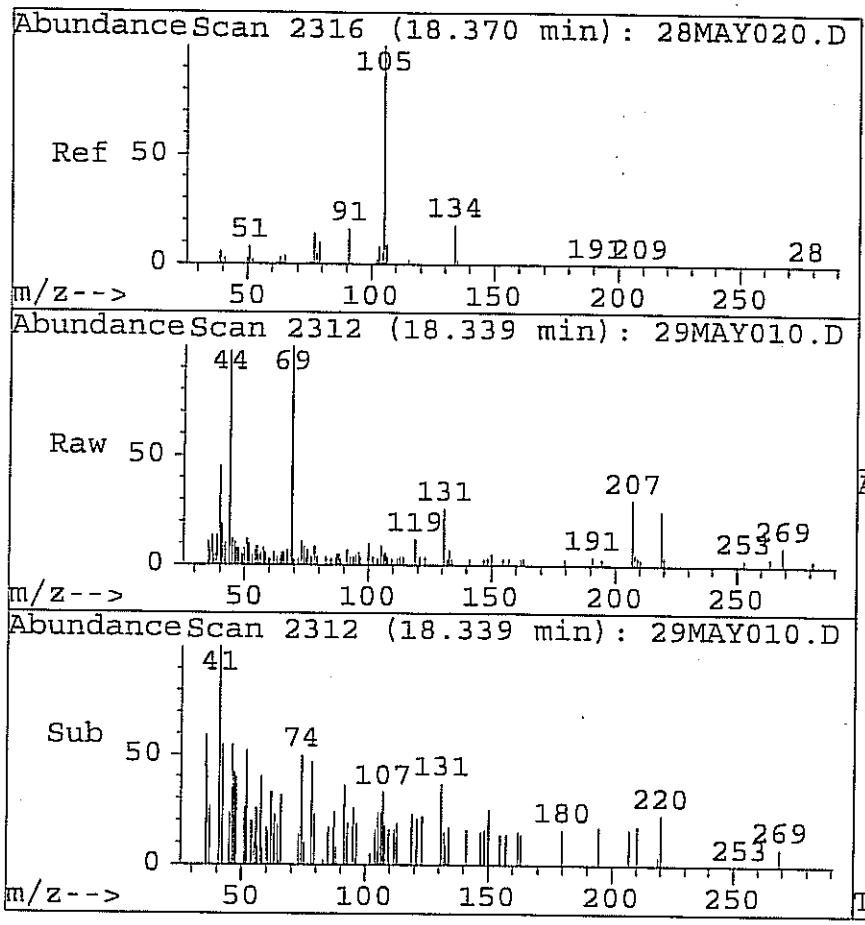




#66
2-Chlorotoluene
Concen: 1.13 ug/L
RT: 17.76 min Scan# 2216
Delta R.T. -0.02 min
Lab File: 29MAY010.D
Acq: 29 May 102 1:51 pm

Tgt Ion:91 Resp: 369

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 91 | 100 | | |
| 126 | 39.4 | 0.0 | 57.5 |
| 89 | 21.3 | 0.0 | 47.3 |
| 90 | 0.0 | 0.0 | 39.6 |

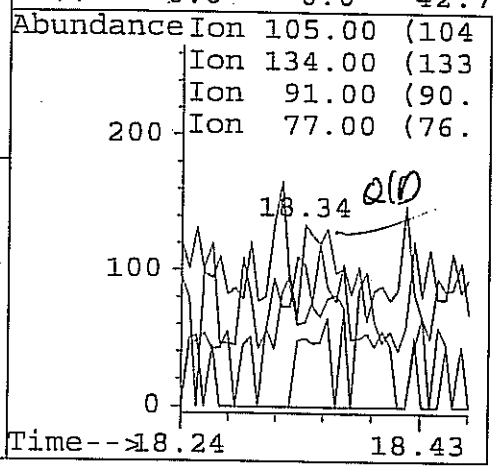





#71
sec-Butylbenzene
Concen: 1.05 ug/L
RT: 18.34 min Scan# 2312
Delta R.T. -0.03 min
Lab File: 29MAY010.D
Acq: 29 May 102 1:51 pm

Tgt Ion:105 Resp: 488

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 105 | 100 | | |
| 134 | 37.3 | 0.0 | 47.1 |
| 91 | 47.0 | 0.0 | 45.6# |
| 77 | 0.0 | 0.0 | 42.7 |



# COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| Client: | GeoTrans | Service Request: | X2200452 |
| Project: | Western Ave/#E049-106 | Date Collected: | 05/15/2002 |
| Sample Matrix: | Water | Date Received: | 05/16/2002 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| Sample Name: | COG-MW3MS | Units: | ug/L |
| Lab Code: | XWG0200681-4 | Basis: | NA |
| Extraction Method: | EPA 5030B | Level: | Low |
| Analysis Method: | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | 10.7 | | 3.0 | 1 | 05/29/02 | 05/29/02 | |
| Chloromethane | 9.04 | | 2.0 | 1 | 05/29/02 | 05/29/02 | |
| Vinyl Chloride | 8.47 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Bromomethane | 7.33 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Chloroethane | 7.93 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Trichlorofluoromethane | 9.58 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,1,2-Trichlorotrifluoroethane | 10.2 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,1-Dichloroethene | 8.37 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Acetone | 43.4 | | 10 | 1 | 05/29/02 | 05/29/02 | |
| Iodomethane | 39.1 | | 2.0 | 1 | 05/29/02 | 05/29/02 | |
| Carbon Disulfide | 38.9 | | 2.0 | 1 | 05/29/02 | 05/29/02 | |
| Methylene Chloride | 8.45 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| ethyl tert-Butyl Ether | 10.4 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| trans-1,2-Dichloroethene | 8.85 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,1-Dichloroethane | 9.26 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Vinyl Acetate | 54.1 | | 3.0 | 1 | 05/29/02 | 05/29/02 | |
| 2,2-Dichloropropane | 9.10 | | 2.0 | 1 | 05/29/02 | 05/29/02 | |
| 2-Butanone (MEK) | 42.9 | | 5.0 | 1 | 05/29/02 | 05/29/02 | |
| cis-1,2-Dichloroethene | 9.19 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Bromochloromethane | 9.81 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Chloroform | 9.26 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,1,1-Trichloroethane | 9.14 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Carbon Tetrachloride | 9.44 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,1-Dichloropropene | 9.11 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Benzene | 9.38 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2-Dichloroethane | 8.56 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Trichloroethene | 9.14 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2-Dichloropropane | 9.41 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Dibromomethane | 9.67 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Bromodichloromethane | 9.66 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| cis-1,3-Dichloropropene | 9.78 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 4-Methyl-2-pentanone (MIBK) | 44.6 | | 5.0 | 1 | 05/29/02 | 05/29/02 | |
| Toluene | 9.50 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |

ments:

# COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| Client: | GeoTrans | Service Request: | X2200452 |
| Project: | Western Ave/#E049-106 | Date Collected: | 05/15/2002 |
| Sample Matrix: | Water | Date Received: | 05/16/2002 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| Sample Name: | COG-MW3MS | Units: | ug/L |
| Lab Code: | XWG0200681-4 | Basis: | NA |
| Extraction Method: | EPA 5030B | Level: | Low |
| Analysis Method: | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| trans-1,3-Dichloropropene | 9.98 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,1,2-Trichloroethane | 10.2 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Tetrachloroethene | 25.0 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 2-Hexanone | 41.4 | | 5.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,3-Dichloropropane | 9.93 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Dibromochloromethane | 10.3 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2-Dibromoethane | 10.8 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Chlorobenzene | 9.34 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,1,1,2-Tetrachloroethane | 9.38 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Ethylbenzene | 9.22 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| m,p-Xylenes | 17.2 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| o-Xylene | 8.71 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Styrene | 8.63 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Isopropylbenzene | 8.61 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Bromobenzene | 10.1 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2,3-Trichloropropane | 9.13 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| n-Propylbenzene | 8.60 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 2-Chlorotoluene | 8.38 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 4-Chlorotoluene | 9.32 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,3,5-Trimethylbenzene | 8.38 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| tert-Butylbenzene | 8.74 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2,4-Trimethylbenzene | 8.27 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| sec-Butylbenzene | 8.25 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,3-Dichlorobenzene | 9.78 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 4-Isopropyltoluene | 8.41 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Bromoform | 10.2 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,1,2,2-Tetrachloroethane | 11.1 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,4-Dichlorobenzene | 9.30 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2-Dichlorobenzene | 10.0 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| n-Butylbenzene | 9.14 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2-Dibromo-3-chloropropane | 10.5 | | 2.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,2,4-Trichlorobenzene | 10.5 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Hexachlorobutadiene | 9.77 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200452 |
| **Project:** | Western Ave/#E049-106 | **Date Collected:** | 05/15/2002 |
| **Sample Matrix:** | Water | **Date Received:** | 05/16/2002 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | COG-MW3MS | **Units:** | ug/L |
| **Lab Code:** | XWG0200681-4 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| Naphthalene | 11.0 | | 3.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,2,3-Trichlorobenzene | 10.9 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |

| Surrogate Name | %Rec | Control Limits | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|
| Dibromofluoromethane | 91 | 84-113 | 05/29/02 | |
| Toluene-d8 | 100 | 68-126 | 05/29/02 | |
| 4-Bromofluorobenzene | 101 | 79-113 | 05/29/02 | |

nments:

# Quantitation Report

| | | | | | |
|---|---|---|---|---|---|
| Bottle ID: | | Tier: | | Matrix: | WATER |
| Prod Code: | 8260 | Collect Date: | | Receive Date: | 05/30/2002 |

| | | | | | |
|---|---|---|---|---|---|
| Analysis Lot: | XWG0200680 | Prep Lot: | XWG0200681 | Report Group: | |
| Analysis Method: | 8260B | Prep Method: | EPA 5030B | | |
| Prep Ref: | 12585 | Prep Date: | 05/29/2002 | | |

| | | | |
|---|---|---|---|
| Quant Method: | J:\MS03\METHODS\82600528.M | Calibration ID: | CAL292 |
| Title: | | | |
| Tune Ref: | J:\MS03\MAY02\MAY2902\29MAY003.D | Method ID: | MJ103 |
| MB Ref: | J:\MS03\MAY02\MAY2902\29MAY010.D | Quant based on Method | |

| | | | | | |
|---|---|---|---|---|---|
| Data File: | J:\MS03\MAY02\MAY2902\29MAY020.D | | | Instrument: | MS03 |
| Acqu Date: | 05/29/2002 19:00 | Quant Date: | 05/30/2002 11:12 | Vial: | 18 |
| Run Type: | MS | | | Dilution: | 1.0 |
| Lab ID: | XWG0200681-4 -- X2200452-001MS | | | Soln Conc. Units: | ug/L |

## *Internal Standard Compounds*

| IS Ref | Parameter Name | RT | Quant Mass | Response | Solution Conc | Area Criteria |
|---|---|---|---|---|---|---|
| 1 | 1,4-Difluorobenzene | 12.48 | 114 | 280126 | 20.00 | OK |
| 2 | Chlorobenzene-d5 | 16.20 | 117 | 240874 | 20.00 | OK |
| 3 | 1,4-Dichlorobenzene-d4 | 18.66 | 152 | 107953 | 20.00 | OK |

## *Surrogate Compounds*

| IS Ref | Parameter Name | RT | RT Dev | RRT Dev | Quant Mass | Response | Solution Conc | %Rec | %Rec Limits | | Rpt? |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Dibromofluoromethane | 11.41 | 0.00 | 0.00 | 113 | 106039 | 18.21 | 91 | 84-113 | OK | |
| 1 | Fluorobenzene | 12.37 | 0.00 | 0.00 | 96 | 345193 | 19.41 | 97 | 70-130 | OK | |
| 1 | Toluene-d8 | 14.51 | 0.00 | 0.00 | 98 | 274528 | 19.92 | 100 | 68-126 | OK | |
| 2 | 4-Bromofluorobenzene | 17.42 | 0.00 | 0.00 | 95 | 106479 | 20.18 | 101 | 79-113 | OK | |

## *Target Compounds*

Final Conc. Units: ug/L

| IS Ref | Parameter Name | RT | RT Dev | RRT Dev | QuantMass | Response | Solution Conc | Final Conc | Q | Rpt? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Dichlorodifluoromethane | 4.58 | | 0.00 | 85 | 46769 | 10.72 | 10.7 | | |
| 1 | Chloromethane | 5.09 | | 0.00 | 50 | 71932 | 9.04 | 9.04 | | |
| 1 | Vinyl Chloride | 5.35 | | 0.00 | 62 | 75313 | 8.47 | 8.47 | | |
| 1 | Bromomethane | 6.17 | | 0.00 | 94 | 54377 | 7.33 | 7.33 | | |
| 1 | Chloroethane | 6.38 | | 0.00 | 64 | 47198 | 7.93 | 7.93 | | |
| 1 | Trichlorofluoromethane | 6.85 | | 0.00 | 101 | 78975 | 9.58 | 9.58 | | |
| 1 | 1,1,2-Trichlorotrifluoroethane | 7.78 | -0.01 | 0.00 | 101 | 56852 | 10.23 | 10.2 | | |
| 1 | Acrolein | 7.77 | | 0.00 | 56 | 591 | 2.28 | 2.28 | J | |
| 1 | 1,1-Dichloroethene | 7.88 | -0.01 | 0.00 | 96 | 46064 | 8.37 | 8.37 | | |
| 1 | Acetone | 8.03 | 0.01 | 0.00 | 58 | 10124 | 43.38 | 43.4 | | |
| 1 | Iodomethane | 8.22 | -0.01 | 0.00 | 142 | 366756 | 39.14 | 39.1 | | |
| 1 | Carbon Disulfide | 8.33 | | 0.00 | 76 | 838535 | 38.90 | 38.9 | | |
| 1 | Acetonitrile | 8.61 | -0.01 | 0.00 | 41 | 1169 | 3.33 | 3.33 | J | |
| 1 | Methylene Chloride | 8.78 | | 0.00 | 84 | 61060 | 8.45 | 8.45 | | |

Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

| | | | | | |
|---|---|---|---|---|---|
| Data File: | J:\MS03\MAY02\MAY2902\29MAY020.D | | | Instrument: | MS03 |
| Acqu Date: | 05/29/2002 19:00 | Quant Date: | 05/30/2002 11:12 | Vial: | 18 |
| Run Type: | MS | | | Dilution: | 1.0 |
| Lab ID: | XWG0200681-4 – X2200452-001MS | | | Soln Conc. Units: | ug/L |

*Target Compounds* Final Conc. Units: ug/L

| S Ref | Parameter Name | RT | RT Dev | RRT Dev | QuantMass | Response | Solution Conc | Final Conc | Q | Rpt? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | tert-Butyl Alcohol | 8.82 | 0.01 | 0.00 | 59 | 14110 | 71.49 | 71.5 | | |
| 1 | Methyl tert-Butyl Ether | 9.08 | -0.01 | 0.00 | 73 | 119594 | 10.43 | 10.4 | | |
| 1 | trans-1,2-Dichloroethene | 9.16 | | 0.00 | 96 | 58522 | 8.85 | 8.85 | | |
| 1 | Acrylonitrile | 9.25 | 0.01 | 0.00 | 53 | 771 | 0.78 | 0.780 | J | |
| 1 | Diisopropyl Ether | 9.77 | -0.01 | 0.00 | 45 | 205357 | 9.69 | 9.69 | | |
| 1 | 1,1-Dichloroethane | 9.88 | | 0.00 | 63 | 111106 | 9.26 | 9.26 | | |
| 1 | Vinyl Acetate | 9.84 | | 0.00 | 43 | 292801 | 54.05 | 54.1 | | |
| 1 | tert-Butyl Ethyl Ether | 10.32 | | 0.00 | 59 | 162101 | 10.05 | 10.1 | | |
| 1 | 2,2-Dichloropropane | 10.73 | | 0.00 | 77 | 75887 | 9.10 | 9.10 | | |
| 1 | 2-Butanone (MEK) | 10.73 | | 0.00 | 72 | 12897 | 42.93 | 42.9 | | |
| 1 | cis-1,2-Dichloroethene | 10.75 | | 0.00 | 96 | 67168 | 9.19 | 9.19 | | |
| 1 | Bromochloromethane | 11.12 | -0.01 | 0.00 | 128 | 27719 | 9.81 | 9.81 | | |
| 1 | Chloroform | 11.17 | | 0.00 | 83 | 110539 | 9.26 | 9.26 | | |
| 1 | Pentafluorobenzene | 11.39 | -0.01 | 0.00 | 168 | 145385 | 20.34 | 20.3 | E | |
| 1 | 1,1,1-Trichloroethane | 11.46 | | 0.00 | 97 | 80693 | 9.14 | 9.14 | | |
| 1 | Carbon Tetrachloride | 11.65 | -0.01 | 0.00 | 117 | 64555 | 9.44 | 9.44 | | |
| 1 | 1,1-Dichloropropene | 11.68 | | 0.00 | 75 | 77011 | 9.11 | 9.11 | | |
| 1 | Benzene | 11.98 | -0.01 | 0.00 | 78 | 209323 | 9.38 | 9.38 | | |
| 1 | tert-Amyl Methyl Ether | 12.00 | | 0.00 | 73 | 132462 | 10.22 | 10.2 | | |
| 1 | 1,2-Dichloroethane | 12.07 | -0.01 | 0.00 | 62 | 66768 | 8.56 | 8.56 | | |
| | Trichloroethene | 12.87 | | 0.00 | 95 | 57959 | 9.14 | 9.14 | | |
| | 1,2-Dichloropropane | 13.26 | | 0.00 | 63 | 59877 | 9.41 | 9.41 | | |
| 1 | Dibromomethane | 13.45 | | 0.00 | 93 | 34115 | 9.67 | 9.67 | | |
| 1 | Bromodichloromethane | 13.60 | | 0.00 | 83 | 77295 | 9.66 | 9.66 | | |
| 1 | 2-Chloroethyl Vinyl Ether | 13.80 | -0.13 | -0.01 | 63 | 613 | 0.25 | 0.250 | J | |
| 1 | cis-1,3-Dichloropropene | 14.19 | | 0.00 | 75 | 84419 | 9.78 | 9.78 | | |
| 1 | 4-Methyl-2-pentanone (MIBK) | 14.32 | 0.01 | 0.00 | 100 | 14875 | 44.55 | 44.6 | | |
| 1 | Toluene | 14.59 | | 0.00 | 92 | 120278 | 9.50 | 9.50 | | |
| 1 | trans-1,3-Dichloropropene | 14.88 | | 0.00 | 75 | 65257 | 9.98 | 9.98 | | |
| 1 | 1,1,2-Trichloroethane | 15.12 | 0.01 | 0.00 | 83 | 33358 | 10.18 | 10.2 | | |
| 1 | Tetrachloroethene | 15.23 | | 0.00 | 164 | 91397 | 24.95 | 25.0 | | |
| 1 | 2-Hexanone | 15.31 | | 0.00 | 43 | 76104 | 41.41 | 41.4 | | |
| 1 | 1,3-Dichloropropane | 15.34 | 0.01 | 0.00 | 76 | 64772 | 9.93 | 9.93 | | |
| 1 | Dibromochloromethane | 15.58 | | 0.00 | 129 | 41608 | 10.33 | 10.3 | | |
| 1 | 1,2-Dibromoethane | 15.76 | | 0.00 | 107 | 36695 | 10.81 | 10.8 | | |
| 2 | Chlorobenzene | 16.24 | 0.01 | 0.00 | 112 | 122461 | 9.34 | 9.34 | | |
| 2 | 1,1,1,2-Tetrachloroethane | 16.30 | | 0.00 | 131 | 43544 | 9.38 | 9.38 | | |
| 2 | Ethylbenzene | 16.27 | -0.01 | 0.00 | 91 | 209442 | 9.22 | 9.22 | | |
| 2 | m,p-Xylenes | 16.39 | | 0.00 | 106 | 147400 | 17.18 | 17.2 | | |
| 2 | o-Xylene | 16.83 | | 0.00 | 106 | 69236 | 8.71 | 8.71 | | |
| 2 | Styrene | 16.85 | | 0.00 | 104 | 119516 | 8.63 | 8.63 | | |
| 2 | Isopropylbenzene | 17.18 | | 0.00 | 105 | 175866 | 8.61 | 8.61 | | |

Detected at or above MDL
Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

| | | | | | |
|---|---|---|---|---|---|
| Data File: | J:\MS03\MAY02\MAY2902\29MAY020.D | | | Instrument: | MS03 |
| Acqu Date: | 05/29/2002 19:00 | Quant Date: | 05/30/2002 11:12 | Vial: | 18 |
| Run Type: | MS | | | Dilution: | 1.0 |
| Lab ID: | XWG0200681-4 – X2200452-001MS | | | Soln Conc. Units: | ug/L |

*Target Compounds* Final Conc. Units: ug/L

| S Ref | Parameter Name | RT | RT Dev | RRT Dev | QuantMass | Response | Solution Conc | Final Conc | Q | Rpt? |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | Bromobenzene | 17.62 | | 0.00 | 156 | 45312 | 10.10 | 10.1 | | |
| 2 | 1,2,3-Trichloropropane | 17.63 | 0.01 | 0.00 | 75 | 35583 | 9.13 | 9.13 | | |
| 2 | n-Propylbenzene | 17.60 | -0.01 | 0.00 | 91 | 228719 | 8.60 | 8.60 | | |
| 2 | 2-Chlorotoluene | 17.77 | | 0.00 | 91 | 152388 | 8.38 | 8.38 | | |
| 2 | 4-Chlorotoluene | 17.89 | | 0.00 | 91 | 135535 | 9.32 | 9.32 | | |
| 2 | 1,3,5-Trimethylbenzene | 17.77 | | 0.00 | 105 | 146926 | 8.38 | 8.38 | | |
| 2 | tert-Butylbenzene | 18.13 | | 0.00 | 119 | 112758 | 8.74 | 8.74 | | |
| 2 | 1,2,4-Trimethylbenzene | 18.19 | 0.01 | 0.00 | 105 | 144183 | 8.27 | 8.27 | | |
| 2 | sec-Butylbenzene | 18.36 | | 0.00 | 105 | 178076 | 8.25 | 8.25 | | |
| 2 | 1,3-Dichlorobenzene | 18.59 | | 0.00 | 146 | 81188 | 9.78 | 9.78 | | |
| 2 | 4-Isopropyltoluene | 18.48 | | 0.00 | 119 | 145120 | 8.41 | 8.41 | | |
| 3 | Bromoform | 17.12 | | 0.00 | 173 | 20398 | 10.17 | 10.2 | | |
| 3 | 1,1,2,2-Tetrachloroethane | 17.54 | | 0.00 | 83 | 38253 | 11.08 | 11.1 | | |
| 3 | 1,4-Dichlorobenzene | 18.69 | | 0.00 | 146 | 82837 | 9.30 | 9.30 | | |
| 3 | 1,2-Dichlorobenzene | 19.14 | 0.01 | 0.00 | 146 | 70937 | 10.00 | 10.0 | | |
| 3 | n-Butylbenzene | 18.94 | | 0.00 | 91 | 147799 | 9.14 | 9.14 | | |
| 3 | 1,2-Dibromo-3-chloropropane | 20.09 | | 0.00 | 75 | 4653 | 10.48 | 10.5 | | |
| 3 | 1,2,4-Trichlorobenzene | 21.20 | | 0.00 | 180 | 44031 | 10.49 | 10.5 | | |
| 3 | Hexachlorobutadiene | 21.30 | | 0.00 | 225 | 15545 | 9.77 | 9.77 | | |
| 3 | Naphthalene | 21.65 | 0.01 | 0.00 | 128 | 67595 | 10.96 | 11.0 | | |
| 3 | 1,2,3-Trichlorobenzene | 22.03 | | 0.00 | 180 | 35253 | 10.88 | 10.9 | | |

| | | | |
|---|---|---|---|
| Prep Amount: | 10 ml | Dilution: | 1.0 |
| Prep Final Vol: | 10 ml | Unit Factor: | 1 |

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

ndetected at or above MDL
nalyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

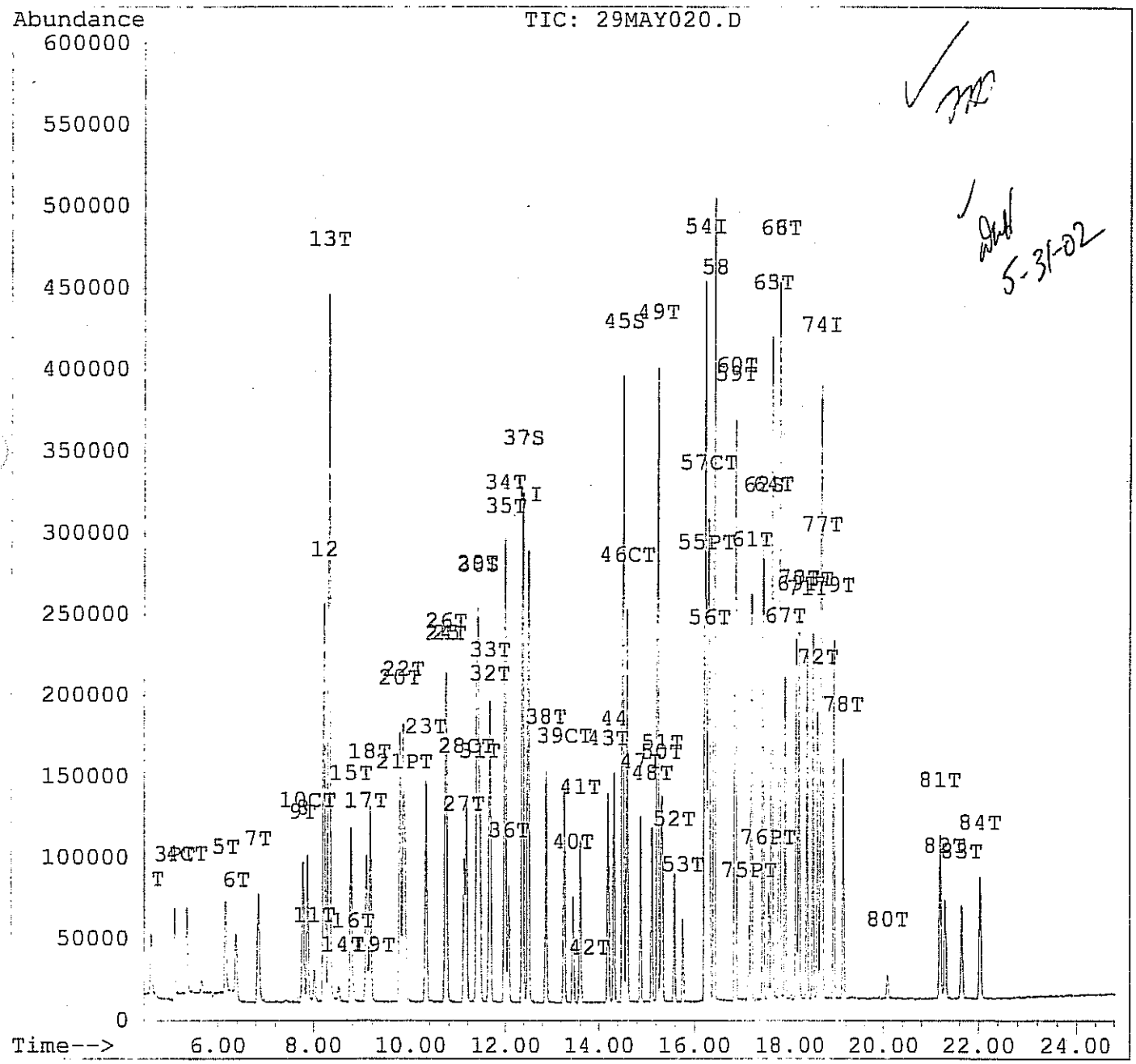
*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
c: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Quantitation Report

Data File : J:\MS03\MAY02\MAY2902\29MAY020.D
Acq On : 29 May 102 7:00 pm
Sample : x2200452-001ms x1 water
Misc :
Quant Time: May 30 11:12 19102

Vial: 18
Operator: dnh
Inst : MS03
Multiplr: 1.00

Method : J:\MS03\METHODS\82600528.M
Title : Volatiles by GC/MS
Last Update : Wed May 29 12:10:58 2002
Response via : Multiple Level Calibration




5-31-02

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200452 |
| **Project:** | Western Ave/#E049-106 | **Date Collected:** | 05/15/2002 |
| **Sample Matrix:** | Water | **Date Received:** | 05/16/2002 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | COG-MW3DMS | **Units:** | ug/L |
| **Lab Code:** | XWG0200681-5 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | 10.1 | | 3.0 | 1 | 05/29/02 | 05/29/02 | |
| Chloromethane | 8.33 | | 2.0 | 1 | 05/29/02 | 05/29/02 | |
| Vinyl Chloride | 7.89 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Bromomethane | 7.15 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Chloroethane | 7.47 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Trichlorofluoromethane | 9.07 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,1,2-Trichlorotrifluoroethane | 9.72 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,1-Dichloroethene | 7.65 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Acetone | 38.8 | | 10 | 1 | 05/29/02 | 05/29/02 | |
| Iodomethane | 37.7 | | 2.0 | 1 | 05/29/02 | 05/29/02 | |
| Carbon Disulfide | 36.8 | | 2.0 | 1 | 05/29/02 | 05/29/02 | |
| Methylene Chloride | 8.19 | | 1.0 | 1 | 05/29/02 | 05/29/02 | M2 |
| ethyl tert-Butyl Ether | 10.2 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| trans-1,2-Dichloroethene | 8.44 | | 0.50 | 1 | 05/29/02 | 05/29/02 | M2 |
| 1,1-Dichloroethane | 8.90 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Vinyl Acetate | 53.5 | | 3.0 | 1 | 05/29/02 | 05/29/02 | |
| 2,2-Dichloropropane | 8.43 | | 2.0 | 1 | 05/29/02 | 05/29/02 | |
| 2-Butanone (MEK) | 43.5 | | 5.0 | 1 | 05/29/02 | 05/29/02 | |
| cis-1,2-Dichloroethene | 8.80 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Bromochloromethane | 9.54 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Chloroform | 8.99 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,1,1-Trichloroethane | 8.80 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Carbon Tetrachloride | 8.89 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,1-Dichloropropene | 8.54 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Benzene | 8.85 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2-Dichloroethane | 8.48 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Trichloroethene | 8.60 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2-Dichloropropane | 8.84 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Dibromomethane | 9.43 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Bromodichloromethane | 9.57 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| cis-1,3-Dichloropropene | 9.40 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 4-Methyl-2-pentanone (MIBK) | 41.5 | | 5.0 | 1 | 05/29/02 | 05/29/02 | |
| Toluene | 9.06 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |

ments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| Client: | GeoTrans | Service Request: | X2200452 |
| Project: | Western Ave/#E049-106 | Date Collected: | 05/15/2002 |
| Sample Matrix: | Water | Date Received: | 05/16/2002 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| Sample Name: | COG-MW3DMS | Units: | ug/L |
| Lab Code: | XWG0200681-5 | Basis: | NA |
| Extraction Method: | EPA 5030B | Level: | Low |
| Analysis Method: | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| trans-1,3-Dichloropropene | 9.52 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,1,2-Trichloroethane | 9.66 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Tetrachloroethene | 23.7 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 2-Hexanone | 40.2 | | 5.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,3-Dichloropropane | 9.75 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Dibromochloromethane | 10.0 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2-Dibromoethane | 10.3 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Chlorobenzene | 8.79 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,1,1,2-Tetrachloroethane | 9.03 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Ethylbenzene | 8.68 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| m,p-Xylenes | 16.4 | | 1.0 | 1 | 05/29/02 | 05/29/02 | M2 |
| o-Xylene | 8.40 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Styrene | 8.32 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Isopropylbenzene | 8.18 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Bromobenzene | 9.54 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2,3-Trichloropropane | 8.76 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| n-Propylbenzene | 8.22 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 2-Chlorotoluene | 8.02 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 4-Chlorotoluene | 8.86 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,3,5-Trimethylbenzene | 7.94 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| tert-Butylbenzene | 8.35 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2,4-Trimethylbenzene | 7.79 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| sec-Butylbenzene | 7.89 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,3-Dichlorobenzene | 9.18 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 4-Isopropyltoluene | 7.88 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Bromoform | 9.87 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,1,2,2-Tetrachloroethane | 10.5 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,4-Dichlorobenzene | 8.78 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2-Dichlorobenzene | 9.50 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| n-Butylbenzene | 8.55 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2-Dibromo-3-chloropropane | 10.5 | | 2.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,2,4-Trichlorobenzene | 9.94 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Hexachlorobutadiene | 9.65 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |

Comments:

# COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200452 |
| **Project:** | Western Ave/#E049-106 | **Date Collected:** | 05/15/2002 |
| **Sample Matrix:** | Water | **Date Received:** | 05/16/2002 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | COG-MW3DMS | **Units:** | ug/L |
| **Lab Code:** | XWG0200681-5 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| **Naphthalene** | **10.6** | | 3.0 | 1 | 05/29/02 | 05/29/02 | |
| **1,2,3-Trichlorobenzene** | **10.4** | | 0.50 | 1 | 05/29/02 | 05/29/02 | |

| Surrogate Name | %Rec | Control Limits | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|
| Dibromofluoromethane | 92 | 84-113 | 05/29/02 | |
| Toluene-d8 | 101 | 68-126 | 05/29/02 | |
| 4-Bromofluorobenzene | 100 | 79-113 | 05/29/02 | |

**Comments:**

# Quantitation Report

| | | | | | |
|---|---|---|---|---|---|
| Bottle ID: | | Tier: | | Matrix: | WATER |
| Prod Code: | 8260 | Collect Date: | | Receive Date: | 05/30/2002 |

| | | | | | |
|---|---|---|---|---|---|
| Analysis Lot: | XWG0200680 | Prep Lot: | XWG0200681 | Report Group: | |
| Analysis Method: | 8260B | Prep Method: | EPA 5030B | | |
| | | Prep Date: | 05/29/2002 | | |
| Prep Ref: | 12586 | | | | |

| | | | |
|---|---|---|---|
| Quant Method: | J:\MS03\METHODS\82600528.M | Calibration ID: | CAL292 |
| Title: | | | |
| Tune Ref: | J:\MS03\MAY02\MAY2902\29MAY003.D | Method ID: | MJ103 |
| MB Ref: | J:\MS03\MAY02\MAY2902\29MAY010.D | Quant based on Method | |

| | | | | | |
|---|---|---|---|---|---|
| Data File: | J:\MS03\MAY02\MAY2902\29MAY021.D | | | Instrument: | MS03 |
| Acqu Date: | 05/29/2002 19:31 | Quant Date: | 05/30/2002 11:12 | Vial: | 18 |
| Run Type: | DMS | | | Dilution: | 1.0 |
| Lab ID: | XWG0200681-5 -- X2200452-001DMS | | | Soln Conc. Units: | ug/L |

## *Internal Standard Compounds*

| IS Ref | Parameter Name | RT | Quant Mass | Response | Solution Conc | Area Criteria |
|---|---|---|---|---|---|---|
| 1 | 1,4-Difluorobenzene | 12.49 | 114 | 275107 | 20.00 | OK |
| 2 | Chlorobenzene-d5 | 16.21 | 117 | 240310 | 20.00 | OK |
| 3 | 1,4-Dichlorobenzene-d4 | 18.66 | 152 | 107267 | 20.00 | OK |

## *Surrogate Compounds*

| IS | Parameter Name | RT | RT Dev | RRT Dev | Quant Mass | Response | Solution Conc | %Rec | %Rec Limits | Rpt? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Dibromofluoromethane | 11.42 | 0.01 | 0.00 | 113 | 105129 | 18.38 | 92 | 84-113 OK | |
| 1 | Fluorobenzene | 12.37 | 0.00 | 0.00 | 96 | 339826 | 19.46 | 97 | 70-130 OK | |
| 1 | Toluene-d8 | 14.51 | 0.00 | 0.00 | 98 | 272223 | 20.11 | 101 | 68-126 OK | |
| 2 | 4-Bromofluorobenzene | 17.42 | 0.00 | 0.00 | 95 | 104970 | 19.94 | 100 | 79-113 OK | |

## *Target Compounds*

Final Conc. Units: ug/L

| IS Ref | Parameter Name | RT | RT Dev | RRT Dev | QuantMass | Response | Solution Conc | Final Conc | Q | Rpt? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Dichlorodifluoromethane | 4.58 | | 0.00 | 85 | 43100 | 10.06 | 10.1 | | |
| 1 | Chloromethane | 5.09 | | 0.00 | 50 | 65126 | 8.33 | 8.33 | | |
| 1 | Vinyl Chloride | 5.35 | | 0.00 | 62 | 68879 | 7.89 | 7.89 | | |
| 1 | Bromomethane | 6.17 | | 0.00 | 94 | 52135 | 7.15 | 7.15 | | |
| 1 | Chloroethane | 6.38 | | 0.00 | 64 | 43677 | 7.47 | 7.47 | | |
| 1 | Trichlorofluoromethane | 6.85 | | 0.00 | 101 | 73394 | 9.07 | 9.07 | | |
| 1 | 1,1,2-Trichlorotrifluoroethane | 7.79 | | 0.00 | 101 | 53058 | 9.72 | 9.72 | | |
| 1 | Acrolein | 7.78 | 0.01 | 0.00 | 56 | 705 | 2.77 | 2.77 | J | |
| 1 | 1,1-Dichloroethene | 7.88 | -0.01 | 0.00 | 96 | 41320 | 7.65 | 7.65 | | |
| 1 | Acetone | 8.03 | 0.01 | 0.00 | 58 | 9058 | 38.75 | 38.8 | | |
| 1 | Iodomethane | 8.22 | -0.01 | 0.00 | 142 | 347220 | 37.74 | 37.7 | | |
| 1 | Carbon Disulfide | 8.33 | | 0.00 | 76 | 778440 | 36.77 | 36.8 | | |
| 1 | Acetonitrile | 8.59 | -0.03 | 0.00 | 41 | 523 | 1.52 | 1.52 | J | |
| 1 | Methylene Chloride | 8.78 | | 0.00 | 84 | 58119 | 8.19 | 8.19 | | |

etected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
n: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

| | | | | | |
|---|---|---|---|---|---|
| Data File: | J:\MS03\MAY02\MAY2902\29MAY021.D | | | Instrument: | MS03 |
| Acqu Date: | 05/29/2002 19:31 | Quant Date: | 05/30/2002 11:12 | Vial: | 18 |
| Run Type: | DMS | | | Dilution: | 1.0 |
| Lab ID: | XWG0200681-5 -- X2200452-001DMS | | | Soln Conc. Units: | ug/L |

*Target Compounds* Final Conc. Units: ug/L

| Ref | Parameter Name | RT | RT Dev | RRT Dev | QuantMass | Response | Solution Conc | Final Conc | Q | Rpt? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | tert-Butyl Alcohol | 8.82 | 0.01 | 0.00 | 59 | 14117 | 72.83 | 72.8 | | |
| 1 | Methyl tert-Butyl Ether | 9.09 | | 0.00 | 73 | 115067 | 10.22 | 10.2 | | |
| 1 | trans-1,2-Dichloroethene | 9.16 | | 0.00 | 96 | 54811 | 8.44 | 8.44 | | |
| 1 | Acrylonitrile | 9.16 | -0.08 | -0.01 | 53 | 1468 | 1.50 | 1.50 | J | |
| 1 | Diisopropyl Ether | 9.78 | | 0.00 | 45 | 195779 | 9.41 | 9.41 | | |
| 1 | 1,1-Dichloroethane | 9.88 | | 0.00 | 63 | 104883 | 8.90 | 8.90 | | |
| 1 | Vinyl Acetate | 9.84 | | 0.00 | 43 | 284449 | 53.46 | 53.5 | | |
| 1 | tert-Butyl Ethyl Ether | 10.32 | | 0.00 | 59 | 152251 | 9.61 | 9.61 | | |
| 1 | 2,2-Dichloropropane | 10.73 | | 0.00 | 77 | 69021 | 8.43 | 8.43 | | |
| 1 | 2-Butanone (MEK) | 10.73 | | 0.00 | 72 | 12834 | 43.54 | 43.5 | | |
| 1 | cis-1,2-Dichloroethene | 10.76 | 0.01 | 0.00 | 96 | 63212 | 8.80 | 8.80 | | |
| 1 | Bromochloromethane | 11.12 | -0.01 | 0.00 | 128 | 26493 | 9.54 | 9.54 | | |
| 1 | Chloroform | 11.17 | | 0.00 | 83 | 105361 | 8.99 | 8.99 | | |
| 1 | Pentafluorobenzene | 11.40 | | 0.00 | 168 | 144927 | 20.65 | 20.7 | E | |
| 1 | 1,1,1-Trichloroethane | 11.46 | | 0.00 | 97 | 76329 | 8.80 | 8.80 | | |
| 1 | Carbon Tetrachloride | 11.66 | | 0.00 | 117 | 59744 | 8.89 | 8.89 | | |
| 1 | 1,1-Dichloropropene | 11.68 | | 0.00 | 75 | 70878 | 8.54 | 8.54 | | |
| 1 | Benzene | 11.99 | | 0.00 | 78 | 193897 | 8.85 | 8.85 | | |
| 1 | tert-Amyl Methyl Ether | 12.00 | | 0.00 | 73 | 124966 | 9.82 | 9.82 | | |
| 1 | 1,2-Dichloroethane | 12.08 | | 0.00 | 62 | 64968 | 8.48 | 8.48 | | |
| | Trichloroethene | 12.87 | | 0.00 | 95 | 53558 | 8.60 | 8.60 | | |
| 1 | 1,2-Dichloropropane | 13.26 | | 0.00 | 63 | 55261 | 8.84 | 8.84 | | |
| 1 | Dibromomethane | 13.45 | | 0.00 | 93 | 32689 | 9.43 | 9.43 | | |
| 1 | Bromodichloromethane | 13.60 | | 0.00 | 83 | 75262 | 9.57 | 9.57 | | |
| 1 | 2-Chloroethyl Vinyl Ether | 13.82 | -0.11 | -0.01 | 63 | 459 | 0.19 | 0.190 | J | |
| 1 | cis-1,3-Dichloropropene | 14.19 | | 0.00 | 75 | 79686 | 9.40 | 9.40 | | |
| 1 | 4-Methyl-2-pentanone (MIBK) | 14.32 | 0.01 | 0.00 | 100 | 13612 | 41.52 | 41.5 | | |
| 1 | Toluene | 14.59 | | 0.00 | 92 | 112640 | 9.06 | 9.06 | | |
| 1 | trans-1,3-Dichloropropene | 14.88 | | 0.00 | 75 | 61161 | 9.52 | 9.52 | | |
| 1 | 1,1,2-Trichloroethane | 15.11 | | 0.00 | 83 | 31098 | 9.66 | 9.66 | | |
| 1 | Tetrachloroethene | 15.24 | 0.01 | 0.00 | 164 | 85428 | 23.74 | 23.7 | | |
| 1 | 2-Hexanone | 15.31 | | 0.00 | 43 | 72507 | 40.17 | 40.2 | | |
| 1 | 1,3-Dichloropropane | 15.34 | 0.01 | 0.00 | 76 | 62495 | 9.75 | 9.75 | | |
| 1 | Dibromochloromethane | 15.58 | | 0.00 | 129 | 39549 | 10.00 | 10.0 | | |
| 1 | 1,2-Dibromoethane | 15.76 | | 0.00 | 107 | 34198 | 10.26 | 10.3 | | |
| 2 | Chlorobenzene | 16.24 | 0.01 | 0.00 | 112 | 115024 | 8.79 | 8.79 | | |
| 2 | 1,1,1,2-Tetrachloroethane | 16.31 | 0.01 | 0.00 | 131 | 41837 | 9.03 | 9.03 | | |
| 2 | Ethylbenzene | 16.28 | | 0.00 | 91 | 196799 | 8.68 | 8.68 | | |
| 2 | m,p-Xylenes | 16.40 | 0.01 | 0.00 | 106 | 139177 | 16.42 | 16.4 | | |
| 2 | o-Xylene | 16.83 | | 0.00 | 106 | 66054 | 8.40 | 8.40 | | |
| 2 | Styrene | 16.85 | | 0.00 | 104 | 113985 | 8.32 | 8.32 | | |
| 2 | Isopropylbenzene | 17.18 | | 0.00 | 105 | 165134 | 8.18 | 8.18 | | |

detected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

| | | | | | |
|---|---|---|---|---|---|
| Data File: | J:\MS03\MAY02\MAY2902\29MAY021.D | | | Instrument: | MS03 |
| Acqu Date: | 05/29/2002 19:31 | Quant Date: | 05/30/2002 11:12 | Vial: | 18 |
| Run Type: | DMS | | | Dilution: | 1.0 |
| Lab ID: | XWG0200681-5 -- X2200452-001DMS | | | Soln Conc. Units: | ug/L |

*Target Compounds* Final Conc. Units: ug/L

| Ref | Parameter Name | RT | RT Dev | RRT Dev | QuantMass | Response | Solution Conc | Final Conc | Q | Rpt? |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | Bromobenzene | 17.62 | | 0.00 | 156 | 42702 | 9.54 | 9.54 | | |
| 2 | 1,2,3-Trichloropropane | 17.62 | | 0.00 | 75 | 34047 | 8.76 | 8.76 | | |
| 2 | n-Propylbenzene | 17.60 | -0.01 | 0.00 | 91 | 216576 | 8.22 | 8.22 | | |
| 2 | 2-Chlorotoluene | 17.78 | 0.01 | 0.00 | 91 | 144403 | 8.02 | 8.02 | | |
| 2 | 4-Chlorotoluene | 17.89 | | 0.00 | 91 | 128549 | 8.86 | 8.86 | | |
| 2 | 1,3,5-Trimethylbenzene | 17.77 | | 0.00 | 105 | 137527 | 7.94 | 7.94 | | |
| 2 | tert-Butylbenzene | 18.13 | | 0.00 | 119 | 106769 | 8.35 | 8.35 | | |
| 2 | 1,2,4-Trimethylbenzene | 18.19 | 0.01 | 0.00 | 105 | 134280 | 7.79 | 7.79 | | |
| 2 | sec-Butylbenzene | 18.36 | | 0.00 | 105 | 168783 | 7.89 | 7.89 | | |
| 2 | 1,3-Dichlorobenzene | 18.59 | | 0.00 | 146 | 76095 | 9.18 | 9.18 | | |
| 2 | 4-Isopropyltoluene | 18.49 | 0.01 | 0.00 | 119 | 134277 | 7.88 | 7.88 | | |
| 3 | Bromoform | 17.12 | | 0.00 | 173 | 19668 | 9.87 | 9.87 | | |
| 3 | 1,1,2,2-Tetrachloroethane | 17.54 | | 0.00 | 83 | 36121 | 10.53 | 10.5 | | |
| 3 | 1,4-Dichlorobenzene | 18.69 | | 0.00 | 146 | 77730 | 8.78 | 8.78 | | |
| 3 | 1,2-Dichlorobenzene | 19.14 | 0.01 | 0.00 | 146 | 66976 | 9.50 | 9.50 | | |
| 3 | n-Butylbenzene | 18.94 | | 0.00 | 91 | 137450 | 8.55 | 8.55 | | |
| 3 | 1,2-Dibromo-3-chloropropane | 20.10 | 0.01 | 0.00 | 75 | 4640 | 10.52 | 10.5 | | |
| 3 | 1,2,4-Trichlorobenzene | 21.20 | | 0.00 | 180 | 41447 | 9.94 | 9.94 | | |
| 3 | Hexachlorobutadiene | 21.31 | 0.01 | 0.00 | 225 | 15258 | 9.65 | 9.65 | | |
| 3 | Naphthalene | 21.65 | 0.01 | 0.00 | 128 | 64964 | 10.60 | 10.6 | | |
| | 1,2,3-Trichlorobenzene | 22.03 | | 0.00 | 180 | 33596 | 10.44 | 10.4 | | |

| | | | |
|---|---|---|---|
| Prep Amount: | 10 ml | Dilution: | 1.0 |
| Prep Final Vol: | 10 ml | Unit Factor: | 1 |

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

detected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

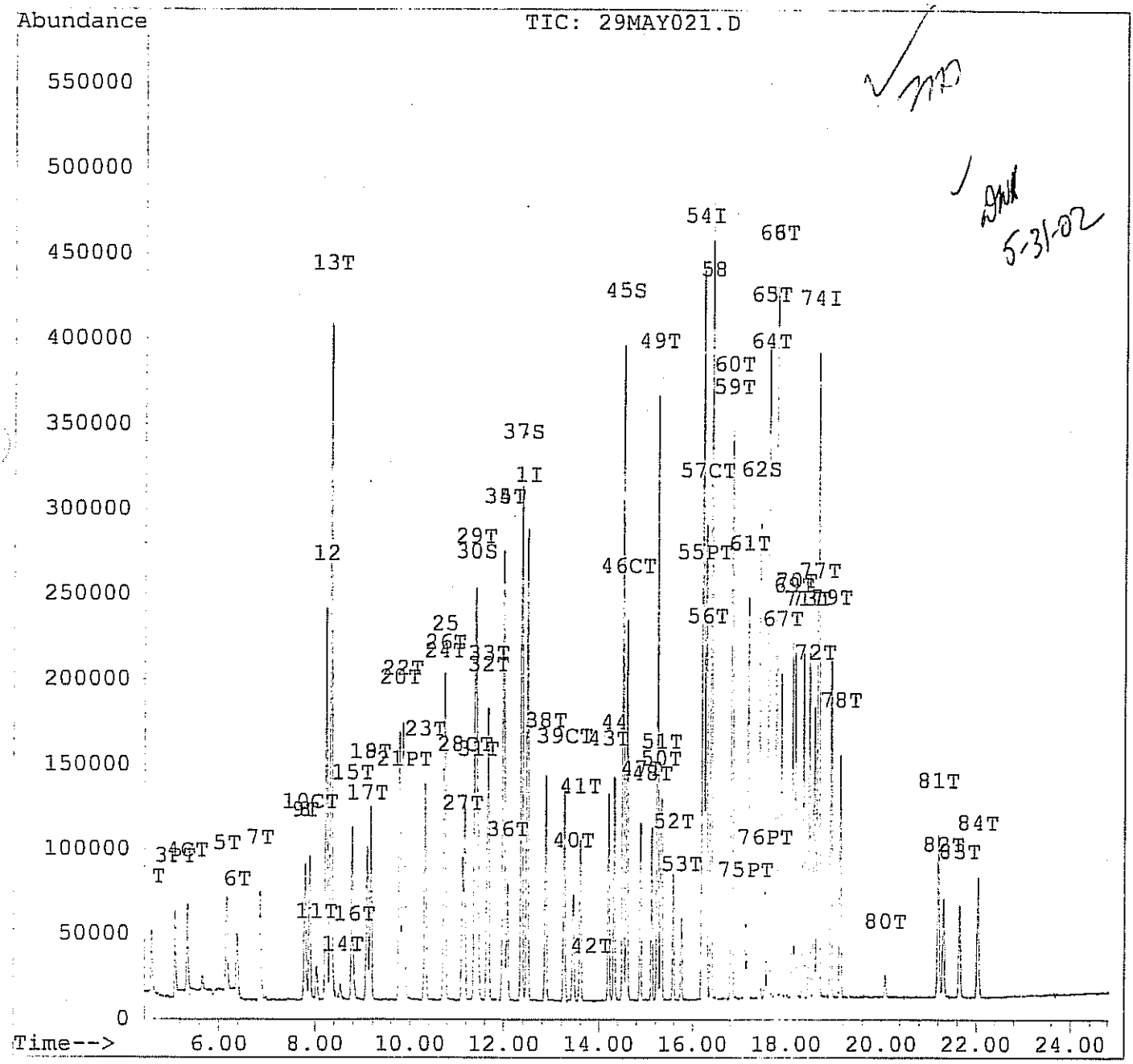
*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Quantitation Report

Data File : J:\MS03\MAY02\MAY2902\29MAY021.D
Acq On : 29 May 102 7:31 pm
Sample : x2200452-001dms x1 water
Misc :
Quant Time: May 30 11:12 19102

Vial: 18
Operator: dnh
Inst : MS03
Multiplr: 1.00

Method : J:\MS03\METHODS\82600528.M
Title : Volatiles by GC/MS
Last Update : Wed May 29 12:10:58 2002
Response via : Multiple Level Calibration




5-31-02



000084

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| Client: | GeoTrans | Service Request: | X2200452 |
| Project: | Western Ave/#E049-106 | Date Collected: | NA |
| Sample Matrix: | Water | Date Received: | NA |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| Sample Name: | Lab Control Sample | Units: | ug/L |
| Lab Code: | XWG0200681-1 | Basis: | NA |
| Extraction Method: | EPA 5030B | Level: | Low |
| Analysis Method: | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | 11.0 | | 3.0 | 1 | 05/29/02 | 05/29/02 | |
| Chloromethane | 8.78 | | 2.0 | 1 | 05/29/02 | 05/29/02 | |
| Vinyl Chloride | 8.45 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Bromomethane | 7.96 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Chloroethane | 8.07 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Trichlorofluoromethane | 9.63 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,1,2-Trichlorotrifluoroethane | 10.6 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,1-Dichloroethene | 8.23 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Acetone | 44.2 | | 10 | 1 | 05/29/02 | 05/29/02 | |
| Iodomethane | 40.1 | | 2.0 | 1 | 05/29/02 | 05/29/02 | |
| Carbon Disulfide | 38.9 | | 2.0 | 1 | 05/29/02 | 05/29/02 | |
| Methylene Chloride | 8.64 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Methyl tert-Butyl Ether | 10.4 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| trans-1,2-Dichloroethene | 9.04 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,1-Dichloroethane | 9.55 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Vinyl Acetate | 51.9 | | 3.0 | 1 | 05/29/02 | 05/29/02 | |
| 2,2-Dichloropropane | 10.2 | | 2.0 | 1 | 05/29/02 | 05/29/02 | |
| 2-Butanone (MEK) | 43.3 | | 5.0 | 1 | 05/29/02 | 05/29/02 | |
| cis-1,2-Dichloroethene | 9.49 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Bromochloromethane | 10.0 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Chloroform | 9.52 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,1,1-Trichloroethane | 9.23 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Carbon Tetrachloride | 9.48 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,1-Dichloropropene | 9.12 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Benzene | 9.34 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2-Dichloroethane | 8.88 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Trichloroethene | 9.33 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2-Dichloropropane | 9.44 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Dibromomethane | 9.43 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Bromodichloromethane | 9.76 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| cis-1,3-Dichloropropene | 9.90 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 4-Methyl-2-pentanone (MIBK) | 40.8 | | 5.0 | 1 | 05/29/02 | 05/29/02 | |
| Toluene | 9.71 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |

Comments:

# COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200452 |
| **Project:** | Western Ave/#E049-106 | **Date Collected:** | NA |
| **Sample Matrix:** | Water | **Date Received:** | NA |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | Lab Control Sample | **Units:** | ug/L |
| **Lab Code:** | XWG0200681-1 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| trans-1,3-Dichloropropene | 10.2 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,1,2-Trichloroethane | 9.67 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Tetrachloroethene | 9.48 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 2-Hexanone | 41.1 | | 5.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,3-Dichloropropane | 9.84 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Dibromochloromethane | 9.98 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2-Dibromoethane | 9.92 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Chlorobenzene | 9.58 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,1,1,2-Tetrachloroethane | 9.79 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Ethylbenzene | 9.68 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| m,p-Xylenes | 18.1 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| o-Xylene | 8.82 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Styrene | 8.90 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Isopropylbenzene | 8.79 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Bromobenzene | 10.4 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2,3-Trichloropropane | 9.59 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| n-Propylbenzene | 8.90 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 2-Chlorotoluene | 9.05 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 4-Chlorotoluene | 10.3 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,3,5-Trimethylbenzene | 8.85 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| tert-Butylbenzene | 9.39 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2,4-Trimethylbenzene | 8.99 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| sec-Butylbenzene | 9.08 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,3-Dichlorobenzene | 10.7 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 4-Isopropyltoluene | 9.22 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Bromoform | 9.55 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,1,2,2-Tetrachloroethane | 9.87 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,4-Dichlorobenzene | 9.57 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2-Dichlorobenzene | 10.3 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| n-Butylbenzene | 9.62 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2-Dibromo-3-chloropropane | 11.6 | | 2.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,2,4-Trichlorobenzene | 9.42 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Hexachlorobutadiene | 9.72 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200452 |
| **Project:** | Western Ave/#E049-106 | **Date Collected:** | NA |
| **Sample Matrix:** | Water | **Date Received:** | NA |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | Lab Control Sample | **Units:** | ug/L |
| **Lab Code:** | XWG0200681-1 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| Naphthalene | 9.89 | | 3.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,2,3-Trichlorobenzene | 9.98 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |

| Surrogate Name | %Rec | Control Limits | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|
| Dibromofluoromethane | 91 | 84-113 | 05/29/02 | |
| Toluene-d8 | 99 | 68-126 | 05/29/02 | |
| 4-Bromofluorobenzene | 100 | 79-113 | 05/29/02 | |

Comments:

# Quantitation Report

| | | | | | |
|---|---|---|---|---|---|
| Bottle ID: | | Tier: | | Matrix: | WATER |
| Prod Code: | 8260 | Collect Date: | | Receive Date: | 05/29/2002 |

| | | | | | |
|---|---|---|---|---|---|
| Analysis Lot: | XWG0200680 | Prep Lot: | XWG0200681 | Report Group: | |
| Analysis Method: | 8260B | Prep Method: | EPA 5030B | | |
| Prep Ref: | 12582 | Prep Date: | 05/29/2002 | | |

| | | | |
|---|---|---|---|
| Quant Method: | J:\MS03\METHODS\82600528.M | Calibration ID: | CAL292 |
| Title: | | | |
| Tune Ref: | J:\MS03\MAY02\MAY2902\29MAY003.D | Method ID: | MJ103 |
| MB Ref: | J:\MS03\MAY02\MAY2902\29MAY010.D | Quant based on Method | |

| | | | | | |
|---|---|---|---|---|---|
| Data File: | J:\MS03\MAY02\MAY2902\29MAY006.D | | | Instrument: | MS03 |
| Acqu Date: | 05/29/2002 11:49 | Quant Date: | 05/29/2002 12:51 | Vial: | 4 |
| Run Type: | LCS | | | Dilution: | 1.0 |
| Lab ID: | XWG0200681-1 | | | Soln Conc. Units: | ug/L |

## *Internal Standard Compounds*

| IS Ref | Parameter Name | RT | Quant Mass | Response | Solution Conc | Area Criteria |
|---|---|---|---|---|---|---|
| 1 | 1,4-Difluorobenzene | 12.48 | 114 | 277490 | 20.00 | OK |
| 2 | Chlorobenzene-d5 | 16.20 | 117 | 221125 | 20.00 | OK |
| 3 | 1,4-Dichlorobenzene-d4 | 18.66 | 152 | 106005 | 20.00 | OK |

## *Surrogate Compounds*

| IS Ref | Parameter Name | RT | RT Dev | RRT Dev | Quant Mass | Response | Solution Conc | %Rec | %Rec Limits | | Rpt? |
|---|---|---|---|---|---|---|---|---|---|---|---|
| [illegible] | Dibromofluoromethane | 11.41 | 0.00 | 0.00 | 113 | 104656 | 18.14 | 91 | 84-113 | OK | |
| 1 | Fluorobenzene | 12.37 | 0.00 | 0.00 | 96 | 339004 | 19.24 | 96 | 70-130 | OK | |
| 1 | Toluene-d8 | 14.51 | 0.00 | 0.00 | 98 | 269344 | 19.73 | 99 | 68-126 | OK | |
| 2 | 4-Bromofluorobenzene | 17.42 | 0.00 | 0.00 | 95 | 96548 | 19.93 | 100 | 79-113 | OK | |

## *Target Compounds*

Final Conc. Units: ug/L

| IS Ref | Parameter Name | RT | RT Dev | RRT Dev | QuantMass | Response | Solution Conc | Final Conc | Q | Rpt? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Dichlorodifluoromethane | 4.58 | | 0.00 | 85 | 47426 | 10.97 | 11.0 | | |
| 1 | Chloromethane | 5.09 | | 0.00 | 50 | 69182 | 8.78 | 8.78 | | |
| 1 | Vinyl Chloride | 5.35 | | 0.00 | 62 | 74441 | 8.45 | 8.45 | | |
| 1 | Bromomethane | 6.17 | | 0.00 | 94 | 58490 | 7.96 | 7.96 | | |
| 1 | Chloroethane | 6.38 | | 0.00 | 64 | 47617 | 8.07 | 8.07 | | |
| 1 | Trichlorofluoromethane | 6.85 | | 0.00 | 101 | 78612 | 9.63 | 9.63 | | |
| 1 | 1,1,2-Trichlorotrifluoroethane | 7.78 | -0.01 | 0.00 | 101 | 58448 | 10.62 | 10.6 | | |
| 1 | Acrolein | 7.77 | | 0.00 | 56 | 21212 | 82.59 | 82.6 | | |
| 1 | 1,1-Dichloroethene | 7.88 | -0.01 | 0.00 | 96 | 44864 | 8.23 | 8.23 | | |
| 1 | Acetone | 8.02 | | 0.00 | 58 | 10191 | 44.22 | 44.2 | | |
| 1 | Iodomethane | 8.22 | -0.01 | 0.00 | 142 | 371978 | 40.08 | 40.1 | | |
| 1 | Carbon Disulfide | 8.33 | | 0.00 | 76 | 830751 | 38.90 | 38.9 | | |
| 1 | Acetonitrile | 8.51 | -0.11 | -0.01 | 41 | 347 | 1.00 | 1.00 | J | |
| 1 | Methylene Chloride | 8.77 | -0.01 | 0.00 | 84 | 61888 | 8.64 | 8.64 | | |

[illegible]etected at or above MDL
[illegible]alyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

| | | | | | |
|---|---|---|---|---|---|
| Data File: | J:\MS03\MAY02\MAY2902\29MAY006.D | | | Instrument: | MS03 |
| Acqu Date: | 05/29/2002 11:49 | Quant Date: | 05/29/2002 12:51 | Vial: | 4 |
| Run Type: | LCS | | | Dilution: | 1.0 |
| Lab ID: | XWG0200681-1 | | | Soln Conc. Units: | ug/L |

*Target Compounds* Final Conc. Units: ug/L

| Ref | Parameter Name | RT | RT Dev | RRT Dev | QuantMass | Response | Solution Conc | Final Conc | Q | Rpt? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | tert-Butyl Alcohol | 8.81 | | 0.00 | 59 | 13926 | 71.23 | 71.2 | | |
| 1 | Methyl tert-Butyl Ether | 9.08 | -0.01 | 0.00 | 73 | 118151 | 10.40 | 10.4 | | |
| 1 | trans-1,2-Dichloroethene | 9.16 | | 0.00 | 96 | 59187 | 9.04 | 9.04 | | |
| 1 | Acrylonitrile | 9.23 | -0.01 | 0.00 | 53 | 77211 | 78.38 | 78.4 | | |
| 1 | Diisopropyl Ether | 9.77 | -0.01 | 0.00 | 45 | 207202 | 9.87 | 9.87 | | |
| 1 | 1,1-Dichloroethane | 9.88 | | 0.00 | 63 | 113485 | 9.55 | 9.55 | | |
| 1 | Vinyl Acetate | 9.84 | | 0.00 | 43 | 278676 | 51.93 | 51.9 | | |
| 1 | tert-Butyl Ethyl Ether | 10.32 | | 0.00 | 59 | 160942 | 10.07 | 10.1 | | |
| 1 | 2,2-Dichloropropane | 10.73 | | 0.00 | 77 | 83946 | 10.16 | 10.2 | | |
| 1 | 2-Butanone (MEK) | 10.72 | -0.01 | 0.00 | 72 | 12868 | 43.26 | 43.3 | | |
| 1 | cis-1,2-Dichloroethene | 10.75 | | 0.00 | 96 | 68762 | 9.49 | 9.49 | | |
| 1 | Bromochloromethane | 11.12 | -0.01 | 0.00 | 128 | 27995 | 10.00 | 10.0 | | |
| 1 | Chloroform | 11.17 | | 0.00 | 83 | 112537 | 9.52 | 9.52 | | |
| 1 | Pentafluorobenzene | 11.39 | -0.01 | 0.00 | 168 | 143594 | 20.28 | 20.3 | E | |
| 1 | 1,1,1-Trichloroethane | 11.45 | -0.01 | 0.00 | 97 | 80789 | 9.23 | 9.23 | | |
| 1 | Carbon Tetrachloride | 11.65 | -0.01 | 0.00 | 117 | 64202 | 9.48 | 9.48 | | |
| 1 | 1,1-Dichloropropene | 11.67 | -0.01 | 0.00 | 75 | 76381 | 9.12 | 9.12 | | |
| 1 | Benzene | 11.98 | -0.01 | 0.00 | 78 | 206506 | 9.34 | 9.34 | | |
| 1 | tert-Amyl Methyl Ether | 12.00 | | 0.00 | 73 | 131001 | 10.20 | 10.2 | | |
| 1 | 1,2-Dichloroethane | 12.07 | -0.01 | 0.00 | 62 | 68602 | 8.88 | 8.88 | | |
| 1 | Trichloroethene | 12.87 | | 0.00 | 95 | 58615 | 9.33 | 9.33 | | |
| 1 | 1,2-Dichloropropane | 13.25 | -0.01 | 0.00 | 63 | 59489 | 9.44 | 9.44 | | |
| 1 | Dibromomethane | 13.45 | | 0.00 | 93 | 32947 | 9.43 | 9.43 | | |
| 1 | Bromodichloromethane | 13.60 | | 0.00 | 83 | 77411 | 9.76 | 9.76 | | |
| 1 | 2-Chloroethyl Vinyl Ether | 13.93 | | 0.00 | 63 | 100069 | 40.67 | 40.7 | | |
| 1 | cis-1,3-Dichloropropene | 14.19 | | 0.00 | 75 | 84591 | 9.90 | 9.90 | | |
| 1 | 4-Methyl-2-pentanone (MIBK) | 14.32 | 0.01 | 0.00 | 100 | 13481 | 40.76 | 40.8 | | |
| 1 | Toluene | 14.59 | | 0.00 | 92 | 121802 | 9.71 | 9.71 | | |
| 1 | trans-1,3-Dichloropropene | 14.88 | | 0.00 | 75 | 66035 | 10.19 | 10.2 | | |
| 1 | 1,1,2-Trichloroethane | 15.11 | | 0.00 | 83 | 31399 | 9.67 | 9.67 | | |
| 1 | Tetrachloroethene | 15.23 | | 0.00 | 164 | 34406 | 9.48 | 9.48 | | |
| 1 | 2-Hexanone | 15.31 | | 0.00 | 43 | 74889 | 41.14 | 41.1 | | |
| 1 | 1,3-Dichloropropane | 15.33 | | 0.00 | 76 | 63598 | 9.84 | 9.84 | | |
| 1 | Dibromochloromethane | 15.58 | | 0.00 | 129 | 39830 | 9.98 | 9.98 | | |
| 1 | 1,2-Dibromoethane | 15.76 | | 0.00 | 107 | 33355 | 9.92 | 9.92 | | |
| 2 | Chlorobenzene | 16.23 | | 0.00 | 112 | 115366 | 9.58 | 9.58 | | |
| 2 | 1,1,1,2-Tetrachloroethane | 16.30 | | 0.00 | 131 | 41721 | 9.79 | 9.79 | | |
| 2 | Ethylbenzene | 16.27 | -0.01 | 0.00 | 91 | 201904 | 9.68 | 9.68 | | |
| 2 | m,p-Xylenes | 16.39 | | 0.00 | 106 | 144088 | 18.10 | 18.1 | | |
| 2 | o-Xylene | 16.83 | | 0.00 | 106 | 64494 | 8.82 | 8.82 | | |
| 2 | Styrene | 16.85 | | 0.00 | 104 | 113916 | 8.90 | 8.90 | | |
| 2 | Isopropylbenzene | 17.18 | | 0.00 | 105 | 165283 | 8.79 | 8.79 | | |

etected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

| | | | | | |
|---|---|---|---|---|---|
| Data File: | J:\MS03\MAY02\MAY2902\29MAY006.D | | | Instrument: | MS03 |
| Acqu Date: | 05/29/2002 11:49 | Quant Date: | 05/29/2002 12:51 | Vial: | 4 |
| Run Type: | LCS | | | Dilution: | 1.0 |
| Lab ID: | XWG0200681-1 | | | Soln Conc. Units: | ug/L |

*Target Compounds* Final Conc. Units: ug/L

| Ref | Parameter Name | RT | RT Dev | RRT Dev | QuantMass | Response | Solution Conc | Final Conc | Q | Rpt? |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | Bromobenzene | 17.62 | | 0.00 | 156 | 42829 | 10.40 | 10.4 | | |
| 2 | 1,2,3-Trichloropropane | 17.62 | | 0.00 | 75 | 34309 | 9.59 | 9.59 | | |
| 2 | n-Propylbenzene | 17.60 | -0.01 | 0.00 | 91 | 218673 | 8.90 | 8.90 | | |
| 2 | 2-Chlorotoluene | 17.77 | | 0.00 | 91 | 152734 | 9.05 | 9.05 | | |
| 2 | 4-Chlorotoluene | 17.89 | | 0.00 | 91 | 138053 | 10.34 | 10.3 | | |
| 2 | 1,3,5-Trimethylbenzene | 17.77 | | 0.00 | 105 | 143718 | 8.85 | 8.85 | | |
| 2 | tert-Butylbenzene | 18.13 | | 0.00 | 119 | 112548 | 9.39 | 9.39 | | |
| 2 | 1,2,4-Trimethylbenzene | 18.18 | | 0.00 | 105 | 145534 | 8.99 | 8.99 | | |
| 2 | sec-Butylbenzene | 18.36 | | 0.00 | 105 | 182166 | 9.08 | 9.08 | | |
| 2 | 1,3-Dichlorobenzene | 18.59 | | 0.00 | 146 | 81667 | 10.71 | 10.7 | | |
| 2 | 4-Isopropyltoluene | 18.48 | | 0.00 | 119 | 147951 | 9.22 | 9.22 | | |
| 3 | Bromoform | 17.12 | | 0.00 | 173 | 18807 | 9.55 | 9.55 | | |
| 3 | 1,1,2,2-Tetrachloroethane | 17.54 | | 0.00 | 83 | 33457 | 9.87 | 9.87 | | |
| 3 | 1,4-Dichlorobenzene | 18.69 | | 0.00 | 146 | 83688 | 9.57 | 9.57 | | |
| 3 | 1,2-Dichlorobenzene | 19.13 | | 0.00 | 146 | 71590 | 10.27 | 10.3 | | |
| 3 | n-Butylbenzene | 18.94 | | 0.00 | 91 | 152778 | 9.62 | 9.62 | | |
| 3 | 1,2-Dibromo-3-chloropropane | 20.08 | -0.01 | 0.00 | 75 | 5033 | 11.62 | 11.6 | | |
| 3 | 1,2,4-Trichlorobenzene | 21.19 | -0.01 | 0.00 | 180 | 38813 | 9.42 | 9.42 | | |
| 3 | Hexachlorobutadiene | 21.30 | | 0.00 | 225 | 15188 | 9.72 | 9.72 | | |
| 3 | Naphthalene | 21.64 | | 0.00 | 128 | 59931 | 9.89 | 9.89 | | |
| | 1,2,3-Trichlorobenzene | 22.03 | | 0.00 | 180 | 31750 | 9.98 | 9.98 | | |

| | | | |
|---|---|---|---|
| Prep Amount: | 10 ml | Dilution: | 1.0 |
| Prep Final Vol: | 10 ml | Unit Factor: | 1 |

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

etected at or above MDL
...alyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

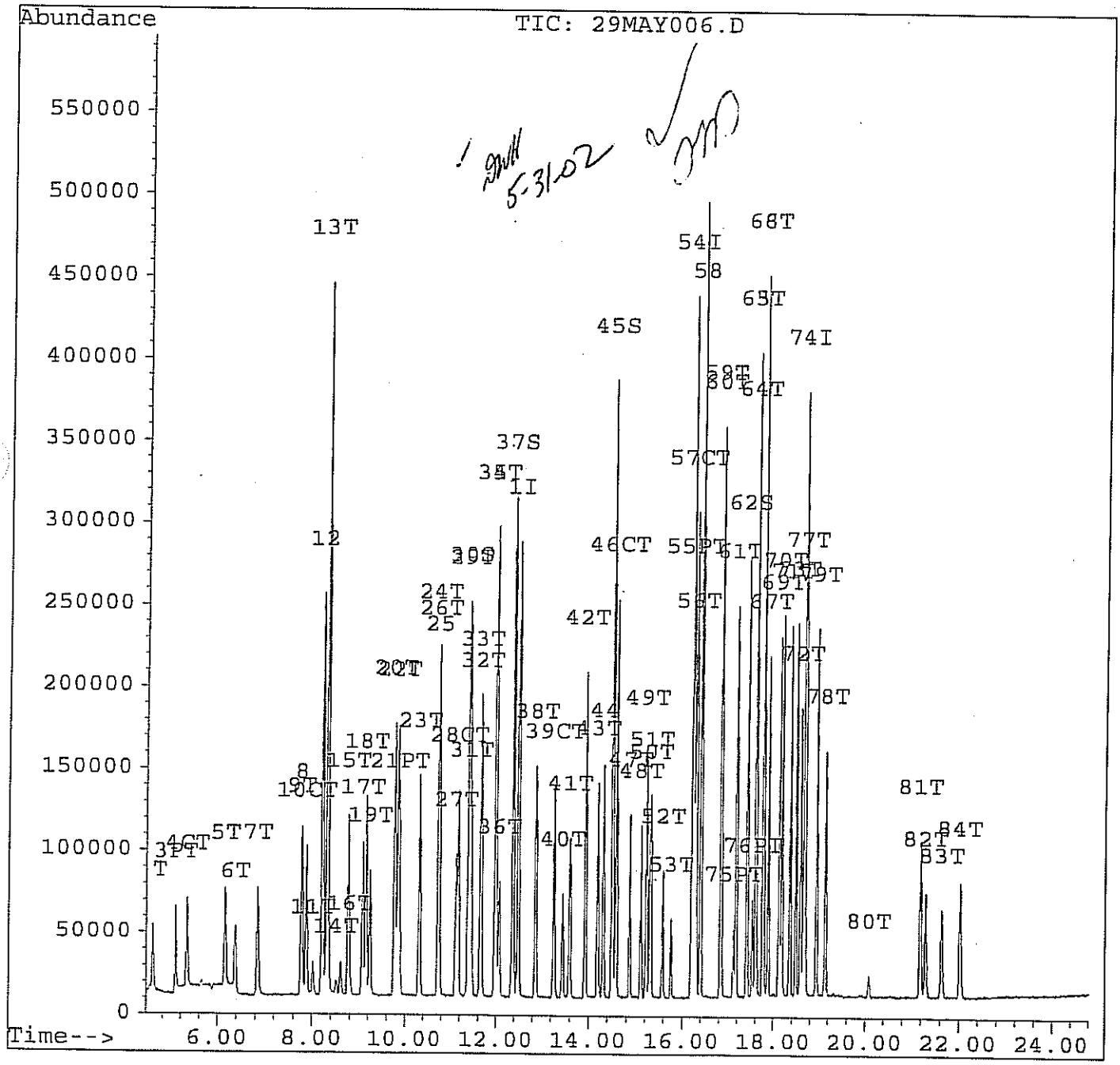
*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Quantitation Report

Data File : J:\MS03\MAY02\MAY2902\29MAY006.D
Acq On : 29 May 102 11:49 am
Sample : 10/40/80 ppb lcs 052902
Misc :
Quant Time: May 29 12:51 19102

Vial: 4
Operator: dnh
Inst : MS03
Multiplr: 1.00

Method : J:\MS03\METHODS\82600528.M
Title : Volatiles by GC/MS
Last Update : Wed May 29 12:10:58 2002
Response via : Multiple Level Calibration




5-31-02

# COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| Client: | GeoTrans | Service Request: | X2200452 |
| Project: | Western Ave/#E049-106 | Date Collected: | NA |
| Sample Matrix: | Water | Date Received: | NA |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| Sample Name: | Duplicate Lab Control Sample | Units: | ug/L |
| Lab Code: | XWG0200681-2 | Basis: | NA |
| Extraction Method: | EPA 5030B | Level: | Low |
| Analysis Method: | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | 10.6 | | 3.0 | 1 | 05/29/02 | 05/29/02 | |
| Chloromethane | 8.84 | | 2.0 | 1 | 05/29/02 | 05/29/02 | |
| Vinyl Chloride | 8.30 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Bromomethane | 7.80 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Chloroethane | 7.94 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Trichlorofluoromethane | 9.31 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,1,2-Trichlorotrifluoroethane | 10.3 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,1-Dichloroethene | 7.92 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Acetone | 42.6 | | 10 | 1 | 05/29/02 | 05/29/02 | |
| Iodomethane | 39.8 | | 2.0 | 1 | 05/29/02 | 05/29/02 | |
| Carbon Disulfide | 37.9 | | 2.0 | 1 | 05/29/02 | 05/29/02 | |
| Methylene Chloride | 8.65 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Methyl tert-Butyl Ether | 10.2 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| trans-1,2-Dichloroethene | 8.69 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,1-Dichloroethane | 9.29 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Vinyl Acetate | 48.3 | | 3.0 | 1 | 05/29/02 | 05/29/02 | |
| 2,2-Dichloropropane | 9.65 | | 2.0 | 1 | 05/29/02 | 05/29/02 | |
| 2-Butanone (MEK) | 42.5 | | 5.0 | 1 | 05/29/02 | 05/29/02 | |
| cis-1,2-Dichloroethene | 9.28 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Bromochloromethane | 9.89 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Chloroform | 9.48 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,1,1-Trichloroethane | 8.96 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Carbon Tetrachloride | 9.23 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,1-Dichloropropene | 9.00 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Benzene | 9.45 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2-Dichloroethane | 8.81 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Trichloroethene | 9.37 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2-Dichloropropane | 9.65 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Dibromomethane | 9.79 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Bromodichloromethane | 9.90 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| cis-1,3-Dichloropropene | 10.2 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 4-Methyl-2-pentanone (MIBK) | 41.3 | | 5.0 | 1 | 05/29/02 | 05/29/02 | |
| Toluene | 9.55 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| Client: | GeoTrans | Service Request: | X2200452 |
| Project: | Western Ave/#E049-106 | Date Collected: | NA |
| Sample Matrix: | Water | Date Received: | NA |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| Sample Name: | Duplicate Lab Control Sample | Units: | ug/L |
| Lab Code: | XWG0200681-2 | Basis: | NA |
| Extraction Method: | EPA 5030B | Level: | Low |
| Analysis Method: | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| trans-1,3-Dichloropropene | 10.2 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,1,2-Trichloroethane | 10.3 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Tetrachloroethene | 10.1 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 2-Hexanone | 39.2 | | 5.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,3-Dichloropropane | 9.84 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Dibromochloromethane | 10.0 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2-Dibromoethane | 10.2 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Chlorobenzene | 9.48 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,1,1,2-Tetrachloroethane | 9.69 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Ethylbenzene | 9.29 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| m,p-Xylenes | 17.5 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| Xylene | 8.57 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Styrene | 8.57 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Isopropylbenzene | 8.37 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Bromobenzene | 10.3 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2,3-Trichloropropane | 9.87 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| n-Propylbenzene | 8.63 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 2-Chlorotoluene | 8.84 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 4-Chlorotoluene | 9.96 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,3,5-Trimethylbenzene | 8.90 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| tert-Butylbenzene | 9.00 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2,4-Trimethylbenzene | 8.88 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| sec-Butylbenzene | 8.66 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,3-Dichlorobenzene | 10.4 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 4-Isopropyltoluene | 8.95 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Bromoform | 9.77 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,1,2,2-Tetrachloroethane | 10.0 | | 1.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,4-Dichlorobenzene | 9.59 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2-Dichlorobenzene | 10.2 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| n-Butylbenzene | 9.68 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| 1,2-Dibromo-3-chloropropane | 10.5 | | 2.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,2,4-Trichlorobenzene | 9.88 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |
| Hexachlorobutadiene | 9.72 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

| | | | |
|---|---|---|---|
| **Client:** | GeoTrans | **Service Request:** | X2200452 |
| **Project:** | Western Ave/#E049-106 | **Date Collected:** | NA |
| **Sample Matrix:** | Water | **Date Received:** | NA |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | Duplicate Lab Control Sample | **Units:** | ug/L |
| **Lab Code:** | XWG0200681-2 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260B | | |

| Analyte Name | Result | Q | MRL | Dilution Factor | Date Extracted | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|---|---|---|
| Naphthalene | 10.1 | | 3.0 | 1 | 05/29/02 | 05/29/02 | |
| 1,2,3-Trichlorobenzene | 10.4 | | 0.50 | 1 | 05/29/02 | 05/29/02 | |

| Surrogate Name | %Rec | Control Limits | Date Analyzed | Arizona Qualifier |
|---|---|---|---|---|
| Dibromofluoromethane | 90 | 84-113 | 05/29/02 | |
| Toluene-d8 | 99 | 68-126 | 05/29/02 | |
| 4-Bromofluorobenzene | 97 | 79-113 | 05/29/02 | |

Comments:

# Quantitation Report

| | | | | | |
|---|---|---|---|---|---|
| Bottle ID: | | Tier: | | Matrix: | WATER |
| Prod Code: | 8260 | Collect Date: | | Receive Date: | 05/29/2002 |

| | | | | | |
|---|---|---|---|---|---|
| Analysis Lot: | XWG0200680 | Prep Lot: | XWG0200681 | Report Group: | |
| Analysis Method: | 8260B | Prep Method: | EPA 5030B | | |
| Prep Ref: | 12583 | Prep Date: | 05/29/2002 | | |

| | | | |
|---|---|---|---|
| Quant Method: | J:\MS03\METHODS\82600528.M | Calibration ID: | CAL292 |
| Title: | | | |
| Tune Ref: | J:\MS03\MAY02\MAY2902\29MAY003.D | Method ID: | MJ103 |
| MB Ref: | J:\MS03\MAY02\MAY2902\29MAY010.D | Quant based on Method | |

| | | | | | |
|---|---|---|---|---|---|
| Data File: | J:\MS03\MAY02\MAY2902\29MAY007.D | | | Instrument: | MS03 |
| Acqu Date: | 05/29/2002 12:19 | Quant Date: | 05/29/2002 12:51 | Vial: | 5 |
| Run Type: | DLCS | | | Dilution: | 1.0 |
| Lab ID: | XWG0200681-2 | | | Soln Conc. Units: | ug/L |

## *Internal Standard Compounds*

| IS Ref | Parameter Name | RT | Quant Mass | Response | Solution Conc | Area Criteria |
|---|---|---|---|---|---|---|
| 1 | 1,4-Difluorobenzene | 12.49 | 114 | 274323 | 20.00 | OK |
| 2 | Chlorobenzene-d5 | 16.20 | 117 | 217872 | 20.00 | OK |
| 3 | 1,4-Dichlorobenzene-d4 | 18.66 | 152 | 102258 | 20.00 | OK |

## *Surrogate Compounds*

| IS Ref | Parameter Name | RT | RT Dev | RRT Dev | Quant Mass | Response | Solution Conc | %Rec | %Rec Limits | Rpt? |
|---|---|---|---|---|---|---|---|---|---|---|
| | Dibromofluoromethane | 11.41 | 0.00 | 0.00 | 113 | 102993 | 18.06 | 90 | 84-113 | OK |
| 1 | Fluorobenzene | 12.36 | -0.01 | 0.00 | 96 | 342921 | 19.69 | 98 | 70-130 | OK |
| 1 | Toluene-d8 | 14.50 | -0.01 | 0.00 | 98 | 268309 | 19.88 | 99 | 68-126 | OK |
| 2 | 4-Bromofluorobenzene | 17.42 | 0.00 | 0.00 | 95 | 92594 | 19.40 | 97 | 79-113 | OK |

## *Target Compounds*

Final Conc. Units: ug/L

| IS Ref | Parameter Name | RT | RT Dev | RRT Dev | QuantMass | Response | Solution Conc | Final Conc | Q | Rpt? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Dichlorodifluoromethane | 4.58 | | 0.00 | 85 | 45452 | 10.63 | 10.6 | | |
| 1 | Chloromethane | 5.09 | | 0.00 | 50 | 68902 | 8.84 | 8.84 | | |
| 1 | Vinyl Chloride | 5.34 | -0.01 | 0.00 | 62 | 72296 | 8.30 | 8.30 | | |
| 1 | Bromomethane | 6.16 | -0.01 | 0.00 | 94 | 56667 | 7.80 | 7.80 | | |
| 1 | Chloroethane | 6.37 | -0.01 | 0.00 | 64 | 46284 | 7.94 | 7.94 | | |
| 1 | Trichlorofluoromethane | 6.85 | | 0.00 | 101 | 75177 | 9.31 | 9.31 | | |
| 1 | 1,1,2-Trichlorotrifluoroethane | 7.79 | | 0.00 | 101 | 56090 | 10.31 | 10.3 | | |
| 1 | Acrolein | 7.77 | | 0.00 | 56 | 19886 | 78.32 | 78.3 | | |
| 1 | 1,1-Dichloroethene | 7.88 | -0.01 | 0.00 | 96 | 42648 | 7.92 | 7.92 | | |
| 1 | Acetone | 8.02 | | 0.00 | 58 | 9763 | 42.59 | 42.6 | | |
| 1 | Iodomethane | 8.22 | -0.01 | 0.00 | 142 | 365324 | 39.82 | 39.8 | | |
| 1 | Carbon Disulfide | 8.33 | | 0.00 | 76 | 799046 | 37.85 | 37.9 | | |
| 1 | Acetonitrile | 8.61 | -0.01 | 0.00 | 41 | 26901 | 78.34 | 78.3 | | |
| 1 | Methylene Chloride | 8.77 | -0.01 | 0.00 | 84 | 61266 | 8.65 | 8.65 | | |

undetected at or above MDL
analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

| | | | | | |
|---|---|---|---|---|---|
| Data File: | J:\MS03\MAY02\MAY2902\29MAY007.D | | | Instrument: | MS03 |
| Acqu Date: | 05/29/2002 12:19 | Quant Date: | 05/29/2002 12:51 | Vial: | 5 |
| Run Type: | DLCS | | | Dilution: | 1.0 |
| Lab ID: | XWG0200681-2 | | | Soln Conc. Units: | ug/L |

*Target Compounds* Final Conc. Units: ug/L

| Ref | Parameter Name | RT | RT Dev | RRT Dev | QuantMass | Response | Solution Conc | Final Conc | Q | Rpt? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | tert-Butyl Alcohol | 8.81 | | 0.00 | 59 | 13151 | 68.04 | 68.0 | | |
| 1 | Methyl tert-Butyl Ether | 9.08 | -0.01 | 0.00 | 73 | 114269 | 10.18 | 10.2 | | |
| 1 | trans-1,2-Dichloroethene | 9.16 | | 0.00 | 96 | 56254 | 8.69 | 8.69 | | |
| 1 | Acrylonitrile | 9.24 | | 0.00 | 53 | 75574 | 77.60 | 77.6 | | |
| 1 | Diisopropyl Ether | 9.77 | -0.01 | 0.00 | 45 | 204428 | 9.85 | 9.85 | | |
| 1 | 1,1-Dichloroethane | 9.87 | -0.01 | 0.00 | 63 | 109125 | 9.29 | 9.29 | | |
| 1 | Vinyl Acetate | 9.84 | | 0.00 | 43 | 256429 | 48.33 | 48.3 | | |
| 1 | tert-Butyl Ethyl Ether | 10.31 | -0.01 | 0.00 | 59 | 158657 | 10.04 | 10.0 | | |
| 1 | 2,2-Dichloropropane | 10.73 | | 0.00 | 77 | 78867 | 9.65 | 9.65 | | |
| 1 | 2-Butanone (MEK) | 10.73 | | 0.00 | 72 | 12501 | 42.46 | 42.5 | | |
| 1 | cis-1,2-Dichloroethene | 10.75 | | 0.00 | 96 | 66483 | 9.28 | 9.28 | | |
| 1 | Bromochloromethane | 11.12 | -0.01 | 0.00 | 128 | 27380 | 9.89 | 9.89 | | |
| 1 | Chloroform | 11.17 | | 0.00 | 83 | 110876 | 9.48 | 9.48 | | |
| 1 | Pentafluorobenzene | 11.39 | -0.01 | 0.00 | 168 | 142234 | 20.32 | 20.3 | E | |
| 1 | 1,1,1-Trichloroethane | 11.45 | -0.01 | 0.00 | 97 | 77473 | 8.96 | 8.96 | | |
| 1 | Carbon Tetrachloride | 11.65 | -0.01 | 0.00 | 117 | 61786 | 9.23 | 9.23 | | |
| 1 | 1,1-Dichloropropene | 11.67 | -0.01 | 0.00 | 75 | 74465 | 9.00 | 9.00 | | |
| 1 | Benzene | 11.99 | | 0.00 | 78 | 206621 | 9.45 | 9.45 | | |
| 1 | tert-Amyl Methyl Ether | 12.00 | | 0.00 | 73 | 129050 | 10.17 | 10.2 | | |
| 1 | 1,2-Dichloroethane | 12.07 | -0.01 | 0.00 | 62 | 67335 | 8.81 | 8.81 | | |
| | Trichloroethene | 12.86 | -0.01 | 0.00 | 95 | 58213 | 9.37 | 9.37 | | |
| | 1,2-Dichloropropane | 13.26 | | 0.00 | 63 | 60105 | 9.65 | 9.65 | | |
| 1 | Dibromomethane | 13.44 | -0.01 | 0.00 | 93 | 33822 | 9.79 | 9.79 | | |
| 1 | Bromodichloromethane | 13.59 | -0.01 | 0.00 | 83 | 77634 | 9.90 | 9.90 | | |
| 1 | 2-Chloroethyl Vinyl Ether | 13.93 | | 0.00 | 63 | 99105 | 40.75 | 40.8 | | |
| 1 | cis-1,3-Dichloropropene | 14.19 | | 0.00 | 75 | 85822 | 10.16 | 10.2 | | |
| 1 | 4-Methyl-2-pentanone (MIBK) | 14.31 | | 0.00 | 100 | 13496 | 41.28 | 41.3 | | |
| 1 | Toluene | 14.58 | -0.01 | 0.00 | 92 | 118386 | 9.55 | 9.55 | | |
| 1 | trans-1,3-Dichloropropene | 14.88 | | 0.00 | 75 | 65011 | 10.15 | 10.2 | | |
| 1 | 1,1,2-Trichloroethane | 15.11 | | 0.00 | 83 | 33043 | 10.29 | 10.3 | | |
| 1 | Tetrachloroethene | 15.23 | | 0.00 | 164 | 36160 | 10.08 | 10.1 | | |
| 1 | 2-Hexanone | 15.31 | | 0.00 | 43 | 70465 | 39.15 | 39.2 | | |
| 1 | 1,3-Dichloropropane | 15.33 | | 0.00 | 76 | 62833 | 9.84 | 9.84 | | |
| 1 | Dibromochloromethane | 15.58 | | 0.00 | 129 | 39468 | 10.01 | 10.0 | | |
| 1 | 1,2-Dibromoethane | 15.76 | | 0.00 | 107 | 33904 | 10.20 | 10.2 | | |
| 2 | Chlorobenzene | 16.23 | | 0.00 | 112 | 112453 | 9.48 | 9.48 | | |
| 2 | 1,1,1,2-Tetrachloroethane | 16.30 | | 0.00 | 131 | 40710 | 9.69 | 9.69 | | |
| 2 | Ethylbenzene | 16.28 | | 0.00 | 91 | 190930 | 9.29 | 9.29 | | |
| 2 | m,p-Xylenes | 16.40 | 0.01 | 0.00 | 106 | 135945 | 17.46 | 17.5 | | |
| 2 | o-Xylene | 16.83 | | 0.00 | 106 | 61342 | 8.57 | 8.57 | | |
| 2 | Styrene | 16.85 | | 0.00 | 104 | 107242 | 8.57 | 8.57 | | |
| 2 | Isopropylbenzene | 17.18 | | 0.00 | 105 | 153892 | 8.37 | 8.37 | | |

ected at or above MDL
yte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

| | | | | | |
|---|---|---|---|---|---|
| Data File: | J:\MS03\MAY02\MAY2902\29MAY007.D | | | Instrument: | MS03 |
| Acqu Date: | 05/29/2002 12:19 | Quant Date: | 05/29/2002 12:51 | Vial: | 5 |
| Run Type: | DLCS | | | Dilution: | 1.0 |
| Lab ID: | XWG0200681-2 | | | Soln Conc. Units: | ug/L |

*Target Compounds* Final Conc. Units: ug/L

| Ref | Parameter Name | RT | RT Dev | RRT Dev | QuantMass | Response | Solution Conc | Final Conc | Q | Rpt? |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | Bromobenzene | 17.62 | | 0.00 | 156 | 41950 | 10.34 | 10.3 | | |
| 2 | 1,2,3-Trichloropropane | 17.62 | | 0.00 | 75 | 34777 | 9.87 | 9.87 | | |
| 2 | n-Propylbenzene | 17.61 | | 0.00 | 91 | 207912 | 8.63 | 8.63 | | |
| 2 | 2-Chlorotoluene | 17.77 | | 0.00 | 91 | 146516 | 8.84 | 8.84 | | |
| 2 | 4-Chlorotoluene | 17.89 | | 0.00 | 91 | 131107 | 9.96 | 9.96 | | |
| 2 | 1,3,5-Trimethylbenzene | 17.77 | | 0.00 | 105 | 142605 | 8.90 | 8.90 | | |
| 2 | tert-Butylbenzene | 18.13 | | 0.00 | 119 | 105544 | 9.00 | 9.00 | | |
| 2 | 1,2,4-Trimethylbenzene | 18.18 | | 0.00 | 105 | 141307 | 8.88 | 8.88 | | |
| 2 | sec-Butylbenzene | 18.36 | | 0.00 | 105 | 170289 | 8.66 | 8.66 | | |
| 2 | 1,3-Dichlorobenzene | 18.59 | | 0.00 | 146 | 78011 | 10.38 | 10.4 | | |
| 2 | 4-Isopropyltoluene | 18.48 | | 0.00 | 119 | 140990 | 8.95 | 8.95 | | |
| 3 | Bromoform | 17.12 | | 0.00 | 173 | 18553 | 9.77 | 9.77 | | |
| 3 | 1,1,2,2-Tetrachloroethane | 17.54 | | 0.00 | 83 | 32703 | 10.00 | 10.0 | | |
| 3 | 1,4-Dichlorobenzene | 18.69 | | 0.00 | 146 | 80862 | 9.59 | 9.59 | | |
| 3 | 1,2-Dichlorobenzene | 19.13 | | 0.00 | 146 | 68276 | 10.16 | 10.2 | | |
| 3 | n-Butylbenzene | 18.94 | | 0.00 | 91 | 148407 | 9.68 | 9.68 | | |
| 3 | 1,2-Dibromo-3-chloropropane | 20.08 | -0.01 | 0.00 | 75 | 4432 | 10.54 | 10.5 | | |
| 3 | 1,2,4-Trichlorobenzene | 21.19 | -0.01 | 0.00 | 180 | 39273 | 9.88 | 9.88 | | |
| 3 | Hexachlorobutadiene | 21.30 | | 0.00 | 225 | 14653 | 9.72 | 9.72 | | |
| 3 | Naphthalene | 21.64 | | 0.00 | 128 | 58951 | 10.09 | 10.1 | | |
| | 1,2,3-Trichlorobenzene | 22.03 | | 0.00 | 180 | 31814 | 10.37 | 10.4 | | |

| | | | |
|---|---|---|---|
| Prep Amount: | 10 ml | Dilution: | 1.0 |
| Prep Final Vol: | 10 ml | Unit Factor: | 1 |

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

tected at or above MDL
lyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

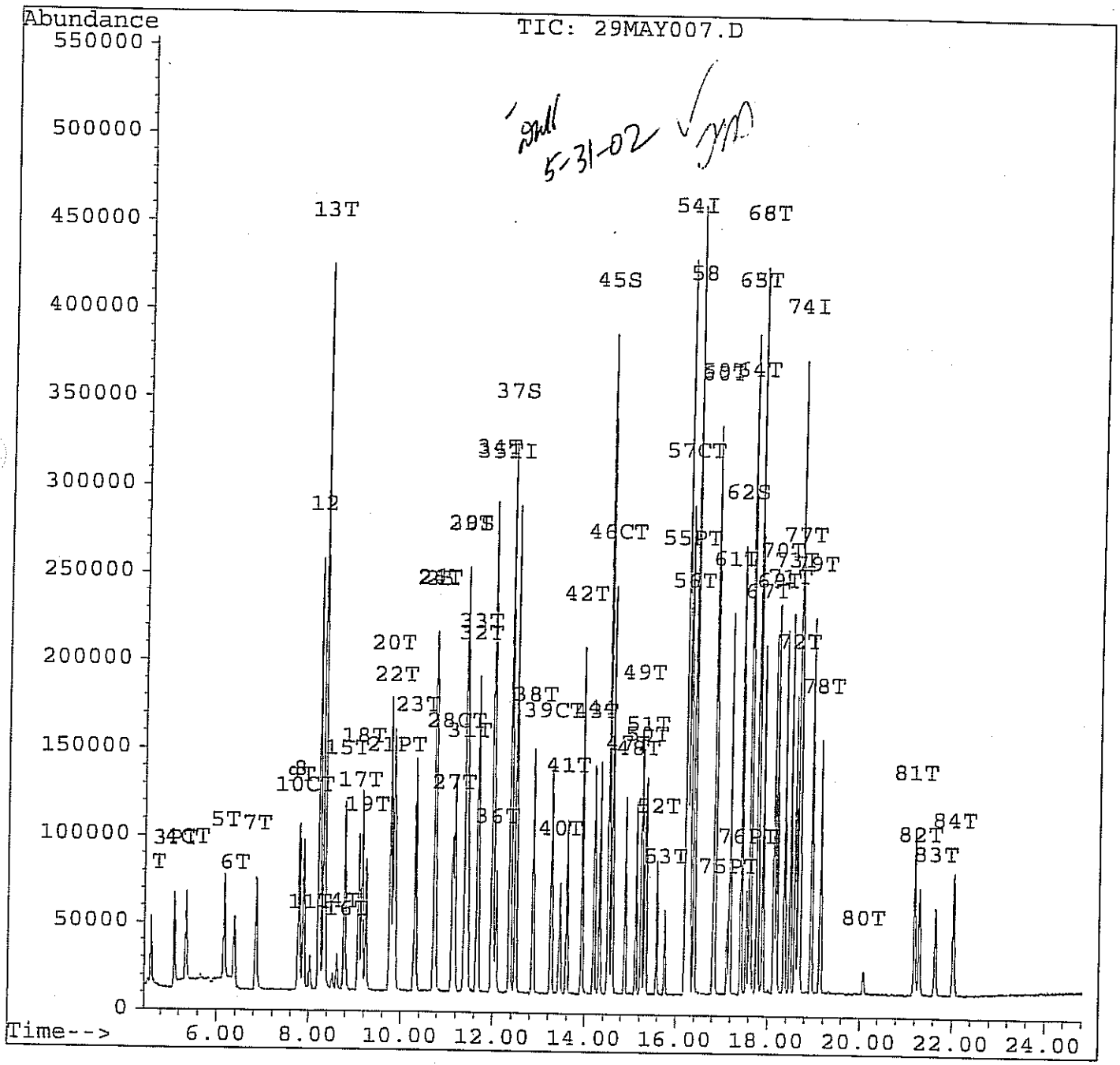
*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Quantification Report

Data File : J:\MS03\MAY02\MAY2902\29MAY007.D
Acq On : 29 May 102 12:19 pm
Sample : 10/40/80 ppb dlcs 052902
Misc :
Quant Time: May 29 12:51 19102

Vial: 5
Operator: dnh
Inst : MS03
Multiplr: 1.00

Method : J:\MS03\METHODS\82600528.M
Title : Volatiles by GC/MS
Last Update : Wed May 29 12:10:58 2002
Response via : Multiple Level Calibration




5-31-02

# Organic Analysis:
# Volatile Organic Compounds

## Validation Package

### Standards Data

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

**Client:** GeoTrans
**Project:** Western Ave/#E049-106

**Service Request:** X2200452
**Date Analyzed:** 05/29/2002
**Time Analyzed:** 10:18

## Tune Summary
## Volatile Organic Compounds

**File ID:** J:\MS03\MAY02\MAY2902\29MAY003.D
**Instrument ID:** MS03
**Column:**

**Analysis Method:** 8260B
**Analysis Lot:** XWG0200680

| Target Mass | Relative to Mass | Lower Limit% | Upper Limit% | Relative Abundance % | Raw Abundance | Result Pass/Fail |
|---|---|---|---|---|---|---|
| 50 | 95 | 15 | 40 | 29.5 | 1585 | PASS |
| 75 | 95 | 30 | 60 | 61.0 | 3280 | FAIL |
| 95 | 95 | 100 | 100 | 100.0 | 5381 | PASS |
| 96 | 95 | 5 | 9 | 7.0 | 376 | PASS |
| 173 | 174 | 0 | 2 | 0.0 | 0 | PASS |
| 174 | 95 | 50 | 100 | 71.8 | 3865 | PASS |
| 175 | 174 | 5 | 9 | 5.9 | 229 | PASS |
| 176 | 174 | 95 | 101 | 95.1 | 3676 | PASS |
| 177 | 176 | 5 | 9 | 6.9 | 253 | PASS |

| Sample Name | Lab Code | File ID | Date Analyzed | Time Analyzed | Q |
|---|---|---|---|---|---|
| Continuing Calibration Verification | XWG0200680-2 | J:\MS03\MAY02\MAY2902\29MAY | 05/29/2002 | 11:18 | |
| Lab Control Sample | XWG0200681-1 | J:\MS03\MAY02\MAY2902\29MAY | 05/29/2002 | 11:49 | |
| Duplicate Lab Control Sample | XWG0200681-2 | J:\MS03\MAY02\MAY2902\29MAY | 05/29/2002 | 12:19 | |
| Method Blank | XWG0200681-3 | J:\MS03\MAY02\MAY2902\29MAY | 05/29/2002 | 13:51 | |
| COG-MW3 | X2200452-001 | J:\MS03\MAY02\MAY2902\29MAY | 05/29/2002 | 14:21 | |
| COG-MW3MS | XWG0200681-4 | J:\MS03\MAY02\MAY2902\29MAY | 05/29/2002 | 19:00 | |
| COG-MW3DMS | XWG0200681-5 | J:\MS03\MAY02\MAY2902\29MAY | 05/29/2002 | 19:31 | |

Results flagged with an asterisk (*) indicate the analysis performed outside specified tune window

000100

# *Exception Report*

**Data File:** J:\MS03\MAY02\MAY2902\29MAY003.D
**Lab ID:** XWG0200680-1
**RunType:** BFB

**Date Acquired:** 05/29/2002 10:18
**Date Quantitated:**
**Batch ID:** XWG0200680
**Matrix:** WATER

## *Sample Exceptions*

| Exception Categories | Result | Low Limit | High Limit | Pass | Fail |
|---|---|---|---|---|---|
| Tune Ion Ratio | NA | NA | NA | | x |

## *Analyte Exceptions*

| Exception Categories | Analyte Name | Result | Low Limit | High Limit | Corrective Action |
|---|---|---|---|---|---|
| Tune Ion Ratio | BFB Ion2 | 61.0 | 30 | 60 | NA USNR |

524.2 CRITERIA
AS BFB IS 25NG

Primary Review: 5-31-02

Secondary Review: 5-31-02

# *Quantitation Report*

| | | | | | |
|---|---|---|---|---|---|
| Bottle ID: | | Tier: | | Matrix: | WATER |
| Prod Code: | TUNE-8260 | Collect Date: | | Receive Date: | 05/29/2002 |

| | | | | | |
|---|---|---|---|---|---|
| nalysis Lot: | XWG0200680 | Prep Lot: | | Report Group: | |
| Analysis Method: | BFB | Prep Method: | | | |
| Prep Ref: | | Prep Date: | | | |

| | | | |
|---|---|---|---|
| Quant Method: | J:\MS03\METHODS\82600528.M | Calibration ID: | CAL292 |
| Title: | GC/MS Tuning Evaluation | Report List ID: | LJ100 |
| Tune Ref: | | Method ID: | MJ100 |
| MB Ref: | | Quant based on Report List | |

| | | | | | |
|---|---|---|---|---|---|
| Data File: | J:\MS03\MAY02\MAY2902\29MAY003.D | | | Instrument: | MS03 |
| Acqu Date: | 05/29/2002 10:18 | Quant Date: | | Vial: | 1 |
| Run Type: | BFB | | | Dilution: | 1.0 |
| Lab ID: | XWG0200680-1 | | | Soln Conc. Units: | |

## Tune Results

from report

| Target Mass | Relative to Mass | Lower Limit% | Upper Limit% | Relative Abundance % | Raw Abundance | Result Pass/Fail |
|---|---|---|---|---|---|---|
| 50 | 95 | 15 | 40 | 29.5 | 1585 | Pass |
| 75 | 95 | 30 | 60 | 61.0 | 3280 | Fail |
| 95 | 95 | 100 | 100 | 100.0 | 5381 | Pass |
| 96 | 95 | 5 | 9 | 7.0 | 376 | Pass |
| 173 | 174 | 0 | 2 | 0.0 | 0 | Pass |
| 174 | 95 | 50 | 100 | 71.8 | 3865 | Pass |
| 175 | 174 | 5 | 9 | 5.9 | 229 | Pass |
| 176 | 174 | 95 | 101 | 95.1 | 3676 | Pass |
| 177 | 176 | 5 | 9 | 6.9 | 253 | Pass |

tected at or above MDL
yte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

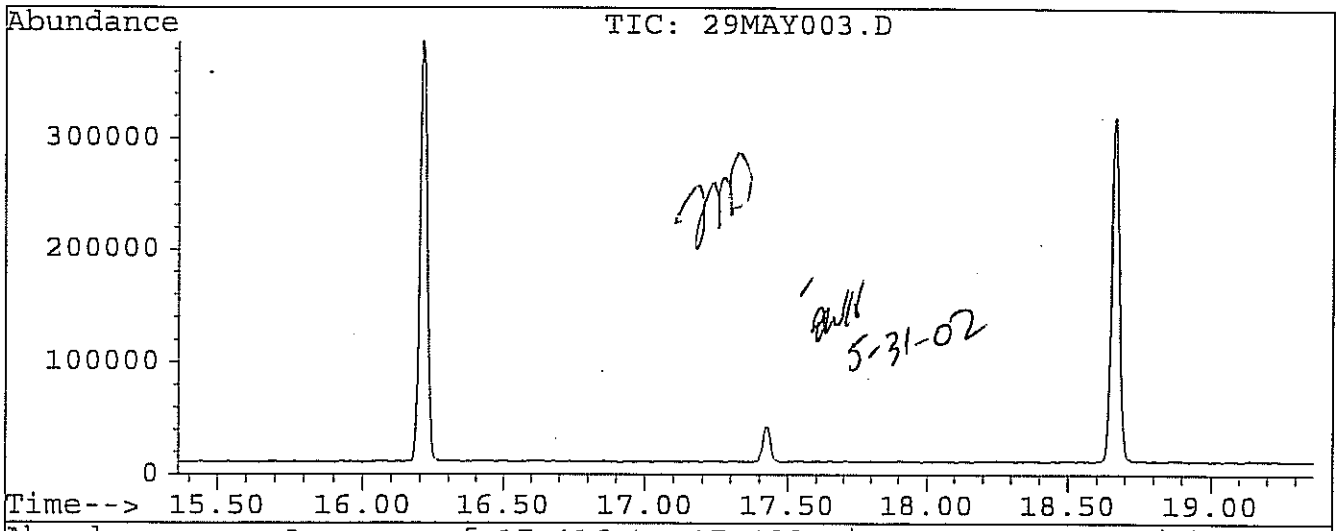
*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

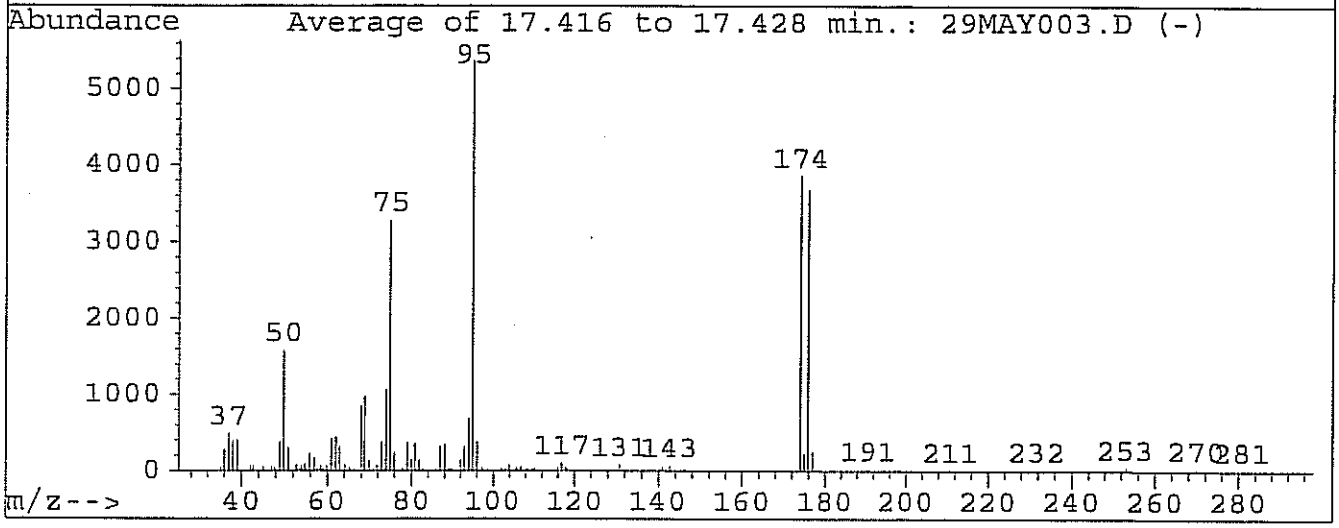
BFB

Data File : J:\MS03\MAY02\MAY2902\29MAY003.D
Acq On : 29 May 102 10:18 am
Sample : bfb01 25ng 052902
Misc :

Vial: 1
Operator: dnh
Inst : MS03
Multiplr: 1.00

Method : J:\MS03\METHODS\82600528.M
Title : Volatiles by GC/MS




Peak Apex is scan: 2149

| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|---|---|---|---|---|---|---|
| 50 | 95 | 15 | 40 | 29.5 | 1585 | PASS |
| 75 | 95 | 30 | 80 | 61.0 | 3280 | PASS |
| 95 | 95 | 100 | 100 | 100.0 | 5381 | PASS |
| 96 | 95 | 5 | 9 | 7.0 | 376 | PASS |
| 173 | 174 | 0 | 2 | 0.0 | 0 | PASS |
| 174 | 95 | 50 | 200 | 71.8 | 3865 | PASS |
| 175 | 174 | 5 | 9 | 5.9 | 229 | PASS |
| 176 | 174 | 95 | 101 | 95.1 | 3676 | PASS |
| 177 | 176 | 5 | 9 | 6.9 | 253 | PASS |

# COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

**Client:** GeoTrans
**Project:** Western Ave/#E049-106

**Service Request:** X2200452
**ICAL Date:** 05/28/2002

## Initial Calibration Summary
## Volatile Organic Compounds

**ICAL ID:** CAL292
**Instrument ID:** MS03

**Column:** MS

| Level ID | File ID | Level ID | File ID |
|---|---|---|---|
| A | J:\MS03\MAY02\MAY2802\28MAY016.D | E | J:\MS03\MAY02\MAY2802\28MAY020.D |
| B | J:\MS03\MAY02\MAY2802\28MAY017.D | F | J:\MS03\MAY02\MAY2802\28MAY021.D |
| C | J:\MS03\MAY02\MAY2802\28MAY018.D | G | J:\MS03\MAY02\MAY2802\28MAY022.D |
| D | J:\MS03\MAY02\MAY2802\28MAY019.D | H | J:\MS03\MAY02\MAY2802\28MAY023.D |

| Analyte Name | Level ID | Amt | RRF | Level ID | Amt | RRF | Level ID | Am | RRF | Level ID | Amt | RRF | Level ID | Amt | RRF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | A | 0.50 | 0.353 | B | 1.0 | 0.323 | C | 2.0 | 0.294 | D | 5.0 | 0.298 | E | 10 | 0.318 |
| | F | 20 | 0.306 | G | 50 | 0.302 | H | 100 | 0.299 | | | | | | |
| † Chloromethane | A | 0.50 | 0.558 | B | 1.0 | 0.590 | C | 2.0 | 0.566 | D | 5.0 | 0.603 | E | 10 | 0.603 |
| | F | 20 | 0.560 | G | 50 | 0.537 | H | 100 | 0.527 | | | | | | |
| ‡ Vinyl Chloride | A | 0.50 | 0.681 | B | 1.0 | 0.623 | C | 2.0 | 0.633 | D | 5.0 | 0.640 | E | 10 | 0.680 |
| | F | 20 | 0.631 | G | 50 | 0.613 | H | 100 | 0.577 | | | | | | |
| Bromomethane | A | 0.50 | 0.654 | B | 1.0 | 0.554 | C | 2.0 | 0.558 | D | 5.0 | 0.508 | E | 10 | 0.513 |
| | F | 20 | 0.491 | G | 50 | 0.486 | H | 100 | 0.474 | | | | | | |
| Chloroethane | A | 0.50 | 0.458 | B | 1.0 | 0.446 | C | 2.0 | 0.435 | D | 5.0 | 0.441 | E | 10 | 0.441 |
| | F | 20 | 0.407 | G | 50 | 0.401 | H | 100 | 0.372 | | | | | | |
| Trichlorofluoromethane | A | 0.50 | 0.594 | B | 1.0 | 0.597 | C | 2.0 | 0.603 | D | 5.0 | 0.594 | E | 10 | 0.621 |
| | F | 20 | 0.572 | G | 50 | 0.561 | H | 100 | 0.565 | | | | | | |
| 1,1,2-Trichlorotrifluoroethane | A | 0.50 | 0.391 | B | 1.0 | 0.403 | C | 2.0 | 0.391 | D | 5.0 | 0.396 | E | 10 | 0.412 |
| | F | 20 | 0.383 | G | 50 | 0.388 | H | 100 | 0.409 | | | | | | |
| ‡ 1,1-Dichloroethene | A | 0.50 | 0.388 | B | 1.0 | 0.433 | C | 2.0 | 0.406 | D | 5.0 | 0.376 | E | 10 | 0.389 |
| | F | 20 | 0.368 | G | 50 | 0.378 | H | 100 | 0.404 | | | | | | |
| Acetone | | | | B | 4.0 | 0.0296 | C | 8.0 | 0.0297 | D | 20 | 0.0207 | E | 40 | 0.0181 |
| | F | 80 | 0.0152 | G | 200 | 0.0146 | H | 400 | 0.0142 | | | | | | |
| Iodomethane | A | 2.0 | 0.561 | B | 4.0 | 0.578 | C | 8.0 | 0.612 | D | 20 | 0.652 | E | 40 | 0.703 |
| | F | 80 | 0.691 | G | 200 | 0.763 | H | 400 | 0.791 | | | | | | |
| Carbon Disulfide | A | 2.0 | 1.39 | B | 4.0 | 1.41 | C | 8.0 | 1.46 | D | 20 | 1.51 | E | 40 | 1.63 |
| | F | 80 | 1.56 | G | 200 | 1.66 | H | 400 | 1.69 | | | | | | |
| Methylene Chloride | A | 0.50 | 0.599 | B | 1.0 | 0.554 | C | 2.0 | 0.513 | D | 5.0 | 0.507 | E | 10 | 0.502 |
| | F | 20 | 0.481 | G | 50 | 0.483 | H | 100 | 0.491 | | | | | | |
| Methyl tert-Butyl Ether | A | 0.50 | 0.932 | B | 1.0 | 0.834 | C | 2.0 | 0.832 | D | 5.0 | 0.817 | E | 10 | 0.825 |
| | F | 20 | 0.785 | G | 50 | 0.767 | H | 100 | 0.755 | | | | | | |
| trans-1,2-Dichloroethene | A | 0.50 | 0.538 | B | 1.0 | 0.460 | C | 2.0 | 0.460 | D | 5.0 | 0.451 | E | 10 | 0.470 |
| | F | 20 | 0.447 | G | 50 | 0.473 | H | 100 | 0.479 | | | | | | |

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

**Client:** GeoTrans
**Project:** Western Ave/#E049-106

**Service Request:** X2200452
**ICAL Date:** 05/28/2002

## Initial Calibration Summary
## Volatile Organic Compounds

**ICAL ID:** CAL292
**Instrument ID:** MS03

**Column:** MS

| Analyte Name | Level ID | Amt | RRF | Level ID | Amt | RRF | Level ID | Am | RRF | Level ID | Amt | RRF | Level ID | Amt | RRF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| † 1,1-Dichloroethane | A | 0.50 | 0.885 | B | 1.0 | 0.873 | C | 2.0 | 0.852 | D | 5.0 | 0.846 | E | 10 | 0.874 |
| | F | 20 | 0.844 | G | 50 | 0.836 | H | 100 | 0.845 | | | | | | |
| Vinyl Acetate | A | 2.0 | 0.486 | B | 4.0 | 0.425 | C | 8.0 | 0.406 | D | 20 | 0.405 | E | 40 | 0.376 |
| | F | 80 | 0.319 | G | 200 | 0.340 | H | 400 | 0.338 | | | | | | |
| 2,2-Dichloropropane | A | 0.50 | 0.678 | B | 1.0 | 0.600 | C | 2.0 | 0.598 | D | 5.0 | 0.585 | E | 10 | 0.598 |
| | F | 20 | 0.562 | G | 50 | 0.569 | H | 100 | 0.575 | | | | | | |
| 2-Butanone (MEK) | | | | B | 4.0 | 0.0322 | C | 8.0 | 0.0257 | D | 20 | 0.0222 | E | 40 | 0.0218 |
| | F | 80 | 0.0210 | G | 200 | 0.0206 | H | 400 | 0.0201 | | | | | | |
| cis-1,2-Dichloroethene | A | 0.50 | 0.581 | B | 1.0 | 0.505 | C | 2.0 | 0.513 | D | 5.0 | 0.494 | E | 10 | 0.509 |
| | F | 20 | 0.503 | G | 50 | 0.531 | H | 100 | 0.542 | | | | | | |
| Bromochloromethane | A | 0.50 | 0.225 | B | 1.0 | 0.206 | C | 2.0 | 0.200 | D | 5.0 | 0.203 | E | 10 | 0.202 |
| | F | 20 | 0.193 | G | 50 | 0.190 | H | 100 | 0.195 | | | | | | |
| ‡ Chloroform | A | 0.50 | 0.892 | B | 1.0 | 0.870 | C | 2.0 | 0.851 | D | 5.0 | 0.848 | E | 10 | 0.870 |
| | F | 20 | 0.821 | G | 50 | 0.822 | H | 100 | 0.845 | | | | | | |
| 1,1-Trichloroethane | A | 0.50 | 0.604 | B | 1.0 | 0.606 | C | 2.0 | 0.636 | D | 5.0 | 0.637 | E | 10 | 0.659 |
| | F | 20 | 0.624 | G | 50 | 0.631 | H | 100 | 0.648 | | | | | | |
| Carbon Tetrachloride | A | 0.50 | 0.472 | B | 1.0 | 0.459 | C | 2.0 | 0.479 | D | 5.0 | 0.482 | E | 10 | 0.506 |
| | F | 20 | 0.487 | G | 50 | 0.499 | H | 100 | 0.521 | | | | | | |
| 1,1-Dichloropropene | A | 0.50 | 0.612 | B | 1.0 | 0.561 | C | 2.0 | 0.582 | D | 5.0 | 0.597 | E | 10 | 0.616 |
| | F | 20 | 0.590 | G | 50 | 0.619 | H | 100 | 0.650 | | | | | | |
| Benzene | A | 0.50 | 1.47 | B | 1.0 | 1.52 | C | 2.0 | 1.51 | D | 5.0 | 1.57 | E | 10 | 1.64 |
| | F | 20 | 1.61 | G | 50 | 1.68 | H | 100 | 1.76 | | | | | | |
| 1,2-Dichloroethane | A | 0.50 | 0.665 | B | 1.0 | 0.643 | C | 2.0 | 0.567 | D | 5.0 | 0.559 | E | 10 | 0.538 |
| | F | 20 | 0.511 | G | 50 | 0.491 | H | 100 | 0.483 | | | | | | |
| Trichloroethene | A | 0.50 | 0.497 | B | 1.0 | 0.438 | C | 2.0 | 0.436 | D | 5.0 | 0.435 | E | 10 | 0.452 |
| | F | 20 | 0.440 | G | 50 | 0.448 | H | 100 | 0.476 | | | | | | |
| ‡ 1,2-Dichloropropane | A | 0.50 | 0.501 | B | 1.0 | 0.459 | C | 2.0 | 0.458 | D | 5.0 | 0.453 | E | 10 | 0.444 |
| | F | 20 | 0.432 | G | 50 | 0.434 | H | 100 | 0.453 | | | | | | |
| Dibromomethane | A | 0.50 | 0.277 | B | 1.0 | 0.276 | C | 2.0 | 0.265 | D | 5.0 | 0.255 | E | 10 | 0.247 |
| | F | 20 | 0.234 | G | 50 | 0.228 | H | 100 | 0.233 | | | | | | |
| Bromodichloromethane | A | 0.50 | 0.642 | B | 1.0 | 0.584 | C | 2.0 | 0.577 | D | 5.0 | 0.568 | E | 10 | 0.563 |
| | F | 20 | 0.542 | G | 50 | 0.538 | H | 100 | 0.558 | | | | | | |
| cis-1,3-Dichloropropene | A | 0.50 | 0.659 | B | 1.0 | 0.611 | C | 2.0 | 0.613 | D | 5.0 | 0.612 | E | 10 | 0.606 |
| | F | 20 | 0.594 | G | 50 | 0.606 | H | 100 | 0.628 | | | | | | |

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

**Client:** GeoTrans
**Project:** Western Ave/#E049-106

**Service Request:** X2200452
**ICAL Date:** 05/28/2002

## Initial Calibration Summary
## Volatile Organic Compounds

**ICAL ID:** CAL292
**Instrument ID:** MS03

**Column:** MS

| Analyte Name | Level ID | Amt | RRF | Level ID | Amt | RRF | Level ID | Am | RRF | Level ID | Amt | RRF | Level ID | Amt | RRF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4-Methyl-2-pentanone (MIBK) | | | | B | 4.0 | 0.0287 | C | 8.0 | 0.0209 | D | 20 | 0.0255 | E | 40 | 0.0234 |
| | F | 80 | 0.0229 | G | 200 | 0.0226 | H | 400 | 0.0229 | | | | | | |
| ‡ Toluene | A | 0.50 | 0.828 | B | 1.0 | 0.812 | C | 2.0 | 0.831 | D | 5.0 | 0.880 | E | 10 | 0.928 |
| | F | 20 | 0.950 | G | 50 | 0.983 | H | 100 | 1.02 | | | | | | |
| trans-1,3-Dichloropropene | A | 0.50 | 0.530 | B | 1.0 | 0.474 | C | 2.0 | 0.466 | D | 5.0 | 0.442 | E | 10 | 0.459 |
| | F | 20 | 0.445 | G | 50 | 0.460 | H | 100 | 0.460 | | | | | | |
| 1,1,2-Trichloroethane | A | 0.50 | 0.271 | B | 1.0 | 0.244 | C | 2.0 | 0.232 | D | 5.0 | 0.227 | E | 10 | 0.225 |
| | F | 20 | 0.220 | G | 50 | 0.228 | H | 100 | 0.225 | | | | | | |
| Tetrachloroethene | A | 0.50 | 0.256 | B | 1.0 | 0.250 | C | 2.0 | 0.237 | D | 5.0 | 0.246 | E | 10 | 0.259 |
| | F | 20 | 0.259 | G | 50 | 0.279 | H | 100 | 0.306 | | | | | | |
| 2-Hexanone | A | 2.0 | 0.153 | B | 4.0 | 0.137 | C | 8.0 | 0.128 | D | 20 | 0.137 | E | 40 | 0.130 |
| | F | 80 | 0.124 | G | 200 | 0.122 | H | 400 | 0.119 | | | | | | |
| 1,3-Dichloropropane | A | 0.50 | 0.508 | B | 1.0 | 0.468 | C | 2.0 | 0.472 | D | 5.0 | 0.456 | E | 10 | 0.458 |
| | F | 20 | 0.450 | G | 50 | 0.453 | H | 100 | 0.461 | | | | | | |
| bromochloromethane | A | 0.50 | 0.307 | B | 1.0 | 0.280 | C | 2.0 | 0.271 | D | 5.0 | 0.280 | E | 10 | 0.283 |
| | F | 20 | 0.278 | G | 50 | 0.290 | H | 100 | 0.310 | | | | | | |
| 1,2-Dibromoethane | A | 0.50 | 0.260 | B | 1.0 | 0.248 | C | 2.0 | 0.239 | D | 5.0 | 0.240 | E | 10 | 0.233 |
| | F | 20 | 0.230 | G | 50 | 0.234 | H | 100 | 0.254 | | | | | | |
| † Chlorobenzene | A | 0.50 | 1.10 | B | 1.0 | 0.980 | C | 2.0 | 1.01 | D | 5.0 | 1.07 | E | 10 | 1.09 |
| | F | 20 | 1.06 | G | 50 | 1.19 | H | 100 | 1.21 | | | | | | |
| 1,1,1,2-Tetrachloroethane | A | 0.50 | 0.406 | B | 1.0 | 0.368 | C | 2.0 | 0.369 | D | 5.0 | 0.366 | E | 10 | 0.377 |
| | F | 20 | 0.369 | G | 50 | 0.410 | H | 100 | 0.420 | | | | | | |
| ‡ Ethylbenzene | A | 0.50 | 1.67 | B | 1.0 | 1.59 | C | 2.0 | 1.68 | D | 5.0 | 1.83 | E | 10 | 1.95 |
| | F | 20 | 1.93 | G | 50 | 2.20 | H | 100 | 2.25 | | | | | | |
| m,p-Xylenes | A | 1.0 | 0.528 | B | 2.0 | 0.539 | C | 4.0 | 0.569 | D | 10 | 0.635 | E | 20 | 0.702 |
| | F | 40 | 0.690 | G | 100 | 0.801 | H | 200 | 0.862 | | | | | | |
| o-Xylene | A | 0.50 | 0.521 | B | 1.0 | 0.524 | C | 2.0 | 0.516 | D | 5.0 | 0.568 | E | 10 | 0.644 |
| | F | 20 | 0.640 | G | 50 | 0.743 | H | 100 | 0.804 | | | | | | |
| Styrene | A | 0.50 | 0.850 | B | 1.0 | 0.830 | C | 2.0 | 0.883 | D | 5.0 | 1.01 | E | 10 | 1.12 |
| | F | 20 | 1.11 | G | 50 | 1.31 | H | 100 | 1.40 | | | | | | |
| Isopropylbenzene | A | 0.50 | 1.25 | B | 1.0 | 1.24 | C | 2.0 | 1.29 | D | 5.0 | 1.46 | E | 10 | 1.64 |
| | F | 20 | 1.64 | G | 50 | 1.92 | H | 100 | 1.98 | | | | | | |
| Bromobenzene | A | 0.50 | 0.335 | B | 1.0 | 0.328 | C | 2.0 | 0.326 | D | 5.0 | 0.364 | E | 10 | 0.395 |
| | F | 20 | 0.401 | G | 50 | 0.458 | | | | | | | | | |

ults flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

**Client:** GeoTrans
**Project:** Western Ave/#E049-106

**Service Request:** X2200452
**ICAL Date:** 05/28/2002

## Initial Calibration Summary
## Volatile Organic Compounds

**ICAL ID:** CAL292
**Instrument ID:** MS03

**Column:** MS

| Analyte Name | Level ID | Amt | RRF | Level ID | Amt | RRF | Level ID | Am | RRF | Level ID | Amt | RRF | Level ID | Amt | RRF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,3-Trichloropropane | A | 0.50 | 0.417 | B | 1.0 | 0.317 | C | 2.0 | 0.318 | D | 5.0 | 0.315 | E | 10 | 0.311 |
| | F | 20 | 0.298 | G | 50 | 0.312 | H | 100 | 0.300 | | | | | | |
| n-Propylbenzene | A | 0.50 | 1.71 | B | 1.0 | 1.64 | C | 2.0 | 1.74 | D | 5.0 | 1.93 | E | 10 | 2.17 |
| | F | 20 | 2.16 | G | 50 | 2.46 | H | 100 | 2.59 | | | | | | |
| 2-Chlorotoluene | A | 0.50 | 1.10 | B | 1.0 | 1.14 | C | 2.0 | 1.19 | D | 5.0 | 1.34 | E | 10 | 1.48 |
| | F | 20 | 1.51 | G | 50 | 1.66 | H | 100 | 1.74 | | | | | | |
| 4-Chlorotoluene | A | 0.50 | 1.03 | B | 1.0 | 0.998 | C | 2.0 | 1.05 | D | 5.0 | 1.17 | E | 10 | 1.29 |
| | F | 20 | 1.28 | G | 50 | 1.40 | H | 100 | 1.45 | | | | | | |
| 1,3,5-Trimethylbenzene | A | 0.50 | 1.01 | B | 1.0 | 1.02 | C | 2.0 | 1.12 | D | 5.0 | 1.23 | E | 10 | 1.39 |
| | F | 20 | 1.46 | G | 50 | 1.65 | H | 100 | 1.71 | | | | | | |
| tert-Butylbenzene | A | 0.50 | 0.775 | B | 1.0 | 0.760 | C | 2.0 | 0.821 | D | 5.0 | 0.929 | E | 10 | 1.06 |
| | F | 20 | 1.04 | G | 50 | 1.20 | H | 100 | 1.25 | | | | | | |
| 1,2,4-Trimethylbenzene | A | 0.50 | 1.01 | B | 1.0 | 1.03 | C | 2.0 | 1.13 | D | 5.0 | 1.26 | E | 10 | 1.40 |
| | F | 20 | 1.45 | G | 50 | 1.61 | H | 100 | 1.64 | | | | | | |
| -Butylbenzene | A | 0.50 | 1.27 | B | 1.0 | 1.26 | C | 2.0 | 1.39 | D | 5.0 | 1.57 | E | 10 | 1.76 |
| | F | 20 | 1.81 | G | 50 | 1.98 | H | 100 | 2.04 | | | | | | |
| 1,3-Dichlorobenzene | A | 0.50 | 0.571 | B | 1.0 | 0.587 | C | 2.0 | 0.634 | D | 5.0 | 0.671 | E | 10 | 0.741 |
| | F | 20 | 0.796 | G | 50 | 0.826 | | | | | | | | | |
| 4-Isopropyltoluene | A | 0.50 | 0.961 | B | 1.0 | 1.02 | C | 2.0 | 1.05 | D | 5.0 | 1.19 | E | 10 | 1.38 |
| | F | 20 | 1.45 | G | 50 | 1.60 | H | 100 | 1.64 | | | | | | |
| † Bromoform | A | 0.50 | 0.413 | B | 1.0 | 0.419 | C | 2.0 | 0.382 | D | 5.0 | 0.349 | E | 10 | 0.341 |
| | F | 20 | 0.317 | G | 50 | 0.378 | H | 100 | 0.373 | | | | | | |
| † 1,1,2,2-Tetrachloroethane | A | 0.50 | 0.804 | B | 1.0 | 0.685 | C | 2.0 | 0.698 | D | 5.0 | 0.616 | E | 10 | 0.589 |
| | F | 20 | 0.526 | G | 50 | 0.613 | H | 100 | 0.584 | | | | | | |
| 1,4-Dichlorobenzene | A | 0.50 | 1.74 | B | 1.0 | 1.63 | C | 2.0 | 1.61 | D | 5.0 | 1.62 | E | 10 | 1.64 |
| | F | 20 | 1.57 | G | 50 | 1.66 | H | 100 | 1.72 | | | | | | |
| 1,2-Dichlorobenzene | A | 0.50 | 1.31 | B | 1.0 | 1.26 | C | 2.0 | 1.29 | D | 5.0 | 1.31 | E | 10 | 1.32 |
| | F | 20 | 1.23 | G | 50 | 1.39 | H | 100 | 1.41 | | | | | | |
| n-Butylbenzene | A | 0.50 | 2.70 | B | 1.0 | 2.62 | C | 2.0 | 2.91 | D | 5.0 | 2.93 | E | 10 | 3.12 |
| | F | 20 | 2.90 | G | 50 | 3.36 | H | 100 | 3.45 | | | | | | |
| 1,2-Dibromo-3-chloropropane | | | | | | | C | 2.0 | 0.101 | D | 5.0 | 0.114 | E | 10 | 0.0948 |
| | F | 20 | 0.0708 | G | 50 | 0.0746 | H | 100 | 0.0784 | | | | | | |
| 1,2,4-Trichlorobenzene | A | 0.50 | 0.847 | B | 1.0 | 0.780 | C | 2.0 | 0.775 | D | 5.0 | 0.745 | E | 10 | 0.743 |
| | F | 20 | 0.694 | G | 50 | 0.796 | H | 100 | 0.840 | | | | | | |

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

000107

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

**Client:** GeoTrans
**Project:** Western Ave/#E049-106

**Service Request:** X2200452
**ICAL Date:** 05/28/2002

## Initial Calibration Summary
## Volatile Organic Compounds

**ICAL ID:** CAL292
**Instrument ID:** MS03

**Column:** MS

| Analyte Name | Level ID | Amt | RRF | Level ID | Amt | RRF | Level ID | Am | RRF | Level ID | Amt | RRF | Level ID | Amt | RRF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hexachlorobutadiene | A | 0.50 | 0.308 | B | 1.0 | 0.266 | C | 2.0 | 0.298 | D | 5.0 | 0.283 | E | 10 | 0.296 |
| | F | 20 | 0.263 | G | 50 | 0.316 | H | 100 | 0.329 | | | | | | |
| Naphthalene | A | 0.50 | 1.20 | B | 1.0 | 1.18 | C | 2.0 | 1.14 | D | 5.0 | 1.12 | E | 10 | 1.12 |
| | F | 20 | 1.03 | G | 50 | 1.16 | H | 100 | 1.19 | | | | | | |
| 1,2,3-Trichlorobenzene | A | 0.50 | 0.648 | B | 1.0 | 0.605 | C | 2.0 | 0.612 | D | 5.0 | 0.579 | E | 10 | 0.576 |
| | F | 20 | 0.536 | G | 50 | 0.606 | H | 100 | 0.638 | | | | | | |
| Dibromofluoromethane | A | 0.50 | 0.434 | B | 1.0 | 0.409 | C | 2.0 | 0.391 | D | 5.0 | 0.395 | E | 10 | 0.435 |
| | F | 20 | 0.408 | G | 40 | 0.422 | H | 5 | 0.434 | | | | | | |
| Toluene-d8 | A | 0.50 | 0.899 | B | 1.0 | 0.837 | C | 2.0 | 0.821 | D | 5.0 | 0.916 | E | 10 | 1.07 |
| | F | 20 | 1.05 | G | 40 | 1.14 | H | 5 | 1.14 | | | | | | |
| 4-Bromofluorobenzene | A | 0.50 | 0.426 | B | 1.0 | 0.361 | C | 2.0 | 0.361 | D | 5.0 | 0.408 | E | 10 | 0.456 |
| | F | 20 | 0.452 | G | 40 | 0.527 | H | 5 | 0.515 | | | | | | |

..esults flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

**Client:** GeoTrans
**Project:** Western Ave/#E049-106

**Service Request:** X2200452
**ICAL Date:** 05/28/2002

## Initial Calibration Summary
## Volatile Organic Compounds

**ICAL ID:** CAL292
**Instrument ID:** MS03

**Column:** MS

| Analyte Name | Compound Type | Calibration Evaluation: Fit Type | Eval. | Eval. Result | Q | Control Criteria | RRF Evaluation: Average RRF | Q | Minimum RRF |
|---|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | MS | AverageRF | % RSD | 6.2 | | ≤ 15 | 0.312 | | 0.01 |
| † Chloromethane | MS | AverageRF | % RSD | 5.1 | | ≤ 15 | 0.568 | | 0.1 |
| ‡ Vinyl Chloride | MS | AverageRF | % RSD | 5.4 | | ≤ 15 | 0.635 | | 0.01 |
| Bromomethane | MS | AverageRF | % RSD | 11.1 | | ≤ 15 | 0.530 | | 0.01 |
| Chloroethane | MS | AverageRF | % RSD | 6.8 | | ≤ 15 | 0.425 | | 0.01 |
| Trichlorofluoromethane | MS | AverageRF | % RSD | 3.5 | | ≤ 15 | 0.588 | | 0.01 |
| 1,1,2-Trichlorotrifluoroethane | MS | AverageRF | % RSD | 2.6 | | ≤ 15 | 0.397 | | 0.01 |
| ‡ 1,1-Dichloroethene | MS | AverageRF | % RSD | 5.3 | | ≤ 15 | 0.393 | | 0.01 |
| Acetone | MS | Linear | R2 | 1.000 | | ≥ 0.990 | 0.0203 | | 0.01 |
| Iodomethane | MS | AverageRF | % RSD | 12.5 | | ≤ 15 | 0.669 | | 0.01 |
| Carbon Disulfide | MS | AverageRF | % RSD | 7.4 | | ≤ 15 | 1.54 | | 0.01 |
| Methylene Chloride | MS | AverageRF | % RSD | 7.9 | | ≤ 15 | 0.516 | | 0.01 |
| Methyl tert-Butyl Ether | MS | AverageRF | % RSD | 6.7 | | ≤ 15 | 0.818 | | 0.01 |
| trans-1,2-Dichloroethene | MS | AverageRF | % RSD | 6.0 | | ≤ 15 | 0.472 | | 0.01 |
| † 1,1-Dichloroethane | MS | AverageRF | % RSD | 2.1 | | ≤ 15 | 0.857 | | 0.1 |
| Vinyl Acetate | MS | AverageRF | % RSD | 14.3 | | ≤ 15 | 0.387 | | 0.01 |
| ,2-Dichloropropane | MS | AverageRF | % RSD | 6.1 | | ≤ 15 | 0.596 | | 0.01 |
| 2-Butanone (MEK) | MS | Linear | R2 | 1.000 | | ≥ 0.990 | 0.0234 | | 0.01 |
| cis-1,2-Dichloroethene | MS | AverageRF | % RSD | 5.4 | | ≤ 15 | 0.522 | | 0.01 |
| Bromochloromethane | MS | AverageRF | % RSD | 5.3 | | ≤ 15 | 0.202 | | 0.01 |
| ‡ Chloroform | MS | AverageRF | % RSD | 2.9 | | ≤ 15 | 0.852 | | 0.01 |
| 1,1,1-Trichloroethane | MS | AverageRF | % RSD | 3.0 | | ≤ 15 | 0.631 | | 0.01 |
| Carbon Tetrachloride | MS | AverageRF | % RSD | 4.1 | | ≤ 15 | 0.488 | | 0.01 |
| 1,1-Dichloropropene | MS | AverageRF | % RSD | 4.5 | | ≤ 15 | 0.603 | | 0.01 |
| Benzene | MS | AverageRF | % RSD | 6.0 | | ≤ 15 | 1.59 | | 0.01 |
| 1,2-Dichloroethane | MS | AverageRF | % RSD | 12.0 | | ≤ 15 | 0.557 | | 0.01 |
| Trichloroethene | MS | AverageRF | % RSD | 4.9 | | ≤ 15 | 0.453 | | 0.01 |
| ‡ 1,2-Dichloropropane | MS | AverageRF | % RSD | 4.7 | | ≤ 15 | 0.454 | | 0.01 |
| Dibromomethane | MS | AverageRF | % RSD | 7.7 | | ≤ 15 | 0.252 | | 0.01 |
| Bromodichloromethane | MS | AverageRF | % RSD | 5.7 | | ≤ 15 | 0.572 | | 0.01 |
| cis-1,3-Dichloropropene | MS | AverageRF | % RSD | 3.2 | | ≤ 15 | 0.616 | | 0.01 |
| 4-Methyl-2-pentanone (MIBK) | MS | AverageRF | % RSD | 10.7 | | ≤ 15 | 0.0238 | | 0.01 |
| ‡ Toluene | MS | AverageRF | % RSD | 8.7 | | ≤ 15 | 0.904 | | 0.01 |
| trans-1,3-Dichloropropene | MS | AverageRF | % RSD | 5.9 | | ≤ 15 | 0.467 | | 0.01 |
| 1,1,2-Trichloroethane | MS | AverageRF | % RSD | 7.0 | | ≤ 15 | 0.234 | | 0.01 |
| Tetrachloroethene | MS | AverageRF | % RSD | 8.4 | | ≤ 15 | 0.262 | | 0.01 |
| 2-Hexanone | MS | AverageRF | % RSD | 8.4 | | ≤ 15 | 0.131 | | 0.01 |
| 1,3-Dichloropropane | MS | AverageRF | % RSD | 4.0 | | ≤ 15 | 0.466 | | 0.01 |
| Dibromochloromethane | MS | AverageRF | % RSD | 4.9 | | ≤ 15 | 0.288 | | 0.01 |
| 1,2-Dibromoethane | MS | AverageRF | % RSD | 4.4 | | ≤ 15 | 0.242 | | 0.01 |
| † Chlorobenzene | MS | AverageRF | % RSD | 7.3 | | ≤ 15 | 1.09 | | 0.3 |

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound ‡ CCC Compound

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

**Client:** GeoTrans
**Project:** Western Ave/#E049-106

**Service Request:** X2200452
**ICAL Date:** 05/28/2002

## Initial Calibration Summary
## Volatile Organic Compounds

**ICAL ID:** CAL292
**Instrument ID:** MS03

**Column:** MS

| Analyte Name | Compound Type | Calibration Evaluation | | | | | RRF Evaluation | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Fit Type | Eval. | Eval. Result | Q | Control Criteria | Average RRF | Q | Minimum RRF |
| 1,1,1,2-Tetrachloroethane | MS | AverageRF | % RSD | 5.9 | | ≤ 15 | 0.386 | | 0.01 |
| ‡ Ethylbenzene | MS | AverageRF | % RSD | 13.0 | | ≤ 15 | 1.89 | | 0.01 |
| m,p-Xylenes | MS | Linear | R2 | 0.998 | | ≥ 0.990 | 0.666 | | 0.01 |
| o-Xylene | MS | Linear | R2 | 0.998 | | ≥ 0.990 | 0.620 | | 0.01 |
| Styrene | MS | Linear | R2 | 0.998 | | ≥ 0.990 | 1.06 | | 0.01 |
| Isopropylbenzene | MS | Linear | R2 | 0.999 | | ≥ 0.990 | 1.55 | | 0.01 |
| Bromobenzene | MS | AverageRF | % RSD | 13.1 | | ≤ 15 | 0.373 | | 0.01 |
| 1,2,3-Trichloropropane | MS | AverageRF | % RSD | 11.9 | | ≤ 15 | 0.323 | | 0.01 |
| n-Propylbenzene | MS | Linear | R2 | 0.999 | | ≥ 0.990 | 2.05 | | 0.01 |
| 2-Chlorotoluene | MS | Linear | R2 | 0.999 | | ≥ 0.990 | 1.40 | | 0.01 |
| 4-Chlorotoluene | MS | AverageRF | % RSD | 14.4 | | ≤ 15 | 1.21 | | 0.01 |
| 1,3,5-Trimethylbenzene | MS | Linear | R2 | 0.999 | | ≥ 0.990 | 1.32 | | 0.01 |
| tert-Butylbenzene | MS | Linear | R2 | 0.999 | | ≥ 0.990 | 0.979 | | 0.01 |
| 1,2,4-Trimethylbenzene | MS | Linear | R2 | 1.000 | | ≥ 0.990 | 1.32 | | 0.01 |
| sec-Butylbenzene | MS | Linear | R2 | 1.000 | | ≥ 0.990 | 1.63 | | 0.01 |
| 1,3-Dichlorobenzene | MS | AverageRF | % RSD | 14.6 | | ≤ 15 | 0.690 | | 0.01 |
| 4-Isopropyltoluene | MS | Linear | R2 | 1.000 | | ≥ 0.990 | 1.29 | | 0.01 |
| Bromoform | MS | AverageRF | % RSD | 9.4 | | ≤ 15 | 0.372 | | 0.1 |
| † 1,1,2,2-Tetrachloroethane | MS | AverageRF | % RSD | 13.5 | | ≤ 15 | 0.639 | | 0.3 |
| 1,4-Dichlorobenzene | MS | AverageRF | % RSD | 3.4 | | ≤ 15 | 1.65 | | 0.01 |
| 1,2-Dichlorobenzene | MS | AverageRF | % RSD | 4.7 | | ≤ 15 | 1.31 | | 0.01 |
| n-Butylbenzene | MS | AverageRF | % RSD | 9.8 | | ≤ 15 | 3.00 | | 0.01 |
| 1,2-Dibromo-3-chloropropane | MS | Linear | R2 | 0.998 | | ≥ 0.990 | 0.0889 | | 0.01 |
| 1,2,4-Trichlorobenzene | MS | AverageRF | % RSD | 6.6 | | ≤ 15 | 0.778 | | 0.01 |
| Hexachlorobutadiene | MS | AverageRF | % RSD | 7.8 | | ≤ 15 | 0.295 | | 0.01 |
| Naphthalene | MS | AverageRF | % RSD | 4.8 | | ≤ 15 | 1.14 | | 0.01 |
| 1,2,3-Trichlorobenzene | MS | AverageRF | % RSD | 6.0 | | ≤ 15 | 0.600 | | 0.01 |
| Dibromofluoromethane | SURR | AverageRF | % RSD | 4.3 | | ≤ 15 | 0.416 | | 0.01 |
| Toluene-d8 | SURR | AverageRF | % RSD | 13.3 | | ≤ 15 | 0.984 | | 0.01 |
| 4-Bromofluorobenzene | SURR | AverageRF | % RSD | 14.2 | | ≤ 15 | 0.438 | | 0.01 |

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound ‡ CCC Compound

# Organic Initial Calibration Checksheet

Method 8260B/624 ICAL Date 5-28-02 Instrument MS03
Analyst DNA Reviewer [illegible] 5/30/02

| ANALYST | ITEMS REQUIRED TO BE IN THE ICAL FOLDER | REVIEWER |
|---|---|---|
| ✓ | Sequence log | ✓ |
| ✓ | Tune analysis report (if GC/MS) | ✓ |
| ✓ | Response factor report with linear curves noted | ✓ |
| ✓ | Calibration curve plot for any no average response factor calibration models | ✓ |
| ✓ | Quant report and chromatogram for each standard | ✓ |
| ✓ | Blank analysis quant report and chromatogram | ✓ |
| ✓ | ICV quant report and chromatogram | ✓ |
| ✓ | Calibration integration parameters | ✓ |

| METHOD | NUMBER OF POINTS | %RSD | ICV LIMITS |
|---|---|---|---|
| 8015AZR1 | 5 | <20 or linear $r^2 \geq 0.995$ | 80-120 |
| 8021 | 5 | <20 or linear $r^2 \geq 0.99$ | 70-130 |
| 601/602 | 3 | <10% or linear $r^2 \geq 0.99$ | 70-130 |
| 8260 | 5 | CCC <30%, SPCC minimum RF, all cmpds. <15% or linear $r^2 \geq 0.99$ | 70-130 |
| 624 | 3 | <35 or linear $r^2 \geq 0.99$ | 70-130 |
| 524.2 | 5 | <20 or linear $r^2 \geq 0.99$ | 70-130 |
| 8310 | 5 | $r^2 \geq 0.99$ | 70-130 |
| 610 | 3 | <10 or linear $r^2 \geq 0.99$ | 70-130 |

| Analyst | Criteria | Reviewer |
|---|---|---|
| ✓ | Method acceptance criteria met (see table above) | ✓ |
| ✓ | Calibration analyzed low to high | ✓ |
| ✓ | Was the blank clean and analyzed immediately prior to the low standard | ✓ |
| N/A | If a point was analyzed twice, were all analytes taken from the same injection. Document why which point was choosen. | — |
| N/A | Are points dropped from the interior of the curve (cannot drop one of these unless you have an instrument or QA reason (i.e. dry purge). It is acceptable to drop the highest or lowest point in the curve to redefine linear range as long as the required number of points remain. | — |
| XXXXXXXX | Randomly recalculate the RF and RSD for 5% of the curve to ensure actual responses were used. | — |
| ✓ | Ensure that integrations (computer or manual) are appropriate and consistent with corporate policy. | ✓ |
| ✓ | Ensure that surrogate is calibrated at different levels. | ✓ |
| ✓ | Inspect the low point: Is it at or below the RL? Is each peak at least 3 to 1 signal to noise. Is it Guassian? For GC/MS the spectra must match the mid level standard. | ✓ |
| ✓ | Inspect the highest point: make sure no saturated peaks are being used. Is the separation good? | ✓ |

Comment:
Operator: dnh
Data Path: J:\MS03\MAY02\MAY2802\
Pre-Seq Cmd:
Post-Seq Cmd:

ENVIRONQUANT
8260 0528.m
STEALTH
CAL 292

Method Sections To Run
(X) Full Method
( ) Reprocessing Only

On A Barcode Mismatch
(X) Inject Anyway
( ) Don't Inject

| Line | Type | Vial | DataFile | Method | Sample Name |
|---|---|---|---|---|---|
| 1 | Sample | 1 | 28MAY001 | GCMS03 | ib |
| 2 | Sample | 0 | 28MAY002 | GCMS03 | ib |
| 3 | Sample | 1 | 28MAY003 | GCMS03 | bfb01 25ng 052802 |
| 4 | Sample | 2 | 28MAY004 | GCMS03 | 10/40/80 ppb ccv 052802 |
| 5 | Sample | 0 | 28MAY005 | GCMS03 | ib |
| 6 | Sample | 0 | 28MAY006 | GCMS03 | ib |
| 7 | Sample | 1 | 28MAY007 | GCMS03 | bfb02 25ng 052802 |
| 8 | Sample | 2 | 28MAY008 | GCMS03 | 10/40/80 ppb ccv 052802 rr |
| 9 | Sample | 3 | 28MAY009 | GCMS03 | 10/40/80 ppb lcs 052802 water |
| 10 | Sample | 4 | 28MAY010 | GCMS03 | 10/40/80 ppb dlcs 052802 water |
| 11 | Sample | 5 | 28MAY011 | GCMS03 | 0.5/2/16 ppb mrl std 052802 |
| 12 | Sample | 1 | 28MAY012 | GCMS03 | bfb03 25ng 052802 |
| 13 | Sample | 1 | 28MAY013 | GCMS03 | bfb04 25ng 052802 |
| 14 | Sample | 2 | 28MAY014 | GCMS03 | mb01 052802 water |
| 15 | Sample | 3 | 28MAY015 | GCMS03 | ib01 052802 water |
| 16 | Sample | 4 | 28MAY016 | GCMS03 | 1 0.5/2/4 ppb ical 052802 |
| 17 | Sample | 5 | 28MAY017 | GCMS03 | 2 1/4/8 ppb ical 052802 |
| 18 | Sample | 6 | 28MAY018 | GCMS03 | 3 2/8/16 ppb ical 052802 |
| 19 | Sample | 7 | 28MAY019 | GCMS03 | 4 5/20/40 ppb ical 052802 |
| 20 | Sample | 8 | 28MAY020 | GCMS03 | 5 10/40/80 ppb ical 052802 |
| 21 | Sample | 9 | 28MAY021 | GCMS03 | 6 20/80/160 ppb ical 052802 |
| 22 | Sample | 10 | 28MAY022 | GCMS03 | 7 50/200/400 ppb ical 052802 |
| 23 | Sample | 11 | 28MAY023 | GCMS03 | 8 100/400/800 ppb ical 052802 |
| 24 | Sample | 0 | 28MAY024 | GCMS03 | ib |
| 25 | Sample | 0 | 28MAY025 | GCMS03 | ib |
| 26 | Sample | 0 | 28MAY026 | GCMS03 | ib |
| 27 | Sample | 12 | 28MAY027 | GCMS03 | 10/40/80 ppb icv 052802 |
| 28 | Sample | 13 | 28MAY028 | GCMS03 | ib |
| 29 | | | | | |

CCV STD WS5-120B & 122B
SURROGATE STD WS5-121B
INTERNAL STD WS5-117A
SECOND SOURCE WS5-122A & 122B
IS & SURROGATE WS5-120A
ANALYST & DATE DHH 5/29/02

| | (CCV (120B)) | (CCV (122B)) | (SURR (121B)) / 50mL |
|---|---|---|---|
| 1. | 0.5µL | 1µL | 0.5µL |
| 2. | 1µL | 2µL | 1µL |
| 3. | 2µL | 4µL | 2µL |
| 4. | 5µL | 10µL | 5µL |
| 5. | 10µL | 20µL | 10µL |
| 6. | 20µL | 40µL | 20µL |
| 7. | 50µL | 100µL | 40µL |
| 8. | 100µL | 200µL | 50µL |

Last Modified: Wed May 29 09:06:30 2002

# *Initial Calibration - Summary Report*

| | | | |
|---|---|---|---|
| **Calibration ID:** | CAL292 | **Instrument ID:** | MS03 |
| **Method ID:** | MJ103 | **Column Name:** | MS |

| Parameter Name | Type | Curve Fit | Min RF | Mean RF | Max %RSD | %RSD | Min COD | COD | MRL Check | Conc ½ Low pt. |
|---|---|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | MS | AverageRF | 0.010 | 0.312 | 15 | 6.2 | | | OK | |
| Chloromethane | MS | AverageRF | 0.100 | 0.568 | 15 | 5.1 | | | OK | |
| Vinyl Chloride | MS | AverageRF | 0.010 | 0.635 | 15 | 5.4 | | | OK | |
| Bromomethane | MS | AverageRF | 0.010 | 0.530 | 15 | 11.1 | | | OK | |
| Chloroethane | MS | AverageRF | 0.010 | 0.425 | 15 | 6.8 | | | OK | |
| Trichlorofluoromethane | MS | AverageRF | 0.010 | 0.588 | 15 | 3.5 | | | OK | |
| 1,1,2-Trichlorotrifluoroethane | MS | AverageRF | 0.010 | 0.397 | 15 | 2.6 | | | OK | |
| Acrolein | MS | AverageRF | 0.010 | 0.019 | 15 | 13.5 | | | OK | |
| 1,1-Dichloroethene | MS | AverageRF | 0.010 | 0.393 | 15 | 5.3 | | | OK | |
| Acetone | MS | Linear | 0.010 | 0.020 | | | 0.990 | 0.9997 | OK | -4.40* |
| Iodomethane | MS | AverageRF | 0.010 | 0.669 | 15 | 12.5 | | | OK | |
| Carbon Disulfide | MS | AverageRF | 0.010 | 1.539 | 15 | 7.4 | | | OK | |
| Acetonitrile | MS | AverageRF | 0.010 | 0.025 | 15 | 10.7 | | | OK | |
| Methylene Chloride | MS | AverageRF | 0.010 | 0.516 | 15 | 7.9 | | | OK | |
| tert-Butyl Alcohol | MS | AverageRF | 0.010 | 0.014 | 15 | 9.7 | | | OK | |
| Methyl tert-Butyl Ether | MS | AverageRF | 0.010 | 0.818 | 15 | 6.7 | | | OK | |
| trans-1,2-Dichloroethene | MS | AverageRF | 0.010 | 0.472 | 15 | 6.0 | | | OK | |
| Acrylonitrile | MS | AverageRF | 0.010 | 0.071 | 15 | 7.6 | | | OK | |
| Diisopropyl Ether | MS | AverageRF | 0.010 | 1.513 | 15 | 6.4 | | | OK | |
| 1,1-Dichloroethane | MS | AverageRF | 0.100 | 0.857 | 15 | 2.1 | | | OK | |
| Vinyl Acetate | MS | AverageRF | 0.010 | 0.387 | 15 | 14.3 | | | OK | |
| tert-Butyl Ethyl Ether | MS | AverageRF | 0.010 | 1.152 | 15 | 3.8 | | | OK | |
| Dichloropropane | MS | AverageRF | 0.010 | 0.596 | 15 | 6.1 | | | OK | |
| utanone (MEK) | MS | Linear | 0.010 | 0.023 | | | 0.990 | 0.9999 | OK | 0.20 |
| cis-1,2-Dichloroethene | MS | AverageRF | 0.010 | 0.522 | 15 | 5.4 | | | OK | |
| Bromochloromethane | MS | AverageRF | 0.010 | 0.202 | 15 | 5.3 | | | OK | |
| Chloroform | MS | AverageRF | 0.010 | 0.852 | 15 | 2.9 | | | OK | |
| Pentafluorobenzene | MS | AverageRF | 0.010 | 0.510 | 15 | 2.5 | | | * | |
| Dibromofluoromethane | SURR | AverageRF | 0.010 | 0.416 | 15 | 4.3 | | | NA | |
| 1,1,1-Trichloroethane | MS | AverageRF | 0.010 | 0.631 | 15 | 3.0 | | | OK | |
| Carbon Tetrachloride | MS | AverageRF | 0.010 | 0.488 | 15 | 4.1 | | | OK | |
| 1,1-Dichloropropene | MS | AverageRF | 0.010 | 0.603 | 15 | 4.5 | | | OK | |
| Benzene | MS | AverageRF | 0.010 | 1.593 | 15 | 6.0 | | | OK | |
| tert-Amyl Methyl Ether | MS | AverageRF | 0.010 | 0.925 | 15 | 4.5 | | | OK | |
| 1,2-Dichloroethane | MS | AverageRF | 0.010 | 0.557 | 15 | 12.0 | | | OK | |
| Fluorobenzene | SURR | AverageRF | 0.010 | 1.270 | 15 | 0.4 | | | NA | |
| Trichloroethene | MS | AverageRF | 0.010 | 0.453 | 15 | 4.9 | | | OK | |
| 1,2-Dichloropropane | MS | AverageRF | 0.010 | 0.454 | 15 | 4.7 | | | OK | |
| Dibromomethane | MS | AverageRF | 0.010 | 0.252 | 15 | 7.7 | | | OK | |
| Bromodichloromethane | MS | AverageRF | 0.010 | 0.572 | 15 | 5.7 | | | OK | |
| 2-Chloroethyl Vinyl Ether | MS | AverageRF | 0.010 | 0.177 | 15 | 1.5 | | | OK | |
| cis-1,3-Dichloropropene | MS | AverageRF | 0.010 | 0.616 | 15 | 3.2 | | | OK | |
| 4-Methyl-2-pentanone (MIBK) | MS | AverageRF | 0.010 | 0.024 | 15 | 10.7 | | | OK | |
| Toluene-d8 | SURR | AverageRF | 0.010 | 0.984 | 15 | 13.3 | | | NA | |
| Toluene | MS | AverageRF | 0.010 | 0.904 | 15 | 8.7 | | | OK | |
| trans-1,3-Dichloropropene | MS | AverageRF | 0.010 | 0.467 | 15 | 5.9 | | | OK | |
| 1,1,2-Trichloroethane | MS | AverageRF | 0.010 | 0.234 | 15 | 7.0 | | | OK | |
| Tetrachloroethene | MS | AverageRF | 0.010 | 0.262 | 15 | 8.4 | | | OK | |
| xanone | MS | AverageRF | 0.010 | 0.131 | 15 | 8.4 | | | OK | |
| 1,3-Dichloropropane | MS | AverageRF | 0.010 | 0.466 | 15 | 4.0 | | | OK | |
| Dibromochloromethane | MS | AverageRF | 0.010 | 0.288 | 15 | 4.9 | | | OK | |

# *Initial Calibration - Summary Report*

| | | | |
|---|---|---|---|
| **Calibration ID:** | CAL292 | **Instrument ID:** | MS03 |
| **Method ID:** | MJ103 | **Column Name:** | MS |

| Parameter Name | Type | Curve Fit | Min RF | Mean RF | Max %RSD | %RSD | Min COD | COD | MRL Check | Conc ½ Low pt. |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromoethane | MS | AverageRF | 0.010 | 0.242 | 15 | 4.4 | | | OK | |
| Chlorobenzene | MS | AverageRF | 0.300 | 1.089 | 15 | 7.3 | | | OK | |
| 1,1,1,2-Tetrachloroethane | MS | AverageRF | 0.010 | 0.386 | 15 | 5.9 | | | OK | |
| Ethylbenzene | MS | AverageRF | 0.010 | 1.887 | 15 | 13.0 | | | OK | |
| m,p-Xylenes | MS | Linear | 0.010 | 0.666 | | | 0.990 | 0.9981 | OK | 3.28* |
| o-Xylene | MS | Linear | 0.010 | 0.620 | | | 0.990 | 0.9979 | OK | 1.72* |
| Styrene | MS | Linear | 0.010 | 1.063 | | | 0.990 | 0.9982 | OK | 1.69* |
| Isopropylbenzene | MS | Linear | 0.010 | 1.552 | | | 0.990 | 0.9991 | OK | 1.42* |
| 4-Bromofluorobenzene | SURR | AverageRF | 0.010 | 0.438 | 15 | 14.2 | | | NA | |
| Bromobenzene | MS | AverageRF | 0.010 | 0.373 | 15 | 13.1 | | | OK | |
| 1,2,3-Trichloropropane | MS | AverageRF | 0.010 | 0.323 | 15 | 11.9 | | | OK | |
| n-Propylbenzene | MS | Linear | 0.010 | 2.052 | | | 0.990 | 0.9989 | OK | 1.45* |
| 2-Chlorotoluene | MS | Linear | 0.010 | 1.395 | | | 0.990 | 0.9993 | OK | 1.27* |
| 4-Chlorotoluene | MS | AverageRF | 0.010 | 1.208 | 15 | 14.4 | | | OK | |
| 1,3,5-Trimethylbenzene | MS | Linear | 0.010 | 1.322 | | | 0.990 | 0.9992 | OK | 1.44* |
| tert-Butylbenzene | MS | Linear | 0.010 | 0.979 | | | 0.990 | 0.9990 | OK | 1.41* |
| 1,2,4-Trimethylbenzene | MS | Linear | 0.010 | 1.317 | | | 0.990 | 0.9996 | OK | 1.19* |
| sec-Butylbenzene | MS | Linear | 0.010 | 1.634 | | | 0.990 | 0.9995 | OK | 1.18* |
| 1,3-Dichlorobenzene | MS | AverageRF | 0.010 | 0.690 | 15 | 14.6 | | | OK | |
| 4-Isopropyltoluene | MS | Linear | 0.010 | 1.287 | | | 0.990 | 0.9995 | OK | 1.27* |
| Bromoform | MS | AverageRF | 0.100 | 0.372 | 15 | 9.4 | | | OK | |
| 1,1,2,2-Tetrachloroethane | MS | AverageRF | 0.300 | 0.639 | 15 | 13.5 | | | OK | |
| 1,4-Dichlorobenzene | MS | AverageRF | 0.010 | 1.650 | 15 | 3.4 | | | OK | |
| 1,2-Dichlorobenzene | MS | AverageRF | 0.010 | 1.315 | 15 | 4.7 | | | OK | |
| n-Butylbenzene | MS | AverageRF | 0.010 | 2.997 | 15 | 9.8 | | | OK | |
| 1,2-Dibromo-3-chloropropane | MS | Linear | 0.010 | 0.089 | | | 0.990 | 0.9976 | OK | 0.56 |
| 1,2,4-Trichlorobenzene | MS | AverageRF | 0.010 | 0.778 | 15 | 6.6 | | | OK | |
| Hexachlorobutadiene | MS | AverageRF | 0.010 | 0.295 | 15 | 7.8 | | | OK | |
| Naphthalene | MS | AverageRF | 0.010 | 1.143 | 15 | 4.8 | | | OK | |
| 1,2,3-Trichlorobenzene | MS | AverageRF | 0.010 | 0.600 | 15 | 6.0 | | | OK | |
| | | | | | | | 0.0 | | | |

# *Initial Calibration - Summary Report*

| | | | |
|---|---|---|---|
| **Calibration ID:** | CAL292 | **Instrument ID:** | MS03 |
| **Method ID:** | MJ103 | **Column Name:** | MS |

## CC and CCC Evaluations

| Parameter Name | Type | SPCC Criteria | SPCC Result | CCC Criteria | CCC Result |
|---|---|---|---|---|---|
| Chloromethane | SPCC | 0.100 | 0.568 | | |
| Vinyl Chloride | CCC | | | 30 | 5.4 |
| 1,1-Dichloroethene | CCC | | | 30 | 5.3 |
| 1,1-Dichloroethane | SPCC | 0.100 | 0.857 | | |
| Chloroform | CCC | | | 30 | 2.9 |
| 1,2-Dichloropropane | CCC | | | 30 | 4.7 |
| Toluene | CCC | | | 30 | 8.7 |
| Chlorobenzene | SPCC | 0.300 | 1.089 | | |
| Ethylbenzene | CCC | | | 30 | 13.0 |
| Bromoform | SPCC | 0.100 | 0.372 | | |
| 1,1,2,2-Tetrachloroethane | SPCC | 0.300 | 0.639 | | |

# *Initial Calibration - Detailed Report*

| | | | |
|---|---|---|---|
| **Calibration ID:** | CAL292 | **Instrument ID:** | MS03 |
| **Method ID:** | MJ103 | **Column Name:** | MS |
| | | **Calibration Fit:** | AverageRF |

| FileID | File Location | Acquisition Date | Quantitation Date | Last Updated |
|---|---|---|---|---|
| 1484 | J:\MS03\MAY02\MAY2802\28MAY016.D | 05/28/2002 18:22 | 05/29/2002 10:51 | 05/29/2002 12:19 |
| 1485 | J:\MS03\MAY02\MAY2802\28MAY017.D | 05/28/2002 18:52 | 05/29/2002 11:14 | 05/29/2002 12:19 |
| 1486 | J:\MS03\MAY02\MAY2802\28MAY018.D | 05/28/2002 19:23 | 05/29/2002 11:15 | 05/29/2002 12:19 |
| 1487 | J:\MS03\MAY02\MAY2802\28MAY019.D | 05/28/2002 19:53 | 05/29/2002 10:51 | 05/29/2002 12:19 |
| 1488 | J:\MS03\MAY02\MAY2802\28MAY020.D | 05/28/2002 20:23 | 05/29/2002 10:51 | 05/29/2002 12:19 |
| 1489 | J:\MS03\MAY02\MAY2802\28MAY021.D | 05/28/2002 20:53 | 05/29/2002 10:51 | 05/29/2002 12:19 |
| 1490 | J:\MS03\MAY02\MAY2802\28MAY022.D | 05/28/2002 21:22 | 05/29/2002 10:52 | 05/29/2002 12:19 |
| 1491 | J:\MS03\MAY02\MAY2802\28MAY023.D | 05/28/2002 21:52 | 05/29/2002 11:13 | 05/29/2002 12:19 |

| Parameter Name | FileID 1484 | 1485 | 1486 | 1487 | 1488 | 1489 | 1490 | 1491 | Mean RF | %RSD |
|---|---|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | 0.353 | 0.323 | 0.294 | 0.298 | 0.318 | 0.306 | 0.302 | 0.299 | 0.312 | 6.2 |
| Chloromethane | 0.558 | 0.590 | 0.566 | 0.603 | 0.603 | 0.560 | 0.537 | 0.527 | 0.568 | 5.1 |
| Vinyl Chloride | 0.681 | 0.623 | 0.633 | 0.640 | 0.680 | 0.631 | 0.613 | 0.577 | 0.635 | 5.4 |
| Bromomethane | 0.654 | 0.554 | 0.558 | 0.508 | 0.513 | 0.491 | 0.486 | 0.474 | 0.530 | 11.1 |
| Chloroethane | 0.458 | 0.446 | 0.435 | 0.441 | 0.441 | 0.407 | 0.401 | 0.372 | 0.425 | 6.8 |
| Trichlorofluoromethane | 0.594 | 0.597 | 0.603 | 0.594 | 0.621 | 0.572 | 0.561 | 0.565 | 0.588 | 3.5 |
| 1,1,2-Trichlorotrifluoroethane | 0.391 | 0.403 | 0.391 | 0.396 | 0.412 | 0.383 | 0.388 | 0.409 | 0.397 | 2.6 |
| Acrolein | | 0.022 | 0.022 | 0.018 | 0.016 | 0.016 | 0.017 | 0.018 | 0.019 | 13.5 |
| 1,1-Dichloroethene | 0.388 | 0.433 | 0.406 | 0.376 | 0.389 | 0.368 | 0.378 | 0.404 | 0.393 | 5.3 |
| Acetone | | 0.030 | 0.030 | 0.021 | 0.018 | 0.015 | 0.015 | 0.014 | 0.020 | 33.5# |
| [illegible]omethane | 0.561 | 0.578 | 0.612 | 0.652 | 0.703 | 0.691 | 0.763 | 0.791 | 0.669 | 12.5 |
| [illegible]rbon Disulfide | 1.395 | 1.409 | 1.455 | 1.514 | 1.630 | 1.561 | 1.660 | 1.690 | 1.539 | 7.4 |
| Acetonitrile | | 0.025 | 0.030 | 0.026 | 0.026 | 0.024 | 0.023 | 0.022 | 0.025 | 10.7 |
| Methylene Chloride | 0.599 | 0.554 | 0.513 | 0.507 | 0.502 | 0.481 | 0.483 | 0.491 | 0.516 | 7.9 |
| tert-Butyl Alcohol | | | 0.015 | 0.015 | 0.015 | 0.014 | 0.013 | 0.012 | 0.014 | 9.7 |
| Methyl tert-Butyl Ether | 0.932 | 0.834 | 0.832 | 0.817 | 0.825 | 0.785 | 0.767 | 0.755 | 0.818 | 6.7 |
| trans-1,2-Dichloroethene | 0.538 | 0.460 | 0.460 | 0.451 | 0.470 | 0.447 | 0.473 | 0.479 | 0.472 | 6.0 |
| Acrylonitrile | | 0.080 | 0.074 | 0.071 | 0.073 | 0.069 | 0.068 | 0.062 | 0.071 | 7.6 |
| Diisopropyl Ether | 1.744 | 1.482 | 1.510 | 1.504 | 1.514 | 1.452 | 1.454 | 1.445 | 1.513 | 6.4 |
| 1,1-Dichloroethane | 0.885 | 0.873 | 0.852 | 0.846 | 0.874 | 0.844 | 0.836 | 0.845 | 0.857 | 2.1 |
| Vinyl Acetate | 0.486 | 0.425 | 0.406 | 0.405 | 0.376 | 0.319 | 0.340 | 0.338 | 0.387 | 14.3 |
| tert-Butyl Ethyl Ether | 1.216 | 1.204 | 1.179 | 1.142 | 1.152 | 1.108 | 1.108 | 1.105 | 1.152 | 3.8 |
| 2,2-Dichloropropane | 0.678 | 0.600 | 0.598 | 0.585 | 0.598 | 0.562 | 0.569 | 0.575 | 0.596 | 6.1 |
| 2-Butanone (MEK) | | 0.032 | 0.026 | 0.022 | 0.022 | 0.021 | 0.021 | 0.020 | 0.023 | 18.4# |
| cis-1,2-Dichloroethene | 0.581 | 0.505 | 0.513 | 0.494 | 0.509 | 0.503 | 0.531 | 0.542 | 0.522 | 5.4 |
| Bromochloromethane | 0.225 | 0.206 | 0.200 | 0.203 | 0.202 | 0.193 | 0.190 | 0.195 | 0.202 | 5.3 |
| Chloroform | 0.892 | 0.870 | 0.851 | 0.848 | 0.870 | 0.821 | 0.822 | 0.845 | 0.852 | 2.9 |
| Pentafluorobenzene | 0.509 | 0.504 | 0.492 | 0.510 | 0.509 | 0.518 | 0.504 | 0.537 | 0.510 | 2.5 |
| Dibromofluoromethane | 0.434 | 0.409 | 0.391 | 0.395 | 0.435 | 0.408 | 0.422 | 0.434 | 0.416 | 4.3 |
| 1,1,1-Trichloroethane | 0.604 | 0.606 | 0.636 | 0.637 | 0.659 | 0.624 | 0.631 | 0.648 | 0.631 | 3.0 |
| Carbon Tetrachloride | 0.472 | 0.459 | 0.479 | 0.482 | 0.506 | 0.487 | 0.499 | 0.521 | 0.488 | 4.1 |
| 1,1-Dichloropropene | 0.612 | 0.561 | 0.582 | 0.597 | 0.616 | 0.590 | 0.619 | 0.650 | 0.603 | 4.5 |
| Benzene | 1.472 | 1.516 | 1.509 | 1.567 | 1.639 | 1.612 | 1.676 | 1.756 | 1.593 | 6.0 |
| tert-Amyl Methyl Ether | 1.024 | 0.916 | 0.916 | 0.909 | 0.931 | 0.897 | 0.898 | 0.913 | 0.925 | 4.5 |
| 1,2-Dichloroethane | 0.665 | 0.643 | 0.567 | 0.559 | 0.538 | 0.511 | 0.491 | 0.483 | 0.557 | 12.0 |
| F[illegible]orobenzene | 1.261 | 1.270 | 1.264 | 1.272 | 1.278 | 1.274 | 1.266 | 1.272 | 1.270 | 0.4 |
| [illegible]hloroethene | 0.497 | 0.438 | 0.436 | 0.435 | 0.452 | 0.440 | 0.448 | 0.476 | 0.453 | 4.9 |
| 1,2-Dichloropropane | 0.501 | 0.459 | 0.458 | 0.453 | 0.444 | 0.432 | 0.434 | 0.453 | 0.454 | 4.7 |

# *Initial Calibration - Detailed Report*

| | | | |
|---|---|---|---|
| **Calibration ID:** | CAL292 | **Instrument ID:** | MS03 |
| **Method ID:** | MJ103 | **Column Name:** | MS |
| | | **Calibration Fit:** | AverageRF |

| Parameter Name | FileID 1484 | 1485 | 1486 | 1487 | 1488 | 1489 | 1490 | 1491 | Mean RF | %RSD |
|---|---|---|---|---|---|---|---|---|---|---|
| Dibromomethane | 0.277 | 0.276 | 0.265 | 0.255 | 0.247 | 0.234 | 0.228 | 0.233 | 0.252 | 7.7 |
| Bromodichloromethane | 0.642 | 0.584 | 0.577 | 0.568 | 0.563 | 0.542 | 0.538 | 0.558 | 0.572 | 5.7 |
| 2-Chloroethyl Vinyl Ether | 0.175 | 0.177 | 0.181 | 0.174 | 0.176 | 0.175 | 0.179 | 0.181 | 0.177 | 1.5 |
| cis-1,3-Dichloropropene | 0.659 | 0.611 | 0.613 | 0.612 | 0.606 | 0.594 | 0.606 | 0.628 | 0.616 | 3.2 |
| 4-Methyl-2-pentanone (MIBK) | | 0.029 | 0.021 | 0.025 | 0.023 | 0.023 | 0.023 | 0.023 | 0.024 | 10.7 |
| Toluene-d8 | 0.899 | 0.837 | 0.821 | 0.916 | 1.069 | 1.052 | 1.139 | 1.139 | 0.984 | 13.3 |
| Toluene | 0.828 | 0.812 | 0.831 | 0.880 | 0.928 | 0.950 | 0.983 | 1.022 | 0.904 | 8.7 |
| trans-1,3-Dichloropropene | 0.530 | 0.474 | 0.466 | 0.442 | 0.459 | 0.445 | 0.460 | 0.460 | 0.467 | 5.9 |
| 1,1,2-Trichloroethane | 0.271 | 0.244 | 0.232 | 0.227 | 0.225 | 0.220 | 0.228 | 0.225 | 0.234 | 7.0 |
| Tetrachloroethene | 0.256 | 0.250 | 0.237 | 0.246 | 0.259 | 0.259 | 0.279 | 0.306 | 0.262 | 8.4 |
| 2-Hexanone | 0.153 | 0.137 | 0.128 | 0.137 | 0.130 | 0.124 | 0.122 | 0.119 | 0.131 | 8.4 |
| 1,3-Dichloropropane | 0.508 | 0.468 | 0.472 | 0.456 | 0.458 | 0.450 | 0.453 | 0.461 | 0.466 | 4.0 |
| Dibromochloromethane | 0.307 | 0.280 | 0.271 | 0.280 | 0.283 | 0.278 | 0.290 | 0.310 | 0.288 | 4.9 |
| 1,2-Dibromoethane | 0.260 | 0.248 | 0.239 | 0.240 | 0.233 | 0.230 | 0.234 | 0.254 | 0.242 | 4.4 |
| Chlorobenzene | 1.101 | 0.980 | 1.012 | 1.066 | 1.088 | 1.062 | 1.188 | 1.214 | 1.089 | 7.3 |
| 1,1,1,2-Tetrachloroethane | 0.406 | 0.368 | 0.369 | 0.366 | 0.377 | 0.369 | 0.410 | 0.420 | 0.386 | 5.9 |
| Ethylbenzene | 1.667 | 1.589 | 1.679 | 1.827 | 1.950 | 1.931 | 2.200 | 2.249 | 1.887 | 13.0 |
| m,p-Xylenes | 0.528 | 0.539 | 0.569 | 0.635 | 0.702 | 0.690 | 0.801 | 0.862 | 0.666 | 18.3# |
| o-Xylene | 0.521 | 0.524 | 0.516 | 0.568 | 0.644 | 0.640 | 0.743 | 0.804 | 0.620 | 17.5# |
| Styrene | 0.850 | 0.830 | 0.883 | 1.009 | 1.115 | 1.114 | 1.306 | 1.398 | 1.063 | 19.8# |
| Isopropylbenzene | 1.249 | 1.243 | 1.290 | 1.460 | 1.642 | 1.641 | 1.917 | 1.975 | 1.552 | 18.7# |
| 4-Bromofluorobenzene | 0.426 | 0.361 | 0.361 | 0.408 | 0.456 | 0.452 | 0.527 | 0.515 | 0.438 | 14.2 |
| [illegible]mobenzene | 0.335 | 0.328 | 0.326 | 0.364 | 0.395 | 0.401 | 0.458 | | 0.373 | 13.1 |
| 1,2,3-Trichloropropane | 0.417 | 0.317 | 0.318 | 0.315 | 0.311 | 0.298 | 0.312 | 0.300 | 0.323 | 11.9 |
| n-Propylbenzene | 1.714 | 1.637 | 1.743 | 1.929 | 2.172 | 2.163 | 2.462 | 2.593 | 2.052 | 17.3# |
| 2-Chlorotoluene | 1.100 | 1.143 | 1.187 | 1.342 | 1.478 | 1.515 | 1.660 | 1.737 | 1.395 | 17.2# |
| 4-Chlorotoluene | 1.029 | 0.998 | 1.047 | 1.169 | 1.290 | 1.279 | 1.403 | 1.448 | 1.208 | 14.4 |
| 1,3,5-Trimethylbenzene | 1.008 | 1.018 | 1.116 | 1.231 | 1.389 | 1.458 | 1.647 | 1.713 | 1.322 | 20.7# |
| tert-Butylbenzene | 0.775 | 0.760 | 0.821 | 0.929 | 1.063 | 1.037 | 1.197 | 1.247 | 0.979 | 19.2# |
| 1,2,4-Trimethylbenzene | 1.010 | 1.029 | 1.135 | 1.257 | 1.402 | 1.454 | 1.607 | 1.645 | 1.317 | 18.8# |
| sec-Butylbenzene | 1.271 | 1.259 | 1.390 | 1.569 | 1.756 | 1.807 | 1.980 | 2.039 | 1.634 | 18.9# |
| 1,3-Dichlorobenzene | 0.571 | 0.587 | 0.634 | 0.671 | 0.741 | 0.796 | 0.826 | | 0.690 | 14.6 |
| 4-Isopropyltoluene | 0.961 | 1.017 | 1.052 | 1.190 | 1.376 | 1.453 | 1.601 | 1.644 | 1.287 | 20.9# |
| Bromoform | 0.413 | 0.419 | 0.382 | 0.349 | 0.341 | 0.317 | 0.378 | 0.373 | 0.372 | 9.4 |
| 1,1,2,2-Tetrachloroethane | 0.804 | 0.685 | 0.698 | 0.616 | 0.589 | 0.526 | 0.613 | 0.584 | 0.639 | 13.5 |
| 1,4-Dichlorobenzene | 1.742 | 1.633 | 1.613 | 1.621 | 1.636 | 1.574 | 1.661 | 1.718 | 1.650 | 3.4 |
| 1,2-Dichlorobenzene | 1.315 | 1.258 | 1.290 | 1.307 | 1.317 | 1.228 | 1.390 | 1.413 | 1.315 | 4.7 |
| n-Butylbenzene | 2.698 | 2.615 | 2.906 | 2.933 | 3.122 | 2.897 | 3.359 | 3.448 | 2.997 | 9.8 |
| 1,2-Dibromo-3-chloropropane | | | 0.101 | 0.114 | 0.095 | 0.071 | 0.075 | 0.078 | 0.089 | 19.2# |
| 1,2,4-Trichlorobenzene | 0.847 | 0.780 | 0.775 | 0.745 | 0.743 | 0.694 | 0.796 | 0.840 | 0.778 | 6.6 |
| Hexachlorobutadiene | 0.308 | 0.266 | 0.298 | 0.283 | 0.296 | 0.263 | 0.316 | 0.329 | 0.295 | 7.8 |
| Naphthalene | 1.204 | 1.179 | 1.140 | 1.120 | 1.118 | 1.034 | 1.156 | 1.191 | 1.143 | 4.8 |
| 1,2,3-Trichlorobenzene | 0.648 | 0.605 | 0.612 | 0.579 | 0.576 | 0.536 | 0.606 | 0.638 | 0.600 | 6.0 |

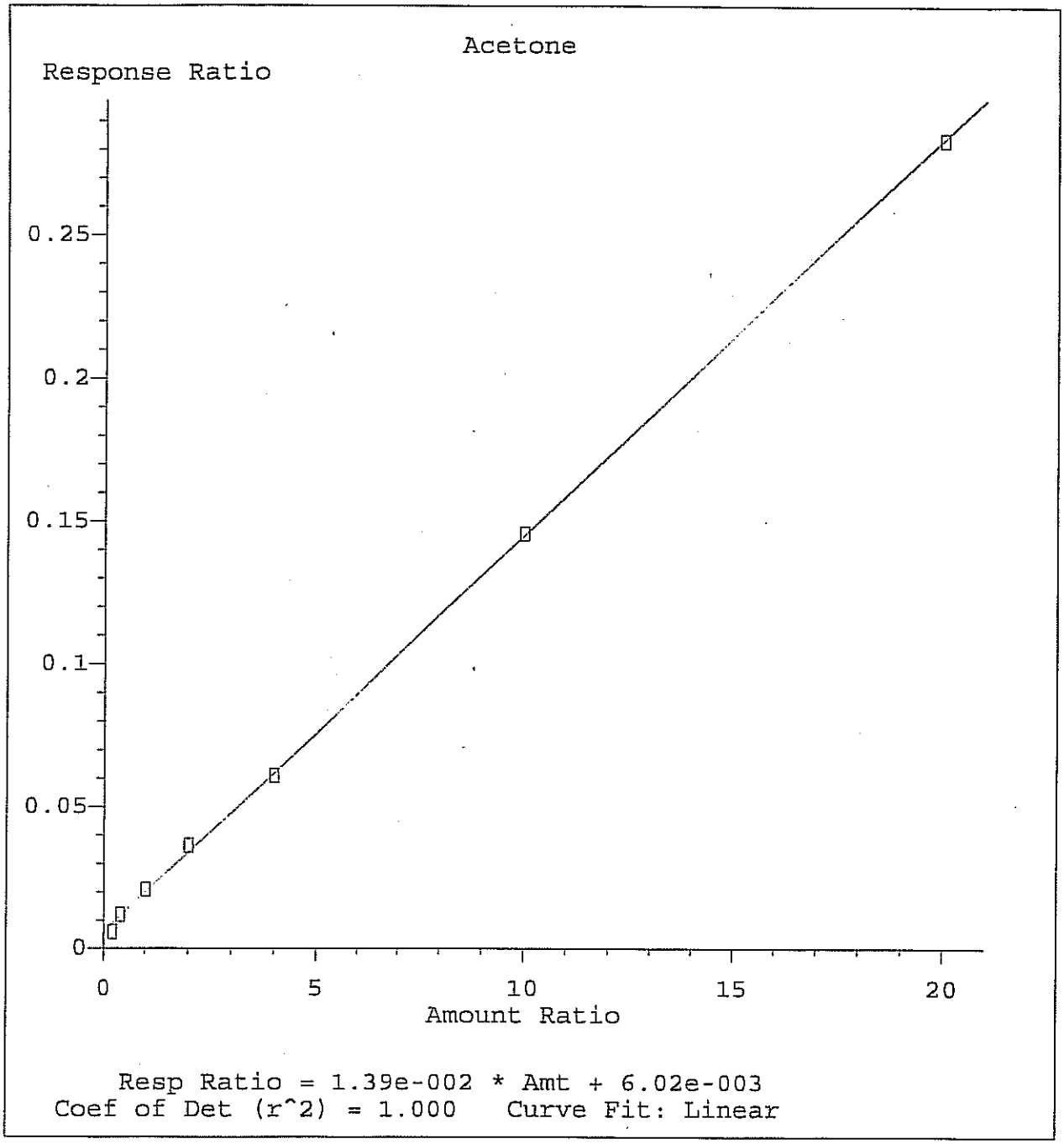
**# RSD Not Applicable. Compound being quantitated from curve. Included in Average RF summary for Average %RSD calculation.**

# *Initial Calibration - Detailed Report*

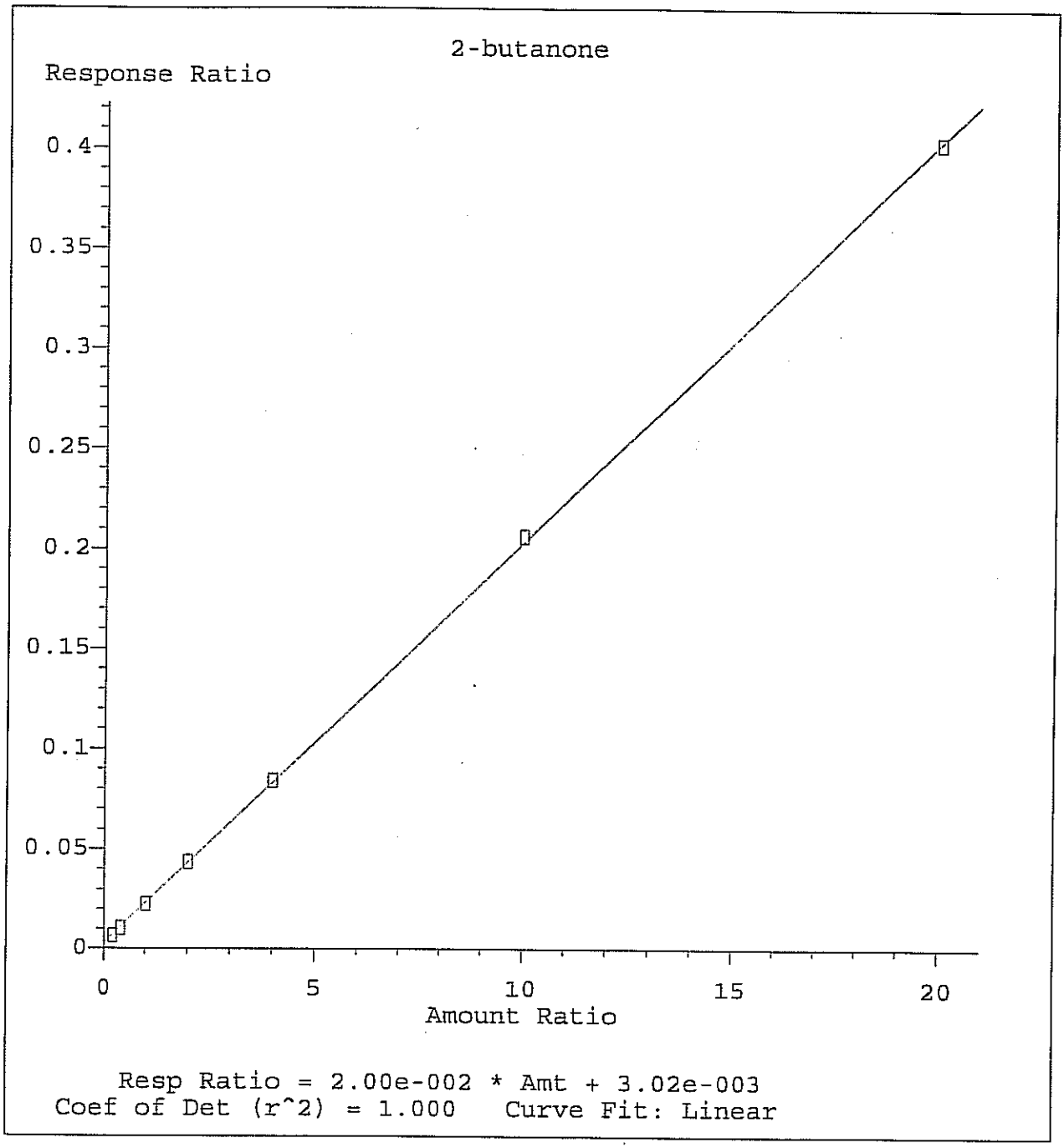
| | | | |
|---|---|---|---|
| **Calibration ID:** | CAL292 | **Instrument ID:** | MS03 |
| **Method ID:** | MJ103 | **Column Name:** | MS |
| | | **Calibration Fit:** | Linear |

| FileID | File Location | Acquisition Date | Quantitation Date | Last Updated |
|---|---|---|---|---|
| 1484 | J:\MS03\MAY02\MAY2802\28MAY016.D | 05/28/2002 18:22 | 05/29/2002 10:51 | 05/29/2002 12:19 |
| 1485 | J:\MS03\MAY02\MAY2802\28MAY017.D | 05/28/2002 18:52 | 05/29/2002 11:14 | 05/29/2002 12:19 |
| 1486 | J:\MS03\MAY02\MAY2802\28MAY018.D | 05/28/2002 19:23 | 05/29/2002 11:15 | 05/29/2002 12:19 |
| 1487 | J:\MS03\MAY02\MAY2802\28MAY019.D | 05/28/2002 19:53 | 05/29/2002 10:51 | 05/29/2002 12:19 |
| 1488 | J:\MS03\MAY02\MAY2802\28MAY020.D | 05/28/2002 20:23 | 05/29/2002 10:51 | 05/29/2002 12:19 |
| 1489 | J:\MS03\MAY02\MAY2802\28MAY021.D | 05/28/2002 20:53 | 05/29/2002 10:51 | 05/29/2002 12:19 |
| 1490 | J:\MS03\MAY02\MAY2802\28MAY022.D | 05/28/2002 21:22 | 05/29/2002 10:52 | 05/29/2002 12:19 |
| 1491 | J:\MS03\MAY02\MAY2802\28MAY023.D | 05/28/2002 21:52 | 05/29/2002 11:13 | 05/29/2002 12:19 |

| Parameter Name | CoefX2 | CoefX | Y-intercept | COD | Mean RF |
|---|---|---|---|---|---|
| Acetone | | 0.014 | 0.006 | 0.9997 | 0.020 |
| 2-Butanone (MEK) | | 0.020 | 0.003 | 0.9999 | 0.023 |
| m,p-Xylenes | | 0.862 | -0.128 | 0.9981 | 0.666 |
| o-Xylene | | 0.804 | -0.063 | 0.9979 | 0.620 |
| Styrene | | 1.400 | -0.108 | 0.9982 | 1.063 |
| Isopropylbenzene | | 1.986 | -0.125 | 0.9991 | 1.552 |
| n-Propylbenzene | | 2.598 | -0.167 | 0.9989 | 2.052 |
| 2-Chlorotoluene | | 1.741 | -0.097 | 0.9993 | 1.395 |
| 1,3,5-Trimethylbenzene | | 1.721 | -0.111 | 0.9992 | 1.322 |
| [illegible]-Butylbenzene | | 1.252 | -0.079 | 0.9990 | 0.979 |
| 1,2,4-Trimethylbenzene | | 1.654 | -0.086 | 0.9996 | 1.317 |
| sec-Butylbenzene | | 2.047 | -0.105 | 0.9995 | 1.634 |
| 4-Isopropyltoluene | | 1.654 | -0.093 | 0.9995 | 1.287 |
| 1,2-Dibromo-3-chloropropane | | 0.077 | 0.003 | 0.9976 | 0.089 |




Method Name: J:\MS03\METHODS\82600528.M
Calibration Table Last Updated: Wed May 29 09:42:36 2002

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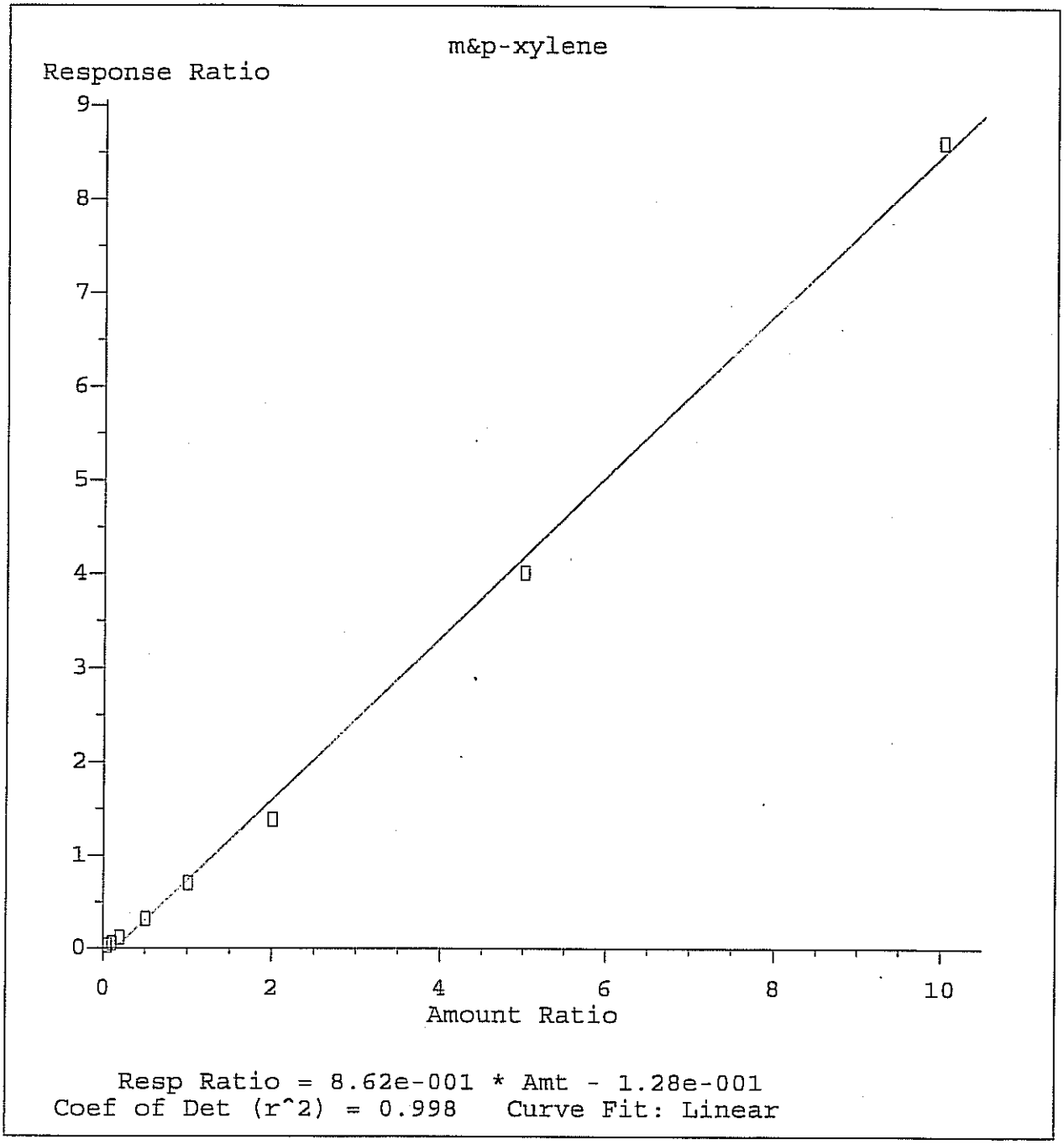
Calibration Table Last Updated: Wed May 29 09:50:21 2002

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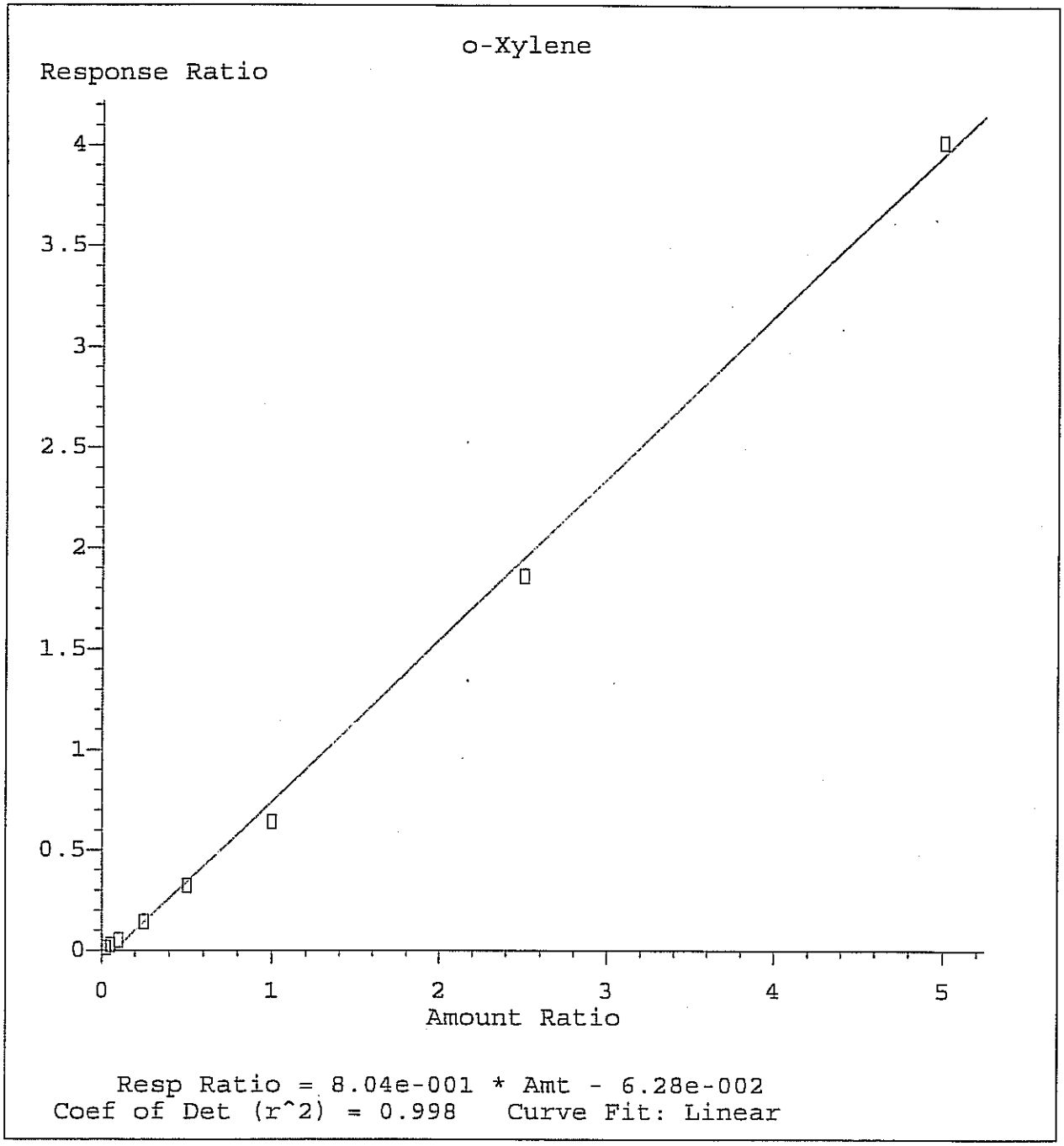
Calibration Table Last Updated: Wed May 29 09:39:27 2002

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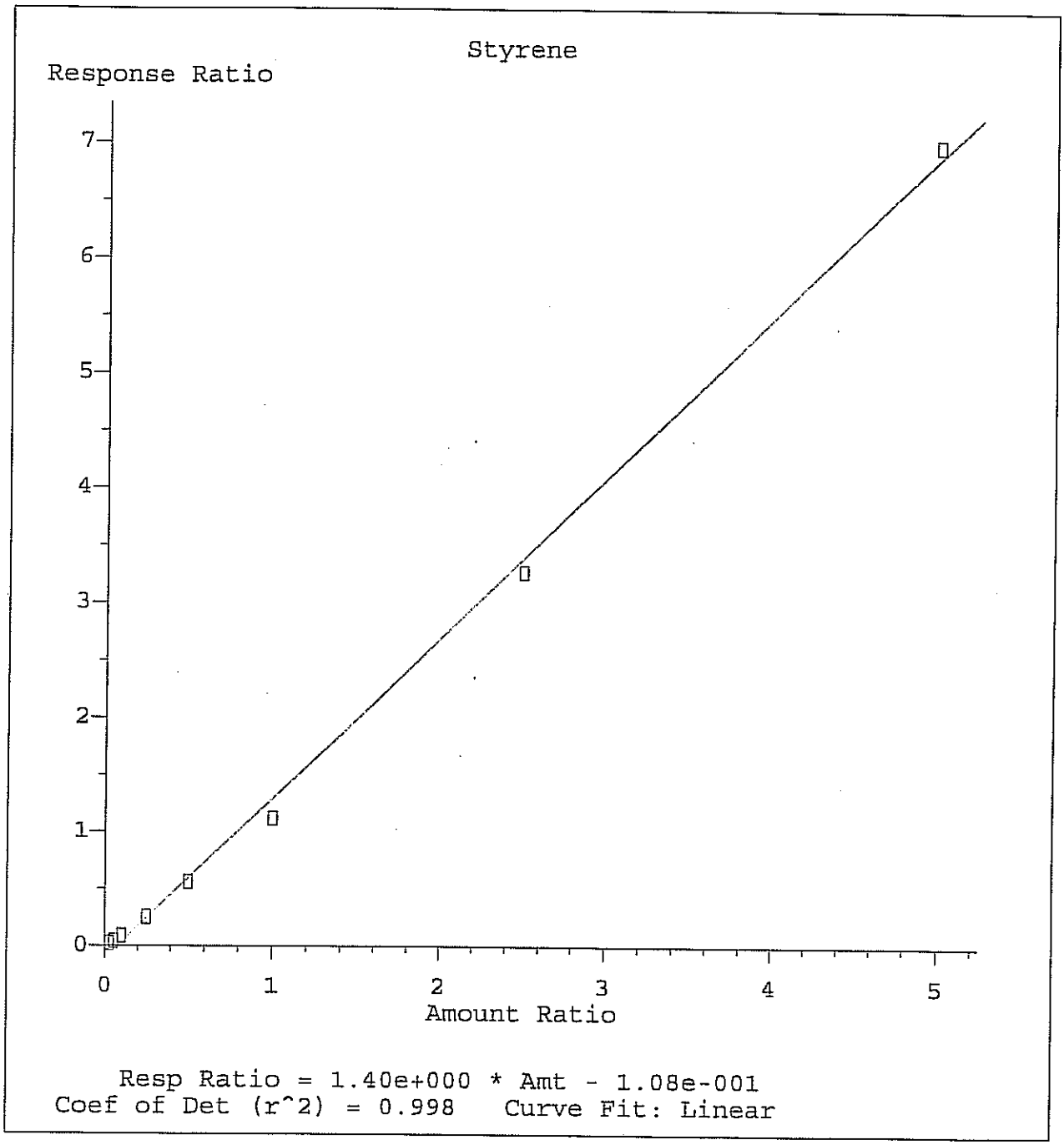
Calibration Table Last Updated: Wed May 29 09:40:37 2002

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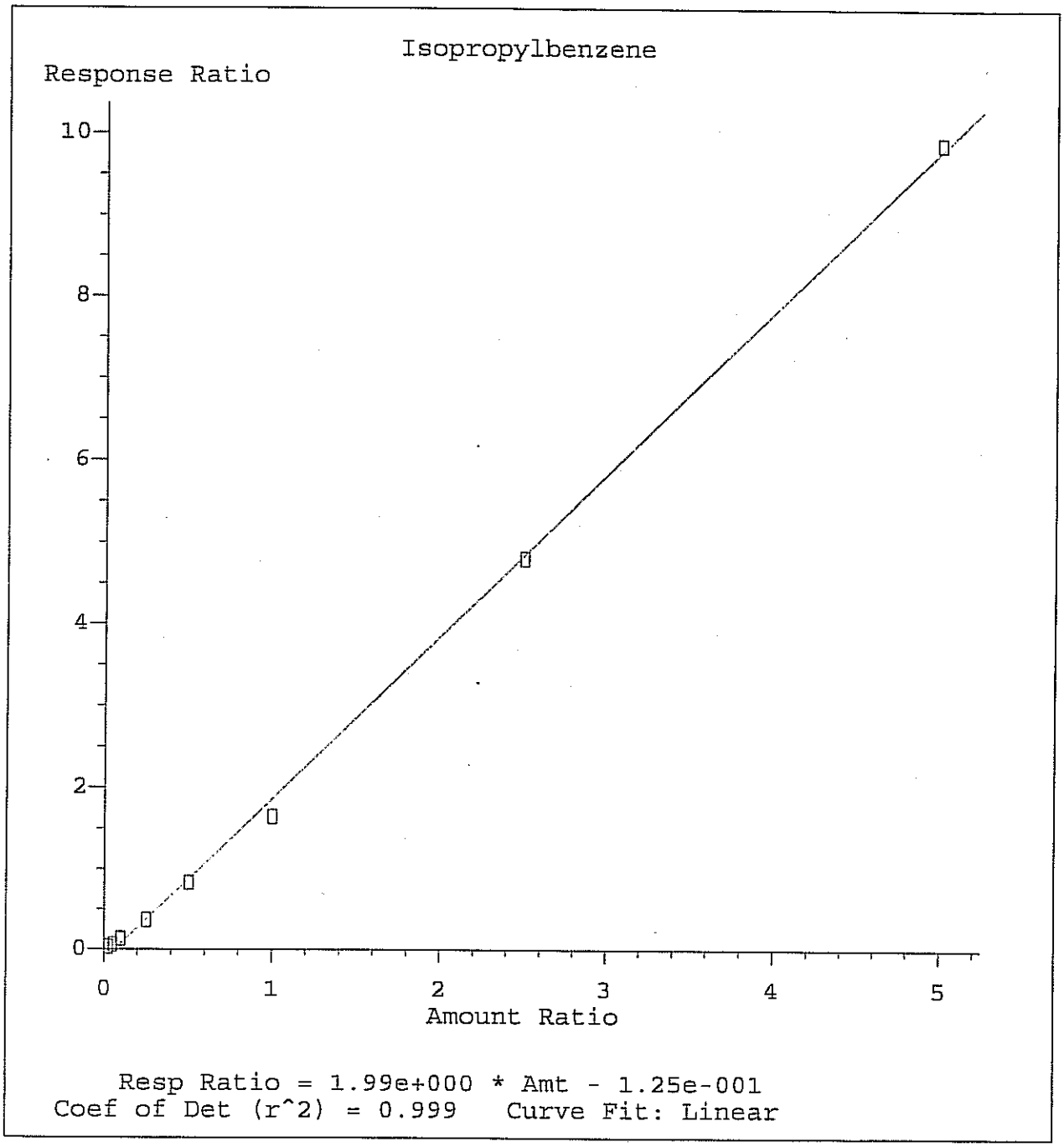
Calibration Table Last Updated: Wed May 29 09:40:42 2002

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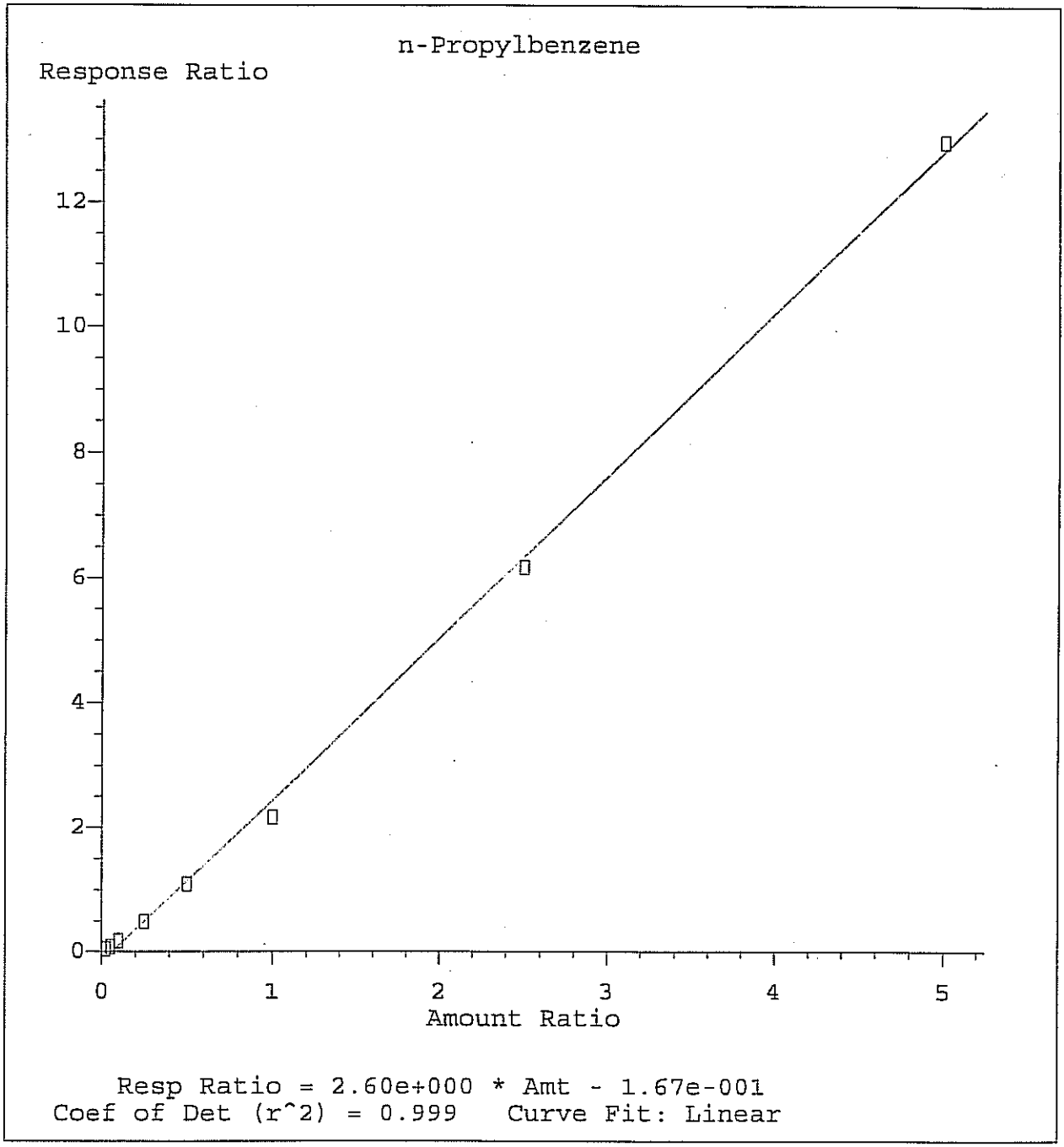
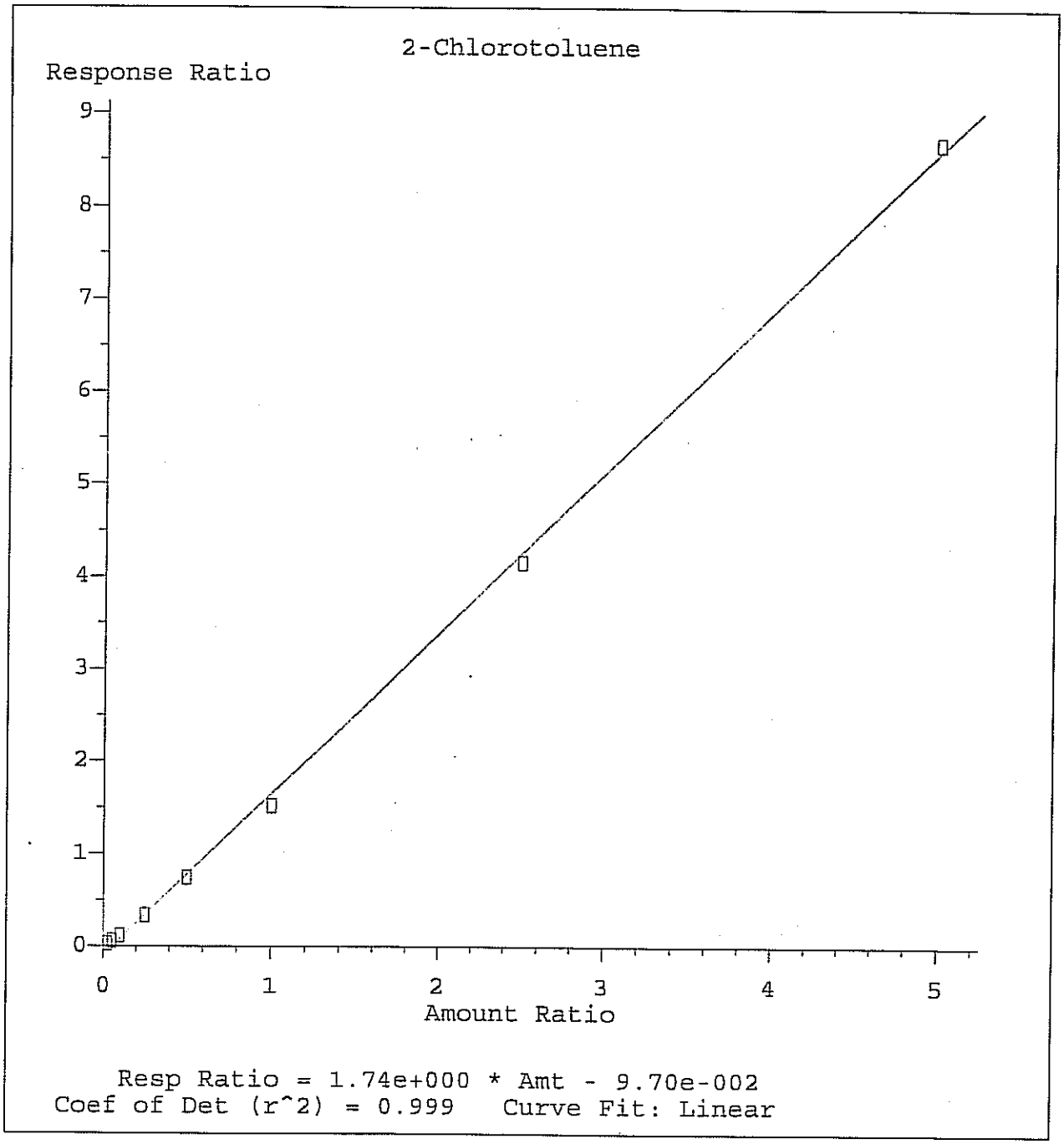
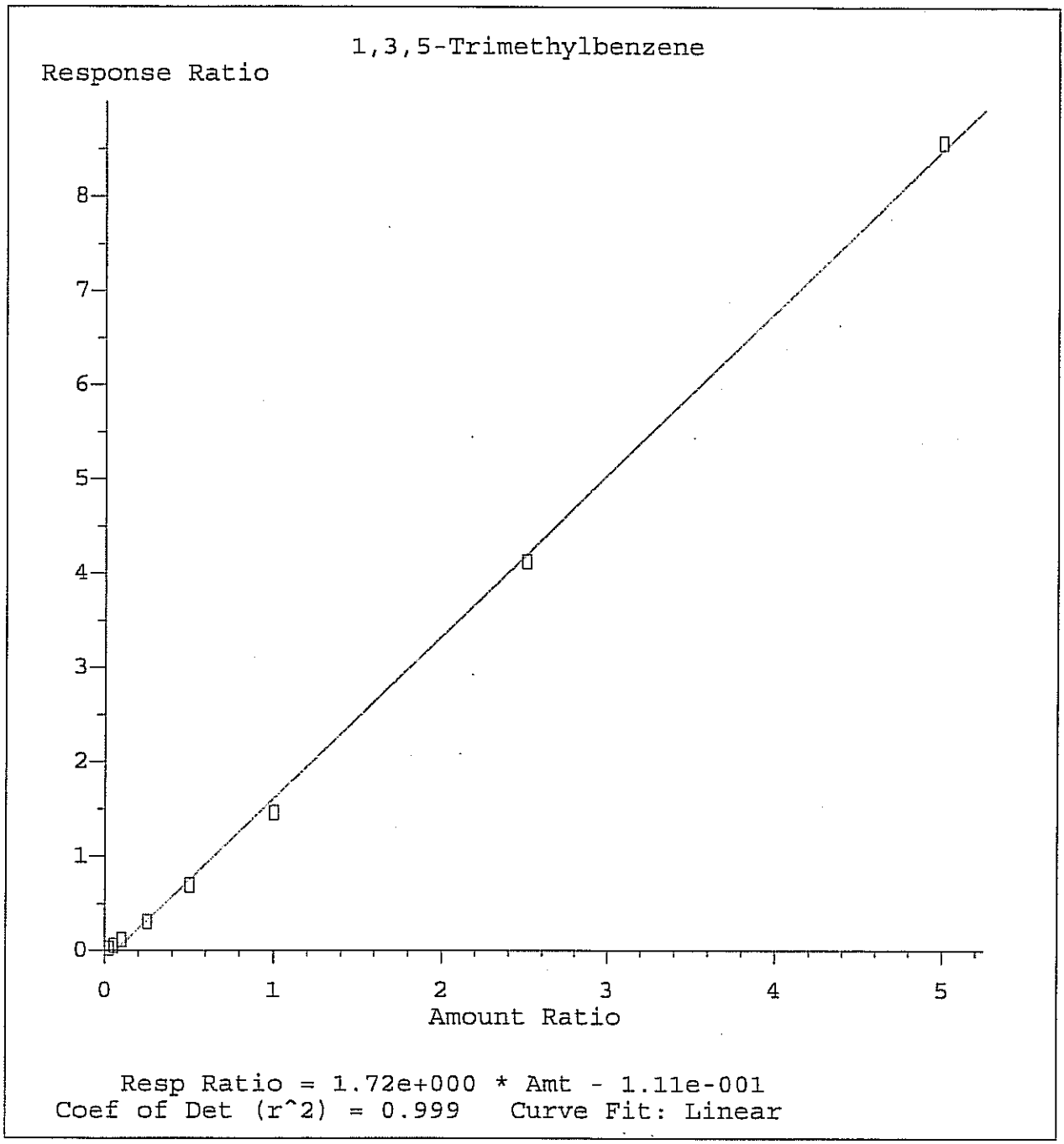
Calibration Table Last Updated: Wed May 29 09:40:53 2002



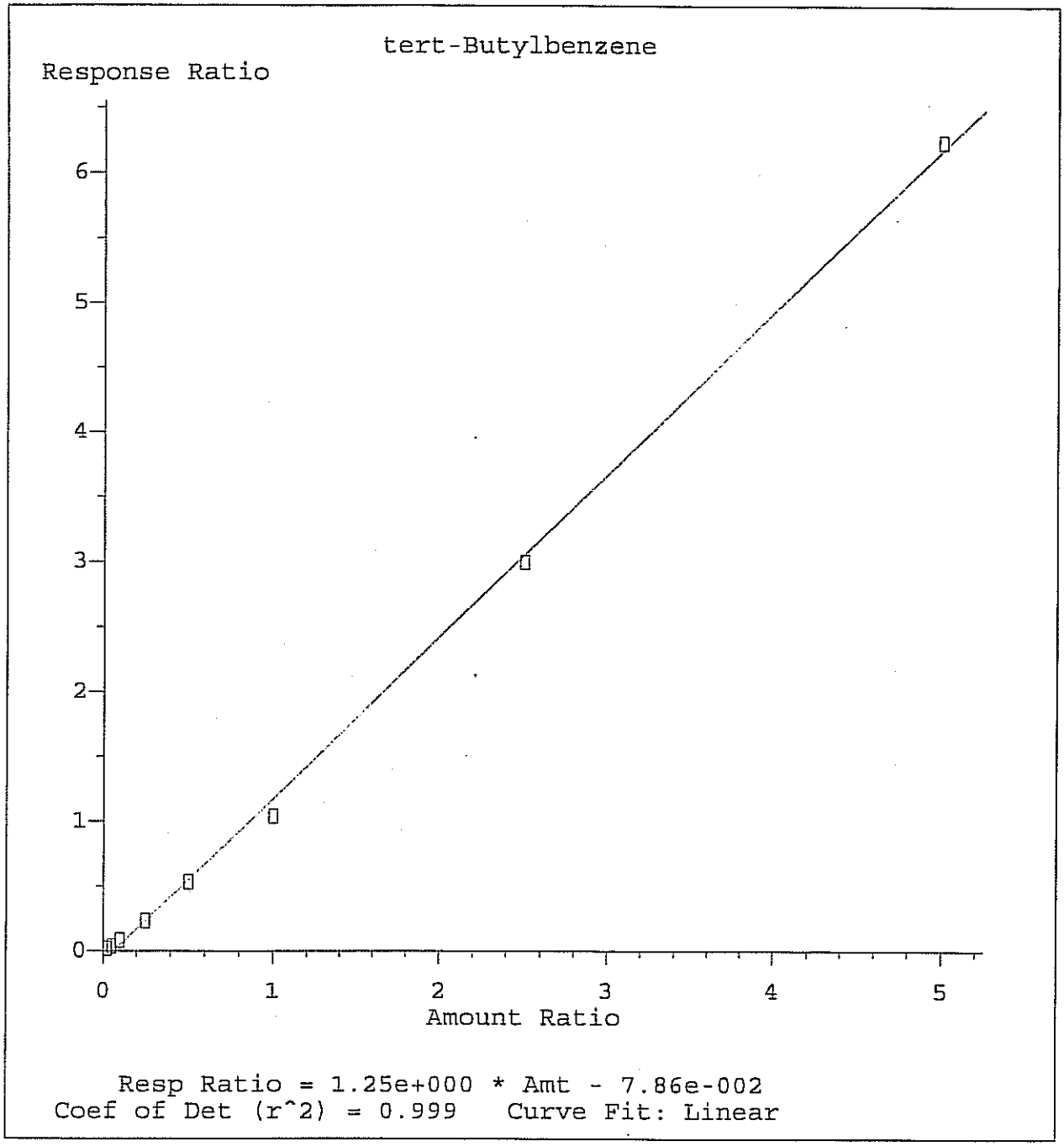

Method Name: J:\MS03\METHODS\82600528.M
Calibration Table Last Updated: Wed May 29 09:41:27 2002



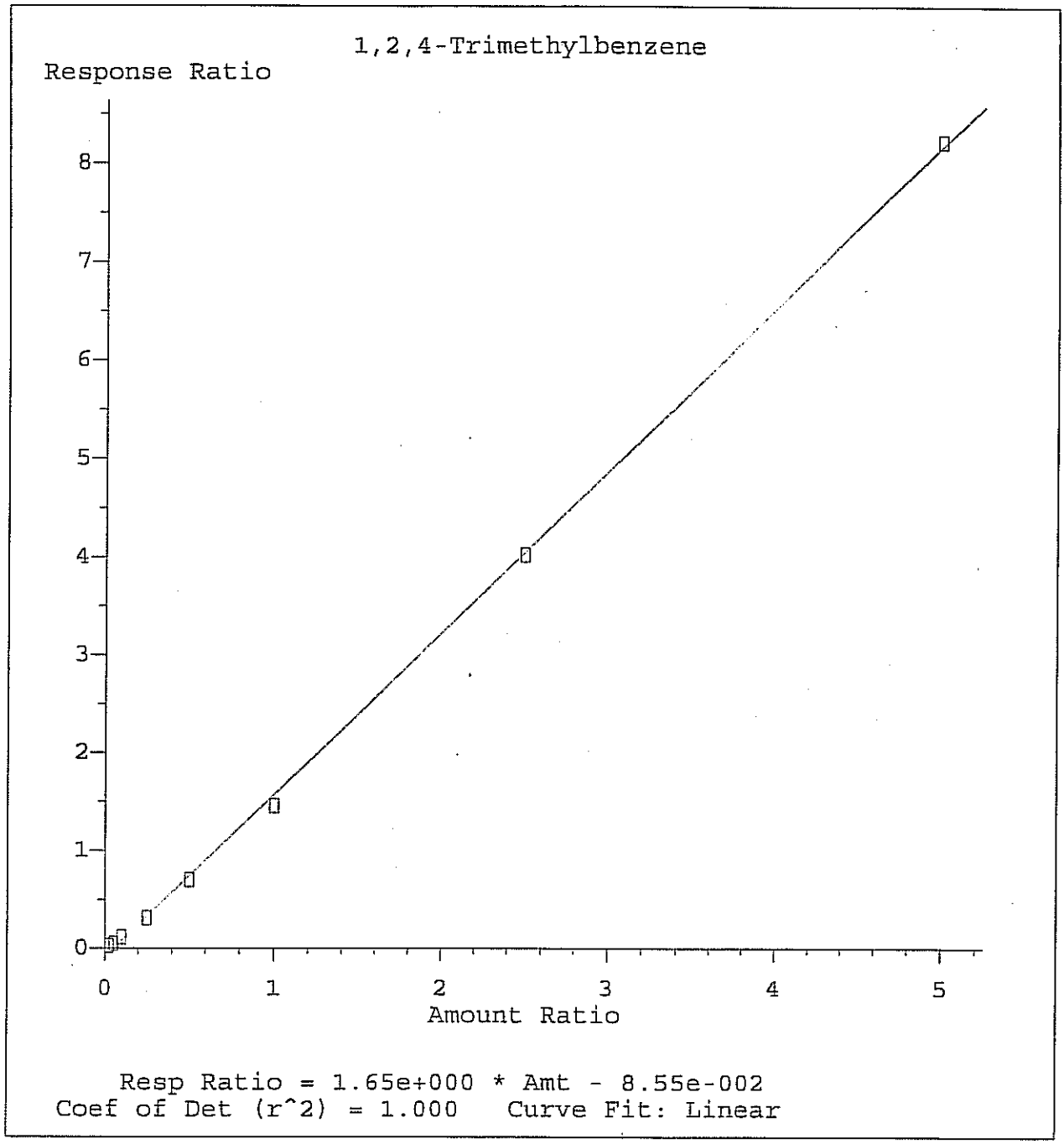

Method Name: J:\MS03\METHODS\82600528.M
Calibration Table Last Updated: Wed May 29 09:41:34 2002



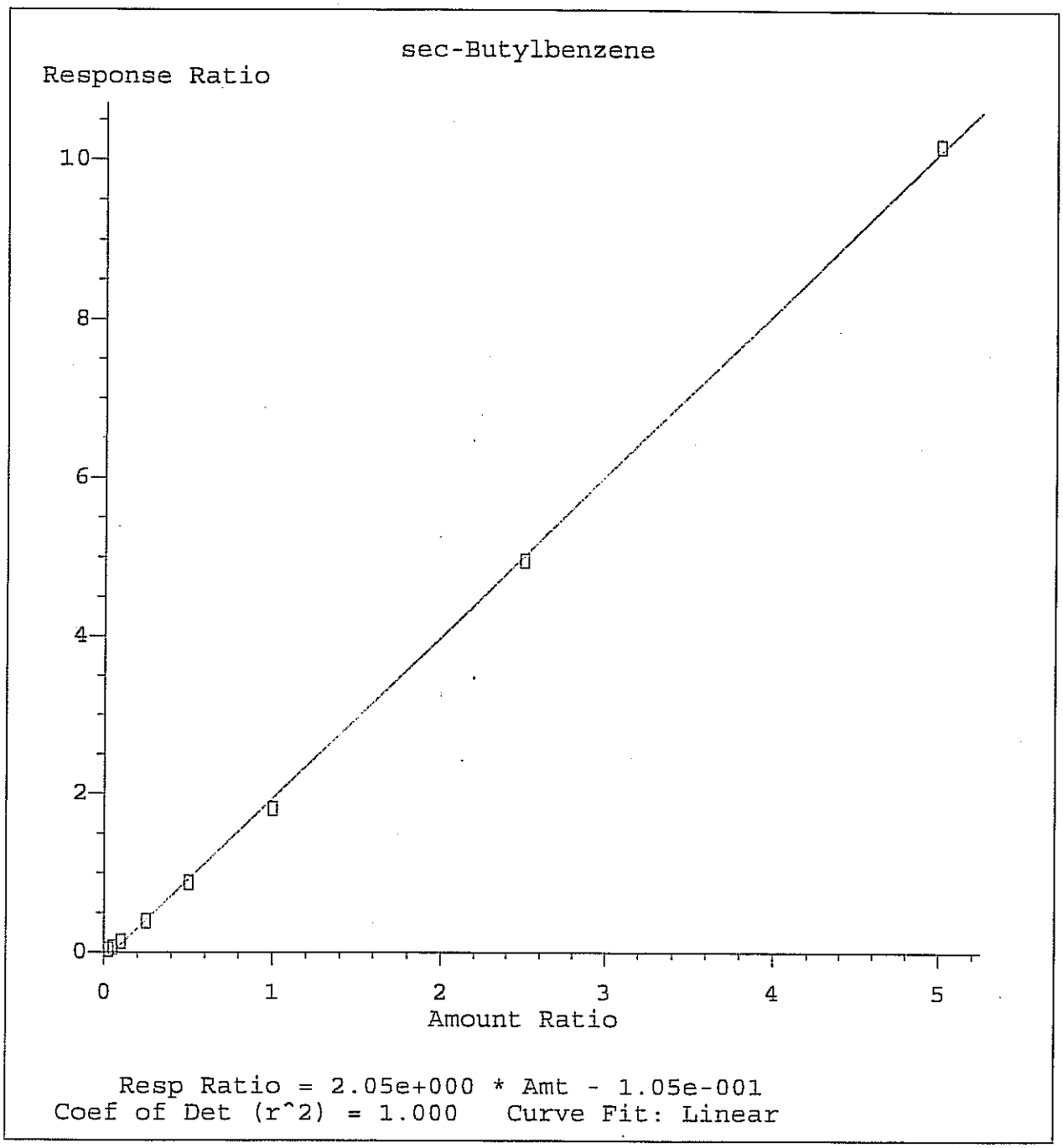

Method Name: J:\MS03\METHODS\82600528.M
Calibration Table Last Updated: Wed May 29 09:41:44 2002



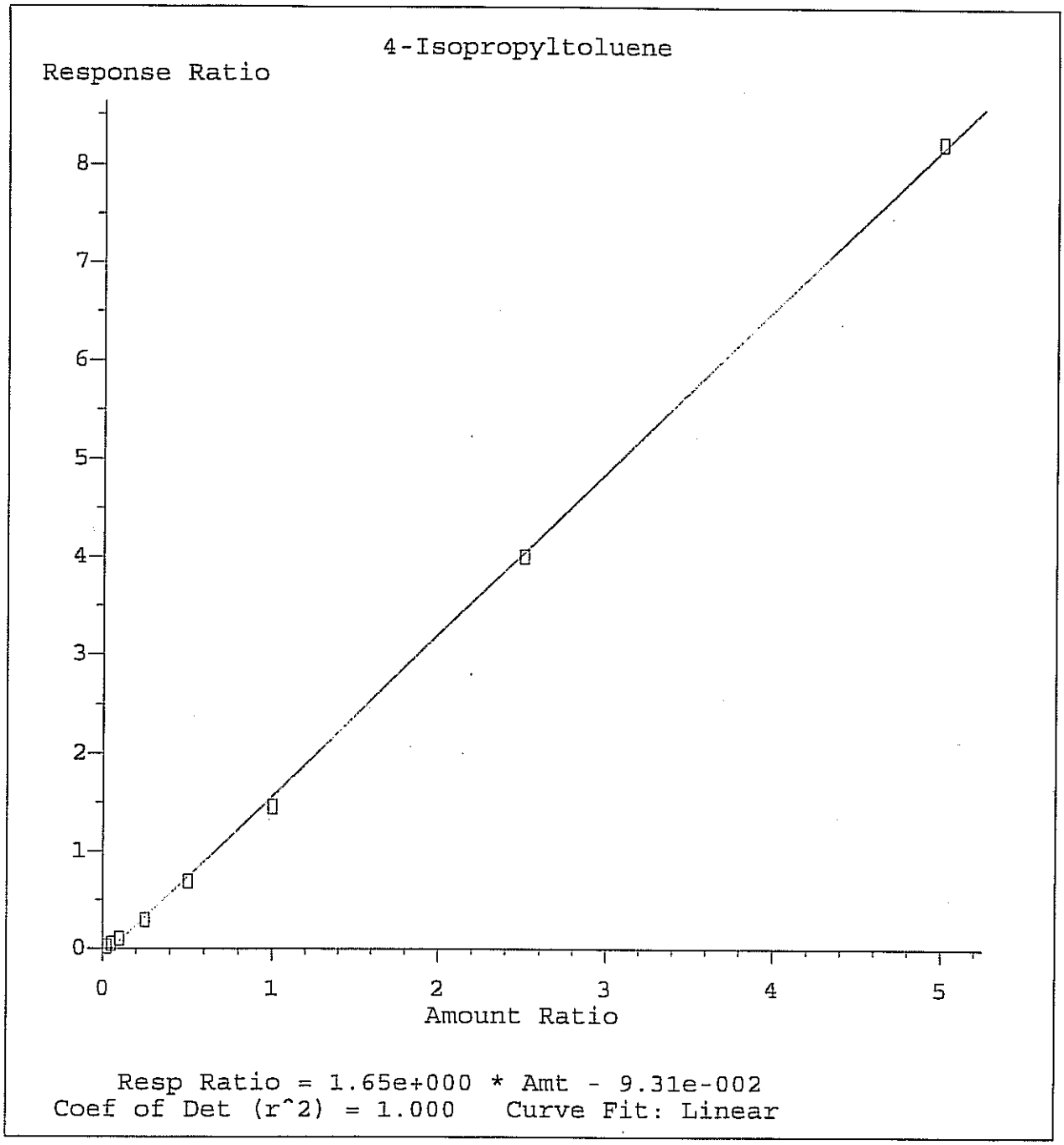

Method Name: J:\MS03\METHODS\82600528.M
Calibration Table Last Updated: Wed May 29 09:41:53 2002



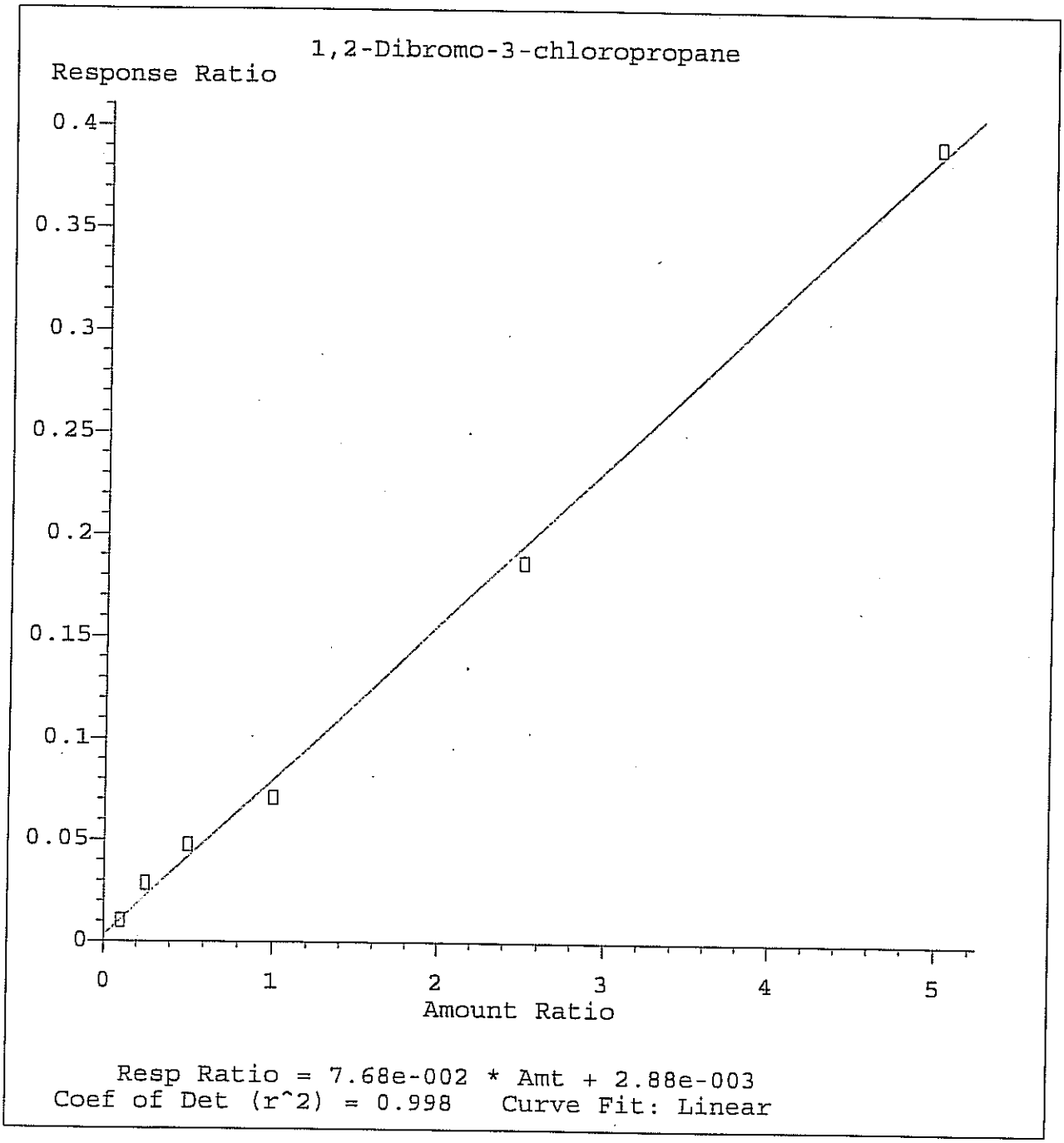

Method Name: J:\MS03\METHODS\82600528.M
Calibration Table Last Updated: Wed May 29 09:41:59 2002




Method Name: J:\MS03\METHODS\82600528.M
Calibration Table Last Updated: Wed May 29 09:42:05 2002




Method Name: J:\MS03\METHODS\82600528.M
Calibration Table Last Updated: Wed May 29 09:42:30 2002



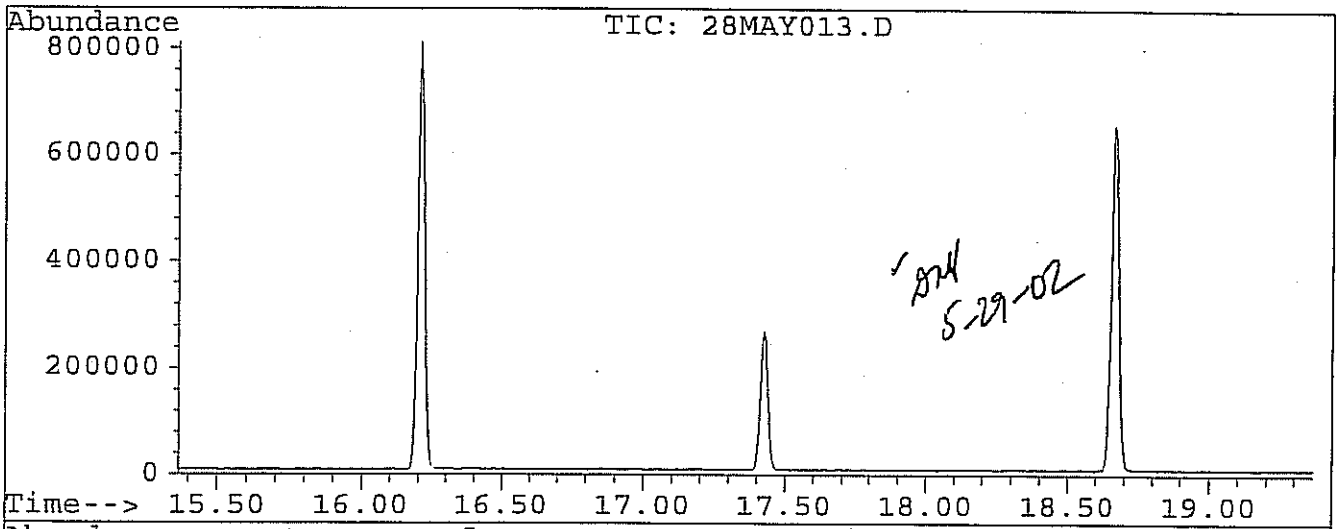

Method Name: J:\MS03\METHODS\82600528.M
Calibration Table Last Updated: Wed May 29 09:48:42 2002

BFB

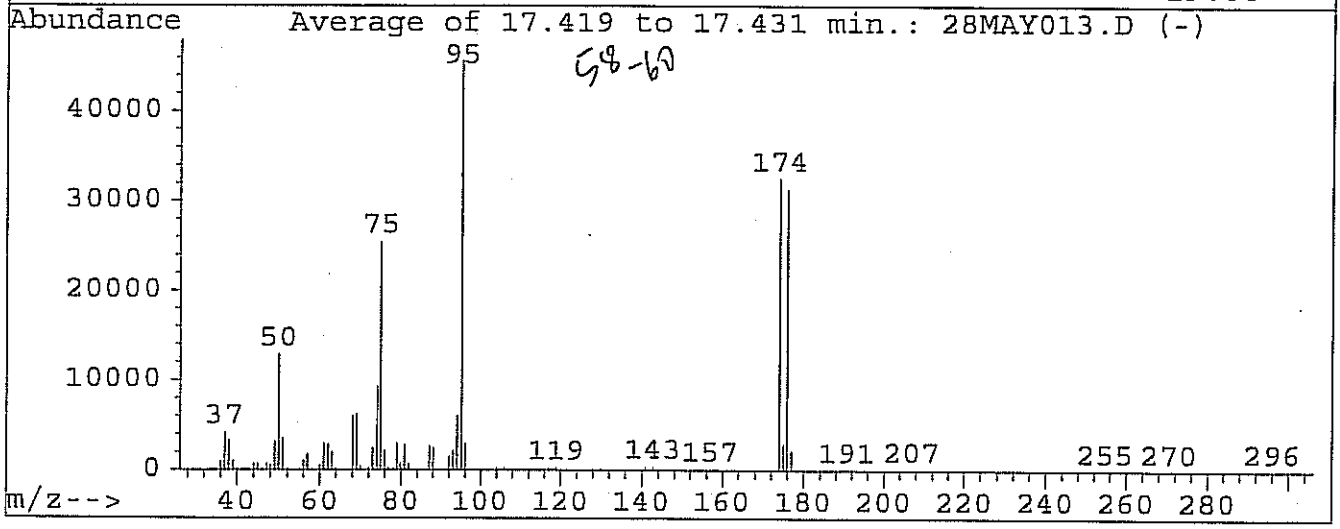
Data File : J:\MS03\MAY02\MAY2802\28MAY013.D
Acq On : 28 May 102 4:47 pm
Sample : bfb04 25ng 052802
Misc :

Vial: 1
Operator: dnh
Inst : MS03
Multiplr: 1.00

Method : J:\MS03\METHODS\82600526.M
Title : Volatiles by GC/MS




✓ DNH 5-29-02




DNH

Peak Apex is scan: 2149

| Target Mass | Rel. to Mass | Lower Limit% | Upper Limit% | Rel. Abn% | Raw Abn | Result Pass/Fail |
|---|---|---|---|---|---|---|
| 50 | 95 | 15 | 40 | 28.1 | 12837 | PASS |
| 75 | 95 | 30 | 80 | 55.7 | 25464 | PASS |
| 95 | 95 | 100 | 100 | 100.0 | 45720 | PASS |
| 96 | 95 | 5 | 9 | 6.6 | 3030 | PASS |
| 173 | 174 | 0 | 2 | 0.0 | 0 | PASS |
| 174 | 95 | 50 | 200 | 71.1 | 32499 | PASS |
| 175 | 174 | 5 | 9 | 8.9 | 2903 | PASS |
| 176 | 174 | 95 | 101 | 96.3 | 31291 | PASS |
| 177 | 176 | 5 | 9 | 6.9 | 2162 | PASS |

28MAY013.D 82600526.M Wed May 29 10:41:47 2002

Quantitation Report

Data File : J:\MS03\MAY02\MAY2802\28MAY016.D
Acq On : 28 May 102 6:22 pm
Sample : 0.5/2/4 ppb ical 052802
Misc :
Quant Time: May 29 10:51 19102

Vial: 4
Operator: dnh
Inst : MS03
Multiplr: 1.00

Method : J:\MS03\METHODS\82600528.M
Title : Volatiles by GC/MS
Last Update : Wed May 29 11:09:49 2002
Response via : Multiple Level Calibration

✓ DNH 5-29-02

| Internal Standards | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 1) 1,4-Difluorobenzene | 12.50 | 114 | 238124 | 20.00 | ug/L | 0.00 |
| 54) Chlorobenzene-d5 | 16.21 | 117 | 189180 | 20.00 | ug/L | 0.00 |
| 74) 1,4-Dichlorobenzene-d4 | 18.66 | 152 | 75433 | 20.00 | ug/L | 0.00 |
| **System Monitoring Compounds** | | | | | | %Recovery |
| 30) Dibromofluoromethane | 11.43 | 113 | 2583 | 0.52 | ug/L | 2.61% |
| 37) Fluorobenzene | 12.38 | 96 | 300195 | 19.86 | ug/L | 99.29% |
| 45) Toluene-d8 | 14.51 | 98 | 5351 | 0.46 | ug/L | 2.28% |
| 62) 4-Bromofluorobenzene | 17.42 | 95 | 2013 | 0.49 | ug/L | 2.43% |
| **Target Compounds** | | | | | | Qvalue |
| 2) Dichlorodifluoromethane | 4.60 | 85 | 2102 | 0.57 | ug/L | 89 |
| 3) Chloromethane | 5.10 | 50 | 3321 | 0.49 | ug/L | 96 |
| 4) Vinyl Chloride | 5.35 | 62 | 4055 | 0.54 | ug/L | 87 |
| 5) Bromomethane | 6.17 | 94 | 3896 | 0.62 | ug/L | 90 |
| 6) Chloroethane | 6.39 | 64 | 2727 | 0.54 | ug/L | 90 |
| 7) Trichlorofluoromethane | 6.86 | 101 | 3534 | 0.50 | ug/L | 97 |
| 8) 1,1,2-trichloro-1,2,2-trif | 7.79 | 101 | 2329 | 0.49 | ug/L | 88 |
| 9) Acrolein | 7.79 | 56 | 1326 | 6.02 | ug/L | 83 |
| 10) 1,1-Dichloroethene | 7.89 | 96 | 2308 | 0.49 | ug/L | 84 |
| 12) Iodomethane | 8.23 | 142 | 13357 | 1.68 | ug/L | 96 |
| 13) Carbon Disulfide | 8.34 | 76 | 33215 | 1.81 | ug/L | 99 |
| 14) Acetonitrile | 8.63 | 41 | 1911 | 6.40 | ug/L | 59 |
| 15) Methylene Chloride | 8.79 | 84 | 3564 | 0.58 | ug/L | 97 |
| 16) t-Butanol | 8.83 | 59 | 1984 | 5.91 | ug/L # | 71 |
| 17) Methyl tert-Butyl Ether | 9.09 | 73 | 5547 | 0.57 | ug/L | 84 |
| 18) trans-1,2-Dichloroethene | 9.16 | 96 | 3200 | 0.57 | ug/L | 86 |
| 19) Acrylonitrile | 9.26 | 53 | 4305 | 5.09 | ug/L | 89 |
| 20) DIPE | 9.78 | 45 | 10383 | 0.58 | ug/L | 97 |
| 21) 1,1-Dichloroethane | 9.89 | 63 | 5271 | 0.52 | ug/L | 98 |
| 22) Vinyl Acetate | 9.85 | 43 | 11572 | 2.51 | ug/L | 91 |
| 23) ETBE | 10.32 | 59 | 7239 | 0.53 | ug/L | 89 |
| 24) 2,2-Dichloropropane | 10.73 | 77 | 4036 | 0.57 | ug/L | 92 |
| 25) 2-butanone | 10.75 | 72 | 840 | 0.51 | ug/L # | 63 |
| 26) cis-1,2-Dichloroethene | 10.75 | 96 | 3456 | 0.56 | ug/L | 88 |
| 27) Bromochloromethane | 11.13 | 128 | 1337 | 0.56 | ug/L # | 84 |
| 28) Chloroform | 11.18 | 83 | 5312 | 0.52 | ug/L | 87 |
| 29) Pentafluorobenzene | 11.40 | 168 | 121103 | 19.93 | ug/L | 99 |
| 31) 1,1,1-Trichloroethane | 11.46 | 97 | 3598 | 0.48 | ug/L | 91 |
| 32) Carbon Tetrachloride | 11.67 | 117 | 2811 | 0.48 | ug/L | 89 |
| 33) 1,1-Dichloropropene | 11.68 | 75 | 3646 | 0.51 | ug/L | 92 |
| 34) Benzene | 12.00 | 78 | 8762 | 0.46 | ug/L | 96 |
| 35) TAME | 12.01 | 73 | 6097 | 0.55 | ug/L | 94 |
| 36) 1,2-Dichloroethane | 12.08 | 62 | 3957 | 0.60 | ug/L | 84 |

DNH 5:30 9Y

(#) = qualifier out of range (m) = manual integration

39) 1,2-Dichloropropane ( )

Ret. Time 13.27 min., Extract & Integrate from 13.12 to 13.42 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 63.00 | | | *** METH DEFAULT *** |
| | 112.00 | 5.00 | 30.0 | *** METH DEFAULT *** |
| Q2 | 62.00 | 76.70 | 30.0 | *** METH DEFAULT *** |
| Q3 | 76.00 | 46.30 | 30.0 | *** METH DEFAULT *** |

| Lvl ID | Conc (ug/L) | Response |
|---|---|---|
| 0.5 | 0.500 | 2983 |
| 1.0 | 1.000 | 5410 |
| 2.0 | 2.000 | 10903 |
| 5.0 | 5.000 | 25989 |
| 10 | 10.000 | 50761 |
| 20 | 20.000 | 104223 |
| 50 | 50.000 | 281529 |
| 100 | 100.000 | 602719 |
| cc | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

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40) Dibromomethane ( )

Ret. Time 13.45 min., Extract & Integrate from 13.30 to 13.60 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 93.00 | | | *** METH DEFAULT *** |
| | 95.00 | 83.40 | 30.0 | *** METH DEFAULT *** |
| Q2 | 174.00 | 92.10 | 30.0 | *** METH DEFAULT *** |
| Q3 | 176.00 | 44.70 | 30.0 | *** METH DEFAULT *** |

| Lvl ID | Conc (ug/L) | Response |
|---|---|---|
| 0.5 | 0.500 | 1647 |
| 1.0 | 1.000 | 3255 |
| 2.0 | 2.000 | 6312 |
| 5.0 | 5.000 | 14622 |
| 10 | 10.000 | 28176 |
| 20 | 20.000 | 56461 |
| 50 | 50.000 | 148059 |
| 100 | 100.000 | 310516 |
| cc | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

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41) Bromodichloromethane ( )

Ret. Time 13.61 min., Extract & Integrate from 13.46 to 13.76 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 83.00 | | | *** METH DEFAULT *** |
| Q2 | 85.00 | 64.60 | 30.0 | *** METH DEFAULT *** |
| | 127.00 | 8.00 | 30.0 | *** METH DEFAULT *** |
| Q3 | 129.00 | 10.90 | 30.0 | *** METH DEFAULT *** |

Quantitation Report

Data File : J:\MS03\MAY02\MAY2802\28MAY016.D
Acq On : 28 May 102 6:22 pm
Sample : 0.5/2/4 ppb ical 052802
Misc :
Quant Time: May 29 10:51 19102

Vial: 4
Operator: dnh
Inst : MS03
Multiplr: 1.00

Method : J:\MS03\METHODS\82600528.M
Title : Volatiles by GC/MS
Last Update : Wed May 29 11:09:49 2002
Response via : Multiple Level Calibration

| Compound | R.T. | QIon | Response | Conc Unit | Qvalue |
|---|---|---|---|---|---|
| 38) Trichloroethene | 12.88 | 95 | 2956 | 0.55 ug/L | 97 |
| 39) 1,2-Dichloropropane | 13.26 | 63 | 2983 | 0.55 ug/L | 80 |
| 40) Dibromomethane | 13.45 | 93 | 1647 | 0.55 ug/L | 86 |
| 41) Bromodichloromethane | 13.60 | 83 | 3819 | 0.56 ug/L | 96 |
| 42) 2-Chloroethyl Vinyl Ether | 13.93 | 63 | 4166 | 1.97 ug/L | 93 |
| 43) cis-1,3-Dichloropropene | 14.20 | 75 | 3922 | 0.53 ug/L | 95 |
| 44) 4-methyl-2-pentanone | 14.33 | 100 | 819 | 2.89 ug/L # | 41 |
| 46) Toluene | 14.60 | 92 | 4928 | 0.46 ug/L | 93 |
| 47) trans-1,3-Dichloropropene | 14.89 | 75 | 3155 | 0.57 ug/L | 87 |
| 48) 1,1,2-Trichloroethane | 15.12 | 83 | 1613 | 0.58 ug/L | 90 |
| 49) Tetrachloroethene | 15.23 | 164 | 1526 | 0.49 ug/L | 88 |
| 50) 2-Hexanone | 15.31 | 43 | 3654 | 2.34 ug/L | 90 |
| 51) 1,3-Dichloropropane | 15.34 | 76 | 3026 | 0.55 ug/L | 91 |
| 52) Dibromochloromethane | 15.58 | 129 | 1828 | 0.53 ug/L | 94 |
| 53) 1,2-Dibromoethane | 15.76 | 107 | 1546 | 0.54 ug/L | 85 |
| 55) Chlorobenzene | 16.24 | 112 | 5209 | 0.51 ug/L | 92 |
| 56) 1,1,1,2-Tetrachloroethane | 16.31 | 131 | 1919 | 0.53 ug/L | 91 |
| 57) Ethylbenzene | 16.28 | 91 | 7884 | 0.44 ug/L | 97 |
| 58) m&p-xylene | 16.40 | 106 | 4995 | 3.58 ug/L | 97 |
| 59) o-Xylene | 16.83 | 106 | 2464 | 1.89 ug/L | 96 |
| 60) Styrene | 16.85 | 104 | 4022 | 1.85 ug/L | 96 |
| 61) Isopropylbenzene | 17.18 | 105 | 5905 | 1.58 ug/L | 90 |
| 63) Bromobenzene | 17.62 | 156 | 1586 | 0.45 ug/L | 96 |
| 64) 1,2,3-Trichloropropane | 17.64 | 75 | 1974 | 0.65 ug/L # | 72 |
| 65) n-Propylbenzene | 17.61 | 91 | 8108 | 1.62 ug/L | 96 |
| 66) 2-Chlorotoluene | 17.78 | 91 | 5202 | 1.43 ug/L | 98 |
| 67) 4-Chlorotoluene | 17.89 | 91 | 4869 | 0.43 ug/L | 95 |
| 68) 1,3,5-Trimethylbenzene | 17.77 | 105 | 4766 | 1.59 ug/L | 92 |
| 69) tert-Butylbenzene | 18.13 | 119 | 3664 | 1.57 ug/L | 95 |
| 70) 1,2,4-Trimethylbenzene | 18.19 | 105 | 4779 | 1.34 ug/L | 97 |
| 71) sec-Butylbenzene | 18.36 | 105 | 6013 | 1.34 ug/L | 87 |
| 72) 1,3-Dichlorobenzene | 18.60 | 146 | 2701 | 0.41 ug/L | 97 |
| 73) 4-Isopropyltoluene | 18.49 | 119 | 4546 | 1.42 ug/L | 94 |
| 75) Bromoform | 17.12 | 173 | 779 | 0.56 ug/L # | 43 |
| 76) 1,1,2,2-Tetrachloroethane | 17.54 | 83 | 1517 | 0.63 ug/L | 88 |
| 77) 1,4-Dichlorobenzene | 18.69 | 146 | 3286 | 0.53 ug/L | 96 |
| 78) 1,2-Dichlorobenzene | 19.15 | 146 | 2479 | 0.50 ug/L | 94 |
| 79) n-Butylbenzene | 18.95 | 91 | 5088 | 0.45 ug/L | 96 |
| 80) 1,2-Dibromo-3-chloropropan | 20.05 | 75 | 685 | 1.62 ug/L # | 7 |
| 81) 1,2,4-Trichlorobenzene | 21.20 | 180 | 1598 | 0.54 ug/L | 94 |
| 82) Hexachlorobutadiene | 21.31 | 225 | 581 | 0.52 ug/L | 84 |
| 83) Naphthalene | 21.65 | 128 | 2271 | 0.53 ug/L | 92 |
| 84) 1,2,3-Trichlorobenzene | 22.05 | 180 | 1222 | 0.54 ug/L | 79 |

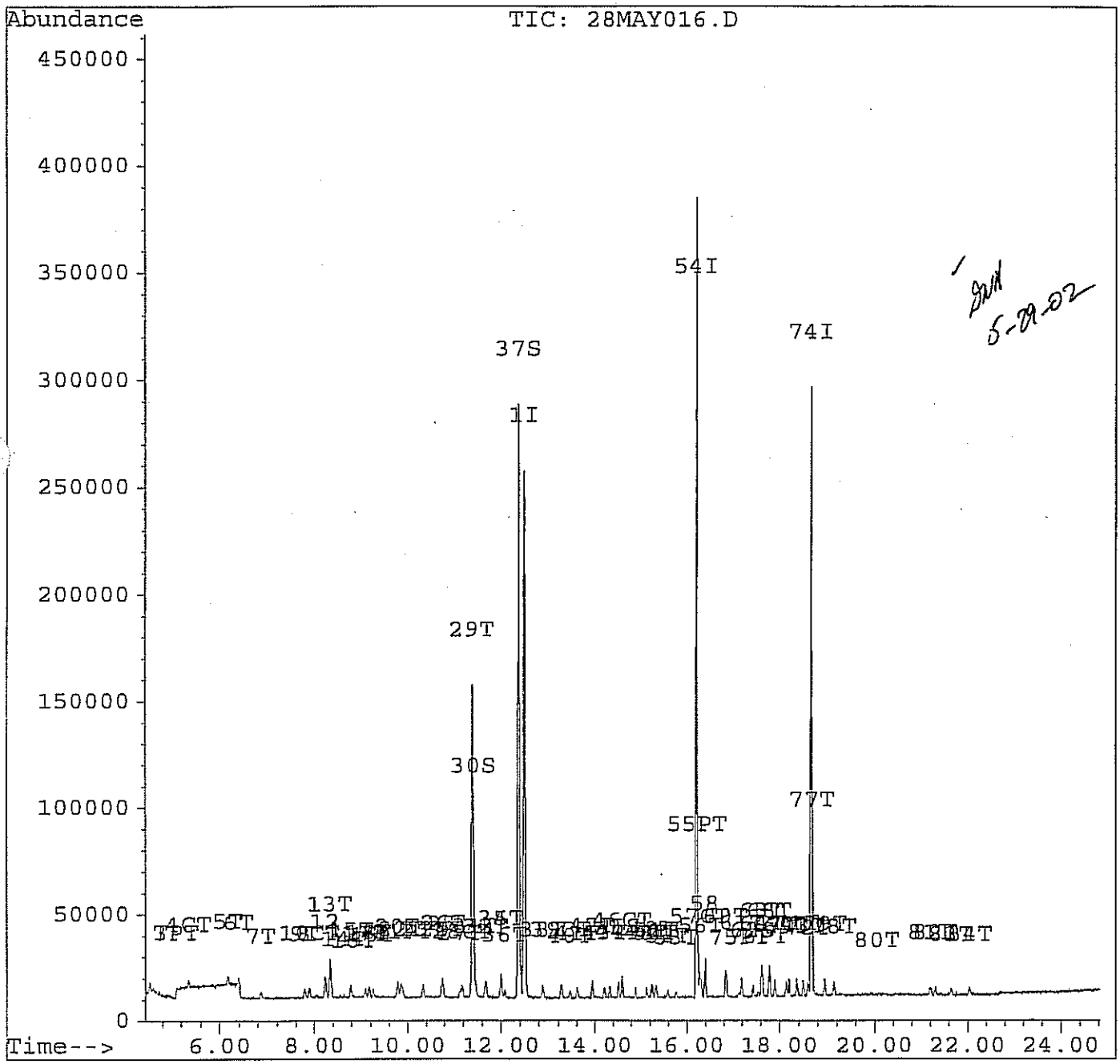
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : J:\MS03\MAY02\MAY2802\28MAY016.D
Acq On : 28 May 102 6:22 pm
Sample : 0.5/2/4 ppb ical 052802
Misc :
Quant Time: May 29 10:51 19102

Vial: 4
Operator: dnh
Inst : MS03
Multiplr: 1.00

Method : J:\MS03\METHODS\82600528.M
Title : Volatiles by GC/MS
Last Update : Wed May 29 11:09:49 2002
Response via : Multiple Level Calibration




5-29-02

5-30-02

Quantitation Report

Data File : J:\MS03\MAY02\MAY2802\28MAY017.D
Acq On : 28 May 102 6:52 pm
Sample : 1/4/8 ppb ical 052802
Misc :
Quant Time: May 29 11:14 19102

Vial: 5
Operator: dnh
Inst : MS03
Multiplr: 1.00

Method : J:\MS03\METHODS\82600528.M
Title : Volatiles by GC/MS
Last Update : Wed May 29 11:09:49 2002
Response via : Multiple Level Calibration

✓ DNH 5-29-02

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) 1,4-Difluorobenzene | 12.50 | 114 | 235824 | 20.00 ug/L | 0.00 |
| 54) Chlorobenzene-d5 | 16.21 | 117 | 189213 | 20.00 ug/L | 0.00 |
| 74) 1,4-Dichlorobenzene-d4 | 18.66 | 152 | 77556 | 20.00 ug/L | 0.00 |
| **System Monitoring Compounds** | | | | | %Recovery |
| 30) Dibromofluoromethane | 11.42 | 113 | 4822 | 0.98 ug/L | 4.92% |
| 37) Fluorobenzene | 12.38 | 96 | 299579 | 20.01 ug/L | 100.05% |
| 45) Toluene-d8 | 14.51 | 98 | 9866 | 0.85 ug/L | 4.25% |
| 62) 4-Bromofluorobenzene | 17.42 | 95 | 3417 | 0.82 ug/L | 4.12% |
| **Target Compounds** | | | | | Qvalue |
| 2) Dichlorodifluoromethane | 4.59 | 85 | 3808 | 1.04 ug/L | 91 |
| 3) Chloromethane | 5.10 | 50 | 6960 | 1.04 ug/L | 88 |
| 4) Vinyl Chloride | 5.36 | 62 | 7346 | 0.98 ug/L | 96 |
| 5) Bromomethane | 6.17 | 94 | 6532 | 1.05 ug/L | 90 |
| 6) Chloroethane | 6.38 | 64 | 5256 | 1.05 ug/L | 90 |
| 7) Trichlorofluoromethane | 6.85 | 101 | 7043 | 1.02 ug/L | 97 |
| 8) 1,1,2-trichloro-1,2,2-trif | 7.79 | 101 | 4751 | 1.02 ug/L | 96 |
| 9) Acrolein | 7.77 | 56 | 2066 | 9.47 ug/L # | 74 |
| 10) 1,1-Dichloroethene | 7.89 | 96 | 5111 | 1.10 ug/L | 95 |
| 12) Iodomethane | 8.23 | 142 | 27268 | 3.46 ug/L | 98 |
| 13) Carbon Disulfide | 8.33 | 76 | 66436 | 3.66 ug/L | 99 |
| 14) Acetonitrile | 8.64 | 41 | 2336 | 7.89 ug/L m | 77 |
| 15) Methylene Chloride | 8.78 | 84 | 6533 | 1.07 ug/L | 94 |
| 16) t-Butanol | 8.82 | 59 | 2349 | 7.07 ug/L # | 56 |
| 17) Methyl tert-Butyl Ether | 9.09 | 73 | 9837 | 1.02 ug/L | 90 |
| 18) trans-1,2-Dichloroethene | 9.16 | 96 | 5419 | 0.97 ug/L | 95 |
| 19) Acrylonitrile | 9.25 | 53 | 7534 | 9.00 ug/L | 97 |
| 20) DIPE | 9.78 | 45 | 17472 | 0.98 ug/L | 98 |
| 21) 1,1-Dichloroethane | 9.89 | 63 | 10289 | 1.02 ug/L | 97 |
| 22) Vinyl Acetate | 9.85 | 43 | 20058 | 4.40 ug/L | 97 |
| 23) ETBE | 10.33 | 59 | 14193 | 1.05 ug/L | 95 |
| 24) 2,2-Dichloropropane | 10.74 | 77 | 7069 | 1.01 ug/L | 97 |
| 25) 2-butanone | 10.73 | 72 | 1518 | 3.41 ug/L # | 60 |
| 26) cis-1,2-Dichloroethene | 10.76 | 96 | 5959 | 0.97 ug/L | 96 |
| 27) Bromochloromethane | 11.13 | 128 | 2434 | 1.02 ug/L # | 81 |
| 28) Chloroform | 11.17 | 83 | 10254 | 1.02 ug/L | 95 |
| 29) Pentafluorobenzene | 11.40 | 168 | 118914 | 19.76 ug/L | 95 |
| 31) 1,1,1-Trichloroethane | 11.46 | 97 | 7141 | 0.96 ug/L | 84 |
| 32) Carbon Tetrachloride | 11.66 | 117 | 5417 | 0.94 ug/L | 93 |
| 33) 1,1-Dichloropropene | 11.68 | 75 | 6609 | 0.93 ug/L | 97 |
| 34) Benzene | 12.00 | 78 | 17872 | 0.95 ug/L | 95 |
| 35) TAME | 12.01 | 73 | 10801 | 0.99 ug/L | 97 |
| 36) 1,2-Dichloroethane | 12.08 | 62 | 7582 | 1.15 ug/L | 95 |

DNH 5-30-02

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : J:\MS03\MAY02\MAY2802\28MAY017.D
Acq On : 28 May 102 6:52 pm
Sample : 1/4/8 ppb ical 052802
Misc :
Quant Time: May 29 11:14 19102

Vial: 5
Operator: dnh
Inst : MS03
Multiplr: 1.00

Method : J:\MS03\METHODS\82600528.M
Title : Volatiles by GC/MS
Last Update : Wed May 29 11:09:49 2002
Response via : Multiple Level Calibration

| Compound | R.T. | QIon | Response | Conc Unit | Qvalue |
|---|---|---|---|---|---|
| 38) Trichloroethene | 12.88 | 95 | 5166 | 0.97 ug/L | 92 |
| 39) 1,2-Dichloropropane | 13.27 | 63 | 5410 | 1.01 ug/L | 88 |
| 40) Dibromomethane | 13.45 | 93 | 3255 | 1.10 ug/L | 87 |
| 41) Bromodichloromethane | 13.60 | 83 | 6889 | 1.02 ug/L | 95 |
| 42) 2-Chloroethyl Vinyl Ether | 13.94 | 63 | 8343 | 3.99 ug/L | 95 |
| 43) cis-1,3-Dichloropropene | 14.20 | 75 | 7207 | 0.99 ug/L | 91 |
| 44) 4-methyl-2-pentanone | 14.33 | 100 | 1354 | 4.82 ug/L # | 91 |
| 46) Toluene | 14.60 | 92 | 9579 | 0.90 ug/L | 97 |
| 47) trans-1,3-Dichloropropene | 14.89 | 75 | 5589 | 1.02 ug/L | 90 |
| 48) 1,1,2-Trichloroethane | 15.12 | 83 | 2872 | 1.04 ug/L | 96 |
| 49) Tetrachloroethene | 15.24 | 164 | 2948 | 0.96 ug/L | 92 |
| 50) 2-Hexanone | 15.31 | 43 | 6460 | 4.18 ug/L | 97 |
| 51) 1,3-Dichloropropane | 15.34 | 76 | 5521 | 1.01 ug/L | 95 |
| 52) Dibromochloromethane | 15.58 | 129 | 3301 | 0.97 ug/L | 85 |
| 53) 1,2-Dibromoethane | 15.76 | 107 | 2923 | 1.02 ug/L | 95 |
| 55) Chlorobenzene | 16.24 | 112 | 9274 | 0.90 ug/L | 97 |
| 56) 1,1,1,2-Tetrachloroethane | 16.31 | 131 | 3480 | 0.95 ug/L | 93 |
| 57) Ethylbenzene | 16.28 | 91 | 15030 | 0.84 ug/L | 97 |
| 58) m&p-xylene | 16.40 | 106 | 10199 | 4.22 ug/L | 92 |
| 59) o-Xylene | 16.84 | 106 | 4956 | 2.21 ug/L | 87 |
| 60) Styrene | 16.85 | 104 | 7852 | 2.14 ug/L | 94 |
| 61) Isopropylbenzene | 17.18 | 105 | 11759 | 1.89 ug/L | 97 |
| 63) Bromobenzene | 17.62 | 156 | 3099 | 0.88 ug/L | 95 |
| 64) 1,2,3-Trichloropropane | 17.63 | 75 | 3002 | 0.98 ug/L | 97 |
| 65) n-Propylbenzene | 17.61 | 91 | 15491 | 1.92 ug/L | 98 |
| 66) 2-Chlorotoluene | 17.78 | 91 | 10812 | 1.77 ug/L | 96 |
| 67) 4-Chlorotoluene | 17.89 | 91 | 9442 | 0.83 ug/L | 99 |
| 68) 1,3,5-Trimethylbenzene | 17.77 | 105 | 9629 | 1.89 ug/L | 98 |
| 69) tert-Butylbenzene | 18.13 | 119 | 7186 | 1.86 ug/L | 91 |
| 70) 1,2,4-Trimethylbenzene | 18.19 | 105 | 9739 | 1.66 ug/L | 95 |
| 71) sec-Butylbenzene | 18.36 | 105 | 11914 | 1.64 ug/L | 93 |
| 72) 1,3-Dichlorobenzene | 18.59 | 146 | 5555 | 0.85 ug/L | 96 |
| 73) 4-Isopropyltoluene | 18.49 | 119 | 9622 | 1.74 ug/L | 92 |
| 75) Bromoform | 17.12 | 173 | 1626 | 1.13 ug/L | 93 |
| 76) 1,1,2,2-Tetrachloroethane | 17.54 | 83 | 2658 | 1.07 ug/L | 93 |
| 77) 1,4-Dichlorobenzene | 18.69 | 146 | 6332 | 0.99 ug/L | 94 |
| 78) 1,2-Dichlorobenzene | 19.14 | 146 | 4880 | 0.96 ug/L | 94 |
| 79) n-Butylbenzene | 18.95 | 91 | 10142 | 0.87 ug/L | 97 |
| 80) 1,2-Dibromo-3-chloropropan | 20.11 | 75 | 817 | 2.00 ug/L # | 30 |
| 81) 1,2,4-Trichlorobenzene | 21.20 | 180 | 3026 | 1.00 ug/L | 95 |
| 82) Hexachlorobutadiene | 21.32 | 225 | 1033 | 0.90 ug/L | 85 |
| 83) Naphthalene | 21.65 | 128 | 4572 | 1.03 ug/L | 95 |
| 84) 1,2,3-Trichlorobenzene | 22.03 | 180 | 2347 | 1.01 ug/L | 97 |

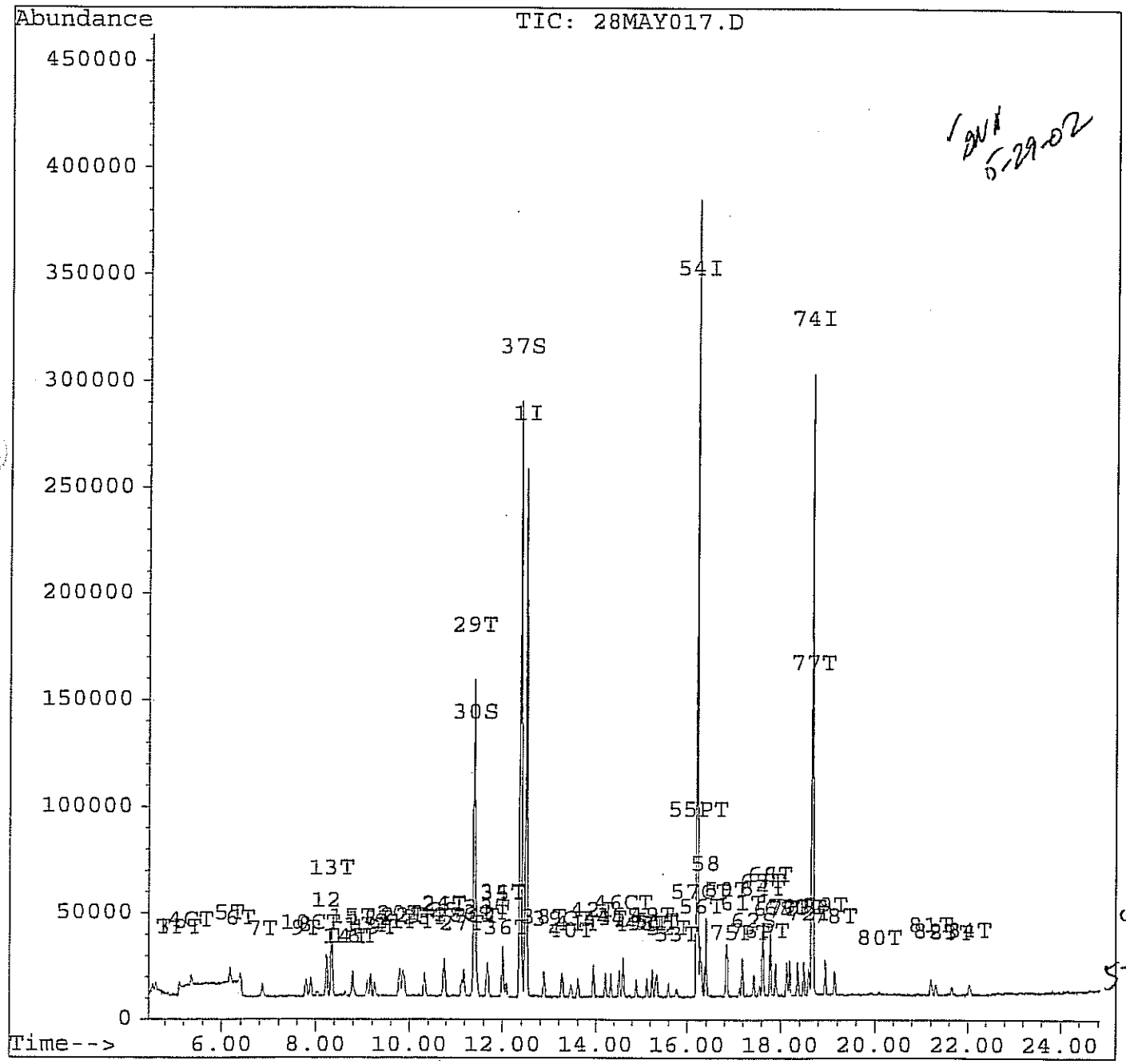
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : J:\MS03\MAY02\MAY2802\28MAY017.D
Acq On : 28 May 102 6:52 pm
Sample : 1/4/8 ppb ical 052802
Misc :
Quant Time: May 29 11:14 19102

Vial: 5
Operator: dnh
Inst : MS03
Multiplr: 1.00

Method : J:\MS03\METHODS\82600528.M
Title : Volatiles by GC/MS
Last Update : Wed May 29 11:09:49 2002
Response via : Multiple Level Calibration

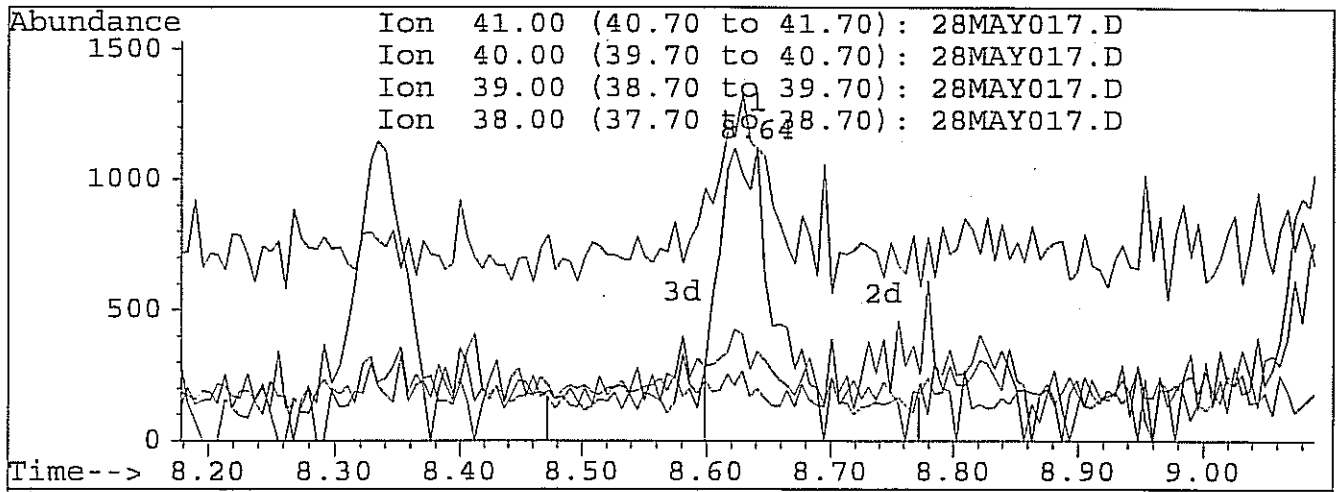


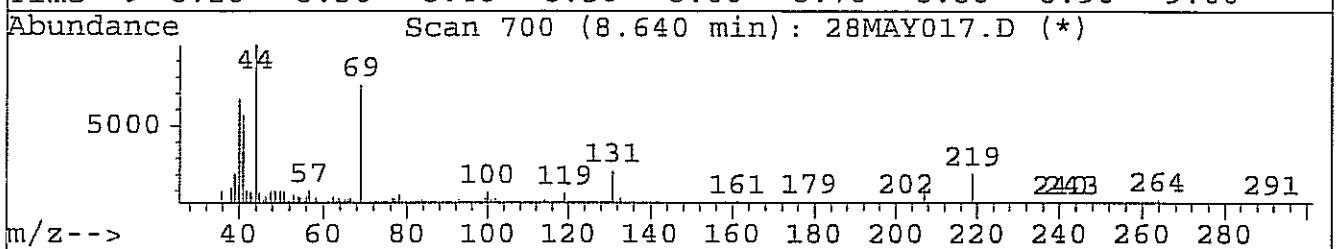
Quantitation Report

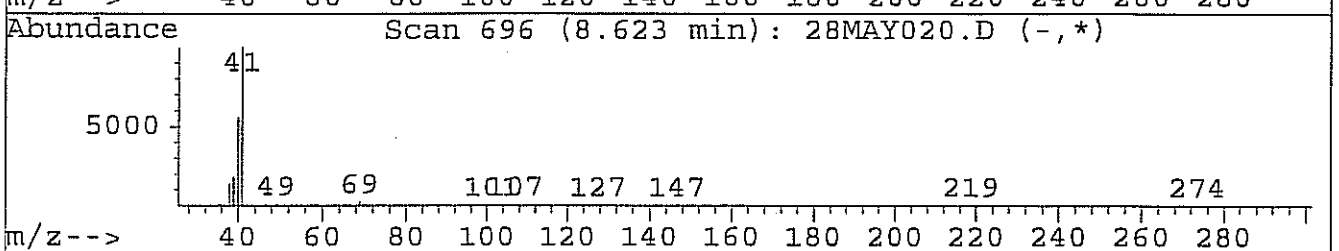
Data File : J:\MS03\MAY02\MAY2802\28MAY017.D
Acq On : 28 May 102 6:52 pm
Sample : 1/4/8 ppb ical 052802
Misc :
Quant Time: May 29 10:51 19102

Vial: 5
Operator: dnh
Inst : MS03
Multiplr: 1.00

Method : J:\MS03\METHODS\82600528.M
Title : Volatiles by GC/MS
Last Update : Wed May 29 10:35:03 2002
Response via : Multiple Level Calibration




TIC: 28MAY017.D

(14) Acetonitrile (T)
8.64min 11.64ug/L
response 3444

| Ion | Exp% | Act% |
|---|---|---|
| 41.00 | 100 | 100 |
| 40.00 | 24.30 | 13.61 |
| 39.00 | 7.20 | 17.35 |
| 38.00 | 0.00 | 6.05 |

Acetonitrile

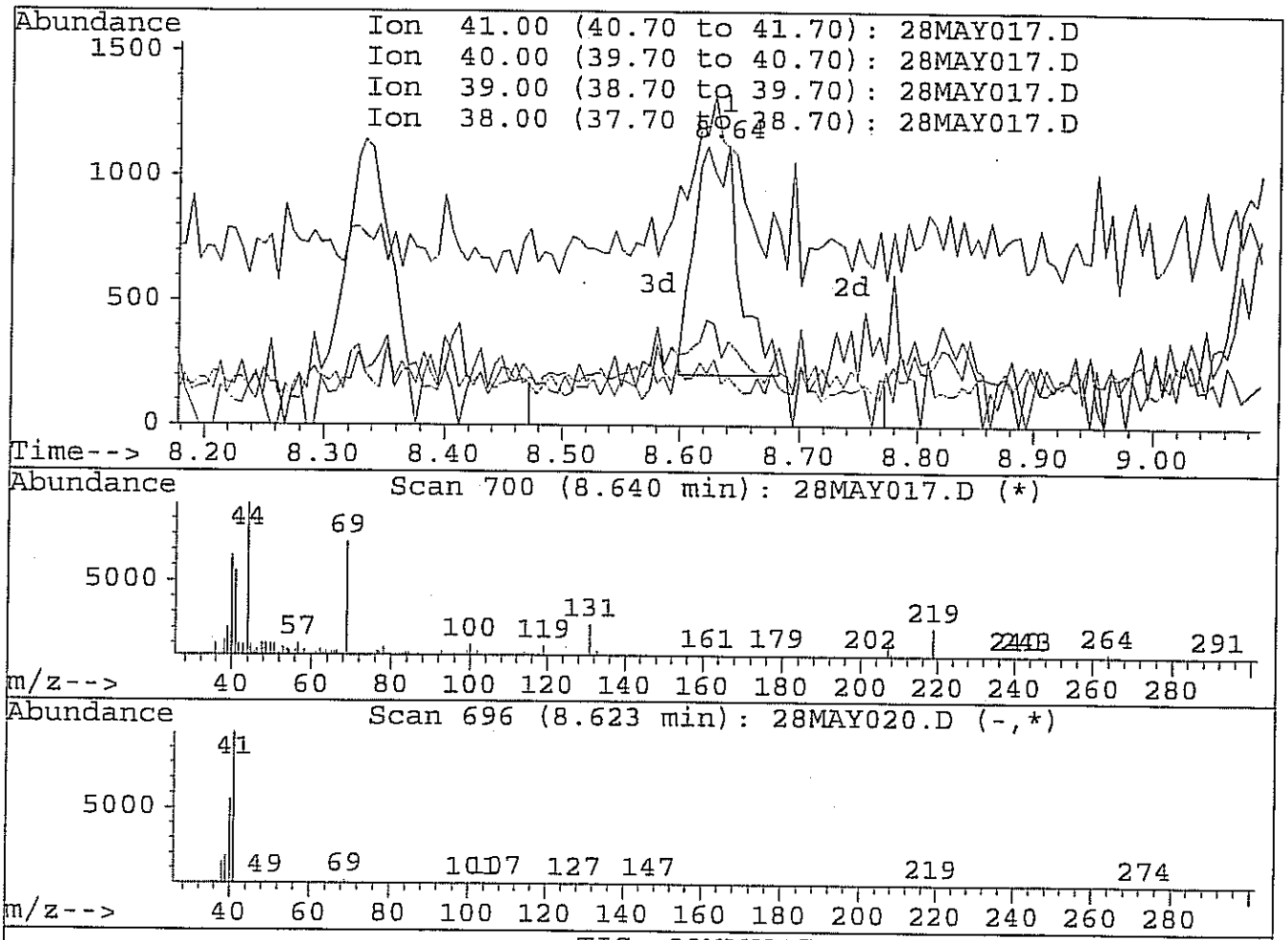
28MAY017.D 82600528.M Wed May 29 11:07:53 2002

Quantitation Report

Data File : J:\MS03\MAY02\MAY2802\28MAY017.D
Acq On : 28 May 102 6:52 pm
Sample : 1/4/8 ppb ical 052802
Misc :
Quant Time: May 29 11:14 19102

Vial: 5
Operator: dnh
Inst : MS03
Multiplr: 1.00

Method : J:\MS03\METHODS\82600528.M
Title : Volatiles by GC/MS
Last Update : Wed May 29 10:35:03 2002
Response via : Multiple Level Calibration




TIC: 28MAY017.D

(14) Acetonitrile (T)
8.64min 7.89ug/L m
response 2336

| Ion | Exp% | Act% |
|---|---|---|
| 41.00 | 100 | 100 |
| 40.00 | 24.30 | 116.93 |
| 39.00 | 7.20 | 35.45 |
| 38.00 | 0.00 | 20.82 |

MANUAL, CORRECTING BASELINE
AM 6-29-02

28MAY017.D 82600528.M Wed May 29 11:08:14 2002

Quantitation Report

Data File : J:\MS03\MAY02\MAY2802\28MAY018.D
Acq On : 28 May 102 7:23 pm
Sample : 2/8/16 ppb ical 052802
Misc :
Quant Time: May 29 11:15 19102

Vial: 6
Operator: dnh
Inst : MS03
Multiplr: 1.00

Method : J:\MS03\METHODS\82600528.M
Title : Volatiles by GC/MS
Last Update : Wed May 29 11:09:49 2002
Response via : Multiple Level Calibration

✓ DNH 5-29-02

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) 1,4-Difluorobenzene | 12.50 | 114 | 237851 | 20.00 ug/L | 0.00 |
| 54) Chlorobenzene-d5 | 16.21 | 117 | 181924 | 20.00 ug/L | 0.00 |
| 74) 1,4-Dichlorobenzene-d4 | 18.67 | 152 | 76022 | 20.00 ug/L | 0.00 |
| **System Monitoring Compounds** | | | | | %Recovery |
| 30) Dibromofluoromethane | 11.43 | 113 | 9294 | 1.88 ug/L | 9.40% |
| 37) Fluorobenzene | 12.38 | 96 | 300713 | 19.92 ug/L | 99.58% |
| 45) Toluene-d8 | 14.51 | 98 | 19526 | 1.67 ug/L | 8.34% |
| 62) 4-Bromofluorobenzene | 17.43 | 95 | 6567 | 1.65 ug/L | 8.24% |
| **Target Compounds** | | | | | Qvalue |
| 2) Dichlorodifluoromethane | 4.59 | 85 | 6993 | 1.89 ug/L | 90 |
| 3) Chloromethane | 5.10 | 50 | 13465 | 1.99 ug/L | 98 |
| 4) Vinyl Chloride | 5.36 | 62 | 15050 | 1.99 ug/L | 95 |
| 5) Bromomethane | 6.18 | 94 | 13278 | 2.11 ug/L | 90 |
| 6) Chloroethane | 6.39 | 64 | 10340 | 2.05 ug/L | 91 |
| 7) Trichlorofluoromethane | 6.86 | 101 | 14353 | 2.05 ug/L | 92 |
| 8) 1,1,2-trichloro-1,2,2-trif | 7.79 | 101 | 9296 | 1.97 ug/L | 96 |
| 9) Acrolein | 7.79 | 56 | 4226 | 19.20 ug/L # | 68 |
| 10) 1,1-Dichloroethene | 7.89 | 96 | 9661 | 2.07 ug/L | 94 |
| 11) Acetone | 8.03 | 58 | 2830 | 8.47 ug/L # | 69 |
| 12) Iodomethane | 8.23 | 142 | 58242 | 7.32 ug/L | 99 |
| 13) Carbon Disulfide | 8.34 | 76 | 138446 | 7.56 ug/L | 99 |
| 14) Acetonitrile | 8.63 | 41 | 5740 | 19.23 ug/L | 67 |
| 15) Methylene Chloride | 8.79 | 84 | 12211 | 1.99 ug/L | 91 |
| 16) t-Butanol | 8.83 | 59 | 3678 | 10.97 ug/L | 93 |
| 17) Methyl tert-Butyl Ether | 9.09 | 73 | 19790 | 2.03 ug/L | 88 |
| 18) trans-1,2-Dichloroethene | 9.17 | 96 | 10940 | 1.95 ug/L | 94 |
| 19) Acrylonitrile | 9.25 | 53 | 14057 | 16.65 ug/L | 97 |
| 20) DIPE | 9.79 | 45 | 35925 | 2.00 ug/L | 97 |
| 21) 1,1-Dichloroethane | 9.89 | 63 | 20258 | 1.99 ug/L | 98 |
| 22) Vinyl Acetate | 9.86 | 43 | 38617 | 8.39 ug/L | 96 |
| 23) ETBE | 10.33 | 59 | 28032 | 2.05 ug/L | 96 |
| 24) 2,2-Dichloropropane | 10.74 | 77 | 14219 | 2.01 ug/L | 94 |
| 25) 2-butanone | 10.74 | 72 | 2441 | 7.23 ug/L # | 86 |
| 26) cis-1,2-Dichloroethene | 10.76 | 96 | 12190 | 1.96 ug/L | 93 |
| 27) Bromochloromethane | 11.13 | 128 | 4765 | 1.99 ug/L | 94 |
| 28) Chloroform | 11.18 | 83 | 20243 | 2.00 ug/L | 96 |
| 29) Pentafluorobenzene | 11.40 | 168 | 117105 | 19.30 ug/L | 98 |
| 31) 1,1,1-Trichloroethane | 11.46 | 97 | 15132 | 2.02 ug/L | 90 |
| 32) Carbon Tetrachloride | 11.67 | 117 | 11384 | 1.96 ug/L | 92 |
| 33) 1,1-Dichloropropene | 11.69 | 75 | 13839 | 1.93 ug/L | 93 |
| 34) Benzene | 12.00 | 78 | 35880 | 1.89 ug/L | 98 |
| 35) TAME | 12.01 | 73 | 21783 | 1.98 ug/L | 95 |

DNH 5-30-02

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : J:\MS03\MAY02\MAY2802\28MAY018.D
Acq On : 28 May 102 7:23 pm
Sample : 2/8/16 ppb ical 052802
Misc :
Quant Time: May 29 11:15 19102

Vial: 6
Operator: dnh
Inst : MS03
Multiplr: 1.00

Method : J:\MS03\METHODS\82600528.M
Title : Volatiles by GC/MS
Last Update : Wed May 29 11:09:49 2002
Response via : Multiple Level Calibration

| | Compound | R.T. | QIon | Response | Conc Unit | Qvalue |
|---|---|---|---|---|---|---|
| 36) | 1,2-Dichloroethane | 12.08 | 62 | 13486 | 2.04 ug/L | 95 |
| 38) | Trichloroethene | 12.88 | 95 | 10360 | 1.92 ug/L | 93 |
| 39) | 1,2-Dichloropropane | 13.27 | 63 | 10903 | 2.02 ug/L | 96 |
| 40) | Dibromomethane | 13.46 | 93 | 6312 | 2.11 ug/L | 93 |
| 41) | Bromodichloromethane | 13.61 | 83 | 13724 | 2.02 ug/L | 91 |
| 42) | 2-Chloroethyl Vinyl Ether | 13.94 | 63 | 17196 | 8.15 ug/L | 96 |
| 43) | cis-1,3-Dichloropropene | 14.20 | 75 | 14576 | 1.99 ug/L | 88 |
| 44) | 4-methyl-2-pentanone | 14.33 | 100 | 1984 | 7.00 ug/L # | 71 |
| 46) | Toluene | 14.60 | 92 | 19757 | 1.84 ug/L | 95 |
| 47) | trans-1,3-Dichloropropene | 14.89 | 75 | 11090 | 2.00 ug/L | 85 |
| 48) | 1,1,2-Trichloroethane | 15.12 | 83 | 5530 | 1.99 ug/L | 91 |
| 49) | Tetrachloroethene | 15.24 | 164 | 5631 | 1.81 ug/L | 95 |
| 50) | 2-Hexanone | 15.31 | 43 | 12149 | 7.79 ug/L | 89 |
| 51) | 1,3-Dichloropropane | 15.34 | 76 | 11238 | 2.03 ug/L | 90 |
| 52) | Dibromochloromethane | 15.59 | 129 | 6457 | 1.89 ug/L | 94 |
| 53) | 1,2-Dibromoethane | 15.77 | 107 | 5684 | 1.97 ug/L | 85 |
| 55) | Chlorobenzene | 16.24 | 112 | 18412 | 1.86 ug/L | 94 |
| 56) | 1,1,1,2-Tetrachloroethane | 16.31 | 131 | 6706 | 1.91 ug/L | 93 |
| 57) | Ethylbenzene | 16.28 | 91 | 30553 | 1.78 ug/L | 97 |
| 58) | m&p-xylene | 16.40 | 106 | 20712 | 5.61 ug/L | 97 |
| 59) | o-Xylene | 16.84 | 106 | 9387 | 2.85 ug/L | 91 |
| 60) | Styrene | 16.85 | 104 | 16072 | 2.80 ug/L | 93 |
| 61) | Isopropylbenzene | 17.19 | 105 | 23476 | 2.56 ug/L | 95 |
| 63) | Bromobenzene | 17.62 | 156 | 5923 | 1.75 ug/L | 87 |
| 64) | 1,2,3-Trichloropropane | 17.64 | 75 | 5782 | 1.97 ug/L # | 79 |
| 65) | n-Propylbenzene | 17.61 | 91 | 31713 | 2.63 ug/L | 95 |
| 66) | 2-Chlorotoluene | 17.78 | 91 | 21603 | 2.48 ug/L | 96 |
| 67) | 4-Chlorotoluene | 17.90 | 91 | 19045 | 1.73 ug/L | 98 |
| 68) | 1,3,5-Trimethylbenzene | 17.78 | 105 | 20302 | 2.59 ug/L | 98 |
| 69) | tert-Butylbenzene | 18.14 | 119 | 14936 | 2.57 ug/L | 97 |
| 70) | 1,2,4-Trimethylbenzene | 18.19 | 105 | 20648 | 2.41 ug/L | 94 |
| 71) | sec-Butylbenzene | 18.37 | 105 | 25280 | 2.39 ug/L | 97 |
| 72) | 1,3-Dichlorobenzene | 18.60 | 146 | 11540 | 1.84 ug/L | 96 |
| 73) | 4-Isopropyltoluene | 18.49 | 119 | 19135 | 2.40 ug/L | 93 |
| 75) | Bromoform | 17.13 | 173 | 2903 | 2.06 ug/L | 86 |
| 76) | 1,1,2,2-Tetrachloroethane | 17.55 | 83 | 5307 | 2.18 ug/L | 96 |
| 77) | 1,4-Dichlorobenzene | 18.70 | 146 | 12261 | 1.96 ug/L | 96 |
| 78) | 1,2-Dichlorobenzene | 19.15 | 146 | 9807 | 1.96 ug/L | 93 |
| 79) | n-Butylbenzene | 18.95 | 91 | 22090 | 1.94 ug/L | 96 |
| 80) | 1,2-Dibromo-3-chloropropan | 20.09 | 75 | 765 | 1.87 ug/L m | 58 |
| 81) | 1,2,4-Trichlorobenzene | 21.20 | 180 | 5890 | 1.99 ug/L | 96 |
| 82) | Hexachlorobutadiene | 21.31 | 225 | 2267 | 2.02 ug/L # | 74 |
| 83) | Naphthalene | 21.66 | 128 | 8666 | 2.00 ug/L | 95 |
| 84) | 1,2,3-Trichlorobenzene | 22.04 | 180 | 4651 | 2.04 ug/L | 97 |

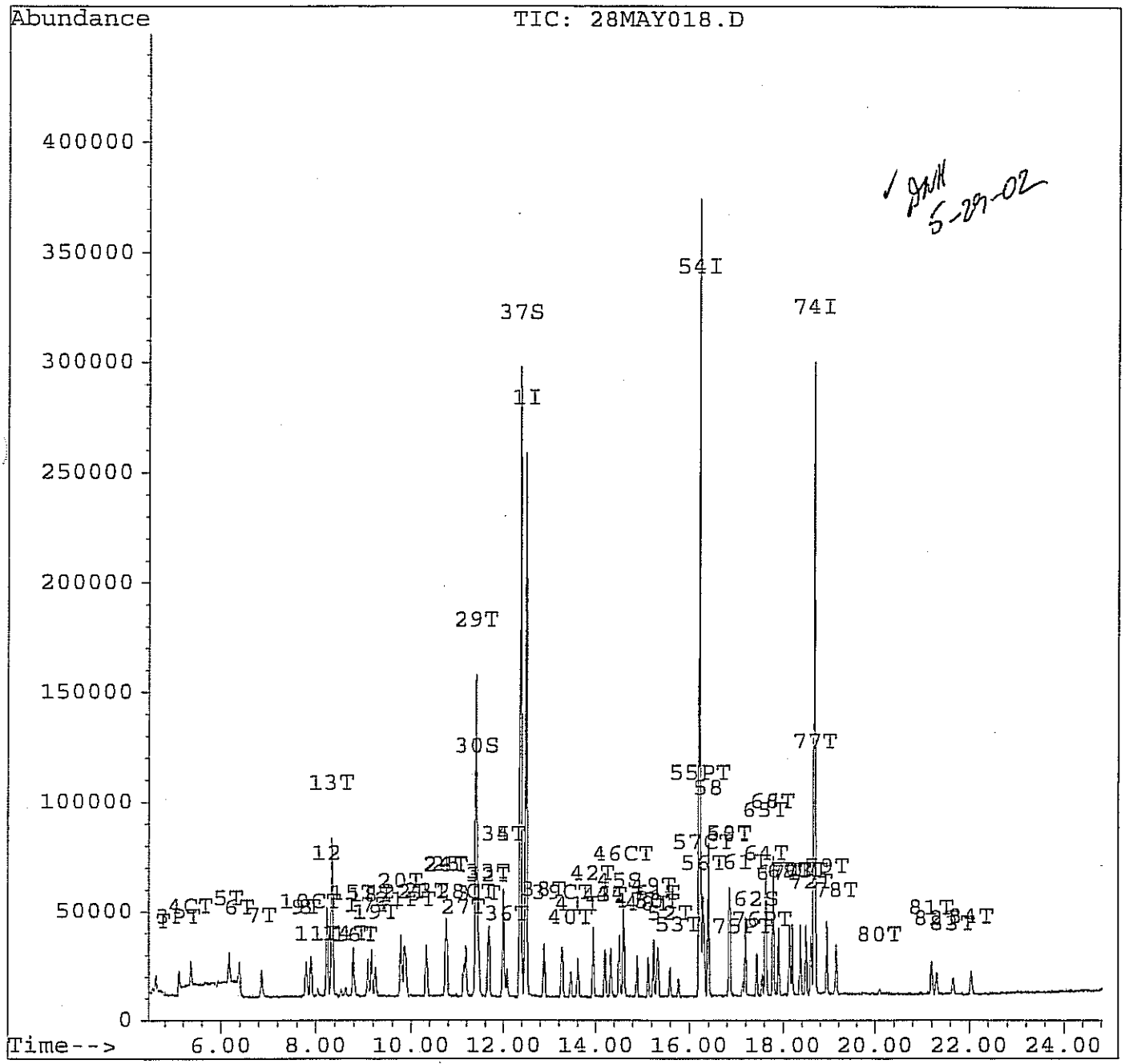
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : J:\MS03\MAY02\MAY2802\28MAY018.D
Acq On : 28 May 102 7:23 pm
Sample : 2/8/16 ppb ical 052802
Misc :
Quant Time: May 29 11:15 19102

Vial: 6
Operator: dnh
Inst : MS03
Multiplr: 1.00

Method : J:\MS03\METHODS\82600528.M
Title : Volatiles by GC/MS
Last Update : Wed May 29 11:09:49 2002
Response via : Multiple Level Calibration

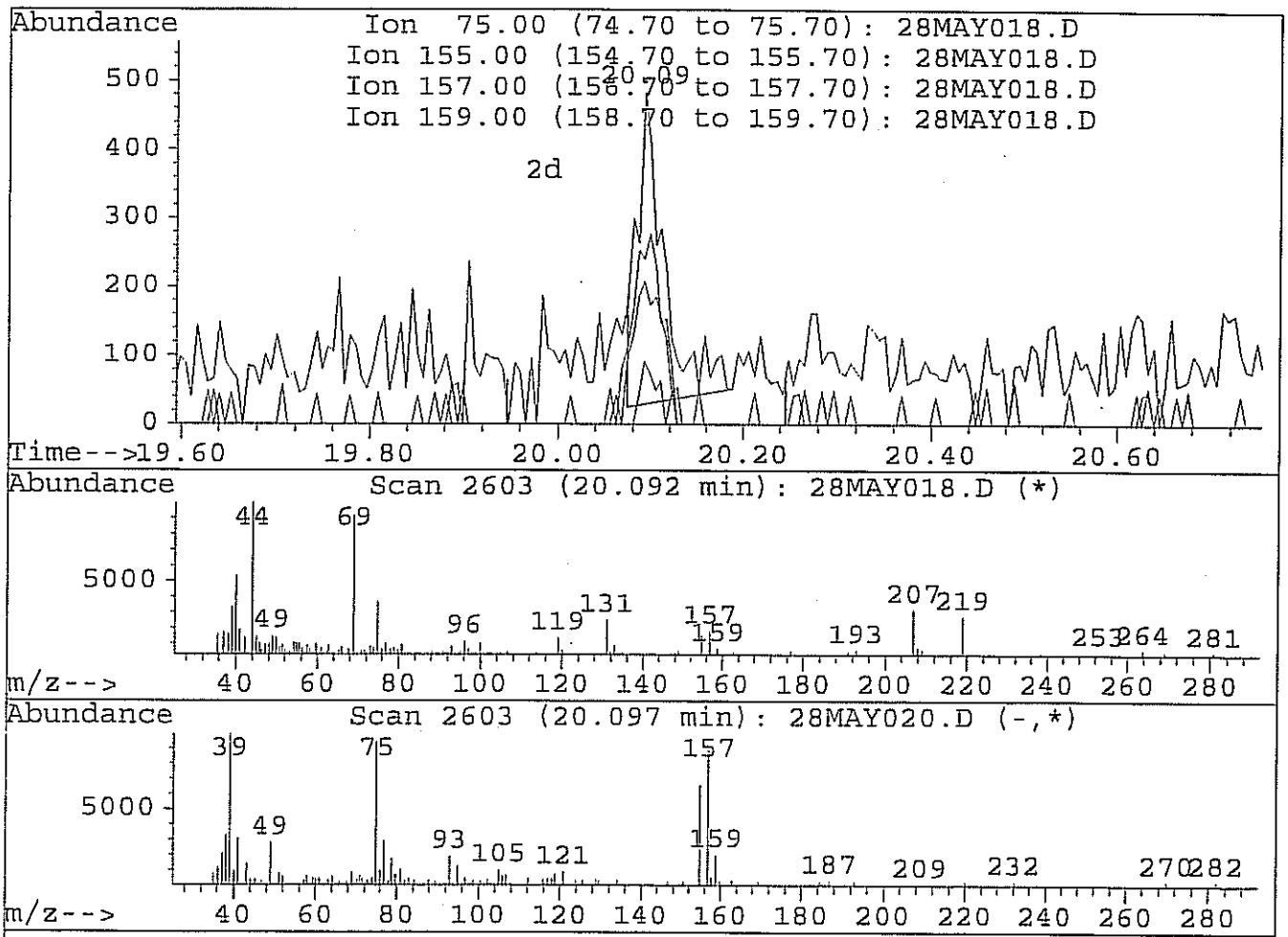


Quantitation Report

Data File : J:\MS03\MAY02\MAY2802\28MAY018.D
Acq On : 28 May 102 7:23 pm
Sample : 2/8/16 ppb ical 052802
Misc :
Quant Time: May 29 10:51 19102

Vial: 6
Operator: dnh
Inst : MS03
Multiplr: 1.00

Method : J:\MS03\METHODS\82600528.M
Title : Volatiles by GC/MS
Last Update : Wed May 29 10:35:03 2002
Response via : Single Level Calibration




(80) 1,2-Dibromo-3-chloropropane (T)
20.09min 2.39ug/L
response 917

| Ion | Exp% | Act% |
|---|---|---|
| 75.00 | 100 | 100 |
| 155.00 | 84.90 | 48.15# |
| 157.00 | 109.20 | 55.56# |
| 159.00 | 25.20 | 21.06 |

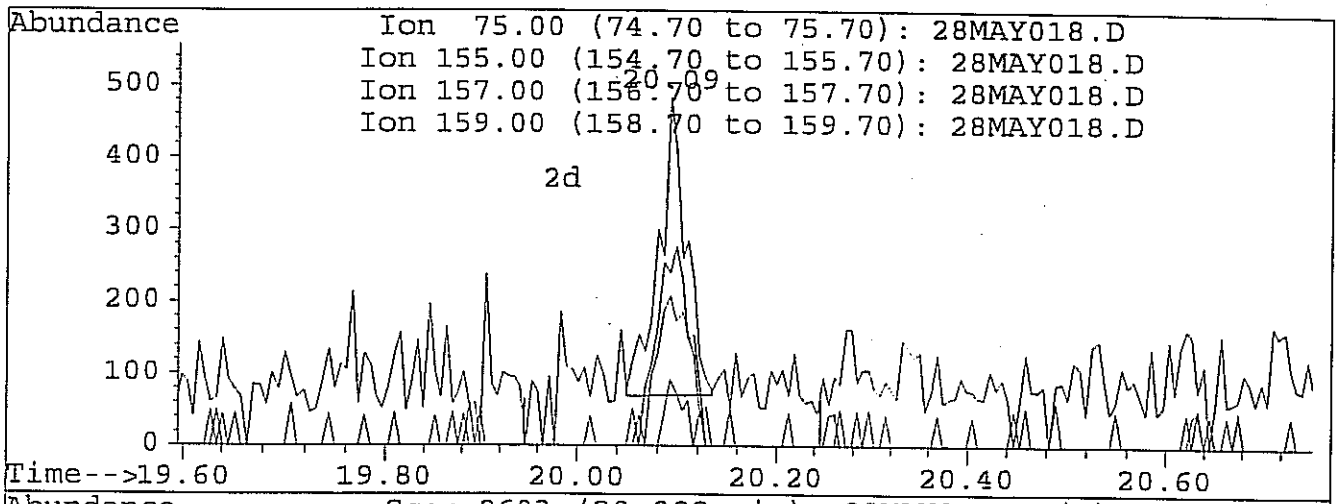
ORIGINAL

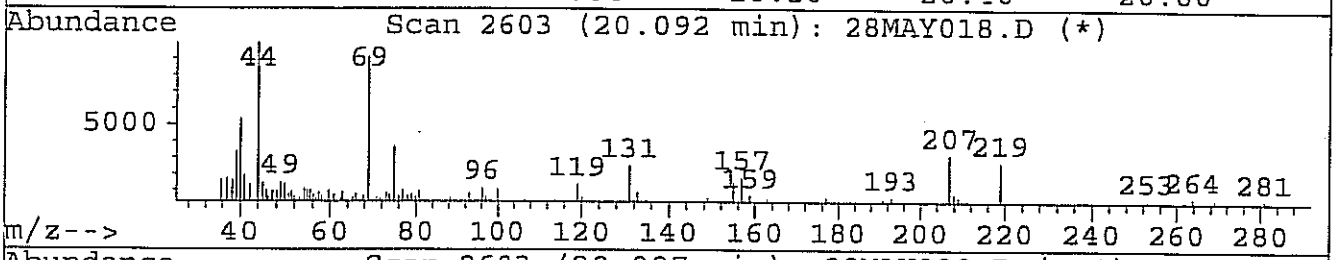
28MAY018.D 82600528.M Wed May 29 11:08:45 2002

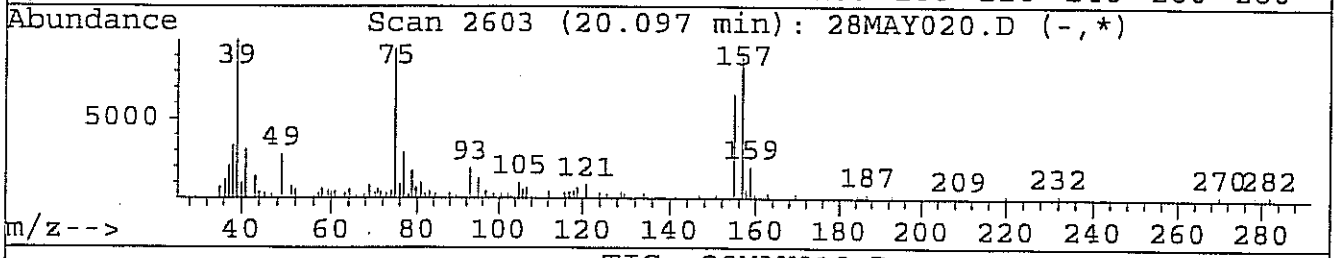
Data File : J:\MS03\MAY02\MAY2802\28MAY018.D
Acq On : 28 May 102 7:23 pm
Sample : 2/8/16 ppb ical 052802
Misc :
Quant Time: May 29 11:15 19102

Vial: 6
Operator: dnh
Inst : MS03
Multiplr: 1.00

Method : J:\MS03\METHODS\82600528.M
Title : Volatiles by GC/MS
Last Update : Wed May 29 10:35:03 2002
Response via : Single Level Calibration




TIC: 28MAY018.D

(80) 1,2-Dibromo-3-chloropropane (T)
20.09min 1.87ug/L m
response 765

| Ion | Exp% | Act% |
|---|---|---|
| 75.00 | 100 | 100 |
| 155.00 | 84.90 | 42.98 |
| 157.00 | 109.20 | 49.58 |
| 159.00 | 25.20 | 18.79 |

MANUAL, CORRECTING BASELINE
JHL 5-29-02

600

28MAY018.D 82600528.M Wed May 29 11:09:05 2002

Data File : J:\MS03\MAY02\MAY2802\28MAY019.D
Acq On : 28 May 102 7:53 pm
Sample : 5/20/40 ppb ical 052802
Misc :
Quant Time: May 29 10:51 19102

Vial: 7
Operator: dnh
Inst : MS03
Multiplr: 1.00

Method : J:\MS03\METHODS\82600528.M
Title : Volatiles by GC/MS
Last Update : Wed May 29 11:09:49 2002
Response via : Multiple Level Calibration

✓ DNH 5-29-02

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) 1,4-Difluorobenzene | 12.50 | 114 | 229516 | 20.00 ug/L | 0.00 |
| 54) Chlorobenzene-d5 | 16.21 | 117 | 182583 | 20.00 ug/L | 0.00 |
| 74) 1,4-Dichlorobenzene-d4 | 18.67 | 152 | 81077 | 20.00 ug/L | 0.00 |
| **System Monitoring Compounds** | | | | | %Recovery |
| 30) Dibromofluoromethane | 11.43 | 113 | 22655 | 4.75 ug/L | 23.74% |
| 37) Fluorobenzene | 12.38 | 96 | 291873 | 20.03 ug/L | 100.16% |
| 45) Toluene-d8 | 14.51 | 98 | 52531 | 4.65 ug/L | 23.26% |
| 62) 4-Bromofluorobenzene | 17.43 | 95 | 18601 | 4.65 ug/L | 23.25% |
| **Target Compounds** | | | | | Qvalue |
| 2) Dichlorodifluoromethane | 4.59 | 85 | 17123 | 4.79 ug/L | 94 |
| 3) Chloromethane | 5.10 | 50 | 34620 | 5.31 ug/L | 100 |
| 4) Vinyl Chloride | 5.36 | 62 | 36713 | 5.04 ug/L | 99 |
| 5) Bromomethane | 6.18 | 94 | 29147 | 4.79 ug/L | 94 |
| 6) Chloroethane | 6.39 | 64 | 25293 | 5.19 ug/L | 92 |
| 7) Trichlorofluoromethane | 6.86 | 101 | 34072 | 5.05 ug/L | 99 |
| 8) 1,1,2-trichloro-1,2,2-trif | 7.80 | 101 | 22726 | 4.99 ug/L | 96 |
| 9) Acrolein | 7.78 | 56 | 8113 | 38.19 ug/L | 82 |
| 10) 1,1-Dichloroethene | 7.89 | 96 | 21559 | 4.78 ug/L # | 84 |
| 11) Acetone | 8.04 | 58 | 4760 | 21.20 ug/L # | 82 |
| 12) Iodomethane | 8.24 | 142 | 149567 | 19.48 ug/L | 99 |
| 13) Carbon Disulfide | 8.34 | 76 | 347461 | 19.67 ug/L | 100 |
| 14) Acetonitrile | 8.62 | 41 | 11747 | 40.79 ug/L # | 38 |
| 15) Methylene Chloride | 8.78 | 84 | 29081 | 4.91 ug/L | 93 |
| 16) t-Butanol | 8.83 | 59 | 8525 | 26.36 ug/L | 77 |
| 17) Methyl tert-Butyl Ether | 9.09 | 73 | 46906 | 4.99 ug/L | 95 |
| 18) trans-1,2-Dichloroethene | 9.17 | 96 | 25877 | 4.78 ug/L | 93 |
| 19) Acrylonitrile | 9.25 | 53 | 32536 | 39.93 ug/L | 97 |
| 20) DIPE | 9.78 | 45 | 86317 | 4.97 ug/L | 96 |
| 21) 1,1-Dichloroethane | 9.89 | 63 | 48521 | 4.94 ug/L | 98 |
| 22) Vinyl Acetate | 9.86 | 43 | 92849 | 20.92 ug/L | 97 |
| 23) ETBE | 10.33 | 59 | 65553 | 4.96 ug/L | 97 |
| 24) 2,2-Dichloropropane | 10.74 | 77 | 33556 | 4.91 ug/L | 99 |
| 25) 2-butanone | 10.74 | 72 | 5086 | 19.10 ug/L | 94 |
| 26) cis-1,2-Dichloroethene | 10.76 | 96 | 28350 | 4.73 ug/L | 91 |
| 27) Bromochloromethane | 11.13 | 128 | 11657 | 5.03 ug/L | 89 |
| 28) Chloroform | 11.18 | 83 | 48671 | 4.98 ug/L | 94 |
| 29) Pentafluorobenzene | 11.40 | 168 | 116993 | 19.98 ug/L | 97 |
| 31) 1,1,1-Trichloroethane | 11.47 | 97 | 36533 | 5.05 ug/L | 93 |
| 32) Carbon Tetrachloride | 11.67 | 117 | 27683 | 4.94 ug/L | 97 |
| 33) 1,1-Dichloropropene | 11.69 | 75 | 34257 | 4.95 ug/L | 96 |
| 34) Benzene | 12.00 | 78 | 89887 | 4.92 ug/L | 98 |
| 35) TAME | 12.02 | 73 | 52158 | 4.91 ug/L | 98 |

6M
5.30M

(#) = qualifier out of range (m) = manual integration

Data File : J:\MS03\MAY02\MAY2802\28MAY019.D
Acq On : 28 May 102 7:53 pm
Sample : 5/20/40 ppb ical 052802
Misc :
Quant Time: May 29 10:51 19102

Vial: 7
Operator: dnh
Inst : MS03
Multiplr: 1.00

Method : J:\MS03\METHODS\82600528.M
Title : Volatiles by GC/MS
Last Update : Wed May 29 11:09:49 2002
Response via : Multiple Level Calibration

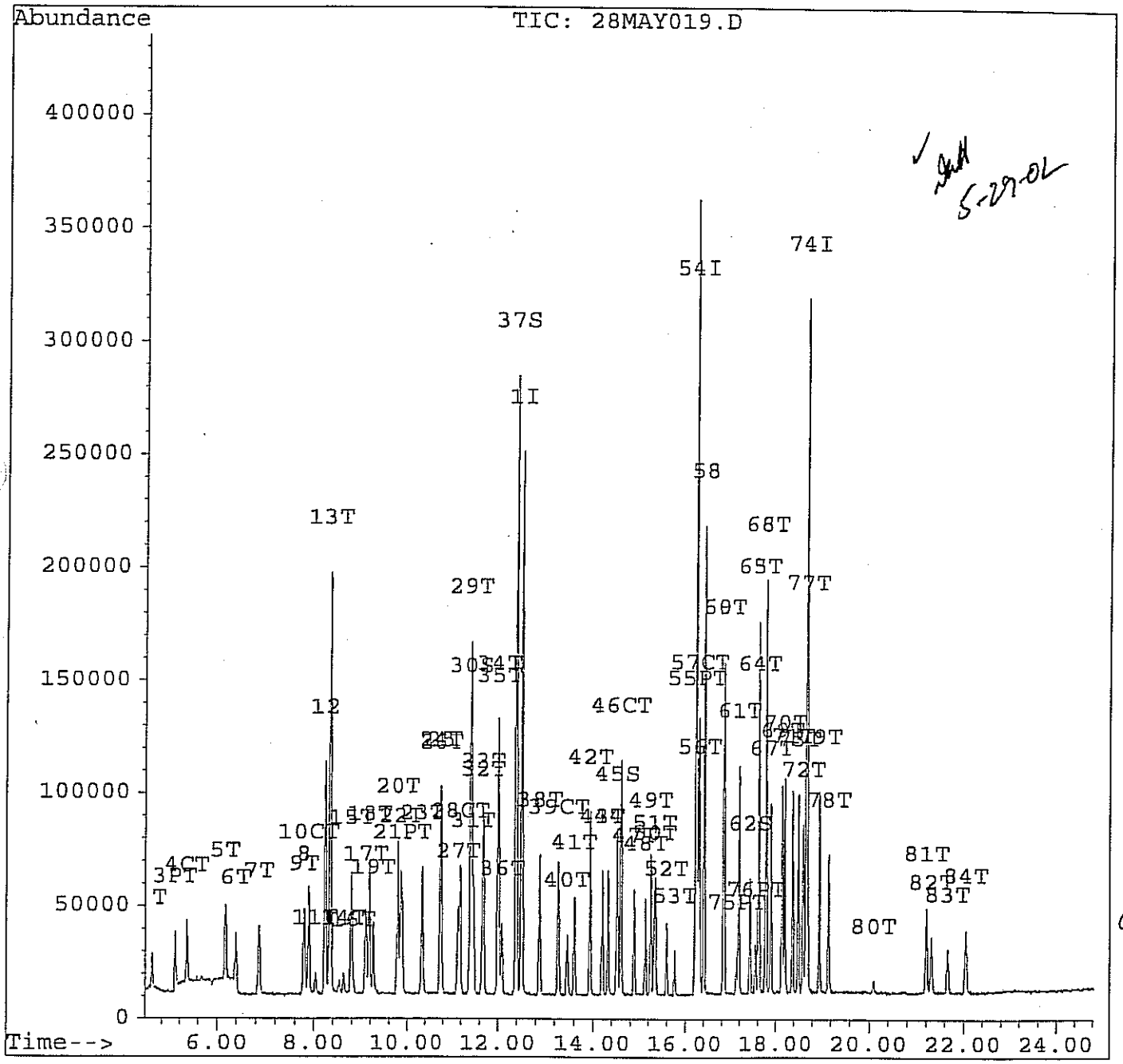
| Compound | R.T. | QIon | Response | Conc Unit | Qvalue |
|---|---|---|---|---|---|
| 36) 1,2-Dichloroethane | 12.08 | 62 | 32095 | 5.02 ug/L | 99 |
| 38) Trichloroethene | 12.88 | 95 | 24967 | 4.81 ug/L | 95 |
| 39) 1,2-Dichloropropane | 13.27 | 63 | 25989 | 4.99 ug/L | 92 |
| 40) Dibromomethane | 13.45 | 93 | 14622 | 5.06 ug/L | 85 |
| 41) Bromodichloromethane | 13.61 | 83 | 32612 | 4.97 ug/L | 97 |
| 42) 2-Chloroethyl Vinyl Ether | 13.94 | 63 | 39939 | 19.63 ug/L | 97 |
| 43) cis-1,3-Dichloropropene | 14.20 | 75 | 35109 | 4.97 ug/L | 90 |
| 44) 4-methyl-2-pentanone | 14.33 | 100 | 5847 | 21.38 ug/L # | 71 |
| 46) Toluene | 14.60 | 92 | 50467 | 4.86 ug/L | 97 |
| 47) trans-1,3-Dichloropropene | 14.89 | 75 | 25358 | 4.73 ug/L | 89 |
| 48) 1,1,2-Trichloroethane | 15.13 | 83 | 13034 | 4.85 ug/L | 93 |
| 49) Tetrachloroethene | 15.25 | 164 | 14115 | 4.70 ug/L | 95 |
| 50) 2-Hexanone | 15.32 | 43 | 31391 | 20.85 ug/L | 94 |
| 51) 1,3-Dichloropropane | 15.34 | 76 | 26151 | 4.89 ug/L | 89 |
| 52) Dibromochloromethane | 15.59 | 129 | 16093 | 4.88 ug/L | 95 |
| 53) 1,2-Dibromoethane | 15.76 | 107 | 13793 | 4.96 ug/L | 93 |
| 55) Chlorobenzene | 16.24 | 112 | 48656 | 4.89 ug/L | 95 |
| 56) 1,1,1,2-Tetrachloroethane | 16.31 | 131 | 16698 | 4.74 ug/L | 98 |
| 57) Ethylbenzene | 16.29 | 91 | 83413 | 4.84 ug/L | 97 |
| 58) m&p-xylene | 16.40 | 106 | 57934 | 10.34 ug/L | 97 |
| 59) o-Xylene | 16.84 | 106 | 25934 | 5.10 ug/L | 95 |
| 60) Styrene | 16.85 | 104 | 46042 | 5.14 ug/L | 94 |
| 61) Isopropylbenzene | 17.18 | 105 | 66630 | 4.94 ug/L | 93 |
| 63) Bromobenzene | 17.62 | 156 | 16630 | 4.89 ug/L | 90 |
| 64) 1,2,3-Trichloropropane | 17.63 | 75 | 14360 | 4.86 ug/L | 91 |
| 65) n-Propylbenzene | 17.61 | 91 | 88057 | 5.00 ug/L | 98 |
| 66) 2-Chlorotoluene | 17.79 | 91 | 61271 | 4.97 ug/L | 98 |
| 67) 4-Chlorotoluene | 17.90 | 91 | 53366 | 4.84 ug/L | 99 |
| 68) 1,3,5-Trimethylbenzene | 17.77 | 105 | 56172 | 4.87 ug/L | 98 |
| 69) tert-Butylbenzene | 18.13 | 119 | 42389 | 4.97 ug/L | 96 |
| 70) 1,2,4-Trimethylbenzene | 18.19 | 105 | 57381 | 4.84 ug/L | 98 |
| 71) sec-Butylbenzene | 18.37 | 105 | 71606 | 4.86 ug/L | 98 |
| 72) 1,3-Dichlorobenzene | 18.60 | 146 | 30631 | 4.87 ug/L | 96 |
| 73) 4-Isopropyltoluene | 18.50 | 119 | 54340 | 4.72 ug/L | 98 |
| 75) Bromoform | 17.13 | 173 | 7074 | 4.70 ug/L | 86 |
| 76) 1,1,2,2-Tetrachloroethane | 17.54 | 83 | 12477 | 4.81 ug/L | 96 |
| 77) 1,4-Dichlorobenzene | 18.69 | 146 | 32865 | 4.91 ug/L | 98 |
| 78) 1,2-Dichlorobenzene | 19.15 | 146 | 26496 | 4.97 ug/L | 97 |
| 79) n-Butylbenzene | 18.95 | 91 | 59459 | 4.89 ug/L | 97 |
| 80) 1,2-Dibromo-3-chloropropan | 20.09 | 75 | 2317 | 6.70 ug/L # | 74 |
| 81) 1,2,4-Trichlorobenzene | 21.21 | 180 | 15110 | 4.79 ug/L | 96 |
| 82) Hexachlorobutadiene | 21.31 | 225 | 5739 | 4.80 ug/L | 99 |
| 83) Naphthalene | 21.65 | 128 | 22699 | 4.90 ug/L | 97 |
| 84) 1,2,3-Trichlorobenzene | 22.05 | 180 | 11737 | 4.83 ug/L | 96 |

(#) = qualifier out of range (m) = manual integration

Data File : J:\MS03\MAY02\MAY2802\28MAY019.D
Acq On : 28 May 102 7:53 pm
Sample : 5/20/40 ppb ical 052802
Misc :
Quant Time: May 29 10:51 19102

Vial: 7
Operator: dnh
Inst : MS03
Multiplr: 1.00

Method : J:\MS03\METHODS\82600528.M
Title : Volatiles by GC/MS
Last Update : Wed May 29 11:09:49 2002
Response via : Multiple Level Calibration




✓ DNH 5-29-02

Data File : J:\MS03\MAY02\MAY2802\28MAY020.D
Acq On : 28 May 102 8:23 pm
Sample : 10/40/80 ppb ical 052802
Misc :
Quant Time: May 29 10:51 19102

Vial: 8
Operator: dnh
Inst : MS03
Multiplr: 1.00

Method : J:\MS03\METHODS\82600528.M
Title : Volatiles by GC/MS
Last Update : Wed May 29 11:09:49 2002
Response via : Multiple Level Calibration

✓ DNH 5-29-02

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) 1,4-Difluorobenzene | 12.50 | 114 | 228574 | 20.00 ug/L | 0.00 |
| 54) Chlorobenzene-d5 | 16.22 | 117 | 182807 | 20.00 ug/L | 0.00 |
| 74) 1,4-Dichlorobenzene-d4 | 18.67 | 152 | 86010 | 20.00 ug/L | 0.00 |
| **System Monitoring Compounds** | | | | | %Recovery |
| 30) Dibromofluoromethane | 11.43 | 113 | 49722 | 10.46 ug/L | 52.32% |
| 37) Fluorobenzene | 12.38 | 96 | 292114 | 20.13 ug/L | 100.65% |
| 45) Toluene-d8 | 14.51 | 98 | 122191 | 10.87 ug/L | 54.33% |
| 62) 4-Bromofluorobenzene | 17.43 | 95 | 41706 | 10.42 ug/L | 52.08% |
| **Target Compounds** | | | | | Qvalue |
| 2) Dichlorodifluoromethane | 4.59 | 85 | 36307 | 10.20 ug/L | 95 |
| 3) Chloromethane | 5.10 | 50 | 68906 | 10.61 ug/L | 100 |
| 4) Vinyl Chloride | 5.36 | 62 | 77751 | 10.72 ug/L | 99 |
| 5) Bromomethane | 6.18 | 94 | 58672 | 9.69 ug/L | 94 |
| 6) Chloroethane | 6.39 | 64 | 50413 | 10.38 ug/L | 92 |
| 7) Trichlorofluoromethane | 6.87 | 101 | 70952 | 10.55 ug/L | 96 |
| 8) 1,1,2-trichloro-1,2,2-trif | 7.80 | 101 | 47056 | 10.38 ug/L | 97 |
| 9) Acrolein | 7.78 | 56 | 15027 | 71.03 ug/L | 95 |
| 10) 1,1-Dichloroethene | 7.89 | 96 | 44485 | 9.91 ug/L | 92 |
| 11) Acetone | 8.03 | 58 | 8264 | 43.40 ug/L | 88 |
| 12) Iodomethane | 8.24 | 142 | 321272 | 42.02 ug/L | 97 |
| 13) Carbon Disulfide | 8.34 | 76 | 744964 | 42.35 ug/L | 100 |
| 14) Acetonitrile | 8.62 | 41 | 23733 | 82.75 ug/L # | 44 |
| 15) Methylene Chloride | 8.79 | 84 | 57321 | 9.72 ug/L | 95 |
| 16) t-Butanol | 8.83 | 59 | 17679 | 54.89 ug/L | 90 |
| 17) Methyl tert-Butyl Ether | 9.09 | 73 | 94318 | 10.08 ug/L | 95 |
| 18) trans-1,2-Dichloroethene | 9.17 | 96 | 53696 | 9.95 ug/L | 98 |
| 19) Acrylonitrile | 9.25 | 53 | 66531 | 81.99 ug/L | 98 |
| 20) DIPE | 9.79 | 45 | 173028 | 10.01 ug/L | 97 |
| 21) 1,1-Dichloroethane | 9.89 | 63 | 99855 | 10.20 ug/L | 96 |
| 22) Vinyl Acetate | 9.86 | 43 | 171957 | 38.90 ug/L | 96 |
| 23) ETBE | 10.33 | 59 | 131703 | 10.01 ug/L | 97 |
| 24) 2,2-Dichloropropane | 10.75 | 77 | 68376 | 10.05 ug/L | 99 |
| 25) 2-butanone | 10.74 | 72 | 9957 | 40.45 ug/L | 93 |
| 26) cis-1,2-Dichloroethene | 10.76 | 96 | 58122 | 9.74 ug/L | 93 |
| 27) Bromochloromethane | 11.14 | 128 | 23036 | 9.99 ug/L | 87 |
| 28) Chloroform | 11.18 | 83 | 99396 | 10.20 ug/L | 95 |
| 29) Pentafluorobenzene | 11.41 | 168 | 116415 | 19.96 ug/L | 97 |
| 31) 1,1,1-Trichloroethane | 11.47 | 97 | 75298 | 10.45 ug/L | 95 |
| 32) Carbon Tetrachloride | 11.67 | 117 | 57879 | 10.37 ug/L | 97 |
| 33) 1,1-Dichloropropene | 11.69 | 75 | 70448 | 10.21 ug/L | 96 |
| 34) Benzene | 12.00 | 78 | 187338 | 10.29 ug/L | 99 |
| 35) TAME | 12.02 | 73 | 106421 | 10.06 ug/L | 98 |

SMJ 5-30-02

(#) = qualifier out of range (m) = manual integration

Data File : J:\MS03\MAY02\MAY2802\28MAY020.D
Acq On : 28 May 102 8:23 pm
Sample : 10/40/80 ppb ical 052802
Misc :
Quant Time: May 29 10:51 19102

Vial: 8
Operator: dnh
Inst : MS03
Multiplr: 1.00

Method : J:\MS03\METHODS\82600528.M
Title : Volatiles by GC/MS
Last Update : Wed May 29 11:09:49 2002
Response via : Multiple Level Calibration

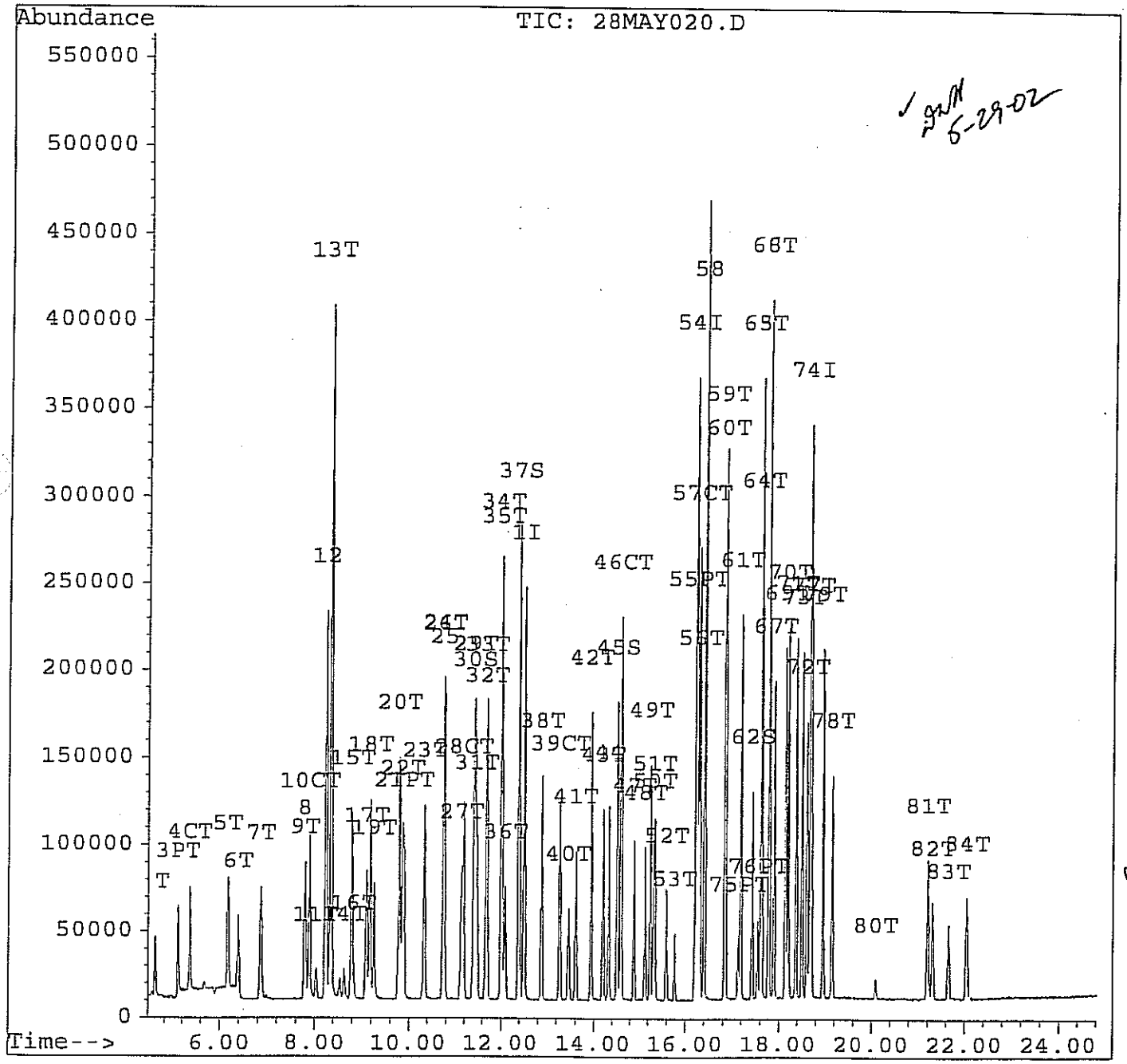
| | Compound | R.T. | QIon | Response | Conc Unit | | Qvalue |
|---|---|---|---|---|---|---|---|
| 36) | 1,2-Dichloroethane | 12.09 | 62 | 61518 | 9.66 ug/L | | 97 |
| 38) | Trichloroethene | 12.88 | 95 | 51620 | 9.98 ug/L | | 94 |
| 39) | 1,2-Dichloropropane | 13.27 | 63 | 50761 | 9.78 ug/L | | 97 |
| 40) | Dibromomethane | 13.45 | 93 | 28176 | 9.79 ug/L | | 86 |
| 41) | Bromodichloromethane | 13.61 | 83 | 64361 | 9.85 ug/L | | 99 |
| 42) | 2-Chloroethyl Vinyl Ether | 13.94 | 63 | 80555 | 39.75 ug/L | | 97 |
| 43) | cis-1,3-Dichloropropene | 14.21 | 75 | 69253 | 9.84 ug/L | | 94 |
| 44) | 4-methyl-2-pentanone | 14.33 | 100 | 10703 | 39.29 ug/L | # | 79 |
| 46) | Toluene | 14.60 | 92 | 106008 | 10.26 ug/L | | 99 |
| 47) | trans-1,3-Dichloropropene | 14.89 | 75 | 52407 | 9.82 ug/L | | 91 |
| 48) | 1,1,2-Trichloroethane | 15.13 | 83 | 25662 | 9.59 ug/L | | 92 |
| 49) | Tetrachloroethene | 15.25 | 164 | 29611 | 9.90 ug/L | | 98 |
| 50) | 2-Hexanone | 15.32 | 43 | 59253 | 39.51 ug/L | | 93 |
| 51) | 1,3-Dichloropropane | 15.34 | 76 | 52340 | 9.83 ug/L | | 94 |
| 52) | Dibromochloromethane | 15.59 | 129 | 32342 | 9.84 ug/L | | 94 |
| 53) | 1,2-Dibromoethane | 15.77 | 107 | 26605 | 9.61 ug/L | | 94 |
| 55) | Chlorobenzene | 16.25 | 112 | 99429 | 9.99 ug/L | | 95 |
| 56) | 1,1,1,2-Tetrachloroethane | 16.31 | 131 | 34501 | 9.79 ug/L | | 97 |
| 57) | Ethylbenzene | 16.29 | 91 | 178252 | 10.34 ug/L | | 100 |
| 58) | m&p-xylene | 16.40 | 106 | 128283 | 19.26 ug/L | | 99 |
| 59) | o-Xylene | 16.84 | 106 | 58850 | 9.57 ug/L | | 95 |
| 60) | Styrene | 16.86 | 104 | 101920 | 9.51 ug/L | | 98 |
| 61) | Isopropylbenzene | 17.18 | 105 | 150099 | 9.53 ug/L | | 96 |
| 63) | Bromobenzene | 17.62 | 156 | 36147 | 10.61 ug/L | | 90 |
| 64) | 1,2,3-Trichloropropane | 17.64 | 75 | 28396 | 9.60 ug/L | | 83 |
| 65) | n-Propylbenzene | 17.61 | 91 | 198487 | 9.64 ug/L | | 98 |
| 66) | 2-Chlorotoluene | 17.79 | 91 | 135131 | 9.61 ug/L | | 99 |
| 67) | 4-Chlorotoluene | 17.90 | 91 | 117921 | 10.68 ug/L | | 99 |
| 68) | 1,3,5-Trimethylbenzene | 17.78 | 105 | 126922 | 9.36 ug/L | | 99 |
| 69) | tert-Butylbenzene | 18.14 | 119 | 97172 | 9.75 ug/L | | 99 |
| 70) | 1,2,4-Trimethylbenzene | 18.20 | 105 | 128130 | 9.51 ug/L | | 99 |
| 71) | sec-Butylbenzene | 18.37 | 105 | 160486 | 9.61 ug/L | | 98 |
| 72) | 1,3-Dichlorobenzene | 18.60 | 146 | 67722 | 10.74 ug/L | | 97 |
| 73) | 4-Isopropyltoluene | 18.50 | 119 | 125815 | 9.45 ug/L | | 97 |
| 75) | Bromoform | 17.13 | 173 | 14654 | 9.17 ug/L | | 88 |
| 76) | 1,1,2,2-Tetrachloroethane | 17.55 | 83 | 25336 | 9.21 ug/L | | 99 |
| 77) | 1,4-Dichlorobenzene | 18.70 | 146 | 70351 | 9.92 ug/L | | 97 |
| 78) | 1,2-Dichlorobenzene | 19.15 | 146 | 56626 | 10.02 ug/L | | 96 |
| 79) | n-Butylbenzene | 18.95 | 91 | 134276 | 10.42 ug/L | | 98 |
| 80) | 1,2-Dibromo-3-chloropropan | 20.10 | 75 | 4079 | 11.61 ug/L | | 83 |
| 81) | 1,2,4-Trichlorobenzene | 21.21 | 180 | 31936 | 9.55 ug/L | | 98 |
| 82) | Hexachlorobutadiene | 21.31 | 225 | 12732 | 10.04 ug/L | | 90 |
| 83) | Naphthalene | 21.66 | 128 | 48097 | 9.79 ug/L | | 98 |
| 84) | 1,2,3-Trichlorobenzene | 22.05 | 180 | 24783 | 9.60 ug/L | | 99 |

(#) = qualifier out of range (m) = manual integration

Data File : J:\MS03\MAY02\MAY2802\28MAY020.D
Acq On : 28 May 102 8:23 pm
Sample : 10/40/80 ppb ical 052802
Misc :
Quant Time: May 29 10:51 19102

Vial: 8
Operator: dnh
Inst : MS03
Multiplr: 1.00

Method : J:\MS03\METHODS\82600528.M
Title : Volatiles by GC/MS
Last Update : Wed May 29 11:09:49 2002
Response via : Multiple Level Calibration




✓ gdN 6-29-02



000152

Data File : J:\MS03\MAY02\MAY2802\28MAY021.D
Acq On : 28 May 102 8:53 pm
Sample : 20/80/160 ppb ical 052802
Misc :
Quant Time: May 29 10:51 19102

Vial: 9
Operator: dnh
Inst : MS03
Multiplr: 1.00

Method : J:\MS03\METHODS\82600528.M
Title : Volatiles by GC/MS
Last Update : Wed May 29 11:09:49 2002
Response via : Multiple Level Calibration

gnh 5-29-02

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) 1,4-Difluorobenzene | 12.50 | 114 | 241322 | 20.00 ug/L | 0.00 |
| 54) Chlorobenzene-d5 | 16.21 | 117 | 195114 | 20.00 ug/L | 0.00 |
| 74) 1,4-Dichlorobenzene-d4 | 18.67 | 152 | 98988 | 20.00 ug/L | 0.00 |
| **System Monitoring Compounds** | | | | | %Recovery |
| 30) Dibromofluoromethane | 11.43 | 113 | 98396 | 19.61 ug/L | 98.07% |
| 37) Fluorobenzene | 12.39 | 96 | 307480 | 20.07 ug/L | 100.35% |
| 45) Toluene-d8 | 14.52 | 98 | 253812 | 21.38 ug/L | 106.90% |
| 62) 4-Bromofluorobenzene | 17.43 | 95 | 88094 | 20.61 ug/L | 103.06% |
| **Target Compounds** | | | | | Qvalue |
| 2) Dichlorodifluoromethane | 4.60 | 85 | 73732 | 19.61 ug/L | 96 |
| 3) Chloromethane | 5.10 | 50 | 135049 | 19.70 ug/L | 99 |
| 4) Vinyl Chloride | 5.37 | 62 | 152268 | 19.88 ug/L | 99 |
| 5) Bromomethane | 6.18 | 94 | 118472 | 18.53 ug/L | 91 |
| 6) Chloroethane | 6.40 | 64 | 98216 | 19.15 ug/L | 92 |
| 7) Trichlorofluoromethane | 6.87 | 101 | 137953 | 19.43 ug/L | 98 |
| 8) 1,1,2-trichloro-1,2,2-trif | 7.80 | 101 | 92378 | 19.30 ug/L | 95 |
| 9) Acrolein | 7.79 | 56 | 31187 | 139.63 ug/L | 82 |
| 10) 1,1-Dichloroethene | 7.90 | 96 | 88897 | 18.75 ug/L | 89 |
| 11) Acetone | 8.03 | 58 | 14645 | 78.73 ug/L | 97 |
| 12) Iodomethane | 8.24 | 142 | 667462 | 82.69 ug/L | 97 |
| 13) Carbon Disulfide | 8.34 | 76 | 1507174 | 81.15 ug/L | 100 |
| 14) Acetonitrile | 8.63 | 41 | 46583 | 153.85 ug/L # | 41 |
| 15) Methylene Chloride | 8.79 | 84 | 116049 | 18.63 ug/L | 96 |
| 16) t-Butanol | 8.83 | 59 | 32892 | 96.73 ug/L | 98 |
| 17) Methyl tert-Butyl Ether | 9.10 | 73 | 189358 | 19.17 ug/L | 97 |
| 18) trans-1,2-Dichloroethene | 9.18 | 96 | 107935 | 18.95 ug/L | 98 |
| 19) Acrylonitrile | 9.25 | 53 | 133061 | 155.31 ug/L | 97 |
| 20) DIPE | 9.79 | 45 | 350290 | 19.19 ug/L | 98 |
| 21) 1,1-Dichloroethane | 9.90 | 63 | 203681 | 19.70 ug/L | 98 |
| 22) Vinyl Acetate | 9.86 | 43 | 307939 | 65.98 ug/L | 97 |
| 23) ETBE | 10.33 | 59 | 267271 | 19.23 ug/L | 97 |
| 24) 2,2-Dichloropropane | 10.75 | 77 | 135568 | 18.87 ug/L | 99 |
| 25) 2-butanone | 10.75 | 72 | 20234 | 80.65 ug/L | 97 |
| 26) cis-1,2-Dichloroethene | 10.77 | 96 | 121443 | 19.28 ug/L | 95 |
| 27) Bromochloromethane | 11.14 | 128 | 46604 | 19.14 ug/L | 91 |
| 28) Chloroform | 11.18 | 83 | 198112 | 19.26 ug/L | 96 |
| 29) Pentafluorobenzene | 11.41 | 168 | 124907 | 20.28 ug/L | 97 |
| 31) 1,1,1-Trichloroethane | 11.47 | 97 | 150524 | 19.78 ug/L | 94 |
| 32) Carbon Tetrachloride | 11.67 | 117 | 117455 | 19.93 ug/L | 98 |
| 33) 1,1-Dichloropropene | 11.69 | 75 | 142452 | 19.56 ug/L | 96 |
| 34) Benzene | 12.00 | 78 | 389044 | 20.24 ug/L | 99 |
| 35) TAME | 12.02 | 73 | 216394 | 19.38 ug/L | 96 |

gnh 5-30-02

(#) = qualifier out of range (m) = manual integration

Data File : J:\MS03\MAY02\MAY2802\28MAY021.D
Acq On : 28 May 102 8:53 pm
Sample : 20/80/160 ppb ical 052802
Misc :
Quant Time: May 29 10:51 19102

Vial: 9
Operator: dnh
Inst : MS03
Multiplr: 1.00

Method : J:\MS03\METHODS\82600528.M
Title : Volatiles by GC/MS
Last Update : Wed May 29 11:09:49 2002
Response via : Multiple Level Calibration

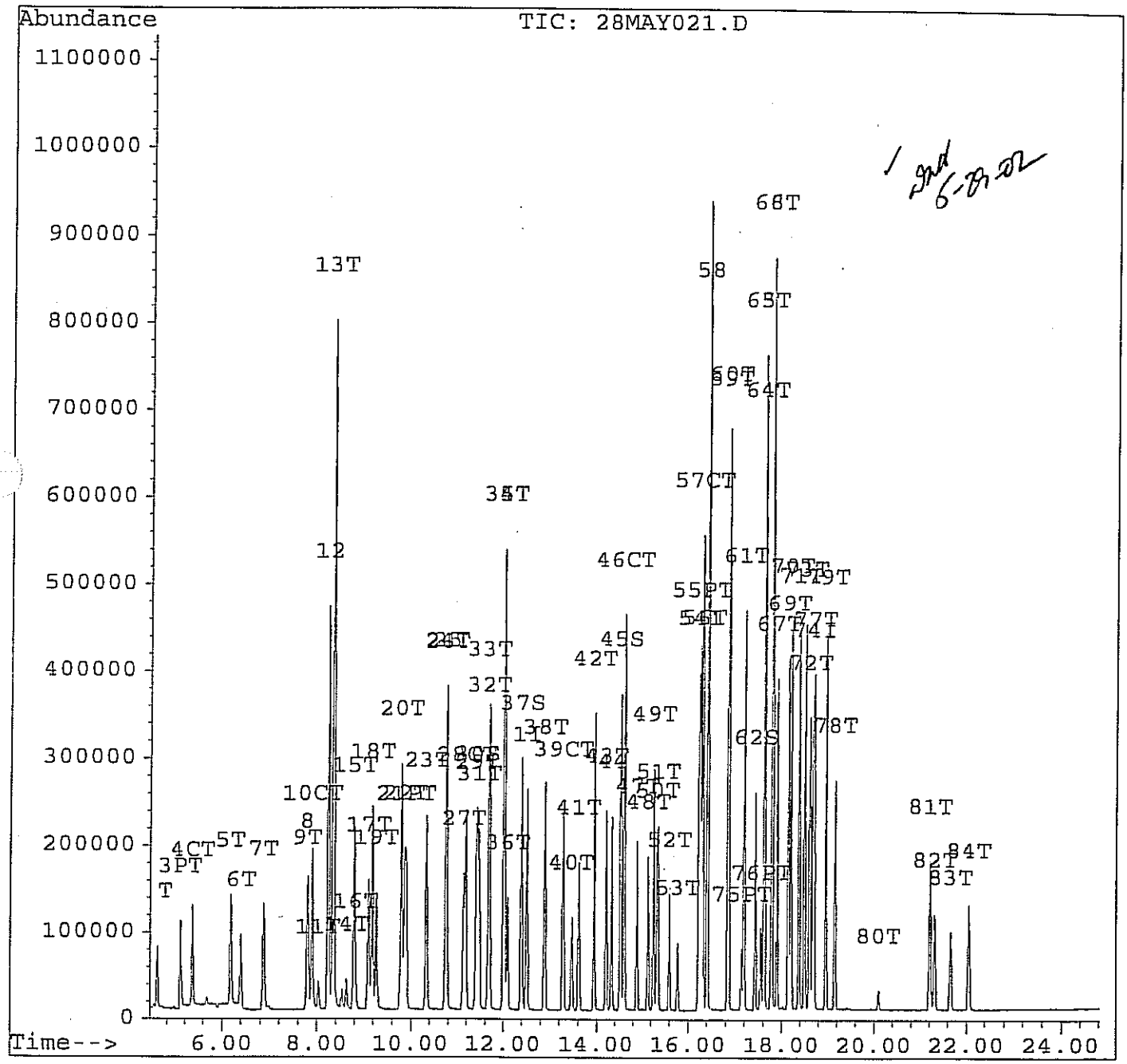
| Compound | R.T. | QIon | Response | Conc Unit | Qvalue |
|---|---|---|---|---|---|
| 36) 1,2-Dichloroethane | 12.09 | 62 | 123235 | 18.33 ug/L | 98 |
| 38) Trichloroethene | 12.89 | 95 | 106144 | 19.43 ug/L | 96 |
| 39) 1,2-Dichloropropane | 13.27 | 63 | 104223 | 19.01 ug/L | 95 |
| 40) Dibromomethane | 13.46 | 93 | 56461 | 18.58 ug/L | 91 |
| 41) Bromodichloromethane | 13.62 | 83 | 130831 | 18.97 ug/L | 98 |
| 42) 2-Chloroethyl Vinyl Ether | 13.95 | 63 | 169368 | 79.16 ug/L | 96 |
| 43) cis-1,3-Dichloropropene | 14.21 | 75 | 143287 | 19.28 ug/L | 93 |
| 44) 4-methyl-2-pentanone | 14.33 | 100 | 22116 | 76.90 ug/L # | 84 |
| 46) Toluene | 14.61 | 92 | 229160 | 21.01 ug/L | 100 |
| 47) trans-1,3-Dichloropropene | 14.89 | 75 | 107297 | 19.04 ug/L | 92 |
| 48) 1,1,2-Trichloroethane | 15.13 | 83 | 53181 | 18.83 ug/L | 95 |
| 49) Tetrachloroethene | 15.25 | 164 | 62427 | 19.78 ug/L | 97 |
| 50) 2-Hexanone | 15.32 | 43 | 119345 | 75.38 ug/L | 96 |
| 51) 1,3-Dichloropropane | 15.35 | 76 | 108510 | 19.31 ug/L | 98 |
| 52) Dibromochloromethane | 15.60 | 129 | 67135 | 19.35 ug/L | 96 |
| 53) 1,2-Dibromoethane | 15.77 | 107 | 55559 | 19.01 ug/L | 97 |
| 55) Chlorobenzene | 16.24 | 112 | 207209 | 19.51 ug/L | 95 |
| 56) 1,1,1,2-Tetrachloroethane | 16.31 | 131 | 71930 | 19.12 ug/L | 99 |
| 57) Ethylbenzene | 16.29 | 91 | 376729 | 20.47 ug/L | 99 |
| 58) m&p-xylene | 16.41 | 106 | 269124 | 34.99 ug/L | 98 |
| 59) o-Xylene | 16.84 | 106 | 124891 | 17.49 ug/L | 100 |
| 60) Styrene | 16.86 | 104 | 217419 | 17.46 ug/L | 98 |
| 61) Isopropylbenzene | 17.19 | 105 | 320097 | 17.78 ug/L | 98 |
| 63) Bromobenzene | 17.63 | 156 | 78327 | 21.55 ug/L | 96 |
| 64) 1,2,3-Trichloropropane | 17.63 | 75 | 58201 | 18.44 ug/L # | 64 |
| 65) n-Propylbenzene | 17.62 | 91 | 422042 | 17.94 ug/L | 98 |
| 66) 2-Chlorotoluene | 17.79 | 91 | 295591 | 18.52 ug/L | 99 |
| 67) 4-Chlorotoluene | 17.90 | 91 | 249487 | 21.17 ug/L | 99 |
| 68) 1,3,5-Trimethylbenzene | 17.78 | 105 | 284472 | 18.24 ug/L | 98 |
| 69) tert-Butylbenzene | 18.14 | 119 | 202262 | 17.82 ug/L | 99 |
| 70) 1,2,4-Trimethylbenzene | 18.19 | 105 | 283684 | 18.62 ug/L | 99 |
| 71) sec-Butylbenzene | 18.37 | 105 | 352534 | 18.68 ug/L | 99 |
| 72) 1,3-Dichlorobenzene | 18.60 | 146 | 155338 | 23.09 ug/L | 98 |
| 73) 4-Isopropyltoluene | 18.50 | 119 | 283503 | 18.70 ug/L | 99 |
| 75) Bromoform | 17.13 | 173 | 31392 | 17.07 ug/L | 90 |
| 76) 1,1,2,2-Tetrachloroethane | 17.55 | 83 | 52084 | 16.46 ug/L | 98 |
| 77) 1,4-Dichlorobenzene | 18.70 | 146 | 155793 | 19.08 ug/L | 98 |
| 78) 1,2-Dichlorobenzene | 19.15 | 146 | 121595 | 18.69 ug/L | 98 |
| 79) n-Butylbenzene | 18.95 | 91 | 286807 | 19.33 ug/L | 98 |
| 80) 1,2-Dibromo-3-chloropropan | 20.10 | 75 | 7010 | 17.70 ug/L | 88 |
| 81) 1,2,4-Trichlorobenzene | 21.21 | 180 | 68697 | 17.85 ug/L | 97 |
| 82) Hexachlorobutadiene | 21.32 | 225 | 26068 | 17.86 ug/L | 96 |
| 83) Naphthalene | 21.66 | 128 | 102308 | 18.09 ug/L | 97 |
| 84) 1,2,3-Trichlorobenzene | 22.05 | 180 | 53046 | 17.86 ug/L | 98 |

(#) = qualifier out of range (m) = manual integration

Data File : J:\MS03\MAY02\MAY2802\28MAY021.D
Acq On : 28 May 102 8:53 pm
Sample : 20/80/160 ppb ical 052802
Misc :
Quant Time: May 29 10:51 19102

Vial: 9
Operator: dnh
Inst : MS03
Multiplr: 1.00

Method : J:\MS03\METHODS\82600528.M
Title : Volatiles by GC/MS
Last Update : Wed May 29 11:09:49 2002
Response via : Multiple Level Calibration



Data File : J:\MS03\MAY02\MAY2802\28MAY022.D
Acq On : 28 May 102 9:22 pm
Sample : 50/200/400 ppb ical 052802
Misc :
Quant Time: May 29 10:52 19102

Vial: 10
Operator: dnh
Inst : MS03
Multiplr: 1.00

Method : J:\MS03\METHODS\82600528.M
Title : Volatiles by GC/MS
Last Update : Wed May 29 11:09:49 2002
Response via : Multiple Level Calibration

✓ gm 5-29-02

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) 1,4-Difluorobenzene | 12.51 | 114 | 259532 | 20.00 ug/L | 0.01 |
| 54) Chlorobenzene-d5 | 16.22 | 117 | 205030 | 20.00 ug/L | 0.00 |
| 74) 1,4-Dichlorobenzene-d4 | 18.68 | 152 | 100802 | 20.00 ug/L | 0.00 |
| **System Monitoring Compounds** | | | | | %Recovery |
| 30) Dibromofluoromethane | 11.44 | 113 | 218801 | 40.55 ug/L | 202.77% |
| 37) Fluorobenzene | 12.39 | 96 | 328510 | 19.94 ug/L | 99.69% |
| 45) Toluene-d8 | 14.52 | 98 | 591166 | 46.30 ug/L | 231.51% |
| 62) 4-Bromofluorobenzene | 17.44 | 95 | 216077 | 48.11 ug/L | 240.56% |
| **Target Compounds** | | | | | Qvalue |
| 2) Dichlorodifluoromethane | 4.60 | 85 | 195896 | 48.45 ug/L | 97 |
| 3) Chloromethane | 5.11 | 50 | 348690 | 47.30 ug/L | 99 |
| 4) Vinyl Chloride | 5.37 | 62 | 397733 | 48.29 ug/L | 99 |
| 5) Bromomethane | 6.18 | 94 | 315164 | 45.84 ug/L | 92 |
| 6) Chloroethane | 6.40 | 64 | 260154 | 47.17 ug/L | 93 |
| 7) Trichlorofluoromethane | 6.88 | 101 | 364259 | 47.70 ug/L | 98 |
| 8) 1,1,2-trichloro-1,2,2-trif | 7.81 | 101 | 251976 | 48.95 ug/L | 97 |
| 9) Acrolein | 7.79 | 56 | 90247 | 375.70 ug/L | 87 |
| 10) 1,1-Dichloroethene | 7.91 | 96 | 245536 | 48.17 ug/L | 93 |
| 11) Acetone | 8.04 | 58 | 37771 | 200.91 ug/L | 97 |
| 12) Iodomethane | 8.25 | 142 | 1979772 | 228.07 ug/L | 94 |
| 13) Carbon Disulfide | 8.35 | 76 | 4307067 | 215.64 ug/L | 100 |
| 14) Acetonitrile | 8.63 | 41 | 117695 | 361.43 ug/L | 45 |
| 15) Methylene Chloride | 8.80 | 84 | 313382 | 46.79 ug/L | 98 |
| 16) t-Butanol | 8.83 | 59 | 82822 | 226.47 ug/L | 93 |
| 17) Methyl tert-Butyl Ether | 9.10 | 73 | 497481 | 46.84 ug/L | 99 |
| 18) trans-1,2-Dichloroethene | 9.18 | 96 | 306740 | 50.07 ug/L | 99 |
| 19) Acrylonitrile | 9.26 | 53 | 354146 | 384.36 ug/L | 99 |
| 20) DIPE | 9.79 | 45 | 943153 | 48.03 ug/L | 99 |
| 21) 1,1-Dichloroethane | 9.90 | 63 | 542255 | 48.77 ug/L | 99 |
| 22) Vinyl Acetate | 9.86 | 43 | 881467 | 175.61 ug/L | 98 |
| 23) ETBE | 10.34 | 59 | 718932 | 48.10 ug/L | 99 |
| 24) 2,2-Dichloropropane | 10.75 | 77 | 369463 | 47.81 ug/L | 98 |
| 25) 2-butanone | 10.75 | 72 | 53466 | 202.55 ug/L | 90 |
| 26) cis-1,2-Dichloroethene | 10.77 | 96 | 344286 | 50.82 ug/L | 96 |
| 27) Bromochloromethane | 11.14 | 128 | 123320 | 47.09 ug/L | 91 |
| 28) Chloroform | 11.19 | 83 | 533292 | 48.21 ug/L | 97 |
| 29) Pentafluorobenzene | 11.41 | 168 | 130856 | 19.76 ug/L | 98 |
| 31) 1,1,1-Trichloroethane | 11.47 | 97 | 409475 | 50.04 ug/L | 95 |
| 32) Carbon Tetrachloride | 11.68 | 117 | 323882 | 51.11 ug/L | 98 |
| 33) 1,1-Dichloropropene | 11.70 | 75 | 401447 | 51.27 ug/L | 97 |
| 34) Benzene | 12.01 | 78 | 1087379 | 52.59 ug/L | 99 |
| 35) TAME | 12.02 | 73 | 582679 | 48.52 ug/L | 95 |

gm 5-30-02

(#) = qualifier out of range (m) = manual integration

Data File : J:\MS03\MAY02\MAY2802\28MAY022.D
Acq On : 28 May 102 9:22 pm
Sample : 50/200/400 ppb ical 052802
Misc :
Quant Time: May 29 10:52 19102

Vial: 10
Operator: dnh
Inst : MS03
Multiplr: 1.00

Method : J:\MS03\METHODS\82600528.M
Title : Volatiles by GC/MS
Last Update : Wed May 29 11:09:49 2002
Response via : Multiple Level Calibration

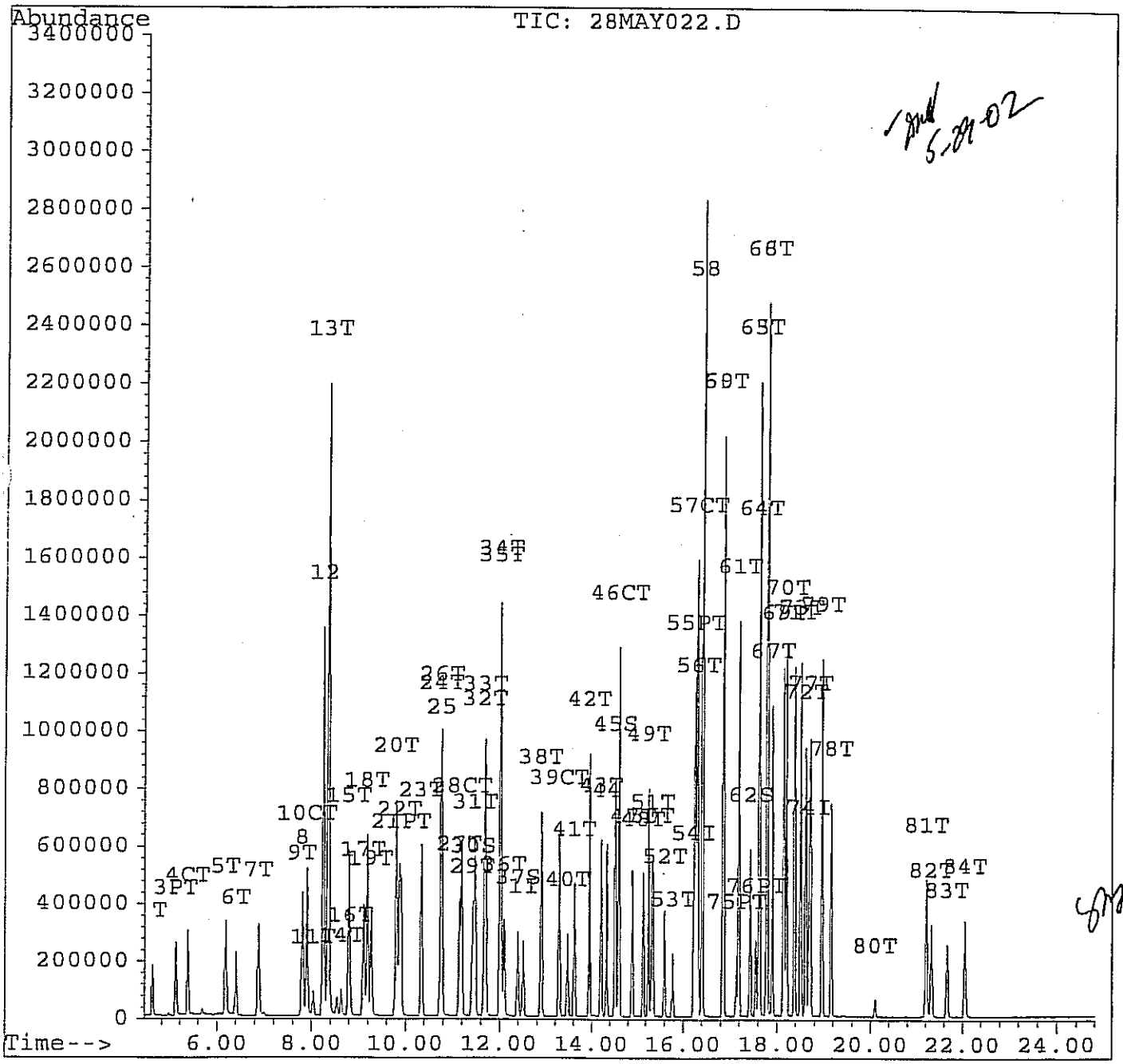
| | Compound | R.T. | QIon | Response | Conc Unit | | Qvalue |
|---|---|---|---|---|---|---|---|
| 36) | 1,2-Dichloroethane | 12.09 | 62 | 318262 | 44.02 ug/L | | 97 |
| 38) | Trichloroethene | 12.89 | 95 | 290882 | 49.51 ug/L | | 96 |
| 39) | 1,2-Dichloropropane | 13.28 | 63 | 281529 | 47.76 ug/L | | 96 |
| 40) | Dibromomethane | 13.47 | 93 | 148059 | 45.30 ug/L | | 94 |
| 41) | Bromodichloromethane | 13.62 | 83 | 348976 | 47.05 ug/L | | 99 |
| 42) | 2-Chloroethyl Vinyl Ether | 13.95 | 63 | 465653 | 202.36 ug/L | | 98 |
| 43) | cis-1,3-Dichloropropene | 14.21 | 75 | 393302 | 49.20 ug/L | | 97 |
| 44) | 4-methyl-2-pentanone | 14.33 | 100 | 58623 | 189.53 ug/L | # | 86 |
| 46) | Toluene | 14.61 | 92 | 638032 | 54.38 ug/L | | 99 |
| 47) | trans-1,3-Dichloropropene | 14.90 | 75 | 298546 | 49.27 ug/L | | 96 |
| 48) | 1,1,2-Trichloroethane | 15.13 | 83 | 147913 | 48.70 ug/L | | 99 |
| 49) | Tetrachloroethene | 15.25 | 164 | 181306 | 53.41 ug/L | | 99 |
| 50) | 2-Hexanone | 15.32 | 43 | 317174 | 186.28 ug/L | | 97 |
| 51) | 1,3-Dichloropropane | 15.35 | 76 | 293811 | 48.61 ug/L | | 98 |
| 52) | Dibromochloromethane | 15.59 | 129 | 188136 | 50.42 ug/L | | 97 |
| 53) | 1,2-Dibromoethane | 15.78 | 107 | 151805 | 48.29 ug/L | | 98 |
| 55) | Chlorobenzene | 16.25 | 112 | 609029 | 54.56 ug/L | | 98 |
| 56) | 1,1,1,2-Tetrachloroethane | 16.32 | 131 | 210356 | 53.22 ug/L | | 99 |
| 57) | Ethylbenzene | 16.29 | 91 | 1127647 | 58.31 ug/L | | 100 |
| 58) | m&p-xylene | 16.41 | 106 | 821602 | 95.99 ug/L | | 96 |
| 59) | o-Xylene | 16.85 | 106 | 380850 | 47.78 ug/L | | 95 |
| 60) | Styrene | 16.86 | 104 | 669298 | 48.17 ug/L | | 98 |
| 61) | Isopropylbenzene | 17.19 | 105 | 982448 | 49.52 ug/L | | 99 |
| 63) | Bromobenzene | 17.63 | 156 | 234875 | 61.50 ug/L | | 96 |
| 64) | 1,2,3-Trichloropropane | 17.64 | 75 | 159768 | 48.18 ug/L | # | 80 |
| 65) | n-Propylbenzene | 17.62 | 91 | 1262199 | 48.68 ug/L | | 100 |
| 66) | 2-Chlorotoluene | 17.79 | 91 | 851032 | 48.81 ug/L | | 98 |
| 67) | 4-Chlorotoluene | 17.91 | 91 | 718905 | 58.06 ug/L | | 99 |
| 68) | 1,3,5-Trimethylbenzene | 17.79 | 105 | 844318 | 49.14 ug/L | | 98 |
| 69) | tert-Butylbenzene | 18.14 | 119 | 613515 | 49.06 ug/L | | 99 |
| 70) | 1,2,4-Trimethylbenzene | 18.20 | 105 | 823832 | 49.63 ug/L | | 99 |
| 71) | sec-Butylbenzene | 18.37 | 105 | 1014922 | 49.38 ug/L | | 100 |
| 72) | 1,3-Dichlorobenzene | 18.60 | 146 | 423534 | 59.91 ug/L | | 98 |
| 73) | 4-Isopropyltoluene | 18.50 | 119 | 820591 | 49.53 ug/L | | 100 |
| 75) | Bromoform | 17.14 | 173 | 95332 | 50.91 ug/L | | 94 |
| 76) | 1,1,2,2-Tetrachloroethane | 17.55 | 83 | 154374 | 47.90 ug/L | | 99 |
| 77) | 1,4-Dichlorobenzene | 18.71 | 146 | 418602 | 50.34 ug/L | | 98 |
| 78) | 1,2-Dichlorobenzene | 19.15 | 146 | 350170 | 52.85 ug/L | | 98 |
| 79) | n-Butylbenzene | 18.95 | 91 | 846545 | 56.03 ug/L | | 99 |
| 80) | 1,2-Dibromo-3-chloropropan | 20.11 | 75 | 18793 | 47.82 ug/L | | 92 |
| 81) | 1,2,4-Trichlorobenzene | 21.21 | 180 | 200554 | 51.18 ug/L | | 99 |
| 82) | Hexachlorobutadiene | 21.32 | 225 | 79520 | 53.50 ug/L | | 96 |
| 83) | Naphthalene | 21.66 | 128 | 291206 | 50.56 ug/L | | 99 |
| 84) | 1,2,3-Trichlorobenzene | 22.05 | 180 | 152644 | 50.47 ug/L | | 99 |

(#) = qualifier out of range (m) = manual integration

Data File : J:\MS03\MAY02\MAY2802\28MAY022.D
Acq On : 28 May 102 9:22 pm
Sample : 50/200/400 ppb ical 052802
Misc :
Quant Time: May 29 10:52 19102

Vial: 10
Operator: dnh
Inst : MS03
Multiplr: 1.00

Method : J:\MS03\METHODS\82600528.M
Title : Volatiles by GC/MS
Last Update : Wed May 29 11:09:49 2002
Response via : Multiple Level Calibration



Data File : J:\MS03\MAY02\MAY2802\28MAY023.D
Acq On : 28 May 102 9:52 pm
Sample : 100/400/800 ppb ical 052802
Misc :
Quant Time: May 29 11:13 19102

Vial: 11
Operator: dnh
Inst : MS03
Multiplr: 1.00

Method : J:\MS03\METHODS\82600528.M
Title : Volatiles by GC/MS
Last Update : Wed May 29 11:09:49 2002
Response via : Multiple Level Calibration

✓ pnd 5-29-02

| Internal Standards | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 1) 1,4-Difluorobenzene | 12.51 | 114 | 265986 | 20.00 | ug/L | 0.01 |
| 54) Chlorobenzene-d5 | 16.22 | 117 | 219701 | 20.00 | ug/L | 0.00 |
| 74) 1,4-Dichlorobenzene-d4 | 18.68 | 152 | 106356 | 20.00 | ug/L | 0.00 |
| **System Monitoring Compounds** | | | | | | %Recovery |
| 30) Dibromofluoromethane | 11.44 | 113 | 288264 | 52.13 | ug/L | 260.66% |
| 37) Fluorobenzene | 12.39 | 96 | 338460 | 20.04 | ug/L | 100.22% |
| 45) Toluene-d8 | 14.52 | 98 | 757550 | 57.89 | ug/L | 289.47% |
| 62) 4-Bromofluorobenzene | 17.44 | 95 | 282725 | 58.75 | ug/L | 293.74% |
| **Target Compounds** | | | | | | Qvalue |
| 2) Dichlorodifluoromethane | 4.60 | 85 | 397961 | 96.03 | ug/L | 97 |
| 3) Chloromethane | 5.11 | 50 | 700745 | 92.76 | ug/L | 99 |
| 4) Vinyl Chloride | 5.37 | 62 | 767444 | 90.91 | ug/L | 99 |
| 5) Bromomethane | 6.18 | 94 | 630498 | 89.48 | ug/L | 93 |
| 6) Chloroethane | 6.40 | 64 | 494784 | 87.53 | ug/L | 92 |
| 7) Trichlorofluoromethane | 6.88 | 101 | 751844 | 96.07 | ug/L | 99 |
| 8) 1,1,2-trichloro-1,2,2-trif | 7.82 | 101 | 544502 | 103.21 | ug/L | 98 |
| 9) Acrolein | 7.79 | 56 | 189559 | 769.98 | ug/L | 86 |
| 10) 1,1-Dichloroethene | 7.91 | 96 | 536661 | 102.72 | ug/L | 99 |
| 11) Acetone | 8.04 | 58 | 75378 | 399.43 | ug/L | 97 |
| 12) Iodomethane | 8.25 | 142 | 4210455 | 473.28 | ug/L | 93 |
| 13) Carbon Disulfide | 8.36 | 76 | 8992355 | 439.30 | ug/L | 100 |
| 14) Acetonitrile | 8.63 | 41 | 233634 | 700.06 | ug/L m | 81 |
| 15) Methylene Chloride | 8.80 | 84 | 652679 | 95.08 | ug/L | 99 |
| 16) t-Butanol | 8.84 | 59 | 164415 | 438.67 | ug/L | 93 |
| 17) Methyl tert-Butyl Ether | 9.10 | 73 | 1004733 | 92.30 | ug/L | 98 |
| 18) trans-1,2-Dichloroethene | 9.18 | 96 | 637025 | 101.46 | ug/L | 99 |
| 19) Acrylonitrile | 9.26 | 53 | 664804 | 704.02 | ug/L | 99 |
| 20) DIPE | 9.80 | 45 | 1922086 | 95.51 | ug/L | 99 |
| 21) 1,1-Dichloroethane | 9.90 | 63 | 1124073 | 98.65 | ug/L | 98 |
| 22) Vinyl Acetate | 9.86 | 43 | 1797537 | 349.43 | ug/L | 99 |
| 23) ETBE | 10.34 | 59 | 1469734 | 95.95 | ug/L | 99 |
| 24) 2,2-Dichloropropane | 10.75 | 77 | 764364 | 96.51 | ug/L | 99 |
| 25) 2-butanone | 10.75 | 72 | 107062 | 398.62 | ug/L # | 87 |
| 26) cis-1,2-Dichloroethene | 10.78 | 96 | 720678 | 103.79 | ug/L | 98 |
| 27) Bromochloromethane | 11.14 | 128 | 259429 | 96.67 | ug/L | 95 |
| 28) Chloroform | 11.19 | 83 | 1124168 | 99.17 | ug/L | 99 |
| 29) Pentafluorobenzene | 11.41 | 168 | 142746 | 21.03 | ug/L | 98 |
| 31) 1,1,1-Trichloroethane | 11.48 | 97 | 862043 | 102.79 | ug/L | 98 |
| 32) Carbon Tetrachloride | 11.68 | 117 | 693465 | 106.78 | ug/L | 99 |
| 33) 1,1-Dichloropropene | 11.70 | 75 | 864818 | 107.76 | ug/L | 98 |
| 34) Benzene | 12.01 | 78 | 2335779 | 110.23 | ug/L | 97 |
| 35) TAME | 12.02 | 73 | 1214073 | 98.64 | ug/L | 94 |

(#) = qualifier out of range (m) = manual integration

5-30-02

Data File : J:\MS03\MAY02\MAY2802\28MAY023.D
Acq On : 28 May 102 9:52 pm
Sample : 100/400/800 ppb ical 052802
Misc :
Quant Time: May 29 11:13 19102

Vial: 11
Operator: dnh
Inst : MS03
Multiplr: 1.00

Method : J:\MS03\METHODS\82600528.M
Title : Volatiles by GC/MS
Last Update : Wed May 29 11:09:49 2002
Response via : Multiple Level Calibration

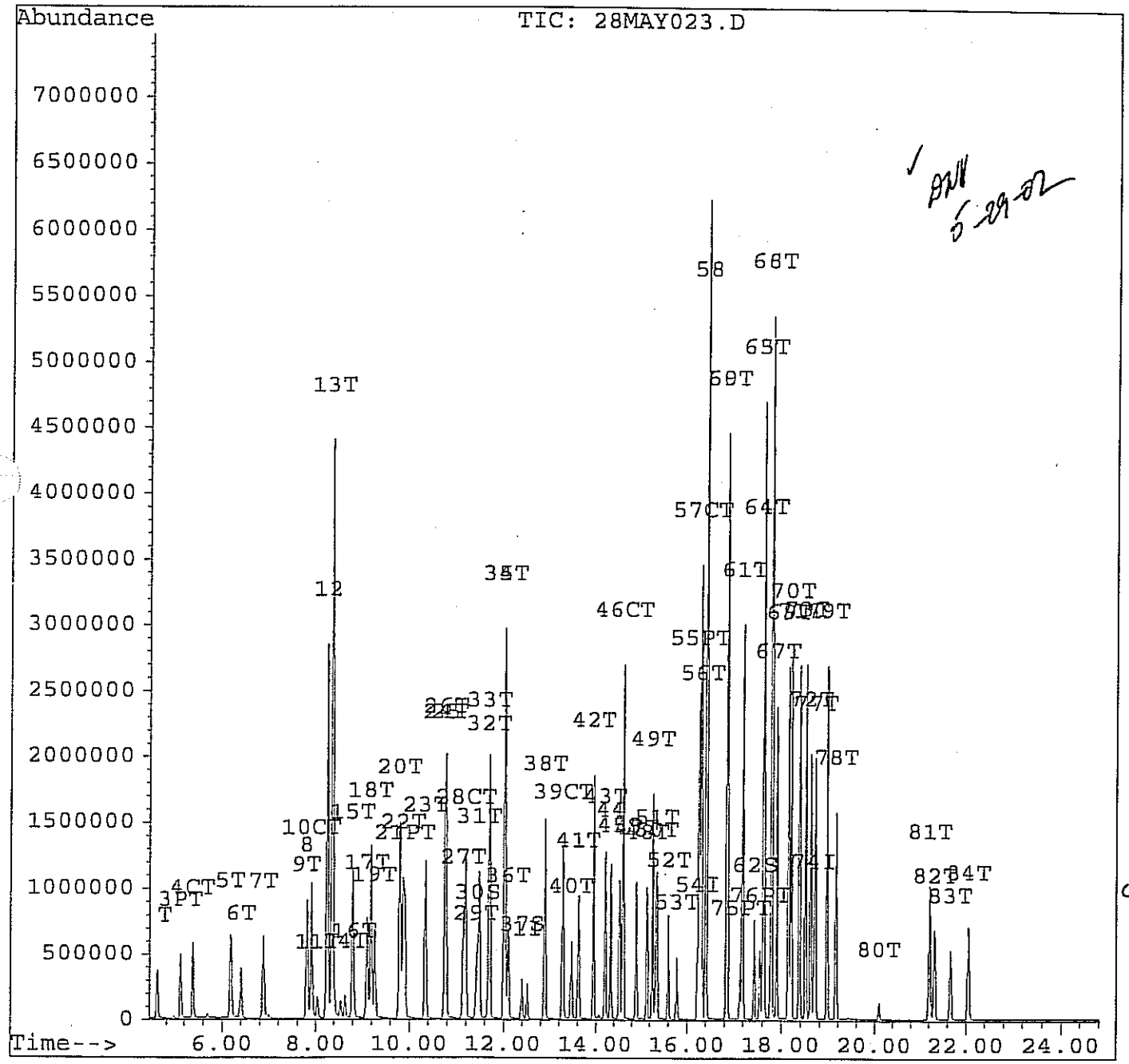
| Compound | R.T. | QIon | Response | Conc Unit | Qvalue |
|---|---|---|---|---|---|
| 36) 1,2-Dichloroethane | 12.09 | 62 | 642932 | 86.77 ug/L | 98 |
| 38) Trichloroethene | 12.89 | 95 | 633708 | 105.25 ug/L | 98 |
| 39) 1,2-Dichloropropane | 13.28 | 63 | 602719 | 99.76 ug/L | 97 |
| 40) Dibromomethane | 13.47 | 93 | 310516 | 92.69 ug/L | 96 |
| 41) Bromodichloromethane | 13.62 | 83 | 742275 | 97.65 ug/L | 98 |
| 42) 2-Chloroethyl Vinyl Ether | 13.95 | 63 | 962579 | 408.16 ug/L | 99 |
| 43) cis-1,3-Dichloropropene | 14.21 | 75 | 834911 | 101.90 ug/L | 99 |
| 44) 4-methyl-2-pentanone | 14.33 | 100 | 121849 | 384.38 ug/L # | 91 |
| 46) Toluene | 14.61 | 92 | 1359144 | 113.04 ug/L | 98 |
| 47) trans-1,3-Dichloropropene | 14.90 | 75 | 612171 | 98.57 ug/L | 98 |
| 48) 1,1,2-Trichloroethane | 15.13 | 83 | 299689 | 96.28 ug/L | 98 |
| 49) Tetrachloroethene | 15.25 | 164 | 407389 | 117.11 ug/L | 99 |
| 50) 2-Hexanone | 15.33 | 43 | 634776 | 363.77 ug/L | 99 |
| 51) 1,3-Dichloropropane | 15.35 | 76 | 613006 | 98.96 ug/L | 99 |
| 52) Dibromochloromethane | 15.60 | 129 | 412754 | 107.93 ug/L | 98 |
| 53) 1,2-Dibromoethane | 15.78 | 107 | 337893 | 104.88 ug/L | 99 |
| 55) Chlorobenzene | 16.25 | 112 | 1333327 | 111.46 ug/L | 98 |
| 56) 1,1,1,2-Tetrachloroethane | 16.32 | 131 | 461537 | 108.96 ug/L | 98 |
| 57) Ethylbenzene | 16.29 | 91 | 2470258 | 119.20 ug/L | 99 |
| 58) m&p-xylene | 16.41 | 106 | 1893098 | 202.99 ug/L | 94 |
| 59) o-Xylene | 16.85 | 106 | 883352 | 101.61 ug/L | 95 |
| 60) Styrene | 16.86 | 104 | 1536255 | 101.43 ug/L | 97 |
| 61) Isopropylbenzene | 17.19 | 105 | 2169681 | 100.71 ug/L | 99 |
| 63) Bromobenzene | 17.63 | 156 | 524735 | 128.21 ug/L | 99 |
| 64) 1,2,3-Trichloropropane | 17.64 | 75 | 329638 | 92.77 ug/L # | 69 |
| 65) n-Propylbenzene | 17.62 | 91 | 2847964 | 101.08 ug/L | 99 |
| 66) 2-Chlorotoluene | 17.79 | 91 | 1908175 | 100.91 ug/L | 97 |
| 67) 4-Chlorotoluene | 17.91 | 91 | 1590213 | 119.85 ug/L | 99 |
| 68) 1,3,5-Trimethylbenzene | 17.79 | 105 | 1881867 | 100.82 ug/L | 96 |
| 69) tert-Butylbenzene | 18.14 | 119 | 1370318 | 100.91 ug/L | 98 |
| 70) 1,2,4-Trimethylbenzene | 18.20 | 105 | 1806737 | 100.50 ug/L | 99 |
| 71) sec-Butylbenzene | 18.38 | 105 | 2239437 | 100.60 ug/L | 99 |
| 72) 1,3-Dichlorobenzene | 18.60 | 146 | 930547 | 122.85 ug/L | 99 |
| 73) 4-Isopropyltoluene | 18.50 | 119 | 1806125 | 100.55 ug/L | 99 |
| 75) Bromoform | 17.14 | 173 | 198261 | 100.35 ug/L | 95 |
| 76) 1,1,2,2-Tetrachloroethane | 17.55 | 83 | 310408 | 91.29 ug/L | 98 |
| 77) 1,4-Dichlorobenzene | 18.71 | 146 | 913480 | 104.12 ug/L | 99 |
| 78) 1,2-Dichlorobenzene | 19.15 | 146 | 751178 | 107.45 ug/L | 99 |
| 79) n-Butylbenzene | 18.95 | 91 | 1833613 | 115.03 ug/L | 99 |
| 80) 1,2-Dibromo-3-chloropropan | 20.10 | 75 | 41665 | 101.31 ug/L | 94 |
| 81) 1,2,4-Trichlorobenzene | 21.22 | 180 | 446678 | 108.03 ug/L | 100 |
| 82) Hexachlorobutadiene | 21.32 | 225 | 174729 | 111.41 ug/L | 98 |
| 83) Naphthalene | 21.67 | 128 | 633579 | 104.26 ug/L | 99 |
| 84) 1,2,3-Trichlorobenzene | 22.05 | 180 | 339472 | 106.39 ug/L | 99 |

(#) = qualifier out of range (m) = manual integration

Data File : J:\MS03\MAY02\MAY2802\28MAY023.D
Acq On : 28 May 102 9:52 pm
Sample : 100/400/800 ppb ical 052802
Misc :
Quant Time: May 29 11:13 19102

Vial: 11
Operator: dnh
Inst : MS03
Multiplr: 1.00

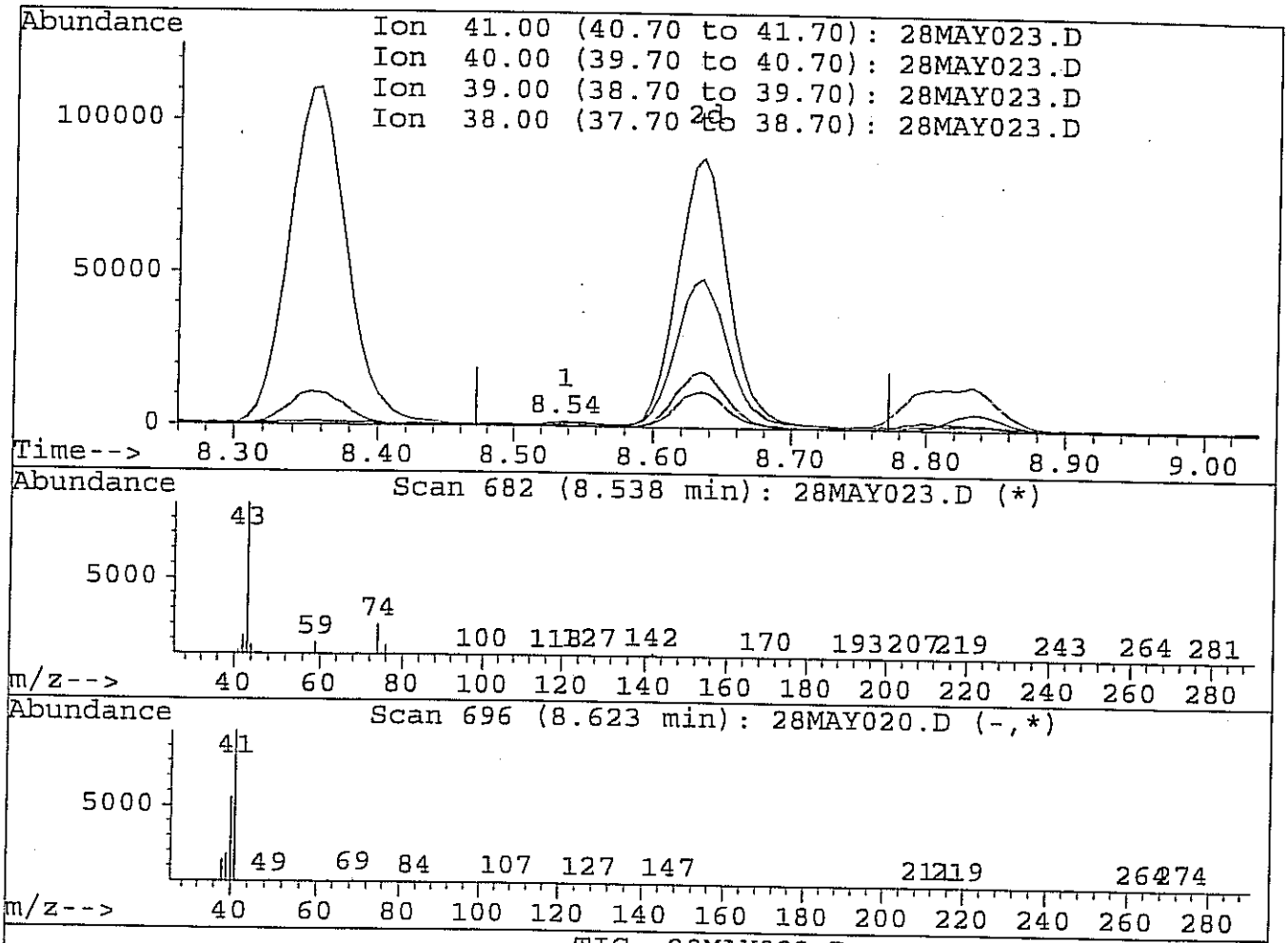
Method : J:\MS03\METHODS\82600528.M
Title : Volatiles by GC/MS
Last Update : Wed May 29 11:09:49 2002
Response via : Multiple Level Calibration



Data File : J:\MS03\MAY02\MAY2802\28MAY023.D
Acq On : 28 May 102 9:52 pm
Sample : 100/400/800 ppb ical 052802
Misc :
Quant Time: May 29 10:52 19102

Vial: 11
Operator: dnh
Inst : MS03
Multiplr: 1.00

Method : J:\MS03\METHODS\82600528.M
Title : Volatiles by GC/MS
Last Update : Wed May 29 10:35:03 2002
Response via : Multiple Level Calibration




(14) Acetonitrile (T)
8.54min 10.95ug/L
response 3654

| Ion | Exp% | Act% |
|---|---|---|
| 41.00 | 100 | 100 |
| 40.00 | 24.30 | 12.38 |
| 39.00 | 7.20 | 5.85 |
| 38.00 | 0.00 | 8.85 |

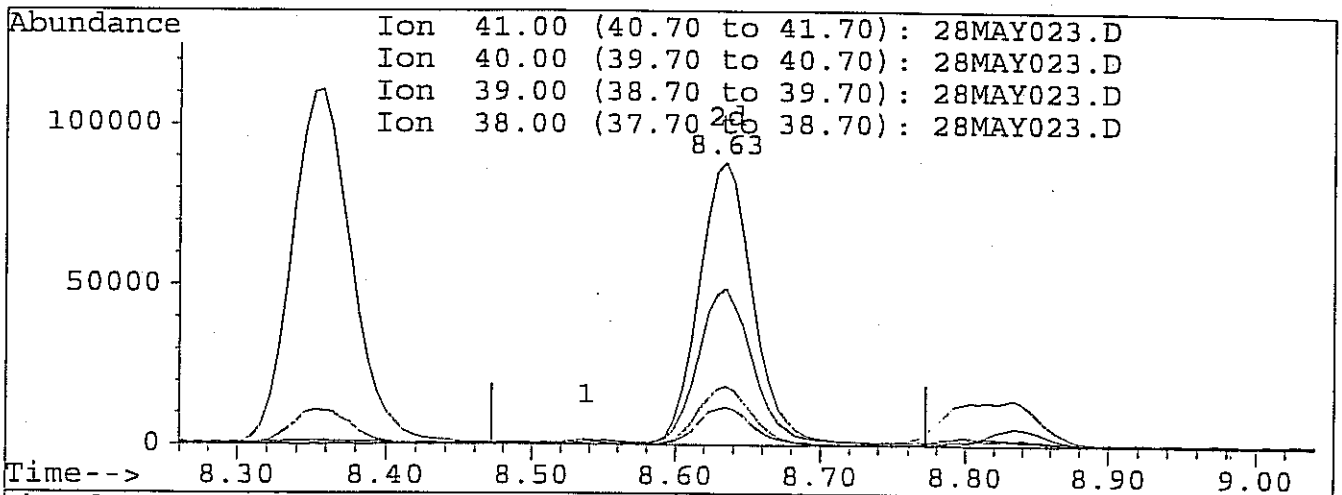
ORIGINAL

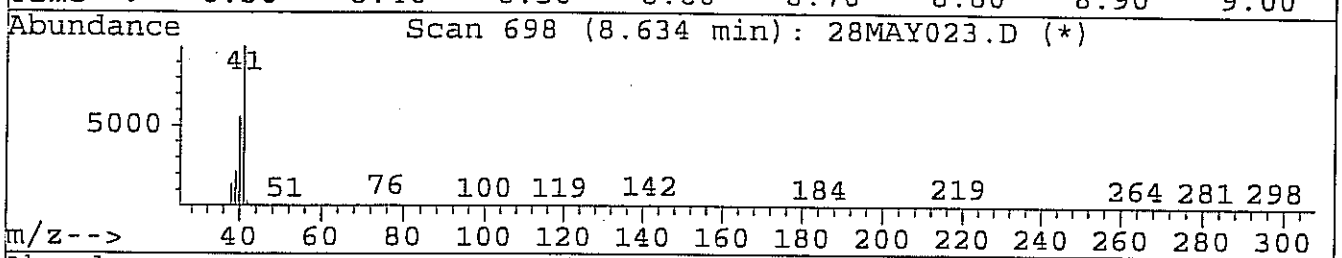
28MAY023.D 82600528.M Wed May 29 11:06:51 2002

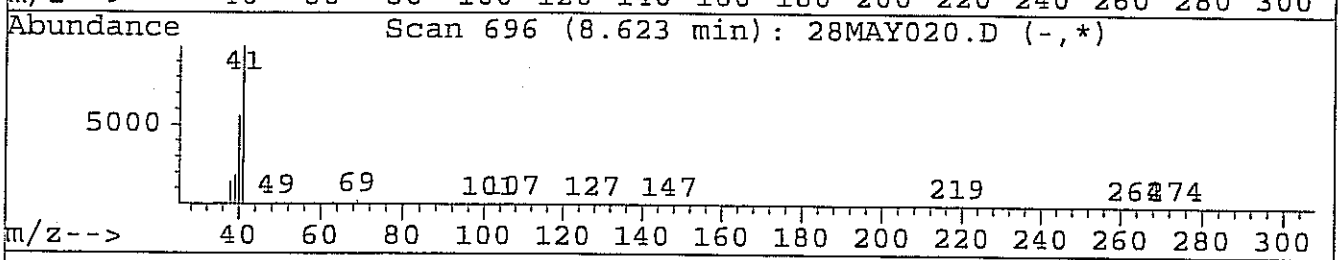
Data File : J:\MS03\MAY02\MAY2802\28MAY023.D
Acq On : 28 May 102 9:52 pm
Sample : 100/400/800 ppb ical 052802
Misc :
Quant Time: May 29 11:13 19102

Vial: 11
Operator: dnh
Inst : MS03
Multiplr: 1.00

Method : J:\MS03\METHODS\82600528.M
Title : Volatiles by GC/MS
Last Update : Wed May 29 10:35:03 2002
Response via : Multiple Level Calibration




TIC: 28MAY023.D

(14) Acetonitrile (T)
8.63min 700.06ug/L m
response 233634

| Ion | Exp% | Act% |
|---|---|---|
| 41.00 | 100 | 100 |
| 40.00 | 24.30 | 55.34 |
| 39.00 | 7.20 | 20.98 |
| 38.00 | 0.00 | 13.46 |

Manual, & integration correct peak!
5-29-02

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

**Client:** GeoTrans
**Project:** Western Ave/#E049-106

**Service Request:** X2200452
**ICAL Date:** 05/28/2002
**Date Analyzed:** 05/28/2002

## Second Source Calibration Verification
## Volatile Organic Compounds

**ICAL Type:** Internal Standard
**Analysis Method:** 8260B

**ICAL ID:** CAL292
**Units:** ug/L

**File ID:** J:\MS03\MAY02\MAY2802\28MAY027.D

| Analyte Name | Expected | Result | Average RF | SSV RF | %D | %Drift | Criteria | Curve Fit |
|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | 10 | 11 | 0.312 | 0.340 | 9 | NA | ± 30 % | AverageRF |
| † Chloromethane | 10 | 9.9 | 0.568 | 0.561 | -1 | NA | ± 30 % | AverageRF |
| ‡ Vinyl Chloride | 10 | 9.4 | 0.635 | 0.598 | -6 | NA | ± 30 % | AverageRF |
| Bromomethane | 10 | 9.3 | 0.530 | 0.491 | -7 | NA | ± 30 % | AverageRF |
| Chloroethane | 10 | 9.4 | 0.425 | 0.399 | -6 | NA | ± 30 % | AverageRF |
| Trichlorofluoromethane | 10 | 9.6 | 0.588 | 0.565 | -4 | NA | ± 30 % | AverageRF |
| 1,1,2-Trichlorotrifluoroethane | 10 | 9.8 | 0.397 | 0.390 | -2 | NA | ± 30 % | AverageRF |
| ‡ 1,1-Dichloroethene | 10 | 7.7 | 0.393 | 0.303 | -23 | NA | ± 30 % | AverageRF |
| Acetone | 40 | 32 | 0.0203 | 0.0141 | NA | -20 | ± 30 % | Linear |
| Iodomethane | 40 | 37 | 0.669 | 0.620 | -7 | NA | ± 30 % | AverageRF |
| Carbon Disulfide | 40 | 37 | 1.54 | 1.43 | -7 | NA | ± 30 % | AverageRF |
| Methylene Chloride | 10 | 8.2 | 0.516 | 0.424 | -18 | NA | ± 30 % | AverageRF |
| Methyl tert-Butyl Ether | 10 | 8.8 | 0.818 | 0.721 | -12 | NA | ± 30 % | AverageRF |
| trans-1,2-Dichloroethene | 10 | 8.5 | 0.472 | 0.399 | -16 | NA | ± 30 % | AverageRF |
| † 1,1-Dichloroethane | 10 | 9.6 | 0.857 | 0.819 | -4 | NA | ± 30 % | AverageRF |
| [illegible]yl Acetate | 40 | 31 | 0.387 | 0.304 | -22 | NA | ± 30 % | AverageRF |
| [illegible],2-Dichloropropane | 10 | 8.4 | 0.596 | 0.502 | -16 | NA | ± 30 % | AverageRF |
| 2-Butanone (MEK) | 40 | 34 | 0.0234 | 0.0185 | NA | -15 | ± 30 % | Linear |
| cis-1,2-Dichloroethene | 10 | 8.9 | 0.522 | 0.464 | -11 | NA | ± 30 % | AverageRF |
| Bromochloromethane | 10 | 9.0 | 0.202 | 0.181 | -10 | NA | ± 30 % | AverageRF |
| ‡ Chloroform | 10 | 9.2 | 0.852 | 0.784 | -8 | NA | ± 30 % | AverageRF |
| 1,1,1-Trichloroethane | 10 | 9.2 | 0.631 | 0.580 | -8 | NA | ± 30 % | AverageRF |
| Carbon Tetrachloride | 10 | 9.2 | 0.488 | 0.448 | -8 | NA | ± 30 % | AverageRF |
| 1,1-Dichloropropene | 10 | 9.0 | 0.603 | 0.545 | -10 | NA | ± 30 % | AverageRF |
| Benzene | 10 | 9.4 | 1.59 | 1.49 | -6 | NA | ± 30 % | AverageRF |
| 1,2-Dichloroethane | 10 | 8.5 | 0.557 | 0.472 | -15 | NA | ± 30 % | AverageRF |
| Trichloroethene | 10 | 9.5 | 0.453 | 0.428 | -6 | NA | ± 30 % | AverageRF |
| ‡ 1,2-Dichloropropane | 10 | 9.1 | 0.454 | 0.415 | -9 | NA | ± 30 % | AverageRF |
| Dibromomethane | 10 | 8.8 | 0.252 | 0.222 | -12 | NA | ± 30 % | AverageRF |
| Bromodichloromethane | 10 | 9.5 | 0.572 | 0.544 | -5 | NA | ± 30 % | AverageRF |
| cis-1,3-Dichloropropene | 10 | 9.2 | 0.616 | 0.567 | -8 | NA | ± 30 % | AverageRF |
| 4-Methyl-2-pentanone (MIBK) | 40 | 35 | 0.0238 | 0.0210 | -12 | NA | ± 30 % | AverageRF |
| ‡ Toluene | 10 | 9.7 | 0.904 | 0.878 | -3 | NA | ± 30 % | AverageRF |
| trans-1,3-Dichloropropene | 10 | 9.1 | 0.467 | 0.423 | -9 | NA | ± 30 % | AverageRF |
| 1,1,2-Trichloroethane | 10 | 8.6 | 0.234 | 0.202 | -14 | NA | ± 30 % | AverageRF |
| Tetrachloroethene | 10 | 9.4 | 0.262 | 0.245 | -6 | NA | ± 30 % | AverageRF |
| 2-Hexanone | 40 | 32 | 0.131 | 0.106 | -19 | NA | ± 30 % | AverageRF |
| 1,3-Dichloropropane | 10 | 9.0 | 0.466 | 0.420 | -10 | NA | ± 30 % | AverageRF |
| Dibromochloromethane | 10 | 8.9 | 0.288 | 0.257 | -11 | NA | ± 30 % | AverageRF |

[illegible]lts flagged with an asterisk (*) indicate values outside control criteria.
[illegible]CC Compound ‡ CCC Compound

**Client:** GeoTrans
**Project:** Western Ave/#E049-106

**Service Request:** X2200452
**ICAL Date:** 05/28/2002
**Date Analyzed:** 05/28/2002

## Second Source Calibration Verification
## Volatile Organic Compounds

**ICAL Type:** Internal Standard
**Analysis Method:** 8260B

**ICAL ID:** CAL292
**Units:** ug/L

| Analyte Name | Expected | Result | Average RF | SSV RF | %D | %Drift | Criteria | Curve Fit |
|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromoethane | 10 | 8.8 | 0.242 | 0.212 | -12 | NA | ± 30 % | AverageRF |
| † Chlorobenzene | 10 | 9.3 | 1.09 | 1.01 | -8 | NA | ± 30 % | AverageRF |
| 1,1,1,2-Tetrachloroethane | 10 | 9.3 | 0.386 | 0.358 | -7 | NA | ± 30 % | AverageRF |
| ‡ Ethylbenzene | 10 | 9.7 | 1.89 | 1.82 | -3 | NA | ± 30 % | AverageRF |
| m,p-Xylenes | 20 | 18 | 0.666 | 0.646 | NA | -10 | ± 30 % | Linear |
| o-Xylene | 10 | 8.9 | 0.620 | 0.589 | NA | -11 | ± 30 % | Linear |
| Styrene | 10 | 8.8 | 1.06 | 1.02 | NA | -12 | ± 30 % | Linear |
| Isopropylbenzene | 10 | 8.8 | 1.55 | 1.51 | NA | -12 | ± 30 % | Linear |
| Bromobenzene | 10 | 9.7 | 0.373 | 0.363 | -3 | NA | ± 30 % | AverageRF |
| 1,2,3-Trichloropropane | 10 | 8.6 | 0.323 | 0.277 | -14 | NA | ± 30 % | AverageRF |
| n-Propylbenzene | 10 | 8.9 | 2.05 | 1.98 | NA | -11 | ± 30 % | Linear |
| 2-Chlorotoluene | 10 | 9.0 | 1.40 | 1.38 | NA | -10 | ± 30 % | Linear |
| 4-Chlorotoluene | 10 | 9.9 | 1.21 | 1.19 | -1 | NA | ± 30 % | AverageRF |
| 1,3,5-Trimethylbenzene | 10 | 8.9 | 1.32 | 1.31 | NA | -11 | ± 30 % | Linear |
| tert-Butylbenzene | 10 | 9.0 | 0.979 | 0.963 | NA | -11 | ± 30 % | Linear |
| 1,2,4-Trimethylbenzene | 10 | 8.9 | 1.32 | 1.29 | NA | -12 | ± 30 % | Linear |
| sec-Butylbenzene | 10 | 8.8 | 1.63 | 1.59 | NA | -12 | ± 30 % | Linear |
| [illegible]-Dichlorobenzene | 10 | 9.9 | 0.690 | 0.683 | -1 | NA | ± 30 % | AverageRF |
| [illegible]sopropyltoluene | 10 | 8.9 | 1.29 | 1.29 | NA | -11 | ± 30 % | Linear |
| † Bromoform | 10 | 8.3 | 0.372 | 0.308 | -17 | NA | ± 30 % | AverageRF |
| † 1,1,2,2-Tetrachloroethane | 10 | 8.3 | 0.639 | 0.530 | -17 | NA | ± 30 % | AverageRF |
| 1,4-Dichlorobenzene | 10 | 9.4 | 1.65 | 1.54 | -7 | NA | ± 30 % | AverageRF |
| 1,2-Dichlorobenzene | 10 | 9.5 | 1.31 | 1.25 | -5 | NA | ± 30 % | AverageRF |
| n-Butylbenzene | 10 | 9.9 | 3.00 | 2.97 | -1 | NA | ± 30 % | AverageRF |
| 1,2-Dibromo-3-chloropropane | 10 | 10 | 0.0889 | 0.0862 | NA | 5 | ± 30 % | Linear |
| 1,2,4-Trichlorobenzene | 10 | 9.0 | 0.778 | 0.702 | -10 | NA | ± 30 % | AverageRF |
| Hexachlorobutadiene | 10 | 10 | 0.295 | 0.300 | 2 | NA | ± 30 % | AverageRF |
| Naphthalene | 10 | 8.7 | 1.14 | 0.994 | -13 | NA | ± 30 % | AverageRF |
| 1,2,3-Trichlorobenzene | 10 | 9.1 | 0.600 | 0.544 | -9 | NA | ± 30 % | AverageRF |

[illegible]ults flagged with an asterisk (*) indicate values outside control criteria.
[illegible]CC Compound ‡ CCC Compound

Data File : J:\MS03\MAY02\MAY2802\28MAY027.D
Acq On : 28 May 102 11:51 pm
Sample : 10/40/80 ppb icv 052802
Misc :
Quant Time: May 29 12:18 19102

Vial: 12
Operator: dnh
Inst : MS03
Multiplr: 1.00

Method : J:\MS03\METHODS\82600528.M
Title : Volatiles by GC/MS
Last Update : Wed May 29 12:10:58 2002
Response via : Multiple Level Calibration

✓ DNH 5-29-02

| Internal Standards | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|
| 1) 1,4-Difluorobenzene | 12.51 | 114 | 242858 | 20.00 ug/L | 0.01 |
| 54) Chlorobenzene-d5 | 16.21 | 117 | 195232 | 20.00 ug/L | 0.00 |
| 74) 1,4-Dichlorobenzene-d4 | 18.68 | 152 | 88933 | 20.00 ug/L | 0.00 |
| **System Monitoring Compounds** | | | | | %Recovery |
| 30) Dibromofluoromethane | 11.43 | 113 | 90255 | 17.88 ug/L | 89.38% |
| 37) Fluorobenzene | 12.39 | 96 | 305556 | 19.82 ug/L | 99.09% |
| 45) Toluene-d8 | 14.52 | 98 | 241554 | 20.22 ug/L | 101.09% |
| 62) 4-Bromofluorobenzene | 17.43 | 95 | 82427 | 19.27 ug/L | 96.37% |
| **Target Compounds** | | | | | Qvalue |
| 2) Dichlorodifluoromethane | 4.60 | 85 | 41293 | 10.91 ug/L | 97 |
| 3) Chloromethane | 5.11 | 50 | 68109 | 9.87 ug/L | 99 |
| 4) Vinyl Chloride | 5.37 | 62 | 72634 | 9.42 ug/L | 96 |
| 5) Bromomethane | 6.18 | 94 | 59639 | 9.27 ug/L | 92 |
| 6) Chloroethane | 6.40 | 64 | 48488 | 9.39 ug/L | 92 |
| 7) Trichlorofluoromethane | 6.88 | 101 | 68625 | 9.60 ug/L | 98 |
| 8) 1,1,2-trichloro-1,2,2-trif | 7.81 | 101 | 47389 | 9.84 ug/L | 97 |
| 9) Acrolein | 7.79 | 56 | 13529 | 60.19 ug/L | 91 |
| 10) 1,1-Dichloroethene | 7.91 | 96 | 36849 | 7.73 ug/L | 91 |
| 11) Acetone | 8.04 | 58 | 6869 | 32.07 ug/L | 96 |
| 12) Iodomethane | 8.24 | 142 | 300997 | 37.06 ug/L | 99 |
| 13) Carbon Disulfide | 8.35 | 76 | 692965 | 37.08 ug/L | 100 |
| 14) Acetonitrile | 8.63 | 41 | 20969 | 68.98 ug/L | 47 |
| 15) Methylene Chloride | 8.80 | 84 | 51493 | 8.22 ug/L | 96 |
| 16) t-Butanol | 8.83 | 59 | 7946 | 46.44 ug/L | 97 |
| 17) Methyl tert-Butyl Ether | 9.10 | 73 | 87534 | 8.81 ug/L | 95 |
| 18) trans-1,2-Dichloroethene | 9.18 | 96 | 48426 | 8.45 ug/L | 97 |
| 19) Acrylonitrile | 9.26 | 53 | 57961 | 67.23 ug/L | 98 |
| 20) DIPE | 9.79 | 45 | 174654 | 9.51 ug/L | 98 |
| 21) 1,1-Dichloroethane | 9.90 | 63 | 99469 | 9.56 ug/L | 98 |
| 22) Vinyl Acetate | 9.86 | 43 | 147422 | 31.39 ug/L | 98 |
| 23) ETBE | 10.34 | 59 | 126235 | 9.03 ug/L | 98 |
| 24) 2,2-Dichloropropane | 10.75 | 77 | 60924 | 8.42 ug/L | 99 |
| 25) 2-butanone | 10.75 | 72 | 9006 | 33.99 ug/L | 93 |
| 26) cis-1,2-Dichloroethene | 10.77 | 96 | 56356 | 8.89 ug/L | 93 |
| 27) Bromochloromethane | 11.14 | 128 | 21949 | 8.96 ug/L # | 87 |
| 28) Chloroform | 11.18 | 83 | 95141 | 9.19 ug/L | 95 |
| 29) Pentafluorobenzene | 11.41 | 168 | 125273 | 20.22 ug/L | 99 |
| 31) 1,1,1-Trichloroethane | 11.47 | 97 | 70432 | 9.20 ug/L | 95 |
| 32) Carbon Tetrachloride | 11.67 | 117 | 54367 | 9.17 ug/L | 97 |
| 33) 1,1-Dichloropropene | 11.70 | 75 | 66151 | 9.03 ug/L | 95 |
| 34) Benzene | 12.00 | 78 | 181117 | 9.36 ug/L | 100 |
| 35) TAME | 12.02 | 73 | 100760 | 8.97 ug/L | 98 |

GMJ 5-30-02

(#) = qualifier out of range (m) = manual integration

Data File : J:\MS03\MAY02\MAY2802\28MAY027.D
Acq On : 28 May 102 11:51 pm
Sample : 10/40/80 ppb icv 052802
Misc :
Quant Time: May 29 12:18 19102

Vial: 12
Operator: dnh
Inst : MS03
Multiplr: 1.00

Method : J:\MS03\METHODS\82600528.M
Title : Volatiles by GC/MS
Last Update : Wed May 29 12:10:58 2002
Response via : Multiple Level Calibration

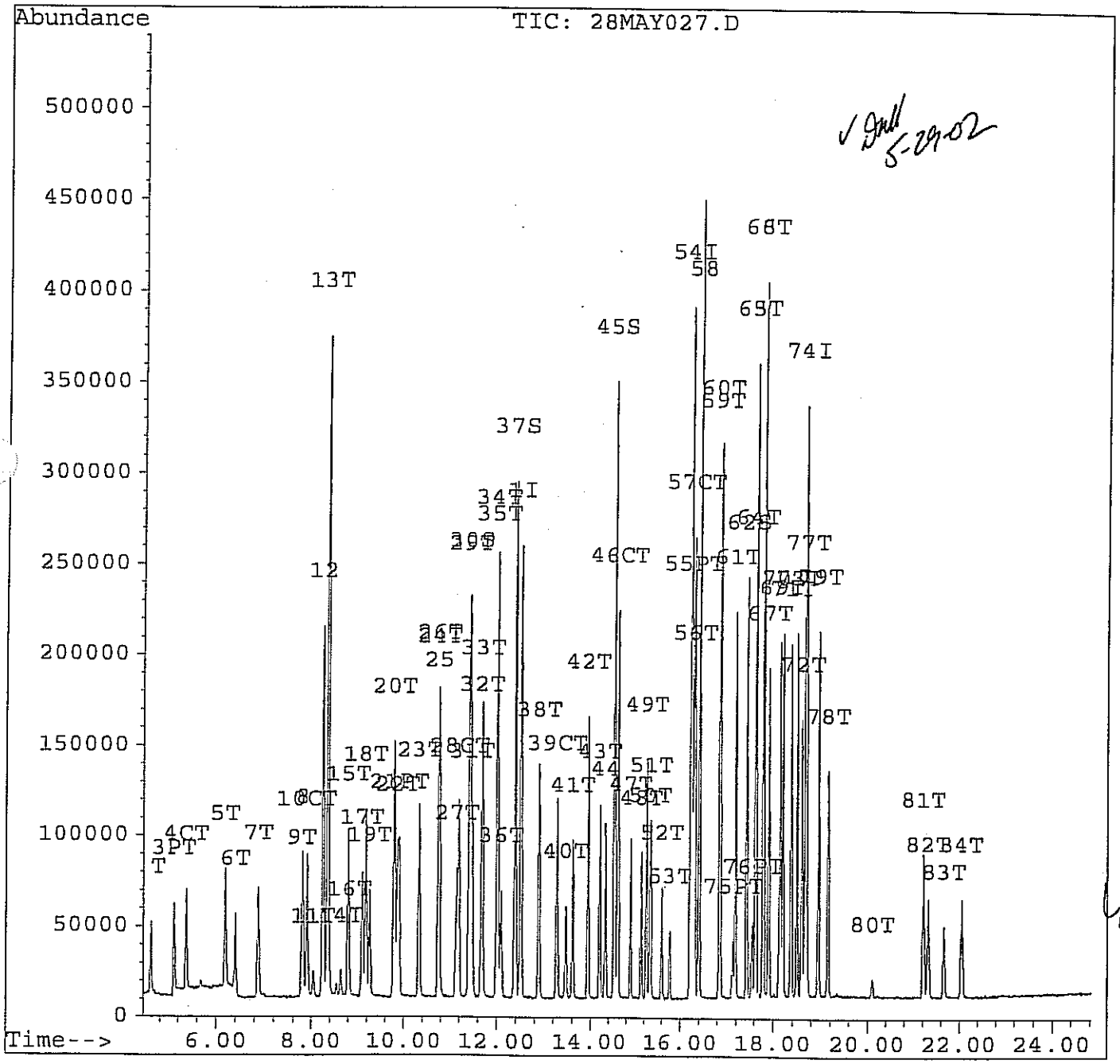
| Compound | R.T. | QIon | Response | Conc Unit | Qvalue |
|---|---|---|---|---|---|
| 36) 1,2-Dichloroethane | 12.09 | 62 | 57323 | 8.47 ug/L | 97 |
| 38) Trichloroethene | 12.89 | 95 | 51941 | 9.45 ug/L | 97 |
| 39) 1,2-Dichloropropane | 13.28 | 63 | 50397 | 9.14 ug/L | 97 |
| 40) Dibromomethane | 13.46 | 93 | 26901 | 8.80 ug/L | 92 |
| 41) Bromodichloromethane | 13.62 | 83 | 66052 | 9.52 ug/L | 97 |
| 42) 2-Chloroethyl Vinyl Ether | 13.95 | 63 | 75707 | 35.16 ug/L | 97 |
| 43) cis-1,3-Dichloropropene | 14.21 | 75 | 68866 | 9.21 ug/L | 93 |
| 44) 4-methyl-2-pentanone | 14.33 | 100 | 10176 | 35.16 ug/L # | 93 |
| 46) Toluene | 14.61 | 92 | 106635 | 9.71 ug/L | 100 |
| 47) trans-1,3-Dichloropropene | 14.89 | 75 | 51373 | 9.06 ug/L | 91 |
| 48) 1,1,2-Trichloroethane | 15.13 | 83 | 24563 | 8.64 ug/L | 93 |
| 49) Tetrachloroethene | 15.25 | 164 | 29699 | 9.35 ug/L | 98 |
| 50) 2-Hexanone | 15.32 | 43 | 51310 | 32.20 ug/L | 94 |
| 51) 1,3-Dichloropropane | 15.35 | 76 | 51018 | 9.02 ug/L | 96 |
| 52) Dibromochloromethane | 15.60 | 129 | 31227 | 8.94 ug/L | 94 |
| 53) 1,2-Dibromoethane | 15.77 | 107 | 25769 | 8.76 ug/L | 97 |
| 55) Chlorobenzene | 16.25 | 112 | 98319 | 9.25 ug/L | 97 |
| 56) 1,1,1,2-Tetrachloroethane | 16.32 | 131 | 34992 | 9.30 ug/L | 99 |
| 57) Ethylbenzene | 16.29 | 91 | 177743 | 9.65 ug/L | 98 |
| 58) m&p-xylene | 16.41 | 106 | 126132 | 17.97 ug/L | 97 |
| 59) o-Xylene | 16.84 | 106 | 57527 | 8.89 ug/L | 97 |
| 60) Styrene | 16.86 | 104 | 99239 | 8.80 ug/L | 97 |
| 61) Isopropylbenzene | 17.19 | 105 | 146995 | 8.84 ug/L | 97 |
| 63) Bromobenzene | 17.63 | 156 | 35389 | 9.73 ug/L | 95 |
| 64) 1,2,3-Trichloropropane | 17.64 | 75 | 27028 | 8.56 ug/L | 98 |
| 65) n-Propylbenzene | 17.62 | 91 | 193661 | 8.92 ug/L | 98 |
| 66) 2-Chlorotoluene | 17.79 | 91 | 134277 | 9.02 ug/L | 99 |
| 67) 4-Chlorotoluene | 17.90 | 91 | 116607 | 9.89 ug/L | 99 |
| 68) 1,3,5-Trimethylbenzene | 17.78 | 105 | 127641 | 8.89 ug/L | 98 |
| 69) tert-Butylbenzene | 18.14 | 119 | 94018 | 8.95 ug/L | 97 |
| 70) 1,2,4-Trimethylbenzene | 18.20 | 105 | 126210 | 8.85 ug/L | 98 |
| 71) sec-Butylbenzene | 18.37 | 105 | 154929 | 8.78 ug/L | 98 |
| 72) 1,3-Dichlorobenzene | 18.60 | 146 | 66705 | 9.91 ug/L | 96 |
| 73) 4-Isopropyltoluene | 18.50 | 119 | 125753 | 8.92 ug/L | 96 |
| 75) Bromoform | 17.14 | 173 | 13712 | 8.30 ug/L | 85 |
| 76) 1,1,2,2-Tetrachloroethane | 17.55 | 83 | 23552 | 8.28 ug/L | 100 |
| 77) 1,4-Dichlorobenzene | 18.70 | 146 | 68581 | 9.35 ug/L | 97 |
| 78) 1,2-Dichlorobenzene | 19.15 | 146 | 55640 | 9.52 ug/L | 95 |
| 79) n-Butylbenzene | 18.95 | 91 | 132088 | 9.91 ug/L | 98 |
| 80) 1,2-Dibromo-3-chloropropan | 20.10 | 75 | 3832 | 10.48 ug/L | 84 |
| 81) 1,2,4-Trichlorobenzene | 21.21 | 180 | 31199 | 9.02 ug/L | 97 |
| 82) Hexachlorobutadiene | 21.32 | 225 | 13339 | 10.17 ug/L | 97 |
| 83) Naphthalene | 21.66 | 128 | 44182 | 8.69 ug/L | 97 |
| 84) 1,2,3-Trichlorobenzene | 22.05 | 180 | 24188 | 9.07 ug/L | 99 |

(#) = qualifier out of range (m) = manual integration

Data File : J:\MS03\MAY02\MAY2802\28MAY027.D
Acq On : 28 May 102 11:51 pm
Sample : 10/40/80 ppb icv 052802
Misc :
Quant Time: May 29 12:18 19102

Vial: 12
Operator: dnh
Inst : MS03
Multiplr: 1.00

Method : J:\MS03\METHODS\82600528.M
Title : Volatiles by GC/MS
Last Update : Wed May 29 12:10:58 2002
Response via : Multiple Level Calibration




28MAY027.D 82600528.M Wed May 29 12:12:13 2002 Page 3

Method : J:\MS03\METHODS\82600528.M
Title : Volatiles by GC/MS
Last Update : Wed May 29 11:09:49 2002
Response via : Initial Calibration

| # | ID | Conc | ISTD Conc | Path\File |
|---|---|---|---|---|
| 1 | 0.5 | 1 | 20 | J:\MS03\MAY02\MAY2802\28MAY016.D |
| 2 | 1.0 | 1 | 20 | J:\MS03\MAY02\MAY2802\28MAY017.D |
| 3 | 2.0 | 2 | 20 | J:\MS03\MAY02\MAY2802\28MAY018.D |
| 4 | 5.0 | 5 | 20 | J:\MS03\MAY02\MAY2802\28MAY019.D |
| 5 | 10 | 10 | 20 | J:\MS03\MAY02\MAY2802\28MAY020.D |
| 6 | 20 | 20 | 20 | J:\MS03\MAY02\MAY2802\28MAY021.D |
| 7 | 50 | 50 | 20 | J:\MS03\MAY02\MAY2802\28MAY022.D |
| 8 | 100 | 100 | 20 | J:\MS03\MAY02\MAY2802\28MAY023.D |
| 9 | cc | 10 | 20 | J:\MS03\MAY02\MAY2802\28MAY020.D |

| # | ID | Update Time | Quant Time | Acquisition Time |
|---|---|---|---|---|
| 1 | 0.5 | May 29 09:33 2002 | May 29 09:33 19102 | 28 May 102 6:22 pm |
| 2 | 1.0 | May 29 09:34 2002 | May 29 09:33 19102 | 28 May 102 6:52 pm |
| 3 | 2.0 | May 29 09:34 2002 | May 29 09:33 19102 | 28 May 102 7:23 pm |
| 4 | 5.0 | May 29 09:34 2002 | May 29 09:34 19102 | 28 May 102 7:53 pm |
| 5 | 10 | May 29 09:34 2002 | May 29 09:34 19102 | 28 May 102 8:23 pm |
| 6 | 20 | May 29 09:34 2002 | May 29 09:34 19102 | 28 May 102 8:53 pm |
| 7 | 50 | May 29 09:34 2002 | May 29 09:34 19102 | 28 May 102 9:22 pm |
| [illegible] | 100 | May 29 09:35 2002 | May 29 09:34 19102 | 28 May 102 9:52 pm |
| [illegible] | cc | May 29 09:26 2002 | May 29 09:31 19102 | 28 May 102 8:23 pm |

82600528.M Wed May 29 11:22:29 2002

```
!This must be specified for each unique method.
!Change the following lines for your method criteria
!calcratio [target mass],[comparison mass],[lower limit(%)],[upper limit(%)]

      calcratio 51, 198, 30, 60
      calcratio 68,  69,  0,  2
      calcratio 69, 198,  0,100
      calcratio 70,  69,  0,  2
      calcratio 127,198, 40, 60
      calcratio 197,198,  0,  1
      calcratio 198,198,100,100
      calcratio 199,198,  5,  9
      calcratio 275,198, 10, 30
      calcratio 365,198,  1,100
      calcratio 441,443,  0.01,100
      calcratio 442,198, 40,100
      calcratio 443,442, 17, 23
    return

name init_parms
  lastprint$=" "
  method$="DFTPP"       ! method name.. (Appears at top of report)
  base_mass=198         ! basepeak for comparison.
  other_base=-1         ! set to value for alternate basepeak,-1 for none.
  n_comparisons=13      ! number of relative abundance comparisons to be made in "
print_ratios".
  return
```

```
!This must be specified for each unique method.
!Change the following lines for your method criteria
!calcratio [target mass],[comparison mass],[lower limit(%)],[upper limit(%)]

  calcratio  50,  95,  15.00,  40.00, 0
  calcratio  75,  95,  30.00,  80.00, 0
  calcratio  95,  95, 100.00, 100.00, 0
  calcratio  96,  95,   5.00,   9.00, 0
  calcratio 173, 174,   0.00,   2.00, 0
  calcratio 174,  95,  50.00, 200.00, 0
  calcratio 175, 174,   5.00,   9.00, 0
  calcratio 176, 174,  95.00, 101.00, 0
  calcratio 177, 176,   5.00,   9.00, 0
    REMOVE PRINT_RATIOS

name init_parms
  lastprint$=" "
  method$="BFB"      ! method name. (Appears at top of report)
  base_mass=95        ! basepeak for comparison.
  other_base=-1        ! set to value for alternate basepeak,-1 for none.
  n_comparisons=9     ! number of relative abundance comparisons to be made.

  REMOVE INIT_PARMS
```

```
!  Set the options for the desired output
Name TEMP
p_founds = 1       ! 0=print all spectra and/or EICP, 1 = print spectra for
                   !   compounds considered as founds
p_istd   = 0       ! 1=Print spectra for ISTD's
p_surr   = 0       ! 1=Print spectra for Surrogates (compound type = S)
mdl      = 0.0     ! Minimum Reporting Limit. Compounds with concentrations
                   ! less than this value will be considered not found
p_qual   = 1       ! report compounds whose qualifiers are out of range as
                   ! hits.  0 = do not report out of range as hit.
                   !        1 = report out of range as hit
p_scan   = 0       ! include scan# or quant ion in summary report
                   ! 0 = quant ion
                   ! 1 = scan number
p_sumsec = 0       ! Include secondary hits in the summary report
                   ! 0 = Do not include
                   ! 1 = Include
p_detail = 0       ! 0 = scan detailed report
                   ! 1 = sim  detailed report
tic_pages = 1      ! x = number of pages for printing of Total Ion
                   !     chromatogram.  0 = Do Not Print TIC
p_scaletime = 0.0  ! Use largest peak after scaletime for y scale
istd_dil = 0       ! Apply multiplier to Internal Standards
surr_dil = 0       ! Apply multiplier to Surrogates
targ_dil = 0       ! Apply multiplier to Target compounds
p_ionratio = 0     ! Include detailed spectral evaluation report
p_format = 0       ! Print the chromatograms in Portrait(0),Landscape(1) Mode
rem Temp
```

```
!   to be included in the continuing calibration report
!   This file can be edited using notepad to
!   uncomment items to be included in the report

name cc_options
   cc_per_low= 50.0    !Specifies the lower and upper area limits
   cc_per_hi = 200   !Specifies the lower and upper area limits
   cc_per_max = 35   !Specifies the maximum deviation in RF's
   cc_relresp_min = 0.1000 ! Specifies the minimum relatative response factor
   cc_level$ = " "   !Level identifier of initial level with same
                     !concentration as continuing level
   cc_time = 0.5     !Retention time deviation limit (min).
   cc_rettime = 0   !Update Quant Database Retention Times when updating
                     ! continuing calibration level 0=no, 1=yes
   cc_refspec = 0 !Update Quant Database Reference Spectra when updating
                     ! continuing calibration level 0=no, 1=yes
remove cc_options
```

```
!
!  Enter the values for the following parameters for
!  use in generating TIC's
!
!  Integration Parameter File Name
LSC_intp$="LSCINT.P"

: of closest ISTD for reporting
percentistd =  10     !cut off for reporting based on area comparison
                      ! of closest internal standard

LSC_MAX = 20     !maximum number of LSC's to report

!TIC library to USE
tic_lib$="NBS75K.L"

! Response for External Standard Comparisons per unit amount
LSC_estd=100000

remove ticintparm
```

DATA ANALYSIS PARAMETERS

ethod Name: J:\MS03\METHODS\82600528.M

ercent Report Settings

ort By: Signal

utput Destination
Screen: No
Printer: Yes
File: No

ntegration Events: Meth Default

enerate Report During Run Method: No

ignal Correlation Window: 0.020

ualitative Report Settings

eak Location of Unknown: Apex

| ibrary to Search | Minimum Quality |
|---|---|
| :\DATABASE\NBS75K.L | 0 |

ntegration Events: Meth Default

eport Type: Summary

utput Destination
Screen: No
Printer: Yes
File: No

enerate Report During Run Method: No

uantitative Report Settings

eport Type: Summary

utput Destination
Screen: Yes
Printer: No

Generate Report During Run Method: Yes

Volatiles by GC/MS
Calibration Last Updated: Wed May 29 11:09:49 2002

Reference Window: 5.00 Percent
Non-Reference Window: 5.00 Percent
Correlation Window: 0.20 minutes
Default Multiplier: 1.00
Default Sample Concentration: 0.00

Compound Information
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1) 1,4-Difluorobenzene (ISTD TR)

Ret. Time 12.50 min., Extract & Integrate from 12.35 to 12.65 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 114.00 | | | *** METH DEFAULT *** |
| Q1 | 63.00 | 21.60 | 30.0 | *** METH DEFAULT *** |
| Q2 | 88.00 | 19.80 | 30.0 | *** METH DEFAULT *** |
| Q3 | 57.00 | 10.20 | 30.0 | *** METH DEFAULT *** |

| vl ID | Conc (ug/L) | Response |
|---|---|---|
| .5 | 20.000 | 238124 |
| .0 | 20.000 | 235824 |
| | 20.000 | 237851 |
| .0 | 20.000 | 229516 |
| 0 | 20.000 | 228574 |
| 0 | 20.000 | 241322 |
| 0 | 20.000 | 259532 |
| 00 | 20.000 | 265986 |
| c | 20.000 | -1 |

ualifier Peak Analysis ON ISTD conc: 20.000 ug/L
urve Fit: Avg. RF

---

2) Dichlorodifluoromethane ( )

et. Time 4.59 min., Extract & Integrate from 4.44 to 4.74 min.

| ignal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| gt | 85.00 | | | *** METH DEFAULT *** |
| 1 | 87.00 | 33.10 | 30.0 | *** METH DEFAULT *** |
| 2 | 50.00 | 13.20 | 30.0 | *** METH DEFAULT *** |
| 3 | 101.00 | 8.40 | 30.0 | *** METH DEFAULT *** |

| vl ID | Conc (ug/L) | Response |
|---|---|---|
| .5 | 0.500 | 2102 |
| .0 | 1.000 | 3808 |
| | 2.000 | 6993 |
| . | 5.000 | 17123 |

| | | |
|---|---|---|
| 20 | 20.000 | 73732 |
| 50 | 50.000 | 195896 |
| 100 | 100.000 | 397961 |
| cc | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

---

3) Chloromethane ( )

Ret. Time 5.10 min., Extract & Integrate from 4.95 to 5.25 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 50.00 | | | *** METH DEFAULT *** |
| Q1 | 52.00 | 32.90 | 30.0 | *** METH DEFAULT *** |
| Q2 | 49.00 | 10.60 | 30.0 | *** METH DEFAULT *** |
| Q3 | 51.00 | 3.90 | 30.0 | *** METH DEFAULT *** |

| Lvl ID | Conc (ug/L) | Response |
|---|---|---|
| 0.5 | 0.500 | 3321 |
| 1.0 | 1.000 | 6960 |
| 2.0 | 2.000 | 13465 |
| 5.0 | 5.000 | 34620 |
| 10 | 10.000 | 68906 |
| 20 | 20.000 | 135049 |
| 50 | 50.000 | 348690 |
| 100 | 100.000 | 700745 |
| cc | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

---

4) Vinyl Chloride ( )

Ret. Time 5.36 min., Extract & Integrate from 5.21 to 5.51 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 62.00 | | | *** METH DEFAULT *** |
| Q1 | 64.00 | 32.70 | 30.0 | *** METH DEFAULT *** |
| Q2 | 60.00 | 6.40 | 30.0 | *** METH DEFAULT *** |
| Q3 | 63.00 | 5.50 | 30.0 | *** METH DEFAULT *** |

| Lvl ID | Conc (ug/L) | Response |
|---|---|---|
| 0.5 | 0.500 | 4055 |
| 1.0 | 1.000 | 7346 |
| 2.0 | 2.000 | 15050 |
| 5.0 | 5.000 | 36713 |
| 10 | 10.000 | 77751 |
| 20 | 20.000 | 152268 |
| 50 | 50.000 | 397733 |
| 100 | 100.000 | 767444 |
| cc | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

---

Ret. Time 6.18 min., Extract & Integrate from 6.03 to 6.33 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 94.00 | | | *** METH DEFAULT *** |
| Q1 | 96.00 | 96.60 | 30.0 | *** METH DEFAULT *** |
| Q2 | 79.00 | 20.10 | 30.0 | *** METH DEFAULT *** |
| [illegible] | 81.00 | 20.60 | 30.0 | *** METH DEFAULT *** |

| Lvl ID | Conc (ug/L) | Response |
|---|---|---|
| 0.5 | 0.500 | 3896 |
| 1.0 | 1.000 | 6532 |
| 2.0 | 2.000 | 13278 |
| 5.0 | 5.000 | 29147 |
| 10 | 10.000 | 58672 |
| 20 | 20.000 | 118472 |
| 50 | 50.000 | 315164 |
| 100 | 100.000 | 630498 |
| cc | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

---

6) Chloroethane ( )

Ret. Time 6.39 min., Extract & Integrate from 6.24 to 6.54 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 64.00 | | | *** METH DEFAULT *** |
| Q1 | 66.00 | 32.80 | 30.0 | *** METH DEFAULT *** |
| Q2 | 49.00 | 30.20 | 30.0 | *** METH DEFAULT *** |
| [illegible] | 51.00 | 9.10 | 30.0 | *** METH DEFAULT *** |

| Lvl ID | Conc (ug/L) | Response |
|---|---|---|
| 0.5 | 0.500 | 2727 |
| 1.0 | 1.000 | 5256 |
| 2.0 | 2.000 | 10340 |
| 5.0 | 5.000 | 25293 |
| 10 | 10.000 | 50413 |
| 20 | 20.000 | 98216 |
| 50 | 50.000 | 260154 |
| 100 | 100.000 | 494784 |
| cc | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

---

7) Trichlorofluoromethane ( )

Ret. Time 6.87 min., Extract & Integrate from 6.72 to 7.02 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 101.00 | | | *** METH DEFAULT *** |
| Q1 | 103.00 | 64.90 | 30.0 | *** METH DEFAULT *** |
| Q2 | 66.00 | 14.50 | 30.0 | *** METH DEFAULT *** |
| [illegible] | 105.00 | 10.10 | 30.0 | *** METH DEFAULT *** |

| | | |
|---|---|---|
| .5 | 0.500 | 3534 |
| .0 | 1.000 | 7043 |
| .0 | 2.000 | 14353 |
| .0 | 5.000 | 34072 |
| 0 | 10.000 | 70952 |
| 0 | 20.000 | 137953 |
| | 50.000 | 364259 |
| 0 | 100.000 | 751844 |
| c | 10.000 | -1 |

ualifier Peak Analysis ON
urve Fit: Avg. RF

---

8) 1,1,2-trichloro-1,2,2-trifluoroethane ( )

et. Time 7.80 min., Extract & Integrate from 7.65 to 7.95 min.

| ignal | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|
| gt 101.00 | | | *** METH DEFAULT *** |
| 1 103.00 | 63.00 | 30.0 | *** METH DEFAULT *** |
| 2 151.00 | 62.60 | 30.0 | *** METH DEFAULT *** |
| 3 85.00 | 44.60 | 30.0 | *** METH DEFAULT *** |

| vl ID | Conc (ug/L) | Response |
|---|---|---|
| .5 | 0.500 | 2329 |
| .0 | 1.000 | 4751 |
| .0 | 2.000 | 9296 |
| .0 | 5.000 | 22726 |
| 0 | 10.000 | 47056 |
| 0 | 20.000 | 92378 |
| | 50.000 | 251976 |
| | 100.000 | 544502 |
| c | 10.000 | -1 |

ualifier Peak Analysis ON
urve Fit: Avg. RF

---

9) Acrolein ( )

et. Time 7.78 min., Extract & Integrate from 7.63 to 7.93 min.

| ignal | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|
| gt 56.00 | | | *** METH DEFAULT *** |
| 1 55.00 | 79.40 | 20.0 | *** METH DEFAULT *** |
| 2 58.00 | 9.80 | 20.0 | *** METH DEFAULT *** |

| vl ID | Conc (ug/L) | Response |
|---|---|---|
| .5 | not used for this compound | |
| .0 | 8.000 | 2066 |
| .0 | 16.000 | 4226 |
| .0 | 40.000 | 8113 |
| 0 | 80.000 | 15027 |
| 0 | 160.000 | 31187 |
| 0 | 400.000 | 90247 |
| 00 | 800.000 | 189559 |
| | 80.000 | -1 |

urve Fit: Avg. RF

---

0) 1,1-Dichloroethene ( )

et. Time 7.89 min., Extract & Integrate from 7.74 to 8.04 min.

| ignal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| gt | 96.00 | | | *** METH DEFAULT *** |
| 1 | 61.00 | 172.90 | 30.0 | *** METH DEFAULT *** |
| 2 | 63.00 | 56.30 | 30.0 | *** METH DEFAULT *** |
| 3 | 98.00 | 64.60 | 30.0 | *** METH DEFAULT *** |

| vl ID | Conc (ug/L) | Response |
|---|---|---|
| .5 | 0.500 | 2308 |
| .0 | 1.000 | 5111 |
| .0 | 2.000 | 9661 |
| .0 | 5.000 | 21559 |
| 0 | 10.000 | 44485 |
| 0 | 20.000 | 88897 |
| 0 | 50.000 | 245536 |
| 00 | 100.000 | 536661 |
| c | 10.000 | -1 |

ualifier Peak Analysis ON
urve Fit: Avg. RF

---

1) Acetone ( )

et. Time 8.03 min., Extract & Integrate from 7.88 to 8.18 min.

| ial | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| gt | 58.00 | | | *** METH DEFAULT *** |
| 1 | 43.00 | 358.90 | 30.0 | *** METH DEFAULT *** |
| 2 | 42.00 | 29.70 | 30.0 | *** METH DEFAULT *** |

| vl ID | Conc (ug/L) | Response |
|---|---|---|
| .5 | not used for this compound | |
| .0 | 4.000 | 1396 |
| .0 | 8.000 | 2830 |
| .0 | 20.000 | 4760 |
| 0 | 40.000 | 8264 |
| 0 | 80.000 | 14645 |
| 0 | 200.000 | 37771 |
| 00 | 400.000 | 75378 |
| c | 40.000 | -1 |

ualifier Peak Analysis ON
urve Fit: Linear

---

2) Iodomethane ( )

et. Time 8.24 min., Extract & Integrate from 8.09 to 8.39 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| | 142.00 | | | *** METH DEFAULT *** |
| 1 | 127.00 | 50.70 | 30.0 | *** METH DEFAULT *** |

| vl ID | Conc (ug/L) | Response |
|---|---|---|
| .5 | 2.000 | 13357 |
| .0 | 4.000 | 27268 |
| .0 | 8.000 | 58242 |
| .0 | 20.000 | 149567 |
| | 40.000 | 321272 |
| ℃ | 80.000 | 667462 |
| 0 | 200.000 | 1979772 |
| 00 | 400.000 | 4210455 |
| c | 40.000 | -1 |

ualifier Peak Analysis ON
urve Fit: Avg. RF

---

3) Carbon Disulfide ( )

et. Time 8.34 min., Extract & Integrate from 8.19 to 8.49 min.

| ignal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| gt | 76.00 | | | *** METH DEFAULT *** |
| 1 | 77.00 | 2.80 | 30.0 | *** METH DEFAULT *** |
| 2 | 78.00 | 9.10 | 30.0 | *** METH DEFAULT *** |

| vl ID | Conc (ug/L) | Response |
|---|---|---|
| .5 | 2.000 | 33215 |
| .0 | 4.000 | 66436 |
| .0 | 8.000 | 138446 |
| .0 | 20.000 | 347461 |
| 0 | 40.000 | 744964 |
| | 80.000 | 1507174 |
| | 200.000 | 4307067 |
| 00 | 400.000 | 8992355 |
| c | 40.000 | -1 |

ualifier Peak Analysis ON
urve Fit: Avg. RF

---

4) Acetonitrile ( )

et. Time 8.62 min., Extract & Integrate from 8.47 to 8.77 min.

| ignal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| gt | 41.00 | | | *** METH DEFAULT *** |
| 1 | 40.00 | 24.30 | 30.0 | *** METH DEFAULT *** |
| 2 | 39.00 | 7.20 | 30.0 | *** METH DEFAULT *** |
| 3 | 38.00 | 0.00 | 30.0 | *** METH DEFAULT *** |

| vl ID | Conc (ug/L) | Response |
|---|---|---|
| .5 | not used for this compound | |
| .0 | 8.000 | 2336 |
| .0 | 16.000 | 5740 |
| .0 | 40.000 | 11747 |
| 0 | 80.000 | 23733 |
| 0 | 160.000 | 46583 |
| | 400.000 | 117695 |
| 00 | 800.000 | 233634 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

---

15) Methylene Chloride ( )

Ret. Time 8.79 min., Extract & Integrate from 8.64 to 8.94 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 84.00 | | | *** METH DEFAULT *** |
| Q1 | 86.00 | 65.30 | 30.0 | *** METH DEFAULT *** |
| Q2 | 49.00 | 133.50 | 30.0 | *** METH DEFAULT *** |
| Q3 | 51.00 | 41.40 | 30.0 | *** METH DEFAULT *** |

| Lvl ID | Conc (ug/L) | Response |
|---|---|---|
| 0.5 | 0.500 | 3564 |
| 1.0 | 1.000 | 6533 |
| 2.0 | 2.000 | 12211 |
| 5.0 | 5.000 | 29081 |
| 10 | 10.000 | 57321 |
| 20 | 20.000 | 116049 |
| 50 | 50.000 | 313382 |
| 100 | 100.000 | 652679 |
| cc | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

---

16) t-Butanol ( )

Ret. Time 8.83 min., Extract & Integrate from 8.68 to 8.98 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 59.00 | | | *** METH DEFAULT *** |
| Q1 | 41.00 | 26.70 | 20.0 | *** METH DEFAULT *** |
| Q2 | 43.00 | 16.40 | 20.0 | *** METH DEFAULT *** |

| Lvl ID | Conc (ug/L) | Response |
|---|---|---|
| 0.5 | not used for this compound | |
| 1.0 | not used for this compound | |
| 2.0 | 10.000 20.0 | 3678 |
| 5.0 | 25.000 50.0 | 8525 |
| 10 | 50.000 100.0 | 17679 |
| 20 | 100.000 200.0 | 32892 |
| 50 | 250.000 500.0 | 82822 |
| 100 | 500.000 1000.0 | 164415 |
| cc | 50.000 100.0 | -1 |

- out 5/29/02

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

---

17) Methyl tert-Butyl Ether ( )

Ret. Time 9.09 min., Extract & Integrate from 8.94 to 9.24 min.

| Signal | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Q1 | 57.00 | 21.00 | 30.0 | *** METH DEFAULT *** |
| Q2 | 41.00 | 22.60 | 30.0 | *** METH DEFAULT *** |
| Q3 | 43.00 | 23.60 | 30.0 | *** METH DEFAULT *** |

| Lvl | ID | Conc (ug/L) | Response |
|---|---|---|---|
| 0.5 | | 0.500 | 5547 |
| | | 1.000 | 9837 |
| 2.0 | | 2.000 | 19790 |
| 5.0 | | 5.000 | 46906 |
| 10 | | 10.000 | 94318 |
| 20 | | 20.000 | 189358 |
| 50 | | 50.000 | 497481 |
| 100 | | 100.000 | 1004733 |
| cc | | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

---

18) trans-1,2-Dichloroethene ( )

Ret. Time 9.17 min., Extract & Integrate from 9.02 to 9.32 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 96.00 | | | *** METH DEFAULT *** |
| Q1 | 61.00 | 148.30 | 30.0 | *** METH DEFAULT *** |
| Q2 | 98.00 | 62.20 | 30.0 | *** METH DEFAULT *** |
| Q3 | 63.00 | 47.60 | 30.0 | *** METH DEFAULT *** |

| Lvl | ID | Conc (ug/L) | Response |
|---|---|---|---|
| 0.5 | | 0.500 | 3200 |
| | | 1.000 | 5419 |
| 2.0 | | 2.000 | 10940 |
| 5.0 | | 5.000 | 25877 |
| 10 | | 10.000 | 53696 |
| 20 | | 20.000 | 107935 |
| 50 | | 50.000 | 306740 |
| 100 | | 100.000 | 637025 |
| cc | | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

---

19) Acrylonitrile ( )

Ret. Time 9.25 min., Extract & Integrate from 9.10 to 9.40 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 53.00 | | | *** METH DEFAULT *** |
| Q1 | 52.00 | 84.00 | 20.0 | *** METH DEFAULT *** |
| Q2 | 51.00 | 36.10 | 20.0 | *** METH DEFAULT *** |

| Lvl | ID | Conc (ug/L) | Response |
|---|---|---|---|
| 0.5 | | not used for this compound | |
| 1.0 | | 8.000 | 7534 |
| 2.0 | | 16.000 | 14057 |
| | | 40.000 | 32536 |
| 10 | | 80.000 | 66531 |

| | | |
|---|---|---|
| 50 | 400.000 | 354146 |
| 100 | 800.000 | 664804 |
| cc | 80.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

---

20) DIPE ( )

Ret. Time 9.79 min., Extract & Integrate from 9.64 to 9.94 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 45.00 | | | *** METH DEFAULT *** |
| Q1 | 43.00 | 41.90 | 20.0 | *** METH DEFAULT *** |
| Q2 | 59.00 | 10.30 | 20.0 | *** METH DEFAULT *** |
| Q3 | 87.00 | 20.40 | 20.0 | *** METH DEFAULT *** |

| Lvl ID | Conc (ug/L) | Response |
|---|---|---|
| 0.5 | 0.500 | 10383 |
| 1.0 | 1.000 | 17472 |
| 2.0 | 2.000 | 35925 |
| 5.0 | 5.000 | 86317 |
| 10 | 10.000 | 173028 |
| 20 | 20.000 | 350290 |
| 50 | 50.000 | 943153 |
| 100 | 100.000 | 1922086 |
| cc | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

---

21) 1,1-Dichloroethane ( )

Ret. Time 9.89 min., Extract & Integrate from 9.74 to 10.04 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 63.00 | | | *** METH DEFAULT *** |
| Q1 | 65.00 | 32.60 | 30.0 | *** METH DEFAULT *** |
| Q2 | 83.00 | 14.10 | 30.0 | *** METH DEFAULT *** |
| Q3 | 62.00 | 8.10 | 30.0 | *** METH DEFAULT *** |

| Lvl ID | Conc (ug/L) | Response |
|---|---|---|
| 0.5 | 0.500 | 5271 |
| 1.0 | 1.000 | 10289 |
| 2.0 | 2.000 | 20258 |
| 5.0 | 5.000 | 48521 |
| 10 | 10.000 | 99855 |
| 20 | 20.000 | 203681 |
| 50 | 50.000 | 542255 |
| 100 | 100.000 | 1124073 |
| cc | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

---

22) Vinyl Acetate ( )

Ret. Time 9.86 min., Extract & Integrate from 9.71 to 10.01 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 43.00 | | | *** METH DEFAULT *** |
| Q1 | 86.00 | 9.00 | 30.0 | *** METH DEFAULT *** |
| Q2 | 42.00 | 9.30 | 30.0 | *** METH DEFAULT *** |
| | 41.00 | 1.50 | 30.0 | *** METH DEFAULT *** |

| Lvl ID | Conc (ug/L) | Response |
|---|---|---|
| 0.5 | 2.000 | 11572 |
| 1.0 | 4.000 | 20058 |
| 2.0 | 8.000 | 38617 |
| 5.0 | 20.000 | 92849 |
| 10 | 40.000 | 171957 |
| 20 | 80.000 | 307939 |
| 50 | 200.000 | 881467 |
| 100 | 400.000 | 1797537 |
| cc | 40.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

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23) ETBE ( )

Ret. Time 10.33 min., Extract & Integrate from 10.18 to 10.48 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 59.00 | | | *** METH DEFAULT *** |
| Q1 | 87.00 | 35.70 | 20.0 | *** METH DEFAULT *** |
| Q2 | 57.00 | 27.90 | 20.0 | *** METH DEFAULT *** |

| ID | Conc (ug/L) | Response |
|---|---|---|
| 0.5 | 0.500 | 7239 |
| 1.0 | 1.000 | 14193 |
| 2.0 | 2.000 | 28032 |
| 5.0 | 5.000 | 65553 |
| 10 | 10.000 | 131703 |
| 20 | 20.000 | 267271 |
| 50 | 50.000 | 718932 |
| 100 | 100.000 | 1469734 |
| cc | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

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4) 2,2-Dichloropropane ( )

Ret. Time 10.75 min., Extract & Integrate from 10.60 to 10.90 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 77.00 | | | *** METH DEFAULT *** |
| Q1 | 97.00 | 21.10 | 30.0 | *** METH DEFAULT *** |
| Q2 | 79.00 | 32.20 | 30.0 | *** METH DEFAULT *** |
| Q3 | 99.00 | 13.50 | 30.0 | *** METH DEFAULT *** |

| ID | Conc (ug/L) | Response |
|---|---|---|
| | 0.500 | 4036 |

| | | |
|---|---|---|
| 2.0 | 2.000 | 14219 |
| 5.0 | 5.000 | 33556 |
| 10 | 10.000 | 68376 |
| 20 | 20.000 | 135568 |
| 50 | 50.000 | 369463 |
| 100 | 100.000 | 764364 |
| | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

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25) 2-butanone ( )

Ret. Time 10.74 min., Extract & Integrate from 10.59 to 10.89 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 72.00 | | | *** METH DEFAULT *** |
| Q1 | 43.00 | 469.90 | 30.0 | *** METH DEFAULT *** |
| Q2 | 57.00 | 33.50 | 30.0 | *** METH DEFAULT *** |

| Lvl | ID | Conc (ug/L) | Response |
|---|---|---|---|
| 0.5 | | not used for this compound | |
| 1.0 | | 4.000 | 1518 |
| 2.0 | | 8.000 | 2441 |
| 5.0 | | 20.000 | 5086 |
| 10 | | 40.000 | 9957 |
| 20 | | 80.000 | 20234 |
| 50 | | 200.000 | 53466 |
| 100 | | 400.000 | 107062 |
| cc | | 40.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Linear

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26) cis-1,2-Dichloroethene ( )

Ret. Time 10.76 min., Extract & Integrate from 10.61 to 10.91 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 96.00 | | | *** METH DEFAULT *** |
| Q1 | 61.00 | 139.50 | 30.0 | *** METH DEFAULT *** |
| Q2 | 98.00 | 65.40 | 30.0 | *** METH DEFAULT *** |
| Q3 | 63.00 | 46.20 | 30.0 | *** METH DEFAULT *** |

| Lvl | ID | Conc (ug/L) | Response |
|---|---|---|---|
| 0.5 | | 0.500 | 3456 |
| 1.0 | | 1.000 | 5959 |
| 2.0 | | 2.000 | 12190 |
| 5.0 | | 5.000 | 28350 |
| 10 | | 10.000 | 58122 |
| 20 | | 20.000 | 121443 |
| 50 | | 50.000 | 344286 |
| 100 | | 100.000 | 720678 |
| cc | | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

27) Bromochloromethane ( )

Ret. Time 11.14 min., Extract & Integrate from 10.99 to 11.29 min.

| Signal | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|
| 128.00 | | | *** METH DEFAULT *** |
| 49.00 | 171.50 | 30.0 | *** METH DEFAULT *** |
| Q2 130.00 | 127.70 | 30.0 | *** METH DEFAULT *** |
| Q3 93.00 | 52.50 | 30.0 | *** METH DEFAULT *** |

| Lvl ID | Conc (ug/L) | Response |
|---|---|---|
| 0.5 | 0.500 | 1337 |
| 1.0 | 1.000 | 2434 |
| 2.0 | 2.000 | 4765 |
| 5.0 | 5.000 | 11657 |
| 10 | 10.000 | 23036 |
| 20 | 20.000 | 46604 |
| 50 | 50.000 | 123320 |
| 100 | 100.000 | 259429 |
| cc | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

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28) Chloroform ( )

Ret. Time 11.18 min., Extract & Integrate from 11.03 to 11.33 min.

| Signal | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|
| 83.00 | | | *** METH DEFAULT *** |
| 85.00 | 65.40 | 30.0 | *** METH DEFAULT *** |
| Q2 47.00 | 25.90 | 30.0 | *** METH DEFAULT *** |
| Q3 48.00 | 11.70 | 30.0 | *** METH DEFAULT *** |

| Lvl ID | Conc (ug/L) | Response |
|---|---|---|
| 0.5 | 0.500 | 5312 |
| 1.0 | 1.000 | 10254 |
| 2.0 | 2.000 | 20243 |
| 5.0 | 5.000 | 48671 |
| 10 | 10.000 | 99396 |
| 20 | 20.000 | 198112 |
| 50 | 50.000 | 533292 |
| 100 | 100.000 | 1124168 |
| cc | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

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29) Pentafluorobenzene ( )

Ret. Time 11.41 min., Extract & Integrate from 11.26 to 11.56 min.

| Signal | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|
| Tgt 168.00 | | | *** METH DEFAULT *** |
| 99.00 | 64.20 | 30.0 | *** METH DEFAULT *** |
| Q2 137.00 | 15.90 | 30.0 | *** METH DEFAULT *** |

| Lvl | ID | Conc (ug/L) | Response |
|---|---|---|---|
| 0.5 | | 20.000 | 121103 |
| 1.0 | | 20.000 | 118914 |
| 2.0 | | 20.000 | 117105 |
| 5.0 | | 20.000 | 116993 |
| | | 20.000 | 116415 |
| 20 | | 20.000 | 124907 |
| 50 | | 20.000 | 130856 |
| 100 | | 20.000 | 142746 |
| cc | | 20.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

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30) Dibromofluoromethane ( )

Ret. Time 11.43 min., Extract & Integrate from 11.28 to 11.58 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 113.00 | | | *** METH DEFAULT *** |
| Q1 | 111.00 | 102.00 | 30.0 | *** METH DEFAULT *** |
| Q2 | 192.00 | 17.50 | 30.0 | *** METH DEFAULT *** |
| Q3 | 194.00 | 8.90 | 30.0 | *** METH DEFAULT *** |

| Lvl | ID | Conc (ug/L) | Response |
|---|---|---|---|
| 0.5 | | 0.500 | 2583 |
| 1.0 | | 1.000 | 4822 |
| 2.0 | | 2.000 | 9294 |
| 5.0 | | 5.000 | 22655 |
| | | 10.000 | 49722 |
| | | 20.000 | 98396 |
| 50 | | 40.000 | 218801 |
| 100 | | 50.000 | 288264 |
| cc | | 20.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

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31) 1,1,1-Trichloroethane ( )

Ret. Time 11.47 min., Extract & Integrate from 11.32 to 11.62 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 97.00 | | | *** METH DEFAULT *** |
| Q1 | 99.00 | 65.20 | 30.0 | *** METH DEFAULT *** |
| Q2 | 61.00 | 47.10 | 30.0 | *** METH DEFAULT *** |
| Q3 | 63.00 | 15.40 | 30.0 | *** METH DEFAULT *** |

| Lvl | ID | Conc (ug/L) | Response |
|---|---|---|---|
| 0.5 | | 0.500 | 3598 |
| 1.0 | | 1.000 | 7141 |
| 2.0 | | 2.000 | 15132 |
| 5.0 | | 5.000 | 36533 |
| 10 | | 10.000 | 75298 |
| | | 20.000 | 150524 |
| 50 | | 50.000 | 409475 |

| | | |
|---|---|---|
| cc | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

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Carbon Tetrachloride ( )

Ret. Time 11.67 min., Extract & Integrate from 11.52 to 11.82 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 117.00 | | | *** METH DEFAULT *** |
| Q1 | 119.00 | 95.30 | 30.0 | *** METH DEFAULT *** |
| Q2 | 121.00 | 30.10 | 30.0 | *** METH DEFAULT *** |
| Q3 | 82.00 | 28.70 | 30.0 | *** METH DEFAULT *** |

| Lvl ID | Conc (ug/L) | Response |
|---|---|---|
| 0.5 | 0.500 | 2811 |
| 1.0 | 1.000 | 5417 |
| 2.0 | 2.000 | 11384 |
| 5.0 | 5.000 | 27683 |
| 10 | 10.000 | 57879 |
| 20 | 20.000 | 117455 |
| 50 | 50.000 | 323882 |
| 100 | 100.000 | 693465 |
| cc | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

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1,1-Dichloropropene ( )

Ret. Time 11.69 min., Extract & Integrate from 11.54 to 11.84 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 75.00 | | | *** METH DEFAULT *** |
| Q1 | 110.00 | 34.20 | 30.0 | *** METH DEFAULT *** |
| Q2 | 77.00 | 31.70 | 30.0 | *** METH DEFAULT *** |
| Q3 | 112.00 | 21.70 | 30.0 | *** METH DEFAULT *** |

| Lvl ID | Conc (ug/L) | Response |
|---|---|---|
| 0.5 | 0.500 | 3646 |
| 1.0 | 1.000 | 6609 |
| 2.0 | 2.000 | 13839 |
| 5.0 | 5.000 | 34257 |
| 10 | 10.000 | 70448 |
| 20 | 20.000 | 142452 |
| 50 | 50.000 | 401447 |
| 100 | 100.000 | 864818 |
| cc | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

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34) Benzene ( )

Ret. Time 12.00 min., Extract & Integrate from 11.85 to 12.15 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 78.00 | | | *** METH DEFAULT *** |
| Q1 | 77.00 | 24.40 | 30.0 | *** METH DEFAULT *** |
| Q2 | 51.00 | 18.50 | 30.0 | *** METH DEFAULT *** |
| Q3 | 52.00 | 18.10 | 30.0 | *** METH DEFAULT *** |

| Lvl ID | Conc (ug/L) | Response |
|---|---|---|
| 0.5 | 0.500 | 8762 |
| 1.0 | 1.000 | 17872 |
| 2.0 | 2.000 | 35880 |
| 5.0 | 5.000 | 89887 |
| 10 | 10.000 | 187338 |
| 20 | 20.000 | 389044 |
| 50 | 50.000 | 1087379 |
| 100 | 100.000 | 2335779 |
| cc | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

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35) TAME ( )

Ret. Time 12.02 min., Extract & Integrate from 11.87 to 12.17 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 73.00 | | | *** METH DEFAULT *** |
| Q1 | 87.00 | 22.30 | 20.0 | *** METH DEFAULT *** |
| Q2 | 55.00 | 25.20 | 20.0 | *** METH DEFAULT *** |

| Lvl ID | Conc (ug/L) | Response |
|---|---|---|
| 0.5 | 0.500 | 6097 |
| 1.0 | 1.000 | 10801 |
| 2.0 | 2.000 | 21783 |
| 5.0 | 5.000 | 52158 |
| 10 | 10.000 | 106421 |
| 20 | 20.000 | 216394 |
| 50 | 50.000 | 582679 |
| 100 | 100.000 | 1214073 |
| cc | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

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36) 1,2-Dichloroethane ( )

Ret. Time 12.09 min., Extract & Integrate from 11.94 to 12.24 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 62.00 | | | *** METH DEFAULT *** |
| Q1 | 98.00 | 9.90 | 30.0 | *** METH DEFAULT *** |
| Q2 | 64.00 | 33.20 | 30.0 | *** METH DEFAULT *** |
| Q3 | 49.00 | 30.80 | 30.0 | *** METH DEFAULT *** |

| Lvl ID | Conc (ug/L) | Response |
|---|---|---|
| 0.5 | 0.500 | 3957 |
| 1.0 | 1.000 | 7582 |
| 2.0 | 2.000 | 13486 |

| | | |
|---|---|---|
| 10 | 10.000 | 61518 |
| 20 | 20.000 | 123235 |
| 50 | 50.000 | 318262 |
| 100 | 100.000 | 642932 |
| cc | 10.000 | -1 |

alifier Peak Analysis ON
urve Fit: Avg. RF

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37) Fluorobenzene ( )

Ret. Time 12.38 min., Extract & Integrate from 12.23 to 12.53 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 96.00 | | | *** METH DEFAULT *** |
| Q1 | 70.00 | 22.60 | 30.0 | *** METH DEFAULT *** |
| Q2 | 50.00 | 11.80 | 30.0 | *** METH DEFAULT *** |
| Q3 | 75.00 | 7.20 | 30.0 | *** METH DEFAULT *** |

| Lvl ID | Conc (ug/L) | Response |
|---|---|---|
| 0.5 | 20.000 | 300195 |
| 1.0 | 20.000 | 299579 |
| 2.0 | 20.000 | 300713 |
| 5.0 | 20.000 | 291873 |
| 10 | 20.000 | 292114 |
| 20 | 20.000 | 307480 |
| 50 | 20.000 | 328510 |
| 100 | 20.000 | 338460 |
| cc | 20.000 | -1 |

alifier Peak Analysis ON
ve Fit: Avg. RF

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38) Trichloroethene ( )

Ret. Time 12.88 min., Extract & Integrate from 12.73 to 13.03 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 95.00 | | | *** METH DEFAULT *** |
| Q1 | 130.00 | 97.00 | 30.0 | *** METH DEFAULT *** |
| Q2 | 132.00 | 92.50 | 30.0 | *** METH DEFAULT *** |
| Q3 | 97.00 | 65.80 | 30.0 | *** METH DEFAULT *** |

| Lvl ID | Conc (ug/L) | Response |
|---|---|---|
| 0.5 | 0.500 | 2956 |
| 1.0 | 1.000 | 5166 |
| 2.0 | 2.000 | 10360 |
| 5.0 | 5.000 | 24967 |
| 10 | 10.000 | 51620 |
| 20 | 20.000 | 106144 |
| 50 | 50.000 | 290882 |
| 100 | 100.000 | 633708 |
| cc | 10.000 | -1 |

Qualifier Peak Analysis ON
ve Fit: Avg. RF

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39) 1,2-Dichloropropane ( )

Ret. Time 13.27 min., Extract & Integrate from 13.12 to 13.42 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 63.00 | | | *** METH DEFAULT *** |
| | 112.00 | 5.00 | 30.0 | *** METH DEFAULT *** |
| Q2 | 62.00 | 76.70 | 30.0 | *** METH DEFAULT *** |
| Q3 | 76.00 | 46.30 | 30.0 | *** METH DEFAULT *** |

| Lvl ID | Conc (ug/L) | Response |
|---|---|---|
| 0.5 | 0.500 | 2983 |
| 1.0 | 1.000 | 5410 |
| 2.0 | 2.000 | 10903 |
| 5.0 | 5.000 | 25989 |
| 10 | 10.000 | 50761 |
| 20 | 20.000 | 104223 |
| 50 | 50.000 | 281529 |
| 100 | 100.000 | 602719 |
| cc | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

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40) Dibromomethane ( )

Ret. Time 13.45 min., Extract & Integrate from 13.30 to 13.60 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 93.00 | | | *** METH DEFAULT *** |
| | 95.00 | 83.40 | 30.0 | *** METH DEFAULT *** |
| Q2 | 174.00 | 92.10 | 30.0 | *** METH DEFAULT *** |
| Q3 | 176.00 | 44.70 | 30.0 | *** METH DEFAULT *** |

| Lvl ID | Conc (ug/L) | Response |
|---|---|---|
| 0.5 | 0.500 | 1647 |
| 1.0 | 1.000 | 3255 |
| 2.0 | 2.000 | 6312 |
| 5.0 | 5.000 | 14622 |
| 10 | 10.000 | 28176 |
| 20 | 20.000 | 56461 |
| 50 | 50.000 | 148059 |
| 100 | 100.000 | 310516 |
| cc | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

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41) Bromodichloromethane ( )

Ret. Time 13.61 min., Extract & Integrate from 13.46 to 13.76 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 83.00 | | | *** METH DEFAULT *** |
| Q1 | 85.00 | 64.60 | 30.0 | *** METH DEFAULT *** |
| | 127.00 | 8.00 | 30.0 | *** METH DEFAULT *** |
| Q3 | 129.00 | 10.90 | 30.0 | *** METH DEFAULT *** |

| Lvl | ID | Conc (ug/L) | Response |
|---|---|---|---|
| 0.5 | | 0.500 | 3819 |
| 1.0 | | 1.000 | 6889 |
| 2.0 | | 2.000 | 13724 |
| 5.0 | | 5.000 | 32612 |
| 10 | | 10.000 | 64361 |
| | | 20.000 | 130831 |
| 50 | | 50.000 | 348976 |
| 100 | | 100.000 | 742275 |
| cc | | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

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42) 2-Chloroethyl Vinyl Ether ( )

Ret. Time 13.94 min., Extract & Integrate from 13.79 to 14.09 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 63.00 | | | *** METH DEFAULT *** |
| Q1 | 65.00 | 32.40 | 30.0 | *** METH DEFAULT *** |
| Q2 | 106.00 | 26.80 | 30.0 | *** METH DEFAULT *** |
| Q3 | 107.00 | 1.40 | 30.0 | *** METH DEFAULT *** |

| Lvl | ID | Conc (ug/L) | Response |
|---|---|---|---|
| 0.5 | | 2.000 | 4166 |
| 1.0 | | 4.000 | 8343 |
| 2.0 | | 8.000 | 17196 |
| 5.0 | | 20.000 | 39939 |
| 10 | | 40.000 | 80555 |
| | | 80.000 | 169368 |
| 50 | | 200.000 | 465653 |
| 100 | | 400.000 | 962579 |
| cc | | 40.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

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43) cis-1,3-Dichloropropene ( )

Ret. Time 14.21 min., Extract & Integrate from 14.06 to 14.36 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 75.00 | | | *** METH DEFAULT *** |
| Q1 | 110.00 | 21.90 | 30.0 | *** METH DEFAULT *** |
| Q2 | 77.00 | 32.50 | 30.0 | *** METH DEFAULT *** |
| Q3 | 39.00 | 51.30 | 30.0 | *** METH DEFAULT *** |

| Lvl | ID | Conc (ug/L) | Response |
|---|---|---|---|
| 0.5 | | 0.500 | 3922 |
| 1.0 | | 1.000 | 7207 |
| 2.0 | | 2.000 | 14576 |
| 5.0 | | 5.000 | 35109 |
| 10 | | 10.000 | 69253 |
| 20 | | 20.000 | 143287 |
| | | 50.000 | 393302 |
| 100 | | 100.000 | 834911 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

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44) 4-methyl-2-pentanone ( )

Ret. Time 14.33 min., Extract & Integrate from 14.18 to 14.48 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 100.00 | | | *** METH DEFAULT *** |
| Q1 | 58.00 | 285.50 | 30.0 | *** METH DEFAULT *** |
| Q2 | 85.00 | 111.90 | 30.0 | *** METH DEFAULT *** |
| Q3 | 43.00 | 773.20 | 30.0 | *** METH DEFAULT *** |

| Lvl | ID | Conc (ug/L) | Response |
|---|---|---|---|
| 0.5 | | not used for this compound | |
| 1.0 | | 4.000 | 1354 |
| 2.0 | | 8.000 | 1984 |
| 5.0 | | 20.000 | 5847 |
| 10 | | 40.000 | 10703 |
| 20 | | 80.000 | 22116 |
| 50 | | 200.000 | 58623 |
| 100 | | 400.000 | 121849 |
| cc | | 40.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

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45) Toluene-d8 ( )

Ret. Time 14.51 min., Extract & Integrate from 14.36 to 14.66 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 98.00 | | | *** METH DEFAULT *** |
| Q1 | 100.00 | 68.00 | 30.0 | *** METH DEFAULT *** |
| Q2 | 70.00 | 12.70 | 30.0 | *** METH DEFAULT *** |
| Q3 | 66.00 | 7.40 | 30.0 | *** METH DEFAULT *** |

| Lvl | ID | Conc (ug/L) | Response |
|---|---|---|---|
| 0.5 | | 0.500 | 5351 |
| 1.0 | | 1.000 | 9866 |
| 2.0 | | 2.000 | 19526 |
| 5.0 | | 5.000 | 52531 |
| 10 | | 10.000 | 122191 |
| 20 | | 20.000 | 253812 |
| 50 | | 40.000 | 591166 |
| 100 | | 50.000 | 757550 |
| cc | | 20.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

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46) Toluene ( )

Ret. Time 14.60 min., Extract & Integrate from 14.45 to 14.75 min.

| | | | | |
|---|---|---|---|---|
| Tgt | 92.00 | | | *** METH DEFAULT *** |
| Q1 | 91.00 | 165.60 | 30.0 | *** METH DEFAULT *** |
| Q2 | 65.00 | 20.80 | 30.0 | *** METH DEFAULT *** |
| Q3 | 63.00 | 14.90 | 30.0 | *** METH DEFAULT *** |

| Lvl | ID | Conc (ug/L) | Response |
|---|---|---|---|
| | | 0.500 | 4928 |
| 1.0 | | 1.000 | 9579 |
| 2.0 | | 2.000 | 19757 |
| 5.0 | | 5.000 | 50467 |
| 10 | | 10.000 | 106008 |
| 20 | | 20.000 | 229160 |
| 50 | | 50.000 | 638032 |
| 100 | | 100.000 | 1359144 |
| cc | | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

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47) trans-1,3-Dichloropropene ( )

Ret. Time 14.89 min., Extract & Integrate from 14.74 to 15.04 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 75.00 | | | *** METH DEFAULT *** |
| Q1 | 110.00 | 23.50 | 30.0 | *** METH DEFAULT *** |
| Q2 | 39.00 | 47.70 | 30.0 | *** METH DEFAULT *** |
| Q3 | 77.00 | 32.60 | 30.0 | *** METH DEFAULT *** |

| Lvl | ID | Conc (ug/L) | Response |
|---|---|---|---|
| | | 0.500 | 3155 |
| | | 1.000 | 5589 |
| 2.0 | | 2.000 | 11090 |
| 5.0 | | 5.000 | 25358 |
| 10 | | 10.000 | 52407 |
| 20 | | 20.000 | 107297 |
| 50 | | 50.000 | 298546 |
| 100 | | 100.000 | 612171 |
| cc | | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

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48) 1,1,2-Trichloroethane ( )

Ret. Time 15.13 min., Extract & Integrate from 14.98 to 15.28 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 83.00 | | | *** METH DEFAULT *** |
| Q1 | 97.00 | 112.10 | 30.0 | *** METH DEFAULT *** |
| Q2 | 85.00 | 67.10 | 30.0 | *** METH DEFAULT *** |
| Q3 | 61.00 | 73.40 | 30.0 | *** METH DEFAULT *** |

| Lvl | ID | Conc (ug/L) | Response |
|---|---|---|---|
| 5 | | 0.500 | 1613 |
| | | 1.000 | 2872 |
| .0 | | 2.000 | 5530 |

| | | |
|---|---|---|
| 10 | 10.000 | 25662 |
| 20 | 20.000 | 53181 |
| 50 | 50.000 | 147913 |
| 100 | 100.000 | 299689 |
| cc | 10.000 | -1 |

alifier Peak Analysis ON
urve Fit: Avg. RF

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49) Tetrachloroethene ( )

Ret. Time 15.25 min., Extract & Integrate from 15.10 to 15.40 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 164.00 | | | *** METH DEFAULT *** |
| Q1 | 129.00 | 93.60 | 30.0 | *** METH DEFAULT *** |
| Q2 | 131.00 | 90.10 | 30.0 | *** METH DEFAULT *** |
| Q3 | 166.00 | 127.00 | 30.0 | *** METH DEFAULT *** |

| Lvl ID | Conc (ug/L) | Response |
|---|---|---|
| 0.5 | 0.500 | 1526 |
| 1.0 | 1.000 | 2948 |
| 2.0 | 2.000 | 5631 |
| 5.0 | 5.000 | 14115 |
| 10 | 10.000 | 29611 |
| 20 | 20.000 | 62427 |
| 50 | 50.000 | 181306 |
| 100 | 100.000 | 407389 |
| cc | 10.000 | -1 |

alifier Peak Analysis ON
rve Fit: Avg. RF

---

50) 2-Hexanone ( )

Ret. Time 15.32 min., Extract & Integrate from 15.17 to 15.47 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 43.00 | | | *** METH DEFAULT *** |
| Q1 | 58.00 | 53.30 | 30.0 | *** METH DEFAULT *** |
| Q2 | 57.00 | 16.50 | 30.0 | *** METH DEFAULT *** |
| Q3 | 100.00 | 11.00 | 30.0 | *** METH DEFAULT *** |

| Lvl ID | Conc (ug/L) | Response |
|---|---|---|
| 0.5 | 2.000 | 3654 |
| 1.0 | 4.000 | 6460 |
| 2.0 | 8.000 | 12149 |
| 5.0 | 20.000 | 31391 |
| 10 | 40.000 | 59253 |
| 20 | 80.000 | 119345 |
| 50 | 200.000 | 317174 |
| 100 | 400.000 | 634776 |
| cc | 40.000 | -1 |

Qualifier Peak Analysis ON
rve Fit: Avg. RF

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51) 1,3-Dichloropropane ( )

Ret. Time 15.34 min., Extract & Integrate from 15.19 to 15.49 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 76.00 | | | *** METH DEFAULT *** |
| | 78.00 | 32.20 | 30.0 | *** METH DEFAULT *** |
| Q2 | 41.00 | 64.60 | 30.0 | *** METH DEFAULT *** |
| Q3 | 63.00 | 11.30 | 30.0 | *** METH DEFAULT *** |

| Lvl ID | Conc (ug/L) | Response |
|---|---|---|
| 0.5 | 0.500 | 3026 |
| 1.0 | 1.000 | 5521 |
| 2.0 | 2.000 | 11238 |
| 5.0 | 5.000 | 26151 |
| 10 | 10.000 | 52340 |
| 20 | 20.000 | 108510 |
| 50 | 50.000 | 293811 |
| 100 | 100.000 | 613006 |
| cc | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

---

52) Dibromochloromethane ( )

Ret. Time 15.59 min., Extract & Integrate from 15.44 to 15.74 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 129.00 | | | *** METH DEFAULT *** |
| | 127.00 | 78.40 | 30.0 | *** METH DEFAULT *** |
| | 91.00 | 11.00 | 30.0 | *** METH DEFAULT *** |
| Q3 | 79.00 | 21.10 | 30.0 | *** METH DEFAULT *** |

| Lvl ID | Conc (ug/L) | Response |
|---|---|---|
| 0.5 | 0.500 | 1828 |
| 1.0 | 1.000 | 3301 |
| 2.0 | 2.000 | 6457 |
| 5.0 | 5.000 | 16093 |
| 10 | 10.000 | 32342 |
| 20 | 20.000 | 67135 |
| 50 | 50.000 | 188136 |
| 100 | 100.000 | 412754 |
| cc | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

---

53) 1,2-Dibromoethane ( )

Ret. Time 15.77 min., Extract & Integrate from 15.62 to 15.92 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 107.00 | | | *** METH DEFAULT *** |
| Q1 | 109.00 | 94.40 | 30.0 | *** METH DEFAULT *** |
| | 188.00 | 3.40 | 30.0 | *** METH DEFAULT *** |
| Q3 | 81.00 | 8.60 | 30.0 | *** METH DEFAULT *** |

| Lvl ID | Conc (ug/L) | Response |
|---|---|---|
| 0.5 | 0.500 | 1546 |
| 1.0 | 1.000 | 2923 |
| 2.0 | 2.000 | 5684 |
| 5.0 | 5.000 | 13793 |
| 10 | 10.000 | 26605 |
| [illegible] | 20.000 | 55559 |
| 50 | 50.000 | 151805 |
| 100 | 100.000 | 337893 |
| cc | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

---

54) Chlorobenzene-d5 (ISTD TR)

Ret. Time 16.22 min., Extract & Integrate from 16.07 to 16.37 min.

| Signal | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|
| Tgt 117.00 | | | *** METH DEFAULT *** |
| Q1 82.00 | 58.80 | 30.0 | *** METH DEFAULT *** |

| Lvl ID | Conc (ug/L) | Response |
|---|---|---|
| 0.5 | 20.000 | 189180 |
| 1.0 | 20.000 | 189213 |
| 2.0 | 20.000 | 181924 |
| 5.0 | 20.000 | 182583 |
| 10 | 20.000 | 182807 |
| 20 | 20.000 | 195114 |
| 50 | 20.000 | 205030 |
| [illegible] | 20.000 | 219701 |
| cc | 20.000 | -1 |

Qualifier Peak Analysis ON ISTD conc: 20.000 ug/L
Curve Fit: Avg. RF

---

55) Chlorobenzene ( )

Ret. Time 16.25 min., Extract & Integrate from 16.10 to 16.40 min.

| Signal | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|
| Tgt 112.00 | | | *** METH DEFAULT *** |
| Q1 77.00 | 62.10 | 30.0 | *** METH DEFAULT *** |
| Q2 114.00 | 32.50 | 30.0 | *** METH DEFAULT *** |
| Q3 51.00 | 22.30 | 30.0 | *** METH DEFAULT *** |

| Lvl ID | Conc (ug/L) | Response |
|---|---|---|
| 0.5 | 0.500 | 5209 |
| 1.0 | 1.000 | 9274 |
| 2.0 | 2.000 | 18412 |
| 5.0 | 5.000 | 48656 |
| 10 | 10.000 | 99429 |
| 20 | 20.000 | 207209 |
| 50 | 50.000 | 609029 |
| 100 | 100.000 | 1333327 |
| [illegible] | 10.000 | -1 |

Curve Fit: Avg. RF

---

56) 1,1,1,2-Tetrachloroethane ( )

Ret. Time 16.31 min., Extract & Integrate from 16.16 to 16.46 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 131.00 | | | *** METH DEFAULT *** |
| Q1 | 133.00 | 94.40 | 30.0 | *** METH DEFAULT *** |
| Q2 | 119.00 | 72.30 | 30.0 | *** METH DEFAULT *** |
| Q3 | 117.00 | 73.50 | 30.0 | *** METH DEFAULT *** |

| Lvl ID | Conc (ug/L) | Response |
|---|---|---|
| 0.5 | 0.500 | 1919 |
| 1.0 | 1.000 | 3480 |
| 2.0 | 2.000 | 6706 |
| 5.0 | 5.000 | 16698 |
| 10 | 10.000 | 34501 |
| 20 | 20.000 | 71930 |
| 50 | 50.000 | 210356 |
| 100 | 100.000 | 461537 |
| cc | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

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57) Ethylbenzene ( )

Ret. Time 16.29 min., Extract & Integrate from 16.14 to 16.44 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 91.00 | | | *** METH DEFAULT *** |
| Q1 | 106.00 | 28.60 | 30.0 | *** METH DEFAULT *** |
| Q2 | 78.00 | 7.50 | 30.0 | *** METH DEFAULT *** |
| Q3 | 65.00 | 9.40 | 30.0 | *** METH DEFAULT *** |

| Lvl ID | Conc (ug/L) | Response |
|---|---|---|
| 0.5 | 0.500 | 7884 |
| 1.0 | 1.000 | 15030 |
| 2.0 | 2.000 | 30553 |
| 5.0 | 5.000 | 83413 |
| 10 | 10.000 | 178252 |
| 20 | 20.000 | 376729 |
| 50 | 50.000 | 1127647 |
| 100 | 100.000 | 2470258 |
| cc | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

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58) m&p-xylene ( )

Ret. Time 16.40 min., Extract & Integrate from 16.25 to 16.55 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 106.00 | | | *** METH DEFAULT *** |

| | | | | |
|---|---|---|---|---|
| Q2 | 105.00 | 45.10 | 30.0 | *** METH DEFAULT *** |
| Q3 | 77.00 | 29.80 | 30.0 | *** METH DEFAULT *** |

| Lvl | ID | Conc (ug/L) | Response |
|---|---|---|---|
| 0.5 | | 1.000 | 4995 |
| 1.0 | | 2.000 | 10199 |
| [illegible] | | 4.000 | 20712 |
| 5.0 | | 10.000 | 57934 |
| 10 | | 20.000 | 128283 |
| 20 | | 40.000 | 269124 |
| 50 | | 100.000 | 821602 |
| 100 | | 200.000 | 1893098 |
| cc | | 20.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Linear

---

59) o-Xylene ( )

Ret. Time 16.84 min., Extract & Integrate from 16.69 to 16.99 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 106.00 | | | *** METH DEFAULT *** |
| Q1 | 91.00 | 226.60 | 30.0 | *** METH DEFAULT *** |
| Q2 | 65.00 | 17.10 | 30.0 | *** METH DEFAULT *** |
| Q3 | 92.00 | 17.40 | 30.0 | *** METH DEFAULT *** |

| Lvl | ID | Conc (ug/L) | Response |
|---|---|---|---|
| 0.5 | | 0.500 | 2464 |
| 1.0 | | 1.000 | 4956 |
| [illegible] | | 2.000 | 9387 |
| [illegible] | | 5.000 | 25934 |
| 10 | | 10.000 | 58850 |
| 20 | | 20.000 | 124891 |
| 50 | | 50.000 | 380850 |
| 100 | | 100.000 | 883352 |
| cc | | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Linear

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60) Styrene ( )

Ret. Time 16.86 min., Extract & Integrate from 16.71 to 17.01 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 104.00 | | | *** METH DEFAULT *** |
| Q1 | 78.00 | 48.00 | 30.0 | *** METH DEFAULT *** |
| Q2 | 74.00 | 7.00 | 30.0 | *** METH DEFAULT *** |
| Q3 | 52.00 | 10.30 | 30.0 | *** METH DEFAULT *** |

| Lvl | ID | Conc (ug/L) | Response |
|---|---|---|---|
| 0.5 | | 0.500 | 4022 |
| 1.0 | | 1.000 | 7852 |
| 2.0 | | 2.000 | 16072 |
| [illegible] | | 5.000 | 46042 |
| 10 | | 10.000 | 101920 |

| | | |
|---|---|---|
| 50 | 50.000 | 669298 |
| 100 | 100.000 | 1536255 |
| cc | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Linear

---

61) Isopropylbenzene ( )

Ret. Time 17.18 min., Extract & Integrate from 17.03 to 17.33 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 105.00 | | | *** METH DEFAULT *** |
| Q1 | 120.00 | 23.80 | 30.0 | *** METH DEFAULT *** |
| Q2 | 77.00 | 16.10 | 30.0 | *** METH DEFAULT *** |
| Q3 | 51.00 | 10.90 | 30.0 | *** METH DEFAULT *** |

| Lvl ID | Conc (ug/L) | Response |
|---|---|---|
| 0.5 | 0.500 | 5905 |
| 1.0 | 1.000 | 11759 |
| 2.0 | 2.000 | 23476 |
| 5.0 | 5.000 | 66630 |
| 10 | 10.000 | 150099 |
| 20 | 20.000 | 320097 |
| 50 | 50.000 | 982448 |
| 100 | 100.000 | 2169681 |
| cc | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Linear

---

62) 4-Bromofluorobenzene ( )

Ret. Time 17.43 min., Extract & Integrate from 17.28 to 17.58 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 95.00 | | | *** METH DEFAULT *** |
| Q1 | 174.00 | 71.10 | 30.0 | *** METH DEFAULT *** |
| Q2 | 176.00 | 67.60 | 30.0 | *** METH DEFAULT *** |
| Q3 | 75.00 | 45.10 | 30.0 | *** METH DEFAULT *** |

| Lvl ID | Conc (ug/L) | Response |
|---|---|---|
| 0.5 | 0.500 | 2013 |
| 1.0 | 1.000 | 3417 |
| 2.0 | 2.000 | 6567 |
| 5.0 | 5.000 | 18601 |
| 10 | 10.000 | 41706 |
| 20 | 20.000 | 88094 |
| 50 | 40.000 | 216077 |
| 100 | 50.000 | 282725 |
| cc | 20.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

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63) Bromobenzene ( )

Ret. Time 17.62 min., Extract & Integrate from 17.47 to 17.77 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 156.00 | | | *** METH DEFAULT *** |
| Q1 | 77.00 | 193.00 | 30.0 | *** METH DEFAULT *** |
| Q2 | 158.00 | 97.20 | 30.0 | *** METH DEFAULT *** |
| | 76.00 | 14.40 | 30.0 | *** METH DEFAULT *** |

| Lvl ID | Conc (ug/L) | Response |
|---|---|---|
| 0.5 | 0.500 | 1586 |
| 1.0 | 1.000 | 3099 |
| 2.0 | 2.000 | 5923 |
| 5.0 | 5.000 | 16630 |
| 10 | 10.000 | 36147 |
| 20 | 20.000 | 78327 |
| 50 | 50.000 | 234875 |
| 100 | not used for this compound | |
| cc | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

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64) 1,2,3-Trichloropropane ( )

Ret. Time 17.64 min., Extract & Integrate from 17.49 to 17.79 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 75.00 | | | *** METH DEFAULT *** |
| Q1 | 77.00 | 178.10 | 30.0 | *** METH DEFAULT *** |
| Q2 | 110.00 | 33.60 | 30.0 | *** METH DEFAULT *** |
| | 112.00 | 21.00 | 30.0 | *** METH DEFAULT *** |

| Lvl ID | Conc (ug/L) | Response |
|---|---|---|
| 0.5 | 0.500 | 1974 |
| 1.0 | 1.000 | 3002 |
| 2.0 | 2.000 | 5782 |
| 5.0 | 5.000 | 14360 |
| 10 | 10.000 | 28396 |
| 20 | 20.000 | 58201 |
| 50 | 50.000 | 159768 |
| 100 | 100.000 | 329638 |
| cc | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

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65) n-Propylbenzene ( )

Ret. Time 17.61 min., Extract & Integrate from 17.46 to 17.76 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 91.00 | | | *** METH DEFAULT *** |
| Q1 | 120.00 | 19.60 | 30.0 | *** METH DEFAULT *** |
| Q2 | 92.00 | 10.80 | 30.0 | *** METH DEFAULT *** |
| Q3 | 65.00 | 10.90 | 30.0 | *** METH DEFAULT *** |

Lvl ID Conc (ug/L) Response

| | | |
|---|---|---|
| 1.0 | 1.000 | 15491 |
| 2.0 | 2.000 | 31713 |
| 5.0 | 5.000 | 88057 |
| 10 | 10.000 | 198487 |
| 20 | 20.000 | 422042 |
| 50 | 50.000 | 1262199 |
| [illegible] | 100.000 | 2847964 |
| cc | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Linear

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66) 2-Chlorotoluene ( )

Ret. Time 17.79 min., Extract & Integrate from 17.64 to 17.94 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 91.00 | | | *** METH DEFAULT *** |
| Q1 | 126.00 | 27.50 | 30.0 | *** METH DEFAULT *** |
| Q2 | 89.00 | 17.30 | 30.0 | *** METH DEFAULT *** |
| Q3 | 90.00 | 9.60 | 30.0 | *** METH DEFAULT *** |

| Lvl | ID | Conc (ug/L) | Response |
|---|---|---|---|
| 0.5 | | 0.500 | 5202 |
| 1.0 | | 1.000 | 10812 |
| 2.0 | | 2.000 | 21603 |
| 5.0 | | 5.000 | 61271 |
| 10 | | 10.000 | 135131 |
| 20 | | 20.000 | 295591 |
| 50 | | 50.000 | 851032 |
| [illegible] | | 100.000 | 1908175 |
| [illegible] | | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Linear

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67) 4-Chlorotoluene ( )

Ret. Time 17.90 min., Extract & Integrate from 17.75 to 18.05 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 91.00 | | | *** METH DEFAULT *** |
| Q1 | 126.00 | 30.40 | 30.0 | *** METH DEFAULT *** |
| Q2 | 125.00 | 12.40 | 30.0 | *** METH DEFAULT *** |
| Q3 | 128.00 | 9.80 | 30.0 | *** METH DEFAULT *** |

| Lvl | ID | Conc (ug/L) | Response |
|---|---|---|---|
| 0.5 | | 0.500 | 4869 |
| 1.0 | | 1.000 | 9442 |
| 2.0 | | 2.000 | 19045 |
| 5.0 | | 5.000 | 53366 |
| 10 | | 10.000 | 117921 |
| 20 | | 20.000 | 249487 |
| 50 | | 50.000 | 718905 |
| 100 | | 100.000 | 1590213 |
| [illegible] | | 10.000 | -1 |

Curve Fit: Avg. RF

---

68) 1,3,5-Trimethylbenzene ( )

Ret. Time 17.78 min., Extract & Integrate from 17.63 to 17.93 min.

| Signal | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|
| Tgt 105.00 | | | *** METH DEFAULT *** |
| Q1 120.00 | 46.60 | 30.0 | *** METH DEFAULT *** |
| Q2 119.00 | 11.60 | 30.0 | *** METH DEFAULT *** |
| Q3 77.00 | 14.10 | 30.0 | *** METH DEFAULT *** |

| Lvl ID | Conc (ug/L) | Response |
|---|---|---|
| 0.5 | 0.500 | 4766 |
| 1.0 | 1.000 | 9629 |
| 2.0 | 2.000 | 20302 |
| 5.0 | 5.000 | 56172 |
| 10 | 10.000 | 126922 |
| 20 | 20.000 | 284472 |
| 50 | 50.000 | 844318 |
| 100 | 100.000 | 1881867 |
| cc | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Linear

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69) tert-Butylbenzene ( )

Ret. Time 18.14 min., Extract & Integrate from 17.99 to 18.29 min.

| Signal | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|
| Tgt 119.00 | | | *** METH DEFAULT *** |
| Q1 91.00 | 75.70 | 30.0 | *** METH DEFAULT *** |
| Q2 134.00 | 25.50 | 30.0 | *** METH DEFAULT *** |
| Q3 79.00 | 11.10 | 30.0 | *** METH DEFAULT *** |

| Lvl ID | Conc (ug/L) | Response |
|---|---|---|
| 0.5 | 0.500 | 3664 |
| 1.0 | 1.000 | 7186 |
| 2.0 | 2.000 | 14936 |
| 5.0 | 5.000 | 42389 |
| 10 | 10.000 | 97172 |
| 20 | 20.000 | 202262 |
| 50 | 50.000 | 613515 |
| 100 | 100.000 | 1370318 |
| cc | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Linear

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70) 1,2,4-Trimethylbenzene ( )

Ret. Time 18.20 min., Extract & Integrate from 18.05 to 18.35 min.

| Signal | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|
| Tgt 105.00 | | | *** METH DEFAULT *** |

| | | | | |
|---|---|---|---|---|
| Q2 | 119.00 | 11.60 | 30.0 | *** METH DEFAULT *** |
| Q3 | 77.00 | 13.10 | 30.0 | *** METH DEFAULT *** |

| Lvl | ID | Conc (ug/L) | Response |
|---|---|---|---|
| 0.5 | | 0.500 | 4779 |
| 1.0 | | 1.000 | 9739 |
| | | 2.000 | 20648 |
| 5.0 | | 5.000 | 57381 |
| 10 | | 10.000 | 128130 |
| 20 | | 20.000 | 283684 |
| 50 | | 50.000 | 823832 |
| 100 | | 100.000 | 1806737 |
| cc | | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Linear

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71) sec-Butylbenzene ( )

Ret. Time 18.37 min., Extract & Integrate from 18.22 to 18.52 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 105.00 | | | *** METH DEFAULT *** |
| Q1 | 134.00 | 17.10 | 30.0 | *** METH DEFAULT *** |
| Q2 | 91.00 | 15.60 | 30.0 | *** METH DEFAULT *** |
| Q3 | 77.00 | 12.70 | 30.0 | *** METH DEFAULT *** |

| Lvl | ID | Conc (ug/L) | Response |
|---|---|---|---|
| 0.5 | | 0.500 | 6013 |
| 1.0 | | 1.000 | 11914 |
| | | 2.000 | 25280 |
| 5.0 | | 5.000 | 71606 |
| 10 | | 10.000 | 160486 |
| 20 | | 20.000 | 352534 |
| 50 | | 50.000 | 1014922 |
| 100 | | 100.000 | 2239437 |
| cc | | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Linear

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72) 1,3-Dichlorobenzene ( )

Ret. Time 18.60 min., Extract & Integrate from 18.45 to 18.75 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 146.00 | | | *** METH DEFAULT *** |
| Q1 | 111.00 | 42.30 | 30.0 | *** METH DEFAULT *** |
| Q2 | 148.00 | 63.30 | 30.0 | *** METH DEFAULT *** |
| Q3 | 75.00 | 31.90 | 30.0 | *** METH DEFAULT *** |

| Lvl | ID | Conc (ug/L) | Response |
|---|---|---|---|
| 0.5 | | 0.500 | 2701 |
| 1.0 | | 1.000 | 5555 |
| 2.0 | | 2.000 | 11540 |
| | | 5.000 | 30631 |
| 10 | | 10.000 | 67722 |

| | | |
|---|---|---|
| 50 | 50.000 | 423534 |
| 100 | not used for this compound | |
| cc | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

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73) 4-Isopropyltoluene ( )

Ret. Time 18.50 min., Extract & Integrate from 18.35 to 18.65 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 119.00 | | | *** METH DEFAULT *** |
| Q1 | 134.00 | 24.90 | 30.0 | *** METH DEFAULT *** |
| Q2 | 91.00 | 25.10 | 30.0 | *** METH DEFAULT *** |
| Q3 | 77.00 | 8.40 | 30.0 | *** METH DEFAULT *** |

| Lvl ID | Conc (ug/L) | Response |
|---|---|---|
| 0.5 | 0.500 | 4546 |
| 1.0 | 1.000 | 9622 |
| 2.0 | 2.000 | 19135 |
| 5.0 | 5.000 | 54340 |
| 10 | 10.000 | 125815 |
| 20 | 20.000 | 283503 |
| 50 | 50.000 | 820591 |
| 100 | 100.000 | 1806125 |
| cc | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Linear

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74) 1,4-Dichlorobenzene-d4 (ISTD TR)

Ret. Time 18.67 min., Extract & Integrate from 18.52 to 18.82 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 152.00 | | | *** METH DEFAULT *** |
| Q1 | 150.00 | 163.50 | 30.0 | *** METH DEFAULT *** |
| Q2 | 115.00 | 61.30 | 30.0 | *** METH DEFAULT *** |
| Q3 | 78.00 | 41.50 | 30.0 | *** METH DEFAULT *** |

| Lvl ID | Conc (ug/L) | Response |
|---|---|---|
| 0.5 | 20.000 | 75433 |
| 1.0 | 20.000 | 77556 |
| 2.0 | 20.000 | 76022 |
| 5.0 | 20.000 | 81077 |
| 10 | 20.000 | 86010 |
| 20 | 20.000 | 98988 |
| 50 | 20.000 | 100802 |
| 100 | 20.000 | 106356 |
| cc | 20.000 | -1 |

Qualifier Peak Analysis ON ISTD conc: 20.000 ug/L
Curve Fit: Avg. RF

---

75) Bromoform ( )

Ret. Time 17.13 min., Extract & Integrate from 16.98 to 17.28 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 173.00 | | | *** METH DEFAULT *** |
| Q1 | 175.00 | 48.70 | 30.0 | *** METH DEFAULT *** |
| Q2 | 93.00 | 28.40 | 30.0 | *** METH DEFAULT *** |
| | 81.00 | 26.90 | 30.0 | *** METH DEFAULT *** |

| Lvl ID | Conc (ug/L) | Response |
|---|---|---|
| 0.5 | 0.500 | 779 |
| 1.0 | 1.000 | 1626 |
| 2.0 | 2.000 | 2903 |
| 5.0 | 5.000 | 7074 |
| 10 | 10.000 | 14654 |
| 20 | 20.000 | 31392 |
| 50 | 50.000 | 95332 |
| 100 | 100.000 | 198261 |
| cc | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

---

76) 1,1,2,2-Tetrachloroethane ( )

Ret. Time 17.55 min., Extract & Integrate from 17.40 to 17.70 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 83.00 | | | *** METH DEFAULT *** |
| Q1 | 131.00 | 8.20 | 30.0 | *** METH DEFAULT *** |
| Q2 | 85.00 | 63.30 | 30.0 | *** METH DEFAULT *** |
| | 95.00 | 14.10 | 30.0 | *** METH DEFAULT *** |

| Lvl ID | Conc (ug/L) | Response |
|---|---|---|
| 0.5 | 0.500 | 1517 |
| 1.0 | 1.000 | 2658 |
| 2.0 | 2.000 | 5307 |
| 5.0 | 5.000 | 12477 |
| 10 | 10.000 | 25336 |
| 20 | 20.000 | 52084 |
| 50 | 50.000 | 154374 |
| 100 | 100.000 | 310408 |
| cc | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

---

77) 1,4-Dichlorobenzene ( )

Ret. Time 18.70 min., Extract & Integrate from 18.55 to 18.85 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 146.00 | | | *** METH DEFAULT *** |
| Q1 | 111.00 | 40.80 | 30.0 | *** METH DEFAULT *** |
| Q2 | 148.00 | 63.80 | 30.0 | *** METH DEFAULT *** |
| Q3 | 73.00 | 13.40 | 30.0 | *** METH DEFAULT *** |

| Lvl ID | Conc (ug/L) | Response |
|---|---|---|

| | | |
|---|---|---|
| 1.0 | 1.000 | 6332 |
| 2.0 | 2.000 | 12261 |
| 5.0 | 5.000 | 32865 |
| 10 | 10.000 | 70351 |
| 20 | 20.000 | 155793 |
| 50 | 50.000 | 418602 |
| [illegible] | 100.000 | 913480 |
| cc | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

---

78) 1,2-Dichlorobenzene ( )

Ret. Time 19.15 min., Extract & Integrate from 19.00 to 19.30 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 146.00 | | | *** METH DEFAULT *** |
| Q1 | 111.00 | 43.60 | 30.0 | *** METH DEFAULT *** |
| Q2 | 148.00 | 63.30 | 30.0 | *** METH DEFAULT *** |
| Q3 | 75.00 | 32.10 | 30.0 | *** METH DEFAULT *** |

| Lvl | ID | Conc (ug/L) | Response |
|---|---|---|---|
| 0.5 | | 0.500 | 2479 |
| 1.0 | | 1.000 | 4880 |
| 2.0 | | 2.000 | 9807 |
| 5.0 | | 5.000 | 26496 |
| 10 | | 10.000 | 56626 |
| 20 | | 20.000 | 121595 |
| 50 | | 50.000 | 350170 |
| [illegible] | | 100.000 | 751178 |
| cc | | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

---

79) n-Butylbenzene ( )

Ret. Time 18.95 min., Extract & Integrate from 18.80 to 19.10 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 91.00 | | | *** METH DEFAULT *** |
| Q1 | 134.00 | 22.00 | 30.0 | *** METH DEFAULT *** |
| Q2 | 92.00 | 58.80 | 30.0 | *** METH DEFAULT *** |
| Q3 | 65.00 | 12.60 | 30.0 | *** METH DEFAULT *** |

| Lvl | ID | Conc (ug/L) | Response |
|---|---|---|---|
| 0.5 | | 0.500 | 5088 |
| 1.0 | | 1.000 | 10142 |
| 2.0 | | 2.000 | 22090 |
| 5.0 | | 5.000 | 59459 |
| 10 | | 10.000 | 134276 |
| 20 | | 20.000 | 286807 |
| 50 | | 50.000 | 846545 |
| [illegible] | | 100.000 | 1833613 |
| [illegible] | | 10.000 | -1 |

Curve Fit: Avg. RF

---

80) 1,2-Dibromo-3-chloropropane ( )

Ret. Time 20.10 min., Extract & Integrate from 19.95 to 20.25 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 75.00 | | | *** METH DEFAULT *** |
| Q1 | 155.00 | 84.90 | 30.0 | *** METH DEFAULT *** |
| Q2 | 157.00 | 109.20 | 30.0 | *** METH DEFAULT *** |
| Q3 | 159.00 | 25.20 | 30.0 | *** METH DEFAULT *** |

| Lvl ID | Conc (ug/L) | Response |
|---|---|---|
| 0.5 | not used for this compound | |
| 1.0 | not used for this compound | |
| 2.0 | 2.000 | 765 |
| 5.0 | 5.000 | 2317 |
| 10 | 10.000 | 4079 |
| 20 | 20.000 | 7010 |
| 50 | 50.000 | 18793 |
| 100 | 100.000 | 41665 |
| cc | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Linear

---

81) 1,2,4-Trichlorobenzene ( )

Ret. Time 21.21 min., Extract & Integrate from 21.06 to 21.36 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 180.00 | | | *** METH DEFAULT *** |
| Q1 | 182.00 | 95.90 | 30.0 | *** METH DEFAULT *** |
| Q2 | 145.00 | 30.00 | 30.0 | *** METH DEFAULT *** |
| Q3 | 109.00 | 27.20 | 30.0 | *** METH DEFAULT *** |

| Lvl ID | Conc (ug/L) | Response |
|---|---|---|
| 0.5 | 0.500 | 1598 |
| 1.0 | 1.000 | 3026 |
| 2.0 | 2.000 | 5890 |
| 5.0 | 5.000 | 15110 |
| 10 | 10.000 | 31936 |
| 20 | 20.000 | 68697 |
| 50 | 50.000 | 200554 |
| 100 | 100.000 | 446678 |
| cc | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

---

82) Hexachlorobutadiene ( )

Ret. Time 21.31 min., Extract & Integrate from 21.16 to 21.46 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 225.00 | | | *** METH DEFAULT *** |

| | | | | |
|---|---|---|---|---|
| Q1 | 223.00 | 65.60 | 30.0 | *** METH DEFAULT *** |
| Q2 | 227.00 | 65.60 | 30.0 | *** METH DEFAULT *** |
| Q3 | 190.00 | 49.90 | 30.0 | *** METH DEFAULT *** |

| Lvl | ID | Conc (ug/L) | Response |
|---|---|---|---|
| 0.5 | | 0.500 | 581 |
| 1.0 | | 1.000 | 1033 |
| [illegible] | | 2.000 | 2267 |
| 5.0 | | 5.000 | 5739 |
| 10 | | 10.000 | 12732 |
| 20 | | 20.000 | 26068 |
| 50 | | 50.000 | 79520 |
| 100 | | 100.000 | 174729 |
| cc | | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

---

33) Naphthalene ( )

Ret. Time 21.66 min., Extract & Integrate from 21.51 to 21.81 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 128.00 | | | *** METH DEFAULT *** |
| Q1 | 126.00 | 7.10 | 30.0 | *** METH DEFAULT *** |
| Q2 | 102.00 | 8.30 | 30.0 | *** METH DEFAULT *** |
| Q3 | 64.00 | 8.10 | 30.0 | *** METH DEFAULT *** |

| Lvl | ID | Conc (ug/L) | Response |
|---|---|---|---|
| 0.5 | | 0.500 | 2271 |
| 1.0 | | 1.000 | 4572 |
| [illegible] | | 2.000 | 8666 |
| 5.0 | | 5.000 | 22699 |
| 10 | | 10.000 | 48097 |
| 20 | | 20.000 | 102308 |
| 50 | | 50.000 | 291206 |
| 100 | | 100.000 | 633579 |
| cc | | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

---

34) 1,2,3-Trichlorobenzene ( )

Ret. Time 22.05 min., Extract & Integrate from 21.90 to 22.20 min.

| Signal | | Rel Resp. | Pct. Unc.(abs) | Integration |
|---|---|---|---|---|
| Tgt | 180.00 | | | *** METH DEFAULT *** |
| Q1 | 182.00 | 94.80 | 30.0 | *** METH DEFAULT *** |
| Q2 | 145.00 | 31.10 | 30.0 | *** METH DEFAULT *** |
| Q3 | 109.00 | 27.30 | 30.0 | *** METH DEFAULT *** |

| Lvl | ID | Conc (ug/L) | Response |
|---|---|---|---|
| 0.5 | | 0.500 | 1222 |
| 1.0 | | 1.000 | 2347 |
| [illegible] | | 2.000 | 4651 |
| [illegible] | | 5.000 | 11737 |
| 10 | | 10.000 | 24783 |

| | | |
|---|---|---|
| 25 | 25.000 | 93048 |
| 50 | 50.000 | 152644 |
| 100 | 100.000 | 339472 |
| cc | 10.000 | -1 |

Qualifier Peak Analysis ON
Curve Fit: Avg. RF

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END OF DATA ANALYSIS PARAMETERS

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Wed May 29 11:22:33 2002

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

**Client:** GeoTrans
**Project:** Western Ave/#E049-106

**Service Request:** X2200452
**Date Analyzed:** 05/29/2002

## Continuing Calibration Verification Summary
## Volatile Organic Compounds

**ICAL Type:** Internal Standard
**Analysis Method:** 8260B

**ICAL Date:** 05/28/2002
**ICAL ID:** CAL292
**Analysis Lot:** XWG0200680
**Units:** ug/L

**File ID:** J:\MS03\MAY02\MAY2902\29MAY005.D

| Analyte Name | Expected | Result | Min RF | Average RF | CCV RF | %D | %Drift | Criteria | Curve Fit |
|---|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | 10 | 9.4 | 0.01 | 0.312 | 0.293 | -6 | NA | ± 28 % | AverageRF |
| † Chloromethane | 10 | 9.0 | 0.1 | 0.568 | 0.510 | -10 | NA | ± 36 % | AverageRF |
| ‡ Vinyl Chloride | 10 | 9.1 | 0.01 | 0.635 | 0.575 | -9 | NA | ± 20 % | AverageRF |
| Bromomethane | 10 | 8.2 | 0.01 | 0.530 | 0.435 | -18 | NA | ± 86 % | AverageRF |
| Chloroethane | 10 | 8.8 | 0.01 | 0.425 | 0.374 | -12 | NA | ± 31 % | AverageRF |
| Trichlorofluoromethane | 10 | 9.6 | 0.01 | 0.588 | 0.564 | -4 | NA | ± 32 % | AverageRF |
| 1,1,2-Trichlorotrifluoroethane | 10 | 10 | 0.01 | 0.397 | 0.396 | 0 | NA | ± 33 % | AverageRF |
| ‡ 1,1-Dichloroethene | 10 | 9.5 | 0.01 | 0.393 | 0.374 | -5 | NA | ± 20 % | AverageRF |
| Acetone | 40 | 39 | 0.01 | 0.0203 | 0.0165 | NA | -3 | ± 62 % | Linear |
| Iodomethane | 40 | 39 | 0.01 | 0.669 | 0.658 | -2 | NA | ± 59 % | AverageRF |
| Carbon Disulfide | 40 | 40 | 0.01 | 1.54 | 1.53 | -1 | NA | ± 30 % | AverageRF |
| Methylene Chloride | 10 | 9.4 | 0.01 | 0.516 | 0.486 | -6 | NA | ± 23 % | AverageRF |
| Methyl tert-Butyl Ether | 10 | 10 | 0.01 | 0.818 | 0.826 | 1 | NA | ± 22 % | AverageRF |
| ıs-1,2-Dichloroethene | 10 | 9.3 | 0.01 | 0.472 | 0.439 | -7 | NA | ± 20 % | AverageRF |
| ı-,1-Dichloroethane | 10 | 9.8 | 0.1 | 0.857 | 0.838 | -2 | NA | ± 20 % | AverageRF |
| Vinyl Acetate | 40 | 47 | 0.01 | 0.387 | 0.454 | 17 | NA | ± 114 % | AverageRF |
| 2,2-Dichloropropane | 10 | 11 | 0.01 | 0.596 | 0.649 | 9 | NA | ± 30 % | AverageRF |
| 2-Butanone (MEK) | 40 | 43 | 0.01 | 0.0234 | 0.0230 | NA | 7 | ± 28 % | Linear |
| cis-1,2-Dichloroethene | 10 | 9.8 | 0.01 | 0.522 | 0.511 | -2 | NA | ± 14 % | AverageRF |
| Bromochloromethane | 10 | 9.6 | 0.01 | 0.202 | 0.194 | -4 | NA | ± 20 % | AverageRF |
| ‡ Chloroform | 10 | 9.7 | 0.01 | 0.852 | 0.823 | -3 | NA | ± 20 % | AverageRF |
| 1,1,1-Trichloroethane | 10 | 9.8 | 0.01 | 0.631 | 0.619 | -2 | NA | ± 22 % | AverageRF |
| Carbon Tetrachloride | 10 | 9.7 | 0.01 | 0.488 | 0.474 | -3 | NA | ± 24 % | AverageRF |
| 1,1-Dichloropropene | 10 | 9.6 | 0.01 | 0.603 | 0.579 | -4 | NA | ± 18 % | AverageRF |
| Benzene | 10 | 9.7 | 0.01 | 1.59 | 1.55 | -3 | NA | ± 20 % | AverageRF |
| 1,2-Dichloroethane | 10 | 9.2 | 0.01 | 0.557 | 0.510 | -8 | NA | ± 20 % | AverageRF |
| Trichloroethene | 10 | 9.1 | 0.01 | 0.453 | 0.413 | -9 | NA | ± 20 % | AverageRF |
| ‡ 1,2-Dichloropropane | 10 | 9.4 | 0.01 | 0.454 | 0.429 | -6 | NA | ± 20 % | AverageRF |
| Dibromomethane | 10 | 9.7 | 0.01 | 0.252 | 0.245 | -3 | NA | ± 20 % | AverageRF |
| Bromodichloromethane | 10 | 9.6 | 0.01 | 0.572 | 0.548 | -4 | NA | ± 20 % | AverageRF |
| cis-1,3-Dichloropropene | 10 | 9.8 | 0.01 | 0.616 | 0.606 | -2 | NA | ± 20 % | AverageRF |
| 4-Methyl-2-pentanone (MIBK) | 40 | 39 | 0.01 | 0.0238 | 0.0235 | -1 | NA | ± 29 % | AverageRF |
| ‡ Toluene | 10 | 10 | 0.01 | 0.904 | 0.924 | 2 | NA | ± 20 % | AverageRF |
| trans-1,3-Dichloropropene | 10 | 10 | 0.01 | 0.467 | 0.470 | 1 | NA | ± 20 % | AverageRF |
| 1,1,2-Trichloroethane | 10 | 9.8 | 0.01 | 0.234 | 0.230 | -2 | NA | ± 19 % | AverageRF |
| Tetrachloroethene | 10 | 9.7 | 0.01 | 0.262 | 0.252 | -3 | NA | ± 21 % | AverageRF |
| 2-Hexanone | 40 | 40 | 0.01 | 0.131 | 0.131 | 0 | NA | ± 22 % | AverageRF |
| 1,3-Dichloropropane | 10 | 9.6 | 0.01 | 0.466 | 0.449 | -4 | NA | ± 34 % | AverageRF |

ılts flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound ‡ CCC Compound

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

**Client:** GeoTrans
**Project:** Western Ave/#E049-106

**Service Request:** X2200452
**Date Analyzed:** 05/29/2002

## Continuing Calibration Verification Summary
## Volatile Organic Compounds

**ICAL Type:** Internal Standard
**Analysis Method:** 8260B

**ICAL Date:** 05/28/2002
**ICAL ID:** CAL292
**Analysis Lot:** XWG0200680
**Units:** ug/L

| Analyte Name | Expected | Result | Min RF | Average RF | CCV RF | %D | %Drift | Criteria | Curve Fit |
|---|---|---|---|---|---|---|---|---|---|
| Dibromochloromethane | 10 | 9.8 | 0.01 | 0.288 | 0.283 | -2 | NA | ± 20 % | AverageRF |
| 1,2-Dibromoethane | 10 | 9.9 | 0.01 | 0.242 | 0.240 | -1 | NA | ± 20 % | AverageRF |
| † Chlorobenzene | 10 | 10 | 0.3 | 1.09 | 1.08 | -1 | NA | ± 20 % | AverageRF |
| 1,1,1,2-Tetrachloroethane | 10 | 9.9 | 0.01 | 0.386 | 0.380 | -1 | NA | ± 20 % | AverageRF |
| ‡ Ethylbenzene | 10 | 10 | 0.01 | 1.89 | 1.88 | 0 | NA | ± 20 % | AverageRF |
| m,p-Xylenes | 20 | 18 | 0.01 | 0.666 | 0.662 | NA | -8 | ± 22 % | Linear |
| o-Xylene | 10 | 9.2 | 0.01 | 0.620 | 0.615 | NA | -8 | ± 25 % | Linear |
| Styrene | 10 | 9.3 | 0.01 | 1.06 | 1.08 | NA | -8 | ± 24 % | Linear |
| Isopropylbenzene | 10 | 9.2 | 0.01 | 1.55 | 1.57 | NA | -8 | ± 25 % | Linear |
| Bromobenzene | 10 | 11 | 0.01 | 0.373 | 0.398 | 7 | NA | ± 35 % | AverageRF |
| 1,2,3-Trichloropropane | 10 | 9.6 | 0.01 | 0.323 | 0.311 | -4 | NA | ± 30 % | AverageRF |
| n-Propylbenzene | 10 | 9.3 | 0.01 | 2.05 | 2.09 | NA | -7 | ± 22 % | Linear |
| 2-Chlorotoluene | 10 | 9.4 | 0.01 | 1.40 | 1.44 | NA | -6 | ± 22 % | Linear |
| 4-Chlorotoluene | 10 | 11 | 0.01 | 1.21 | 1.30 | 8 | NA | ± 23 % | AverageRF |
| [illegible],5-Trimethylbenzene | 10 | 9.1 | 0.01 | 1.32 | 1.33 | NA | -10 | ± 31 % | Linear |
| [illegible]-Butylbenzene | 10 | 9.2 | 0.01 | 0.979 | 1.00 | NA | -8 | ± 22 % | Linear |
| 1,2,4-Trimethylbenzene | 10 | 9.4 | 0.01 | 1.32 | 1.38 | NA | -6 | ± 20 % | Linear |
| sec-Butylbenzene | 10 | 9.6 | 0.01 | 1.63 | 1.75 | NA | -5 | ± 23 % | Linear |
| 1,3-Dichlorobenzene | 10 | 11 | 0.01 | 0.690 | 0.774 | 12 | NA | ± 21 % | AverageRF |
| 4-Isopropyltoluene | 10 | 9.5 | 0.01 | 1.29 | 1.39 | NA | -5 | ± 22 % | Linear |
| † Bromoform | 10 | 9.4 | 0.1 | 0.372 | 0.348 | -6 | NA | ± 24 % | AverageRF |
| † 1,1,2,2-Tetrachloroethane | 10 | 9.8 | 0.3 | 0.639 | 0.624 | -2 | NA | ± 30 % | AverageRF |
| 1,4-Dichlorobenzene | 10 | 9.8 | 0.01 | 1.65 | 1.61 | -2 | NA | ± 20 % | AverageRF |
| 1,2-Dichlorobenzene | 10 | 10 | 0.01 | 1.31 | 1.36 | 3 | NA | ± 29 % | AverageRF |
| n-Butylbenzene | 10 | 10 | 0.01 | 3.00 | 3.00 | 0 | NA | ± 20 % | AverageRF |
| 1,2-Dibromo-3-chloropropane | 10 | 12 | 0.01 | 0.0889 | 0.0972 | NA | 19 | ± 31 % | Linear |
| 1,2,4-Trichlorobenzene | 10 | 9.3 | 0.01 | 0.778 | 0.726 | -7 | NA | ± 23 % | AverageRF |
| Hexachlorobutadiene | 10 | 9.7 | 0.01 | 0.295 | 0.285 | -3 | NA | ± 49 % | AverageRF |
| Naphthalene | 10 | 9.4 | 0.01 | 1.14 | 1.07 | -6 | NA | ± 27 % | AverageRF |
| 1,2,3-Trichlorobenzene | 10 | 9.3 | 0.01 | 0.600 | 0.560 | -7 | NA | ± 20 % | AverageRF |
| Dibromofluoromethane | 20 | 18 | 0.01 | 0.416 | 0.369 | -11 | NA | ± 78 % | AverageRF |
| Toluene-d8 | 20 | 20 | 0.01 | 0.984 | 0.969 | -2 | NA | ± 81 % | AverageRF |
| 4-Bromofluorobenzene | 20 | 20 | 0.01 | 0.438 | 0.441 | 1 | NA | ± 20 % | AverageRF |

[illegible]ults flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound ‡ CCC Compound

# Quantitation Report

| | | | | | |
|---|---|---|---|---|---|
| Bottle ID: | | Tier: | | Matrix: | WATER |
| Prod Code: | 8260 | Collect Date: | | Receive Date: | 05/29/2002 |

| | | | | | |
|---|---|---|---|---|---|
| Analysis Lot: | XWG0200680 | Prep Lot: | | Report Group: | |
| Analysis Method: | 8260B | Prep Method: | | | |
| Prep Ref: | | Prep Date: | | | |

| | | | |
|---|---|---|---|
| Quant Method: | J:\MS03\METHODS\82600528.M | Calibration ID: | CAL292 |
| Title: | | | |
| Tune Ref: | J:\MS03\MAY02\MAY2902\29MAY003.D | Method ID: | MJ103 |
| MB Ref: | | Quant based on Method | |

| | | | | | |
|---|---|---|---|---|---|
| Data File: | J:\MS03\MAY02\MAY2902\29MAY005.D | | | Instrument: | MS03 |
| Acqu Date: | 05/29/2002 11:18 | Quant Date: | 05/29/2002 13:06 | Vial: | 3 |
| Run Type: | CCV | | | Dilution: | 1.0 |
| Lab ID: | XWG0200680-2 | | | Soln Conc. Units: | ug/L |

## *Internal Standard Compounds*

| IS Ref | Parameter Name | RT | Quant Mass | Response | Solution Conc | Area Criteria |
|---|---|---|---|---|---|---|
| 1 | 1,4-Difluorobenzene | 12.49 | 114 | 270950 | 20.00 | NA |
| 2 | Chlorobenzene-d5 | 16.20 | 117 | 213360 | 20.00 | NA |
| 3 | 1,4-Dichlorobenzene-d4 | 18.66 | 152 | 104933 | 20.00 | NA |

## *Surrogate Compounds*

| IS Ref | Parameter Name | RT | RT Dev | RRT Dev | Quant Mass | Response | Solution Conc | %Rec | %Rec Limits | Rpt? |
|---|---|---|---|---|---|---|---|---|---|---|
| | Dibromofluoromethane | 11.41 | | | 113 | 100070 | 17.77 | | 84-113 | NA |
| 1 | Fluorobenzene | 12.37 | | | 96 | 333137 | 19.37 | | 70-130 | NA |
| 1 | Toluene-d8 | 14.51 | | | 98 | 262479 | 19.69 | | 68-126 | NA |
| 2 | 4-Bromofluorobenzene | 17.42 | | | 95 | 94061 | 20.13 | | 79-113 | NA |

## *Target Compounds*

Final Conc. Units: ug/L

| IS Ref | Parameter Name | RT | RT Dev | RRT Dev | QuantMass | Response | Solution Conc | Final Conc | Q | Rpt? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Dichlorodifluoromethane | 4.58 | | | 85 | 39746 | 9.42 | | | |
| 1 | Chloromethane | 5.09 | | | 50 | 69147 | 8.99 | | | |
| 1 | Vinyl Chloride | 5.35 | | | 62 | 77871 | 9.06 | | | |
| 1 | Bromomethane | 6.17 | | | 94 | 58883 | 8.20 | | | |
| 1 | Chloroethane | 6.38 | | | 64 | 50626 | 8.79 | | | |
| 1 | Trichlorofluoromethane | 6.85 | | | 101 | 76411 | 9.59 | | | |
| 1 | 1,1,2-Trichlorotrifluoroethane | 7.79 | | | 101 | 53683 | 9.99 | | | |
| 1 | Acrolein | 7.77 | | | 56 | 19780 | 78.87 | | | |
| 1 | 1,1-Dichloroethene | 7.89 | | | 96 | 50661 | 9.52 | | | |
| 1 | Acetone | 8.02 | | | 58 | 8924 | 38.76 | | | |
| 1 | Iodomethane | 8.23 | | | 142 | 356659 | 39.36 | | | |
| 1 | Carbon Disulfide | 8.33 | | | 76 | 827692 | 39.69 | | | |
| 1 | Acetonitrile | 8.62 | | | 41 | 27483m | 81.03 | | | |
| 1 | Methylene Chloride | 8.78 | | | 84 | 65818 | 9.41 | | | |

etected at or above MDL
alyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

| | | | | | |
|---|---|---|---|---|---|
| Data File: | J:\MS03\MAY02\MAY2902\29MAY005.D | | | Instrument: | MS03 |
| Acqu Date: | 05/29/2002 11:18 | Quant Date: | 05/29/2002 13:06 | Vial: | 3 |
| Run Type: | CCV | | | Dilution: | 1.0 |
| Lab ID: | XWG0200680-2 | | | Soln Conc. Units: | ug/L |

*Target Compounds* Final Conc. Units: ug/L

| Ref | Parameter Name | RT | RT Dev | RRT Dev | QuantMass | Response | Solution Conc | Final Conc | Q | Rpt? |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | tert-Butyl Alcohol | 8.81 | | | 59 | 20106 | 105.32 | | | |
| 1 | Methyl tert-Butyl Ether | 9.09 | | | 73 | 111881 | 10.09 | | | |
| 1 | trans-1,2-Dichloroethene | 9.16 | | | 96 | 59427 | 9.29 | | | |
| 1 | Acrylonitrile | 9.24 | | | 53 | 74046 | 76.98 | | | |
| 1 | Diisopropyl Ether | 9.78 | | | 45 | 197298 | 9.62 | | | |
| 1 | 1,1-Dichloroethane | 9.88 | | | 63 | 113584 | 9.79 | | | |
| 1 | Vinyl Acetate | 9.84 | | | 43 | 246249 | 46.99 | | | |
| 1 | tert-Butyl Ethyl Ether | 10.32 | | | 59 | 153702 | 9.85 | | | |
| 1 | 2,2-Dichloropropane | 10.73 | | | 77 | 87902 | 10.90 | | | |
| 1 | 2-Butanone (MEK) | 10.73 | | | 72 | 12468 | 42.90 | | | |
| 1 | cis-1,2-Dichloroethene | 10.75 | | | 96 | 69251 | 9.79 | | | |
| 1 | Bromochloromethane | 11.13 | | | 128 | 26332 | 9.63 | | | |
| 1 | Chloroform | 11.17 | | | 83 | 111466 | 9.65 | | | |
| 1 | Pentafluorobenzene | 11.40 | | | 168 | 132109 | 19.11 | | | |
| 1 | 1,1,1-Trichloroethane | 11.46 | | | 97 | 83843 | 9.81 | | | |
| 1 | Carbon Tetrachloride | 11.66 | | | 117 | 64247 | 9.71 | | | |
| 1 | 1,1-Dichloropropene | 11.68 | | | 75 | 78459 | 9.60 | | | |
| 1 | Benzene | 11.99 | | | 78 | 210040 | 9.73 | | | |
| 1 | tert-Amyl Methyl Ether | 12.00 | | | 73 | 126535 | 10.09 | | | |
| 1 | 1,2-Dichloroethane | 12.08 | | | 62 | 69157 | 9.16 | | | |
| | Trichloroethene | 12.87 | | | 95 | 55947 | 9.12 | | | |
| | 1,2-Dichloropropane | 13.26 | | | 63 | 58107 | 9.44 | | | |
| 1 | Dibromomethane | 13.45 | | | 93 | 33218 | 9.73 | | | |
| 1 | Bromodichloromethane | 13.60 | | | 83 | 74275 | 9.59 | | | |
| 1 | 2-Chloroethyl Vinyl Ether | 13.93 | | | 63 | 96147 | 40.02 | | | |
| 1 | cis-1,3-Dichloropropene | 14.19 | | | 75 | 82096 | 9.84 | | | |
| 1 | 4-Methyl-2-pentanone (MIBK) | 14.31 | | | 100 | 12744 | 39.46 | | | |
| 1 | Toluene | 14.59 | | | 92 | 125232 | 10.22 | | | |
| 1 | trans-1,3-Dichloropropene | 14.88 | | | 75 | 63727 | 10.07 | | | |
| 1 | 1,1,2-Trichloroethane | 15.11 | | | 83 | 31192 | 9.84 | | | |
| 1 | Tetrachloroethene | 15.23 | | | 164 | 34206 | 9.65 | | | |
| 1 | 2-Hexanone | 15.31 | | | 43 | 71053 | 39.97 | | | |
| 1 | 1,3-Dichloropropane | 15.33 | | | 76 | 60800 | 9.64 | | | |
| 1 | Dibromochloromethane | 15.58 | | | 129 | 38300 | 9.83 | | | |
| 1 | 1,2-Dibromoethane | 15.76 | | | 107 | 32506 | 9.90 | | | |
| 2 | Chlorobenzene | 16.23 | | | 112 | 115545 | 9.95 | | | |
| 2 | 1,1,1,2-Tetrachloroethane | 16.30 | | | 131 | 40580 | 9.87 | | | |
| 2 | Ethylbenzene | 16.28 | | | 91 | 200319 | 9.95 | | | |
| 2 | m,p-Xylenes | 16.39 | | | 106 | 141218 | 18.34 | | | |
| 2 | o-Xylene | 16.83 | | | 106 | 65648 | 9.22 | | | |
| 2 | Styrene | 16.85 | | | 104 | 115048 | 9.25 | | | |
| 2 | Isopropylbenzene | 17.18 | | | 105 | 167559 | 9.17 | | | |

...etected at or above MDL
...nalyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

| | | | | | |
|---|---|---|---|---|---|
| Data File: | J:\MS03\MAY02\MAY2902\29MAY005.D | | | Instrument: | MS03 |
| Acqu Date: | 05/29/2002 11:18 | Quant Date: | 05/29/2002 13:06 | Vial: | 3 |
| Run Type: | CCV | | | Dilution: | 1.0 |
| Lab ID: | XWG0200680-2 | | | Soln Conc. Units: | ug/L |

*Target Compounds* Final Conc. Units: ug/L

| Ref | Parameter Name | RT | RT Dev | RRT Dev | QuantMass | Response | Solution Conc | Final Conc | Q | Rpt? |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | Bromobenzene | 17.62 | | | 156 | 42427 | 10.67 | | | |
| 2 | 1,2,3-Trichloropropane | 17.62 | | | 75 | 33177 | 9.61 | | | |
| 2 | n-Propylbenzene | 17.61 | | | 91 | 222681 | 9.32 | | | |
| 2 | 2-Chlorotoluene | 17.77 | | | 91 | 154008 | 9.41 | | | |
| 2 | 4-Chlorotoluene | 17.89 | | | 91 | 139210 | 10.80 | | | |
| 2 | 1,3,5-Trimethylbenzene | 17.77 | | | 105 | 142381 | 9.05 | | | |
| 2 | tert-Butylbenzene | 18.13 | | | 119 | 106651 | 9.24 | | | |
| 2 | 1,2,4-Trimethylbenzene | 18.18 | | | 105 | 147414 | 9.39 | | | |
| 2 | sec-Butylbenzene | 18.36 | | | 105 | 186171 | 9.55 | | | |
| 2 | 1,3-Dichlorobenzene | 18.59 | | | 146 | 82587 | 11.23 | | | |
| 2 | 4-Isopropyltoluene | 18.48 | | | 119 | 148418 | 9.54 | | | |
| 3 | Bromoform | 17.12 | | | 173 | 18257 | 9.37 | | | |
| 3 | 1,1,2,2-Tetrachloroethane | 17.54 | | | 83 | 32718 | 9.75 | | | |
| 3 | 1,4-Dichlorobenzene | 18.69 | | | 146 | 84462 | 9.76 | | | |
| 3 | 1,2-Dichlorobenzene | 19.13 | | | 146 | 71207 | 10.32 | | | |
| 3 | n-Butylbenzene | 18.94 | | | 91 | 157444 | 10.01 | | | |
| 3 | 1,2-Dibromo-3-chloropropane | 20.09 | | | 75 | 5102 | 11.92 | | | |
| 3 | 1,2,4-Trichlorobenzene | 21.20 | | | 180 | 38071 | 9.33 | | | |
| 3 | Hexachlorobutadiene | 21.30 | | | 225 | 14944 | 9.66 | | | |
| 3 | Naphthalene | 21.64 | | | 128 | 56081 | 9.35 | | | |
| | 1,2,3-Trichlorobenzene | 22.03 | | | 180 | 29393 | 9.34 | | | |

detected at or above MDL
alyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
c: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

# *Calibration Verification Report*

**Calibration ID:** CAL292
**Method ID:** MJ103
**DataFile:** J:\MS03\MAY02\MAY2902\29MAY005.D

| Parameter Name | Type | PARM Type | Curve Fit | Method Criteria | Min RF | ICAL RF | CCV RF | %Diff | Sol'n Conc. | True Value | % Drift |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | | MS | AverageRF | 28 | 0.01 | 0.312 | 0.293 | -5.8 | | | |
| Chloromethane | SPCC | MS | AverageRF | 36 | 0.1 | 0.568 | 0.510 | -10.1 | | | |
| Vinyl Chloride | CCC | MS | AverageRF | 20 | 0.01 | 0.635 | 0.575 | -9.4 | | | |
| Bromomethane | | MS | AverageRF | 86 | 0.01 | 0.530 | 0.435 | -18.0 | | | |
| Chloroethane | | MS | AverageRF | 31 | 0.01 | 0.425 | 0.374 | -12.1 | | | |
| Trichlorofluoromethane | | MS | AverageRF | 32 | 0.01 | 0.588 | 0.564 | -4.1 | | | |
| Acrolein | | MS | AverageRF | 35 | 0.01 | 0.019 | 0.018 | -1.4 | | | |
| 1,1,2-Trichlorotrifluoroethane | | MS | AverageRF | 33 | 0.01 | 0.397 | 0.396 | -0.1 | | | |
| 1,1-Dichloroethene | CCC | MS | AverageRF | 20 | 0.01 | 0.393 | 0.374 | -4.8 | | | |
| Acetone | | MS | Linear | 62 | 0.01 | 0.020 | 0.016 | | 38.76 | 40.00 | -3.1 |
| Iodomethane | | MS | AverageRF | 59 | 0.01 | 0.669 | 0.658 | -1.6 | | | |
| Carbon Disulfide | | MS | AverageRF | 30 | 0.01 | 1.539 | 1.527 | -0.8 | | | |
| Acetonitrile | | MS | AverageRF | 35 | 0.01 | 0.025 | 0.025 | 1.3 | | | |
| Methylene Chloride | | MS | AverageRF | 23 | 0.01 | 0.516 | 0.486 | -5.9 | | | |
| tert-Butyl Alcohol | | MS | AverageRF | 35 | 0.01 | 0.014 | 0.015 | 5.3 | | | |
| Methyl tert-Butyl Ether | | MS | AverageRF | 22 | 0.01 | 0.818 | 0.826 | 0.9 | | | |
| trans-1,2-Dichloroethene | | MS | AverageRF | 20 | 0.01 | 0.472 | 0.439 | -7.1 | | | |
| Acrylonitrile | | MS | AverageRF | 35 | 0.01 | 0.071 | 0.068 | -3.8 | | | |
| Diisopropyl Ether | | MS | AverageRF | 35 | 0.01 | 1.513 | 1.456 | -3.8 | | | |
| Vinyl Acetate | | MS | AverageRF | 114 | 0.01 | 0.387 | 0.454 | 17.5 | | | |
| 1,1-Dichloroethane | SPCC | MS | AverageRF | 20 | 0.1 | 0.857 | 0.838 | -2.1 | | | |
| [illegible]-Butyl Ethyl Ether | | MS | AverageRF | 35 | 0.01 | 1.152 | 1.135 | -1.5 | | | |
| 2,2-Dichloropropane | | MS | AverageRF | 30 | 0.01 | 0.596 | 0.649 | 9.0 | | | |
| 2-Butanone (MEK) | | MS | Linear | 28 | 0.01 | 0.023 | 0.023 | | 42.90 | 40.00 | 7.3 |
| cis-1,2-Dichloroethene | | MS | AverageRF | 14 | 0.01 | 0.522 | 0.511 | -2.1 | | | |
| Bromochloromethane | | MS | AverageRF | 20 | 0.01 | 0.202 | 0.194 | -3.7 | | | |
| Chloroform | CCC | MS | AverageRF | 20 | 0.01 | 0.852 | 0.823 | -3.5 | | | |
| Pentafluorobenzene | | MS | AverageRF | 35 | 0.01 | 0.510 | 0.488 | -4.5 | | | |
| Dibromofluoromethane | | SURR | AverageRF | 78 | 0.01 | 0.416 | 0.369 | -11.2 | | | |
| 1,1,1-Trichloroethane | | MS | AverageRF | 22 | 0.01 | 0.631 | 0.619 | -1.9 | | | |
| Carbon Tetrachloride | | MS | AverageRF | 24 | 0.01 | 0.488 | 0.474 | -2.9 | | | |
| 1,1-Dichloropropene | | MS | AverageRF | 18 | 0.01 | 0.603 | 0.579 | -4.0 | | | |
| Benzene | | MS | AverageRF | 20 | 0.01 | 1.593 | 1.550 | -2.7 | | | |
| tert-Amyl Methyl Ether | | MS | AverageRF | 35 | 0.01 | 0.925 | 0.934 | 0.9 | | | |
| 1,2-Dichloroethane | | MS | AverageRF | 20 | 0.01 | 0.557 | 0.510 | -8.4 | | | |
| Fluorobenzene | | SURR | AverageRF | 20 | 0.01 | 1.270 | 1.230 | -3.2 | | | |
| Trichloroethene | | MS | AverageRF | 20 | 0.01 | 0.453 | 0.413 | -8.8 | | | |
| 1,2-Dichloropropane | CCC | MS | AverageRF | 20 | 0.01 | 0.454 | 0.429 | -5.6 | | | |
| Dibromomethane | | MS | AverageRF | 20 | 0.01 | 0.252 | 0.245 | -2.7 | | | |
| Bromodichloromethane | | MS | AverageRF | 20 | 0.01 | 0.572 | 0.548 | -4.1 | | | |
| 2-Chloroethyl Vinyl Ether | | MS | AverageRF | 20 | 0.01 | 0.177 | 0.177 | 0.1 | | | |
| cis-1,3-Dichloropropene | | MS | AverageRF | 20 | 0.01 | 0.616 | 0.606 | -1.6 | | | |
| 4-Methyl-2-pentanone (MIBK) | | MS | AverageRF | 29 | 0.01 | 0.024 | 0.024 | -1.3 | | | |
| Toluene-d8 | | SURR | AverageRF | 81 | 0.01 | 0.984 | 0.969 | -1.5 | | | |
| Toluene | CCC | MS | AverageRF | 20 | 0.01 | 0.904 | 0.924 | 2.2 | | | |
| trans-1,3-Dichloropropene | | MS | AverageRF | 20 | 0.01 | 0.467 | 0.470 | 0.7 | | | |
| 1,1,2-Trichloroethane | | MS | AverageRF | 19 | 0.01 | 0.234 | 0.230 | -1.6 | | | |

# *Calibration Verification Report*

**Calibration ID:** CAL292
**Method ID:** MJ103
**taFile:** J:\MS03\MAY02\MAY2902\29MAY005.D

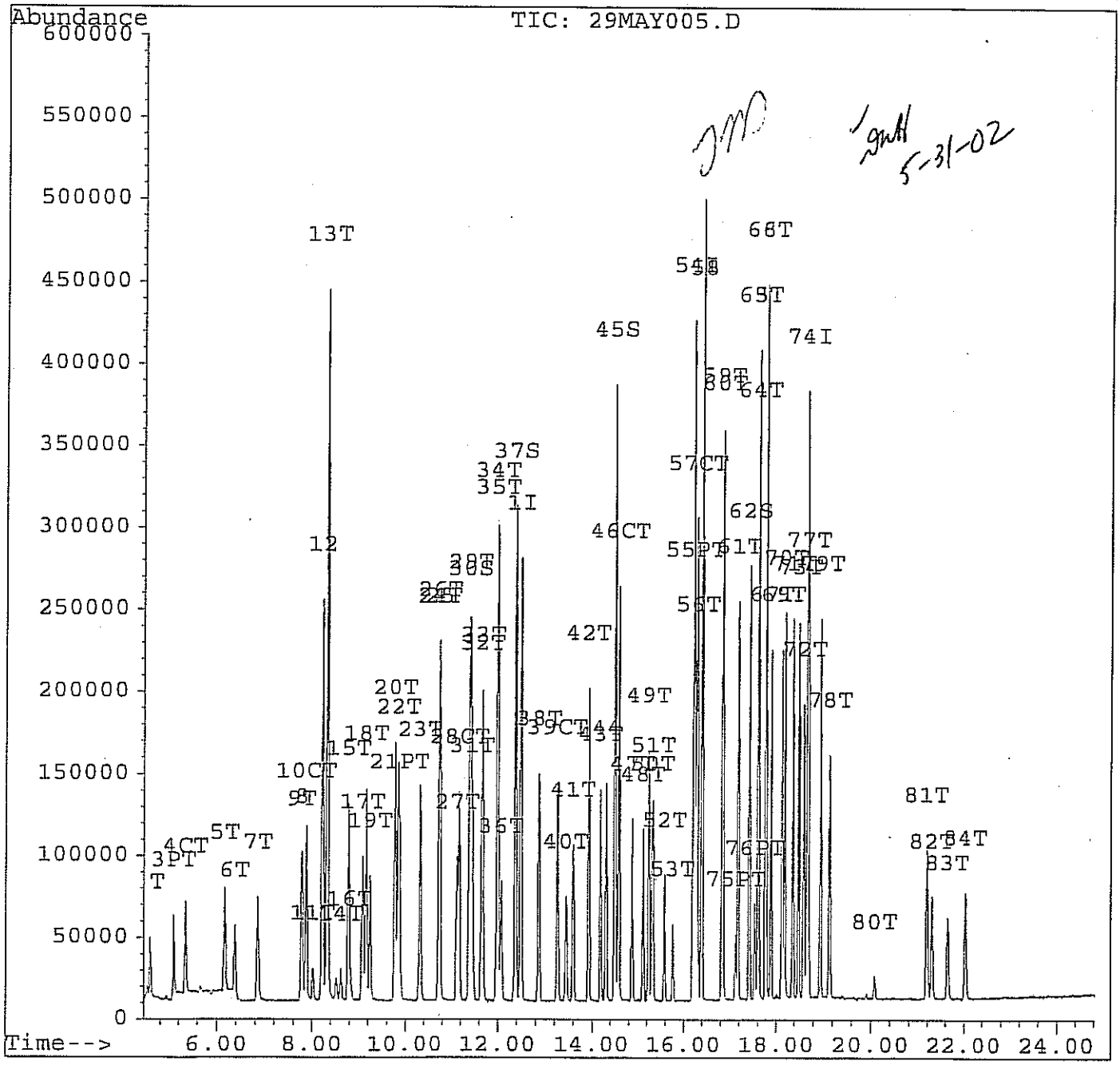
| Parameter Name | Type | PARM Type | Curve Fit | Method Criteria | Min RF | ICAL RF | CCV RF | %Diff | Sol'n Conc. | True Value | % Drift |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Tetrachloroethene | | MS | AverageRF | 21 | 0.01 | 0.262 | 0.252 | -3.5 | | | |
| 2-Hexanone | | MS | AverageRF | 22 | 0.01 | 0.131 | 0.131 | -0.1 | | | |
| 1,3-Dichloropropane | | MS | AverageRF | 34 | 0.01 | 0.466 | 0.449 | -3.6 | | | |
| Dibromochloromethane | | MS | AverageRF | 20 | 0.01 | 0.288 | 0.283 | -1.7 | | | |
| 1,2-Dibromoethane | | MS | AverageRF | 20 | 0.01 | 0.242 | 0.240 | -1.0 | | | |
| Chlorobenzene | SPCC | MS | AverageRF | 20 | 0.3 | 1.089 | 1.083 | -0.5 | | | |
| Ethylbenzene | CCC | MS | AverageRF | 20 | 0.01 | 1.887 | 1.878 | -0.5 | | | |
| 1,1,1,2-Tetrachloroethane | | MS | AverageRF | 20 | 0.01 | 0.386 | 0.380 | -1.3 | | | |
| m,p-Xylenes | | MS | Linear | 22 | 0.01 | 0.666 | 0.662 | | 18.34 | 20.00 | -8.3 |
| o-Xylene | | MS | Linear | 25 | 0.01 | 0.620 | 0.615 | | 9.220 | 10.00 | -7.8 |
| Styrene | | MS | Linear | 24 | 0.01 | 1.063 | 1.078 | | 9.250 | 10.00 | -7.5 |
| Bromoform | SPCC | MS | AverageRF | 24 | 0.1 | 0.372 | 0.348 | -6.3 | | | |
| Isopropylbenzene | | MS | Linear | 25 | 0.01 | 1.552 | 1.571 | | 9.170 | 10.00 | -8.3 |
| 4-Bromofluorobenzene | | SURR | AverageRF | 20 | 0.01 | 0.438 | 0.441 | 0.6 | | | |
| 1,1,2,2-Tetrachloroethane | SPCC | MS | AverageRF | 30 | 0.3 | 0.639 | 0.624 | -2.5 | | | |
| n-Propylbenzene | | MS | Linear | 22 | 0.01 | 2.052 | 2.087 | | 9.320 | 10.00 | -6.8 |
| 1,2,3-Trichloropropane | | MS | AverageRF | 30 | 0.01 | 0.323 | 0.311 | -3.9 | | | |
| Bromobenzene | | MS | AverageRF | 35 | 0.01 | 0.373 | 0.398 | 6.7 | | | |
| 1,3,5-Trimethylbenzene | | MS | Linear | 31 | 0.01 | 1.322 | 1.335 | | 9.050 | 10.00 | -9.5 |
| 2-Chlorotoluene | | MS | Linear | 22 | 0.01 | 1.395 | 1.444 | | 9.410 | 10.00 | -5.9 |
| 4-Chlorotoluene | | MS | AverageRF | 23 | 0.01 | 1.208 | 1.305 | 8.0 | | | |
| Butylbenzene | | MS | Linear | 22 | 0.01 | 0.979 | 1.000 | | 9.240 | 10.00 | -7.6 |
| 1,2,4-Trimethylbenzene | | MS | Linear | 20 | 0.01 | 1.317 | 1.382 | | 9.390 | 10.00 | -6.1 |
| sec-Butylbenzene | | MS | Linear | 23 | 0.01 | 1.634 | 1.745 | | 9.550 | 10.00 | -4.5 |
| 4-Isopropyltoluene | | MS | Linear | 22 | 0.01 | 1.287 | 1.391 | | 9.540 | 10.00 | -4.6 |
| 1,3-Dichlorobenzene | | MS | AverageRF | 21 | 0.01 | 0.690 | 0.774 | 12.3 | | | |
| 1,4-Dichlorobenzene | | MS | AverageRF | 20 | 0.01 | 1.650 | 1.610 | -2.4 | | | |
| n-Butylbenzene | | MS | AverageRF | 20 | 0.01 | 2.997 | 3.001 | 0.1 | | | |
| 1,2-Dichlorobenzene | | MS | AverageRF | 29 | 0.01 | 1.315 | 1.357 | 3.2 | | | |
| 1,2-Dibromo-3-chloropropane | | MS | Linear | 31 | 0.01 | 0.089 | 0.097 | | 11.92 | 10.00 | 19.2 |
| 1,2,4-Trichlorobenzene | | MS | AverageRF | 23 | 0.01 | 0.778 | 0.726 | -6.7 | | | |
| Hexachlorobutadiene | | MS | AverageRF | 49 | 0.01 | 0.295 | 0.285 | -3.4 | | | |
| Naphthalene | | MS | AverageRF | 27 | 0.01 | 1.143 | 1.069 | -6.5 | | | |
| 1,2,3-Trichlorobenzene | | MS | AverageRF | 20 | 0.01 | 0.600 | 0.560 | -6.6 | | | |

Quantitation Report

Data File : J:\MS03\MAY02\MAY2902\29MAY005.D
Acq On : 29 May 102 11:18 am
Sample : 10/40/80 ppb ccv 052902
Misc :
Quant Time: May 29 13:06 19102

Vial: 3
Operator: dnh
Inst : MS03
Multiplr: 1.00

Method : J:\MS03\METHODS\82600528.M
Title : Volatiles by GC/MS
Last Update : Wed May 29 12:10:58 2002
Response via : Multiple Level Calibration




5-31-02



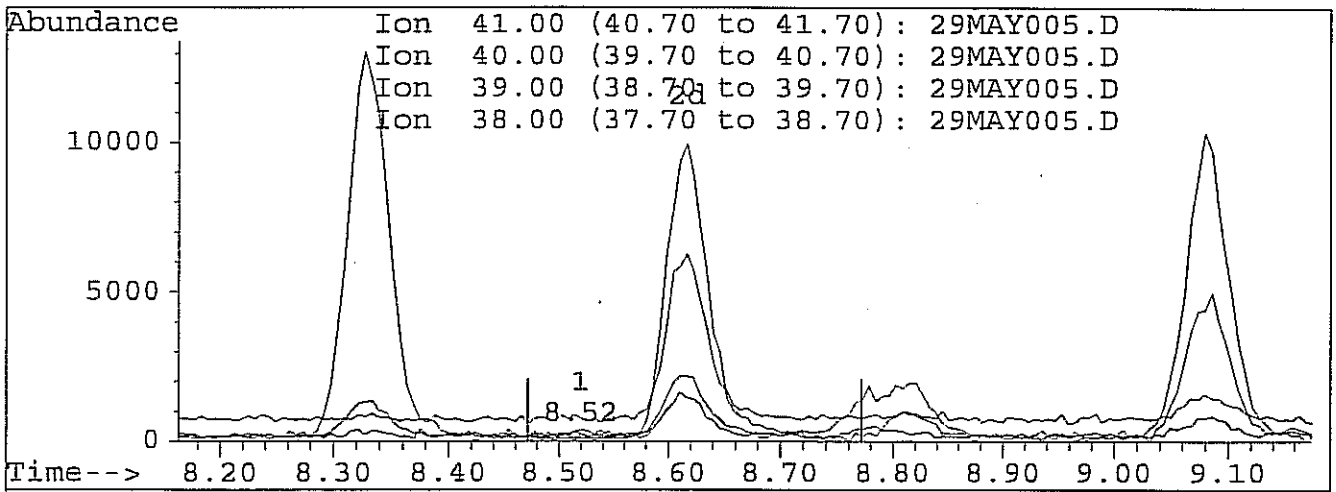
000219

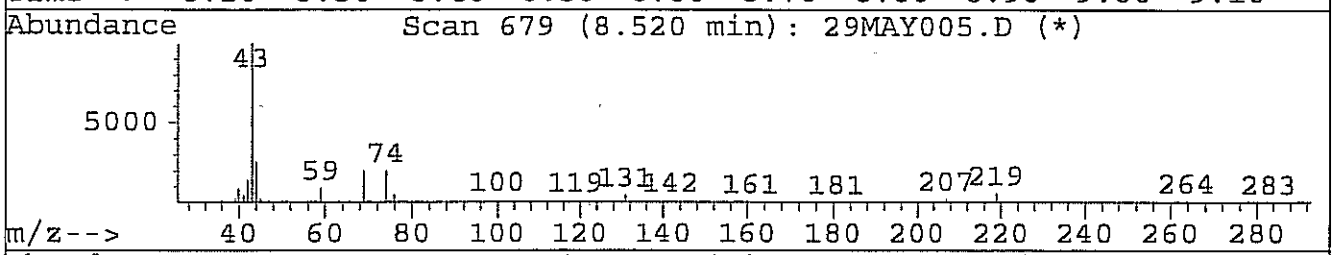
Quantitation Report

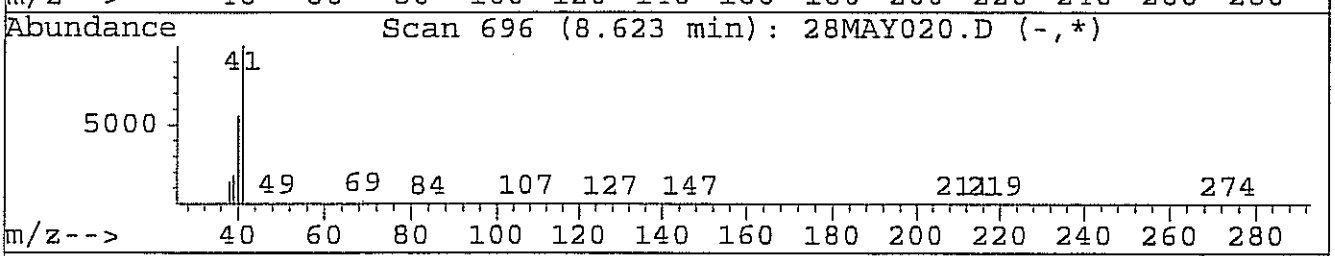
Data File : J:\MS03\MAY02\MAY2902\29MAY005.D
Acq On : 29 May 102 11:18 am
Sample : 10/40/80 ppb ccv 052902
Misc :
Quant Time: May 29 12:51 19102

Vial: 3
Operator: dnh
Inst : MS03
Multiplr: 1.00

Method : J:\MS03\METHODS\82600528.M
Title : Volatiles by GC/MS
Last Update : Wed May 29 12:10:58 2002
Response via : Multiple Level Calibration




TIC: 29MAY005.D

(14) Acetonitrile (T)
8.52min 2.03ug/L
response 688

| Ion | Exp% | Act% |
|---|---|---|
| 41.00 | 100 | 100 |
| 40.00 | 24.30 | 2.97 |
| 39.00 | 7.20 | 0.00 |
| 38.00 | 0.00 | 28.25 |

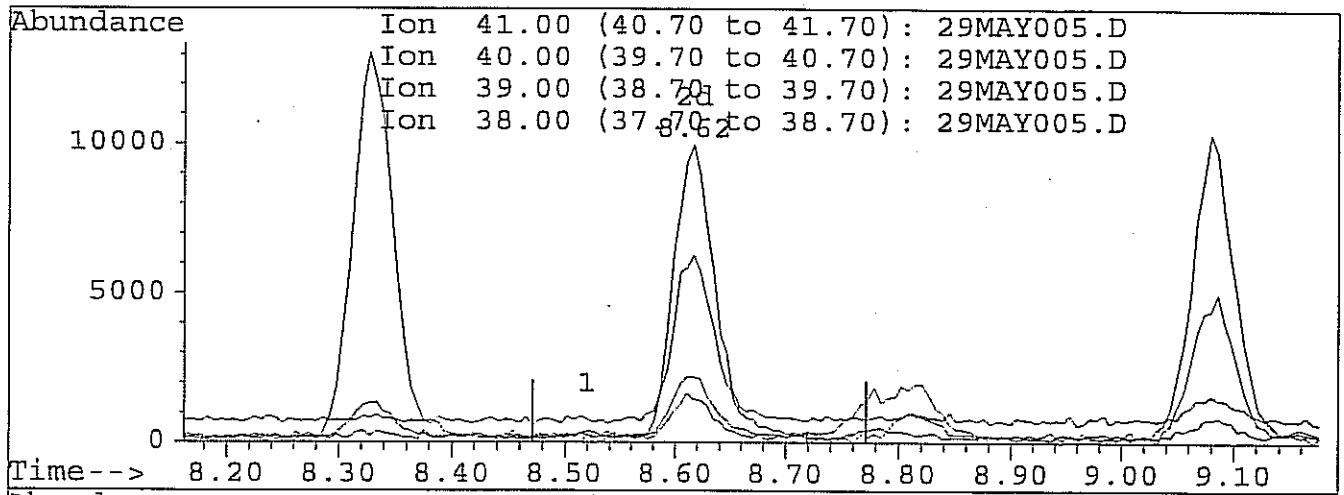
ORIGINAL

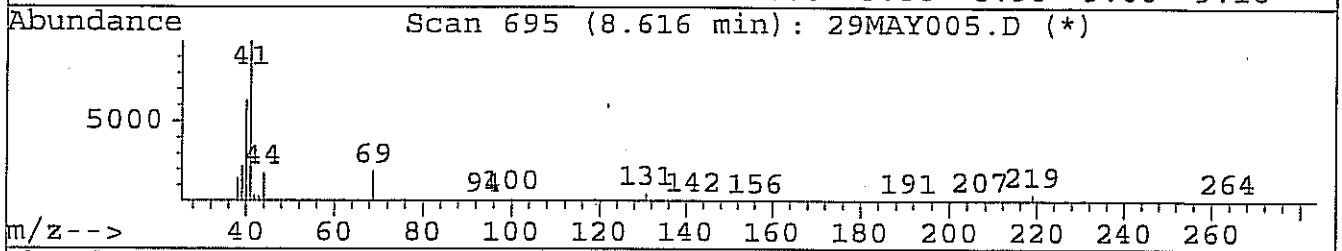
29MAY005.D 82600528.M Wed May 29 12:59:46 2002

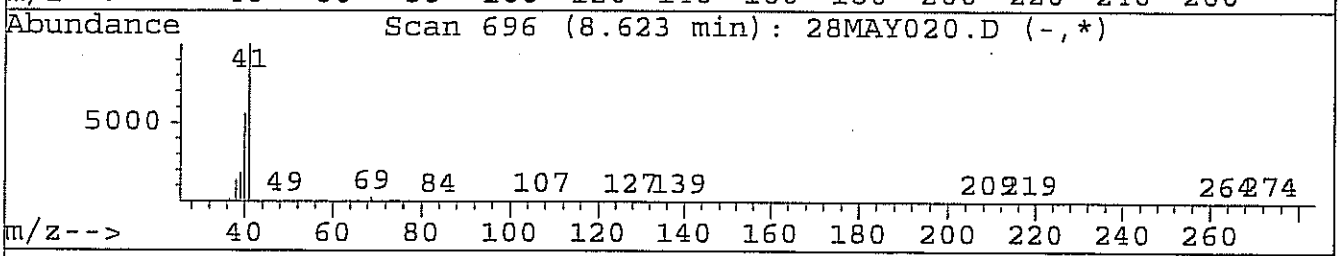
Data File : J:\MS03\MAY02\MAY2902\29MAY005.D
Acq On : 29 May 102 11:18 am
Sample : 10/40/80 ppb ccv 052902
Misc :
Quant Time: May 29 13:06 19102

Vial: 3
Operator: dnh
Inst : MS03
Multiplr: 1.00

Method : J:\MS03\METHODS\82600528.M
Title : Volatiles by GC/MS
Last Update : Wed May 29 12:10:58 2002
Response via : Multiple Level Calibration




TIC: 29MAY005.D

(14) Acetonitrile (T)
8.62min 81.03ug/L m
response 27483

| Ion | Exp% | Act% |
|---|---|---|
| 41.00 | 100 | 100 |
| 40.00 | 24.30 | 62.94 |
| 39.00 | 7.20 | 22.03 |
| 38.00 | 0.00 | 14.50 |

MANUAL CALCULATION CORRECT PPB! AJK 5-31-02

29MAY005.D 82600528.M Wed May 29 12:59:52 2002

# Organic Analysis:
# Volatile Organic Compounds

## Validation Package

### Sample Prep and Screen Data

5/1/02 8260B Internal Std Mix. Take 2 mls of WS5-98B (Restek I.S. 2500µg/mL, Exp 2/05), 2.5 mls of WS5-98A (Restek FB 2000µg/mL, Exp 5/04) and dilute to 25 ml w/ MeOH (WS4-105C) in a volumetric flask. Exp 6/1/02
JJD

WS5-117A 200µg/mL

5/1/02 8260B Soil Surrogate Spiking Std. Take 800µl of WS5-98C (Supelco Equity 8260 Surr. Mix, 2500µg/mL, Exp 11/2004) and dilute to 5mls w/ MeOH (WS4-105C) in volumetric flask Exp 6/1/02
JJD

WS5-117B JJ Dutton 5-1-02 400µg/mL

5-1-02 ACRYLONITRILE/ACROLEIN CALIBRATION STD. TAKE 200µL OF WS5-111A (ACRYLONITRILE, SUPELCO, 5000µg/mL, 9/2004 EXP) AND 1mL OF WS5-111C (SUPELCO ACROLEIN, 1000µg/mL, EXP 10/2002) AND DILUTE TO 5mLS WITH REAGENT WATER IN VOLUMETRIC FLASK. EXP. 5-8-02
DNH

WS5-117B 200µg/mL

DNH 5/1/02

5-5-02 INTERNAL STANDARD AND SURROGATE MIX. TAKE 800µl OF WS5-98A
DNH (RESTEK F.B., 2000 µg/mL, EXP 5/2004), 400µl OF WS5-98B (RESTEK
I.S. MIX, 2500 µg/mL, EXP 2/2005), 400µl OF WS5-98C (EQUITY 8260
SURR. MIX, 2,500 µg/mL, EXP 11/2004) AND DILUTED 5mLS W/MEOH
(WS4-105C) IN VOLUMETRIC FLASK. EXP 6-5-02
WS5-120A 20 µg/mL

5-15-02 8260B Calibration Std. (w/o custom mix) Take 125µl of WS5-50D (Supelco VOC mix #6, 2000µg/ml, exp 5/2003),
JJD 125µl of WS5-110F (Supelco Equity Oxygenates Mix 1, 2000-10,000µg/ml, exp 4/2003), 125µl
of WS5-64A (Restek Freon 113, 2000µg/ml, exp 6/2002), 125µl of WS5-~~X~~75E (Supelco
502/524 VOC Mix, 2000 µg/ml, exp 10/2003), 500µl of WS5-110C (Supelco Cal Mix 2,
2000µg/ml, exp 2/2003) and dilute to 5mls w/MeOH (WS4-105C) in volumetric flask Exp 5/29/02
WS5-120B 50/200 µg/mL

5-15-02 8260 SS. Calibration Std. Take 125µl of WS5-110E (Supelco SS Freon 113, 2000µg/ml, Exp 11/2003),
JJD 125µl of WS5-71C (Accu Std CA Oxygenates, 2000-10000µg/ml, exp 1/4/2003), 125µl of WS5-110B
(Supelco SS VOC Mix #6, 2000µg/ml, exp 6/2003), 125µl of WS5-~~78~~75B (Supelco SS Cal Mix #1, 2000µg/ml,
Exp 10/2002), 500µl of WS5-98D (Supelco SS Cal Mix #2, 2000µg/mL, Exp 8/2002)
and dilute to 5mls w/MeOH (WS4-105C) in volumetric flask Exp 5/29/02
WS5-120C 50/200 µg/ml

5/15/02 Rec
JJD Lot #
WS5
5/15/02
JJD 8260 B
2500
volu
WS
5/22/02 Acc
DNH volum
ADDE
FOR
WS5
5/22/02 Acro
DNH WS5-
OF
TO 5
WS5

5/15/02 JJD Received from Restek, Fluorobenzene Mixture, 2000 µg/mL in MeOH, Cat# 30030, Lot# A021591, 10 x 1.0 mL, Exp. 12/04

WS5-121A

5/15/02 JJD 8260B Daily Surrogate Std. Take 200 µl of WS5-119B (Supelco Equity Surrogate Mix, 2500 µg/mL, Exp 11/2004) and dilute to 10 mls w/ MeOH (WS#4-105C) in volumetric flask. Exp 6-15-02

WS5-121B 50 µg/mL

5/22/02 DNH ACETONITRILE STOCK CALIBRATION STANDARD. INTO A TARED 5mL VOLUMETRIC FLASK CONTAINING 4mLS OF REAGENT WATER ADDED DROPWISE WS5-87C (SUPELCO NEAT ACETONITRILE) FOR A NET GAIN OF 57.0mg EXP 11-22-02

WS5-121C 10,000 µg/mL

5/22/02 DNH ACROLEIN/ACRYLONITRILE/ACETONITRILE STANDARD. TAKE 100µL OF WS5-121C (ACETO. STOCK CAL. STD. 10,000 µg/mL, EXP 11/22/02), 100µL OF WS5-104C (ACRO/ACRYL, 10,000 µg/mL, EXP 5/8/02) AND DILUTE TO 5mLS WITH REAGENT WATER IN VOLUMETRIC FLASK. EXP 5/29/02

WS5-121D 200 µg/mL

5/26/02 8260B S.S. CALIBRATION STANDARD. TAKE 125µL OF WSS-71C (ACCSTD. CH
DNH OXYGENATES, 2000-10000µg/mL, EXP 1/2003), 125µL OF WSS-110E (SUPELCO S.S. FREON
113, 2000µg/mL, 11/2003), 125µL OF WSS-75B (SUPELCO EQUITY S.S. 8260 CAL
MIX 1, 2000µg/mL, EXP 10/2002), 125µL OF WSS-110B (SUPELCO S.S. VOC,
MIX 6, 2000µg/mL, EXP 6/2003), 500µL OF WSS-98D (SUPELCO S.S. 8260 CAL
MIX 2, 2000µg/mL, 9/2002 EXP), AND DILUTE TO 5mLs WITH MEOH
(WS4-105C) IN VOLUMETRIC FLASK. EXP 6/9/02
WSS-122A 50/200 µg/mL

, /02 ACROLEIN/ACRYLONITRILE/ACETONITRILE STANDARD. TAKE 100µL WSS-121C
DNH (ACETONITRILE STOCK STD, 10,000µg/mL, EXP 11/22/02), 100µL OF WSS-
104C (ACROLEIN/ACRYLONITRILE, 10,000µg/mL, EXP 8/11/02) AND DILUTE
TO 5mLs WITH REAGENT WATER IN VOLUMETRIC FLASK. EXP 6/2/02
WSS-122B 200 µg/mL

/29/02 OXYGENATE S.S. STANDARD, TAKE 125µL OF WSS-71C (ACCSTD. CH
DNH OXYGENATES, 2,000-10,000 µg/mL, EXP 1/2003) AND DILUTE TO 5mLs WITH
MEOH (~~WSS~~-WS4-105C) IN VOLUMETRIC FLASK. EXP 6/12/02
T-BUTANOL 1000 µg/mL
WSS-122C MTBE, DIPE, ETBE, & TAME 200 µg/mL

S/M/02 Recei
JMD Cat #
( LBC
WSS
5/30/02 8260
JMD
125 µl
WSS-1
VOC
2000µg/
WSS-
6/3/02 8260
JMD
2500,
Exp
Volume
W
6/3/02 Acrole
JMD
10,000 µ
and di
WS

Col[illegible]ia Ar[illegible]ical Services INC.
An Employee-Owned Company
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# CHAIN OF CUSTODY/LABORATOR[illegible] ANALYSIS REQUEST FORM

3902 E. University Dr., Suite 4 • Phoenix, AZ 85034 • (602) 437-2001 • 800-695-7222 x09 • FAX (602) 437-5308

PAGE 1 OF 2

SR # X220[illegible]52

CAS Contact

| | |
|---|---|
| Project Name: WESTERN AVE | Project Number: E049-106 |
| Project Manager: CHRISTIAAN CULBERTSON | Report CC: |
| Company/Address: GEOTRANS, INC. 4665 S. ASH AVE. STE G-1 TEMPE AZ 85282 | |
| Phone #: 480-839-2800 | FAX#: 480-839-2828 |
| Sampler's Signature: [signature] | Sampler's Printed Name: MATT LAVIGNE |

ANALYSIS REQUESTED (Include Method Number and Container Preservative)

| CLIENT SAMPLE ID | LAB ID | SAMPLING DATE | SAMPLING TIME | MATRIX | NUMBER OF CONTAINERS | BTEX 602/8021 | Volatile Organics GC/MS 8260 524 524.2 | 8015 AZR1 C-10-C-32 | PAH 8310 | Halogenated & Aromatic 601/602 8021 | 8 RCRA Metals Total TCLP | Lead Total TCLP | Flash Point pH Paint Filter | | | | | | | | REMARKS/ ALTERNATE DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PRESERVATIVE | | | | | | | 1 | | | | | | | | | | | | | | |
| COG-MW3 | 452-001 | 5/15/02 | 1045 | $H_2O$ | 3 | | X | | | | | | | | | | | | | | |

Preservative Key
0. NONE
1. HCL
2. $HNO_3$
3. $H_2SO_4$
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other ACID

00027

SPECIAL INSTRUCTIONS/COMMENTS
*REQUEST: SEE REPORT REQUIREMENTS
THANKS

See QAPP ☐

TURNAROUND REQUIREMENTS
___ RUSH (SURCHARGES APPLY)
X STANDARD
REQUESTED FAX DATE
REQUESTED REPORT DATE

REPORT REQUIREMENTS
___ I. Results Only
___ II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
___ III. Results + QC and Calibration Summaries
X IV. Data Validation Report with Raw Data
___ V. Specialized Forms / Custom Report
Edata X Yes ___ No

INVOICE INFORMATION
PO#
BILL TO:

SAMPLE RECEIPT: CONDITION/COOLER TEMP: _____ CUSTODY SEALS: Y N

| RELINQUISHED BY | RECEIVED BY | RELINQUISHED BY | RECEIVED BY | RELINQUISHED BY | RECEIVED BY |
|---|---|---|---|---|---|
| Signature: [signature] | Signature: [signature] | Signature | Signature | Signature | Signature |
| Printed Name: MATT LAVIGNE | Printed Name: Jared Jordan | Printed Name | Printed Name | Printed Name | Printed Name |
| Firm: GEOTRANS, INC | Firm: CAS | Firm | Firm | Firm | Firm |
| Date/Time: 5/16/02 1135 | Date/Time: 5/16/02 1130 | Date/Time | Date/Time | Date/Time | Date/Time |

Distribution: White - Return to Originator; Yellow - Lab Copy; Pink - Retained by Client

SCOC-0101-06

X220 0452

**Columbia Analytical Services, Inc.**
**Phoenix, AZ**

# Sample Receipt and Preservation Form

Client: Geotrans Project Name: Western Ave

Sample(s) Received on: 5/16/02 date 1130 time

VOA's ☒ Glass Bottles ☐ Plastic Bottles ☐ Jars ☐ Sleeves ☐

MATRIX: SOIL ☐ WATER ☒

First Extraction Holding Time Expiration: _____ date _____ time (soils only)

Is first extraction/analysis holding time expiration LESS THAN 24 HOURS(soil)/7 DAYS (water)? Yes ☐ No ☐

If YES, chemist notified on: _____ date _____ time _____ Chemist's Initials

1. Rush or standard turn-a-round time? RUSH STANDARD
2. Are the custody seals present? Yes ☐ No ☒
   If yes, how many and where? _____
3. Are the signature and date correct? Yes ☒ No ☐
4. Did all containers arrive in good condition? Yes ☒ No ☐
5. Are all container labels complete (i.e. preservation, sample ID)? Yes ☒ No ☐
6. Were the correct containers used for the tests indicated? Yes ☒ No ☐
7. Have VOA's been checked for the presence of air bubbles? (note problems in comments) Yes ☒ No ☐ N/A ☐
8. Temperature of sample(s) upon receipt: 5.8°C

Explaination of discrepancies: _____

| | | YES | NO |
|---|---|---|---|
| pH | Reagent | | |
| 12 | NaOH | | |
| 2 | $HNO_3$ | | |
| 2 | $H_2SO_4$ | | |

VOA Vial pH Verification
(Tested After Analysis) GM 6/4/02
☒ All Samples pH ≤ 2
☐ Following Samples Exhibited pH > 2

| | | |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

Comments: _____

Form Completed and Sample(s) Received by (initials): GM

r:\common\forms\samprev.doc
Revised: 02/07/02 2:58 PM

# ARIZONA DATA QUALIFIERS

**Method Blank:**

| | |
|---|---|
| B1 | Target analyte detected in method blank at or above the method reporting limit. |
| B2 | Non-target analyte detected in method blank and sample, producing interference. |
| B3 | Target analyte detected in calibration blank at or above the method reporting limit. |
| B4 | Target analyte detected in blank at/above method acceptance criteria. |

**Confirmation:**

| | |
|---|---|
| C1 | Confirmatory analysis not performed as required by the method. |
| C2 | Confirmatory analysis not performed. Confirmation of analyte presence established by site historical data. |
| C3 | Qualitative confirmation performed. See case narrative. |
| C4 | Confirmatory analysis was past holding time. |
| C5 | Confirmatory analysis was past holding time. Original result not confirmed. |

**Dilution:**

| | |
|---|---|
| D1 | Sample required dilution due to matrix interference. See case narrative. |
| D2 | Sample required dilution due to high concentration of target analyte. |
| D3 | Sample dilution required due to insufficient sample. |
| D4 | Minimum reporting level (MRL) adjusted to reflect sample amount received and analyzed. |

**Estimated concentration:**

| | |
|---|---|
| E1 | Concentration estimated. Analyte exceeded calibration range. Reanalysis not possible due to insufficient sample. |
| E2 | Concentration estimated. Analyte exceeded calibration range. Reanalysis not performed due to sample matrix. |
| E3 | Concentration estimated. Analyte exceeded calibration range. Reanalysis not performed due to holding time requirements. |
| E4 | Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL). |
| E5 | Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL), but not confirmed by alternate analysis. |
| E6 | Confirmation estimated. Internal standard recoveries did not meet method acceptance criteria. |
| E7 | Confirmation estimated. Internal standard recoveries did not meet laboratory acceptance criteria. |

**Hold Time:**

| | |
|---|---|
| H1 | Sample analysis performed past holding time. See case narrative. |
| H2 | Initial analysis within holding time. Reanalysis for the required dilution was past holding time. |
| H3 | Sample was received and analyzed past holding time. |
| H4 | Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative. |

**BOD:**

| | |
|---|---|
| K1 | The sample dilutions set-up for the BOD analysis did not meet the oxygen depletion criteria of at least 2mg/L. Any reported result is an estimated value. |
| K2 | The sample dilutions set up for the BOD analysis did not meet the criteria of a residual dissolved oxygen of at least 1 mg/L. Any reported result is an estimated value. |
| K3 | The seed depletion was outside the method acceptance limits. |

K4 The seed depletion was outside the method and laboratory acceptance limits. The reported result is an estimated value.

K5 The dilution water D.O. depletion was >0.2 mg/L.

K6 Glucose/glutamic acid BOD was below method acceptance criteria.

K7 The discrepancy between the BOD and COD results has been verified by reanalysis of the sample for COD.

**Laboratory fortified blank/blank spike:**

L1 The associated blank spike recovery was above laboratory acceptance limits. See case narrative.

L2 The associated blank spike recovery was below laboratory acceptance limits. See case narrative.

L3 The associated blank spike recovery was above method acceptance limits. See case narrative.

L4 The associated blank spike recovery was below method acceptance limits. See case narrative.

**Note: The L1, L2, L3, & L4 footnotes need to be added to all corresponding analytes for a sample.**

**Matrix spike:**

M1 Matrix spike recovery was high, the method control sample recovery was acceptable.

M2 Matrix spike recovery was low, the method control sample was acceptable.

M3 The accuracy of the spike recovery value is reduced since the analyte concentration in the sample is disproportionate to spike level. The method control sample recovery was acceptable.

M4 The analysis of the spiked sample required a dilution such that the spike concentrations was diluted below the reporting limit. The method control sample recovery was acceptable.

M5 Analyte concentration was determined by the method of standard addition (MSA).

**General:**

N1 See case narrative.

N2 See corrective action report.

**Sample quality:**

Q1 Sample integrity was not maintained. See case narrative.

Q2 Sample received with head space.

Q3 Sample received with improper chemical preservation.

Q4 Sample received and analyzed without chemical preservation.

Q5 Sample received with inadequate chemical preservation, but preserved by the laboratory.

Q6 Sample was received above recommended temperature.

Q7 Sample inadequately dechlorinated.

Q8 Insufficient sample received to meet QC requirements. QC requirements satisfy ADEQ policies 0154 and 0155.

Q9 Insufficient sample received to meet QC requirements.

Q10 Sample received in inappropriate sample container.

Q11 Sample is heterogeneous. Sample homogeneity could not be readily achieved using routine laboratory practices.

**Duplicates:**

R1 RPD exceeded the method control limit. See case narrative.

R2 RPD exceeded the laboratory control limit. See case narrative.

R3 Sample RPD between the primary and confirmatory analysis exceeded 40%. Per Method 8000B, the higher value was reported.

R4 MS/MSD RPD exceeded the method control limit. Recovery met acceptance criteria.

R5 MS/MSD RPD exceeded the laboratory control limit. Recovery met acceptance criteria.

R6 LFB/LFBD RPD exceeded the method control limit. Recovery met acceptance criteria.

R7 LFB/LFBD RPD exceeded the laboratory control limit. Recovery met acceptance criteria.

| | |
|---|---|
| R8 | Sample RPD exceeded the method control limit. |
| R9 | Sample RPD exceeded the laboratory control limit. |

**Surrogate:**

| | |
|---|---|
| S1 | Surrogate recovery was above laboratory acceptance limits, but within method acceptance limits. |
| S2 | Surrogate recovery was above laboratory and method acceptance limits. |
| S3 | Surrogate recovery was above laboratory acceptance limits, but within method acceptance limits. No target analytes were detected in the sample. |
| S4 | Surrogate recovery was above laboratory and method acceptance limits. No target analytes were detected in the sample. |
| S5 | Surrogate recovery was below laboratory acceptance limits, but within method acceptance limits. |
| S6 | Surrogate recovery was below laboratory and method acceptance limits. Reextraction and/or reanalysis confirms low recovery caused by matrix effect. |
| S7 | Surrogate recovery was below laboratory and method acceptance limits. Unable to confirm matrix effect. |
| S8 | The analysis of the sample required a dilution such that the surrogate concentration was diluted below the method acceptance criteria. The method control sample recovery was acceptable. |
| S9 | The analysis of the sample required a dilution such that the surrogate concentration was diluted below the laboratory acceptance criteria. The method control sample recovery was acceptable. |
| S10 | Surrogate recovery was above laboratory and method acceptance limits. See case narrative. |

**Method/analyte discrepancies:**

| | |
|---|---|
| T1 | Method promulgated by EPA, but not ADHS at this time. |
| T2 | Cited ADHS licensed method does not contain this analyte as part of method compound list. |
| T3 | Method not promulgated either by EPA or ADHS. |
| T4 | Tentatively identified compound. Concentration is estimated and based on the closest internal standard. |

**Calibration verification:**

| | |
|---|---|
| V1 | CCV recovery was above method acceptance limits. This target analyte was not detected in the sample. |
| V2 | CCV recovery was above method acceptance limits. This target analyte was detected in the sample. The sample could not be reanalyzed due to insufficient sample. |
| V3 | CCV recovery was above method acceptance limits. This target analyte was detected in the sample, but the sample was not reanalyzed. See case narrative. |
| V4 | CCV recovery was below method acceptance limits. The sample could not be reanalyzed due to insufficient sample. |
| V5 | CCV recovery after a group of samples was above acceptance limits. This target analyte was not detected in the sample. Acceptable per EPA Method 8000B. |

## Inorganic Data Qualifiers

| | |
|---|---|
| * | The result is an outlier. See case narrative. |
| # | The control limit criteria is not applicable. See case narrative. |
| [illegible] | The analyte was found in the associated method blank at a level that is significant relative to the sample result. |
| E | The result is an estimate amount because the value exceeded the instrument calibration range. |
| J | The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL. |
| U | The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. |
| i | The MRL/MDL has been elevated due to a matrix interference. |
| X | See case narrative. |

## Metals Data Qualifiers

| | |
|---|---|
| # | The control limit criteria is not applicable. See case narrative. |
| B | The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL. |
| E | The reported value is estimated because of the presence of matrix interference. |
| M | The duplicate injection precision was not met. |
| N | The Matrix Spike sample recovery is not within control limits. See case narrative. |
| S | The reported value was determined by the Method of Standard Additions (MSA). |
| U | The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. |
| W | The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance. |
| i | The MRL/MDL has been elevated due to a matrix interference. |
| X | See case narrative. |
| * | The duplicate analysis not within control limits. See case narrative. |
| + | The correlation coefficient for the MSA is less than 0.995. |

## Organic Data Qualifiers

| | |
|---|---|
| * | The result is an outlier. See case narrative. |
| # | The control limit criteria is not applicable. See case narrative. |
| A | A tentatively identified compound, a suspected aldol-condensation product. |
| B | The analyte was found in the associated method blank at a level that is significant relative to the sample result. |
| C | The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data. |
| D | The reported result is from a dilution. |
| E | The result is an estimate amount because the value exceeded the instrument calibration range. |
| J | The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL. |
| N | The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed. |
| P | The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results (25% for CLP Pesticides). |
| U | The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. |
| i | The MRL/MDL has been elevated due to a chromatographic interference. |
| X | See case narrative. |

## Additional Petroleum Hydrocarbon Specific Qualifiers

| | |
|---|---|
| F | The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard. |
| L | The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard. |
| H | The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard. |
| [illegible] | The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard. |
| Y | The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard. |
| Z | The chromatographic fingerprint does not resemble a petroleum product. |