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MACTEC

DECEMBER 2002/JANUARY 2003 BIMONTHLY PROGRESS, OPERATION, AND MAINTENANCE REPORT

SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Prepared for:

SWOPE SITE CLEANUP COMMITTEE

c/o Dechert
Philadelphia, Pennsylvania

February 7, 2003

MACTEC

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Joseph Gowers, Project Manager
U.S. Environmental Protection Agency
Emergency and Remedial Response Division
290 Broadway, 19th Floor
New York, NY 10007-1866

Subject: **December 2002/January 2003 Bimonthly Progress, Operation, and Maintenance Report**
Swope Oil and Chemical Company Site, Pennsauken, New Jersey
MACTEC Project No. 2200000028.200.220

Dear Mr. Gowers:

On behalf of the Swope Site Cleanup Committee, MACTEC Engineering & Consulting, Inc. of Georgia (MACTEC), has enclosed the Bimonthly Progress, Operation, and Maintenance Report for the period of December 2002 through January 2003 for the Swope Oil and Chemical Company site. This report for the above referenced period includes data collected by MACTEC in December 2002 and January 2003.

If you have any questions or need additional information, please do not hesitate to call Angela Gershman or Doug Newton at (609) 936-0700.

Sincerely,

MACTEC ENGINEERING AND CONSULTING, INC. OF GEORGIA

Angela K. Gershman
Project Engineer

Douglas J. Newton, C.P.G., P.G.
Principal Geologist

Enclosure
Cc: John M. Ix, Esquire – Dechert (one copy)
John Vidumsky – Dupont (one copy)
John Rhodes – Rhodes Engineering (one copy)
Jim DeNoble – NJDEP (three copies)

MACTEC Engineering and Consulting, Inc.
14 Washington Road
Building 1, First Floor • Princeton Junction, NJ 08550
609-936-0700 • Fax: 609-936-1020
Home Page: www.mactec.com

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1.0 INTRODUCTION

In accordance with Section XI (Reporting Requirements), Paragraph 30 of the Consent Decree that was lodged with the Court on May 19, 1993, this bimonthly progress, operation and maintenance (O&M) report is being submitted to the U.S. Environmental Protection Agency (USEPA) for work conducted during December 2002 and January 2003 as part of the remedial action program for the Swope Oil and Chemical Company Site (Swope site) in Pennsauken, New Jersey.

2.0 PROGRESS REPORT

2.1 STATUS OF WORK

During December 2002 and January 2003, MACTEC Engineering & Consulting, Inc. of Georgia (MACTEC), performed the following activities:

- Performed routine O&M and sampling activities for the soil vapor extraction (SVE) system at the Swope site. Section 3.0, Soil Vapor Extraction System Remedial Action Program, provides a more detailed discussion of the O&M activities and performance of the SVE system.
- Prepared and submitted the October/November 2002 Bimonthly Progress and O&M Report to the USEPA on December 9, 2002.
- Prepared and submitted the Ground-Water Investigation Work Plan to the USEPA on January 15, 2003.
- Prepared and submitted the September 2003 Ground-Water Monitoring Report to the USEPA on January 29, 2003.

2.2 ESTIMATE OF WORK COMPLETED

As of January 2003, the SVE system has been in operation for approximately 64 months. The O&M phase of the remedial action program is estimated to be approximately 89-percent complete, which is based upon the assumption that the system will be operating for an additional 48 months beyond the original 24-month period. MACTEC will continue to operate the SVE system under the current pulsing program and perform data evaluations of the effects of the pulsing and document the progress of the remedial action.

2.3 UNRESOLVED DELAYS ENCOUNTERED OR ANTICIPATED

No unresolved delays were encountered with the project during the reporting period. None are anticipated for the next period. SVE system shutdown alarms occurred during the reporting period, which are discussed in Section 3.0, Soil Vapor Extraction System Remedial Action Program.

2.4 ACTIVITIES PLANNED FOR THE NEXT PERIOD

MACTEC plans to conduct the following activities during the next reporting period:

- Continue routine O&M and sampling activities.
- Continue pulsing of the SVE system that was initiated on March 30, 2001, when the SVE system was shut down following that O&M event. The SVE system was shut down on January 30, 2003 and is scheduled to be re-started on or about March 3, 2003, and will again be shut down on or about April 1, 2003.
- Attend a meeting with the USEPA, NJDEP, and the Swope Site Cleanup Committee on February 25, 2003 to discuss on-going and future activities related to the Swope site remedial action program and ground-water monitoring program.
- Obtain access to adjacent properties to install two shallow ground-water monitoring wells.
- Monitoring of phyto cap.

2.5 OTHER ISSUES

There are no other issues to report for this period.

3.0 SOIL VAPOR EXTRACTION SYSTEM REMEDIAL ACTION PROGRAM

This summary describes the operation of the site's SVE remediation system in accordance with the requirements outlined in Section 7.6 (Reporting) of the Final Operation and Maintenance Plan for the Swope Oil and Chemical Company Site in Pennsauken, New Jersey. This section summarizes O&M activities performed at the Swope site during December 2002 and January 2003.

3.1 SOIL VAPOR EXTRACTION SYSTEM OPERATION

3.1.1 Duration of System Operations

Pursuant to the USEPA-approved pulsing program, the system was shut down from November 27, 2002 through January 2, 2003. The system was restarted on January 2, 2003 and ran through January 30, 2003, except for shutdown periods as described in detail below. During January 2003, the system ran for an estimated 564 hours, or 24 days, which is approximately 84 percent of the month. The reasons for the periods of shutdown are described in the System Operation and Shut Down Details section.

3.1.2 System Operation and Shut Down Details

MACTEC performed the required monthly SVE system monitoring event on January 30, 2003. O&M activities were also performed by MACTEC on December 4 and 13, 2002 and January 2, 3, 13, 23, and 27, 2003.

Two condensate tank pump-outs were performed on December 13, 2002 and January 23, 2003 by Environmental Industrial Services Corporation of New Jersey (EISCO-NJ), during which time the condensate was pumped out and disposed off-site by EISCO-NJ.

In addition to the pump-out events, the following O&M activities were performed:

- December 4: Waste from the phyto cap planting was picked up in a dumpster and hauled off-site for disposal by Waste Management.
- December 13: Condensate tank pump-out event and accompanied a visit to the site by Swope Site Cleanup Committee member representatives.

- January 2: The SVE system was restarted after a month of shutdown in accordance with the planned system pulsing initiated on March 30, 2001. The continuous emissions monitor (CEM) unit was checked and re-calibrated. Photoionization detector (PID) measurements were collected at the system influent, effluent, and wellheads.

- January 3: The SVE system shut down due to a high water level alarm for the air/water separator tank. MACTEC personnel drained the tank and restarted the system.

- January 13: The SVE system shut down due to a high CEM concentration alarm. MACTEC personnel checked and recalibrated the CEM unit and restarted the system.

- January 21: The SVE system shut down due to a high water level alarm in the condensate tank. The tank was pumped out on January 23, 2003 during the scheduled pump-out event, and subsequently the system was restarted.

- January 27: The SVE system shut down due to a high CEM concentration alarm. MACTEC personnel checked and recalibrated the CEM unit on January 28, 2003 and restarted the system.

- January 30: The monthly monitoring and air-sampling event was performed and PID measurements were collected at the system influent, effluent, and wellheads and the SVE system was shut down for pulsing.

Approximately 25 gallons of water and material were removed from the extraction lines and knock-out tank during the operating period of December 2002 and January 2003.

On January 30, 2003, MACTEC personnel performed the monthly monitoring event and shutdown. The system will be re-started on or about March 3, 2003 and the total volatile organic compound (VOC) concentrations will be measured with the PID immediately after start-up.

3.2 DISCUSSION OF DATA COLLECTED

Monitoring data collected at each extraction well during the scheduled O&M event on January 2 and 30, 2003 are presented in Tables 1 through 3. Tables 4 and 5 contain the laboratory analytical results of the influent and effluent air samples, respectively, collected during the November 2002 O&M activities. The laboratory analytical report for the influent and effluent air samples collected on January 30, 2003 was not available from the laboratory for this report, but will be included with the next bimonthly report. A summary of the total VOCs recovered from the SVE system through November 27, 2002 is provided in Table 6. Tables with historical data on a well-by-well basis that were collected and tabulated by ARCADIS Geraghty & Miller, Inc. from February 1997 through August 2000 are provided in Appendix

A. A copy of the laboratory analytical report for the air samples collected on November 27, 2002 is provided in Appendix B.

3.2.1 Soil Vapor Concentrations

The soil vapor total VOC concentrations measured in the field with the PID during system operation are summarized for each well in Table 1. During the January 2003 monitoring periods, the three highest and lowest concentrations of total VOCs measured in field-screened samples from the extraction wells are summarized in parts per million by volume (ppm_v) as follows:

Highest

- January 30, 2003: EW-4S (**90**), EW-8S (**80**), EW-2S (**30**)

Lowest

- January 30, 2003: EW-3S (**2**), EW-5S (**5**), EW-12D (**14**)

PID data collected on January 2, 2003 are not included with this report. The PID instrument used for the January 2nd monitoring event was a rental unit because the Swope site PID unit was being repaired. MACTEC suspects that the lamp of the rented unit was not functioning correctly, which resulted in unusually high readings that were well above the historical range for all wells.

Monthly pulsing of the SVE system began in March 2001, in which the system is operated one month and shut down for the next month. During this period, the system was shut down during December 2002 and operated during January 2003. When SVE systems are pulsed, typically a spike in total VOC concentrations is observed followed by a gradual decrease in concentration below the levels observed prior to the shutdown period.

Figures 1 through 4 show the total VOC concentrations versus time (as measured in the field by a PID) for each extraction well. Note that following the December 2000 monitoring event, the wells shown on Figure 4 (Extraction Wells EW-1S, EW-6S, EW-7S, and EW-15S) were permanently shut down; therefore, no additional monitoring has been performed at these wells. During the pulsing operations of the last 12 months, spikes in total VOC concentrations were observed in Extraction Wells EW-3S, EW-4S, EW-8S, EW-9S, EW-10S, and EW-14S. Figure 5 illustrates these spikes in concentrations. The most notable of these spikes were in Extraction Wells EW-4S and EW-8S.

Since pulsing of the SVE system began in March 2001, the total VOC concentrations generally increased in most operating extraction wells through March 2002. However, the April through September 2002 monitoring results of the extraction wells indicate that the total VOC concentrations have declined in approximately half of the operating wells since March 2002. From September 2002 through November 2002, total VOC concentrations generally increased in most extraction wells, and have subsequently shown an increase in concentrations since November 2002.

As shown in Table 4, the total VOC concentration in the influent sample collected on November 27, 2002 was 49.5 ppm_v. A chart showing historical influent total VOC concentrations versus time is provided on Figure 6. As shown on Figure 6, VOC concentrations in the influent have decreased from a high of approximately 885 ppm_v on October 2, 1997 to a low of 8.934 ppm_v on September 27, 2002, and subsequently increased in November 2002. Figure 7 shows the total VOC mass removal rate over time in pounds per hour (lbs/hr) with a three-period moving average trendline. As shown on Table 6 and Figure 7, the rate of mass removal has declined from a high of approximately 3.25 lbs/hr on October 2, 1997 to a low of 0.03 lbs/hr on September 27, 2002. The rate of mass removal increased to approximately 0.24 lbs/hr in November 2002.

Moving averages provide trend information that a simple average of all historical data would mask, and are typically used to forecast trends in data sets. The trendline provides values averaged from the past three periods to assess the data trends, which take into account general data fluctuations. The moving average trendline indicates that the total VOC concentrations in the influent have declined from August 2000 through June 2001. From June 2001 through May 2002, the total VOC concentrations in the influent appeared to exhibit a fluctuating, though steady, trend that was neither decreasing nor increasing markedly. Since May 2002, the moving average indicates the overall trend of total VOC concentrations is declining and appears to be approaching asymptotic concentrations.

Once the phyto-cover growth begins, the phyto cover should increase the effectiveness of the SVE system by increasing evapotranspiration and reducing surface-water infiltration, which should also reduce recharge to the perched ground water, when present, on-site.

The total VOC concentration in the effluent sample collected on November 27, 2002 was 0.208 ppm_v, which is within the limits set forth in the air permit equivalency for the system (minimum 95-percent

removal of total VOCs and 99-percent removal of total air toxics emissions). This effluent concentration represents a greater than 99-percent removal efficiency.

3.2.2 Vacuum Influence and Air Flow Data

Vacuum and air flow measurements for the extraction wells are presented for each well in Table 1. Air flow is estimated by measuring the air flow velocity in the extraction piping from each well using a pitot tube. Air flow rates for a number of wells were not able to be measured during this period due to trapped frozen water that was clogging the pitot tubes.

3.2.3 Biological Activity Parameters

Methane, oxygen, and carbon dioxide levels were measured with the GA-90 instrument at each extraction well to provide evidence of biological activity and biodegradation of certain organic compounds in the subsurface. The measurements collected in December 2002 and January 2003 are summarized for each well in Table 1.

From startup through March 1998, a general increasing trend in oxygen concentrations is evident in the extracted soil vapor from the extraction wells across the site. From March 1998 to May 2000, the oxygen concentrations have generally fluctuated within a consistent range and then declined through March 2002. From March 2002 to July 2002, oxygen levels appear to be fluctuating within a limited range in Extraction Wells EW-3S, EW-4S, EW-5S, EW-9S, EW-10S, EW-11I, EW-12D, EW-13S, EW-14S, and EW-16S, and decreasing in Extraction Wells EW-2S and EW-8S. Then from July 2002 through January 2003, the oxygen levels appear to be fluctuating within a limited range in Extraction Wells EW-2S, EW-3S, EW-4S, EW-5S, EW-8S, EW-11I, EW-12D, EW-13S, EW-14S, and EW-16S; increasing in Extraction Well EW-9S; and decreasing in Extraction Well EW-10S.

Methane concentration trends in the long-term appear to be static or decreasing in most operating wells. Since September 2001, Extraction Wells EW-8S, EW-9S, and EW-14S have exhibited an increasing then decreasing trend in methane. Carbon dioxide concentrations have slightly increased or remained static in most of the SVE wells. Monthly increasing and decreasing fluctuations in the carbon dioxide concentrations appear to be reflective of monthly decreasing and increasing fluctuations in the oxygen concentrations. Some of the fluctuations appear to coincide with the pulsing of the SVE system. In

general, an increase in carbon dioxide and a decrease in oxygen is an indication of the presence of biological activity; that microorganisms in the subsurface are consuming the oxygen as they degrade the organic constituents in the subsurface and release carbon dioxide.

3.2.4 Cumulative Mass Recovery

Based on soil vapor total VOC concentrations (laboratory analytical results) reported in collected influent samples, it is estimated that approximately 20,470 pounds of VOCs have been recovered through November 27, 2002 during system operation. The January 30, 2003 air sampling data were not available for this report, but will be included with the next bimonthly report. A summary of the mass recovery calculations is provided in Table 6. A chart showing cumulative and monthly estimated total VOCs recovered on a monthly basis is provided on Figure 8.

4.0 PHYTOREMEDIATION WORK PLAN IMPLEMENTATION

4.1 FIELD ACTIVITIES

No field activities related to the phyto cap were performed during this period, with the exception of a limited inspection of the planted trees during scheduled SVE O&M events. No major activities associated with the phyto cap are planned until Spring 2003, when watering of the trees may be necessary.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 CONCLUSIONS

During the month January 2003, the system was operational approximately 84 percent of the time. The system was shut down during the month of December 2002 for pulsing. Approximately 20,470 pounds of VOCs have been recovered through November 27, 2002 during system operation. Approximately 25 gallons of liquid was recovered from the extraction lines and the knockout tank during this period. The unplanned system shut downs that occurred during January 2003 were corrected with no further problems.

System pulsing operations continued through the January 30, 2003 monitoring event and shutdown. The SVE system will be restarted and sampled on or about March 3, 2003. MACTEC will continue pulsing and monitoring of the SVE system on a bimonthly basis (i.e. during the operational month), in the same manner as pulsing has been conducted for the past 18 months, contingent upon any changes made to the SVE program as a result of the upcoming meeting with the USEPA.

5.2 RECOMMENDATIONS

MACTEC recommends no further changes to the remedial program at this time. MACTEC's recommendations will be discussed during the meeting with the USEPA on February 25, 2003.

TABLES

TABLE 1
MONITORING DATA COLLECTED FROM THE SOIL VAPOR EXTRACTION SYSTEM
SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Date	Air Flow (cfm)	PID (ppm_v)	Methane (%)	Oxygen (%)	Carbon Dioxide (%)	Vacuum (in. Hg)
EW-1S	NM[a]	NM[a]	NM[a]	NM[a]	NM[a]	NM[a]
EW-2S						
9/28/2000	46	17	0.3	15.1	1.2	5
10/13/2000	21	6.2	0	17.3	1.0	8
11/21/2000	21	1	0	17.2	0.6	1
12/12/2000	20	8	0	16.7	0.2	4
1/9/2001	21	6	1	15.9	7.0	3
2/28/2001	21	42	0	14.9	1.3	1.0
3/30/2001	21	16.5	0	14.5	1.5	0.5
4/27/2001	21	0.5	NM[e]	NM[e]	NM[e]	6.5
5/30/2001	23	14.5	0.1	14.7	1.1	2.0
6/29/2001	21	1.8	0.0	16.1	0	1
7/26/2001	28	9	0.0	15.7	0.1	1
9/5/2001	21	2.5	0.0	12.1	1.1	1
9/21/2001	21	3.4	0.0	12.4	2.1	0.6
11/1/2001	21	5.0	0.0	7.9	2.8	1.5
11/30/2001	21	9.0	0.0	10.3	2.2	0.5
12/28/2001	21	3.2	0.0	8.6	0.4	1
1/31/2002	21	3.5	0.0	8.6	1.8	0.5
2/28/2002	21	5.0	0.0	6.4	0.8	1
3/21/2002	20	12.0	NM[e]	NM[e]	NM[e]	0.6
4/1/2002	21	12.5	0.0	18.2	2.3	0.3
4/30/2002	20	3.5	0.0	15.9	2.7	0.1
5/31/2002	20	15.0	0.0	18.1	2.7	0.7
7/1/2002	20	7.0	0.1	15.1	3	0.4
8/5/2002	22	4.0	0.1	15.3	3	0.1
8/30/2002	17	2.0	0.0	11.6	4.7	0.04
9/27/2002	17	0.0	0.0	13.7	5	0.3
11/1/2002	15	2.0	0.0	10.9	6.1	0.1
11/27/2002	21	22.0	0.0	17.4	2.1	0.9
1/2/2003	21	58.0	0.0	14	2.8	14
1/30/2003	9	30.0	0.0	17.6	0	0.1
EW-3S						1.9
9/28/2000	28	22	0	18.7	0	5
10/13/2000	21	3.5	0.8	15.4	2.0	9
11/21/2000	21	4	4.0	15.8	1.3	4
12/12/2000	28	12.5	0.1	16.2	0.8	7.5
1/9/2001	21	8.5	0.3	13.9	2.4	5
2/28/2001	28	18	0	12.6	4.2	2
3/30/2001	15	16	2.1	12.4	3.5	5

TABLE 1
MONITORING DATA COLLECTED FROM THE SOIL VAPOR EXTRACTION SYSTEM
SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Date	Air Flow (cfm)	PID (ppm$_v$)	Methane (%)	Oxygen (%)	Carbon Dioxide (%)	Vacuum (in. Hg)
4/27/2001	21	0.1	NM[e]	NM[e]	NM[e]	4
5/30/2001	21	21	2.1	12.2	3.3	3
6/29/2001	21	12	1.3	6	5.1	2
7/26/2001	21	20	0	14.1	1.6	0
9/5/2001	15	26	0.2	10.6	2.4	1
9/21/2001	21	30	0.8	12.5	1.8	1
11/1/2001	15	12	0	8	1.8	1
11/30/2001	16	65	1.2	8.4	3.8	0.5
12/28/2001	16	12	0	3.7	4.9	0.5
1/31/2002	16	40	1.1	4.6	6.4	0.5
2/28/2002	14	18	0	3.6	4.4	0.5
3/21/2002	16	50	NM[e]	NM[e]	NM[e]	0.2
4/1/2002	15	52	1.6	13.7	6.7	0.7
4/30/2002	15	25	0.3	9.8	6.4	0.4
5/31/2002	15	50	1.2	9.9	7.7	0.3
7/1/2002	17	13	0.1	20	0.1	0.1
8/5/2002	21	14	0.1	11.9	7.3	0.1
8/30/2002	17	25	0.1	19.4	0	0.1
9/27/2002	15	15	0	19	0	0.0
11/1/2002	17	16	0	18.8	0	0.0
11/27/2002	16	70	1.7	11.7	7.8	1.3
1/2/2003	NM[g]	NA	1.2	4.3	11.2	2.1
1/30/2003	NM[g]	2.0	0.0	18	0	0.1
EW-4S						
9/28/2000	17	13	0.2	18.1	0.0	4
10/13/2000	21	15	0.1	17.9	0.4	5.5
11/21/2000	21	7	0	17.4	3.0	0.5
12/12/2000	28	16	0	16.8	0.1	4.5
1/9/2001	21	25	0	15.8	4.0	4
2/28/2001	28	50	0	15.1	1.1	1
3/30/2001	21	28	0.3	15.0	1.0	1
4/27/2001	21	1.5	NM[e]	NM[e]	NM[e]	6
5/30/2001	23	35	0.5	15.1	0.8	2
6/29/2001	21	5	0.7	10.2	3.6	2
7/26/2001	9	34	0	13.2	2.5	0.5
9/5/2001	21	5	0.5	6.8	6.6	1.0
9/21/2001	21	40	0.4	12.5	1.7	0.5
11/1/2001	21	3	0	8.6	2.8	1.0
11/30/2001	21	140	0.4	10.3	1.8	0.5
12/28/2001	21	38	0	7.4	1.9	0.5
1/31/2002	21	40	0.2	8	2	0.5

TABLE 1
MONITORING DATA COLLECTED FROM THE SOIL VAPOR EXTRACTION SYSTEM
SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Date	Air Flow (cfm)	PID (ppm_v)	Methane (%)	Oxygen (%)	Carbon Dioxide (%)	Vacuum (in. Hg)
2/28/2002	17	85	0	5.5	1.6	0.5
3/21/2002	21	70	NM[e]	NM[e]	NM[e]	0.4
4/1/2002	21	75	0	18.7	2	0.6
4/30/2002	17	35	0	17.4	1.7	0.1
5/31/2002	21	35	0.2	18.4	1.8	0.5
7/1/2002	21	10	0.1	20	0	0.1
8/5/2002	21	6	0.1	19.5	0	0.1
8/30/2002	NM[f]	2	0	19.5	0	0.05
9/27/2002	20	5	0.1	13	4	0.3
11/1/2002	12	26	0.2	9	9.6	0.3
11/27/2002	20	175	0.4	17.4	1.4	0.7
1/2/2003	21	NA	0.3	14.1	2.9	10.0
1/30/2003	NM[g]	90.0	0.0	17.7	0	0.3
EW-5S						
9/28/2000	12	30	0.1	18.6	0.2	5
10/13/2000	21	15	0	18.7	0	13.5
11/21/2000	21	2	0	17.0	0	1
12/12/2000	21	4.5	0	17.0	0	4
1/9/2001	21	22	0	16.7	0	4
2/28/2001	21	ND	0	16.7	0	1
3/30/2001	25	5.5	0	16.2	0	1
4/27/2001	21	1	NM[e]	NM[e]	NM[e]	7
5/30/2001	21	4.2	0	15.9	0	1
6/29/2001	21	1.5	0	15.1	0.3	2
7/26/2001	28	2.0	0	15.7	0.3	0.5
9/5/2001	21	0.5	0	12.6	0.9	1.0
9/21/2001	21	3.0	0	13.7	0.2	0.0
11/1/2001	20	4.0	0	11.3	0.4	0.5
11/30/2001	21	4.5	0	11.7	0.1	0.5
12/28/2001	21	1.5	0	9.9	0	0.5
1/31/2002	21	1.0	0	9.4	0.1	0.5
2/28/2002	21	0.5	0	7.4	0	0.5
3/21/2002	21	20.0	NM[e]	NM[e]	NM[e]	0.4
4/1/2002	17	4.0	0	20.2	0.4	0.2
4/30/2002	20	2.0	0	19.9	0.4	0.1
5/31/2002	17	3.0	0	20.2	0.2	0.3
7/1/2002	20	7.0	0	18.4	1	0.2
8/5/2002	23	5.5	0	19.5	0	0.1
8/30/2002	21	0.0	0	19.3	0	0.1
9/27/2002	21	1.0	0	18.9	0	0.1
11/1/2002	15	4.0	0	18.4	0	0.1

TABLE 1
MONITORING DATA COLLECTED FROM THE SOIL VAPOR EXTRACTION SYSTEM
SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Date	Air Flow (cfm)	PID (ppm_v)	Methane (%)	Oxygen (%)	Carbon Dioxide (%)	Vacuum (in. Hg)
11/27/2002	17	4.0	0	18.4	0.2	0.6
1/2/2003	21	NA	0	17.5	0.6	0.7
1/30/2003	NM[g]	5.0	0	17.8	0	0.7
EW-6S	NM[a]	NM[a]	NM[a]	NM[a]	NM[a]	NM[a]
EW-7S						
9/28/2000	NM[b]	NM[b]	NM[b]	NM[b]	NM[b]	NM[b]
10/13/2000	25	0.5	0	18.2	0	2
11/21/2000	25	1	0	17.8	0	2
12/12/2000	25	2	0	16.7	0.1	7.5
1/9/2001	NM[a]	NM[a]	NM[a]	NM[a]	NM[a]	NM[a]
EW-8S						
9/28/2000	21	30	1.8	7.2	6.6	6
10/13/2000	17	8.5	1.9	16.6	0.8	10.5
11/21/2000	21	3	1.0	17.0	7	12
12/12/2000	17	8.5	0.1	16.5	0.4	16.5
1/9/2001	21	3	0.7	15.6	1	12
2/28/2001	12	8	0	12.1	7.2	11
3/30/2001	12	11.5	0.9	14.6	1.6	11
4/27/2001	21	0.2	NM[e]	NM[e]	NM[e]	10
5/30/2001	17	8.8	0.2	14.7	1.2	13
6/29/2001	15	10	1.7	13.7	1.2	11
7/26/2001	25	19	0.3	13.3	1.9	13
9/5/2001	25	28	3.2	9.8	3.9	10
9/21/2001	21	19	0	12.2	1.8	11
11/1/2001	17	35	5.5	7.6	5.4	11
11/30/2001	17	40	1.8	8.1	4.3	10
12/28/2001	16	55	10.4	4.7	10.1	1
1/31/2002	17	25.0	1.5	7	4.1	0.5
2/28/2002	16	85.0	0.4	3.5	7	1.0
3/21/2002	17	120.0	NM[e]	NM[e]	NM[e]	1.5
4/1/2002	15	250.0	0.2	17.8	2.9	11.5
4/30/2002	16	50.0	7.9	12.2	5.7	12.0
5/31/2002	17	22.0	0.7	16.3	3.6	9.0
7/1/2002	17	40.0	10.2	5.1	12	6.0
8/5/2002	16	50.0	17.6	7.8	9	0.7
8/30/2002	17	20.0	20.8	8.6	10.3	0.1
9/27/2002	16	30.0	4.9	11.7	6.5	0.4
11/1/2002	16	55.0	8.9	10.4	8.1	0.2
11/27/2002	17	160.0	2.8	16.3	2.4	10.5

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SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Date	Air Flow (cfm)	PID (ppm$_v$)	Methane (%)	Oxygen (%)	Carbon Dioxide (%)	Vacuum (in. Hg)
1/2/2003	NM[g]	NA	12.3	11.6	4.6	9.5
1/30/2003	NM[g]	80.0	0.0	17.6	0	0.01
EW-9S						
9/28/2000	30	17	1.8	7.1	3.9	5.5
10/13/2000	21	4	2.4	14.5	2.5	9
11/21/2000	17	1	0	17.5	3	11
12/12/2000	0	8	0	17.2	0	16.5
1/9/2001	17	4	0	13.6	2.4	13
2/28/2001	NA	14	0	12.2	6	11.5
3/30/2001	12	4	2.1	13.4	3	11.0
4/27/2001	20	0.1	NM[e]	NM[e]	NM[e]	10.0
5/30/2001	17	7	0	14.6	1.5	13.0
6/29/2001	21	6	6	5.4	6.2	10.0
7/26/2001	21	20	0	10.6	4.6	0.5
9/5/2001	21	28	5.2	5.3	7.1	10.0
9/21/2001	17	12.5	1.2	10.1	4.3	9.0
11/1/2001	17	42	7.1	4.8	8.6	10.5
11/30/2001	17	40	4.6	5.8	7.5	10.0
12/28/2001	17	30	12.5	3	10.4	9.0
1/31/2002	17	1.0	0.9	6.9	3.4	14.0
2/28/2002	17	80.0	0	4.2	4.5	11.5
3/21/2002	17	120	NM[e]	NM[e]	NM[e]	11
4/1/2002	16	70.0	0	19	1.8	11.0
4/30/2002	17	40.0	6.6	9.5	7.6	7.5
5/31/2002	NM[f]	20.0	0.6	19.1	0.3	9.0
7/1/2002	17	37.0	18.2	3.7	10.7	8.0
8/5/2002	17	30.0	1.2	15.6	2.9	10.0
8/30/2002	17	35.0	21.8	1.8	13.5	8.0
9/27/2002	12	26.0	19.9	4.7	10.8	0.3
11/1/2002	16	42.0	28.4	5.8	12.9	0.3
11/27/2002	17	100.0	1.2	13	7.5	13.0
1/2/2003	NM[g]	NA	15.0	4.6	11.2	9.5
1/30/2003	86	NA	0.0	17.6	0	9.0
EW-10S						
9/28/2000	25	11	0.2	8.8	7.9	4.5
10/13/2000	9	3	0.8	11.5	5.1	8.5
11/21/2000	16	1	0	14.8	2.0	11
12/12/2000	12	0	0	16.8	0.3	13.5
1/9/2001	16	NM[c]	NM[c]	NM[c]	NM[c]	13
2/28/2001	NM[d]	NM[d]	NM[d]	NM[d]	NM[d]	NM[d]

TABLE 1
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SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Date	Air Flow (cfm)	PID (ppm_v)	Methane (%)	Oxygen (%)	Carbon Dioxide (%)	Vacuum (in. Hg)
3/30/2001	12	2.5	0.8	10.8	5.4	1
4/27/2001	15	0	NM[e]	NM[e]	NM[e]	4.5
5/30/2001	12	22	0.1	13.3	3	4
6/29/2001	17	6	1.9	4.2	10.8	NM[e]
7/26/2001	28	14	0	13.1	2.2	0.5
9/5/2001	21	28	12	5.5	8.8	11.0
9/21/2001	21	17	2.4	9.9	4	9.0
11/1/2001	16	16	1.7	2.5	11.4	4.0
11/30/2001	16	55	2	4.5	9.2	5.0
12/28/2001	19	25	1.2	1.1	13.2	6.0
1/31/2002	17	15.0	0.2	6.8	2.9	10.0
2/28/2002	20	70	0.4	2.6	9.9	7.0
3/21/2002	17	19	NM[e]	NM[e]	NM[e]	5.1
4/1/2002	NM[f]	25	0.0	20.3	0.2	15
4/30/2002	NM[f]	28	0.3	10.7	7.0	10
5/31/2002	NM[f]	16	0.4	9.1	9.1	6
7/1/2002	17	20	1.0	6.4	10.8	3
8/5/2002	17	19	0.8	11.8	6.7	7
8/30/2002	21	28	1.3	5.4	13.9	1
9/27/2002	12	10	0.4	10.4	6.6	0.01
11/1/2002	16	18	1.1	7.9	11.3	9.50
11/27/2002	NM[c]	67	0.4	6.8	12.9	0.37
1/2/2003	NM[g]	NA	1.3	3.6	12.4	4.0
1/30/2003	NM[g]	NM[g]	NM[g]	NM[g]	NM[g]	NM[g]
EW-11I						
9/28/2000	142	40	0.3	18.5	0.0	3.5
10/13/2000	80	13	0	17.8	0.4	3.5
11/21/2000	64	2	0	16.4	1.2	3
12/12/2000	284	12.5	0	16.5	0.4	4
1/9/2001	64	8	0	16.8	0	4
2/28/2001	148	40	0	14.5	2.1	2
3/30/2001	159	13	0	14.3	1.9	2
4/27/2001	64	0	NM[e]	NM[e]	NM[e]	4
5/30/2001	127	3	0	14.2	1.8	3
6/29/2001	66	6	0	16.3	0	5
7/26/2001	61	11	0	16	0	2
9/5/2001	135	10	0	14.3	0	3
9/21/2001	135	2	0	12.4	1.8	2
11/1/2001	66	22	0	10.7	2	1
11/30/2001	50	1.5	0	10.2	1.9	0.5
12/28/2001	44	10	0	9.8	0	0.5

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SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Date	Air Flow (cfm)	PID (ppm$_v$)	Methane (%)	Oxygen (%)	Carbon Dioxide (%)	Vacuum (in. Hg)
1/31/2002	48	1.0	0	7.9	2	0.5
2/28/2002	41	9.0	0	7.7	0	1.0
3/21/2002	52	0.0	NM[e]	NM[e]	NM[e]	0.2
4/1/2002	49	6.0	0	17.8	3.1	0.1
4/30/2002	49	40.0	0.3	20.7	0	0.3
5/31/2002	68	6.5	0	17.9	2.5	1.2
7/1/2002	81	20.0	0.3	19.7	0.1	0.8
8/5/2002	131	10.0	0	16.8	2.5	1.2
8/30/2002	135	10.0	0.3	19.3	0	3.0
9/27/2002	82	4.4	0.1	16.3	2.6	2.0
11/1/2002	100	7.0	0	16.4	1.8	1.4
11/27/2002	200	8.0	0	16.1	2.8	1.3
1/2/2003	NM[g]	NA	0.0	16.2	1.1	1.8
1/30/2003	NM[g]	NA	0.0	17.6	0	2.5
EW-12D						
9/28/2000	110	50	0	18.9	0	2
10/13/2000	49	2.8	0	18.7	0	2
11/21/2000	49	3	0	17.4	3	2
12/12/2000	61	3	0	16.8	0	3
1/9/2001	49	4	0	16.0	0	4
2/28/2001	164	20	0	15.5	1	15
3/30/2001	NA	NA	NA	NA	NA	2
4/27/2001	49	0.5	NM[e]	NM[e]	NM[e]	3
5/30/2001	78	3	0	15.1	1	2
6/29/2001	70	11	0	16.4	0	2
7/26/2001	86	14.5	0	16	0	0.3
9/5/2001	86	10	0	14.7	0	1.0
9/21/2001	121	3	0	13.4	0.9	0.5
11/1/2001	49	10	0	11.7	0.8	1.0
11/30/2001	55	2	0	11.3	0.4	0.5
12/28/2001	86	11	0	9.6	0.0	0.5
1/31/2002	65	0.8	0	8.7	1.1	0.5
2/28/2002	70	15.0	0	7.6	0.0	0.5
3/21/2002	65	30.0	NM[e]	NM[e]	NM[e]	0.3
4/1/2002	78	30.0	0	18.4	2.1	0.2
4/30/2002	65	16.0	2	20.4	0.2	0.4
5/31/2002	86	0.0	0.1	18.9	1.5	0.5
7/1/2002	99	22.0	0.7	3.6	14.6	0.4
8/5/2002	86	7.0	0	18.5	1.3	0.2
8/30/2002	86	7.8	0.1	19	0.2	0.3
9/27/2002	61	4.5	0	18	1.4	0.1

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SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Date	Air Flow (cfm)	PID (ppm$_v$)	Methane (%)	Oxygen (%)	Carbon Dioxide (%)	Vacuum (in. Hg)
11/1/2002	70	4.0	0	17.5	1.1	0.2
11/27/2002	86	4.0	0	17.6	1.2	0.5
1/2/2003	49	NA	0	17.3	1	0.5
1/30/2003	121	14.0	0.0	17.9	0	0.6
EW-13S						
9/28/2000	21	20	0.1	17.9	0.2	5
10/13/2000	12	2.5	0	13.7	3.4	11.5
11/21/2000	16	NM[c]	NM[c]	NM[c]	NM[c]	11
12/12/2000	15	0	0	17.3	0	13.5
1/9/2001	17	NM[c]	NM[c]	NM[c]	NM[c]	13
2/28/2001	NM[d]	NM[d]	NM[d]	NM[d]	NM[d]	NM[d]
3/30/2001	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]	12
4/27/2001	15	0	NM[e]	NM[e]	NM[e]	4
5/30/2001	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]	13
6/29/2001	21	5	0.5	4.1	12.2	1.0
7/26/2001	21	9	0	12.3	2.9	0.5
9/5/2001	25	19	0.8	6.5	9.2	2.0
9/21/2001	21	17	0.4	9.5	4.7	1.0
11/1/2001	NM[f]	26	0.6	4.6	9.1	10.0
11/30/2001	17	30	0.4	6.4	6.7	0.5
12/28/2001	17	21	0.5	1.1	12.6	0.5
1/31/2002	17	NM[c]	NM[c]	NM[c]	NM[c]	8.0
2/28/2002	15	30	0	3.4	8.2	0.5
3/21/2002	16	6	NM[e]	NM[e]	NM[e]	10.0
4/1/2002	NM[f]	NM[c]	NM[c]	NM[c]	NM[c]	9.0
4/30/2002	16	10	0.2	5.8	10.0	2.0
5/31/2002	15	13	0.2	14.9	4.1	9.0
7/1/2002	17	38	0.9	4.2	12.4	0.4
8/5/2002	17	28	0.8	8.6	9.4	0.3
8/30/2002	17	30	1.0	2.3	16.8	0.3
9/27/2002	16	20	1.0	8.8	9.7	5.0
11/1/2002	16	3.5	0.0	14.5	2.6	9.0
11/27/2002	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]
1/2/2003	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]	10.5
1/30/2003	NM[g]	NM[g]	NM[g]	NM[g]	NM[g]	NM[g]
EW-14S						
9/28/2000	21	25	0.4	18.3	0	5.5
10/13/2000	25	22	0	18.6	0	8
11/21/2000	21	2	0	18.0	0	10
12/12/2000	0	6	0	17.3	0	16

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MONITORING DATA COLLECTED FROM THE SOIL VAPOR EXTRACTION SYSTEM
SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Date	Air Flow (cfm)	PID (ppm$_v$)	Methane (%)	Oxygen (%)	Carbon Dioxide (%)	Vacuum (in. Hg)
1/9/2001	21	6.8	0	16.7	0	12
2/28/2001	20	12	0	16.5	0	11
3/30/2001	12	6	0	15.0	1.1	11
4/27/2001	21	0.2	NM[e]	NM[e]	NM[e]	10
5/30/2001	12	15	0	16.3	0	13
6/29/2001	20	4.5	1.5	15.1	0.8	10
7/26/2001	25	2.5	0	15.4	0.3	12.5
9/5/2001	21	24	8.1	10.8	3.6	10
9/21/2001	21	9	0	13.4	0.4	11
11/1/2001	20	38	4.1	9.8	2.9	11
11/30/2001	20	12	0	10.4	1.5	10
12/28/2001	21	50	6.7	7.3	3.4	9
1/31/2002	21	15.0	0.0	8	1.7	12
2/28/2002	20	80	0.1	4.8	3.1	12.5
3/21/2002	17	30	NM[e]	NM[e]	NM[e]	11
4/1/2002	16	100	0	17.8	2.8	11
4/30/2002	16	40	8.7	13.0	5.3	11
5/31/2002	17	14	0.2	19.1	1.1	11
7/1/2002	17	30	15.0	10.0	6.7	6
8/5/2002	17	20	0.1	17.2	2.0	10
8/30/2002	21	30	11.5	11.8	5.7	11
9/27/2002	16	20	0.1	18.5	0.2	12
11/1/2002	16	37	31.5	6.1	10.9	9.5
11/27/2002	21	90	0.5	16.2	2.5	12.5
1/2/2003	NM[g]	NA	23.2	7	10	9
1/30/2003	NM[g]	NM[g]	NM[g]	NM[g]	NM[g]	NM[g]
EW-15S	NM[a]	NM[a]	NM[a]	NM[a]	NM[a]	NM[a]
EW-16S						
9/28/2000	21	12	0.1	18.5	0	4.5
10/13/2000	12	1.5	0	14.9	2.5	8.5
11/21/2000	12	NM[c]	NM[c]	NM[c]	NM[c]	12
12/12/2000	0	0	0	17.3	0	13
1/9/2001	6	NM[c]	NM[c]	NM[c]	NM[c]	11
2/28/2001	NM[d]	NM[d]	NM[d]	NM[d]	NM[d]	NM[d]
3/30/2001	9	NM[c]	NM[c]	NM[c]	NM[c]	12
4/27/2001	15	0.1	NM[e]	NM[e]	NM[e]	10
5/30/2001	12	14	0	14.8	1.1	10
6/29/2001	21	6	0	7.8	5.7	2
7/26/2001	21	6	0	13.9	1.5	0.5
9/5/2001	21	1	0	7	7.1	1.0

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Date	Air Flow (cfm)	PID (ppm_v)	Methane (%)	Oxygen (%)	Carbon Dioxide (%)	Vacuum (in. Hg)
9/21/2001	21	4	0	12.5	2.1	0.5
11/1/2001	21	8	0	7.2	4.6	3.0
11/30/2001	20	4	0	11.1	1.1	3.0
12/28/2001	17	2.6	0	6.3	3	1.0
1/31/2002	14	NM[e]	0	8	1	5.0
2/28/2002	16	4	0	5.5	1.9	3.0
3/21/2002	17	NM[c]	NM[e]	NM[e]	NM[e]	11.0
4/1/2002	20	NM[c]	NM[c]	NM[c]	NM[c]	10.0
4/30/2002	16	5	0.0	15.5	2.9	6.0
5/31/2002	17	6	0.1	18.2	1.6	8.0
7/1/2002	17	7	2.1	10.8	6.2	3.0
8/5/2002	17	7	0.1	17.2	1.6	8.0
8/30/2002	17	6	0.2	11.6	5.6	4.0
9/27/2002	16	3.5	0.1	17.1	1.9	4.0
11/1/2002	15	0.5	0.0	13.2	3.9	6.0
11/27/2002	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]
1/2/2003	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]
1/30/2003	NM[g]	NM[g]	NM[g]	NM[g]	NM[g]	NM[g]
INFLUENT						
9/28/2000	430	17	0	17.3	0.4	6.0
10/13/2000	222	10.2	0	17.6	0.7	9.25
11/21/2000	333	2	0	17.0	0.4	14
12/12/2000	314	0.5	0	17.2	0.1	13
1/9/2001	314	2	0	16.8	0	11
2/28/2001	385	30	0	14.3	1.6	13
3/30/2001	249	4	0	15.0	1.1	11
4/27/2001	343	1	NM[e]	NM[e]	NM[e]	11.5
5/30/2001	333	2	0.1	15.9	0.3	13
6/29/2001	333	0	0.1	15.3	0.3	12
7/26/2001	377	9.5	0	15.2	0.6	13
9/5/2001	401	1	0	12.8	0.9	11
9/21/2001	283	1	0	13.2	0.6	9
11/1/2001	249	25	0.1	10.2	2.0	12
11/30/2001	193	65	0	10.6	1.4	10
12/28/2001	193	20	0.4	8.5	1.2	10
1/31/2002	193	15.5	0.0	8.8	0.8	12
2/28/2002	193	55.0	0.0	7.1	0.3	10
3/21/2002	222	18.0	NM[e]	NM[e]	NM[e]	11
4/1/2002	208	45.0	0.0	18.3	2.3	11
4/30/2002	193	38.0	0.2	18.8	0.9	11.5
5/31/2002	249	10.0	0.0	19.7	0.7	10

TABLE 1
MONITORING DATA COLLECTED FROM THE SOIL VAPOR EXTRACTION SYSTEM
SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Date	Air Flow (cfm)	PID (ppm_v)	Methane (%)	Oxygen (%)	Carbon Dioxide (%)	Vacuum (in. Hg)
7/1/2002	385	13.0	0.1	18.3	1.3	7
8/5/2002	261	11.0	0.1	17.6	1.8	10
8/30/2002	283	30.0	0.1	18.6	0.6	11
9/27/2002	249	5.0	0.0	17.3	1.7	12.5
11/1/2002	222	26.0	0.0	16.9	1.4	11
11/27/2002	360	35.0	0.0	17.0	1.8	10
1/2/2003	222	NA	0.2	16.8	1.2	7
1/30/2003	157	5.0	0	18	0	9

cfm	Cubic feet per minute.
PID	Photoionization detector; concentration of total VOCs detected with the photoionization detector.
ppm_v	Parts per million by volume.
%	Percent.
in. Hg	Inches mercury.
NM[a]	Not measured - well shut down permanently.
NM[b]	Well shut down and measurements not collected by ARCADIS Geraghty & Miller, Inc., reason not noted.
NM[c]	Not able to be measured due to suction of water by vacuum extraction pump.
NM[d]	Not able to be measured due to wellhead and/or piping damage.
NM[e]	Not measured.
NM[f]	Not able to be measured due to pitot tube clogging
NM[g]	Not able to be measured due to frozen pitot tube.
NA	Measurement not available due suspected malfunction of the PID detector lamp.

Created by: AKG 2/4/03
Checked by: SH 2/5/03

TABLE 2
EFFLUENT MONITORING DATA FROM THE SOIL VAPOR EXTRACTION SYSTEM
SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Date	PID (ppm_v)	CEM (ppm_v)
9/28/2000	0.5	1.0
10/13/2000	2.0	4.4
11/21/2000	0.0	3.3
12/12/2000	0.3	0.7 [a]
1/9/2001	0.0	0.4
2/28/2001	2.7	1.1
3/30/2001	1.0	0.5
4/27/2001	0.5	0.8
5/30/2001	0.1	0.4
6/29/2001	0.0	2.8
7/26/2001	0.5	0.5
9/5/2001	4.0	0.4
9/21/2001	2.0	0.2
11/1/2001	9.0	1.2
11/30/2001	0.0	0.1
12/28/2001	0.1	0.9
1/31/2002	0.5	0.3
2/28/2002	0.5	0.7
4/1/2002	0.0	0.7
4/30/2002	0.0	0.0
5/31/2002	0.5	1.0
7/1/2002	0.5	0.5
8/5/2002	6.0	1.9
8/30/2002	0.2	0.5
9/27/2002	1.0	0.6
11/1/2002	1.0	0.3
11/27/2002	2.0	1.2
1/2/2003	NA	NA
1/30/2003	0.0	0.0

PID Photoionization detector; concentration of total VOCs detected with the photoionization detector.
CEM Continuous emissions monitor.
ppm_v Parts per million by volume.

Created by: AKG 2/4/03
Checked by: SH 2/5/03

Notes:

a. Field data modified by professional judgement from 0.007 to 0.7 ppm_v due to the CEM unit not being capable of that degree of accuracy.

TABLE 3
OPERATIONAL DATA FROM THE SOIL VAPOR EXTRACTION SYSTEM
SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Date	Vacuum Readings		Pressure Readings	Temperature Readings					Barometric Pressure
	Air Filter Inlet (in Hg)	Blower Inlet (in Hg)	Blower Outlet Pressure (kPa)	Blower Inlet (°F)	Blower Outlet (°F)	Heat Exchanger Outlet (°F)	Air/Water Cooling Coil Outlet (°F)	Discharge Stack Inlet (°F)	(in Hg)
9/28/2000	6	7	0	78	134	90	90	75	30.06
10/13/2000	8.5	11	0	76	159	94	92	82	30.11
11/21/2000	12	12	0	49	211	84	82	73	29.92
12/12/2000	15	16	0	56	206	90	86	80	29.86
1/9/2001	11	11.5	0	50	150	78	74	70	29.78
2/28/2001	8	12.0	0	55	152	92	92	82	29.98
3/30/2001	11	10.0	0	50	175	89	86	86	29.71
4/27/2001	11	10.5	0	60	110	80	72	72	29.92
5/30/2001	11	14.0	0	64	200	90	70	64	29.85
6/29/2001	12	15.0	0	92	220	110	82	80	30.05
7/26/2001	13	14.0	0	88	228	100	80	78	29.95
9/5/2001	11	13.0	0	80	196	98	77	80	30.11
9/21/2001	10	15.0	0	76	170	104	77	80	29.90
11/1/2001	12	15.0	0	76	220	114	79	80	30.20
11/30/2001	10	10.0	1	72	192	100	75	82	30.06
12/28/2001	10	9.0	1.5	47	180	98	92	70	29.68
1/31/2002	12	11.0	0	56	188	98	92	90	30.15
2/28/2002	10	12.0	0	57	175	80	78	79	29.97
4/1/2002	11	10.0	0	65	200	88	67	78	29.76
4/30/2002	11	15.0	0	70	214	94	70	84	29.77
5/31/2002	10	13.0	0	79	218	110	78	80	29.63
7/1/2002	10	10.0	0	84	200	120	82	82	30.05

TABLE 3
OPERATIONAL DATA FROM THE SOIL VAPOR EXTRACTION SYSTEM
SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Date	Vacuum Readings		Pressure Readings	Temperature Readings					Barometric Pressure
	Air Filter Inlet	Blower Inlet	Blower Outlet Pressure	Blower Inlet	Blower Outlet	Heat Exchanger Outlet	Air/Water Cooling Coil Outlet	Discharge Stack Inlet	
	(in Hg)	(in Hg)	(kPa)	(°F)	(°F)	(°F)	(°F)	(°F)	(in Hg)
8/5/2002	10	11.5	0	91	240	120	86	88	29.86
8/30/2002	11	10.0	0	74	205	89	73	72	30.14
9/27/2002	12.5	10.0	0	72	210	86	70	72	29.80
11/1/2002	10.0	10.5	0	58	160	88	75	74	29.91
11/27/2002	10.0	8.5	2	56	206	106	94	92	30.00
1/2/2003	11.0	7.0	0	50	168	78	70	70	29.88
1/30/2003	11.0	7.0	0	40	180	100	84	80	30.32

in Hg — Inches mercury. (°F) — Degrees Fahrenheit.
kPa — Kilopascals. NM — Not measured.

Prepared/date: AKG 2/5/03
Checked/date: SH 2/5/03

TABLE 4

ANALYTICAL RESULTS OF AIR SAMPLES FROM THE SVE SYSTEM INFLUENT
SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Compound	Influent 10/13/00	Influent 11/21/00	Influent 12/12/00	Influent 1/9/01	Influent 2/28/01	Influent 3/30/01
Freon 12	ND	ND	ND	ND	ND	ND
Freon 114	ND	ND	ND	ND	ND	ND
Chloromethane	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND	ND	**0.052**
Bromomethane	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND
Freon 11	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND
Freon 113	ND	ND	ND	ND	ND	ND
Methylene Chloride	**0.34**	ND	**0.21**	**0.13**	**0.096**	**0.12**
1,1-Dichloroethane	ND	ND	**0.15**	**0.063**	**0.039**	**0.073**
cis-1,2-Dichloroethene	**5**	**2.7**	**3.5**	**1.9**	**0.89**	**1.6**
Chloroform	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	**7.3**	**5.5**	**2.8**	**1.3**	**0.64**	**1**
Carbon Tetrachloride	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ND	0.29	**0.37**	**0.18**	**0.1**	**0.16**
Trichloroethene	**4**	**3**	**2.9**	**1.8**	**1.1**	**2**
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND
Toluene	**28**	**21**	**17**	**14**	**7.4**	**8.6**
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND
Tetrachloroethene	**15**	**11**	**6.8**	**5.9**	**2.5**	**4**
Ethylene Dibromide	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND
Ethyl Benzene	**6.6**	**5.4**	**2.7**	**3.3**	**1.7**	**2.4**
m,p-Xylene	**53**	**48**	**17**	**20**	**11**	**16**
o-Xylene	**14**	**14**	**3.9**	**5.2**	**3**	**4**
Styrene	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	**4.5**	**5.3**	**0.7**	**1.7**	**1.1**	**1.7**
1,2,4-Trimethylbenzene	**7.6**	**9.8**	**1.1**	**2.9**	**1.9**	**2.9**
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND
Chlorotoluene	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	ND	ND	ND	ND	ND	ND
Propylene	ND	ND	ND	ND	ND	ND
1,3 Butadiene	ND	ND	ND	ND	ND	ND

TABLE 4

ANALYTICAL RESULTS OF AIR SAMPLES FROM THE SVE SYSTEM INFLUENT
SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Compound	Influent 10/13/00	Influent 11/21/00	Influent 12/12/00	Influent 1/9/01	Influent 2/28/01	Influent 3/30/01
Acetone	ND	ND	**0.4**	ND	ND	ND
Carbon Disulfide	ND	ND	ND	ND	ND	ND
2-Propanol	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND
Vinyl Acetate	ND	ND	ND	ND	ND	ND
2-Butanone (Methyl Ethyl Ketone)	ND	ND	ND	ND	ND	ND
Hexane	ND	ND	ND	ND	ND	ND
Tetrahydrofuran	ND	ND	ND	ND	ND	ND
Cyclohexane	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	ND	ND	**0.65**	ND	ND	ND
2-Hexanone	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND
4-Ethyltoluene	**10**	**10**	**1.9**	**4.2**	**2.8**	**3.4**
Ethanol	ND	ND	ND	ND	**0.55**	ND
Methyl tert-butyl Ether	ND	ND	ND	ND	ND	ND
Heptane	**1.1**	**0.9 J**	**0.98**	**0.73**	**0.37**	**0.44**
Total VOCs	**156.4**	**136.9**	**63.1**	**63.3**	**35.2**	**48.4**

Concentrations expressed in parts per million by volume (ppm).

ND Compound not detected.

J Estimated value.

TABLE 4

ANALYTICAL RESULTS OF AIR SAMPLES FROM THE SVE SYSTEM INFLUENT
SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Compound	Influent 5/30/01	Influent 7/26/01	Influent 9/21/01	Influent 10/1/01	Influent 11/30/01	Influent 1/31/02
Freon 12	ND	ND	ND	ND	ND	**0.92**
Freon 114	ND	ND	ND	ND	ND	ND
Chloromethane	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ND	ND	**0.069**	**0.063**	ND	**0.16**
Bromomethane	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND
Freon 11	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND	ND	**0.045**
Freon 113	ND	ND	ND	ND	ND	ND
Methylene Chloride	**0.085**	**0.12**	**0.18**	**0.099**	**0.22**	**0.12**
1,1-Dichloroethane	**0.061**	**0.13**	**0.12**	**0.12**	**0.19**	**0.16**
cis-1,2-Dichloroethene	**1.2**	**2.0**	**1.7**	**1.7**	**3.5**	**2.1**
Chloroform	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	**0.87**	**2.2**	**2.0**	**2.1**	**3.4**	**1.9**
Carbon Tetrachloride	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	**0.12**	ND	**0.14**	ND	**0.37**	**0.19**
Trichloroethene	**1.7**	**1.6**	**1.8**	**1.9**	**2.5**	**1.6**
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND
Toluene	**6.8**	**8.3**	**9.1**	**9.6**	**20**	**7.5**
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND
Tetrachloroethene	**3.7**	**5.6**	**5.2**	**5.5**	**12**	**6.7**
Ethylene Dibromide	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND
Ethyl Benzene	**1.8**	**2.3**	**2.3**	**2.2**	**4.1**	**1.5**
m,p-Xylene	**13**	**22**	**19**	**18**	**37**	**17**
o-Xylene	**3.8**	**8.3**	**6.4**	**6.2**	**12**	**5.5**
Styrene	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	**2**	**3.7**	**2.4**	**2.4**	**4.4**	**2.8**
1,2,4-Trimethylbenzene	**3.1**	**5.2**	**3.8**	**4**	**6.6**	**4.1**
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND
Chlorotoluene	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	ND	ND	ND	ND	ND	ND
Propylene	ND	ND	ND	ND	ND	ND
1,3 Butadiene	ND	ND	ND	ND	ND	ND

TABLE 4

ANALYTICAL RESULTS OF AIR SAMPLES FROM THE SVE SYSTEM INFLUENT
SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Compound	Influent 5/30/01	Influent 7/26/01	Influent 9/21/01	Influent 10/1/01	Influent 11/30/01	Influent 1/31/02
Acetone	ND	ND	ND	ND	ND	ND
Carbon Disulfide	ND	ND	ND	ND	ND	ND
2-Propanol	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND
Vinyl Acetate	ND	ND	ND	ND	ND	ND
2-Butanone (Methyl Ethyl Ketone)	ND	ND	ND	ND	ND	ND
Hexane	ND	ND	ND	ND	ND	ND
Tetrahydrofuran	ND	ND	ND	ND	ND	ND
Cyclohexane	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	ND	ND	ND	ND	ND	ND
2-Hexanone	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND
4-Ethyltoluene	**3.4**	**6.7**	**4.4**	**4.2**	**7.7**	**6.2**
Ethanol	ND	ND	ND	ND	ND	ND
Methyl tert-butyl Ether	ND	ND	ND	ND	ND	ND
Heptane	**0.3**	**0.43**	**0.48**	**0.52**	**1.2**	**0.51**
Total VOCs	**41.9**	**68.6**	**59.1**	**58.6**	**115.2**	**59.0**

Concentrations expressed in parts per million by volume (ppm).

ND Compound not detected.

J Estimated value.

TABLE 4

ANALYTICAL RESULTS OF AIR SAMPLES FROM THE SVE SYSTEM INFLUENT
SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Compound	Influent 4/1/02	Influent 5/31/02	Influent 8/5/02	Influent 9/27/02	Influent 11/27/02
Freon 12	ND	ND	ND	ND	ND
Freon 114	ND	ND	ND	ND	ND
Chloromethane	ND	ND	ND	ND	ND
Vinyl Chloride	**0.14**	**0.063**	**0.081**	**0.078**	**0.1**
Bromomethane	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND
Freon 11	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	**0.032**	**0.025**	**0.03**	**0.052**
Freon 113	ND	ND	ND	ND	ND
Methylene Chloride	**0.18**	**0.14**	**0.13**	**0.1**	**0.15**
1,1-Dichloroethane	**0.2**	**0.14**	**0.1**	**0.13**	**0.11**
cis-1,2-Dichloroethene	**3.4**	**1.5**	**1.7**	**1.9**	**2.8**
Chloroform	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	**2.5**	**1.4**	**0.98**	**1**	**1.1**
Carbon Tetrachloride	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND
1,2-Dichloroethane	**0.3**	**0.14**	**0.1**	**0.11**	**0.18**
Trichloroethene	**2.7**	**1.6**	**1.8**	**1.6**	**2.2**
1,2-Dichloropropane	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND
Toluene	**32**	**3.9**	**0.81**	**0.52**	**6.8**
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND
Tetrachloroethene	**11**	**3.9**	**1.1**	**1.7**	**5.6**
Ethylene Dibromide	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND
Ethyl Benzene	**6.2**	**0.79**	**0.16**	**0.1**	**1.8**
m,p-Xylene	**36**	**8.8**	**1.6**	**1.1**	**15**
o-Xylene	**11**	**2.9**	**0.54**	**0.32**	**4.1**
Styrene	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	**3.7**	**1.6**	**0.069**	**0.062**	**2.4**
1,2,4-Trimethylbenzene	**6**	**2.2**	**0.053**	**0.052**	**3.4**
1,3-Dichlorobenzene	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND	ND
Chlorotoluene	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND
Hexachlorobutadiene	ND	ND	ND	ND	ND
Propylene	ND	ND	**0.049**	ND	ND
1,3 Butadiene	ND	ND	ND	ND	ND

TABLE 4

ANALYTICAL RESULTS OF AIR SAMPLES FROM THE SVE SYSTEM INFLUENT
SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Compound	Influent 4/1/02	Influent 5/31/02	Influent 8/5/02	Influent 9/27/02	Influent 11/27/02
Acetone	ND	ND	**0.042**	ND	ND
Carbon Disulfide	ND	ND	ND	ND	ND
2-Propanol	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND
Vinyl Acetate	ND	ND	ND	ND	ND
2-Butanone (Methyl Ethyl Ketone)	ND	ND	ND	ND	ND
Hexane	ND	ND	ND	ND	ND
Tetrahydrofuran	ND	ND	ND	ND	ND
Cyclohexane	ND	ND	ND	ND	ND
1,4-Dioxane	ND	ND	**0.065**	**0.066**	ND
Bromodichloromethane	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	ND	ND	ND	ND	ND
2-Hexanone	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND
4-Ethyltoluene	**9**	**3**	**0.071**	**0.066**	**3.3**
Ethanol	ND	ND	ND	ND	ND
Methyl tert-butyl Ether	ND	ND	ND	ND	ND
Heptane	**2.6**	**0.2**	ND	ND	**0.38**
Total VOCs	**126.9**	**32.3**	**9.5**	**8.934**	**49.5**

Concentrations expressed in parts per million by volume (ppm).
ND Compound not detected.
J Estimated value.

Prepared/date: AKG 2/5/03
Checked/date: SH 2/5/03

TABLE 5

ANALYTICAL RESULTS OF AIR SAMPLES FROM THE SVE SYSTEM EFFLUENT
SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Compound	Effluent 10/13/00	Effluent 11/21/00	Effluent 12/12/00	Effluent 1/9/01	Effluent 2/28/01	Effluent 3/30/01
Freon 12	**0.00079**	**0.001**	ND	ND	**0.0012**	**0.00071**
Freon 114	ND	ND	ND	ND	ND	ND
Chloromethane	**0.0011**	**0.0036**	**0.0053**	**0.0021**	**0.0025**	**0.0012**
Vinyl Chloride	**0.0056**	**0.033**	ND	**0.00088**	**0.022**	**0.0096**
Bromomethane	ND	ND	ND	ND	ND	ND
Chloroethane	**0.0012**	ND	ND	ND	ND	ND
Freon 11	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	**0.00086**	ND	ND	ND	ND	ND
Freon 113	ND	ND	ND	ND	ND	ND
Methylene Chloride	**0.011**	**0.00067**	**0.0014**	**0.00096**	**0.0011**	ND
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	**0.0072**	ND	ND	ND	ND	ND
Chloroform	ND	ND	**0.00085**	ND	ND	ND
1,1,1-Trichloroethane	**0.0048**	ND	ND	ND	ND	ND
Carbon Tetrachloride	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	**0.00078**	ND	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND
Trichloroethene	**0.0033**	ND	ND	ND	ND	ND
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND
Toluene	**0.018**	**0.006**	**0.0086**	**0.0011**	**0.0012**	**0.0013**
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND
Tetrachloroethene	**0.01**	**0.0032**	**0.0037**	ND	ND	ND
Ethylene Dibromide	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND
Ethyl Benzene	**0.0032**	**0.0016**	**0.0017**	ND	ND	ND
m,p-Xylene	**0.023**	**0.012**	**0.01**	**0.00081**	**0.0015**	**0.0027**
o-Xylene	**0.0057**	**0.0032**	**0.0031**	ND	ND	**0.0007**
Styrene	ND	ND	**0.0012**	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	**0.0018**	**0.0012**	**0.0016**	ND	ND	ND
1,2,4-Trimethylbenzene	**0.003**	**0.0023**	**0.0038**	ND	ND	**0.0011**
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND
Chlorotoluene	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND

TABLE 5

ANALYTICAL RESULTS OF AIR SAMPLES FROM THE SVE SYSTEM EFFLUENT
SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Compound	Effluent 10/13/00	Effluent 11/21/00	Effluent 12/12/00	Effluent 1/9/01	Effluent 2/28/01	Effluent 3/30/01
Hexachlorobutadiene	ND	ND	ND	ND	ND	ND
Propylene	ND	ND	**0.014**	ND	ND	**0.028**
1,3 Butadiene	ND	ND	ND	ND	ND	ND
Acetone	**0.02**	ND	**0.013**	ND	ND	**0.0051**
Carbon Disulfide	ND	ND	ND	ND	ND	ND
2-Propanol	ND	ND	**0.0037**	ND	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND
Vinyl Acetate	ND	ND	ND	ND	ND	ND
2-Butanone (Methyl Ethyl Ketone)	ND	ND	**0.0043**	ND	ND	ND
Hexane	ND	ND	ND	ND	ND	ND
Tetrahydrofuran	ND	ND	ND	ND	ND	ND
Cyclohexane	ND	**0.0027**	**0.0069**	**0.0052**	ND	ND
1,4-Dioxane	ND	ND	**0.0033**	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	ND	ND	ND	ND	ND	ND
2-Hexanone	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND
4-Ethyltoluene	**0.004**	ND	**0.0034**	ND	ND	ND
Ethanol	**0.0036**	ND	**0.029**	ND	**0.13**	ND
Methyl tert-butyl Ether	ND	ND	ND	ND	ND	ND
Heptane	ND	ND	ND	ND	ND	ND
Total VOCs	**0.128**	**0.070**	**0.120**	**0.011**	**0.160**	**0.050**

Concentrations expressed in parts per million by volume (ppm).
ND Compound not detected.
J Estimated value.

TABLE 5

ANALYTICAL RESULTS OF AIR SAMPLES FROM THE SVE SYSTEM EFFLUENT
SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Compound	Effluent 5/30/01	Effluent 7/26/01	Effluent 9/21/01	Effluent 11/30/01	Effluent 1/31/02	Effluent 4/1/02
Freon 12	**0.00084**	**0.00088**	**0.00096**	**0.0008**	**0.0068**	ND
Freon 114	ND	ND	ND	ND	ND	ND
Chloromethane	ND	**0.0015**	**0.0018**	**0.0013**	ND	**0.0012**
Vinyl Chloride	**0.023**	**0.029**	**0.027**	**0.028**	**0.0071**	**0.00068**
Bromomethane	ND	ND	ND	ND	ND	ND
Chloroethane	**0.0025**	**0.0029**	**0.018**	**0.0076**	ND	ND
Freon 11	**0.00097**	ND	**0.0011**	ND	ND	ND
1,1-Dichloroethene	**0.0086**	**0.00086**	**0.014**	ND	ND	ND
Freon 113	**0.0042**	ND	**0.0045**	ND	ND	ND
Methylene Chloride	**0.055**	**0.0024**	**0.081**	**0.0046**	**0.0009**	**0.00073**
1,1-Dichloroethane	**0.022**	**0.0016**	**0.044**	ND	ND	ND
cis-1,2-Dichloroethene	**0.037**	**0.0072**	**0.037**	ND	ND	ND
Chloroform	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	**0.034**	**0.015**	**0.1**	ND	ND	ND
Carbon Tetrachloride	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	**0.0013**	ND	**0.00097**	ND	ND	ND
Trichloroethene	**0.0017**	**0.001**	**0.00097**	ND	ND	ND
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND
Toluene	ND	**0.0054**	**0.0024**	ND	**0.00069**	**0.002**
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ND	**0.0027**	**0.0023**	ND	ND	ND
Ethylene Dibromide	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND
Ethyl Benzene	ND	**0.0011**	**0.0015**	ND	ND	ND
m,p-Xylene	**0.001**	**0.0094**	**0.016**	ND	**0.00092**	**0.0026**
o-Xylene	ND	**0.0028**	**0.0053**	ND	ND	**0.00076**
Styrene	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	ND	**0.00089**	**0.0023**	ND	ND	**0.00092**
1,2,4-Trimethylbenzene	ND	**0.0016**	**0.0041**	ND	ND	ND
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND
Chlorotoluene	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND

TABLE 5

ANALYTICAL RESULTS OF AIR SAMPLES FROM THE SVE SYSTEM EFFLUENT
SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Compound	Effluent 5/30/01	Effluent 7/26/01	Effluent 9/21/01	Effluent 11/30/01	Effluent 1/31/02	Effluent 4/1/02
Hexachlorobutadiene	ND	ND	ND	ND	ND	ND
Propylene	ND	**0.045**	ND	ND	**0.013**	**0.0035**
1,3 Butadiene	ND	ND	ND	ND	ND	ND
Acetone	ND	**0.02**	**0.0086**	**0.0034**	ND	**0.0037**
Carbon Disulfide	ND	ND	ND	ND	ND	ND
2-Propanol	ND	ND	**0.032**	ND	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND
Vinyl Acetate	ND	ND	ND	ND	ND	ND
2-Butanone (Methyl Ethyl Ketone)	ND	**0.0061**	ND	ND	ND	ND
Hexane	ND	ND	ND	ND	ND	ND
Tetrahydrofuran	ND	ND	ND	ND	ND	ND
Cyclohexane	ND	ND	ND	**0.0093**	**0.0081**	**0.0039**
1,4-Dioxane	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	ND	ND	ND	ND	ND	ND
2-Hexanone	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND
4-Ethyltoluene	ND	ND	ND	ND	ND	ND
Ethanol	ND	**0.0046**	**0.0044**	ND	**0.0037**	ND
Methyl tert-butyl Ether	ND	ND	ND	ND	ND	ND
Heptane	ND	ND	ND	ND	ND	ND
Total VOCs	**0.192**	**0.162**	**0.410**	**0.055**	**0.041**	**0.01999**

Concentrations expressed in parts per million by volume (ppm).

ND Compound not detected.

J Estimated value.

TABLE 5

ANALYTICAL RESULTS OF AIR SAMPLES FROM THE SVE SYSTEM EFFLUENT
SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Compound	Effluent 5/31/02	Effluent 8/5/02	Effluent 9/27/02	Effluent 11/27/02
Freon 12	**0.00098**	**0.0013**	**0.0011**	**0.0017**
Freon 114	ND	ND	ND	ND
Chloromethane	**0.0012**	ND	ND	**0.0026**
Vinyl Chloride	**0.029**	**0.0078**	**0.024**	**0.1**
Bromomethane	ND	ND	ND	ND
Chloroethane	**0.0081**	ND	**0.003**	**0.0032**
Freon 11	**0.00093**	ND	**0.00084**	ND
1,1-Dichloroethene	**0.0038**	ND	**0.0025**	ND
Freon 113	**0.0015**	ND	ND	ND
Methylene Chloride	**0.084**	**0.007**	**0.037**	**0.018**
1,1-Dichloroethane	**0.0084**	ND	0.005	ND
cis-1,2-Dichloroethene	**0.009**	**0.0034**	**0.002**	**0.00072**
Chloroform	ND	ND	ND	ND
1,1,1-Trichloroethane	**0.011**	**0.002**	**0.0018**	ND
Carbon Tetrachloride	ND	ND	ND	ND
Benzene	ND	ND	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND
Trichloroethene	**0.0007**	**0.002**	ND	ND
1,2-Dichloropropane	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND
Toluene	ND	**0.0066**	ND	**0.0013**
trans-1,3-Dichloropropene	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND
Tetrachloroethene	ND	**0.0037**	ND	**0.0021**
Ethylene Dibromide	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND
Ethyl Benzene	ND	**0.0014**	ND	ND
m,p-Xylene	**0.0007**	**0.013**	ND	**0.0044**
o-Xylene	ND	**0.0038**	ND	**0.0012**
Styrene	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND
1,3,5-Trimethylbenzene	ND	**0.00083**	ND	**0.00091**
1,2,4-Trimethylbenzene	ND	**0.0011**	ND	**0.0014**
1,3-Dichlorobenzene	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND
Chlorotoluene	ND	ND	ND	ND
1,2-Dichlorobenzene	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND
				ND

TABLE 5

ANALYTICAL RESULTS OF AIR SAMPLES FROM THE SVE SYSTEM EFFLUENT
SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Compound	Effluent 5/31/02	Effluent 8/5/02	Effluent 9/27/02	Effluent 11/27/02
Hexachlorobutadiene	ND	ND	ND	ND
Propylene	**0.037**	**0.016**	ND	**0.07**
1,3 Butadiene	ND	ND	ND	ND
Acetone	**0.0031**	**0.011**	**0.026**	ND
Carbon Disulfide	ND	ND	ND	ND
2-Propanol	ND	ND	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND
Vinyl Acetate	ND	ND	ND	ND
2-Butanone (Methyl Ethyl Ketone)	ND	ND	ND	ND
Hexane	ND	ND	ND	ND
Tetrahydrofuran	ND	ND	ND	ND
Cyclohexane	**0.015**	**0.011**	ND	ND
1,4-Dioxane	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND
4-Methyl-2-pentanone	ND	ND	ND	ND
2-Hexanone	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND
4-Ethyltoluene	ND	ND	ND	ND
Ethanol	ND	ND	ND	ND
Methyl tert-butyl Ether	ND	ND	ND	ND
Heptane	ND	ND	ND	ND
Total VOCs	**0.214**	**0.092**	**0.103**	**0.208**

Concentrations expressed in parts per million by volume (ppm).

ND Compound not detected.

J Estimated value.

Prepared/date: AKG 2/5/03
Checked/date: SH 2/5/03

TABLE 6

SUMMARY OF MASS RECOVERY TOTALS BASED ON AIR SAMPLES COLLECTED AT THE SVE SYSTEM INFLUENT
SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Date	Operational Time Elapsed (days)	Blower Inlet Temperature (°F)	Barometric Pressure (in. Hg)	Influent Pitot Tube (in. w.c.)	Velocity (fpm)	Flow Rate (cfm)	Influent Total VOC Concentration (ppm_v)	Mass Removed (lb/hr)	Mass Removed (lb)	Cumulative Mass Removed (lb)
8/23/00[1]										17,942.2
9/28/00[2]	12	78	30.06	0.3	2,207	433	86.1	0.50	144.4	18,086.6
10/13/2000	13	76	30.11	0.08	1,136	223	156.4	0.47	146.3	18,233.0
11/21/2000	35	49	29.92	0.18	1,666	327	136.9	0.60	505.7	18,738.6
12/12/2000	21	56	29.86	0.16	1,584	311	63.1	0.26	132.9	18,871.5
1/9/2001	24	50	29.78	0.16	1,576	310	63.3	0.26	151.7	19,023.2
2/28/2001	15	55	29.98	0.24	1,934	380	35.2	0.18	64.7	19,087.8
3/30/2001	26	50	29.71	0.1	1,248	245	48.4	0.16	99.4	19,187.3
4/27/2001	0	60	29.92	0.19	1,731	340	NA	0.00	0.0	19,187.3
5/30/2001	30	64	29.85	0.18	1,693	332	41.9	0.19	134.8	19,322.0
6/30/2001	0	92	30.05	0.18	1,732	340	NA	0.00	0.0	19322.0
7/26/2001	25	88	29.95	0.23	1,954	384	68.6	0.31	186.0	19508.0
9/5/2001	0	80	30.11	0.26	2,056	404	NA	0.00	0.0	19508.0
9/21/2001	25	77	29.90	0.13	1,455	286	59.1	0.23	136.2	19644.2
11/1/2001	0	76	30.20	0.1	1,269	249	NA	0.00	0.0	19644.2
11/30/2001	27	72	30.06	0.06	981	193	115.18	0.30	193.3	19837.4
12/28/2001	0	47	29.68	0.06	964	189	NA	0.00	0.0	19837.4
1/31/2002	31	56	30.15	0.06	965	189	59	0.15	111.8	19949.2
2/28/2002	0	57	29.97	0.06	969	190	NA	0.00	0.0	19949.2
4/1/2002	30.5	65	29.76	0.07	1,058	208	126.90	0.35	259.4	20208.6
4/30/2002	0	70	29.77	0.06	984	193	NA	0.00	0.0	20208.6
5/31/2002	29	79	29.63	0.1	1,284	252	32.30	0.11	76.2	20284.8
7/1/2002	0	84	30.05	0.24	1,985	390	NA	0.00	0.0	20284.8

TABLE 6

SUMMARY OF MASS RECOVERY TOTALS BASED ON AIR SAMPLES COLLECTED AT THE SVE SYSTEM INFLUENT
SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Date	Operational Time Elapsed (days)	Blower Inlet Temperature (°F)	Barometric Pressure (in. Hg)	Influent Pitot Tube (in. w.c.)	Velocity (fpm)	Flow Rate (cfm)	Influent Total VOC Concentration (ppm_v)	Mass Removed (lb/hr)	Mass Removed (lb)	Cumulative Mass Removed (lb)
8/5/2002	21	91	29.86	0.11	1,357	266	9.50	0.034	17.1	20301.9
8/30/2002	0	74	30.14	0.13	1,445	284	NA	0.00	0.0	20301.9
9/27/2002	29	72	29.66	0.10	1,275	250	8.93	0.030	20.9	20322.8
11/1/2002	0	58	29.91	0.08	1,121	220	NA	0.000	0.0	20322.8
11/27/2002	26	56	30.00	0.21	1,810	355	49.50	0.236	147.5	20470.4

°F	Degrees Fahrenheit.
in. Hg	Inches of mercury.
in. w.c.	Inches water column.
fpm	Feet per minute.
cfm	Cubic feet per minute.
ppm_v	Parts per million by volume.
lb/hr	Pounds per hour.
lb	Pounds.
NA	Not available.

Prepared by: AKG 2/5/03
Checked by: SH 2/5/03

Notes:

1. Cumulative mass removed total from Bimonthly Progress and Operation & Maintenance Report, ARCADIS Geraghty & Miller, Inc., October 9, 2000.
2. Mass removed for September 2000 is estimated based on measurements collected in August 2000.

TABLES

TABLE 1
MONITORING DATA COLLECTED FROM THE SOIL VAPOR EXTRACTION SYSTEM
SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Date	Air Flow (cfm)	PID (ppm_v)	Methane (%)	Oxygen (%)	Carbon Dioxide (%)	Vacuum (in. Hg)
EW-1S	NM[a]	NM[a]	NM[a]	NM[a]	NM[a]	NM[a]
EW-2S						
9/28/2000	46	17	0.3	15.1	1.2	5
10/13/2000	21	6.2	0	17.3	1.0	8
11/21/2000	21	1	0	17.2	0.6	1
12/12/2000	20	8	0	16.7	0.2	4
1/9/2001	21	6	1	15.9	7.0	3
2/28/2001	21	42	0	14.9	1.3	1.0
3/30/2001	21	16.5	0	14.5	1.5	0.5
4/27/2001	21	0.5	NM[c]	NM[c]	NM[c]	6.5
5/30/2001	23	14.5	0.1	14.7	1.1	2.0
6/29/2001	21	1.8	0.0	16.1	0	1
7/26/2001	28	9	0.0	15.7	0.1	1
9/5/2001	21	2.5	0.0	12.1	1.1	1
9/21/2001	21	3.4	0.0	12.4	2.1	0.6
11/1/2001	21	5.0	0.0	7.9	2.8	1.5
11/30/2001	21	9.0	0.0	10.3	2.2	0.5
12/28/2001	21	3.2	0.0	8.6	0.4	1
1/31/2002	21	3.5	0.0	8.6	1.8	0.5
2/28/2002	21	5.0	0.0	6.4	0.8	1
3/21/2002	20	12.0	NM[c]	NM[c]	NM[c]	0.6
4/1/2002	21	12.5	0.0	18.2	2.3	0.3
4/30/2002	20	3.5	0.0	15.9	2.7	0.1
5/31/2002	20	15.0	0.0	18.1	2.7	0.7
7/1/2002	20	7.0	0.1	15.1	3	0.4
8/5/2002	22	4.0	0.1	15.3	3	0.1
8/30/2002	17	2.0	0.0	11.6	4.7	0.04
9/27/2002	17	0.0	0.0	13.7	5	0.3
11/1/2002	15	2.0	0.0	10.9	6.1	0.1
11/27/2002	21	22.0	0.0	17.4	2.1	0.9
1/2/2003	21	58.0	0.0	14	2.8	14
1/30/2003	9	30.0	0.0	17.6	0	0.1
EW-3S						1.9
9/28/2000	28	22	0	18.7	0	5
10/13/2000	21	3.5	0.8	15.4	2.0	9
11/21/2000	21	4	4.0	15.8	1.3	4
12/12/2000	28	12.5	0.1	16.2	0.8	7.5
1/9/2001	21	8.5	0.3	13.9	2.4	5
2/28/2001	28	18	0	12.6	4.2	2
3/30/2001	15	16	2.1	12.4	3.5	5

TABLE 1
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Date	Air Flow (cfm)	PID (ppm_v)	Methane (%)	Oxygen (%)	Carbon Dioxide (%)	Vacuum (in. Hg)
4/27/2001	21	0.1	NM[e]	NM[e]	NM[e]	4
5/30/2001	21	21	2.1	12.2	3.3	3
6/29/2001	21	12	1.3	6	5.1	2
7/26/2001	21	20	0	14.1	1.6	0
9/5/2001	15	26	0.2	10.6	2.4	1
9/21/2001	21	30	0.8	12.5	1.8	1
11/1/2001	15	12	0	8	1.8	1
11/30/2001	16	65	1.2	8.4	3.8	0.5
12/28/2001	16	12	0	3.7	4.9	0.5
1/31/2002	16	40	1.1	4.6	6.4	0.5
2/28/2002	14	18	0	3.6	4.4	0.5
3/21/2002	16	50	NM[e]	NM[e]	NM[e]	0.2
4/1/2002	15	52	1.6	13.7	6.7	0.7
4/30/2002	15	25	0.3	9.8	6.4	0.4
5/31/2002	15	50	1.2	9.9	7.7	0.3
7/1/2002	17	13	0.1	20	0.1	0.1
8/5/2002	21	14	0.1	11.9	7.3	0.1
8/30/2002	17	25	0.1	19.4	0	0.1
9/27/2002	15	15	0	19	0	0.0
11/1/2002	17	16	0	18.8	0	0.0
11/27/2002	16	70	1.7	11.7	7.8	1.3
1/2/2003	NM[g]	NA	1.2	4.3	11.2	2.1
1/30/2003	NM[g]	2.0	0.0	18	0	0.1
EW-4S						
9/28/2000	17	13	0.2	18.1	0.0	4
10/13/2000	21	15	0.1	17.9	0.4	5.5
11/21/2000	21	7	0	17.4	3.0	0.5
12/12/2000	28	16	0	16.8	0.1	4.5
1/9/2001	21	25	0	15.8	4.0	4
2/28/2001	28	50	0	15.1	1.1	1
3/30/2001	21	28	0.3	15.0	1.0	1
4/27/2001	21	1.5	NM[e]	NM[e]	NM[e]	6
5/30/2001	23	35	0.5	15.1	0.8	2
6/29/2001	21	5	0.7	10.2	3.6	2
7/26/2001	9	34	0	13.2	2.5	0.5
9/5/2001	21	5	0.5	6.8	6.6	1.0
9/21/2001	21	40	0.4	12.5	1.7	0.5
11/1/2001	21	3	0	8.6	2.8	1.0
11/30/2001	21	140	0.4	10.3	1.8	0.5
12/28/2001	21	38	0	7.4	1.9	0.5
1/31/2002	21	40	0.2	8	2	0.5

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Date	Air Flow (cfm)	PID (ppm_v)	Methane (%)	Oxygen (%)	Carbon Dioxide (%)	Vacuum (in. Hg)
2/28/2002	17	85	0	5.5	1.6	0.5
3/21/2002	21	70	NM[e]	NM[e]	NM[e]	0.4
4/1/2002	21	75	0	18.7	2	0.6
4/30/2002	17	35	0	17.4	1.7	0.1
5/31/2002	21	35	0.2	18.4	1.8	0.5
7/1/2002	21	10	0.1	20	0	0.1
8/5/2002	21	6	0.1	19.5	0	0.1
8/30/2002	NM[f]	2	0	19.5	0	0.05
9/27/2002	20	5	0.1	13	4	0.3
11/1/2002	12	26	0.2	9	9.6	0.3
11/27/2002	20	175	0.4	17.4	1.4	0.7
1/2/2003	21	NA	0.3	14.1	2.9	10.0
1/30/2003	NM[g]	90.0	0.0	17.7	0	0.3
EW-5S						
9/28/2000	12	30	0.1	18.6	0.2	5
10/13/2000	21	15	0	18.7	0	13.5
11/21/2000	21	2	0	17.0	0	1
12/12/2000	21	4.5	0	17.0	0	4
1/9/2001	21	22	0	16.7	0	4
2/28/2001	21	ND	0	16.7	0	1
3/30/2001	25	5.5	0	16.2	0	1
4/27/2001	21	1	NM[e]	NM[e]	NM[e]	7
5/30/2001	21	4.2	0	15.9	0	1
6/29/2001	21	1.5	0	15.1	0.3	2
7/26/2001	28	2.0	0	15.7	0.3	0.5
9/5/2001	21	0.5	0	12.6	0.9	1.0
9/21/2001	21	3.0	0	13.7	0.2	0.0
11/1/2001	20	4.0	0	11.3	0.4	0.5
11/30/2001	21	4.5	0	11.7	0.1	0.5
12/28/2001	21	1.5	0	9.9	0	0.5
1/31/2002	21	1.0	0	9.4	0.1	0.5
2/28/2002	21	0.5	0	7.4	0	0.5
3/21/2002	21	20.0	NM[e]	NM[e]	NM[e]	0.4
4/1/2002	17	4.0	0	20.2	0.4	0.2
4/30/2002	20	2.0	0	19.9	0.4	0.1
5/31/2002	17	3.0	0	20.2	0.2	0.3
7/1/2002	20	7.0	0	18.4	1	0.2
8/5/2002	23	5.5	0	19.5	0	0.1
8/30/2002	21	0.0	0	19.3	0	0.1
9/27/2002	21	1.0	0	18.9	0	0.1
11/1/2002	15	4.0	0	18.4	0	0.1

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Date	Air Flow (cfm)	PID (ppm_v)	Methane (%)	Oxygen (%)	Carbon Dioxide (%)	Vacuum (in. Hg)
11/27/2002	17	4.0	0	18.4	0.2	0.6
1/2/2003	21	NA	0	17.5	0.6	0.7
1/30/2003	NM[g]	5.0	0	17.8	0	0.7
EW-6S	NM[a]	NM[a]	NM[a]	NM[a]	NM[a]	NM[a]
EW-7S						
9/28/2000	NM[b]	NM[b]	NM[b]	NM[b]	NM[b]	NM[b]
10/13/2000	25	0.5	0	18.2	0	2
11/21/2000	25	1	0	17.8	0	2
12/12/2000	25	2	0	16.7	0.1	7.5
1/9/2001	NM[a]	NM[a]	NM[a]	NM[a]	NM[a]	NM[a]
EW-8S						
9/28/2000	21	30	1.8	7.2	6.6	6
10/13/2000	17	8.5	1.9	16.6	0.8	10.5
11/21/2000	21	3	1.0	17.0	7	12
12/12/2000	17	8.5	0.1	16.5	0.4	16.5
1/9/2001	21	3	0.7	15.6	1	12
2/28/2001	12	8	0	12.1	7.2	11
3/30/2001	12	11.5	0.9	14.6	1.6	11
4/27/2001	21	0.2	NM[e]	NM[e]	NM[e]	10
5/30/2001	17	8.8	0.2	14.7	1.2	13
6/29/2001	15	10	1.7	13.7	1.2	11
7/26/2001	25	19	0.3	13.3	1.9	13
9/5/2001	25	28	3.2	9.8	3.9	10
9/21/2001	21	19	0	12.2	1.8	11
11/1/2001	17	35	5.5	7.6	5.4	11
11/30/2001	17	40	1.8	8.1	4.3	10
12/28/2001	16	55	10.4	4.7	10.1	1
1/31/2002	17	25.0	1.5	7	4.1	0.5
2/28/2002	16	85.0	0.4	3.5	7	1.0
3/21/2002	17	120.0	NM[e]	NM[e]	NM[e]	1.5
4/1/2002	15	250.0	0.2	17.8	2.9	11.5
4/30/2002	16	50.0	7.9	12.2	5.7	12.0
5/31/2002	17	22.0	0.7	16.3	3.6	9.0
7/1/2002	17	40.0	10.2	5.1	12	6.0
8/5/2002	16	50.0	17.6	7.8	9	0.7
8/30/2002	17	20.0	20.8	8.6	10.3	0.1
9/27/2002	16	30.0	4.9	11.7	6.5	0.4
11/1/2002	16	55.0	8.9	10.4	8.1	0.2
11/27/2002	17	160.0	2.8	16.3	2.4	10.5

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Date	Air Flow (cfm)	PID (ppm$_v$)	Methane (%)	Oxygen (%)	Carbon Dioxide (%)	Vacuum (in. Hg)
1/2/2003	NM[g]	NA	12.3	11.6	4.6	9.5
1/30/2003	NM[g]	80.0	0.0	17.6	0	0.01
EW-9S						
9/28/2000	30	17	1.8	7.1	3.9	5.5
10/13/2000	21	4	2.4	14.5	2.5	9
11/21/2000	17	1	0	17.5	3	11
12/12/2000	0	8	0	17.2	0	16.5
1/9/2001	17	4	0	13.6	2.4	13
2/28/2001	NA	14	0	12.2	6	11.5
3/30/2001	12	4	2.1	13.4	3	11.0
4/27/2001	20	0.1	NM[e]	NM[e]	NM[e]	10.0
5/30/2001	17	7	0	14.6	1.5	13.0
6/29/2001	21	6	6	5.4	6.2	10.0
7/26/2001	21	20	0	10.6	4.6	0.5
9/5/2001	21	28	5.2	5.3	7.1	10.0
9/21/2001	17	12.5	1.2	10.1	4.3	9.0
11/1/2001	17	42	7.1	4.8	8.6	10.5
11/30/2001	17	40	4.6	5.8	7.5	10.0
12/28/2001	17	30	12.5	3	10.4	9.0
1/31/2002	17	1.0	0.9	6.9	3.4	14.0
2/28/2002	17	80.0	0	4.2	4.5	11.5
3/21/2002	17	120	NM[e]	NM[e]	NM[e]	11
4/1/2002	16	70.0	0	19	1.8	11.0
4/30/2002	17	40.0	6.6	9.5	7.6	7.5
5/31/2002	NM[f]	20.0	0.6	19.1	0.3	9.0
7/1/2002	17	37.0	18.2	3.7	10.7	8.0
8/5/2002	17	30.0	1.2	15.6	2.9	10.0
8/30/2002	17	35.0	21.8	1.8	13.5	8.0
9/27/2002	12	26.0	19.9	4.7	10.8	0.3
11/1/2002	16	42.0	28.4	5.8	12.9	0.3
11/27/2002	17	100.0	1.2	13	7.5	13.0
1/2/2003	NM[g]	NA	15.0	4.6	11.2	9.5
1/30/2003	86	NA	0.0	17.6	0	9.0
EW-10S						
9/28/2000	25	11	0.2	8.8	7.9	4.5
10/13/2000	9	3	0.8	11.5	5.1	8.5
11/21/2000	16	1	0	14.8	2.0	11
12/12/2000	12	0	0	16.8	0.3	13.5
1/9/2001	16	NM[c]	NM[c]	NM[c]	NM[c]	13
2/28/2001	NM[d]	NM[d]	NM[d]	NM[d]	NM[d]	NM[d]

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Date	Air Flow (cfm)	PID (ppm_v)	Methane (%)	Oxygen (%)	Carbon Dioxide (%)	Vacuum (in. Hg)
3/30/2001	12	2.5	0.8	10.8	5.4	1
4/27/2001	15	0	NM[e]	NM[e]	NM[e]	4.5
5/30/2001	12	22	0.1	13.3	3	4
6/29/2001	17	6	1.9	4.2	10.8	NM[e]
7/26/2001	28	14	0	13.1	2.2	0.5
9/5/2001	21	28	12	5.5	8.8	11.0
9/21/2001	21	17	2.4	9.9	4	9.0
11/1/2001	16	16	1.7	2.5	11.4	4.0
11/30/2001	16	55	2	4.5	9.2	5.0
12/28/2001	19	25	1.2	1.1	13.2	6.0
1/31/2002	17	15.0	0.2	6.8	2.9	10.0
2/28/2002	20	70	0.4	2.6	9.9	7.0
3/21/2002	17	19	NM[e]	NM[e]	NM[e]	5.1
4/1/2002	NM[f]	25	0.0	20.3	0.2	15
4/30/2002	NM[f]	28	0.3	10.7	7.0	10
5/31/2002	NM[f]	16	0.4	9.1	9.1	6
7/1/2002	17	20	1.0	6.4	10.8	3
8/5/2002	17	19	0.8	11.8	6.7	7
8/30/2002	21	28	1.3	5.4	13.9	1
9/27/2002	12	10	0.4	10.4	6.6	0.01
11/1/2002	16	18	1.1	7.9	11.3	9.50
11/27/2002	NM[c]	67	0.4	6.8	12.9	0.37
1/2/2003	NM[g]	NA	1.3	3.6	12.4	4.0
1/30/2003	NM[g]	NM[g]	NM[g]	NM[g]	NM[g]	NM[g]
EW-11I						
9/28/2000	142	40	0.3	18.5	0.0	3.5
10/13/2000	80	13	0	17.8	0.4	3.5
11/21/2000	64	2	0	16.4	1.2	3
12/12/2000	284	12.5	0	16.5	0.4	4
1/9/2001	64	8	0	16.8	0	4
2/28/2001	148	40	0	14.5	2.1	2
3/30/2001	159	13	0	14.3	1.9	2
4/27/2001	64	0	NM[e]	NM[e]	NM[e]	4
5/30/2001	127	3	0	14.2	1.8	3
6/29/2001	66	6	0	16.3	0	5
7/26/2001	61	11	0	16	0	2
9/5/2001	135	10	0	14.3	0	3
9/21/2001	135	2	0	12.4	1.8	2
11/1/2001	66	22	0	10.7	2	1
11/30/2001	50	1.5	0	10.2	1.9	0.5
12/28/2001	44	10	0	9.8	0	0.5

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Date	Air Flow (cfm)	PID (ppm_v)	Methane (%)	Oxygen (%)	Carbon Dioxide (%)	Vacuum (in. Hg)
1/31/2002	48	1.0	0	7.9	2	0.5
2/28/2002	41	9.0	0	7.7	0	1.0
3/21/2002	52	0.0	NM[e]	NM[e]	NM[e]	0.2
4/1/2002	49	6.0	0	17.8	3.1	0.1
4/30/2002	49	40.0	0.3	20.7	0	0.3
5/31/2002	68	6.5	0	17.9	2.5	1.2
7/1/2002	81	20.0	0.3	19.7	0.1	0.8
8/5/2002	131	10.0	0	16.8	2.5	1.2
8/30/2002	135	10.0	0.3	19.3	0	3.0
9/27/2002	82	4.4	0.1	16.3	2.6	2.0
11/1/2002	100	7.0	0	16.4	1.8	1.4
11/27/2002	200	8.0	0	16.1	2.8	1.3
1/2/2003	NM[g]	NA	0.0	16.2	1.1	1.8
1/30/2003	NM[g]	NA	0.0	17.6	0	2.5
EW-12D						
9/28/2000	110	50	0	18.9	0	2
10/13/2000	49	2.8	0	18.7	0	2
11/21/2000	49	3	0	17.4	3	2
12/12/2000	61	3	0	16.8	0	3
1/9/2001	49	4	0	16.0	0	4
2/28/2001	164	20	0	15.5	1	15
3/30/2001	NA	NA	NA	NA	NA	2
4/27/2001	49	0.5	NM[e]	NM[e]	NM[e]	3
5/30/2001	78	3	0	15.1	1	2
6/29/2001	70	11	0	16.4	0	2
7/26/2001	86	14.5	0	16	0	0.3
9/5/2001	86	10	0	14.7	0	1.0
9/21/2001	121	3	0	13.4	0.9	0.5
11/1/2001	49	10	0	11.7	0.8	1.0
11/30/2001	55	2	0	11.3	0.4	0.5
12/28/2001	86	11	0	9.6	0.0	0.5
1/31/2002	65	0.8	0	8.7	1.1	0.5
2/28/2002	70	15.0	0	7.6	0.0	0.5
3/21/2002	65	30.0	NM[e]	NM[e]	NM[e]	0.3
4/1/2002	78	30.0	0	18.4	2.1	0.2
4/30/2002	65	16.0	2	20.4	0.2	0.4
5/31/2002	86	0.0	0.1	18.9	1.5	0.5
7/1/2002	99	22.0	0.7	3.6	14.6	0.4
8/5/2002	86	7.0	0	18.5	1.3	0.2
8/30/2002	86	7.8	0.1	19	0.2	0.3
9/27/2002	61	4.5	0	18	1.4	0.1

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Date	Air Flow (cfm)	PID (ppm_v)	Methane (%)	Oxygen (%)	Carbon Dioxide (%)	Vacuum (in. Hg)
11/1/2002	70	4.0	0	17.5	1.1	0.2
11/27/2002	86	4.0	0	17.6	1.2	0.5
1/2/2003	49	NA	0	17.3	1	0.5
1/30/2003	121	14.0	0.0	17.9	0	0.6
EW-13S						
9/28/2000	21	20	0.1	17.9	0.2	5
10/13/2000	12	2.5	0	13.7	3.4	11.5
11/21/2000	16	NM[c]	NM[c]	NM[c]	NM[c]	11
12/12/2000	15	0	0	17.3	0	13.5
1/9/2001	17	NM[c]	NM[c]	NM[c]	NM[c]	13
2/28/2001	NM[d]	NM[d]	NM[d]	NM[d]	NM[d]	NM[d]
3/30/2001	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]	12
4/27/2001	15	0	NM[e]	NM[e]	NM[e]	4
5/30/2001	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]	13
6/29/2001	21	5	0.5	4.1	12.2	1.0
7/26/2001	21	9	0	12.3	2.9	0.5
9/5/2001	25	19	0.8	6.5	9.2	2.0
9/21/2001	21	17	0.4	9.5	4.7	1.0
11/1/2001	NM[f]	26	0.6	4.6	9.1	10.0
11/30/2001	17	30	0.4	6.4	6.7	0.5
12/28/2001	17	21	0.5	1.1	12.6	0.5
1/31/2002	17	NM[c]	NM[c]	NM[c]	NM[c]	8.0
2/28/2002	15	30	0	3.4	8.2	0.5
3/21/2002	16	6	NM[e]	NM[e]	NM[e]	10.0
4/1/2002	NM[f]	NM[c]	NM[c]	NM[c]	NM[c]	9.0
4/30/2002	16	10	0.2	5.8	10.0	2.0
5/31/2002	15	13	0.2	14.9	4.1	9.0
7/1/2002	17	38	0.9	4.2	12.4	0.4
8/5/2002	17	28	0.8	8.6	9.4	0.3
8/30/2002	17	30	1.0	2.3	16.8	0.3
9/27/2002	16	20	1.0	8.8	9.7	5.0
11/1/2002	16	3.5	0.0	14.5	2.6	9.0
11/27/2002	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]
1/2/2003	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]	10.5
1/30/2003	NM[g]	NM[g]	NM[g]	NM[g]	NM[g]	NM[g]
EW-14S						
9/28/2000	21	25	0.4	18.3	0	5.5
10/13/2000	25	22	0	18.6	0	8
11/21/2000	21	2	0	18.0	0	10
12/12/2000	0	6	0	17.3	0	16

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SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Date	Air Flow (cfm)	PID (ppm_v)	Methane (%)	Oxygen (%)	Carbon Dioxide (%)	Vacuum (in. Hg)
1/9/2001	21	6.8	0	16.7	0	12
2/28/2001	20	12	0	16.5	0	11
3/30/2001	12	6	0	15.0	1.1	11
4/27/2001	21	0.2	NM[e]	NM[e]	NM[e]	10
5/30/2001	12	15	0	16.3	0	13
6/29/2001	20	4.5	1.5	15.1	0.8	10
7/26/2001	25	2.5	0	15.4	0.3	12.5
9/5/2001	21	24	8.1	10.8	3.6	10
9/21/2001	21	9	0	13.4	0.4	11
11/1/2001	20	38	4.1	9.8	2.9	11
11/30/2001	20	12	0	10.4	1.5	10
12/28/2001	21	50	6.7	7.3	3.4	9
1/31/2002	21	15.0	0.0	8	1.7	12
2/28/2002	20	80	0.1	4.8	3.1	12.5
3/21/2002	17	30	NM[e]	NM[e]	NM[e]	11
4/1/2002	16	100	0	17.8	2.8	11
4/30/2002	16	40	8.7	13.0	5.3	11
5/31/2002	17	14	0.2	19.1	1.1	11
7/1/2002	17	30	15.0	10.0	6.7	6
8/5/2002	17	20	0.1	17.2	2.0	10
8/30/2002	21	30	11.5	11.8	5.7	11
9/27/2002	16	20	0.1	18.5	0.2	12
11/1/2002	16	37	31.5	6.1	10.9	9.5
11/27/2002	21	90	0.5	16.2	2.5	12.5
1/2/2003	NM[g]	NA	23.2	7	10	9
1/30/2003	NM[g]	NM[g]	NM[g]	NM[g]	NM[g]	NM[g]
EW-15S	NM[a]	NM[a]	NM[a]	NM[a]	NM[a]	NM[a]
EW-16S						
9/28/2000	21	12	0.1	18.5	0	4.5
10/13/2000	12	1.5	0	14.9	2.5	8.5
11/21/2000	12	NM[c]	NM[c]	NM[c]	NM[c]	12
12/12/2000	0	0	0	17.3	0	13
1/9/2001	6	NM[c]	NM[c]	NM[c]	NM[c]	11
2/28/2001	NM[d]	NM[d]	NM[d]	NM[d]	NM[d]	NM[d]
3/30/2001	9	NM[c]	NM[c]	NM[c]	NM[c]	12
4/27/2001	15	0.1	NM[e]	NM[e]	NM[e]	10
5/30/2001	12	14	0	14.8	1.1	10
6/29/2001	21	6	0	7.8	5.7	2
7/26/2001	21	6	0	13.9	1.5	0.5
9/5/2001	21	1	0	7	7.1	1.0

TABLE 1
MONITORING DATA COLLECTED FROM THE SOIL VAPOR EXTRACTION SYSTEM
SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Date	Air Flow (cfm)	PID (ppm_v)	Methane (%)	Oxygen (%)	Carbon Dioxide (%)	Vacuum (in. Hg)
9/21/2001	21	4	0	12.5	2.1	0.5
11/1/2001	21	8	0	7.2	4.6	3.0
11/30/2001	20	4	0	11.1	1.1	3.0
12/28/2001	17	2.6	0	6.3	3	1.0
1/31/2002	14	NM[e]	0	8	1	5.0
2/28/2002	16	4	0	5.5	1.9	3.0
3/21/2002	17	NM[c]	NM[e]	NM[e]	NM[e]	11.0
4/1/2002	20	NM[c]	NM[c]	NM[c]	NM[c]	10.0
4/30/2002	16	5	0.0	15.5	2.9	6.0
5/31/2002	17	6	0.1	18.2	1.6	8.0
7/1/2002	17	7	2.1	10.8	6.2	3.0
8/5/2002	17	7	0.1	17.2	1.6	8.0
8/30/2002	17	6	0.2	11.6	5.6	4.0
9/27/2002	16	3.5	0.1	17.1	1.9	4.0
11/1/2002	15	0.5	0.0	13.2	3.9	6.0
11/27/2002	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]
1/2/2003	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]
1/30/2003	NM[g]	NM[g]	NM[g]	NM[g]	NM[g]	NM[g]
INFLUENT						
9/28/2000	430	17	0	17.3	0.4	6.0
10/13/2000	222	10.2	0	17.6	0.7	9.25
11/21/2000	333	2	0	17.0	0.4	14
12/12/2000	314	0.5	0	17.2	0.1	13
1/9/2001	314	2	0	16.8	0	11
2/28/2001	385	30	0	14.3	1.6	13
3/30/2001	249	4	0	15.0	1.1	11
4/27/2001	343	1	NM[e]	NM[e]	NM[e]	11.5
5/30/2001	333	2	0.1	15.9	0.3	13
6/29/2001	333	0	0.1	15.3	0.3	12
7/26/2001	377	9.5	0	15.2	0.6	13
9/5/2001	401	1	0	12.8	0.9	11
9/21/2001	283	1	0	13.2	0.6	9
11/1/2001	249	25	0.1	10.2	2.0	12
11/30/2001	193	65	0	10.6	1.4	10
12/28/2001	193	20	0.4	8.5	1.2	10
1/31/2002	193	15.5	0.0	8.8	0.8	12
2/28/2002	193	55.0	0.0	7.1	0.3	10
3/21/2002	222	18.0	NM[e]	NM[e]	NM[e]	11
4/1/2002	208	45.0	0.0	18.3	2.3	11
4/30/2002	193	38.0	0.2	18.8	0.9	11.5
5/31/2002	249	10.0	0.0	19.7	0.7	10

TABLE 1
MONITORING DATA COLLECTED FROM THE SOIL VAPOR EXTRACTION SYSTEM
SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Date	Air Flow (cfm)	PID (ppm_v)	Methane (%)	Oxygen (%)	Carbon Dioxide (%)	Vacuum (in. Hg)
7/1/2002	385	13.0	0.1	18.3	1.3	7
8/5/2002	261	11.0	0.1	17.6	1.8	10
8/30/2002	283	30.0	0.1	18.6	0.6	11
9/27/2002	249	5.0	0.0	17.3	1.7	12.5
11/1/2002	222	26.0	0.0	16.9	1.4	11
11/27/2002	360	35.0	0.0	17.0	1.8	10
1/2/2003	222	NA	0.2	16.8	1.2	7
1/30/2003	157	5.0	0	18	0	9

Created by: AKG 2/4/03
Checked by: SH 2/5/03

cfm	Cubic feet per minute.
PID	Photoionization detector; concentration of total VOCs detected with the photoionization detector.
ppm_v	Parts per million by volume.
%	Percent.
in. Hg	Inches mercury.
NM[a]	Not measured - well shut down permanently.
NM[b]	Well shut down and measurements not collected by ARCADIS Geraghty & Miller, Inc., reason not noted.
NM[c]	Not able to be measured due to suction of water by vacuum extraction pump.
NM[d]	Not able to be measured due to wellhead and/or piping damage.
NM[e]	Not measured.
NM[f]	Not able to be measured due to pitot tube clogging
NM[g]	Not able to be measured due to frozen pitot tube.
NA	Measurement not available due suspected malfunction of the PID detector lamp.

TABLE 2
EFFLUENT MONITORING DATA FROM THE SOIL VAPOR EXTRACTION SYSTEM
SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Date	PID (ppm_v)	CEM (ppm_v)
9/28/2000	0.5	1.0
10/13/2000	2.0	4.4
11/21/2000	0.0	3.3
12/12/2000	0.3	0.7 [a]
1/9/2001	0.0	0.4
2/28/2001	2.7	1.1
3/30/2001	1.0	0.5
4/27/2001	0.5	0.8
5/30/2001	0.1	0.4
6/29/2001	0.0	2.8
7/26/2001	0.5	0.5
9/5/2001	4.0	0.4
9/21/2001	2.0	0.2
11/1/2001	9.0	1.2
11/30/2001	0.0	0.1
12/28/2001	0.1	0.9
1/31/2002	0.5	0.3
2/28/2002	0.5	0.7
4/1/2002	0.0	0.7
4/30/2002	0.0	0.0
5/31/2002	0.5	1.0
7/1/2002	0.5	0.5
8/5/2002	6.0	1.9
8/30/2002	0.2	0.5
9/27/2002	1.0	0.6
11/1/2002	1.0	0.3
11/27/2002	2.0	1.2
1/2/2003	NA	NA
1/30/2003	0.0	0.0

PID Photoionization detector; concentration of total VOCs detected with the photoionization detector.
CEM Continuous emissions monitor.
ppm_v Parts per million by volume.

Created by: AKG 2/4/03
Checked by: SH 2/5/03

Notes:

a. Field data modified by professional judgement from 0.007 to 0.7 ppm_v due to the CEM unit not being capable of that degree of accuracy.

TABLE 3
OPERATIONAL DATA FROM THE SOIL VAPOR EXTRACTION SYSTEM
SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Date	Vacuum Readings		Pressure Readings	Temperature Readings					Barometric Pressure
	Air Filter Inlet	Blower Inlet	Blower Outlet Pressure	Blower Inlet	Blower Outlet	Heat Exchanger Outlet	Air/Water Cooling Coil Outlet	Discharge Stack Inlet	
	(in Hg)	(in Hg)	(kPa)	(°F)	(°F)	(°F)	(°F)	(°F)	(in Hg)
9/28/2000	6	7	0	78	134	90	90	75	30.06
10/13/2000	8.5	11	0	76	159	94	92	82	30.11
11/21/2000	12	12	0	49	211	84	82	73	29.92
12/12/2000	15	16	0	56	206	90	86	80	29.86
1/9/2001	11	11.5	0	50	150	78	74	70	29.78
2/28/2001	8	12.0	0	55	152	92	92	82	29.98
3/30/2001	11	10.0	0	50	175	89	86	86	29.71
4/27/2001	11	10.5	0	60	110	80	72	72	29.92
5/30/2001	11	14.0	0	64	200	90	70	64	29.85
6/29/2001	12	15.0	0	92	220	110	82	80	30.05
7/26/2001	13	14.0	0	88	228	100	80	78	29.95
9/5/2001	11	13.0	0	80	196	98	77	80	30.11
9/21/2001	10	15.0	0	76	170	104	77	80	29.90
11/1/2001	12	15.0	0	76	220	114	79	80	30.20
11/30/2001	10	10.0	1	72	192	100	75	82	30.06
12/28/2001	10	9.0	1.5	47	180	98	92	70	29.68
1/31/2002	12	11.0	0	56	188	98	92	90	30.15
2/28/2002	10	12.0	0	57	175	80	78	79	29.97
4/1/2002	11	10.0	0	65	200	88	67	78	29.76
4/30/2002	11	15.0	0	70	214	94	70	84	29.77
5/31/2002	10	13.0	0	79	218	110	78	80	29.63
7/1/2002	10	10.0	0	84	200	120	82	82	30.05

TABLE 3
OPERATIONAL DATA FROM THE SOIL VAPOR EXTRACTION SYSTEM
SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Date	Vacuum Readings		Pressure Readings	Temperature Readings					Barometric Pressure
	Air Filter Inlet	Blower Inlet	Blower Outlet Pressure	Blower Inlet	Blower Outlet	Heat Exchanger Outlet	Air/Water Cooling Coil Outlet	Discharge Stack Inlet	
	(in Hg)	(in Hg)	(kPa)	(°F)	(°F)	(°F)	(°F)	(°F)	(in Hg)
8/5/2002	10	11.5	0	91	240	120	86	88	29.86
8/30/2002	11	10.0	0	74	205	89	73	72	30.14
9/27/2002	12.5	10.0	0	72	210	86	70	72	29.80
11/1/2002	10.0	10.5	0	58	160	88	75	74	29.91
11/27/2002	10.0	8.5	2	56	206	106	94	92	30.00
1/2/2003	11.0	7.0	0	50	168	78	70	70	29.88
1/30/2003	11.0	7.0	0	40	180	100	84	80	30.32

in Hg Inches mercury. (°F) Degrees Fahrenheit.
kPa Kilopascals. NM Not measured.

Prepared/date: AKG 2/5/03
Checked/date: SH 2/5/03

TABLE 4

ANALYTICAL RESULTS OF AIR SAMPLES FROM THE SVE SYSTEM INFLUENT
SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Compound	Influent 10/13/00	Influent 11/21/00	Influent 12/12/00	Influent 1/9/01	Influent 2/28/01	Influent 3/30/01
Freon 12	ND	ND	ND	ND	ND	ND
Freon 114	ND	ND	ND	ND	ND	ND
Chloromethane	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND	ND	**0.052**
Bromomethane	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND
Freon 11	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND
Freon 113	ND	ND	ND	ND	ND	ND
Methylene Chloride	**0.34**	ND	**0.21**	**0.13**	**0.096**	**0.12**
1,1-Dichloroethane	ND	ND	**0.15**	**0.063**	**0.039**	**0.073**
cis-1,2-Dichloroethene	**5**	**2.7**	**3.5**	**1.9**	**0.89**	**1.6**
Chloroform	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	**7.3**	**5.5**	**2.8**	**1.3**	**0.64**	**1**
Carbon Tetrachloride	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ND	0.29	**0.37**	**0.18**	**0.1**	**0.16**
Trichloroethene	**4**	**3**	**2.9**	**1.8**	**1.1**	**2**
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND
Toluene	**28**	**21**	**17**	**14**	**7.4**	**8.6**
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND
Tetrachloroethene	**15**	**11**	**6.8**	**5.9**	**2.5**	**4**
Ethylene Dibromide	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND
Ethyl Benzene	**6.6**	**5.4**	**2.7**	**3.3**	**1.7**	**2.4**
m,p-Xylene	**53**	**48**	**17**	**20**	**11**	**16**
o-Xylene	**14**	**14**	**3.9**	**5.2**	**3**	**4**
Styrene	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	**4.5**	**5.3**	**0.7**	**1.7**	**1.1**	**1.7**
1,2,4-Trimethylbenzene	**7.6**	**9.8**	**1.1**	**2.9**	**1.9**	**2.9**
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND
Chlorotoluene	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	ND	ND	ND	ND	ND	ND
Propylene	ND	ND	ND	ND	ND	ND
1,3 Butadiene	ND	ND	ND	ND	ND	ND

TABLE 4

ANALYTICAL RESULTS OF AIR SAMPLES FROM THE SVE SYSTEM INFLUENT
SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Compound	Influent 10/13/00	Influent 11/21/00	Influent 12/12/00	Influent 1/9/01	Influent 2/28/01	Influent 3/30/01
Acetone	ND	ND	**0.4**	ND	ND	ND
Carbon Disulfide	ND	ND	ND	ND	ND	ND
2-Propanol	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND
Vinyl Acetate	ND	ND	ND	ND	ND	ND
2-Butanone (Methyl Ethyl Ketone)	ND	ND	ND	ND	ND	ND
Hexane	ND	ND	ND	ND	ND	ND
Tetrahydrofuran	ND	ND	ND	ND	ND	ND
Cyclohexane	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	ND	ND	**0.65**	ND	ND	ND
2-Hexanone	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND
4-Ethyltoluene	**10**	**10**	**1.9**	**4.2**	**2.8**	**3.4**
Ethanol	ND	ND	ND	ND	**0.55**	ND
Methyl tert-butyl Ether	ND	ND	ND	ND	ND	ND
Heptane	**1.1**	**0.9 J**	**0.98**	**0.73**	**0.37**	**0.44**
Total VOCs	**156.4**	**136.9**	**63.1**	**63.3**	**35.2**	**48.4**

Concentrations expressed in parts per million by volume (ppm).

ND Compound not detected.

J Estimated value.

TABLE 4

ANALYTICAL RESULTS OF AIR SAMPLES FROM THE SVE SYSTEM INFLUENT
SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Compound	Influent 5/30/01	Influent 7/26/01	Influent 9/21/01	Influent 10/1/01	Influent 11/30/01	Influent 1/31/02
Freon 12	ND	ND	ND	ND	ND	**0.92**
Freon 114	ND	ND	ND	ND	ND	ND
Chloromethane	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ND	ND	**0.069**	**0.063**	ND	**0.16**
Bromomethane	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND
Freon 11	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND	ND	**0.045**
Freon 113	ND	ND	ND	ND	ND	ND
Methylene Chloride	**0.085**	**0.12**	**0.18**	**0.099**	**0.22**	**0.12**
1,1-Dichloroethane	**0.061**	**0.13**	**0.12**	**0.12**	**0.19**	**0.16**
cis-1,2-Dichloroethene	**1.2**	**2.0**	**1.7**	**1.7**	**3.5**	**2.1**
Chloroform	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	**0.87**	**2.2**	**2.0**	**2.1**	**3.4**	**1.9**
Carbon Tetrachloride	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	**0.12**	ND	**0.14**	ND	**0.37**	**0.19**
Trichloroethene	**1.7**	**1.6**	**1.8**	**1.9**	**2.5**	**1.6**
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND
Toluene	**6.8**	**8.3**	**9.1**	**9.6**	**20**	**7.5**
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND
Tetrachloroethene	**3.7**	**5.6**	**5.2**	**5.5**	**12**	**6.7**
Ethylene Dibromide	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND
Ethyl Benzene	**1.8**	**2.3**	**2.3**	**2.2**	**4.1**	**1.5**
m,p-Xylene	**13**	**22**	**19**	**18**	**37**	**17**
o-Xylene	**3.8**	**8.3**	**6.4**	**6.2**	**12**	**5.5**
Styrene	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	**2**	**3.7**	**2.4**	**2.4**	**4.4**	**2.8**
1,2,4-Trimethylbenzene	**3.1**	**5.2**	**3.8**	**4**	**6.6**	**4.1**
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND
Chlorotoluene	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	ND	ND	ND	ND	ND	ND
Propylene	ND	ND	ND	ND	ND	ND
1,3 Butadiene	ND	ND	ND	ND	ND	ND

TABLE 4

ANALYTICAL RESULTS OF AIR SAMPLES FROM THE SVE SYSTEM INFLUENT
SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Compound	Influent 5/30/01	Influent 7/26/01	Influent 9/21/01	Influent 10/1/01	Influent 11/30/01	Influent 1/31/02
Acetone	ND	ND	ND	ND	ND	ND
Carbon Disulfide	ND	ND	ND	ND	ND	ND
2-Propanol	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND
Vinyl Acetate	ND	ND	ND	ND	ND	ND
2-Butanone (Methyl Ethyl Ketone)	ND	ND	ND	ND	ND	ND
Hexane	ND	ND	ND	ND	ND	ND
Tetrahydrofuran	ND	ND	ND	ND	ND	ND
Cyclohexane	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	ND	ND	ND	ND	ND	ND
2-Hexanone	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND
4-Ethyltoluene	**3.4**	**6.7**	**4.4**	**4.2**	**7.7**	**6.2**
Ethanol	ND	ND	ND	ND	ND	ND
Methyl tert-butyl Ether	ND	ND	ND	ND	ND	ND
Heptane	**0.3**	**0.43**	**0.48**	**0.52**	**1.2**	**0.51**
Total VOCs	**41.9**	**68.6**	**59.1**	**58.6**	**115.2**	**59.0**

Concentrations expressed in parts per million by volume (ppm).

ND Compound not detected.

J Estimated value.

TABLE 4

ANALYTICAL RESULTS OF AIR SAMPLES FROM THE SVE SYSTEM INFLUENT
SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Compound	Influent 4/1/02	Influent 5/31/02	Influent 8/5/02	Influent 9/27/02	Influent 11/27/02
Freon 12	ND	ND	ND	ND	ND
Freon 114	ND	ND	ND	ND	ND
Chloromethane	ND	ND	ND	ND	ND
Vinyl Chloride	**0.14**	**0.063**	**0.081**	**0.078**	**0.1**
Bromomethane	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND
Freon 11	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	**0.032**	**0.025**	**0.03**	**0.052**
Freon 113	ND	ND	ND	ND	ND
Methylene Chloride	**0.18**	**0.14**	**0.13**	**0.1**	**0.15**
1,1-Dichloroethane	**0.2**	**0.14**	**0.1**	**0.13**	**0.11**
cis-1,2-Dichloroethene	**3.4**	**1.5**	**1.7**	**1.9**	**2.8**
Chloroform	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	**2.5**	**1.4**	**0.98**	**1**	**1.1**
Carbon Tetrachloride	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND
1,2-Dichloroethane	**0.3**	**0.14**	**0.1**	**0.11**	**0.18**
Trichloroethene	**2.7**	**1.6**	**1.8**	**1.6**	**2.2**
1,2-Dichloropropane	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND
Toluene	**32**	**3.9**	**0.81**	**0.52**	**6.8**
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND
Tetrachloroethene	**11**	**3.9**	**1.1**	**1.7**	**5.6**
Ethylene Dibromide	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND
Ethyl Benzene	**6.2**	**0.79**	**0.16**	**0.1**	**1.8**
m,p-Xylene	**36**	**8.8**	**1.6**	**1.1**	**15**
o-Xylene	**11**	**2.9**	**0.54**	**0.32**	**4.1**
Styrene	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	**3.7**	**1.6**	**0.069**	**0.062**	**2.4**
1,2,4-Trimethylbenzene	**6**	**2.2**	**0.053**	**0.052**	**3.4**
1,3-Dichlorobenzene	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND	ND
Chlorotoluene	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND
Hexachlorobutadiene	ND	ND	ND	ND	ND
Propylene	ND	ND	**0.049**	ND	ND
1,3 Butadiene	ND	ND	ND	ND	ND

TABLE 4

ANALYTICAL RESULTS OF AIR SAMPLES FROM THE SVE SYSTEM INFLUENT
SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Compound	Influent 4/1/02	Influent 5/31/02	Influent 8/5/02	Influent 9/27/02	Influent 11/27/02
Acetone	ND	ND	**0.042**	ND	ND
Carbon Disulfide	ND	ND	ND	ND	ND
2-Propanol	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND
Vinyl Acetate	ND	ND	ND	ND	ND
2-Butanone (Methyl Ethyl Ketone)	ND	ND	ND	ND	ND
Hexane	ND	ND	ND	ND	ND
Tetrahydrofuran	ND	ND	ND	ND	ND
Cyclohexane	ND	ND	ND	ND	ND
1,4-Dioxane	ND	ND	**0.065**	**0.066**	ND
Bromodichloromethane	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	ND	ND	ND	ND	ND
2-Hexanone	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND
4-Ethyltoluene	**9**	**3**	**0.071**	**0.066**	**3.3**
Ethanol	ND	ND	ND	ND	ND
Methyl tert-butyl Ether	ND	ND	ND	ND	ND
Heptane	**2.6**	**0.2**	ND	ND	**0.38**
Total VOCs	**126.9**	**32.3**	**9.5**	**8.934**	**49.5**

Concentrations expressed in parts per million by volume (ppm).
ND Compound not detected.
J Estimated value.

Prepared/date: AKG 2/5/03
Checked/date: SH 2/5/03

TABLE 5

ANALYTICAL RESULTS OF AIR SAMPLES FROM THE SVE SYSTEM EFFLUENT
SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Compound	Effluent 10/13/00	Effluent 11/21/00	Effluent 12/12/00	Effluent 1/9/01	Effluent 2/28/01	Effluent 3/30/01
Freon 12	**0.00079**	**0.001**	ND	ND	**0.0012**	**0.00071**
Freon 114	ND	ND	ND	ND	ND	ND
Chloromethane	**0.0011**	**0.0036**	**0.0053**	**0.0021**	**0.0025**	**0.0012**
Vinyl Chloride	**0.0056**	**0.033**	ND	**0.00088**	**0.022**	**0.0096**
Bromomethane	ND	ND	ND	ND	ND	ND
Chloroethane	**0.0012**	ND	ND	ND	ND	ND
Freon 11	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	**0.00086**	ND	ND	ND	ND	ND
Freon 113	ND	ND	ND	ND	ND	ND
Methylene Chloride	**0.011**	**0.00067**	**0.0014**	**0.00096**	**0.0011**	ND
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	**0.0072**	ND	ND	ND	ND	ND
Chloroform	ND	ND	**0.00085**	ND	ND	ND
1,1,1-Trichloroethane	**0.0048**	ND	ND	ND	ND	ND
Carbon Tetrachloride	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	**0.00078**	ND	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND
Trichloroethene	**0.0033**	ND	ND	ND	ND	ND
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND
Toluene	**0.018**	**0.006**	**0.0086**	**0.0011**	**0.0012**	**0.0013**
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND
Tetrachloroethene	**0.01**	**0.0032**	**0.0037**	ND	ND	ND
Ethylene Dibromide	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND
Ethyl Benzene	**0.0032**	**0.0016**	**0.0017**	ND	ND	ND
m,p-Xylene	**0.023**	**0.012**	**0.01**	**0.00081**	**0.0015**	**0.0027**
o-Xylene	**0.0057**	**0.0032**	**0.0031**	ND	ND	**0.0007**
Styrene	ND	ND	**0.0012**	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	**0.0018**	**0.0012**	**0.0016**	ND	ND	ND
1,2,4-Trimethylbenzene	**0.003**	**0.0023**	**0.0038**	ND	ND	**0.0011**
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND
Chlorotoluene	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND

TABLE 5

ANALYTICAL RESULTS OF AIR SAMPLES FROM THE SVE SYSTEM EFFLUENT
SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Compound	Effluent 10/13/00	Effluent 11/21/00	Effluent 12/12/00	Effluent 1/9/01	Effluent 2/28/01	Effluent 3/30/01
Hexachlorobutadiene	ND	ND	ND	ND	ND	ND
Propylene	ND	ND	**0.014**	ND	ND	**0.028**
1,3 Butadiene	ND	ND	ND	ND	ND	ND
Acetone	**0.02**	ND	**0.013**	ND	ND	**0.0051**
Carbon Disulfide	ND	ND	ND	ND	ND	ND
2-Propanol	ND	ND	**0.0037**	ND	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND
Vinyl Acetate	ND	ND	ND	ND	ND	ND
2-Butanone (Methyl Ethyl Ketone)	ND	ND	**0.0043**	ND	ND	ND
Hexane	ND	ND	ND	ND	ND	ND
Tetrahydrofuran	ND	ND	ND	ND	ND	ND
Cyclohexane	ND	**0.0027**	**0.0069**	**0.0052**	ND	ND
1,4-Dioxane	ND	ND	**0.0033**	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	ND	ND	ND	ND	ND	ND
2-Hexanone	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND
4-Ethyltoluene	**0.004**	ND	**0.0034**	ND	ND	ND
Ethanol	**0.0036**	ND	**0.029**	ND	**0.13**	ND
Methyl tert-butyl Ether	ND	ND	ND	ND	ND	ND
Heptane	ND	ND	ND	ND	ND	ND
Total VOCs	**0.128**	**0.070**	**0.120**	**0.011**	**0.160**	**0.050**

Concentrations expressed in parts per million by volume (ppm$_v$).

ND Compound not detected.

J Estimated value.

TABLE 5

ANALYTICAL RESULTS OF AIR SAMPLES FROM THE SVE SYSTEM EFFLUENT
SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Compound	Effluent 5/30/01	Effluent 7/26/01	Effluent 9/21/01	Effluent 11/30/01	Effluent 1/31/02	Effluent 4/1/02
Freon 12	**0.00084**	**0.00088**	**0.00096**	**0.0008**	**0.0068**	ND
Freon 114	ND	ND	ND	ND	ND	ND
Chloromethane	ND	**0.0015**	**0.0018**	**0.0013**	ND	**0.0012**
Vinyl Chloride	**0.023**	**0.029**	**0.027**	**0.028**	**0.0071**	**0.00068**
Bromomethane	ND	ND	ND	ND	ND	ND
Chloroethane	**0.0025**	**0.0029**	**0.018**	**0.0076**	ND	ND
Freon 11	**0.00097**	ND	**0.0011**	ND	ND	ND
1,1-Dichloroethene	**0.0086**	**0.00086**	**0.014**	ND	ND	ND
Freon 113	**0.0042**	ND	**0.0045**	ND	ND	ND
Methylene Chloride	**0.055**	**0.0024**	**0.081**	**0.0046**	**0.0009**	**0.00073**
1,1-Dichloroethane	**0.022**	**0.0016**	**0.044**	ND	ND	ND
cis-1,2-Dichloroethene	**0.037**	**0.0072**	**0.037**	ND	ND	ND
Chloroform	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	**0.034**	**0.015**	**0.1**	ND	ND	ND
Carbon Tetrachloride	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	**0.0013**	ND	**0.00097**	ND	ND	ND
Trichloroethene	**0.0017**	**0.001**	**0.00097**	ND	ND	ND
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND
Toluene	ND	**0.0054**	**0.0024**	ND	**0.00069**	**0.002**
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ND	**0.0027**	**0.0023**	ND	ND	ND
Ethylene Dibromide	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND
Ethyl Benzene	ND	**0.0011**	**0.0015**	ND	ND	ND
m,p-Xylene	**0.001**	**0.0094**	**0.016**	ND	**0.00092**	**0.0026**
o-Xylene	ND	**0.0028**	**0.0053**	ND	ND	**0.00076**
Styrene	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	ND	**0.00089**	**0.0023**	ND	ND	**0.00092**
1,2,4-Trimethylbenzene	ND	**0.0016**	**0.0041**	ND	ND	ND
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND
Chlorotoluene	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND

TABLE 5

ANALYTICAL RESULTS OF AIR SAMPLES FROM THE SVE SYSTEM EFFLUENT
SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Compound	Effluent 5/30/01	Effluent 7/26/01	Effluent 9/21/01	Effluent 11/30/01	Effluent 1/31/02	Effluent 4/1/02
Hexachlorobutadiene	ND	ND	ND	ND	ND	ND
Propylene	ND	**0.045**	ND	ND	**0.013**	**0.0035**
1,3 Butadiene	ND	ND	ND	ND	ND	ND
Acetone	ND	**0.02**	**0.0086**	**0.0034**	ND	**0.0037**
Carbon Disulfide	ND	ND	ND	ND	ND	ND
2-Propanol	ND	ND	**0.032**	ND	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND
Vinyl Acetate	ND	ND	ND	ND	ND	ND
2-Butanone (Methyl Ethyl Ketone)	ND	**0.0061**	ND	ND	ND	ND
Hexane	ND	ND	ND	ND	ND	ND
Tetrahydrofuran	ND	ND	ND	ND	ND	ND
Cyclohexane	ND	ND	ND	**0.0093**	**0.0081**	**0.0039**
1,4-Dioxane	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	ND	ND	ND	ND	ND	ND
2-Hexanone	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND
4-Ethyltoluene	ND	ND	ND	ND	ND	ND
Ethanol	ND	**0.0046**	**0.0044**	ND	**0.0037**	ND
Methyl tert-butyl Ether	ND	ND	ND	ND	ND	ND
Heptane	ND	ND	ND	ND	ND	ND
Total VOCs	**0.192**	**0.162**	**0.410**	**0.055**	**0.041**	**0.01999**

Concentrations expressed in parts per million by volume (ppm).
ND Compound not detected.
J Estimated value.

TABLE 5

ANALYTICAL RESULTS OF AIR SAMPLES FROM THE SVE SYSTEM EFFLUENT
SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Compound	Effluent 5/31/02	Effluent 8/5/02	Effluent 9/27/02	Effluent 11/27/02
Freon 12	**0.00098**	**0.0013**	**0.0011**	**0.0017**
Freon 114	ND	ND	ND	ND
Chloromethane	**0.0012**	ND	ND	**0.0026**
Vinyl Chloride	**0.029**	**0.0078**	**0.024**	**0.1**
Bromomethane	ND	ND	ND	ND
Chloroethane	**0.0081**	ND	**0.003**	**0.0032**
Freon 11	**0.00093**	ND	**0.00084**	ND
1,1-Dichloroethene	**0.0038**	ND	**0.0025**	ND
Freon 113	**0.0015**	ND	ND	ND
Methylene Chloride	**0.084**	**0.007**	**0.037**	**0.018**
1,1-Dichloroethane	**0.0084**	ND	0.005	ND
cis-1,2-Dichloroethene	**0.009**	**0.0034**	**0.002**	**0.00072**
Chloroform	ND	ND	ND	ND
1,1,1-Trichloroethane	**0.011**	**0.002**	**0.0018**	ND
Carbon Tetrachloride	ND	ND	ND	ND
Benzene	ND	ND	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND
Trichloroethene	**0.0007**	**0.002**	ND	ND
1,2-Dichloropropane	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND
Toluene	ND	**0.0066**	ND	**0.0013**
trans-1,3-Dichloropropene	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND
Tetrachloroethene	ND	**0.0037**	ND	**0.0021**
Ethylene Dibromide	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND
Ethyl Benzene	ND	**0.0014**	ND	ND
m,p-Xylene	**0.0007**	**0.013**	ND	**0.0044**
o-Xylene	ND	**0.0038**	ND	**0.0012**
Styrene	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND
1,3,5-Trimethylbenzene	ND	**0.00083**	ND	**0.00091**
1,2,4-Trimethylbenzene	ND	**0.0011**	ND	**0.0014**
1,3-Dichlorobenzene	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND
Chlorotoluene	ND	ND	ND	ND
1,2-Dichlorobenzene	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND
				ND

TABLE 5

ANALYTICAL RESULTS OF AIR SAMPLES FROM THE SVE SYSTEM EFFLUENT
SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Compound	Effluent 5/31/02	Effluent 8/5/02	Effluent 9/27/02	Effluent 11/27/02
Hexachlorobutadiene	ND	ND	ND	ND
Propylene	**0.037**	**0.016**	ND	**0.07**
1,3 Butadiene	ND	ND	ND	ND
Acetone	**0.0031**	**0.011**	**0.026**	ND
Carbon Disulfide	ND	ND	ND	ND
2-Propanol	ND	ND	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND
Vinyl Acetate	ND	ND	ND	ND
2-Butanone (Methyl Ethyl Ketone)	ND	ND	ND	ND
Hexane	ND	ND	ND	ND
Tetrahydrofuran	ND	ND	ND	ND
Cyclohexane	**0.015**	**0.011**	ND	ND
1,4-Dioxane	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND
4-Methyl-2-pentanone	ND	ND	ND	ND
2-Hexanone	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND
4-Ethyltoluene	ND	ND	ND	ND
Ethanol	ND	ND	ND	ND
Methyl tert-butyl Ether	ND	ND	ND	ND
Heptane	ND	ND	ND	ND
Total VOCs	**0.214**	**0.092**	**0.103**	**0.208**

Concentrations expressed in parts per million by volume (ppm).
ND Compound not detected.
J Estimated value.

Prepared/date: AKG 2/5/03
Checked/date: SH 2/5/03

TABLE 6

SUMMARY OF MASS RECOVERY TOTALS BASED ON AIR SAMPLES COLLECTED AT THE SVE SYSTEM INFLUENT
SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Date	Operational Time Elapsed (days)	Blower Inlet Temperature (°F)	Barometric Pressure (in. Hg)	Influent Pitot Tube (in. w.c.)	Velocity (fpm)	Flow Rate (cfm)	Influent Total VOC Concentration (ppm_v)	Mass Removed (lb/hr)	Mass Removed (lb)	Cumulative Mass Removed (lb)
8/23/00[1]										17,942.2
9/28/00[2]	12	78	30.06	0.3	2,207	433	86.1	0.50	144.4	18,086.6
10/13/2000	13	76	30.11	0.08	1,136	223	156.4	0.47	146.3	18,233.0
11/21/2000	35	49	29.92	0.18	1,666	327	136.9	0.60	505.7	18,738.6
12/12/2000	21	56	29.86	0.16	1,584	311	63.1	0.26	132.9	18,871.5
1/9/2001	24	50	29.78	0.16	1,576	310	63.3	0.26	151.7	19,023.2
2/28/2001	15	55	29.98	0.24	1,934	380	35.2	0.18	64.7	19,087.8
3/30/2001	26	50	29.71	0.1	1,248	245	48.4	0.16	99.4	19,187.3
4/27/2001	0	60	29.92	0.19	1,731	340	NA	0.00	0.0	19,187.3
5/30/2001	30	64	29.85	0.18	1,693	332	41.9	0.19	134.8	19,322.0
6/30/2001	0	92	30.05	0.18	1,732	340	NA	0.00	0.0	19322.0
7/26/2001	25	88	29.95	0.23	1,954	384	68.6	0.31	186.0	19508.0
9/5/2001	0	80	30.11	0.26	2,056	404	NA	0.00	0.0	19508.0
9/21/2001	25	77	29.90	0.13	1,455	286	59.1	0.23	136.2	19644.2
11/1/2001	0	76	30.20	0.1	1,269	249	NA	0.00	0.0	19644.2
11/30/2001	27	72	30.06	0.06	981	193	115.18	0.30	193.3	19837.4
12/28/2001	0	47	29.68	0.06	964	189	NA	0.00	0.0	19837.4
1/31/2002	31	56	30.15	0.06	965	189	59	0.15	111.8	19949.2
2/28/2002	0	57	29.97	0.06	969	190	NA	0.00	0.0	19949.2
4/1/2002	30.5	65	29.76	0.07	1,058	208	126.90	0.35	259.4	20208.6
4/30/2002	0	70	29.77	0.06	984	193	NA	0.00	0.0	20208.6
5/31/2002	29	79	29.63	0.1	1,284	252	32.30	0.11	76.2	20284.8
7/1/2002	0	84	30.05	0.24	1,985	390	NA	0.00	0.0	20284.8

TABLE 6

SUMMARY OF MASS RECOVERY TOTALS BASED ON AIR SAMPLES COLLECTED AT THE SVE SYSTEM INFLUENT
SWOPE OIL AND CHEMICAL COMPANY SITE
PENNSAUKEN, NEW JERSEY

Date	Operational Time Elapsed (days)	Blower Inlet Temperature (°F)	Barometric Pressure (in. Hg)	Influent Pitot Tube (in. w.c.)	Velocity (fpm)	Flow Rate (cfm)	Influent Total VOC Concentration (ppm_v)	Mass Removed (lb/hr)	Mass Removed (lb)	Cumulative Mass Removed (lb)
8/5/2002	21	91	29.86	0.11	1,357	266	9.50	0.034	17.1	20301.9
8/30/2002	0	74	30.14	0.13	1,445	284	NA	0.00	0.0	20301.9
9/27/2002	29	72	29.66	0.10	1,275	250	8.93	0.030	20.9	20322.8
11/1/2002	0	58	29.91	0.08	1,121	220	NA	0.000	0.0	20322.8
11/27/2002	26	56	30.00	0.21	1,810	355	49.50	0.236	147.5	20470.4

°F	Degrees Fahrenheit.
in. Hg	Inches of mercury.
in. w.c.	Inches water column.
fpm	Feet per minute.
cfm	Cubic feet per minute.
ppm_v	Parts per million by volume.
lb/hr	Pounds per hour.
lb	Pounds.
NA	Not available.

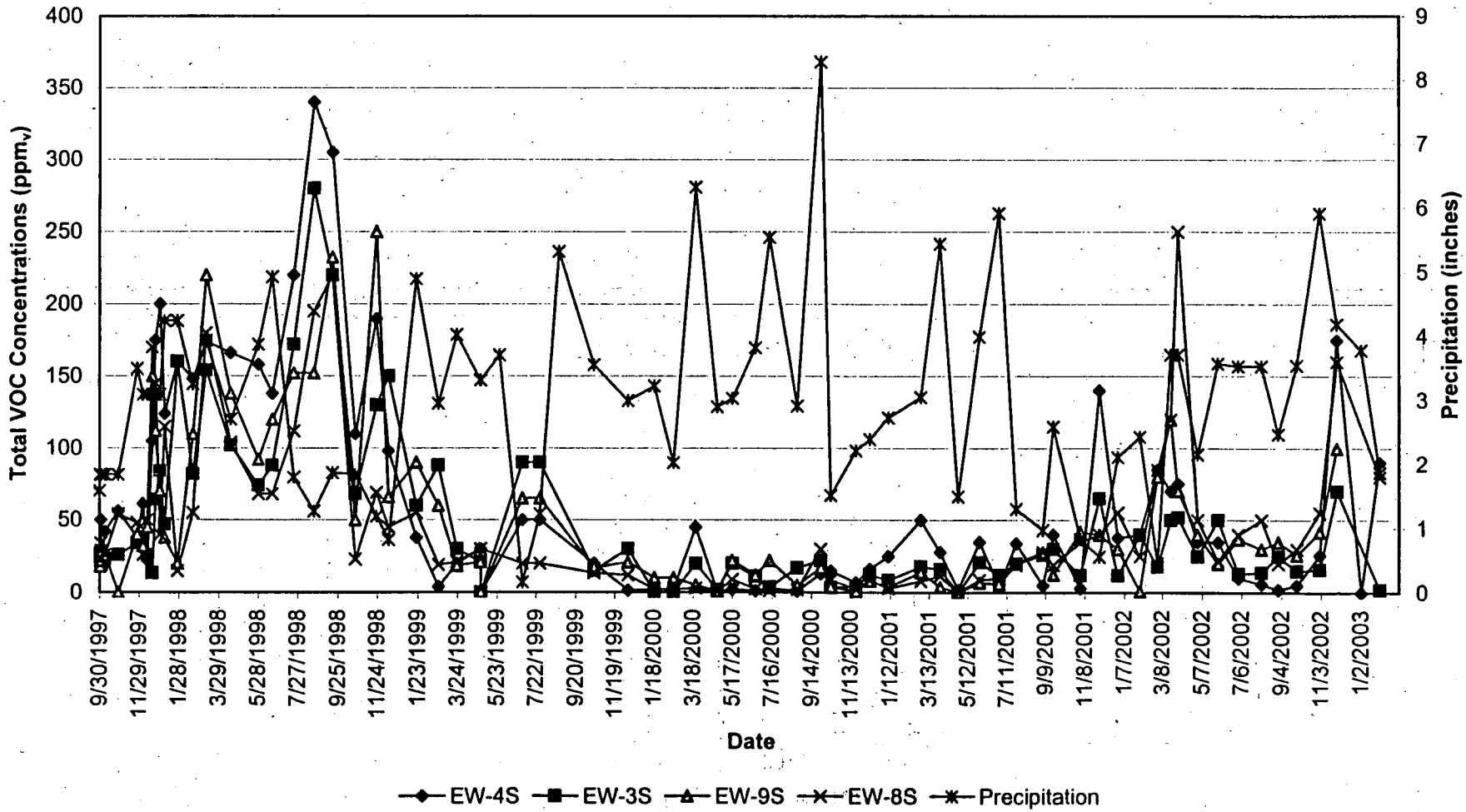
Prepared by: AKG 2/5/03
Checked by: SH 2/5/03

Notes:

1. Cumulative mass removed total from Bimonthly Progress and Operation & Maintenance Report, ARCADIS Geraghty & Miller, Inc., October 9, 2000.
2. Mass removed for September 2000 is estimated based on measurements collected in August 2000.

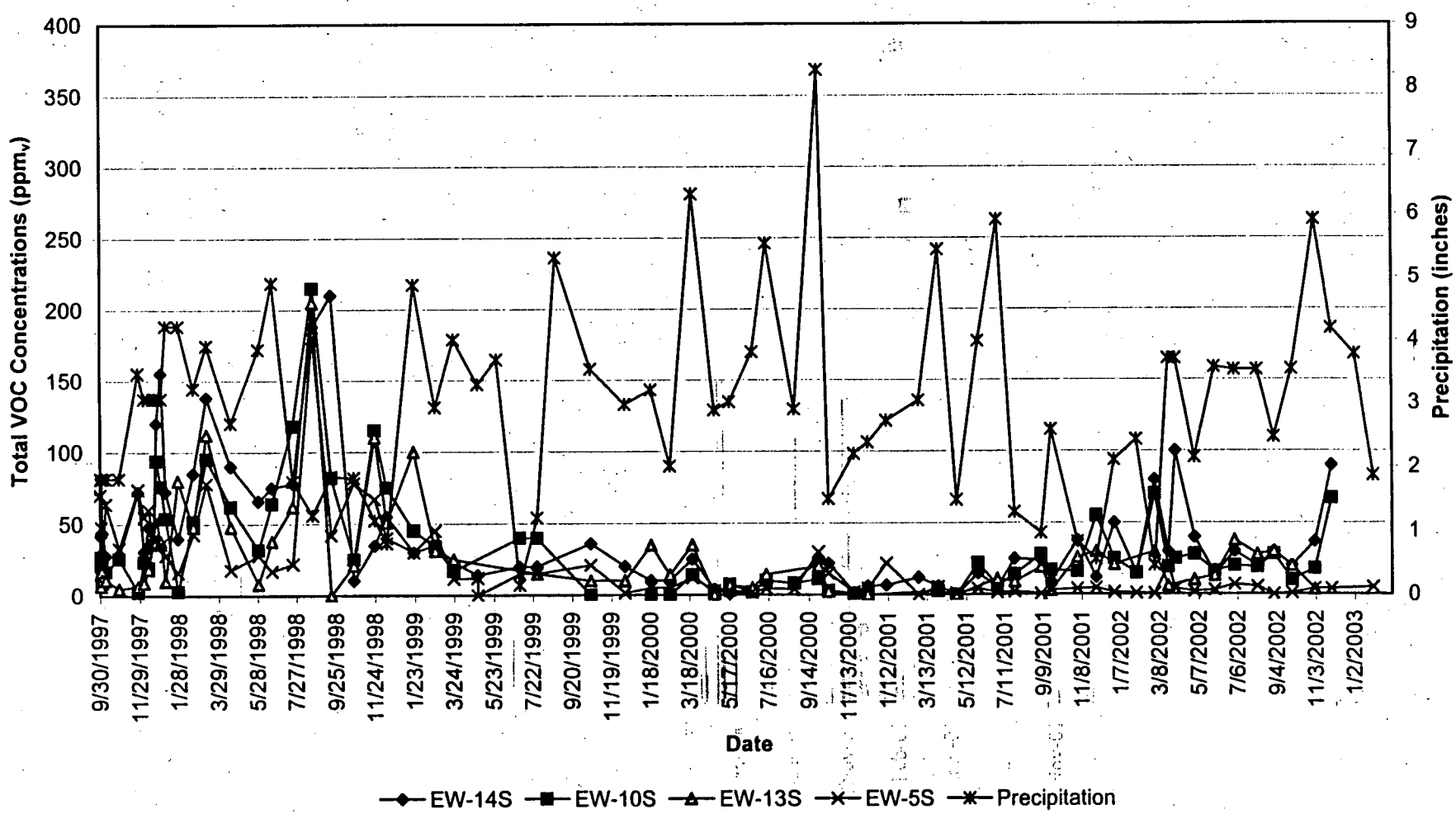
FIGURES

Figure 1
Field Measured Total Volatile Organic Compound Concentrations in Extraction Wells EW-4S, EW-3S, EW-9S, and EW-8S, Swope Oil and Chemical Company Site, Pennsauken, New Jersey



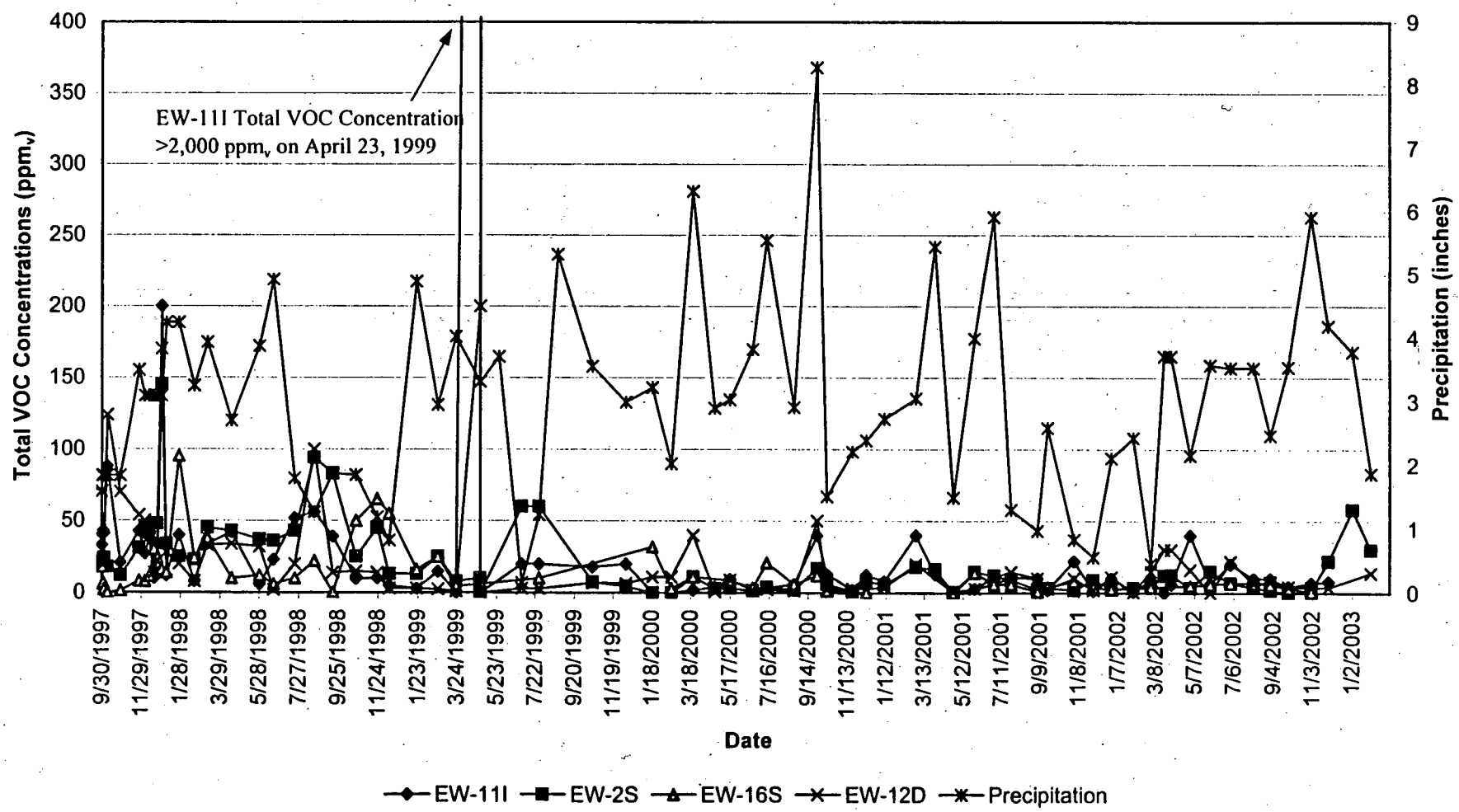
Prepared by: AKG 2/5/03
Checked by: SH 2/5/03

Figure 2
Field Measured Total Volatile Organic Compound Concentrations in Extraction Wells EW-14S, EW-10S, EW-13S, and EW-5S, Swope Oil and Chemical Company Site, Pennsauken, New Jersey



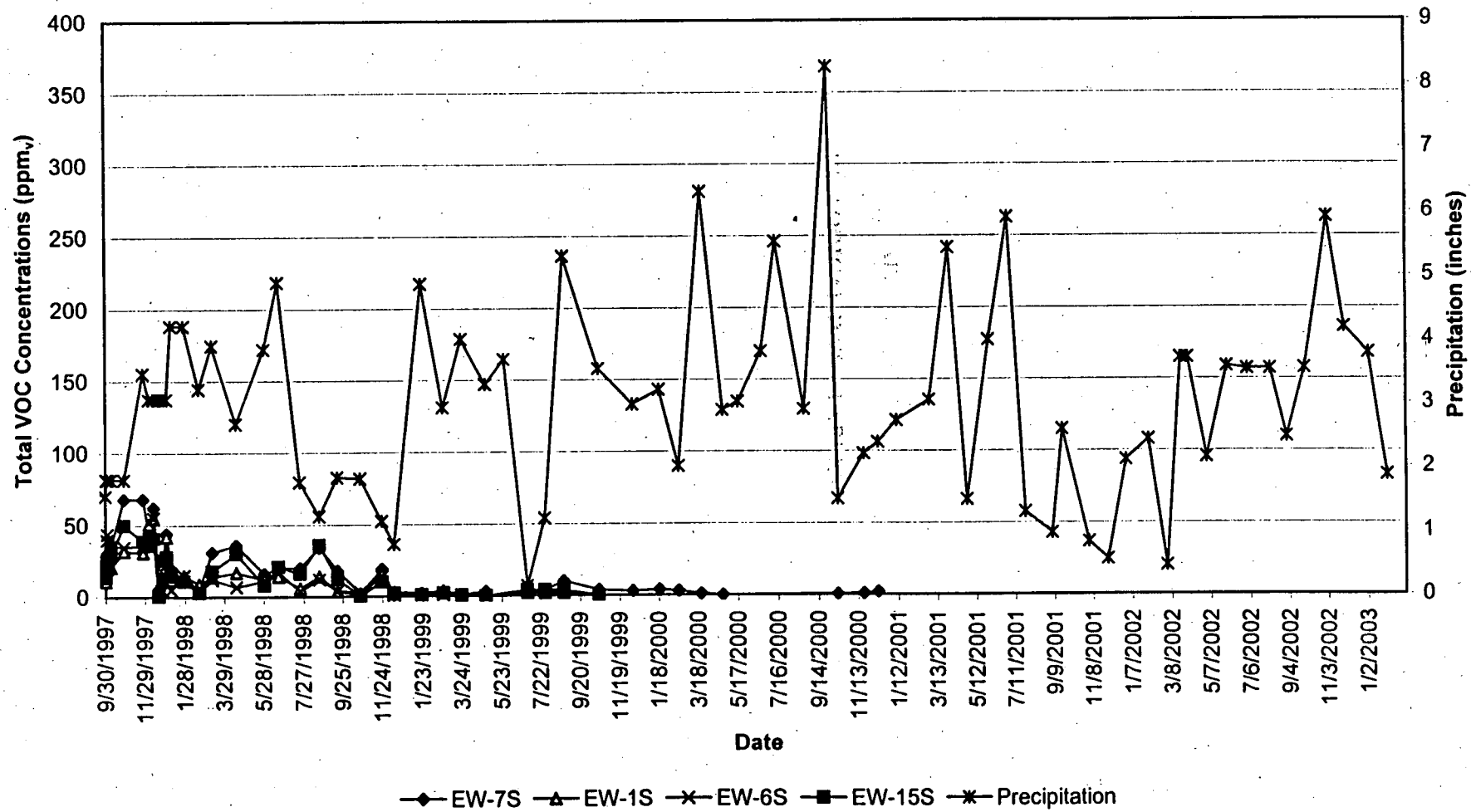
Prepared by: AKG 2/5/03
Checked by: SH 2/5/03

Figure 3
Field Measured Total Volatile Organic Compound Concentrations in Extraction Wells EW-2S, EW-16S, EW-11I, and EW-12D, Swope Oil and Chemical Company Site, Pennsauken, New Jersey



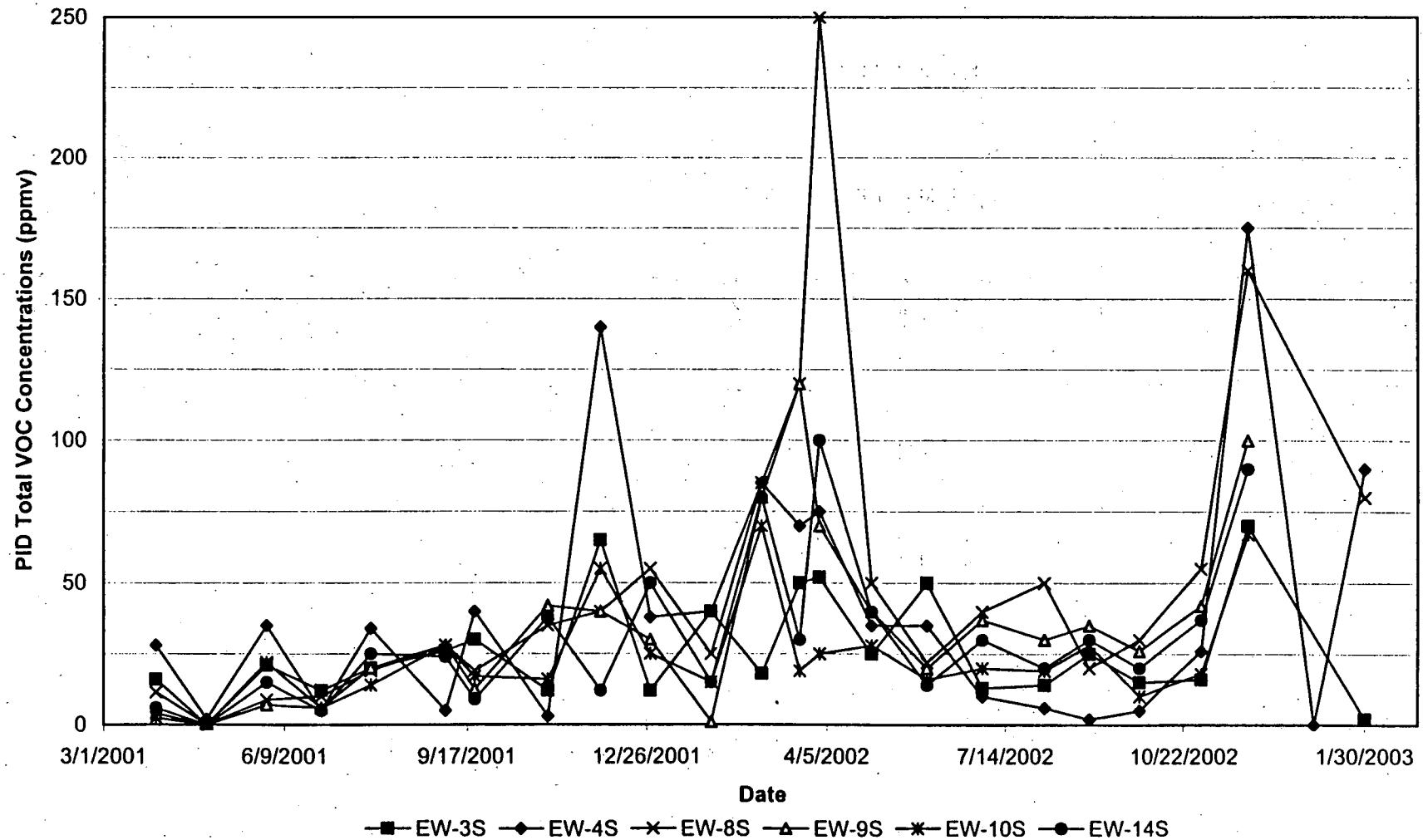
Prepared by: AKG 2/5/03
Checked by: SH 2/5/03

Figure 4
Field Measured Total Volatile Organic Compound Concentrations in Extraction Wells EW-7S, EW-15S, EW-1S, and EW-6S, Swope Oil and Chemical Company Site, Pennsauken, New Jersey



Prepared by: AKG 2/5/03
Checked by: SH 2/5/03

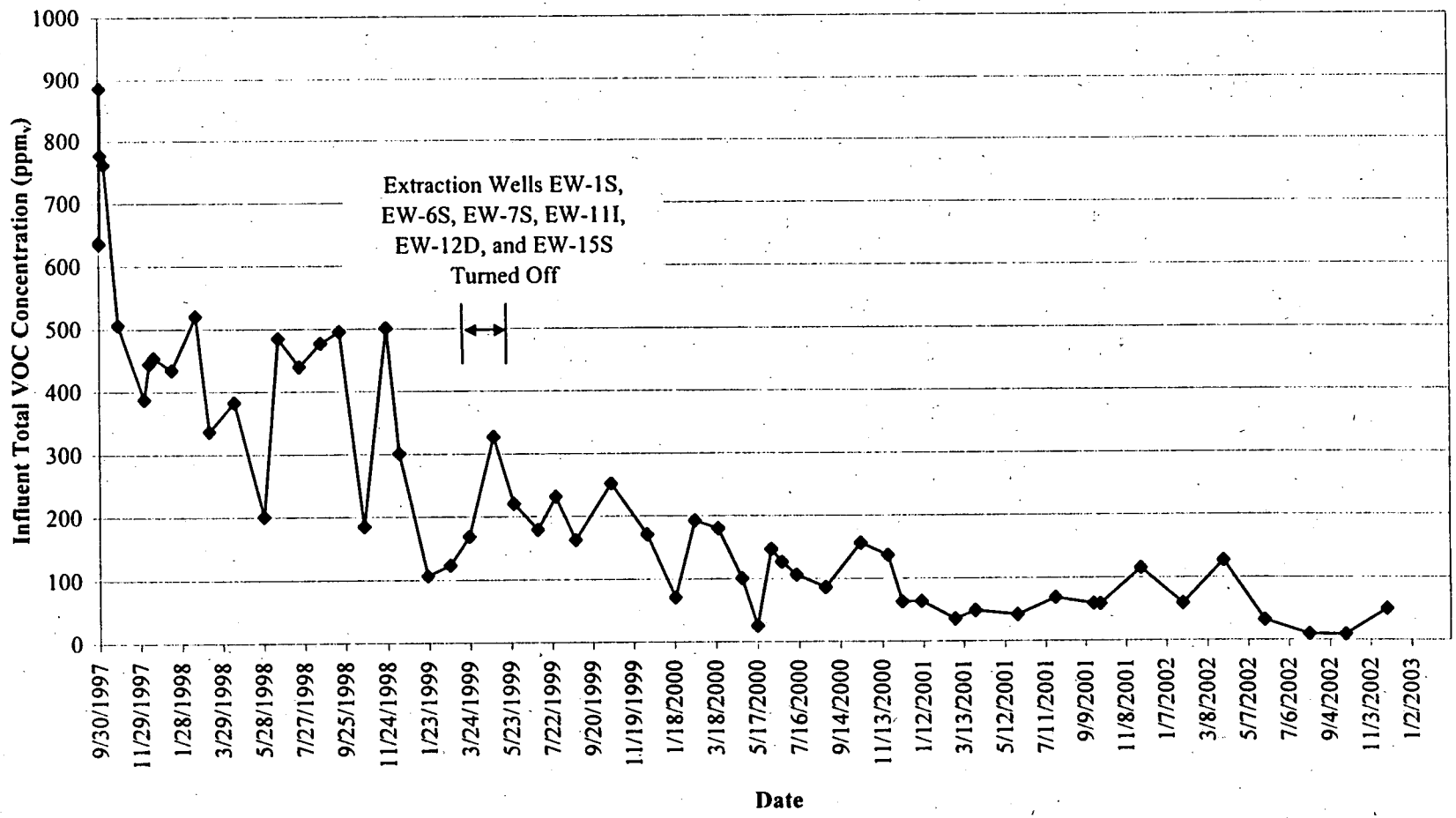
Figure 5
Apparent Spikes in VOC Concentrations during SVE System Pulsing
Extraction Wells EW-3S, EW-4S, EW-8S, EW-9S, EW-10S, and EW-14S
Swope Oil and Chemical Company Site
Pennsauken, New Jersey



Prepared by: AKG 2/5/03
Checked by: SH 2/5/03

P:\From LAW\Aproject\Swope\SVE O Prog\Report Tables and Figs \ Fig 1-4 Wellhead PIDs.xls \ Fig 5

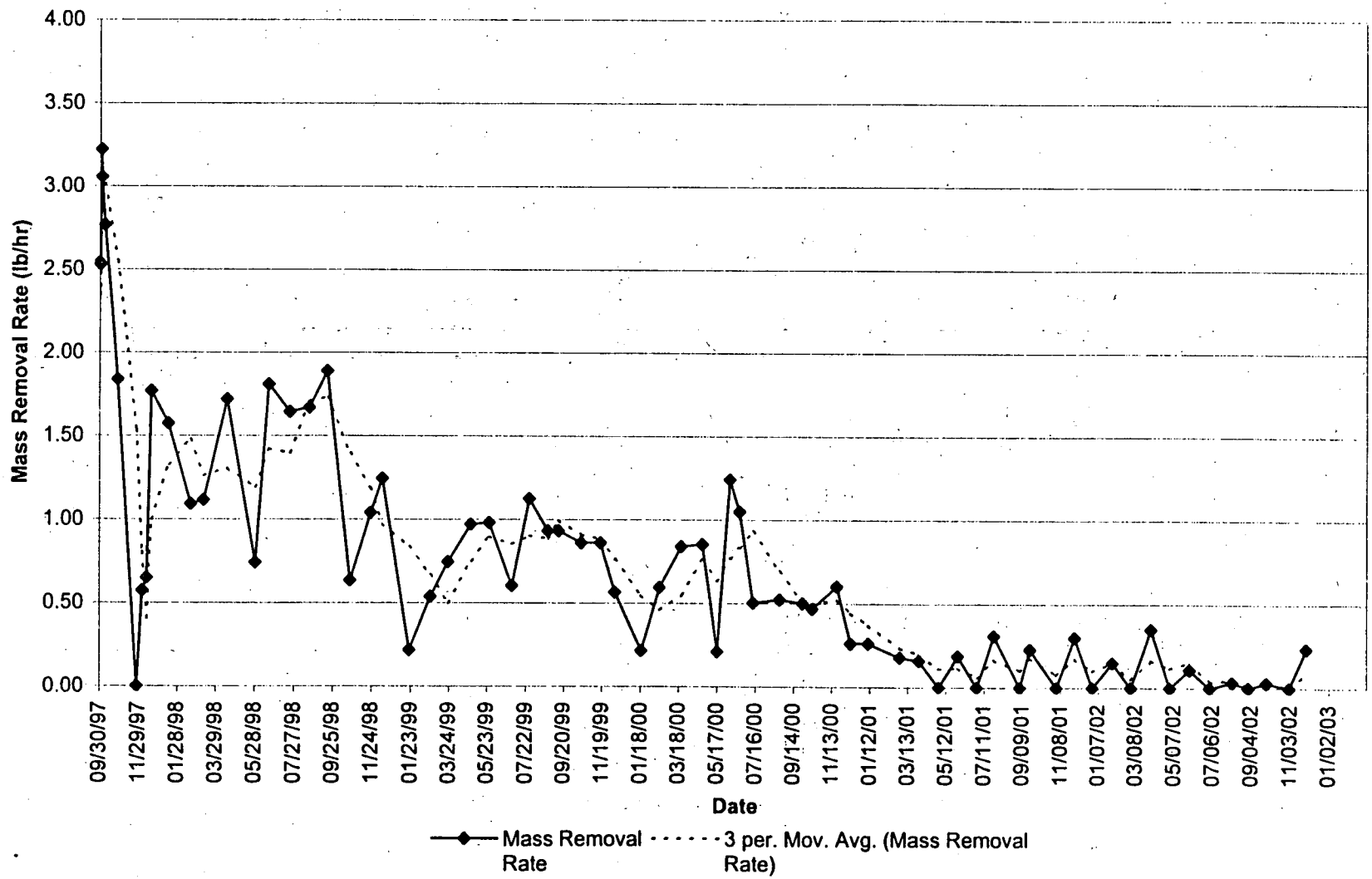
Figure 6
Concentration of Total Volatile Organic Compounds in Air Samples Collected at the SVE System Influent
Swope Oil and Chemical Company Site, Pennsauken, New Jersey



P:\From LAW\Aproject\Swope\SVE O Prog\Report Tables and Figs \ Table 4 Analyt Air.xls \ Fig 6

Prepared by: AKG 2/5/03
Checked by: SH 2/5/03

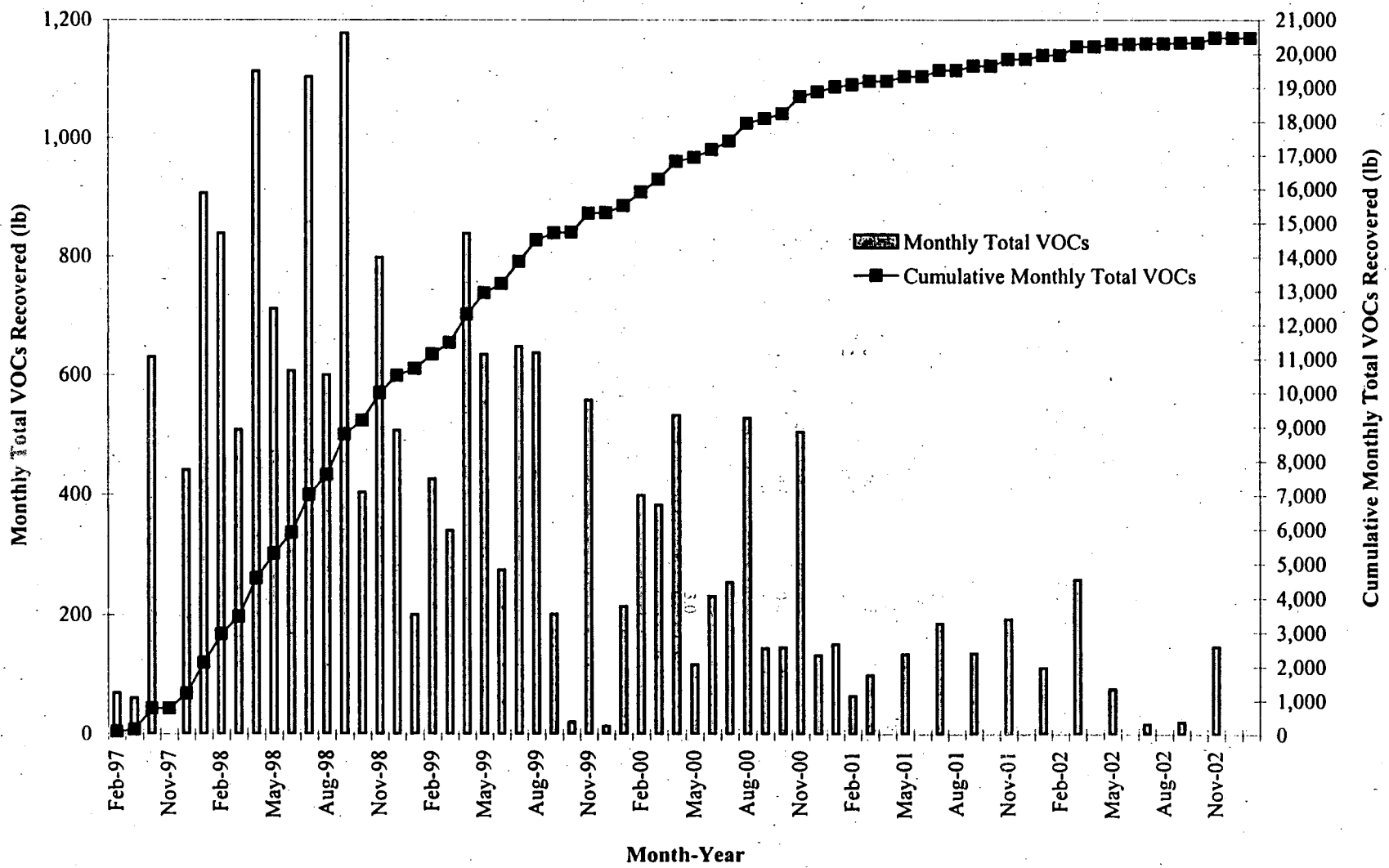
Figure 7
Total Volatile Organic Compound Mass Removal Rate and Three-Period Moving Average of the Mass Removal Rate
Swope Oil and Chemical Company Site
Pennsauken, New Jersey



P:\From LAW\Aproject\Swope\SVE O Prog\Report Tables and Figs \ Table 6 Mass Recovered.xls \ Fig 7 Mass Removal Rate

Prepared by: KLA 12/6/02
Checked by: AKG 12/6/02

Figure 8
Estimated Monthly and Cumulative Total VOCs Recovered from the SVE System based on Air Samples Collected at the SVE System Influent
Swope Oil and Chemical Company Site
Pennsauken, New Jersey



Prepared by: AKG 2/5/03
Checked by: SH 2/5/03

APPENDIX A

APPENDIX A

HISTORICAL DATA TABLES

Table A-1
Extraction Well EW-1S Historical Monitoring Data
Collected by ARCADIS Geraghty & Miller, Inc.
Swope Oil and Chemical Company Site, Pennsauken, New Jersey

Date	Air Flow (cfm)	PID (ppmv)	Methane (%)	Oxygen (%)	Carbon Dioxide (%)	Vacuum (in.w.c.)
02/18/97	27	65	9.2	10.3	0.0	52
02/21/97	30.5	28	0	20.8	0.0	36
09/30/97	21	11	0.8	3.4	19.6	21
10/01/97	21	17	1.0	8.0	15.6	24
10/02/97	21	20	0.9	13.5	9.6	24
10/03/97	21	29	1.2	12.6	11.6	19
10/08/97	21	21	1.0	10.5	11.5	17
10/28/97	28	32	0.6	16.0	5.1	16
11/26/97	21	31	0.4	12.4	6.7	30
12/05/97	21	51	2.4	17.1	3.1	40
12/12/97	20	55	2.4	18.3	2.7	42
12/19/97	21	3.4	0	17.7	2.1	26
12/24/97	21	21	0	17.4	0.2	24
12/31/97	21	42	0.6	18.1	2.0	24
01/07/98	17	12	0	18.3	2.4	20
01/26/98	21	15	0	18.8	2.2	20
02/18/98	21	9	0.4	18.2	1.7	20
03/10/98	21	14	0	18.6	1.4	23
04/16/98	21	17	0	18.4	0.7	16
05/29/98	21	12	0	19.1	1.2	18
06/19/98	21	14	0	17.9	2.0	18
07/21/98	21	6	0	17.4	2.0	18
08/20/98	21	14	0.9	16.7	3.9	18
09/17/98	17	3.8	0	16.9	2.9	19
10/22/98	21	1.0	0	17.7	2.1	6.8
11/23/98	21	15.0	0	18.6	1.0	34
12/11/98	21	3.0	0	18.1	1.1	6.8
01/21/99	21	2.0	0	18.5	1.0	13.6
02/23/99	21	3.5	0	16.2	2.2	6.8
03/23/99	21	1.2	0.6	17.6	1.9	20.4
4/28/99 9:00 AM	NM[a]	NM[a]	NM[a]	NM[a]	NM[a]	NM[a]
4/28/99 11:08 AM	21	0.0	0	17.5	1.2	40.8
4/28/99 11:38 AM	21	1	0	17.8	1.1	34
05/27/99	21	NM[b]	0.1	17.8	1.0	41
07/01/99	21	1	0	18.2	1.3	41
07/28/99	21	2	0	19.7	0.9	82
08/26/99	21	2	0.3	18.8	1.2	41
10/18/99	21	0.5	0.3	12.5	3.4	20
12/09/99	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]
01/19/00	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]
02/17/00	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]
03/22/00	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]
04/24/00	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]
05/17/00	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]
06/21/00	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]
07/12/00	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]
08/23/00	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]

cfm Cubic feet per minute.
PID Photoionization detector; concentration of total VOCs detected with the photoionization detector.
ppm Parts per million by volume.
% Percent.
in.w.c. Inches water column.
NM Not measured.
[a] Extraction well turned off on March 23, 1999 for pulsed operation; therefore, measurement not collected.
[b] PID not operating correctly; measurement collected is invalid.
[c] Extraction well shutdown; no measurements collected.

Table A-2
Extraction Well EW-2S Historical Monitoring Data
Collected by ARCADIS Geraghty & Miller, Inc.
Swope Oil and Chemical Company Site, Pennsauken, New Jersey

Date	Air Flow (cfm)	PID (ppmv)	Methane (%)	Oxygen (%)	Carbon Dioxide (%)	Vacuum (in.w.c.)
02/18/97	29	220	0.1	20.9	0	60
02/21/97	37	89	0	18.9	1.1	55
09/30/97	21	19	2.8	3.7	16.4	27
10/01/97	21	21	5.4	9	11.9	27
10/02/97	21	22	3.6	8.5	11.3	44
10/03/97	21	24	3.5	9.5	9.8	23.5
10/08/97	21	18	4.3	8.2	9.5	20
10/28/97	25	12	1.3	12.7	5.6	19
11/26/97	21	31	0.7	10.1	8.9	33
12/05/97	9	46	3.5	13.3	4.9	38
12/12/97	21	44	2.0	14.7	4.2	40
12/19/97	21	48	0.6	14.8	3.4	30
12/24/97	21	48	1.2	14.4	3.4	41
12/31/97	26	140-150	2.5	13.4	4.4	32
01/07/98	21	34	1.0	15.7	4.5	21
01/26/98	21	25	0.8	15.2	4.6	28
02/18/98	21	23	1.5	15.2	1.4	38
03/10/98	21	45	1.1	14.3	4.2	38
04/16/98	21	43	1.0	16.2	2.2	22
05/29/98	25	37	0.6	18.3	1.8	21
06/19/98	21	36	0.8	16.9	2.6	20
07/21/98	21	43	0.7	16.9	2.7	20
08/20/98	20	94	1.3	15.0	5.1	25
09/17/98	21	80-86	0.8	16.2	3.3	23
10/22/98	21	25	0.1	15.2	4.4	7
11/23/98	21	45	2.0	17.2	2.1	13.6
12/11/98	21	13	0.0	17.2	2.0	6.8
01/21/99	21	13	0.0	18.4	0.0	6.8
02/23/99	21	25	0.0	14.8	3.9	6.8
03/23/99	21	8	0.6	14.4	3.3	31.3
4/28/99 9:00 AM	21	10	0.0	16.5	2.4	27.2
4/28/99 11:08 AM	NM	NM	NM	NM	NM	NM
4/28/99 11:38 AM	21	0	0.0	16.9	2.3	34
05/27/99	21	NM[a]	0.3	16.7	1.8	41
07/01/99	21	20	0.1	18.0	1.8	41
07/28/99	21	60	0.0	19.1	1.3	68
08/26/99	21	NM[a]	0.5	18.8	1.2	54
10/18/99	21	1.5	0.3	13.0	1.9	27
12/09/99	21	7.5	0.6	16.9	1.9	14
01/19/00	21	4.5	0.1	17.7	1.1	0
02/17/00	49	0	NM[b]	NM[b]	NM[b]	68
03/22/00	23	11	0.4	16.5	1.2	61
04/24/00	55	3	0.0	19.5	0.0	82
05/17/00	55	3.4	0.0	20.3	0.2	102
06/21/00	59	1.3	0.0	17.5	1.1	109
07/12/00	31	4	0.0	18	0.3	68
08/23/00	48	2	1.0	17.7	0.8	82

cfm Cubic feet per minute.
PID Photoionization detector; concentration of total VOCs detected with the photoionization detector.
ppmv Parts per million by volume.
% Percent.
in.w.c. Inches water column.
NM Not measured.
[a] PID not operating correctly; measurement collected is invalid.
[b] Multi-gas meter (GA-90) not operating correctly; methane, oxygen, and carbon dioxide readings were not collect

Table A-3
Extraction Well EW-3S Historical Monitoring Data
Collected by ARCADIS Geraghty & Miller, Inc.
Swope Oil and Chemical Company Site, Pennsauken, New Jersey

Date	Air Flow (cfm)	PID (ppmv)	Methane (%)	Oxygen (%)	Carbon Dioxide (%)	Vacuum (in.w.c.)
02/18/97	18	35	1.5	12.8	4.2	46
02/21/97	14.5	23	5.5	5.9	8.5	24
09/30/97	15	26	7	2.2	13.4	26
10/01/97	21	27	4.8	5.7	10.5	27
10/02/97	33	27	6.5	6.5	10.1	50
10/03/97	21	19	3.5	8	8.9	21
10/08/97	21	23	5.2	5.7	8.7	14.5
10/28/97	9	26	6	8.9	7.2	15
11/26/97	21	34	1.6	7.3	8.7	20
12/05/97	20	38	1.8	10.5	6.9	18
12/12/97	21	26	2.0	10.8	6.7	18
12/19/97	15	14	12.1	11.9	5.2	17
12/24/97	21	64	11.2	12.0	4.7	8
12/31/97	21	84	5.2	8.3	5.3	3
01/07/98	17	47	13.9	10.6	6.0	21
01/26/98	23	160	10.3	15.2	3.6	18
02/18/98	17	82	8.3	15.7	3.5	17
03/10/98	17	154	7.7	16.2	3.5	44
04/16/98	17	102	4.9	13.9	2.6	29
05/29/98	17	74	5.4	17.7	2.2	38
06/19/98	24	88	8.4	16.9	3.1	30
07/21/98	21	172	5.3	14.8	2.7	24
08/20/98	21	280	10.4	14.7	5.0	28
09/17/98	21	220	1.0	18.9	0.7	32
10/22/98	21	68	4.4	12.9	4.3	3.4
11/23/98	21	130	3.1	17.4	1.8	27.2
12/11/98	21	150	3.9	18.7	2.0	13.6
01/21/99	21	60	2.4	14.9	2.9	6.8
02/23/99	21	88	6.0	15.5	3.2	6.8
03/23/99	23	30	3.7	15.8	2.3	23.1
4/28/99 9:00 AM	21	21	4.6	14.6	3.3	34
4/28/99 11:08 AM	NM	NM	NM	NM	NM	NM
4/28/99 11:38 AM	21	3	3.8	15.2	3.1	34
05/27/99	23	NM[a]	5.4	16.7	2.4	54
07/01/99	21	150	4.6	17.3	2.3	61
07/28/99	21	90	28.9	18.0	0.3	68
08/26/99	21	NM[a]	3.0	16.8	2.7	54
10/18/99	21	9.0	2.9	7.4	5.6	27
12/09/99	21	15	5.9	12.4	4.5	0
01/19/00	21	30	3.8	13.0	4.5	0
02/17/00	21	0	NM[b]	NM[b]	NM[b]	68
03/22/00	20	20	1.7	15.9	2.0	82
04/24/00	39	2	0.0	19.8	0.0	109
05/17/00	28	20	0.7	20.2	0.4	129
06/21/00	28	11	1.7	17	1.8	122
07/12/00	17	3.8	0.8	17.6	1	82
08/23/00	30	17	1.4	16.1	2.0	95

cfm Cubic feet per minute.
PID Photoionization detector; concentration of total VOCs detected with the photoionization detector.
ppmv Parts per million by volume.
% Percent.
in.w.c. Inches water column.
NM Not measured.
[a] PID not operating correctly; measurement collected is invalid.
[b] Multi-gas meter (GA-90) not operating correctly; methane, oxygen, and carbon dioxide readings were not collect

Table A-4
Extraction Well EW-4S Historical Monitoring Data
Collected by ARCADIS Geraghty & Miller, Inc.
Swope Oil and Chemical Company Site, Pennsauken, New Jersey

Date	Air Flow (cfm)	PID (ppmv)	Methane (%)	Oxygen (%)	Carbon Dioxide (%)	Vacuum (in.w.c.)
02/18/97	33	65	2.5	7.3	9.6	46
02/21/97	45	23	0	20.8	0	33
09/30/97	21	21	4.6	5.1	13.2	15
10/01/97	21	28	6.2	7	10.6	14
10/02/97	21	50	5.9	10.8	9.3	20
10/03/97	21	21	7.4	12	8.4	14
10/08/97	21	42	4.1	11.5	7.8	13
10/28/97	28	56	2.6	15.4	4.3	15
11/26/97	21	38	1.5	12.5	5.4	13
12/05/97	17	61	1.7	16.7	3.2	15
12/12/97	21	22	2.7	18.2	2.8	14
12/19/97	21	100-110	5.1	17.3	2.2	15
12/24/97	21	170-180	4.8	17.2	2.1	15
12/31/97	21	200	2.0	18.7	1.0	11
01/07/98	21	124	5.0	17.4	2.1	18
01/26/98	21	160	6.0	19.0	1.5	18
02/18/98	21	148	2.9	18.3	1.5	16
03/10/98	21	174	2.5	18.2	1.5	18
04/16/98	23	166	1.7	18.2	0.7	12
05/29/98	25	158	0.9	19.9	0.4	12
06/19/98	21	138	3.5	17.7	1.9	16
07/21/98	21	220	2.1	17.1	1.8	14
08/20/98	21	340	4.6	15.9	3.6	4
09/17/98	19	305	3.9	15.9	3.0	14
10/22/98	21	110	2.1	16.2	2.8	6.8
11/23/98	21	190	2.2	17.4	1.6	6.8
12/11/98	21	98	0.2	18.9	0.2	6.8
01/21/99	21	38	0.0	18.5	0.0	4.1
02/23/99	21	4	0.0	19.1	0.0	6.8
03/23/99	21	20	0.5	17.6	0.7	20.4
4/28/99 9:00 AM	21	30	1.3	16.4	2.0	20.4
4/28/99 11:08 AM	NM	NM	NM	NM	NM	NM
4/28/99 11:38 AM	21	0	1.0	16.9	1.9	20.4
05/27/99	21	NM[a]	2.3	17.4	1.4	40.8
07/01/99	21	1	0	20.5	0	0
07/28/99	21	50	0	20.6	0	61
08/26/99	21	NM[a]	0.3	20.0	0.2	27
10/18/99	21	3.0	0.2	21.0	0.0	0
12/09/99	21	20	0.3	19.5	0.0	0
01/19/00	21	1.5	0.1	19.3	0.0	0
02/17/00	21	2	NM[b]	NM[b]	NM[b]	0
03/22/00	21	45	0.2	19.1	0.0	34
04/24/00	21	1	0.0	19.5	0.0	54
05/17/00	29	2	0.0	20.9	0.0	82
06/21/00	25	1.2	0.0	19.1	0.0	95
07/12/00	0	3	0.0	18.8	0.0	61
08/23/00	17	1	0.0	18.5	0.0	41

cfm Cubic feet per minute.
PID Photoionization detector; concentration of total VOCs detected with the photoionization detector.
ppmv Parts per million by volume.
% Percent.
in.w.c. Inches water column.
NM Not measured.
[a] PID not operating correctly; measurement collected is invalid.
[b] Multi-gas meter (GA-90) not operating correctly; methane, oxygen, and carbon dioxide readings were not collect

Table A-5
Extraction Well EW-5S Historical Monitoring Data
Collected by ARCADIS Geraghty & Miller, Inc.
Swope Oil and Chemical Company Site, Pennsauken, New Jersey.

Date	Air Flow (cfm)	PID (ppmv)	Methane (%)	Oxygen (%)	Carbon Dioxide (%)	Vacuum (in.w.c.)
02/18/97	32	18	0	20.8	0	40
02/21/97	47	23	0	19.7	1.4	31
09/30/97	21	22	2	13.1	6.5	12.5
10/01/97	21	24	3	15.6	5.6	12
10/02/97	21	48	1.8	17	5.1	19.5
10/03/97	21	20	0.5	17.7	4.5	11
10/08/97	21	64	1	18.2	4	10.5
10/28/97	25	33	0.3	18.4	1.9	10.5
11/26/97	21	74	0.8	18.5	1.8	17
12/05/97	17	55	0.7	18.4	1.5	17
12/12/97	20	60	0.4	19.2	1.4	16.5
12/19/97	21	40	0	18.4	1.1	17
12/24/97	21	54	0	18.6	0.9	18
12/31/97	21	36	0	19.8	0.4	12
01/07/98	23	28	0	20.2	0.9	17
01/26/98	21	16	0	20.7	0.7	18
02/18/98	21	43	0.5	19.6	0.6	15
03/10/98	21	78	0.3	19.6	0.6	17
04/16/98	25	18	0	20.1	0.1	11
05/29/98	17	28	0	19.9	0.4	12
06/19/98	21	17	0	19.3	0.5	13
07/21/98	24	22	0	20.1	0.4	11
08/20/98	21	180	1	18.8	1.2	10
09/17/98	20	42	0	19.6	0.8	13
10/22/98	21	78	0	18.8	0.9	136.1
11/23/98	21	67	0	19.1	0.4	34
12/11/98	21	40	0	18.7	0.4	20.4
01/21/99	21	30	0	18.5	0.0	20.4
02/23/99	21	45	0	18.1	0.9	13.6
03/23/99	21	11.5	0.1	18.9	0.1	20.4
4/28/99 9:00 AM	21	12	0	18.8	0.2	13.6
4/28/99 11:08 AM	NM	NM	NM	NM	NM	NM
4/28/99 11:38 AM	21	10	0	19.4	0.1	13.6
05/27/99	21	NM[a]	0.2	18.9	0.2	27.2
07/01/99	21	6	0	20	0.3	27.2
07/28/99	21	15	0	19.1	0	61.2
08/26/99	21	NM[a]	0.4	19.6	2.5	34.0
10/18/99	21	3	0.2	20.5	0.0	13.6
12/09/99	21	21	0.4	19.6	0.1	6.8
01/19/00	21	1.5	0.1	19.2	0.0	0.0
02/17/00	92	5	NM[b]	NM[b]	NM[b]	54.4
03/22/00	21	12	0.2	19.0	0.1	68.1
04/24/00	107	3	0.0	20.0	0.0	108.9
05/17/00	89	3	0.0	20.8	0.0	108.9
06/21/00	87	1.8	0.1	18.8	0.0	108.9
07/12/00	57	4.5	0.0	18.8	0.0	68.1
08/23/00	0	4	0.0	18.7	0.0	95.3

cfm Cubic feet per minute.
PID Photoionization detector; concentration of total VOCs detected with the photoionization detector.
ppmv Parts per million by volume.
% Percent.
in.w.c. Inches water column.
NM Not measured.
[a] PID not operating correctly; measurement collected is invalid.
[b] Multi-gas meter (GA-90) not operating correctly; methane, oxygen, and carbon dioxide readings were not collect

Table A-6
Extraction Well EW-6S Historical Monitoring Data
Collected by ARCADIS Geraghty & Miller, Inc.
Swope Oil and Chemical Company Site, Pennsauken, New Jersey

Date	Air Flow (cfm)	PID (ppmv)	Methane (%)	Oxygen (%)	Carbon Dioxide (%)	Vacuum (in.w.c.)
2/18/1997	27	129	0	20.7	0	117
2/21/1997	41	24	0	20.8	0	10.2
9/30/1997	21	16	1	11.3	11	45
10/1/1997	21	17	0.8	16.6	7.1	46
10/2/1997	21	40	1.1	17.9	4.6	46
10/3/1997	21	44	1.5	17.9	3.8	44.5
10/8/1997	21	36	0.9	17.8	3.2	32
10/28/1997	28	35	0.3	18.2	2	42.5
11/26/1997	21	36	0.2	17.7	3	26
12/5/1997	17	41	1	18.2	2.1	26
12/12/1997	21	55	0.8	19.2	1.8	22
12/19/1997	21	1.4	0	18.4	1.4	37
12/24/1997	21	5	0	18.4	1.2	37
12/31/1997	21	23	0.2	18.9	1.4	36
1/7/1998	29	5	0.0	20.0	1.1	55
1/26/1998	21	15	0.1	19.6	1.1	48
2/18/1998	21	4	0	18.8	1.1	50
3/10/1998	21	12	0	19.2	0.9	60
4/16/1998	25	7	0	19.3	0.2	35
5/29/1998	21	11	0	20.0	0.3	58
6/19/1998	21	17	0	19.5	0.8	56
7/21/1998	21	4	0	19.5	0.4	44
8/20/1998	21	12	0	18.8	1.1	38
9/17/1998	21	4	0	19.3	0.8	24
10/22/1998	21	3	0	19.5	0.4	54.4
11/23/1998	21	14	0	19.6	0.1	61.2
12/11/1998	21	1	0	19.0	0.3	27.2
1/21/1999	21	0.9	0	18.6	1.0	34.0
2/23/1999	21	1.0	0	18.6	0.3	34.0
3/23/1999	21	0.8	0	18.9	0.2	47.6
4/28/99 9:00 AM	NM[a]	NM[a]	NM[a]	NM[a]	NM[a]	NM[a]
4/28/99 11:08 AM	21	0	0	19.0	0.1	61.2
4/28/99 11:38 AM	21	4	0	18.8	0.1	61.2
5/27/1999	21	NM[b]	0	18.6	0.4	81.7
7/1/1999	21	1	0	19.9	4.0	68.1
7/28/1999	21	2.5	0	20.4	0.2	108.9
8/26/1999	21	NM[b]	0.4	19.8	0.4	74.9
10/18/1999	21	1.5	0.3	15.7	0.9	40.8
12/9/1999	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]
1/19/2000	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]
2/17/2000	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]
3/22/2000	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]
4/24/2000	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]
5/17/2000	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]
06/21/00	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]
07/12/00	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]
08/23/00	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]

cfm Cubic feet per minute.
PID Photoionization detector; concentration of total VOCs detected with the photoionization detector.
ppmv Parts per million by volume.
% Percent.
in.w.c. Inches water column.
NM Not measured.
[a] Extraction well turned off on March 23, 1999 for pulsed operation; therefore, measurement not collected.
[b] PID not operating correctly; measurement collected is invalid.
[c] Extraction well shutdown: no measurements collected.

Table A-7
Extraction Well EW-7S Historical Monitoring Data
Collected by ARCADIS Geraghty & Miller, Inc.
Swope Oil and Chemical Company Site, Pennsauken, New Jersey

Date	Air Flow (cfm)	PID (ppmv)	Methane (%)	Oxygen (%)	Carbon Dioxide (%)	Vacuum (in.w.c.)
02/18/97	NM	NM	NM	NM	NM	NM
02/21/97	NM	NM	NM	NM	NM	NM
09/30/97	25	10	0.4	17.2	3.7	24.5
10/01/97	25	29	1.7	18.7	2.7	27
10/02/97	25	25	0.4	18	2.5	26
10/03/97	21	31	0.8	17.9	2.4	20.5
10/08/97	25	36	1.7	18.6	1.9	16.5
10/28/97	29	68	0.7	19.6	0	16.5
11/26/97	25	68	1.1	18.3	2.0	10
12/05/97	33	45	1.4	17.3	2.8	8
12/12/97	25	62	1.1	19.0	1.9	9
12/19/97	25	5.8	0	18.1	1.8	10
12/24/97	25	8	0	18.0	1.9	15
12/31/97	25	44	0.4	19.4	0.9	17
01/07/98	30	20	0.1	19.4	1.9	28
01/26/98	25	11	0	20.3	0.8	20
02/18/98	25	6	0.2	18.1	2.1	22
03/10/98	25	31	0.4	18.3	2.0	31
04/16/98	25	36	0.2	20.1	0	24
05/29/98	25	16	0	19.7	0.7	60
06/19/98	25	20	0.2	19.2	1.1	33
07/21/98	25	20	0.1	20.2	0.1	28
08/20/98	25	34	1.0	18.7	1.1	30
09/17/98	24	18	0.1	18.6	1.4	24
10/22/98	25	2	0	19.0	1.0	13.6
11/23/98	25	19	0	18.9	0.9	34
12/11/98	25	1	0	18.4	1.0	6.8
01/21/99	25	2	0	18.4	0.0	20.4
02/23/99	25	2	0	18.4	0.8	6.8
03/23/99	12	0.9	0.2	18.7	0.8	27.2
4/28/99 9:00 AM	NM[a]	NM[a]	NM[a]	NM[a]	NM[a]	NM[a]
4/28/99 11:08 AM	25	3	0	19.3	0	142.9
4/28/99 11:38 AM	25	4	0	19	0	142.9
05/27/99	NM[b]	NM[b]	NM[b]	NM[b]	NM[b]	NM[b]
07/01/99	NM[b]	NM[b]	NM[b]	NM[b]	NM[b]	NM[b]
7/28/99 9:31 AM	25	4	0	20.7	0	54.4
7/28/99 11:08 AM	25	1	0	20.4	0	54.4
08/26/99	25	10	0	18.9	0.9	54.4
10/18/99	21	3	0.3	18.5	0.5	13.6
12/09/99	21	4	0.2	18.5	0.6	6.8
01/19/00	21	0.5	0.1	18.4	1.0	0
02/17/00	25	3	NM[c]	NM[c]	NM[c]	0
03/22/00	23	1	0.1	18.7	0.3	0
04/24/00	25	0	0.0	19.5	0.0	41
05/17/00	NM[d]	NM[d]	NM[d]	NM[d]	NM[d]	NM[d]
06/21/00	NM[d]	NM[d]	NM[d]	NM[d]	NM[d]	NM[d]
07/12/00	NM[d]	NM[d]	NM[d]	NM[d]	NM[d]	NM[d]
08/23/00	NM[d]	NM[d]	NM[d]	NM[d]	NM[d]	NM[d]

cfm Cubic feet per minute.
PID Photoionization detector; concentration of total VOCs detected with the photoionization detector.
ppmv Parts per million by volume.
% Percent.
in.w.c. Inches water column.
NM Not measured.
[a] Extraction well turned off on March 23, 1999 for pulsed operation; therefore, measurement not collected.
[b] Extraction well turned off on May 5, 1999 due to excessive water collection in the SVE extraction piping; theref measurement not collected.
[c] Multi-gas meter (GA-90) not operating correctly; methane, oxygen, and carbon dioxide readings were not collec
[d] Extraction well turned off.

Table A-8
Extraction Well EW-8S Historical Monitoring Data
Collected by ARCADIS Geraghty & Miller, Inc.
Swope Oil and Chemical Company Site, Pennsauken, New Jersey

Date	Air Flow (cfm)	PID (ppmv)	Methane (%)	Oxygen (%)	Carbon Dioxide (%)	Vacuum (in.w.c.)
02/18/97	17	32	0	18.8	1	124
02/21/97	21	13.4	0.1	20.6	0	127
09/30/97	17	24	8.2	0.6	16.2	43.5
10/01/97	17	22	12.9	1.7	13.9	136.1
10/02/97	12	34	8.6	1.9	15.1	44
10/03/97	20	29	6.7	2.7	13.7	48.5
10/08/97	15	26	10.6	0.9	13.5	150
10/28/97	21	54	3.8	7.6	7.9	44
11/26/97	15	48	3.4	5.5	10.7	150
12/05/97	21	26	5.3	10.0	6.4	142.9
12/12/97	15	50	3.6	13.1	5.1	149.7
12/19/97	19	160-180	22.1	14.8	3.4	10.5
12/24/97	21	140-150	20.6	14.1	3.5	142.9
12/31/97	21	30-50	21.4	12.6	3.9	142.9
01/07/98	17	110-120	29.0	16.2	3.3	142.9
01/26/98	21	15	44.8	9.6	7.1	136.1
02/18/98	17	55	25.5	14.7	4.5	129.3
03/10/98	15	175-185	23.8	15.2	3.2	136.1
04/16/98	15	104	27.7	7.5	5.5	129.3
05/29/98	15	68	9.2	17.6	2.0	149.7
06/19/98	15	68	22.8	14.2	5.1	115.7
07/21/98	12	112	34.7	3.7	7.6	8.5
08/20/98	15	190-200	34.7	10.1	9.7	8.5
09/17/98	12	220	41.8	4.4	9.8	149.7
10/22/98	17	23	32.8	10.3	8.1	136.1
11/23/98	21	69	0.0	20.0	0.0	149.7
12/11/98	21	45	8.5	14.6	4.1	122.5
01/21/99	21	55	0.0	19.1	0.0	136.1
02/23/99	21	19	18.8	10.4	7.8	129.3
03/23/99	21	21	11.7	14.8	3.4	156.5
4/28/99 9:00 AM	21	30	12.4	13.6	3.7	190.5
4/28/99 11:08 AM	NM	NM	NM	NM	NM	NM
4/28/99 11:38 AM	NM[a]	NM[a]	NM[a]	NM[a]	NM[a]	NM[a]
05/27/99	21	NM[b]	10.4	15.5	3.1	176.9
07/01/99	15	60	18.4	13.5	5.1	149.7
07/28/99	21	20	0.0	19.1	6.0	204.2
08/26/99	21	NM[b]	16.9	15.7	3.9	176.9
10/18/99	17	11	4.1	9.4	5.2	142.9
12/09/99	17	13.5	5.1	11.2	6.4	156.5
01/19/00	21	12	2.5	17.4	1.5	102.1
02/17/00	21	2	NM[c]	NM[c]	NM[c]	54.4
03/22/00	21	3	3.3	16.5	1.1	74.9
04/24/00	15	1	0.0	19.5	0.0	108.9
05/17/00	12	9	0.4	19.7	0.8	115.7
06/21/00	20	2.4	0.3	17.1	1.7	108.9
07/12/00	15	1.3	0.0	17.6	1.0	81.7
08/23/00	21	2	0.4	17.4	1.1	95.3

cfm Cubic feet per minute.
PID Photoionization detector; concentration of total VOCs detected with the photoionization detector.
ppmv Parts per million by volume.
% Percent.
in.w.c. Inches water column.
NM Not measured.
[a] PID, methane, oxygen, and carbon dioxide measurements not collected due to water extracted in the sampling pu
[b] PID not operating correctly; measurement collected is invalid.
[c] Multi-gas meter (GA-90) not operating correctly; methane, oxygen, and carbon dioxide readings were not collecte

Table A-9
Extraction Well EW-9S Historical Monitoring Data
Collected by ARCADIS Geraghty & Miller, Inc.
Swope Oil and Chemical Company Site, Pennsauken, New Jersey

Date	Air Flow (cfm)	PID (ppmv)	Methane (%)	Oxygen (%)	Carbon Dioxide (%)	Vacuum (in.w.c.)
02/18/97	NM	NM	NM	NM	NM	NM
02/21/97	NM	NM	NM	NM	NM	NM
09/30/97	21	18	27.3	0	19.2	43.5
10/01/97	21	18	18.2	2.6	14.7	70
10/02/97	26	22	22.1	4.5	12.9	108.9
10/03/97	21	28	11.4	5.8	11.3	46
10/08/97	41	26	3.6	14.8	2.8	44
10/28/97	NM	NM	NM	NM	NM	NM
11/26/97	21	40	6.5	9.5	9.4	52
12/05/97	20	32	4.3	13.6	6.3	51
12/12/97	21	45	4.6	14.7	5.1	46
12/19/97	21	120-180	63.4	15.1	3.7	44
12/24/97	21	112	54.9	15.0	3.5	23
12/31/97	21	60-80	45.8	14.5	3.3	18
01/07/98	17	38	NM	16.8	2.9	71
01/26/98	21	20	68.0	16.9	3.1	70
02/18/98	17	105-115	54.5	16.8	2.6	68
03/10/98	17	220	34.1	17.2	2.4	43
04/16/98	17	138	48.4	15.5	1.8	80
05/29/98	19	92	26.6	18.5	1.2	122.5
06/19/98	21	115-125	47.1	16.9	2.6	50
07/21/98	21	152	57.3	14.6	3.4	142.9
08/20/98	20	152	58.6	13.8	5.5	63
09/17/98	17	230-235	49.8	14.0	4.1	136.1
10/22/98	17	50	33.0	14.1	4.9	149.7
11/23/98	21	250	1.7	19.2	0.3	122.5
12/11/98	21	66	15.2	16.1	2.6	88.46
01/21/99	17	90	0.7	18.9	0.2	136.1
02/23/99	21	60	15.4	14.4	4.4	6.8
03/23/99	21	19	14.1	15.9	2.2	156.5
4/28/99 9:00 AM	21	21	15.4	10.6	6.2	149.7
4/28/99 11:08 AM	NM	NM	NM	NM	NM	NM
4/28/99 11:38 AM	21	30	12.2	11.8	5.6	129.3
05/27/99	21	NM[a]	18.2	15.4	3.2	149.7
07/01/99	21	30	25.5	15.5	3.6	108.9
07/28/99	21	65	76.3	15.8	2.4	136.1
08/26/99	21	NM[a]	24.1	15.2	3.9	136.1
10/18/99	21	12.5	9.9	5.9	5.0	95.3
12/09/99	21	17	19.4	9.8	6.4	149.7
01/19/00	21	21	11.6	14.0	3.4	0.0
02/17/00	21	10	NM[b]	NM[b]	NM[b]	68.1
03/22/00	21	5	4.6	8.9	4.5	81.7
04/24/00	21	1	0.0	19.5	0.0	108.9
05/17/00	17	22	2.6	19.7	0.6	122.5
06/21/00	25	12	7.1	17	2	108.9
07/12/00	17	22	2.6	17.1	1.2	81.7
08/23/00	33	5	2.8	16.2	2.1	95.3

cfm Cubic feet per minute.
PID Photoionization detector; concentration of total VOCs detected with the photoionization detector.
ppmv Parts per million by volume.
% Percent.
in.w.c. Inches water column.
NM Not measured.
[a] PID not operating correctly; measurement collected is invalid.
[b] Multi-gas meter (GA-90) not operating correctly; methane, oxygen, and carbon dioxide readings were not collect

Table A-10
Extraction Well EW-10S Historical Monitoring Data
Collected by ARCADIS Geraghty & Miller, Inc.
Swope Oil and Chemical Company Site, Pennsauken, New Jersey

Date	Air Flow (cfm)	PID (ppmv)	Methane (%)	Oxygen (%)	Carbon Dioxide (%)	Vacuum (in.w.c.)
02/18/97	17	35	0.4	20.9	0	143.5
02/21/97	21	75	1.1	20.6	0	141
09/30/97	16	27	2.3	3.7	15.2	44
10/01/97	16	21	1.4	9.8	8.8	43.5
10/02/97	21	23	2.3	11.9	5.9	102.1
10/03/97	16	9	1.4	12.4	5.3	44
10/08/97	16	17	1.8	7.2	7.4	45.5
10/28/97	9	26	2.1	14.2	3.2	44.5
11/26/97	16	2.4	0.8	7.3	8.3	62
12/05/97	15	23.5	0.7	13.3	5	82
12/12/97	16	19.8	0.4	14.6	4.0	44
12/19/97	16	36	4.9	15.1	3.0	99
12/24/97	16	94	4.4	2.4	15.7	12
12/31/97	16	76	4.2	9.5	5.7	6
01/07/98	16	54	4.0	14.6	4.5	67
01/26/98	16	3	5.2	5.0	13.0	9
02/18/98	16	52	3.0	14.6	3.3	96
03/10/98	16	90-100	2.7	14.3	4.3	108.9
04/16/98	16	62	2.4	8.6	6.3	129.3
05/29/98	15	32	1.3	17.5	1.7	163.3
06/19/98	16	64	4.9	13.8	5.1	163.3
07/21/98	16	118	5.1	7.1	9.1	149.7
08/20/98	19	215	4.1	12.6	6.2	62
09/17/98	16	82	0.2	18.2	0.9	64
10/22/98	16	25	4.3	10.7	7.1	74.9
11/23/98	16	115	1.2	16.2	2.2	74.9
12/11/98	16	75	1.6	14.6	4.2	20.4
01/21/99	16	45	0.7	12.3	6.7	4.1
02/23/99	16	34	2.2	10.9	7.7	6.8
03/23/99	17	17	5.4	12.8	0.7	47.6
4/28/99 9:00 AM	17	NM[a]	NM[a]	NM[a]	NM[a]	156.5
4/28/99 11:08 AM	NM	NM	NM	NM	NM	NM
4/28/99 11:38 AM	NM[a]	NM[a]	NM[a]	NM[a]	NM[a]	NM[a]
05/27/99	NM[a]	NM[b]	3.3	10.5	7.1	68.1
07/01/99	NM[a]	4	5.2	12.1	5.7	13.6
07/28/99	16	40	5.7	14.0	1.0	204.2
08/26/99	16	NM[b]	1.3	12.9	6.3	190.5
10/18/99	16	8.5	1.7	5.9	9.3	81.7
12/09/99	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]
01/19/00	15	20	1.1	8.5	6.9	0.0
02/17/00	15	0	NM[d]	NM[d]	NM[d]	68.1
03/22/00	15	14	0.6	12.1	3.7	81.7
04/24/00	21	1	0.0	19.8	0.0	108.9
05/17/00	21	7.2	0.5	18.6	1.5	129.3
06/21/00	15	1.8	0.6	15.7	2.5	122.5
07/12/00	12	10	0.0	16.4	1.6	81.7
08/23/00	28	8	1.0	17.4	0.8	95.3

cfm Cubic feet per minute.
PID Photoionization detector; concentration of total VOCs detected with the photoionization detector.
ppmv Parts per million by volume.
% Percent.
in.w.c. Inches water column.
NM Not measured.
[a] PID, methane, oxygen, and carbon dioxide measurements not collected due to water extracted in the sampling pun
[b] PID not operating correctly; measurement collected is invalid.
[c] Extraction well shutdown; no measurements collected.
[d] Multi-gas meter (GA-90) not operating correctly; methane, oxygen, and carbon dioxide readings were not collecte

Table A-11
Extraction Well EW-11I Historical Monitoring Data
Collected by ARCADIS Geraghty & Miller, Inc.
Swope Oil and Chemical Company Site, Pennsauken, New Jersey

Date	Air Flow (cfm)	PID (ppmv)	Methane (%)	Oxygen (%)	Carbon Dioxide (%)	Vacuum (in.w.c.)
02/18/97	67	61	0.2	10.8	8.8	15
02/21/97	56	20	0.2	11.7	8.5	14
09/30/97	68	33	3.2	8.4	9.6	14
10/01/97	52	19	4.7	11.3	7.3	16
10/02/97	86	43	3.6	12.2	7.1	18
10/03/97	70	41	3.5	12.9	6.8	18
10/08/97	87	88	1.9	17.3	2.1	17
10/28/97	73	21	2.7	14.6	6	22
11/26/97	66	43	2.5	12	8.3	13
12/05/97	70	27	5	14.6	5.7	14
12/12/97	78	38	5.6	15.3	5.5	15
12/19/97	82	10	0	15.3	4.7	19
12/24/97	65	34	0.6	15.3	4.7	22
12/31/97	78	200	3.4	20.2	0.2	24
01/07/98	86	12	0.7	16.6	4.5	11
01/26/98	78	40	0.5	21.1	0.0	19
02/18/98	70	8	1.0	16.1	4.0	10
03/10/98	78	34	0.9	15.9	4.2	16
04/16/98	78	42	0.8	20.1	0.0	16
05/29/98	78	6	0	16.8	3.9	16
06/19/98	78	23	0.5	16.3	4.6	18
07/21/98	78	52	1.1	20.9	0.0	14
08/20/98	86	56	0.7	16.7	3.8	20
09/17/98	78	39	0.3	17.0	3.3	17
10/22/98	86	9.8	0.7	16.9	3.3	6.8
11/23/98	86	10	0	17.5	2.3	27.2
12/11/98	86	5	0.1	17.0	2.8	6.8
01/21/99	86	3	0	18.5	0	5.4
02/23/99	86	15	2	16.1	3.2	6.8
03/23/99	86	0.2	0	16.4	2.7	27.2
4/28/99 9:00 AM	NM[a]	NM[a]	NM[a]	NM[a]	NM[a]	NM[a]
4/28/99 11:08 AM	86	>2,000	0	14.6	4.4	61.2
4/28/99 11:38 AM	86	300	0	14.9	4.4	61.2
05/27/99	86	NM[b]	0.1	17.2	2.1	68.1
07/01/99	86	30	0.2	17.8	2.1	61.2
07/28/99	86	20	0.8	17.9	1.7	68.1
08/26/99	86	NM[b]	0.7	17.8	2.2	54.4
10/18/99	92	29	0.9	19.4	0.3	20.4
12/09/99	86	18	0.6	16.6	2.2	0.0
01/19/00	86	20	0.4	16.8	2.0	0.0
02/17/00	105	0	NM[c]	NM[c]	NM[c]	0.0
03/22/00	99	2	0.3	17.7	0.8	74.9
04/24/00	234	4	0.9	17.5	0.6	40.8
05/17/00	188	9.4	0.1	19.4	1.2	54.4
06/21/00	204	2.1	0.0	16.7	2.1	68.1
07/12/00	110	3.5	0.0	17.6	1.1	61.2
08/23/00	185	6	0.0	17.5	1.5	40.8

cfm Cubic feet per minute.
PID Photoionization detector; concentration of total VOCs detected with the photoionization detector.
ppmv Parts per million by volume.
% Percent.
in.w.c. Inches water column.
NM Not measured.
[a] Extraction well turned off on March 23, 1999 for pulsed operation; therefore, measurement not collected.
[b] PID not operating correctly; measurement collected is invalid.
[c] Extraction well shutdown; no measurements collected.

Table A-12
Extraction Well EW-12D Historical Monitoring Data
Collected by ARCADIS Geraghty & Miller, Inc.
Swope Oil and Chemical Company Site, Pennsauken, New Jersey

Date	Air Flow (cfm)	PID (ppmv)	Methane (%)	Oxygen (%)	Carbon Dioxide (%)	Vacuum (in.w.c.)
02/18/97	68	44	0.1	16.1	4.5	2
02/21/97	58	25	0	17.1	3.1	+1.2
09/30/97	49	37	3.1	14.4	5.2	5
10/01/97	70	19	4.7	11.3	7.3	16
10/02/97	49	22	4.5	16.4	3.5	5
10/03/97	49	22	1.2	16	3.7	4.5
10/08/97	49	124	1.1	18.9	0.4	5
10/28/97	70	70	0.4	16.7	3.1	12.5
11/26/97	49	54	0.5	16.7	3.4	5
12/05/97	49	50	0.9	17.4	2.2	3
12/12/97	49	46	3.4	18.1	2.5	5
12/19/97	49	14	0.2	17.3	2.0	5
12/24/97	49	22	0.4	17.3	2.0	8
12/31/97	49	160-180	0.1	20.2	0.0	9
01/07/98	49	28	0.1	19.2	3.0	4
01/26/98	49	20	0.2	20.1	0.8	7
02/18/98	49	8	0.3	17.6	2.2	3
03/10/98	49	33	0.4	17.6	2.3	10
04/16/98	49	34	0.1	19.2	0.7	12
05/29/98	49	32	0.3	18.9	1.2	8
06/19/98	49	2	0	18.7	1.7	8
07/21/98	49	20	0.1	20.1	0.4	8
08/20/98	49	100	1.3	18.6	1.7	10
09/17/98	49	14	0	18.9	1.5	4
10/22/98	49	15	1	18.8	1.5	3.4
11/23/98	49	14	0	18.8	1.1	20.4
12/11/98	49	3	0	18.1	1.5	6.8
01/21/99	49	3	0	18.5	0	6.8
02/23/99	49	3	0	17.7	2	6.8
03/23/99	49	1.2	0	17.9	1.2	20.4
4/28/99 9:00 AM	NM[a]	NM[a]	NM[a]	NM[a]	NM[a]	NM[a]
4/28/99 11:08 AM	49	200	0	17.3	1.6	27.2
4/28/99 11:38 AM	49	7	0	17.8	1.5	27.2
05/27/99	49	NM[b]	0.2	18.2	1.4	27.2
07/01/99	49	1	0	19.2	1.2	13.6
07/28/99	49	3	0	19.6	1.2	54.4
08/26/99	49	NM[b]	0.3	19.0	1.3	27.2
10/18/99	49	1.5	0.2	20.2	0.2	0.0
12/09/99	49	7.0	0.7	18.9	0.8	0.0
01/19/00	49	6.5	1.0	17.8	1.1	0.0
02/17/00	86	11	NM[c]	NM[c]	NM[c]	0.0
03/22/00	86	40	0.4	18.6	0.0	0.0
04/24/00	178	1	0.0	19.5	0.0	13.6
05/17/00	131	9	0.1	19.7	1	34.0
06/21/00	140	2	0.0	17.2	1.5	40.8
07/12/00	86	2.5	0.0	17.5	1	40.8
08/23/00	131	1.5	0.0	17.5	1.0	27.2

cfm Cubic feet per minute.
PID Photoionization detector; concentration of total VOCs detected with the photoionization detector.
ppmv Parts per million by volume.
% Percent.
in.w.c. Inches water column.
NM Not measured.
[a] Extraction well turned off on March 23, 1999 for pulsed operation; therefore, measurement not collected.
[b] PID not operating correctly; measurement collected is invalid.
[c] Extraction well shutdown; no measurements collected.

Table A-13
Extraction Well EW-13S Historical Monitoring Data
Collected by ARCADIS Geraghty & Miller, Inc.
Swope Oil and Chemical Company Site, Pennsauken, New Jersey

Date	Air Flow (cfm)	PID (ppmv)	Methane (%)	Oxygen (%)	Carbon Dioxide (%)	Vacuum (in.w.c.)
02/18/97	15	205	0	21.1	0	143.5
02/21/97	17	47	0	20.6	0	136.5
09/30/97	16	15	1.1	1.9	16.5	41
10/01/97	16	7	0.9	6.1	12.6	42
10/02/97	25	17	1	8.5	9.5	156.5
10/03/97	16	11	0.6	11.3	6.6	45
10/08/97	16	11	0.7	5.8	10.1	46.5
10/28/97	12	4.9	0.9	13.4	4.2	45
11/26/97	16	6.8	0.6	8	9.6	8
12/05/97	12	9	0.4	12.6	6.1	4
12/12/97	16	18.5	0.2	13.5	5.8	5.5
12/19/97	16	40	2.1	13.6	4.7	6
12/24/97	16	38	1.4	14.2	4.3	18
12/31/97	16	38	2.9	9.8	5.4	20
01/07/98	16	10	1.3	16.8	3.3	129.3
01/26/98	15	80	2.6	10.5	5.9	163.3
02/18/98	16	48	1.0	13.6	4.1	136.1
03/10/98	16	112	1.1	14.9	3.9	136.1
04/16/98	16	48	1.3	5.9	8.0	129.3
05/29/98	16	8	0.9	14.4	4.2	149.7
06/19/98	16	38	3.0	11.2	8.2	122.5
07/21/98	16	62	4.2	4.1	12.0	149.7
08/20/98	14	205	2.8	10.8	8.6	163.3
09/17/98	16	0	0	20.4	0	149.7
10/22/98	16	21	0.9	12.9	7	14.8
11/23/98	16	110	0.2	20.0	0	136.1
12/11/98	16	51	0.9	14.6	4	88.46
01/21/99	16	100	0	18.7	0	136.1
02/23/99	16	31	1	14.1	3	6.8
03/23/99	17	25	0	19.4	0	170.1
4/28/99 9:00 AM	NM[a]	NM[a]	NM[a]	NM[a]	NM[a]	190.5
4/28/99 11:08 AM	NM	NM	NM	NM	NM	NM
4/28/99 11:38 AM	16	NM[a]	0.2	18.3	0.4	149.7
05/27/99	16	NM[b]	1.7	14.7	3.4	176.9
07/01/99	16	NM[b]	3.4	9.6	7.5	183.7
07/28/99	16	15	64.5	10.7	5.7	217.8
08/26/99	16	NM[b]	2.5	6.9	11.3	190.5
10/18/99	16	10.5	1.4	12.2	5.4	163.3
12/09/99	16	10	0.2	19.0	0.2	170.1
01/19/00	15	35	0.5	16.1	1.5	0.0
02/17/00	17	14	NM[c]	NM[c]	NM[c]	68.1
03/22/00	17	35	0.0	18.3	0.1	81.7
04/24/00	21	0	0.0	19.5	0.0	108.9
05/17/00	17	6.8	0.0	19.2	1.1	129.3
06/21/00	17	4.8	0.2	15.8	2.7	122.5
07/12/00	15	14.2	0.0	17.8	0.8	81.7
08/23/00	25	NM	0.8	17.7	0.4	95.3

cfm Cubic feet per minute.
PID Photoionization detector; concentration of total VOCs detected with the photoionization detector.
ppmv Parts per million by volume.
% Percent.
in.w.c. Inches water column.
NM Not measured.
[a] PID, methane, oxygen, and carbon dioxide measurements not collected due to water extracted in the sampling pu
[b] PID not operating correctly; measurement collected is invalid.
[c] Multi-gas meter (GA-90) not operating correctly; methane, oxygen, and carbon dioxide readings were not collecte

Table A-14
Extraction Well EW-14S Historical Monitoring Data
Collected by ARCADIS Geraghty & Miller, Inc.
Swope Oil and Chemical Company Site, Pennsauken, New Jersey

Date	Air Flow (cfm)	PID (ppmv)	Methane (%)	Oxygen (%)	Carbon Dioxide (%)	Vacuum (in.w.c.)
02/18/97	16	44	0	19.4	0.6	130
02/21/97	40	63	0.1	20.7	0	136.5
09/30/97	17	29	19.5	11.2	12.3	44
10/01/97	17	42	10	13.8	6	136.1
10/02/97	12	82	13.7	13.7	4.5	149.7
10/03/97	15	44	7.6	14.5	3.3	50
10/08/97	17	28	5.2	8.2	7.1	44
10/28/97	20	28	7.1	15.5	3	44
11/26/97	17	72	2.8	14.4	5.1	156.3
12/05/97	21	31	9.1	14.7	4.1	197.3
12/12/97	21	48	3.1	16.6	2.9	43
12/19/97	21	36	19.8	17.1	1.7	149.7
12/24/97	17	110-130	21.4	16.9	1.7	122.5
12/31/97	21	120-190	35.0	14.2	4.0	156.5
01/07/98	15	65-80	23.7	17.4	2.1	156.5
01/26/98	20	40	40.7	13.7	4.5	149.7
02/18/98	15	85	13.5	17.1	2.0	136.1
03/10/98	15	138	9.8	17.6	1.5	136.1
04/16/98	17	90	14.1	11.6	3.8	142.9
05/29/98	12	66	2	18.9	0.8	108.9
06/19/98	15	75	5.3	18.4	1.2	136.1
07/21/98	17	78	10.5	10.9	4.6	129.3
08/20/98	12	188	3.6	18.2	1.5	129.3
09/17/98	12	210	10.4	10.8	5.2	136.1
10/22/98	17	10.5	5.6	16.7	2.2	136.1
11/23/98	21	35	0	20.0	0.0	163.3
12/11/98	21	55	2.3	17.5	1.1	122.5
01/21/99	21	30	0	19.0	0	149.7
02/23/99	21	35	10	13.3	4	122.5
03/23/99	21	23	2.4	16.8	1.5	170.1
4/28/99 9:00 AM	21	14	1.1	17.2	1.0	190.5
4/28/99 11:08 AM	NM	NM	NM	NM	NM	NM
4/28/99 11:38 AM	21	NM[a]	NM[a]	NM[a]	NM[a]	NM[a]
05/27/99	21	NM[b]	2.3	17.5	1.3	176.9
07/01/99	15	22	2.9	18.3	1.2	197.3
07/28/99	21	20	6.6	18.8	6.6	204.2
08/26/99	21	NM[b]	0.3	18.6	0.5	190.5
10/18/99	21	13	3.5	14.8	3.4	163.3
12/09/99	21	36	15.7	10.8	5.6	163.3
01/19/00	21	20	0.4	17.7	1.1	108.9
02/17/00	25	10	NM[c]	NM[c]	NM[c]	27.2
03/22/00	25	25	0.5	18.9	0.0	20.4
04/24/00	123	4	0.3	18.7	0.4	108.9
05/17/00	12	0.7	0.1	20.1	0.5	122.5
06/21/00	25	2	0.0	17.3	1.5	108.9
07/12/00	21	10	0.0	19.4	0.0	88.5
08/23/00	26	8	0.0	18.8	0.0	95.3

cfm Cubic feet per minute.
PID Photoionization detector; concentration of total VOCs detected with the photoionization detector.
ppmv Parts per million by volume.
% Percent.
in.w.c. Inches water column.
NM Not measured.
[a] PID, methane, oxygen, and carbon dioxide measurements not collected due to water extracted in the sampling pu
[b] PID not operating correctly; measurement collected is invalid.
[c] Multi-gas meter (GA-90) not operating correctly; methane, oxygen, and carbon dioxide readings were not collecte

Table A-15
Extraction Well EW-15S Historical Monitoring Data
Collected by ARCADIS Geraghty & Miller, Inc.
Swope Oil and Chemical Company Site, Pennsauken, New Jersey

Date	Air Flow (cfm)	PID (ppmv)	Methane (%)	Oxygen (%)	Carbon Dioxide (%)	Vacuum (in.w.c.)
02/18/97	NM	NM	NM	NM	NM	NM
02/21/97	NM	NM	NM	NM	NM	NM
09/30/97	21	14	0.5	13.7	7.1	16
10/01/97	21	22	1.1	16.1	5.5	18
10/02/97	21	22	0.5	16.6	4.5	11.5
10/03/97	21	24	1	16.5	4.3	17
10/08/97	21	30	1.1	16.7	3.9	16
10/28/97	28	50	0.6	16.6	3.5	11.5
11/26/97	21	39	0.8	16.7	3.4	13
12/05/97	17	36	1.1	16.3	3.6	13
12/12/97	21	41	1.2	17.5	3.5	14
12/19/97	21	0.5	0	17.6	3.0	10
12/24/97	21	26	0	17.0	2.8	10
12/31/97	20	28	0.5	17.9	2.2	14
01/07/98	28	15	0.0	17.5	3.5	20
01/26/98	21	11	0.1	19.2	2.0	20
02/18/98	21	3	0.1	16.7	3.7	17
03/10/98	21	18	0.1	17.0	3.5	21
04/16/98	23	30	0.3	19.3	0.3	13
05/29/98	23	8	0	18.8	1.7	20
06/19/98	21	21	0	18.3	2.1	19
07/21/98	21	16	0	19.2	0.7	20
08/20/98	21	36	0	17.9	2.0	20
09/17/98	21	12	0	17.9	2.2	18
10/22/98	21	0.5	0	18.1	2.0	13.6
11/23/98	21	10	0	18.3	1.4	40.8
12/11/98	21	2	0	17.8	1.7	13.6
01/21/99	21	1	0	18.5	0	27.2
02/23/99	21	2	0	17.6	1.8	1.5
03/23/99	21	0.5	0.7	17.9	1.9	40.8
4/28/99 9:00 AM	NM[a]	NM[a]	NM[a]	NM[a]	NM[a]	NM[a]
4/28/99 11:08 AM	21	0	0	17.5	0.9	68.1
4/28/99 11:38 AM	21	1	0	18.5	0.8	34.0
05/27/99	21	NM[b]	1	18.0	1.1	34.0
07/01/99	21	0	0	19.8	0.8	40.8
07/28/99	21	4	0	19.4	0.9	54.4
08/26/99	21	4	0	18.8	1.1	54.4
10/18/99	21	0.8	0.2	13.6	2.9	20.4
12/09/99	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]
01/19/00	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]
02/17/00	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]
03/22/00	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]
04/24/00	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]
05/17/00	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]
06/21/00	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]
07/12/00	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]
08/23/00	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]	NM[c]

cfm Cubic feet per minute.
PID Photoionization detector; concentration of total VOCs detected with the photoionization detector.
ppmv Parts per million by volume.
% Percent.
in.w.c. Inches water column.
NM Not measured.
[a] Extraction well turned off on March 23, 1999 for pulsed operation; therefore, measurement not collected.
[b] PID not operating correctly; measurement collected is invalid.
[c] Extraction well shutdown; no measurements collected

Table A-16
Extraction Well EW-16S Historical Monitoring Data
Collected by ARCADIS Geraghty & Miller, Inc.
Swope Oil and Chemical Company Site, Pennsauken, New Jersey

Date	Air Flow (cfm)	PID (ppmv)	Methane (%)	Oxygen (%)	Carbon Dioxide (%)	Vacuum (in.w.c.)
02/18/97	12	26	0	21	0	143.5
02/21/97	14.5	37	0	20.7	0	136.5
09/30/97	12	18	0.1	6.9	9.8	49
10/01/97	12	6	0	5.6	9.3	44
10/02/97	12	7	0	6.5	7.9	136.1
10/03/97	12	2	0	6.3	8.5	45
10/08/97	12	0.03	0	2	11.5	31
10/28/97	12	1.5	0	8.8	6.7	42.5
11/26/97	12	8.2	0	6	10	16
12/05/97	30	8	0	6.5	9.6	12
12/12/97	15	11.5	0	7.9	9.3	10.5
12/19/97	14	30	0	8.8	8.3	16
12/24/97	12	24	0	10.5	6.7	10
12/31/97	12	16	0.4	3.1	9.4	11
01/07/98	12	14	0.0	14.2	4.8	84
01/26/98	15	95	2.7	10.0	6.1	163.3
02/18/98	17	24	0.7	13.6	4.1	136.1
03/10/98	12	38	0.8	15.1	3.8	136.1
04/16/98	15	10	0.1	6.2	9.4	149.7
05/29/98	12	12	0.4	15.6	3.0	136.1
06/19/98	12	6	0.4	12.4	6.6	136.1
07/21/98	12	10	0.1	4.8	11.8	136.1
08/20/98	12	22	0	14.3	5.7	136.1
09/17/98	12	0.2	0	20.3	0	142.9
10/22/98	12	50	0.1	17.6	1.8	136.1
11/23/98	12	65	0	2.0	0	142.9
12/11/98	12	55	0.8	18.1	1.1	47.6
01/21/99	12	16	0	18.9	0.1	4.1
02/23/99	12	25	1	17.1	1.1	1.5
03/23/99	9	4.5	0	19.2	0	170.1
4/28/99 9:00 AM	17	NM[a]	NM[a]	NM[a]	NM[a]	NM[a]
4/28/99 11:08 AM	NM	NM	NM	NM	NM	NM
4/28/99 11:38 AM	12	NM[a]	NM[a]	NM[a]	NM[a]	NM[a]
05/27/99	12	NM[b]	0	16.9	1.7	149.7
07/01/99	12	NM[b]	1.2	12.4	5.7	176.9
07/28/99	12	10.0	1.0	19.9	1.4	190.5
08/26/99	12	NM[b]	1.2	18.9	1.9	149.7
10/18/99	16	NM[a]	NM[a]	NM[a]	NM[a]	156.5
12/09/99	15	1	0.1	15.9	2.9	170.1
01/19/00	12	32	0.5	14.5	2.2	0.0
02/17/00	15	3	NM[c]	NM[c]	NM[c]	54.4
03/22/00	12	11	0.0	18.7	0.0	95.3
04/24/00	25	NM[d]	NM[d]	NM[d]	NM[d]	108.9
05/17/00	17	8.8	0.0	19.9	0.8	122.5
06/21/00	21	3.4	0.0	17.5	1.5	122.5
07/12/00	15	21	0.0	18.0	0.8	81.7
08/23/00	25	6	0.0	18.1	0	81.7

cfm Cubic feet per minute.
PID Photoionization detector; concentration of total VOCs detected with the photoionization detector.
ppmv Parts per million by volume.
% Percent.
in.w.c. Inches water column.
NM Not measured.
[a] PID, methane, oxygen, and carbon dioxide measurements not collected due to water extracted in the sampling pun
[b] PID not operating correctly; measurement collected is invalid.
[c] Multi-gas meter (GA-90) not operating correctly; methane, oxygen, and carbon dioxide readings were not collecte
[d] PID, methane, oxygen, and carbon dioxide measurements not collected due to water extracted in the sampling pun

Table A-17
Influent Historical Monitoring Data
Collected by ARCADIS Geraghty & Miller, Inc.
Swope Oil and Chemical Company Site, Pennsauken, New Jersey

Date	Air Flow (cfm)	PID (ppmv)	CH_4 (%)	O_2 (%)	CO_2 (%)	Vacuum (in.w.c.)
02/18/97	286	110/28	0	20.8	0	130
02/21/97	276	9.2	0	20.7	0	191
09/30/97	294	26	2.6	10.7	8.6	136.1
10/01/97	294	22	3.4	11.5	8.2	44
10/02/97	272	20	1.2	12.4	7.1	45
10/03/97	294	27	1.3	13.3	6.4	45
10/08/97	272	44	2.9	13.2	5.6	45
10/28/97	272	44	2.9	13.2	5.6	45
10/29/97	NM	35/550*	NM	NM	NM	NM
11/26/97	294	33	0.8	12.7	6.2	142.8
12/05/97	111	3.1/16	1.5	15.1	4.1	156.5
12/12/97	111	37	0.4	15.9	3.5	156.5
12/19/97	294	16	1.5	16.9	2.5	122.5
12/24/97	261	34	0.9	16.9	2.4	156.5
12/31/97	272	64	2.2	18.1	1.6	149.7
01/07/98	272	62	2.6	18.2	2.4	156.5
01/26/98	193	35	3.8	18.1	1.9	149.7
02/18/98	157	24	0.7	13.6	4.1	136.1
03/10/98	249	78	1.1	17.6	2.2	142.9
04/16/98	333	82	1.4	17.4	1.1	129.3
05/29/98	272	68	0.8	19.4	0.9	142.9
06/19/98	272	74	1.2	17.8	2.2	9.5
07/21/98	272	152	1.9	17.3	1.6	136.1
08/20/98	261	200	1.1	17.1	2.9	NM
09/17/98	283	144	1.7	16.7	2.7	142.9
10/22/98	261	20	0.5	17.7	1.9	149.7
11/23/98	157	7.5	0	20	0	149.7
12/11/98	314	71	0	0	0	149.7
01/21/99	157	55	0	19.5	0	149.7
02/23/99	333	65	0.1	17.7	1.6	136.1
03/23/99	333	24	0.6	17.9	1.1	163.3
03/23/99	157	40	NM	NM	NM	NM
4/28/99 9:00 AM	222	40	0.6	17.8	0.9	190.5
4/28/99 11:08 AM	NM	NM	NM	NM	NM	NM
4/28/99 11:38 AM	351	NM	NM	NM	NM	149.7
04/30/99	NM	NM	NM	NM	NM	108.9
05/27/99	333	NM[a]	9	17.7	1.5	136.1
07/01/99	249	35	0.8	18.2	1.8	176.9
07/28/99	351	28	0	18.3	23.9	149.7
08/26/99	423	35	1.5	18.2	1.8	190.5
10/18/99	255	7	0.5	16.7	1.4	115.7
12/09/99	249	14.5	1.1	17.0	1.8	176.9
01/19/00	333	1.5	0.2	18.3	0.9	136.1
02/17/00	662	28	NM[b]	NM[b]	NM[b]	95.3
03/22/00	351	25	0.0	19.3	0.0	95.3
04/24/00	639	2	0.1	18.5	0.9	108.9
05/17/00	629	4	0.0	20.1	0.4	122.5
06/21/00	619	3	0.3	17.4	1.1	108.9
07/12/00	351	13.4	0.2	17.6	0.8	81.7
08/23/00	458	6	0.0	18.1	0	81.7

* The Hnu PI-101 photoionization detector with an 11.7 eV lamp measured the influent concentration to be 35 ppmv, and the Foxboro flame ionization detector measured the influent concentration to be 550 ppmv.
cfm Cubic feet per minute.
PID Photoionization detector; concentration of total VOCs detected with the photoionization detector.
ppmv Parts per million by volume.
CH_4 Methane.
O_2 Oxygen.
CO_2 Carbon dioxide.
% Percent.
in.w.c. Inches water column.
NM Not measured.
[a] PID not operating correctly; measurement collected is invalid.
[b] Multi-gas meter (GA-90) not operating correctly; methane, oxygen, and carbon dioxide readings were not collect

Table A-18
Effluent Historical Monitoring Data
Collected by ARCADIS Geraghty & Miller, Inc.
Swope Oil and Chemical Company Site, Pennsauken, New Jersey

Date	PID (ppmv)	CEM (ppmv)
02/18/97	NM	NR
02/21/97	NM	NR
09/30/97	1.0	NR
10/01/97	1.4	NR
10/02/97	13.0	NR
10/03/97	1.6	NR
10/08/97	8.4	NR
10/28/97	32.0/0.2	NR
11/26/97	0.02	NR
12/05/97	16.0-32.0	8.0-14.0
12/12/97	7.0	2.5
12/19/97	0.6	NR
12/24/97	0.2	1.2
12/31/97	0.8	0.6
01/07/98	0.4	NR
01/26/98	2.5	1.8
02/18/98	0.3	3.8
03/10/98	0.4	1.2
04/16/98	0.1	0.7-1.6
05/29/98	0.8	1.2
06/19/98	0.3	9.6
07/21/98	0.2	2.5
08/20/98	1.9	8.4-11.1
09/17/98	0.1	1.8-2.9
10/22/98	1.5	0.9
11/23/98	0.5	0.5
12/11/98	0.0	1.5
01/21/99	0.0	6.4
02/23/99	1.0	2.0
03/23/99	NM	5.9
4/28/99 9:00 AM	1.0	4.6
4/28/99 11:08 AM	NM	NM
4/28/99 11:38 AM	0.0	-1.7
05/27/99	NM[a]	1.1
07/01/99	0	1.6
07/28/99	1	1.8
08/26/99	1	6.5
10/18/99	1.5	9.0
12/09/99	0.0	1.5
01/19/00	2.0	-0.004
02/17/00	0.0	2.5
03/22/00	2.5	4.2
04/24/00	0.0	4.7
05/17/00	2.0	1.0
06/21/00	0.8-1.3	1.6-2.1
07/12/00	1.5	2.1
08/23/00	0.5	1.3

PID Photoionization detector; concentration of total VOCs detected with the photoionization detector.
CEM Continuous emissions monitor.
ppmv Parts per million by volume.
NM Not measured.
NR Not recorded.
[a] PID not operating correctly; measurement collected is invalid.

Table A-19
SVE System Influent Air Sample Analytical Results
Collected by ARCADIS Geraghty & Miller, Inc.
Swope Oil and Chemical Company Site, Pennsauken, New Jersey

Compound	02/18/97	02/21/97	02/21/97 (Duplicate)	09/30/97	10/01/97	10/02/97	10/03/97	10/08/97	10/28/97	11/26/97	12/05/97
Freon 12	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0042	ND
Freon 114	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	8.0	6.1	6.4	4.6	3.8 J	3.3	3.6	3.5	1.1	ND	1.6
Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	1.6	ND	ND	ND	1.4	ND	ND	ND
Freon 11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	2.8	2.9	2.9	5.6	4.4 J	3.9	3.6	3.5	1.3	ND	ND
Freon 113	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	4.2	3.4	3.6	5.4	4.2 J	4.4	5.4	7.6	3.7	0.004	4.7
1,1-Dichloroethane	3.8	3.7	3.8	4.9	4.1 J	5.0	5.0	4.4	2.6	0.0011	2.3
cis-1,2-Dichloroethene	81.0	59.0	62.0	67.0	66.0 J	80.0	88.0	91.0	52.0	ND	52.0
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	46.0	56.0	60.0	97.0	81.0 J	130.0	110.0	96.0	50.0	0.00089	23.0
Carbon Tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	0.6 J	ND	ND	ND	ND	0.0016	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	1.7	1.1	ND	1.1
Trichloroethene	10.0	10.0	10.0	17.0	14.0 J	16.0	16.0	20.0	10.0	0.00099	8.6
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	200.0	170.0	180.0	140.0	160.0 J	210.0	180.0	190.0	120.0	0.043	110.0
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	25.0	23.0	25.0	19.0	17.0 J	28.0	28.0	26.0	17.0	0.0019	14.0
Ethylene Dibromide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Benzene	23.0	25.0	29.0	31.0	35.0 J	55.0	47.0	39.0	29.0	0.0031	21.0
m,p-Xylene	74.0	91.0	110.0	140.0	140.0 J	200.0	150.0	160.0	100.0	0.011	88.0
o-Xylene	25.0	27.0	34.0	34.0	26.0 J	42.0	36.0	34.0	23.0	0.0034	18.0
Styrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	8.0	8.2	12.0	8.4	4.9 J	12.0	11.0	8.0	5.3	ND	4.0
1,2,4-Trimethylbenzene	15.0	14.0	22.0	14.0	9.3 J	20.0	18.0	14.0	9.2	0.002	6.8
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorotoluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table A-19
SVE System Influent Air Sample Analytical Results
Collected by ARCADIS Geraghty & Miller, Inc.
Swope Oil and Chemical Company Site, Pennsauken, New Jersey

Compound	02/18/97	02/21/97	02/21/97 (Duplicate)	09/30/97	10/01/97	10/02/97	10/03/97	10/08/97	10/28/97	11/26/97	12/05/97
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Butadene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Propylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	24.0	14.0	13.0	11.0	20.0 J	14.0	16.0	16.0	41.0	0.03	14.0
Carbon Disulfide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Propanol	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0081	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Acetate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone (Methyl Ethyl Ketone)	5.8	ND	4.1	ND	6.5 J	4.6	5.6	4.8	14	0.016	ND
Hexane	ND	ND	ND	3.2	3.4 J	4.5	3.6	ND	ND	0.007	ND
Tetrahydrofuran	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cyclohexane	12.0	ND	ND	ND	ND	ND	ND	ND	ND	0.039	ND
1,4-Dioxane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	ND	8.9	9.2	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	ND	ND	ND	ND	ND	ND	ND	3.8	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Ethyltoluene	17.0	14.0	21.0	22.0	18.0 J	32.0	31.0	23.0	16.0	ND	9.6
Ethanol	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.100	ND
Methyl tert-butyl Ether	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0081	ND
Heptane	23.0	15.0	16.0	12.0	17.0 J	21.0	19.0	14.0	9.9	ND	9.1
Total VOCs	607.6	551.2	624.0	637.7	635.2	885.7	776.8	761.7	506.2	0.28	387.8

Concentrations expressed in parts per million by volume (ppmv).
ND Compound not detected.
E Exceeds instrument calibration range, not within linear range.
J Estimated results.

Table A-19
SVE System Influent Air Sample Analytical Results
Collected by ARCADIS Geraghty & Miller, Inc.
Swope Oil and Chemical Company Site, Pennsauken, New Jersey

Compound	12/12/97	12/19/97	01/14/98	02/18/98	03/10/98	05/29/98	06/19/98	08/20/98	09/17/98	10/22/98	11/23/98
Freon 12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 114	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	1.2 J	0.84	ND	ND	ND	ND	ND	ND	ND	0.2 J	ND
Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	1.2 J	2.8	ND	ND	0.57	1.0	0.74	0.45 J	ND	0.22 J	ND
Freon 113	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	4.1 J	3.8	2.7	3.0	2.8	1.8	1.3	ND	1.8 J	0.65	1.2 J
1,1-Dichloroethane	2.1 J	2.1	1.4	1.6	1.3	0.62	0.97	0.97	0.97 J	0.48	0.59 J
cis-1,2-Dichloroethene	50.0 J	48	38.0	35.0	22	13	15	18	20	11	17
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	24.0 J	29	20.0	22.0	20	14	25	31	24	20	16
Carbon Tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	0.39 J	ND	ND	ND	0.62	0.18 J	0.33 J	0.34 J	ND	ND	ND
1,2-Dichloroethane	1.2 J	1.1	1.0	ND	0.57	0.57	0.46 J	1.2	ND	0.74	1.3 J
Trichloroethene	11.0 J	8.8	12.0	12.0	7.9	7.8	6.5	9.2	12	8.9	14
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	150.0 J	140	130.0	130.0	100	50	98	100	110	37	90
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	16.0 J	17	21.0	22.0	16	5.7	23	20	24	9.2	24
Ethylene Dibromide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Benzene	26.0 J	28	29.0	33.0	21	10	33	28	28	6.6	31
m,p-Xylene	100.0 J	110	94.0	130.0	83	56	160	160	160	54	180
o-Xylene	21.0 J	22	22.0	30.0	18	11	39	35	36	9.3	36
Styrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.6 J
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	3.9 J	4.4	5.3	8.1	4.4	1.7	12	8.2	8.4	1	4.8
1,2,4-Trimethylbenzene	7.2 J	8.7	9.7	16.0	7.5	3.3	22	13	17	0.94	9.7
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorotoluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table A-19
SVE System Influent Air Sample Analytical Results
Collected by ARCADIS Geraghty & Miller, Inc.
Swope Oil and Chemical Company Site, Pennsauken, New Jersey

Compound	12/12/97	12/19/97	01/14/98	02/18/98	03/10/98	05/29/98	06/19/98	08/20/98	09/17/98	10/22/98	11/23/98
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Butadene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Propylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	ND	ND	18.0	25.0	8.1	14	9.1	20	20	17	42
Carbon Disulfide	ND	ND	ND	ND	ND	ND	0.049 J	ND	ND	ND	ND
2-Propanol	ND	ND	ND	ND	ND	1.1 J	0.58 J	1.5 J	ND	0.51 J	3.4 J
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Acetate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone (Methyl Ethyl Ketone)	5.7 J	5	6.4	7.5	3.5	2.8	3.4	5.3	5.1 J	3.9	8.3
Hexane	ND	ND	ND	3.9	ND	0.28 J	0.36 J	ND	ND	ND	ND
Tetrahydrofuran	ND	ND	ND	ND	ND	ND	0.11 J	ND	ND	ND	ND
Cyclohexane	ND	ND	ND	9.9	ND	ND	ND	ND	2.9 J	ND	ND
1,4-Dioxane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Ethyltoluene	9.7 J	12	14.0	20.0	10	3.7	28	18	19	1.3	14
Ethanol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl Ether	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptane	9.9 J	9.8	10.0	11.0	9.3	3.5	5.6	4.9	6	1.9	5.6
Total VOCs	444.6	453.3	434.5	520.0	336.6	202.1	484.5	476.6	495.2	184.8	500.5

Concentrations expressed in parts per million by volume (ppmv).

ND Compound not detected.
E Exceeds instrument calibration range, not within linear range.
J Estimated results.

Table A-19
SVE System Influent Air Sample Analytical Results
Collected by ARCADIS Geraghty & Miller, Inc.
Swope Oil and Chemical Company Site, Pennsauken, New Jersey

Compound	12/11/98	01/21/99	02/23/99	03/23/99	04/28/99	05/27/99	07/21/98	07/01/99	07/28/99	08/26/99	10/18/99
Freon 12	ND	ND	ND	ND	0.59 J	ND	ND	ND	ND	ND	ND
Freon 114	ND	ND	ND	ND	0.6 J	ND	ND	ND	ND	ND	ND
Chloromethane	ND	ND	ND	ND	0.9 J	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND	0.77 J	ND	ND	ND	ND	ND	ND
Bromomethane	ND	ND	ND	ND	0.54 J	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	0.52 J	ND	ND	ND	ND	ND	ND
Freon 11	ND	ND	ND	ND	0.59 J	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	0.11 J	ND	0.67 J	ND	0.83	ND	ND	ND	0.28
Freon 113	ND	ND	ND	ND	0.55 J	ND	ND	ND	ND	ND	ND
Methylene Chloride	1.3	0.57	0.45	0.83 J	1.2 J	0.54 J	1.5	0.55	0.52	0.36	1.20
1,1-Dichloroethane	0.48 J	0.26 J	0.25 J	0.33 J	1 J	0.34 J	0.79	0.26	0.26	0.20	0.54
cis-1,2-Dichloroethene	14	5.5	8.1	9.4	10	9.1	18	7.60	8.20	6.20	21.00
Chloroform	ND	ND	ND	ND	0.6 J	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	11	4.7	4.8	6	7.6	5.8	30	6.00	7.50	7.50	13.00
Carbon Tetrachloride	ND	ND	ND	ND	0.55 J	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	0.77 J	ND	0.34 J	ND	ND	ND	ND
1,2-Dichloroethane	1.1	ND	0.44	0.44 J	0.9 J	0.51 J	0.78	0.56	0.53	0.32	0.69
Trichloroethene	12	4.9	5.5	7.5	4.6	7.7	11	6.80	7.20	7.10	11.00
1,2-Dichloropropane	ND	ND	ND	ND	0.63 J	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	0.58 J	ND	ND	ND	ND	ND	ND
Toluene	66	24	30	34	76	44	86	39.00	49.00	27.00	38.00
trans-1,3-Dichloropropene	ND	ND	ND	ND	0.58 J	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	0.75 J	ND	ND	ND	ND	ND	ND
Tetrachloroethene	14	7.8	8.8	9.5	23	12	20	11.00	15.00	9.50	13.00
Ethylene Dibromide	ND	ND	ND	ND	0.56 J	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	0.65 J	ND	ND	ND	ND	ND	ND
Ethyl Benzene	19	4.9	6.1	8.7	22	14	26	11.00	13.00	9.40	9.60
m,p-Xylene	100	29	27	50	88	68	150	53.00	72.00	55.00	82.00
o-Xylene	20	6.3	6.6	10	22	16	32	12.00	16.00	13.00	21.00
Styrene	ND	ND	ND	ND	1.3 J	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	0.61 J	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	3.1	1.2	1.1	1.7	7.7	4.4	6.3	2.80	3.70	3.20	4.70
1,2,4-Trimethylbenzene	5.4	2	1.9	3.2	14	8.2	12	5.00	6.80	5.70	7.00
1,3-Dichlorobenzene	ND	ND	ND	ND	0.54 J	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND	0.54 J	ND	ND	ND	ND	ND	ND
Chlorotoluene	ND	ND	ND	ND	0.88 J	ND	ND	ND	ND	ND	ND

Table A-19
SVE System Influent Air Sample Analytical Results
Collected by ARCADIS Geraghty & Miller, Inc.
Swope Oil and Chemical Company Site, Pennsauken, New Jersey

Compound	12/11/98	01/21/99	02/23/99	03/23/99	04/28/99	05/27/99	07/21/98	07/01/99	07/28/99	08/26/99	10/18/99
1,2-Dichlorobenzene	ND	ND	ND	ND	0.62 J	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND	0.66 J	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	ND	ND	ND	ND	0.45 J	ND	ND	ND	ND	ND	ND
1,3-Butadene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Propylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	26	8.5	9.8	12	2.2 J	9.4	17	9.70	10.00	5.70	7.70
Carbon Disulfide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Propanol	ND	ND	0.49 J	ND	ND	ND	0.72 J	ND	ND	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Acetate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone (Methyl Ethyl Ketone)	ND	1.9 J	1.9	2.5 J	2.1 J	2.5	5.8	1.90	2.30	1.60	1.30
Hexane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrahydrofuran	ND	ND	ND	ND	ND	ND	0.62 J	ND	ND	ND	ND
Cyclohexane	ND	ND	ND	ND	ND	ND	1.3 J	ND	ND	ND	ND
1,4-Dioxane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	ND	ND	4.5	5	ND	ND	ND	ND	ND	ND	3.00
2-Hexanone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Ethyltoluene	7.8	3.3	3.8	5	22	15	14	10.00	17.00	9.00	14.00
Ethanol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl Ether	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptane	ND	1.9 J	1.8	2.4 J	5.6	2.7	4.3	2.00	2.40	1.90	2.60
Total VOCs	301.2	106.7	123.4	168.5	326.9	220.2	439.3	179.17	231.41	162.68	251.61

Concentrations expressed in parts per million by volume (ppmv).
ND Compound not detected.
E Exceeds instrument calibration range, not within linear range.
J Estimated results.

Table A-19
SVE System Influent Air Sample Analytical Results
Collected by ARCADIS Geraghty & Miller, Inc.
Swope Oil and Chemical Company Site, Pennsauken, New Jersey

Compound	12/09/99	01/19/00	02/17/00	03/22/00	04/25/00	05/17/00	06/06/00	06/21/00	07/12/00	8/23/2000
Freon 12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 114	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Freon 113	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	0.67	0.26	0.17	0.32	0.16	0.13	0.29	0.22	ND	0.17
1,1-Dichloroethane	0.29	0.16	ND	0.26	0.13	0.1	ND	0.15	ND	0.12
cis-1,2-Dichloroethene	9.80	4.10	3.30	5.80	3.10	2.7	3.5	3.6	2.5	2.4
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	8.20	3.70	3.40	5.70	2.60	2.3	4.7	3.2	2.2	2.3
Carbon Tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.66	0.30	ND	0.32	0.20	0.22	ND	0.27	0.25	0.24
Trichloroethene	8.70	3.90	2.00	3.90	2.30	2.3	3.6	2.9	2.3	2.1
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	33.00	16.00	43.00	38.00	20.00	9.1	33	24	22	14
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	12.00	4.60	12.00	16.00	7.50	5.7	17	13	10	10
Ethylene Dibromide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Benzene	8.90	4.30	13.00	9.90	5.10	0.066	6.1	5.6	4.7	3.6
m,p-Xylene	56.00	22.00	63.00	50.00	31.00	0.05	41	40	33	26
o-Xylene	12.00	5.20	16.00	14.00	7.80	ND	11	10	8.9	7.3
Styrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	2.80	0.84	6.30	6.20	3.10	ND	4.6	3.8	3.7	3.3
1,2,4-Trimethylbenzene	4.50	1.50	11.00	12.00	5.80	ND	7.2	7	6.8	6.1
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorotoluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table A-19
SVE System Influent Air Sample Analytical Results
Collected by ARCADIS Geraghty & Miller, Inc.
Swope Oil and Chemical Company Site, Pennsauken, New Jersey

Compound	12/09/99	01/19/00	02/17/00	03/22/00	04/25/00	05/17/00	06/06/00	06/21/00	07/12/00	8/23/2000
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Butadene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Propylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	2.50	0.56	ND	0.81	0.53	0.66	ND	1	1	0.53
Carbon Disulfide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Propanol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Acetate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone (Methyl Ethyl Ketone)	1.00	ND	ND	ND	ND	0.26	ND	0.37	ND	ND
Hexane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrahydrofuran	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cyclohexane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Ethyltoluene	8.00	2.40	17.00	17.00	10.00	ND	15	10	8.6	7.2
Ethanol	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.78
Methyl tert-butyl Ether	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptane	1.80	0.78	2.20	2.30	1.20	1.6	ND	1.4	ND	ND
Total VOCs	170.82	70.60	192.37	180.21	100.52	25.19	146.99	126.51	105.95	86.14

Concentrations expressed in parts per million by volume (ppmv).
ND Compound not detected.
E Exceeds instrument calibration range, not within linear range.
J Estimated results.

Table A-20
SVE System Effluent Air Sample Analytical Results
Collected by ARCADIS Geraghty & Miller, Inc.
Swope Oil and Chemical Company Site, Pennsauken, New Jersey

Compound	02/18/97	02/21/97	09/30/97	10/01/97	10/02/97	10/03/97	10/08/97	10/28/97	11/26/97	12/05/97	12/12/97
Freon 12	ND	ND	ND	ND	ND	ND	ND	ND J	ND	ND	ND
Freon 114	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	0.0023	0.003	ND	ND	ND	ND	ND	ND J	ND	0.0022	0.0018
Vinyl Chloride	0.6	ND	0.59	0.32	2.0	3.2	1.8	0.86 J	0.85	0.28	0.51
Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND J	ND	ND	ND
Chloroethane	0.019	ND	ND	ND	ND	0.73	0.44	0.29 J	0.10	0.034	0.086
Freon 11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	0.021	0.0019	ND	ND	2.9	0.6	1.5	1.0 J	0.19	0.066	0.049
Freon 113	0.0077	ND	ND	ND	ND	ND	0.038	ND J	ND	0.0038	0.0028
Methylene Chloride	0.048	0.0026	ND	0.57	2.8	1.7	3.5	2.8 J	1.0	0.32	0.45
1,1-Dichloroethane	0.017	0.0018	ND	ND	3.8	0.12	0.31	2.2 J	0.074	0.049	0.021
cis-1,2-Dichloroethene	0.14	0.033	ND	ND	68.0	1.7	1.6	53.0 J	0.72	0.61	0.2
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	0.18	0.019	ND	ND	91.0	1.6	1.4	47.0 J	0.30	0.29	0.084
Carbon Tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND	ND	ND	0.48 J	ND	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND	0.5	ND	ND	1.1 J	ND	0.0064	ND
Trichloroethene	0.0032	0.0029	ND	ND	14.0	0.27	0.1	12.0 J	0.033	0.03	0.012
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Didichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	0.0018	0.025	0.19	ND	46.0	0.97	0.26	52.0 J	0.057	0.22	0.11
trans-1,3-Dichloroprpene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachlorethene	ND	0.0022	ND	ND	5.8	0.16	0.037	5.8 J	ND	0.03	0.018
Ethlyene Dibromide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Benzene	ND	0.0023	0.077	ND	ND	0.055	ND	0.53 J	ND	0.038	0.026
m,p-Xylene	ND	0.0077	0.35	ND	ND	0.21	0.065	ND J	ND	0.15	0.1
o-Xylene	ND	0.0025	0.11	ND	ND	0.045	ND	ND J	ND	0.03	0.021
Slyrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	0.022	ND	ND J	ND	0.0069	0.0038
1,2,4-Trimethylbenzene	0.0016	0.0035	ND	ND	ND	0.041	ND	ND J	ND	0.011	0.0092
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorotoulene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table A-20
SVE System Effluent Air Sample Analytical Results
Collected by ARCADIS Geraghty & Miller, Inc.
Swope Oil and Chemical Company Site, Pennsauken, New Jersey

Compound	02/18/97	02/21/97	09/30/97	10/01/97	10/02/97	10/03/97	10/08/97	10/28/97	11/26/97	12/05/97	12/12/97
1,2-Dichlorbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Propylene	0.28	ND	0.98	ND	ND	1.0	1.5	ND J	0.43	0.2	0.28
1,3-Butalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	0.012	0.013	0.41	1.9	12.0	0.3	0.35	33.0 J	0.21	0.059	0.044
Carbon Disulfide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Propanol	ND	ND	ND	2.2	ND	ND	ND	ND J	ND	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Acetate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone (Methyl Ethyl Ketone)	ND	ND	8.5	32	14.0	1.9	3.5	10.0 J	3.4	0.26	0.36
Hexane	ND	ND	ND	ND	3.8	0.071	ND	1.6 J	ND	ND	ND
Tetrahydrofuran	ND	ND	21	87	29.0	6.1 E	7.4	ND J	6.7	0.53	0.67
Cyclohexane	0.033	ND	ND	ND	7.8	ND	ND	ND J	ND	ND	ND
1,4-Dioxane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	ND	ND	ND	ND	ND	ND	ND	ND J	ND	ND	0.026
2-Hexanone	ND	ND	ND	ND	ND	ND	ND	ND J	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Ethyltoluene	ND	ND	ND	ND	ND	ND	ND	ND J	ND	0.013	0.0081
Ethanol	ND	ND	ND	ND	ND	ND	0.14	ND J	ND	ND	0.028
Methyl tert-butyl Ether	ND	ND	ND	ND	ND	ND	ND	ND J	ND	ND	ND
Heptane	0.01	ND	ND	ND	15.0	0.3	ND	12.0 J	ND	0.028	0.0089
Total VOCs	1.38	0.12	32.21	123.99	318.40	21.09	23.94	235.66	14.06	3.27	3.13

Concentrations expressed in parts per million by volume (ppmv).
ND Compound not detected.
E Exceeds instrument calibration range, not within linear range.
J Estimated results.

Table A-20
SVE System Effluent Air Sample Analytical Results
Collected by ARCADIS Geraghty & Miller, Inc.
Swope Oil and Chemical Company Site, Pennsauken, New Jersey

Compound	12/19/97	01/14/98	02/18/98	03/10/98	04/16/98	05/29/98	06/19/98	07/21/98	08/20/98	09/17/98	10/22/98
Freon 12	ND	ND	ND	ND	ND	0.00069 J	ND J	0.0013 J	ND	ND	0.00073 J
Freon 114	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ND	0.014	ND	ND	ND	0.0015	ND J	ND	ND	ND	0.001 J
Vinyl Chloride	0.24	0.047	0.21	0.27	0.046	0.019	ND J	0.008 J	0.011 J	0.018	0.02
Bromomethane	ND	ND	ND	ND	ND	ND	ND J	ND	ND	ND	ND
Chloroethane	0.028	ND	0.034	ND	0.013	0.0048	ND J	0.0031 J	ND	0.0063	0.0046
Freon 11	ND	ND	ND	ND	ND	0.00044 J	ND J	0.0071 J	ND	ND	ND
1,1-Dichloroethene	0.025	0.045	0.056	1.2	0.045	0.035	0.4 J	0.015 J	0.042	0.011	0.014
Freon 113	ND	ND	ND	0.16	ND	0.0018	ND J	0.001 J	ND	ND	ND
Methylene Chloride	0.13	0.071	1.4	2.7	0.19	0.26	0.64 J	0.097 J	0.11	0.068	0.07
1,1-Dichloroethane	ND	0.046	0.032	2.1	0.054	0.021	0.48 J	0.02 J	0.14	0.011	0.023 J
cis-1,2-Dichloroethene	0.1	0.46	0.23	26	1.4	0.19	12 J	0.24 J	2.2	0.13	0.013
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	0.048	0.33	0.088	9.3	1.4	0.15	15 J	0.25 J	4.7	0.13	0.067
Carbon Tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	0.014	0.0019	0.13 J	0.0044 J	0.0088 J	0.0012 J	0.073 J
1,2-Dichloroethane	ND	ND	ND	0.2	0.045	0.0045	0.4 J	0.0061 J	0.066	0.0035 J	ND
Trichloroethene	ND	0.022	ND	ND	0.72	0.08	5.1 J	0.11 J	0.43	0.036	0.022 J
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Didichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	0.029	0.014	0.018	ND	0.4	0.04	3.7 J	0.39 J	0.25	0.05	0.007
trans-1,3-Dichloroprpene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachlorethene	0.019	ND	ND	ND	0.11	0.0078	1.4 J	0.11 J	0.089	0.015	0.0013 J
Ethlyene Dibromide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Benzene	ND	ND	ND	ND	0.014	0.0007 J	0.064 J	0.016 J	0.018	0.0023 J	0.001 J
m,p-Xylene	ND	0.0079	ND	ND	0.05	0.0029	0.041 J	0.017 J	0.034	0.0049 J	0.0056
o-Xylene	ND	ND	ND	ND	0.011	0.0007 J	0.0063 J	0.0031 J	0.0074 J	ND	0.0014 J
Slyrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	0.00031 J	0.0015 J	0.00082 J	ND	ND	0.00077 J
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	0.00072 J	0.0094 J	0.0031 J	0.0083 J	0.001 J	0.0015 J
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	0.026	ND	ND	ND	ND	ND J	ND	ND	ND	ND
Chlorotoulene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table A-20
SVE System Effluent Air Sample Analytical Results
Collected by ARCADIS Geraghty & Miller, Inc.
Swope Oil and Chemical Company Site, Pennsauken, New Jersey

Compound	12/19/97	01/14/98	02/18/98	03/10/98	04/16/98	05/29/98	06/19/98	07/21/98	08/20/98	09/17/98	10/22/98
1,2-Dichlorbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Propylene	0.24	0.22	0.15	ND	0.13	0.03	ND J	0.014 J	ND	ND	0.015
1,3-Butalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	0.11	0.06	0.1	2.2	0.42	0.064	9.6 J	0.073 J	0.65	0.023	0.0085
Carbon Disulfide	ND	ND	ND	ND	ND	0.0012 J	0.019 J	ND	ND	ND	ND
2-Propanol	ND	ND	ND	ND	ND	0.0025 J	0.090 J	0.012 J	ND	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	0.032 J	ND	ND	ND	ND
Vinyl Acetate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone (Methyl Ethyl Ketone)	2.1	1.0	1.7	1.6	0.19	0.11	0.88 J	0.037 J	0.017 J	0.0071 J	0.0033 J
Hexane	ND	ND	ND	ND	0.032	0.0043	0.23 J	0.0042 J	0.048 J	ND	ND
Tetrahydrofuran	3.8	1.6	3.1	2.4	0.24	0.15	0.11 J	0.023 J	ND	ND	0.0044 J
Cyclohexane	ND	ND	ND	0.62	ND	ND	ND J	0.018 J	0.28	0.017	ND
1,4-Dioxane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	ND	ND	ND	ND	ND	ND	ND J	0.023 J	ND	ND	ND
2-Hexanone	ND	ND	ND	ND	ND	ND	ND J	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Ethyltoluene	ND	ND	ND	ND	ND	0.0004 J	0.0085 J	ND	ND	ND	ND
Ethanol	ND	ND	ND	ND	ND	ND	ND J	ND	ND	0.0059 J	0.005 J
Methyl tert-butyl Ether	ND	ND	ND	ND	ND	0.0011 J	ND J	ND	ND	ND	0.0033 J
Heptane	ND	ND	ND	ND	0.31	0.022	3.2 J	0.058 J	0.21	0.019	ND
Total VOCs	6.87	3.96	7.12	48.75	5.83	1.21	53.54	1.57	9.32	0.56	0.37

Concentrations expressed in parts per million by volume (ppmv).
ND Compound not detected.
E Exceeds instrument calibration range, not within linear range.
J Estimated results.

Table A-20
SVE System Effluent Air Sample Analytical Results
Collected by ARCADIS Geraghty & Miller, Inc.
Swope Oil and Chemical Company Site, Pennsauken, New Jersey

Compound	11/23/98	12/11/98	01/21/99	02/23/99	03/23/99	04/28/99	05/27/99	07/01/99	07/28/99	08/26/99	10/18/99
Freon 12	ND	ND	ND	0.00078 J	0.00066 J	0.00064 J	ND	ND	ND	ND	ND
Freon 114	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ND	0.0037 J	ND	0.002 J	ND	0.0012 J	0.0077	0.0015	ND	ND	ND
Vinyl Chloride	0.032 J	0.11	ND	0.008	ND	0.0063	0.015	0.012	0.043	ND	0.078
Bromomethane	0.039 JB	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	0.0036	ND	ND	ND	ND	ND	0.0028	ND	ND	ND
Freon 11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	0.062	0.024	0.0021	0.0013 J	ND	ND	0.0024 J	0.019	0.03	ND	0.12
Freon 113	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	0.3	0.21	0.02	0.0032	0.0026	0.0021 J	0.014	0.14	0.23	0.2	0.45
1,1-Dichloroethane	0.16	0.027	ND	0.0015 J	ND	0.00069 J	0.0037	0.02	0.013	0.11	0.19
cis-1,2-Dichloroethene	3.5	0.66	0.0059	0.043	ND	0.014	0.031	0.22	0.12	3.3	4.9
Chloroform	ND	ND	0.0012	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	1.8	0.6	0.017	0.029	ND	0.0094	0.025	0.1	0.068	3.9	3.7
Carbon Tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	0.002	0.00081 J	ND	0.00073 J	ND	0.0031	ND	ND	ND
1,2-Dichloroethane	0.1	0.028	ND	0.0024 J	ND	ND	0.00077 J	ND	ND	0.17	0.14
Trichloroethene	0.18	0.23	0.019	0.023	0.00066 J	0.00078	0.0073	0.062	0.12	3.7	2.2
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Didichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	0.013 J	0.089	0.1	0.092	0.006	0.1	0.029	0.11	1.3	14	4.3
trans-1,3-Dichloroprpene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachlorethene	ND	0.028	0.035	0.026	0.001 J	0.034	0.0068	0.044	0.35	5	1.6
Ethlyene Dibromide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	0.076	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Benzene	ND	0.0088	0.02	0.02	0.0011 J	0.025	0.0036	0.0074	0.13	4.8	0.54
m,p-Xylene	ND	0.046	0.13	0.1	0.0048	0.098	0.017	0.012	0.29	33	0.98
o-Xylene	ND	0.0089	0.026	0.019	0.001 J	0.022	0.0035	ND	0.032	8.2	0.091
Slyrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	ND	0.0056 J	0.0034	0.0039	ND	0.0036	ND	ND	ND	1.6	ND
1,2,4-Trimethylbenzene	ND	0.0039 J	0.006	0.0077	ND	0.0059	0.0012 J	ND	ND	0.85	ND
1,3-Dichlorobenzene	ND	ND	0.0015	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	0.0067	ND	ND	0.0021 J	ND	ND	ND	ND	ND
Chlorotoulene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table A-20
SVE System Effluent Air Sample Analytical Results
Collected by ARCADIS Geraghty & Miller, Inc.
Swope Oil and Chemical Company Site, Pennsauken, New Jersey

Compound	11/23/98	12/11/98	01/21/99	02/23/99	03/23/99	04/28/99	05/27/99	07/01/99	07/28/99	08/26/99	10/18/99
1,2-Dichlorbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Propylene	ND	ND	ND	ND	ND	ND	0.08	ND	ND	ND	0.18
1,3-Butalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	4.8	0.3	0.0098	0.04	0.0085	0.0045 J	0.02	0.06	0.068	3.1	0.78
Carbon Disulfide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Propanol	0.055 J	ND	0.013	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Acetate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone (Methyl Ethyl Ketone)	ND	ND	0.0038	0.015	0.0042 J	0.0032 J	0.0063 J	0.0064	0.037	0.86	ND
Hexane	ND	0.009 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrahydrofuran	0.053	ND	ND	0.017	0.005	ND	0.0058	ND	0.028	ND	0.48
Cyclohexane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	0.067 JB	ND	ND	ND	ND	0.0084	0.032	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	ND	ND	ND	ND	ND	ND	0.0027 J	ND	ND	ND	ND
2-Hexanone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Ethyltoluene	ND	ND	0.01	0.012	ND	0.013	ND	ND	ND	5.8	ND
Ethanol	0.083 J	0.0081 J	0.024	0.0027 J	ND	0.0032 J	0.0049 J	ND	ND	ND	ND
Methyl tert-butyl Ether	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptane	ND	ND	0.0062	0.0092	ND	0.0068	0.0019 J	0.013	0.039	0.98	0.62
Total VOCs	11.24	2.40	0.54	0.48	0.04	0.37	0.32	0.83	2.90	89.57	21.35

Concentrations expressed in parts per million by volume (ppmv).
ND Compound not detected.
E Exceeds instrument calibration range, not within linear range.
J Estimated results.

Table A-20
SVE System Effluent Air Sample Analytical Results
Collected by ARCADIS Geraghty & Miller, Inc.
Swope Oil and Chemical Company Site, Pennsauken, New Jersey

Compound	12/09/99	01/19/00	02/17/00	03/22/00	04/25/00	05/17/00	06/06/00	06/21/00	07/12/00	8/23/2000
Freon 12	ND	0.00092	ND	ND	ND	ND	ND	ND	ND	0.0011
Freon 114	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ND	0.0014	0.0021	0.0042	ND	ND	0.0011	ND	ND	0.0019
Vinyl Chloride	0.032	0.015	0.00069	0.048	ND	ND	ND	0.013	0.018	0.015
Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	0.001	ND	0.0048	ND	ND	ND	ND	ND	ND
Freon 11	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00071
1,1-Dichloroethene	0.066	ND	ND	0.0075	ND	ND	ND	0.0038	0.017	0.0039
Freon 113	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.023
Methylene Chloride	0.26	0.0086	0.00096	0.069	ND	0.18	ND	0.0057	0.059	0.002
1,1-Dichloroethane	0.079	ND	ND	0.0074	ND	0.12	ND	0.0062	0.013	0.064
cis-1,2-Dichloroethene	1	0.0017	0.003	0.1	1.1	2.7	0.00071	0.31	0.15	ND
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.1
1,1,1-Trichloroethane	0.12	ND	0.0022	0.059	0.94	2.2	0.00078	0.19	0.039	ND
Carbon Tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00084
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0065
1,2-Dichloroethane	0.0062	ND	ND	ND	0.079	0.2	ND	0.026	0.0037	0.071
Trichloroethene	0.031	0.002	0.00093	0.016	0.79	2.1	0.002	0.27	0.094	ND
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Didichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.025
Toluene	0.13	0.013	0.013	0.073	8.2	17	0.028	0.72	0.94	ND
trans-1,3-Dichloroprpene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.023
Tetrachlorethene	0.064	0.0045	0.0044	0.024	3.2	8.7	0.013	0.54	0.37	ND
Ethlyene Dibromide	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00082
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0034
Ethyl Benzene	0.057	0.0042	0.0032	0.0061	3.1	4	0.0048	0.16	0.025	0.0009
m,p-Xylene	0.44	0.023	0.016	0.017	12	24	0.027	1.1	0.086	ND
o-Xylene	0.1	0.0056	0.0042	0.0032	1.2	6.1	0.0071	0.26	0.02	ND
Slyrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0012
1,3,5-Trimethylbenzene	0.046	0.0016	0.0012	ND	ND	2.4	0.0013	0.068	0.01	ND
1,2,4-Trimethylbenzene	0.094	0.0028	0.001	ND	ND	4.1	0.0018	0.11	0.018	ND
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorotoulene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table A-20
SVE System Effluent Air Sample Analytical Results
Collected by ARCADIS Geraghty & Miller, Inc.
Swope Oil and Chemical Company Site, Pennsauken, New Jersey

Compound	12/09/99	01/19/00	02/17/00	03/22/00	04/25/00	05/17/00	06/06/00	06/21/00	07/12/00	8/23/2000
1,2-Dichlorbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Propylene	ND	ND	0.0071	ND	ND	ND	ND	ND	ND	ND
1,3-Butalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	0.084	0.0059	0.0044	0.02	ND	0.57	0.0027	0.05	0.043	0.012
Carbon Disulfide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Propanol	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.013
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Acetate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone (Methyl Ethyl Ketone)	ND	ND	0.011	ND	ND	0.31	0.0074	ND	ND	0.016
Hexane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrahydrofuran	ND	0.003	0.013	ND	ND	ND	0.0099	ND	ND	0.027
Cyclohexane	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0058
1,4-Dioxane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Ethyltoluene	0.12	0.0036	0.004	ND	ND	7.0	0.0049	0.190	0.022	ND
Ethanol	ND	ND	0.0015	ND	ND	ND	ND	ND	ND	0.0035
Methyl tert-butyl Ether	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptane	ND	ND	ND	ND	0.51	1.2	ND	0.091	0.022	0.0046
Total VOCs	2.73	0.10	0.09	0.46	31.12	82.88	0.11	4.11	1.95	0.43

Concentrations expressed in parts per million by volume (ppmv).
ND Compound not detected.
E Exceeds instrument calibration range, not within linear range.
J Estimated results.

APPENDIX B

NOVEMBER 2002
AIR SAMPLING LABORATORY ANALYTICAL REPORT

APPENDIX B

NOVEMBER 2002
AIR SAMPLING LABORATORY ANALYTICAL REPORT

eCVP

Electronic Comprehensive Validation Package

WO# 0212071

Air Toxics Ltd.

180 Blue Ravine Road Ste. B
Folsom, CA 95630
Phone: 916/985-1000
Fax: 916/985-1020
eMail: atl@airtoxics.com
www.airtoxics.com

AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

COMPREHENSIVE VALIDATION PACKAGE

Modified TO-14

INVENTORY SHEET

Work Order #: 0212071

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Comments:

Completed by:

Judy Lee	Judy Lee / Document Control	12/17/02
(Signature)	(Print Name & Title)	(Date)

AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

WORK ORDER #: 0212071

Work Order Summary

CLIENT:	Ms. Angie Gershman Mactec 14 Washington Rd., Building 1 Princeton Junction, NJ 08550	**BILL TO:**	A/P Department Mactec 1105 Sanctuary Parkway, Suite 300 Alpharetta, GA 30004
PHONE:	609-936-0700	**P.O. #**	
FAX:	609-936-1020	**PROJECT #**	22000-0-0028 SWOPE
DATE RECEIVED:	12/4/2002	**CONTACT:**	Betty Chu
DATE COMPLETED:	12/16/2002		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.
01A	INFLUENT	Modified TO-14	10.0 "Hg
02A	EFFLUENT	Modified TO-14	0.0 "Hg
03A	Lab Blank	Modified TO-14	NA
04A	LCS	Modified TO-14	NA

CERTIFIED BY: Linda J. Freeman

Laboratory Director

DATE: 12/17/02

Certfication numbers: AR DEQ, CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763, NJ NELAP - CA004
NY NELAP - 11291, UT NELAP - 9166389892
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/02, Expiration date: 06/30/03
Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

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180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified Method TO-14
Law Engineering and Environmental Services, Inc.
Workorder# 0212071

Two 6 Liter Silonite Canister samples were received on December 04, 2002. The laboratory performed analysis via modified EPA Method TO-14 using GC/MS in the full scan mode. The method involves concentrating up to 0.5 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis. See the data sheets for the reporting limits for each compound.

Method modifications taken to run these samples include:

Requirement	*TO-14*	*ATL Modifications*
Internal standard retention times.	Not specified.	Within 0.33 minutes of most recent daily CCV internal standards
Internal standard recoveries.	Not specified.	Within 40% of the daily CCV internal standard area for blanks and samples.
Initial calibration criteria.	Not specified.	RSD of 30% or less for standard compounds, 40% or less for non-standard and polar compounds

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

There were no analytical discrepancies.

Definition of Data Qualifying Flags

Seven qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction no performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

Table 1

Client Sample ID	Lab Sample ID	Date Collected	Date Received	Date Extracted	Sample Holding Time (Days)	Date Analyzed	Sample Extract Holding Time (Days)	Sample Condition
INFLUENT	0212071-01A	11/27/2002	12/ 4/2002	NA	14	12/11/2002	NA	Good
EFFLUENT	0212071-02A	11/27/2002	12/ 4/2002	NA	14	12/11/2002	NA	Good
Lab Blank	0212071-03A	NA	NA	NA	NA	12/11/2002	NA	Good
LCS	0212071-04A	NA	NA	NA	NA	12/11/2002	NA	Good

Sample Results and Raw Data

AIR TOXICS LTD.

SAMPLE NAME: INFLUENT

ID#: 0212071-01A

MODIFIED EPA METHOD TO-14 GC/MS FULL SCAN

File Name:	f121112	Date of Collection: 11/27/02
Dil. Factor:	100	Date of Analysis: 12/11/02

Compound	Rpt. Limit (ppbv)	Rpt. Limit (uG/m3)	Amount (ppbv)	Amount (uG/m3)
Freon 12	50	250	Not Detected	Not Detected
Freon 114	50	360	Not Detected	Not Detected
Chloromethane	50	100	Not Detected	Not Detected
Vinyl Chloride	50	130	100	260
Bromomethane	50	200	Not Detected	Not Detected
Chloroethane	50	130	Not Detected	Not Detected
Freon 11	50	280	Not Detected	Not Detected
1,1-Dichloroethene	50	200	52	210
Freon 113	50	390	Not Detected	Not Detected
Methylene Chloride	50	180	150	520
1,1-Dichloroethane	50	200	110	460
cis-1,2-Dichloroethene	50	200	2800	11000
Chloroform	50	250	Not Detected	Not Detected
1,1,1-Trichloroethane	50	280	1100	6000
Carbon Tetrachloride	50	320	Not Detected	Not Detected
Benzene	50	160	Not Detected	Not Detected
1,2-Dichloroethane	50	200	180	760
Trichloroethene	50	270	2200	12000
1,2-Dichloropropane	50	230	Not Detected	Not Detected
cis-1,3-Dichloropropene	50	230	Not Detected	Not Detected
Toluene	50	190	6800	26000
trans-1,3-Dichloropropene	50	230	Not Detected	Not Detected
1,1,2-Trichloroethane	50	280	Not Detected	Not Detected
Tetrachloroethene	50	340	5600	38000
1,2-Dibromoethane (EDB)	50	390	Not Detected	Not Detected
Chlorobenzene	50	230	Not Detected	Not Detected
Ethyl Benzene	50	220	1800	7900
m,p-Xylene	50	220	15000	64000
o-Xylene	50	220	4100	18000
Styrene	50	220	Not Detected	Not Detected
1,1,2,2-Tetrachloroethane	50	350	Not Detected	Not Detected
1,3,5-Trimethylbenzene	50	250	2400	12000
1,2,4-Trimethylbenzene	50	250	3400	17000
1,3-Dichlorobenzene	50	300	Not Detected	Not Detected
1,4-Dichlorobenzene	50	300	Not Detected	Not Detected
alpha-Chlorotoluene	50	260	Not Detected	Not Detected
1,2-Dichlorobenzene	50	300	Not Detected	Not Detected
1,2,4-Trichlorobenzene	200	1500	Not Detected	Not Detected
Hexachlorobutadiene	200	2200	Not Detected	Not Detected
Propylene	200	350	Not Detected	Not Detected
1,3-Butadiene	200	450	Not Detected	Not Detected
Acetone	200	480	Not Detected	Not Detected

AIR TOXICS LTD.

SAMPLE NAME: INFLUENT

ID#: 0212071-01A

MODIFIED EPA METHOD TO-14 GC/MS FULL SCAN

File Name:	**f121112**	**Date of Collection:**	**11/27/02**
Dil. Factor:	**100**	**Date of Analysis:**	**12/11/02**

Compound	Rpt. Limit (ppbv)	Rpt. Limit (uG/m3)	Amount (ppbv)	Amount (uG/m3)
Carbon Disulfide	200	630	Not Detected	Not Detected
2-Propanol	200	500	Not Detected	Not Detected
trans-1,2-Dichloroethene	200	800	Not Detected	Not Detected
Vinyl Acetate	200	720	Not Detected	Not Detected
2-Butanone (Methyl Ethyl Ketone)	200	600	Not Detected	Not Detected
Hexane	200	720	Not Detected	Not Detected
Tetrahydrofuran	200	600	Not Detected	Not Detected
Cyclohexane	200	700	Not Detected	Not Detected
1,4-Dioxane	200	730	Not Detected	Not Detected
Bromodichloromethane	200	1400	Not Detected	Not Detected
4-Methyl-2-pentanone	200	830	Not Detected	Not Detected
2-Hexanone	200	830	Not Detected	Not Detected
Dibromochloromethane	200	1700	Not Detected	Not Detected
Bromoform	200	2100	Not Detected	Not Detected
4-Ethyltoluene	200	1000	3300	17000
Ethanol	200	380	Not Detected	Not Detected
Methyl tert-Butyl Ether	200	730	Not Detected	Not Detected
Heptane	200	830	380	1600

Container Type: 6 Liter Silonite Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	91	70-130
Toluene-d8	86	70-130
4-Bromofluorobenzene	114	70-130

Air Toxics Ltd.

METHOD TO14

Data file : /chem/msdf.i/f-11dec.b/f121112.d
Lab Smp Id: 0212071-01A Client Smp ID: INFLUENT
Inj Date : 11-DEC-2002 14:57
Operator : ct Inst ID: msdf.i
Smp Info : 4.0mL Can#4255
Misc Info : 10.0"Hg-5psi Mactec notics
Comment :
Method : /var/chem/msdf.i/f-11dec.b/to14n25c.m
Meth Date : 11-Dec-2002 10:57 ctaylor Quant Type: ISTD
Cal Date : 09-DEC-2002 10:49 Cal File: f120907.d
Als bottle: 1
Dil Factor: 100.00000
Integrator: HP RTE Compound Sublist: AT.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
* 59 Bromochloromethane						CAS #: 74-97-5			
14.265	14.265	(1.000)	130	645799	25.0000		80.00- 120.00	100.00	9506
14.265	14.265	(0.000)	128	89160			29.33- 129.33	13.81	
14.265	14.265	(0.000)	49	180928			122.65- 222.65	28.02	
* 72 1,4-Difluorobenzene						CAS #: 540-36-3			
16.169	16.169	(1.000)	114	1464727	25.0000		80.00- 120.00	100.00	9461
16.169	16.169	(0.000)	88	25552			0.00- 66.58	1.74	
* 105 Chlorobenzene-d5						CAS #: 3114-55-4			
21.854	21.854	(1.000)	117	644382	25.0000		80.00- 120.00	100.00	
21.854	21.854	(1.000)	82	448400			6.52- 106.52	69.59	
$ 65 1,2-Dichloroethane-d4						CAS #: 17060-07-0			
15.452	15.452	(1.083)	65	883703	22.7401	22.740	80.00- 120.00	100.00	10000(a)
15.452	15.452	(0.000)	67	65767			1.64- 101.64	7.44	
$ 91 Toluene-d8						CAS #: 2037-26-5			
19.012	19.012	(1.176)	98	855534	21.4156	21.416	80.00- 120.00	100.00	9575(a)
19.012	19.012	(0.000)	70	18680			0.00- 62.97	2.18	

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
$ 91 Toluene-d8 (continued)									
19.012	19.012	(0.000)	100	93368			18.10- 118.10	10.91	
$ 117 Bromofluorobenzene						CAS #: 460-00-4			
23.979	23.979	(1.097)	95	379080	28.4046	28.404	80.00- 120.00	100.00	8138(a)
23.979	23.979	(0.000)	174	57208			15.71- 115.71	15.09	
23.979	23.979	(0.000)	176	58080			12.57- 112.57	15.32	
10 Vinyl Chloride						CAS #: 75-01-4			
6.841	6.841	(0.480)	62	42329	0.99734	99.734	80.00- 120.00	100.00	4437
6.841	6.841	(0.000)	64	1017			0.00- 79.95	2.40	
26 1,1-Dichloroethene						CAS #: 75-35-4			
10.374	10.374	(0.727)	61	48010	0.51562	51.562	80.00- 120.00	100.00	8890
10.374	10.374	(0.000)	96	2874			5.85- 105.85	5.99	
10.374	10.374	(0.000)	98	1837			0.00- 86.60	3.83	
36 Methylene Chloride						CAS #: 75-09-2			
11.339	11.339	(0.795)	49	95746	1.47291	147.29	80.00- 120.00	100.00	9369
11.339	11.339	(0.000)	84	13352			17.09- 117.09	13.95	
11.339	11.339	(0.000)	51	6288			0.00- 76.78	6.57	
45 1,1-Dichloroethane						CAS #: 75-34-3			
12.747	12.747	(0.894)	63	116489	1.12747	112.75	80.00- 120.00	100.00	6409
12.747	12.747	(0.000)	65	4088			0.00- 80.86	3.51	
54 cis-1,2-Dichloroethene						CAS #: 156-59-2			
13.823	13.823	(0.969)	61	1948213	27.8197	2782.0	80.00- 120.00	100.00	8236
13.823	13.823	(0.000)	96	186304			20.12- 120.12	9.56	
13.823	13.823	(0.000)	98	122568			0.00- 95.80	6.29	
62 1,1,1-Trichloroethane						CAS #: 71-55-6			
14.734	14.762	(1.033)	97	1045534	10.7545	1075.4	80.00- 120.00	100.00	7539
14.734	14.762	(0.000)	99	70120			14.47- 114.47	6.71	
70 1,2-Dichloroethane						CAS #: 107-06-2			
15.590	15.590	(0.964)	62	106116	1.85520	185.52	80.00- 120.00	100.00	5503
15.590	15.590	(0.000)	64	5216			0.00- 84.04	4.92	
68 Heptane						CAS #: 142-82-5			
15.672	15.672	(0.969)	43	173549	3.78921	378.92	80.00- 120.00	100.00	7476
15.672	15.672	(0.000)	57	5909			1.24- 101.24	3.40	
15.672	15.672	(0.000)	71	5758			1.33- 101.33	3.32	
76 Trichloroethene						CAS #: 79-01-6			
16.694	16.694	(1.032)	95	895128	22.0341	2203.4	80.00- 120.00	100.00	8702

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
76 Trichloroethene (continued)									
16.694	16.694	(0.000)	130	118640			46.84- 146.84	13.25	
16.694	16.694	(0.000)	97	79056			13.33- 113.33	8.83	
92 Toluene						CAS #: 108-88-3			
19.150	19.150	(1.184)	91	4265842	67.6946	6769.5	80.00- 120.00	100.00	9068
19.150	19.150	(0.000)	92	453929			12.27- 112.27	10.64	
96 Tetrachloroethene						CAS #: 127-18-4			
20.171	20.171	(0.923)	166	1699372	55.7608	5576.1	80.00- 120.00	100.00	9290
20.171	20.171	(0.000)	129	248064			22.15- 122.15	14.60	
20.171	20.171	(0.000)	131	231040			20.31- 120.31	13.60	
107 Ethyl Benzene						CAS #: 100-41-4			
21.992	21.992	(1.006)	106	273774	17.8981	1789.8	80.00- 120.00	100.00	
21.992	21.992	(1.006)	91	830243			264.91- 364.91	303.26	
109 m,p-Xylene						CAS #: 108-38-3			
22.186	22.186	(1.015)	106	2063864	146.333	14633	80.00- 120.00	100.00	
22.186	22.186	(1.015)	91	3976145			151.15- 251.15	192.66	
111 o-Xylene						CAS #: 95-47-6			
22.958	22.958	(1.050)	106	550752	41.4568	4145.7	80.00- 120.00	100.00	8865
22.958	22.958	(0.000)	91	283252			150.69- 250.69	51.43	
119 4-Ethyltoluene						CAS #: 622-96-8			
24.449	24.504	(1.119)	105	1214938	33.2302	3323.0	80.00- 120.00	100.00	
24.449	24.504	(1.119)	120	385084			0.00- 79.69	31.70	
124 1,3,5-Trimethylbenzene						CAS #: 108-67-8			
24.614	24.614	(1.126)	105	581292	23.9929	2399.3	80.00- 120.00	100.00	
24.614	24.614	(1.126)	120	279360			0.00- 98.67	48.06	
129 1,2,4-Trimethylbenzene						CAS #: 95-63-6			
25.304	25.304	(1.158)	105	674728	34.1374	3413.7	80.00- 120.00	100.00	8743
25.304	25.304	(0.000)	120	97830			0.00- 95.51	14.50	

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

Air Toxics Ltd.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdf.i
Lab File ID: f121112.d
Lab Smp Id: 0212071-01A
Analysis Type: VOA
Quant Type: ISTD
Operator: ct
Method File: /var/chem/msdf.i/f-11dec.b/to14n25c.m
Misc Info: 10.0"Hg-5psi Mactec notics

Calibration Date: 11-DEC-2002
Calibration Time: 09:38
Client Smp ID: INFLUENT
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
59 Bromochloromethan	679915	407949	951881	645799	-5.02
72 1,4-Difluorobenze	1573788	944273	2203303	1464727	-6.93
105 Chlorobenzene-d5	798262	478957	1117567	644382	-19.28

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
59 Bromochloromethan	14.26	13.93	14.59	14.26	0.00
72 1,4-Difluorobenze	16.17	15.84	16.50	16.17	0.00
105 Chlorobenzene-d5	21.85	21.52	22.18	21.85	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Air Toxics Ltd.

RECOVERY REPORT

Client Name:
Sample Matrix: GAS
Lab Smp Id: 0212071-01A
Level: LOW
Data Type: MS DATA
SpikeList File:
Sublist File: AT.sub
Method File: /var/chem/msdf.i/f-11dec.b/to14n25c.m
Misc Info: 10.0"Hg-5psi Mactec notics

Client SDG: f-11dec
Fraction: VOA
Client Smp ID: INFLUENT
Operator: ct
SampleType: SAMPLE
Quant Type: ISTD

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 65 1,2-Dichloroethane	25.000	22.740	90.96	70-130
$ 91 Toluene-d8	25.000	21.416	85.66	70-130
$ 117 Bromofluorobenzene	25.000	28.404	113.62	70-130

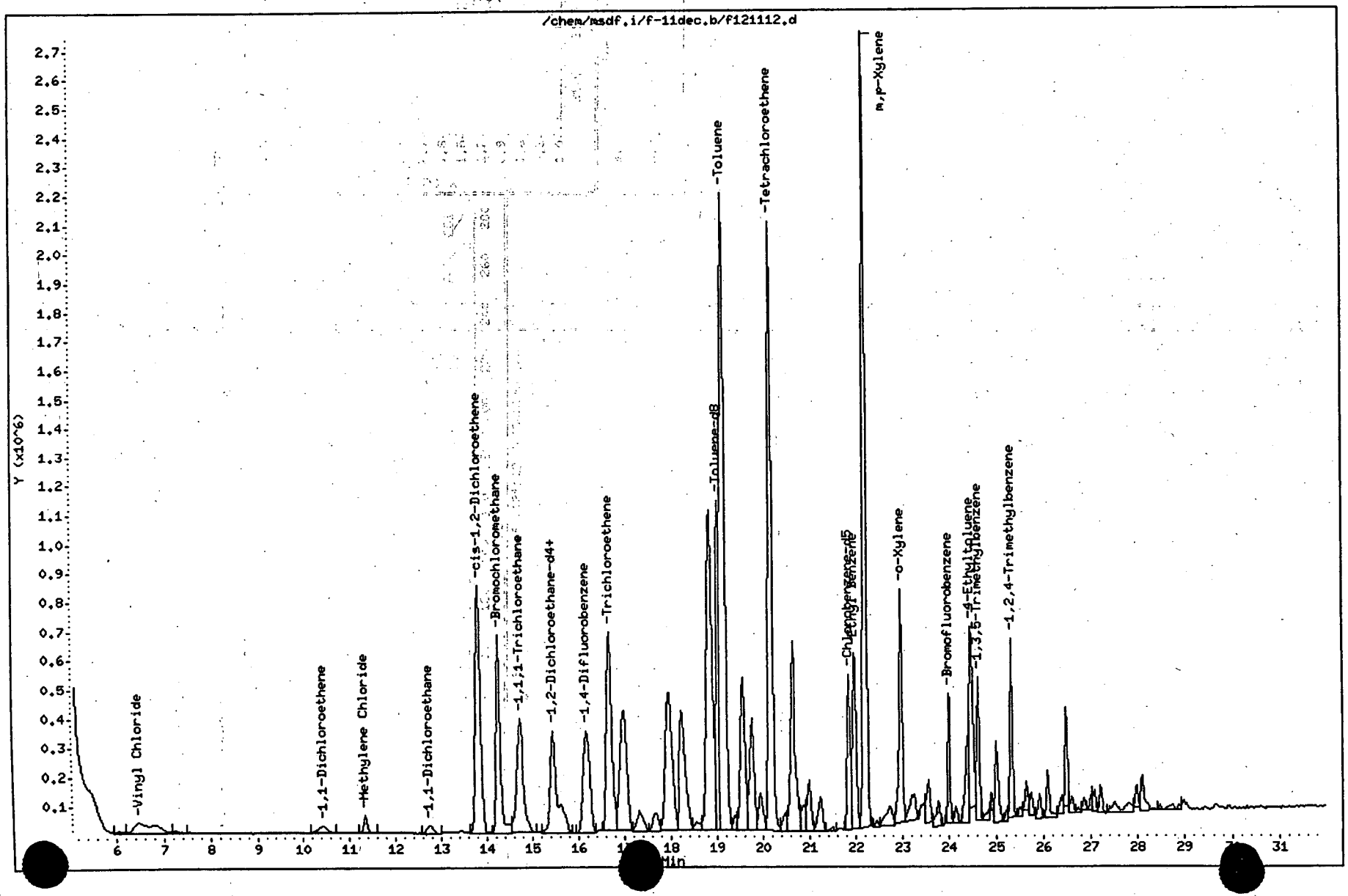
0012

Data File: /chem/msdf.i/f-11dec.b/f121112.d
Date : 11-DEC-2002 14:57
Client ID: INFLUENT
Sample Info: 4.0mL Can#4255

Column phase: RTx-624

Instrument: msdf.i

Operator: ct
Column diameter: 0.53



Data File: /chem/msdf.i/f-11dec.b/f121112.d

Date : 11-DEC-2002 14:57

Client ID: INFLUENT

Instrument: msdf.i

Sample Info: 4.0mL Can#4255

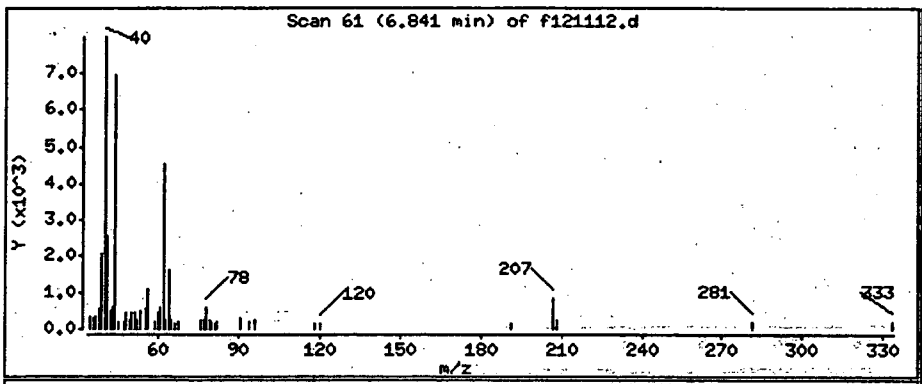
Operator: ct

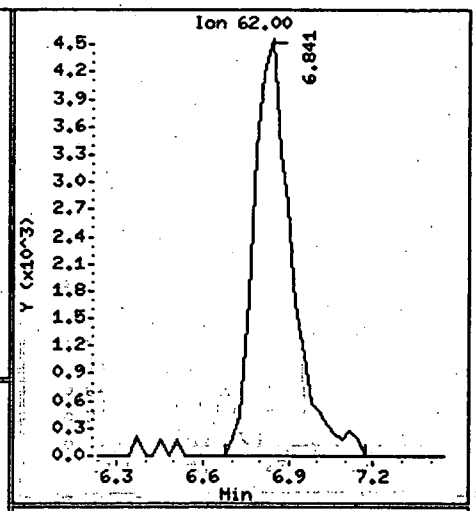
Column phase: RTx-624

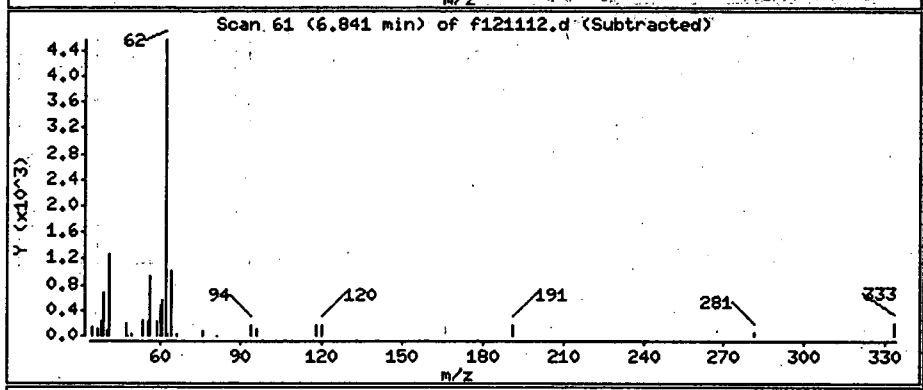
Column diameter: 0.53

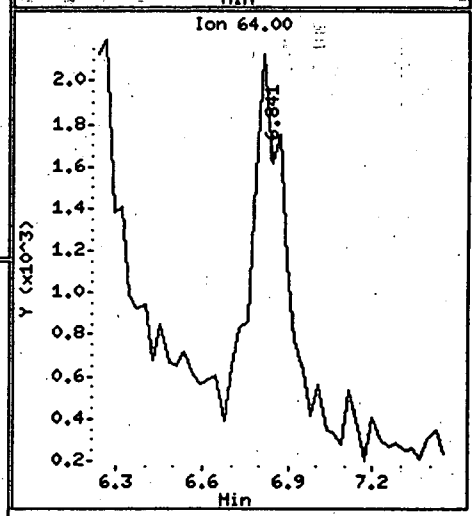
10 Vinyl Chloride

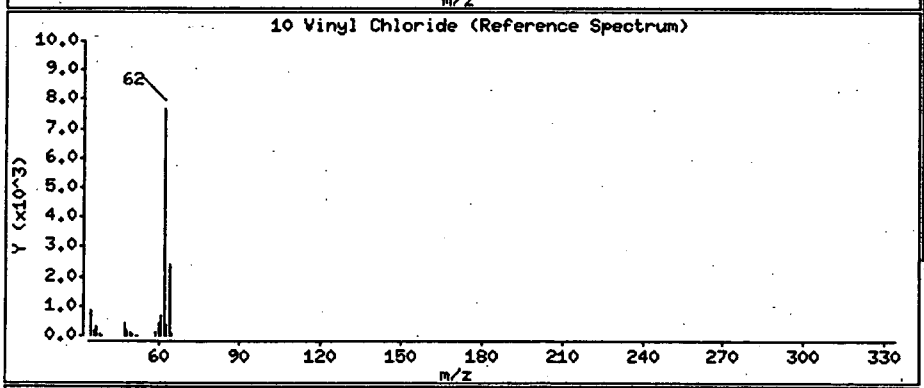
Concentration: 99.734 PPBV

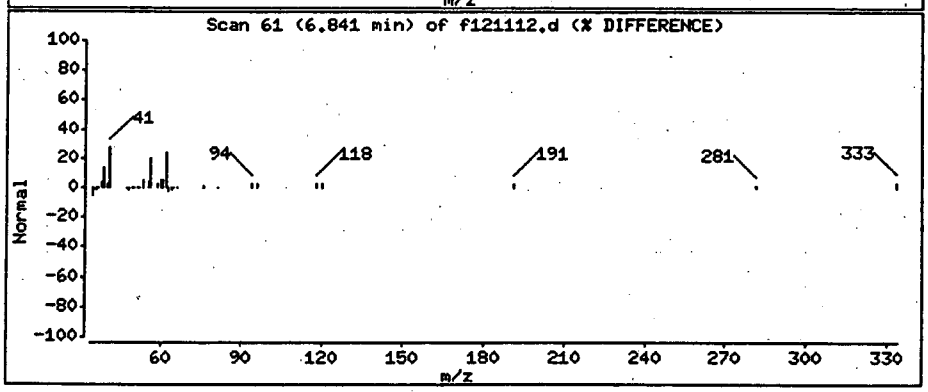












Data File: /chem/msdf.i/f-11dec.b/f121112.d

Date : 11-DEC-2002 14:57

Client ID: INFLUENT

Sample Info: 4.0mL Can#4255

Instrument: msdf.i

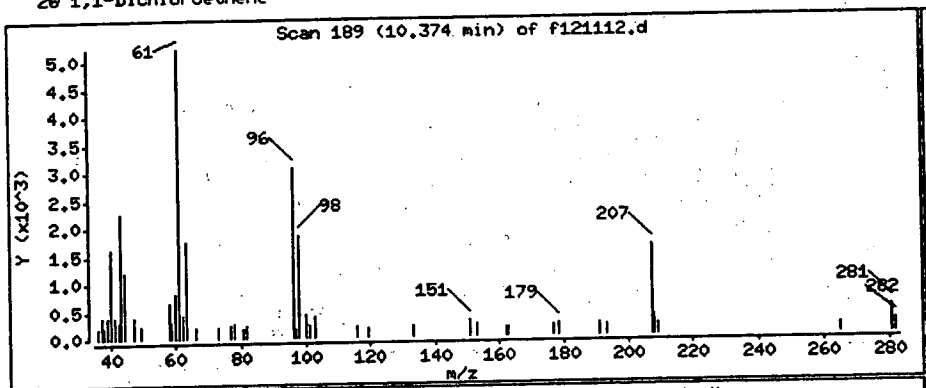
Operator: ct

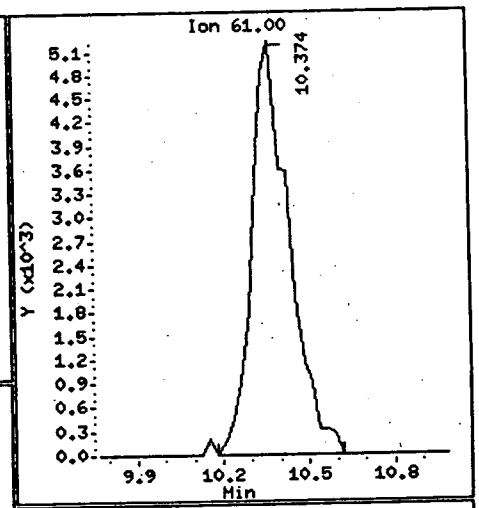
Column phase: RTx-624

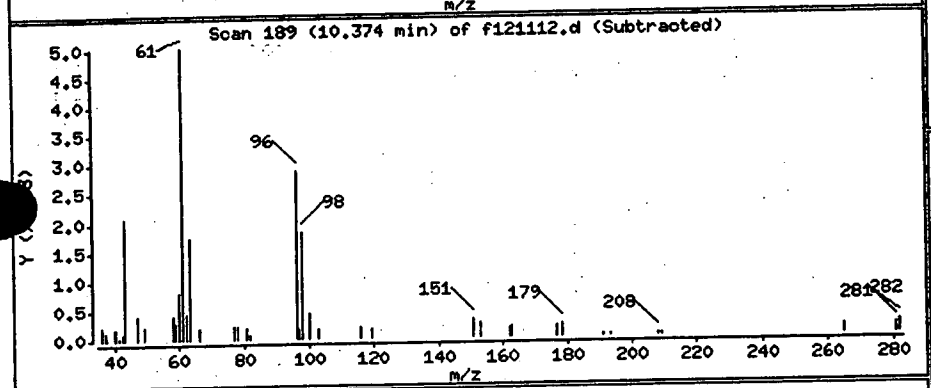
Column diameter: 0.53

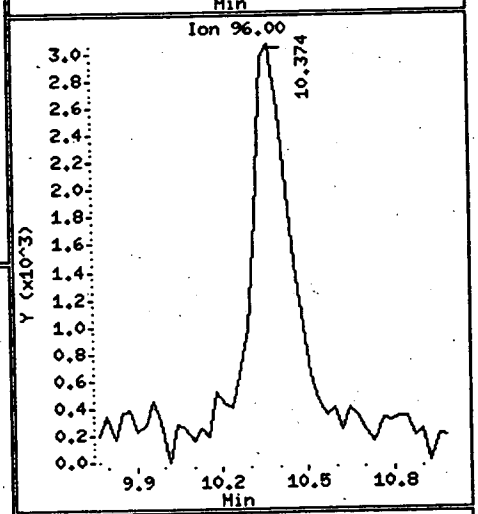
Concentration: 51.562 PPBV

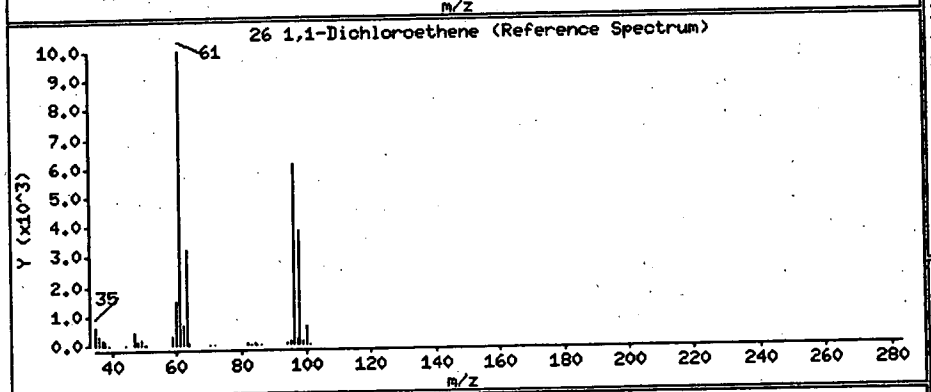
26 1,1-Dichloroethene

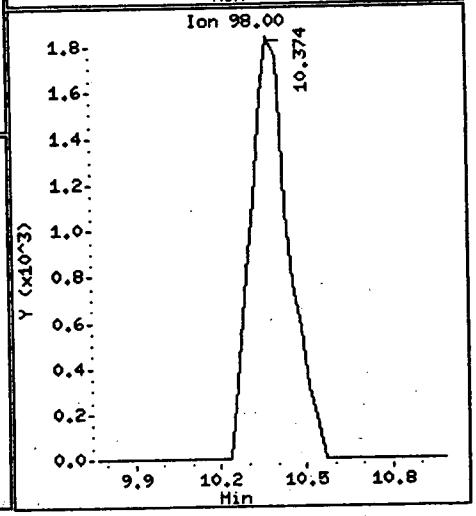


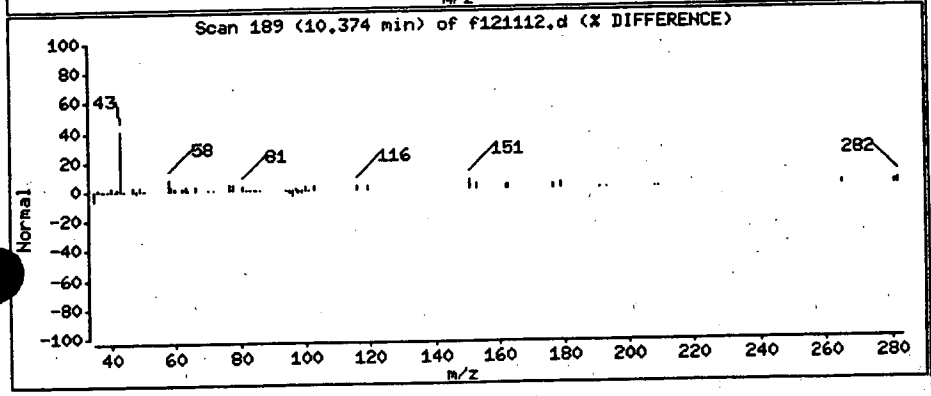












Data File: /chem/msdf.i/f-11dec.b/f121112.d

Date : 11-DEC-2002 14:57

Client ID: INFLUENT

Instrument: msdf.i

Sample Info: 4.0mL Can#4255

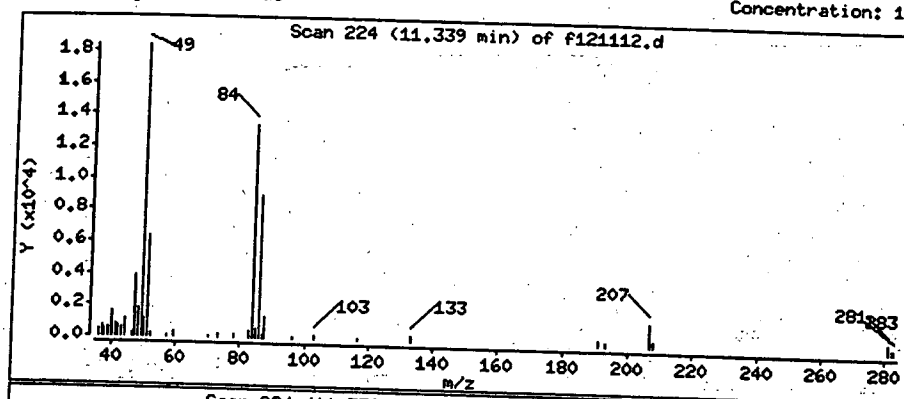
Operator: ct

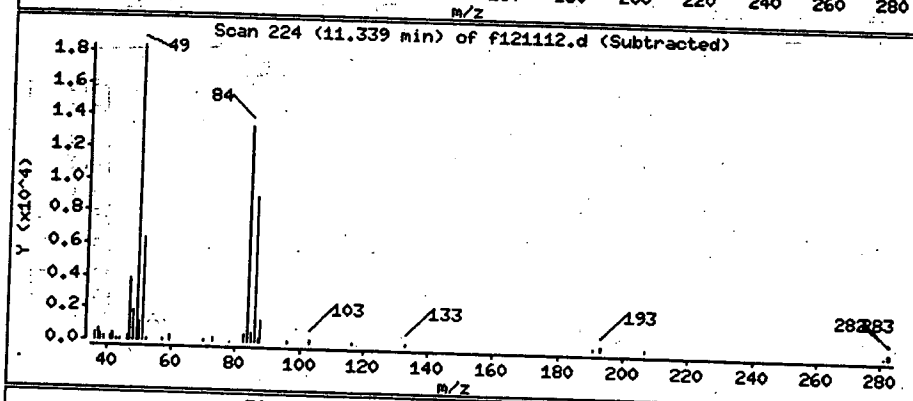
Column phase: RTx-624

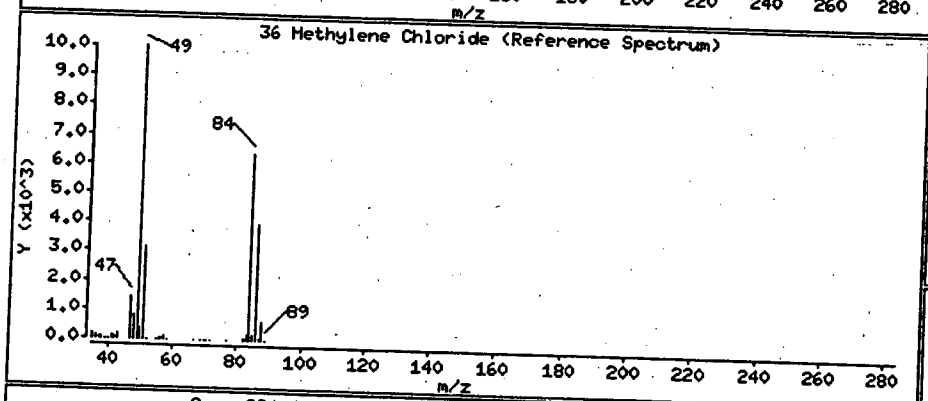
Column diameter: 0.53

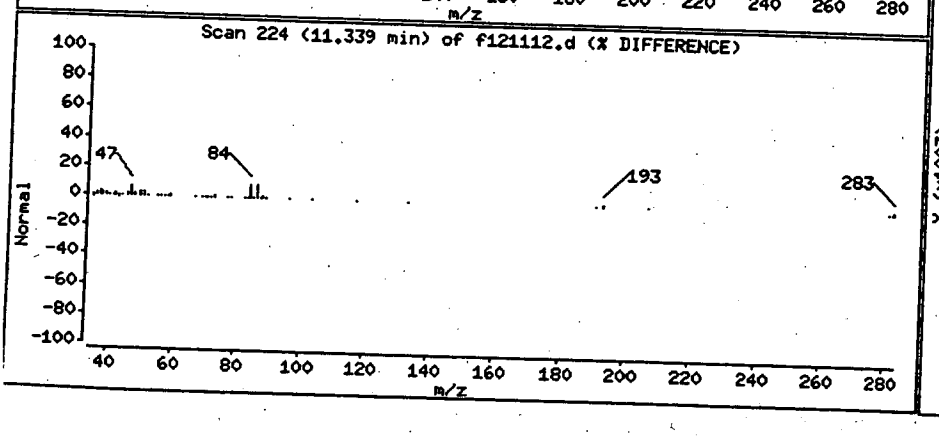
36 Methylene Chloride

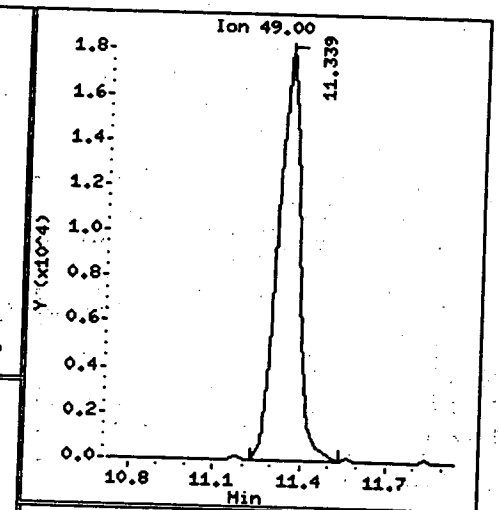
Concentration: 147.29 PPBV

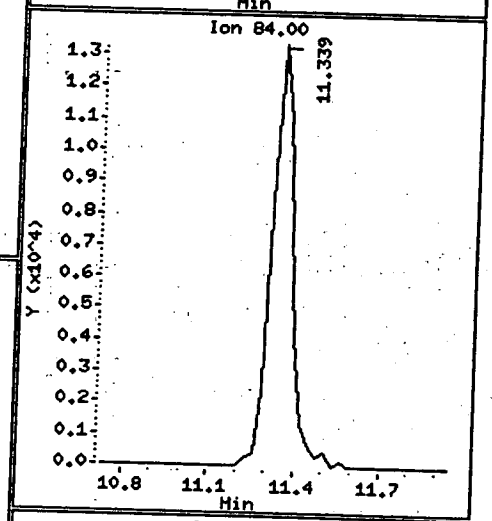


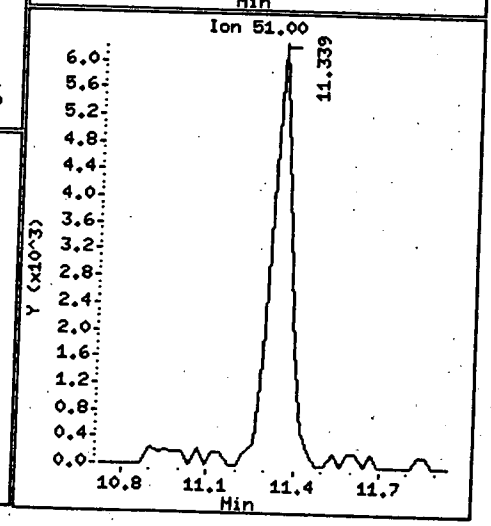












Data File: /chem/msdf.i/f-11dec.b/f121112.d

Date : 11-DEC-2002 14:57

Client ID: INFLUENT

Instrument: msdf.i

Sample Info: 4.0mL Can#4255

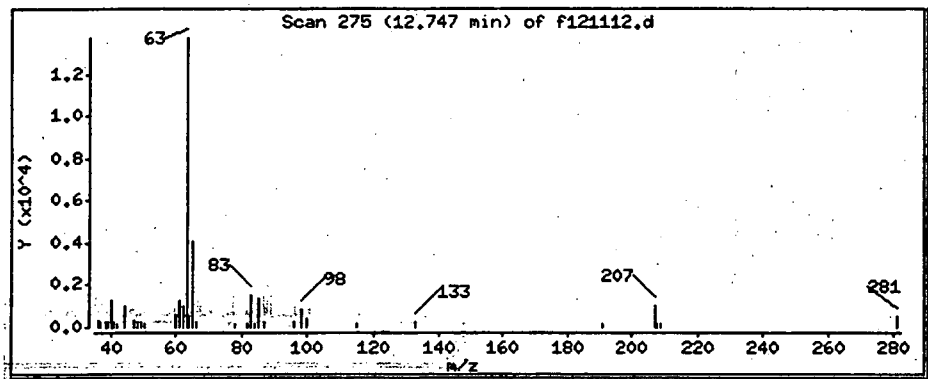
Operator: ct

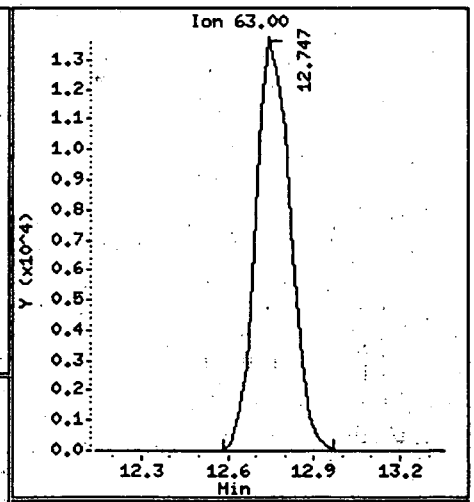
Column phase: RTx-624

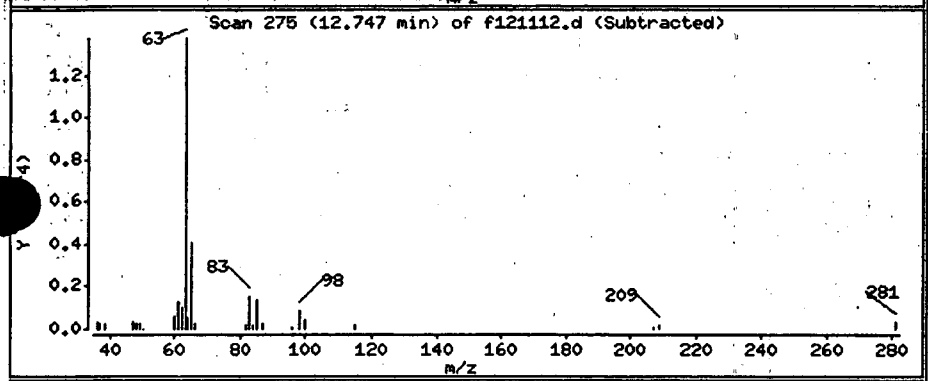
Column diameter: 0.53

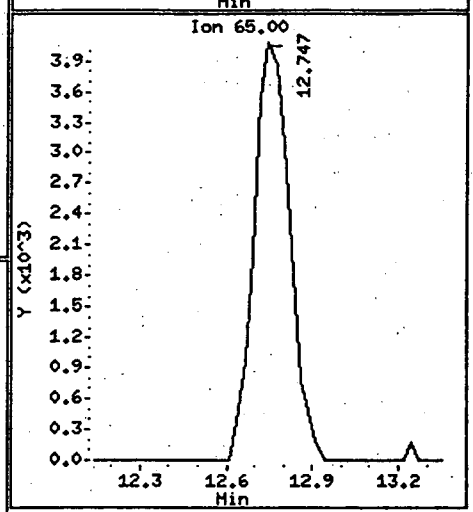
45 1,1-Dichloroethane

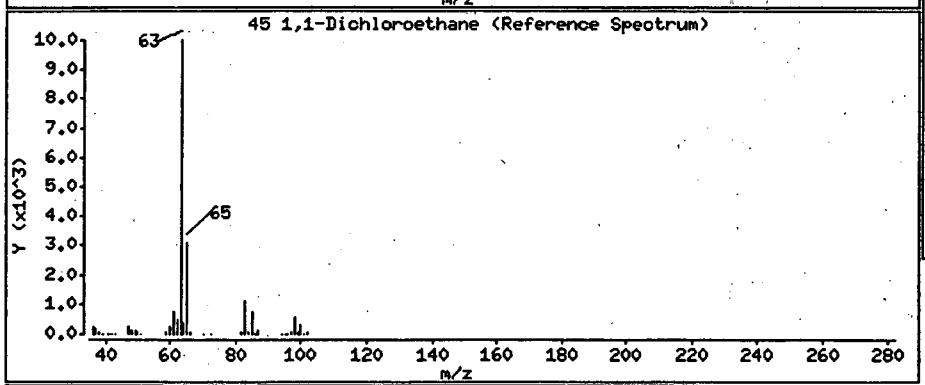
Concentration: 112.75 PPBV

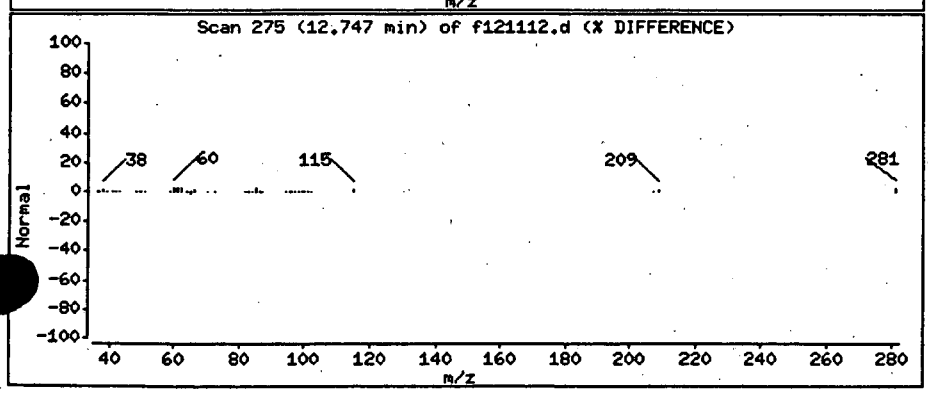












Data File: /chem/msdf.i/f-11dec.b/f121112.d

Date : 11-DEC-2002 14:57

Client ID: INFLUENT

Instrument: msdf.i

Sample Info: 4.0mL Can#4255

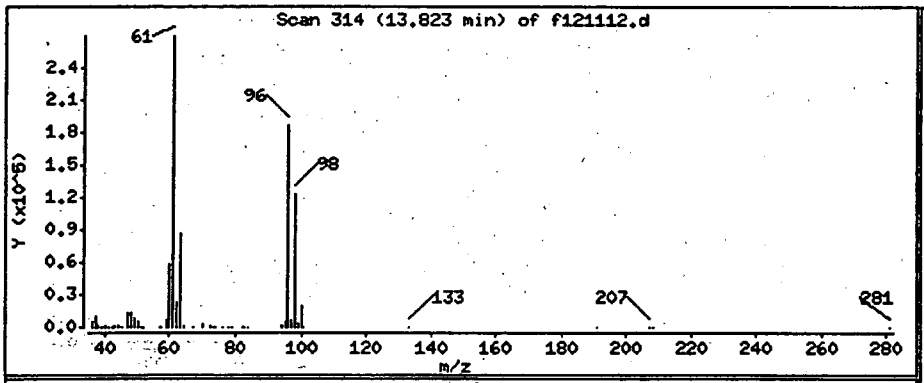
Operator: ct

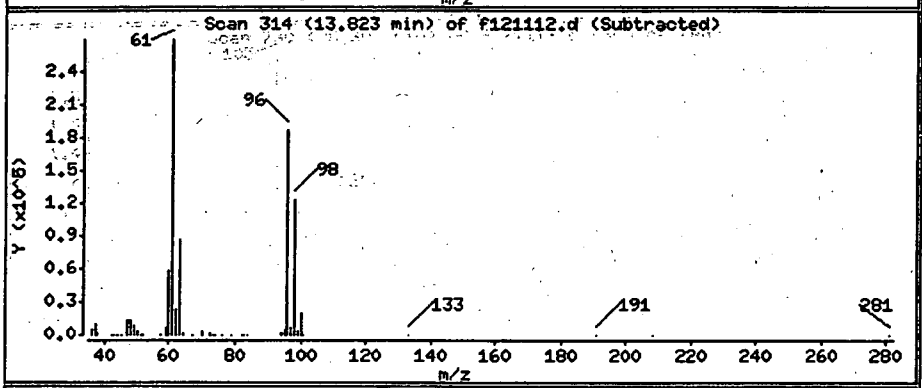
Column phase: RTx-624

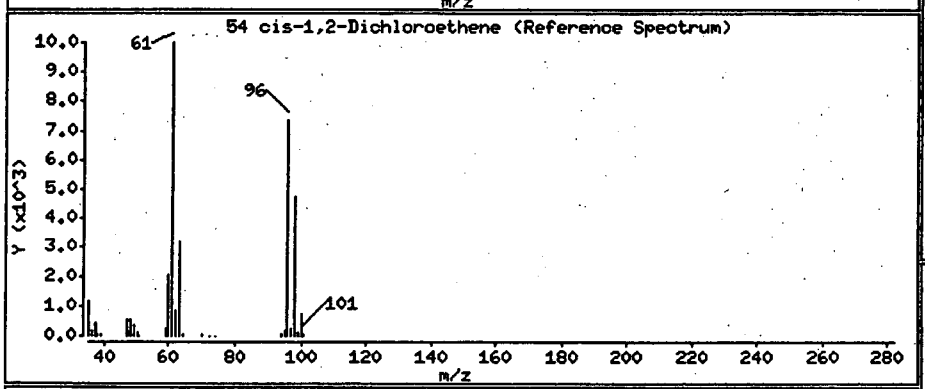
Column diameter: 0.53

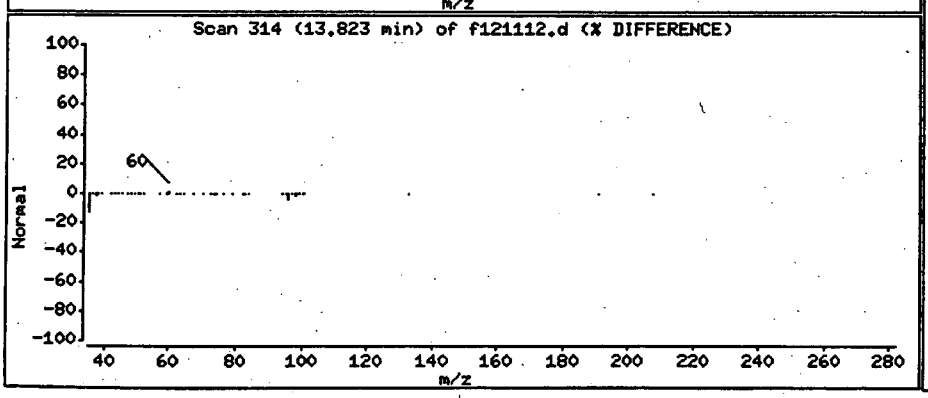
54 cis-1,2-Dichloroethene

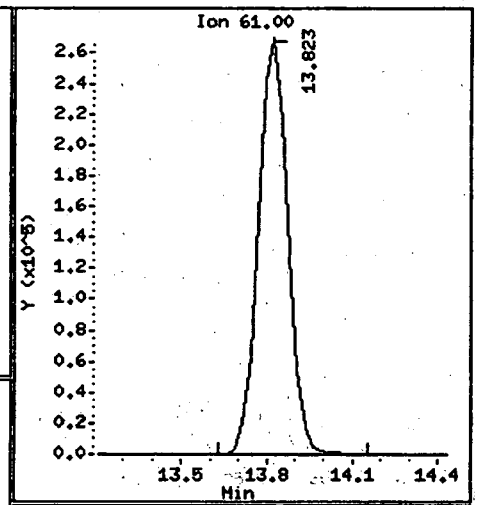
Concentration: 2782.0 PPBV

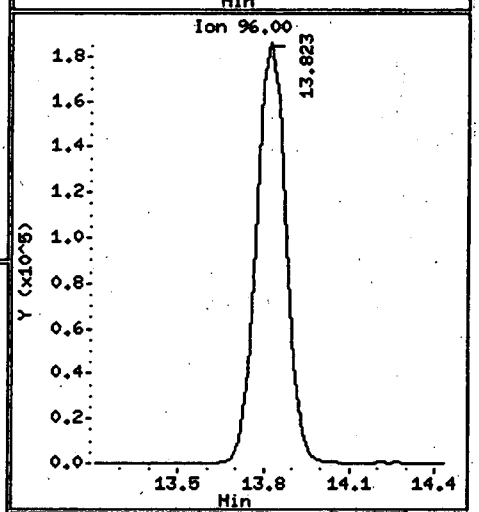


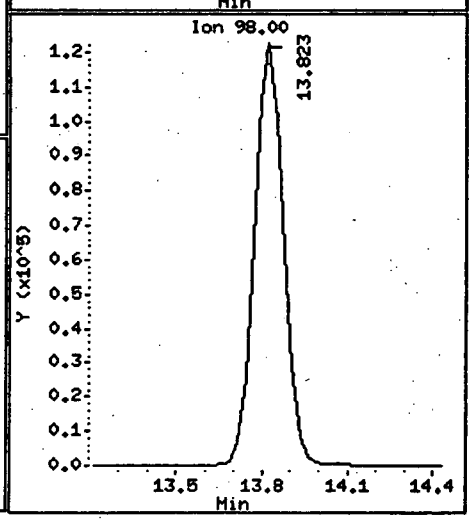












Data File: /chem/msdf.i/f-11dec.b/f121112.d

Date : 11-DEC-2002 14:57

Client ID: INFLUENT

Instrument: msdf.i

Sample Info: 4.0mL Can#4255

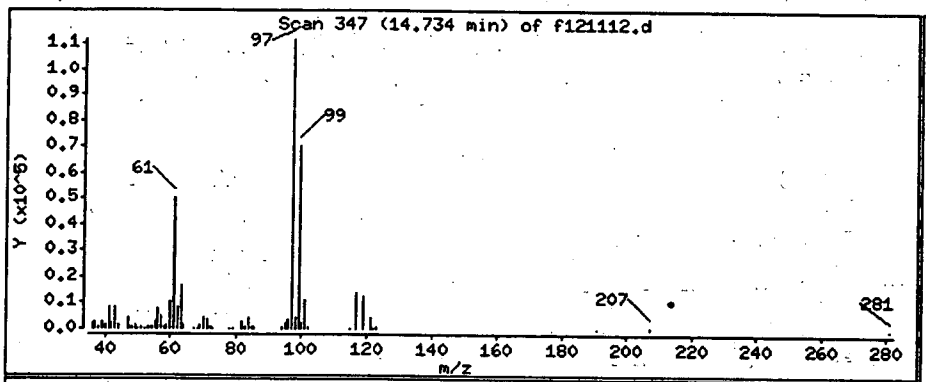
Operator: ct

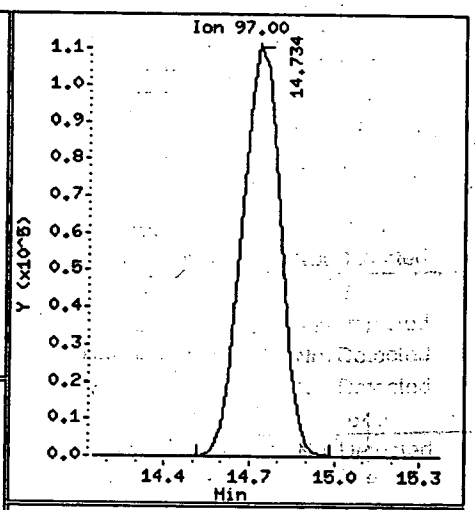
Column phase: RTx-624

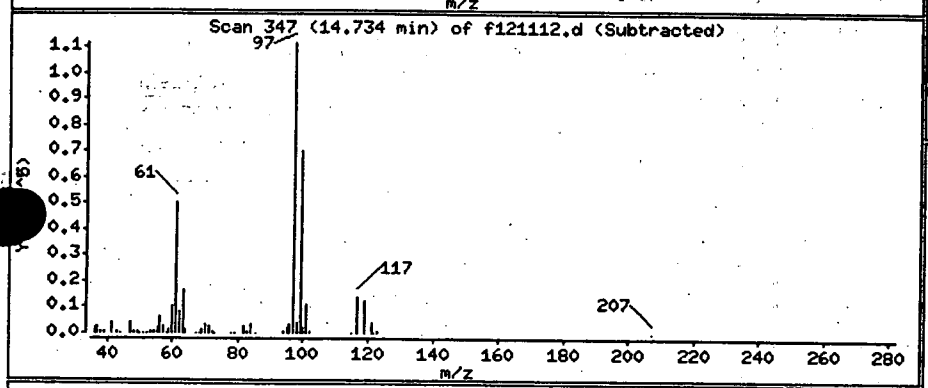
Column diameter: 0.53

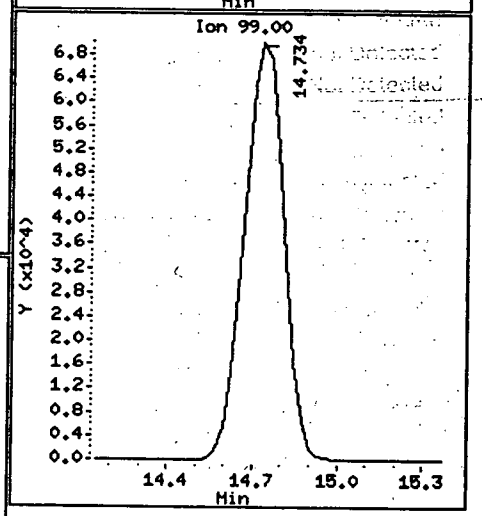
62 1,1,1-Trichloroethane

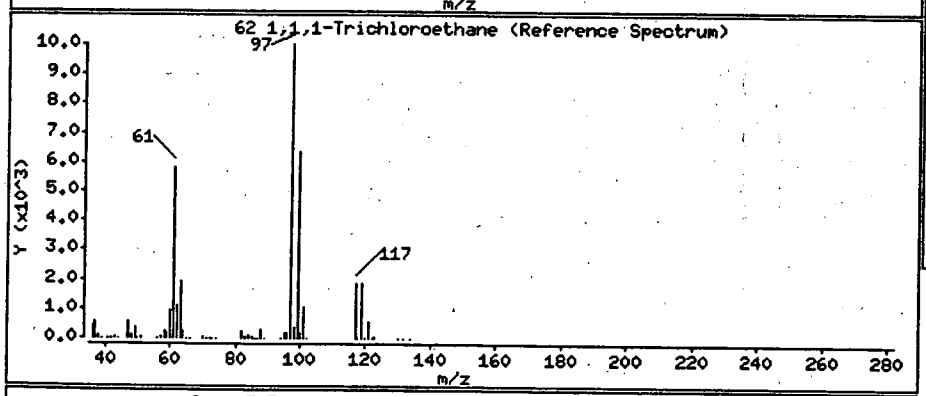
Concentration: 1075.4 PPBV

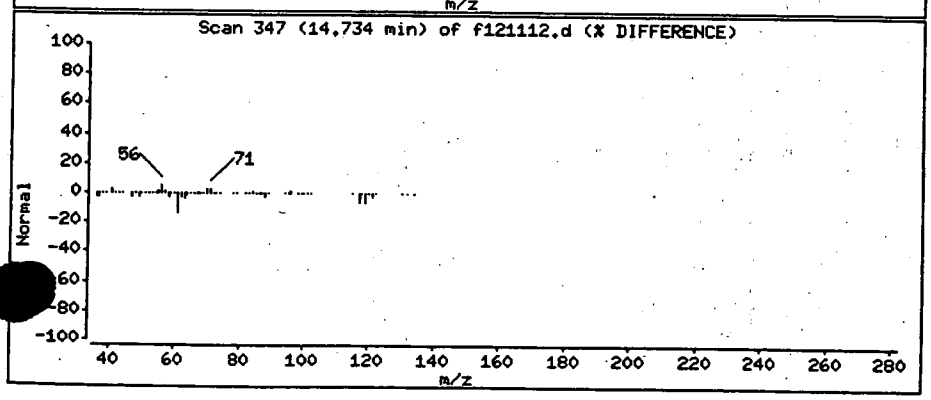












Data File: /chem/msdf.i/f-11dec.b/f121112.d

Date : 11-DEC-2002 14:57

Client ID: INFLUENT

Sample Info: 4.0mL Can#4255

Instrument: msdf.i

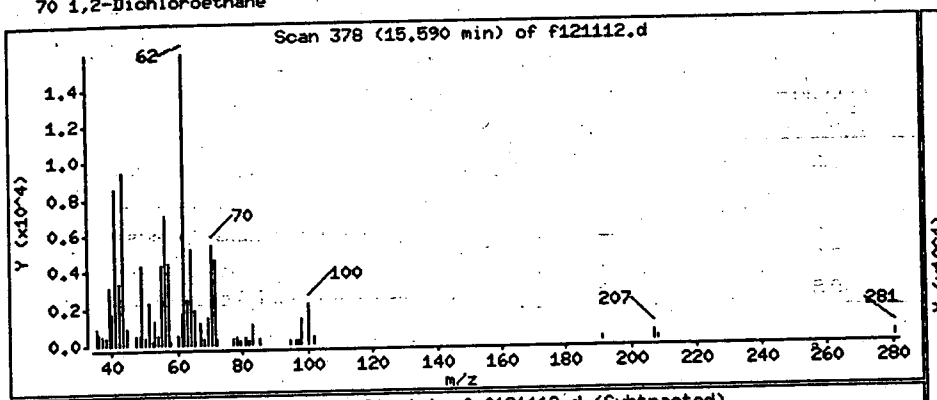
Operator: ct

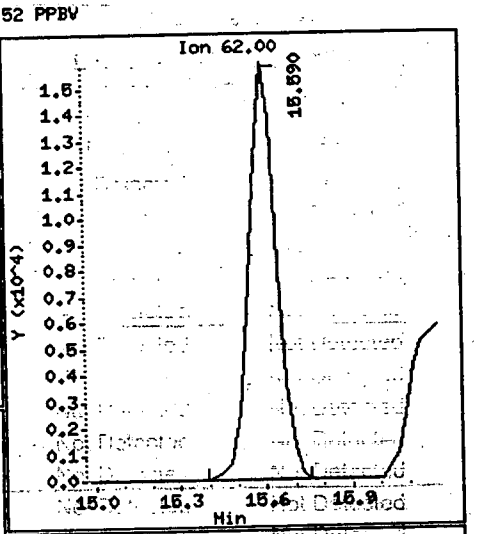
Column phase: RTx-624

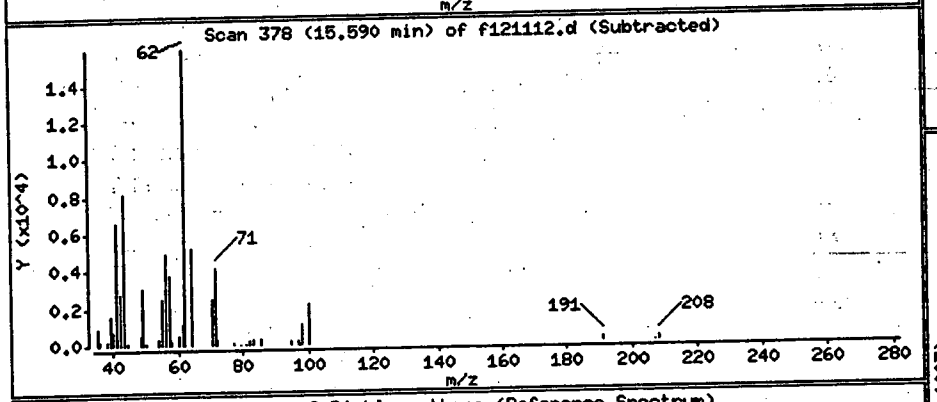
Column diameter: 0.53

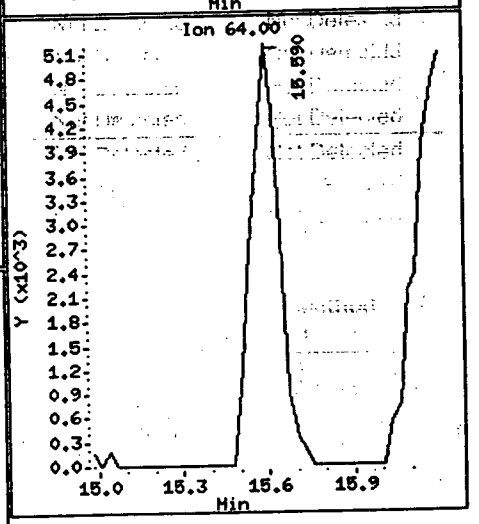
Concentration: 185.52 PPBV

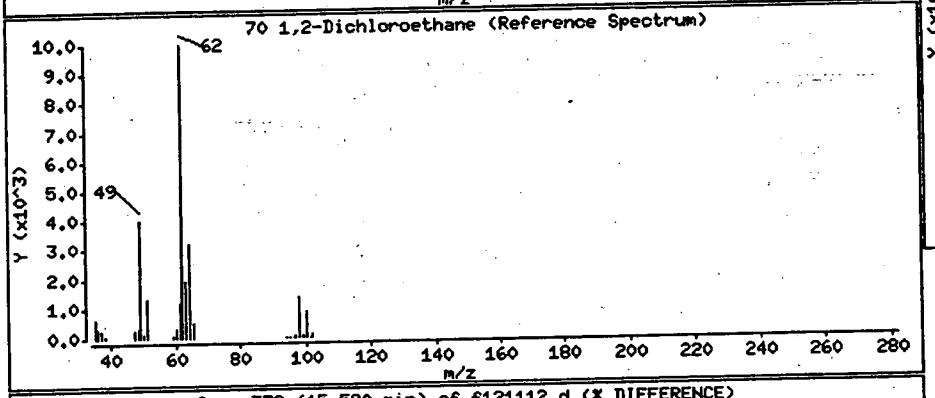
70 1,2-Dichloroethane

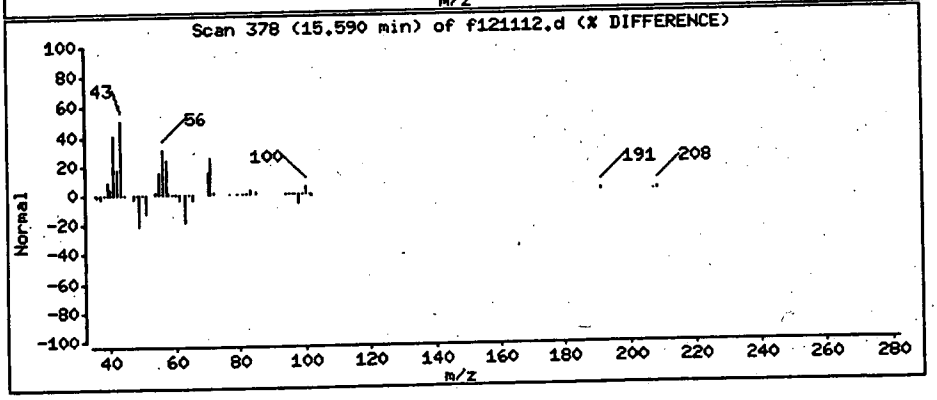












Data File: /chem/msdf.i/f-11dec.b/f121112.d

Date : 11-DEC-2002 14:57

Client ID: INFLUENT

Instrument: msdf.i

Sample Info: 4.0mL Can#4255

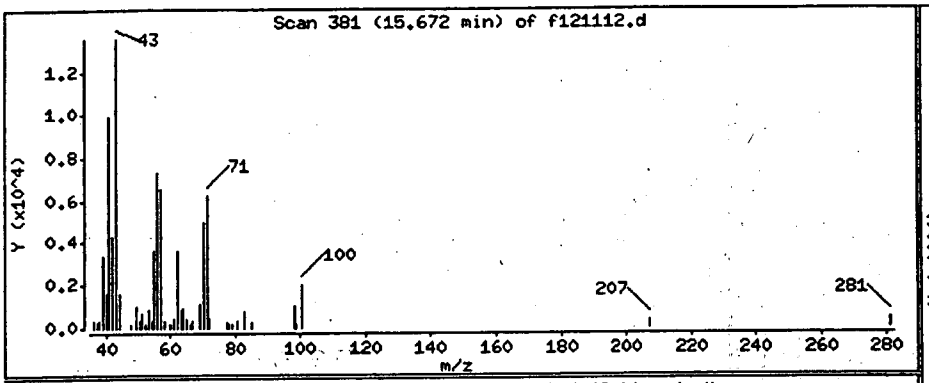
Operator: ct

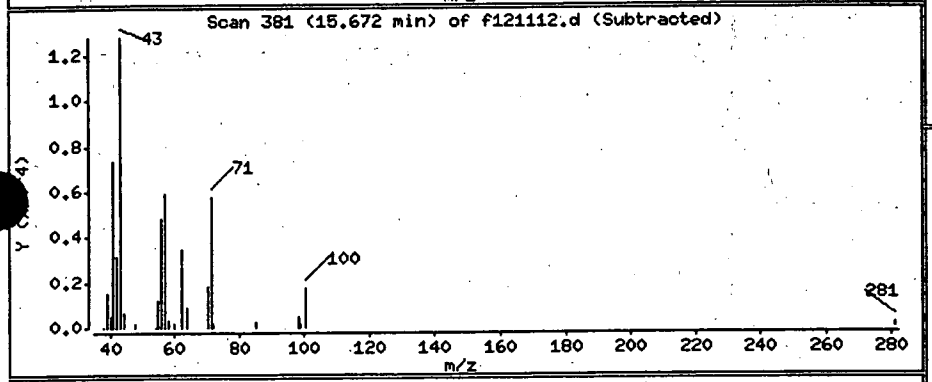
Column phase: RTx-624

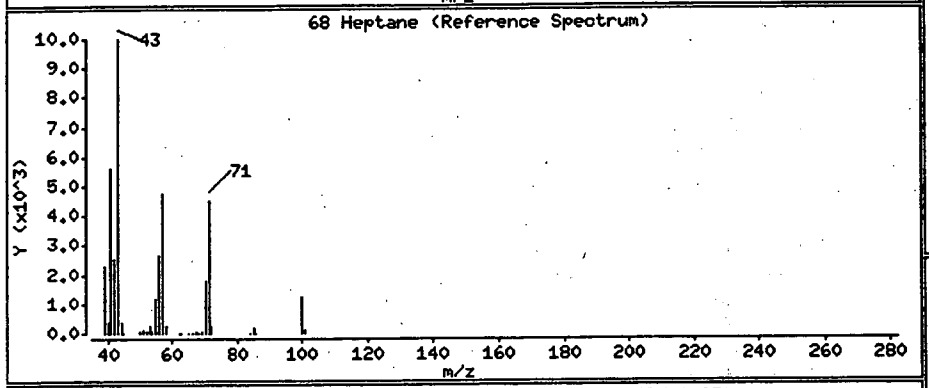
Column diameter: 0.53

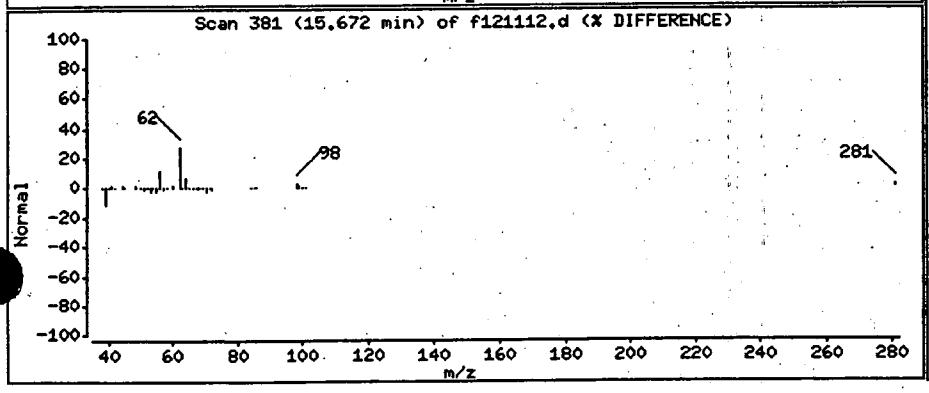
68 Heptane

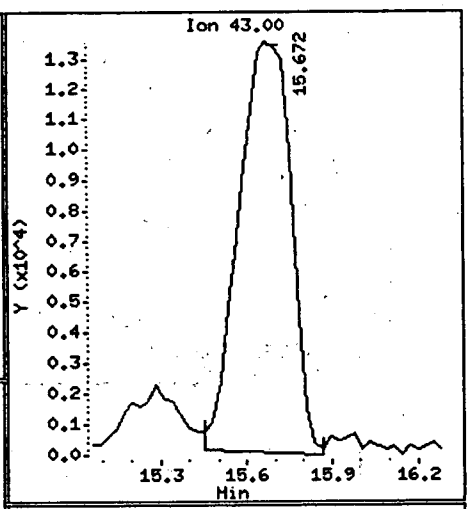
Concentration: 378.92 PPBV

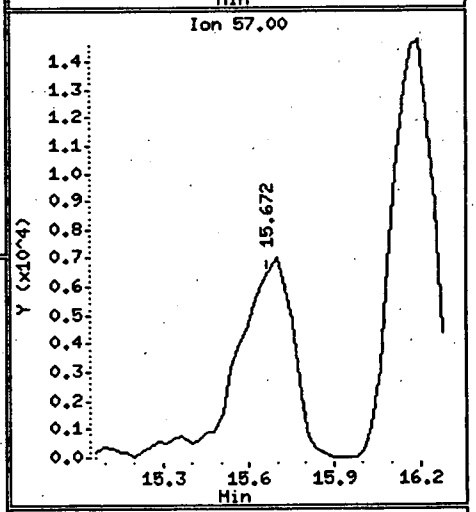


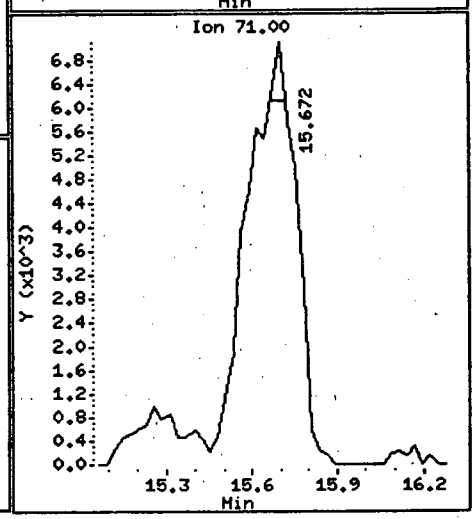












Data File: /chem/msdf.i/f-11dec.b/f121112.d

Date : 11-DEC-2002 14:57

Client ID: INFLUENT

Instrument: msdf.i

Sample Info: 4.0mL Can#4255

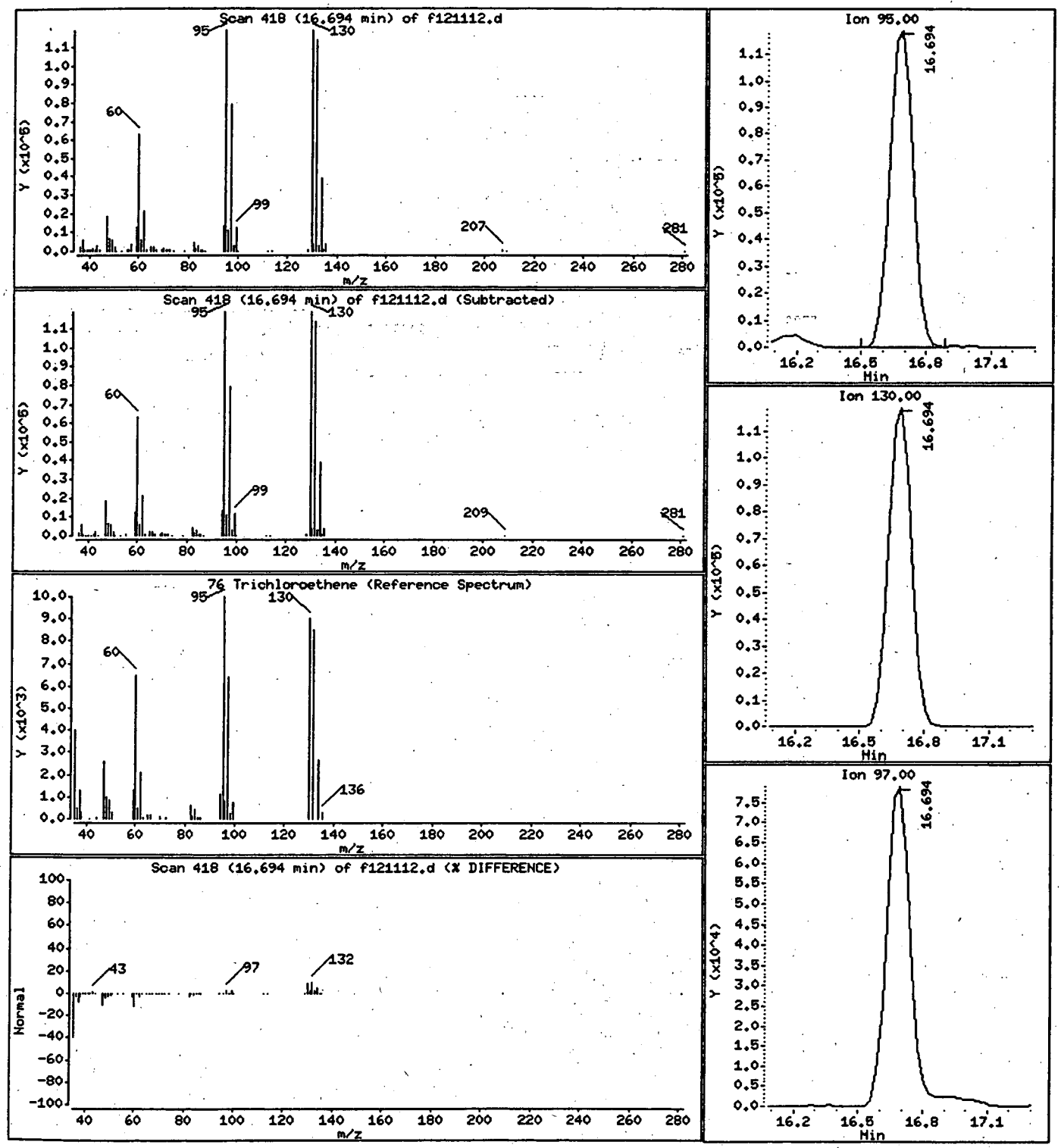
Operator: ct

Column phase: RTx-624

Column diameter: 0.53

76 Trichloroethene

Concentration: 2203.4 PPBV



Data File: /chem/msdf.i/f-11dec.b/f121112.d

Date : 11-DEC-2002 14:57

Client ID: INFLUENT

Sample Info: 4.0mL Can#4255

Instrument: msdf.i

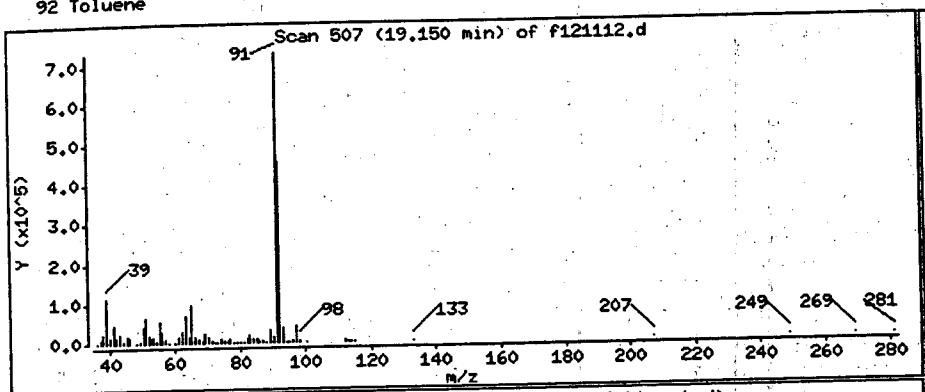
Operator: ct

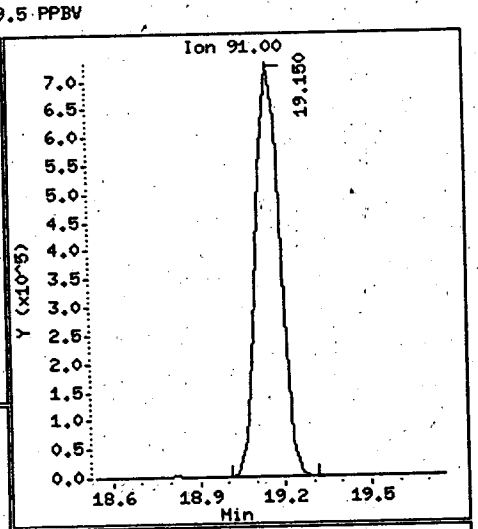
Column phase: RTx-624

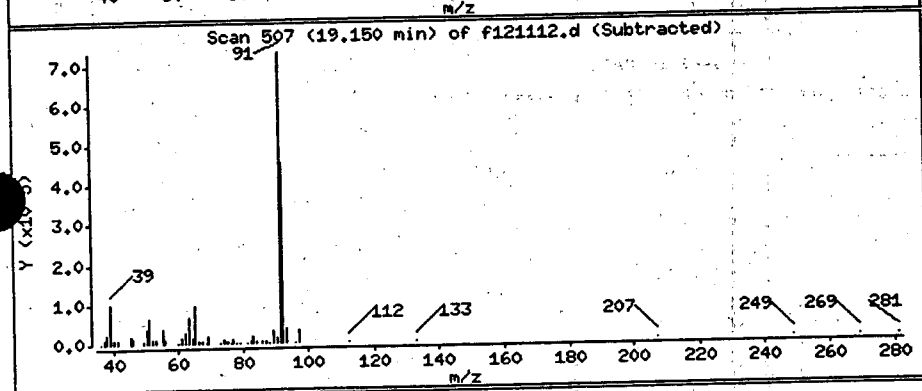
Column diameter: 0.53

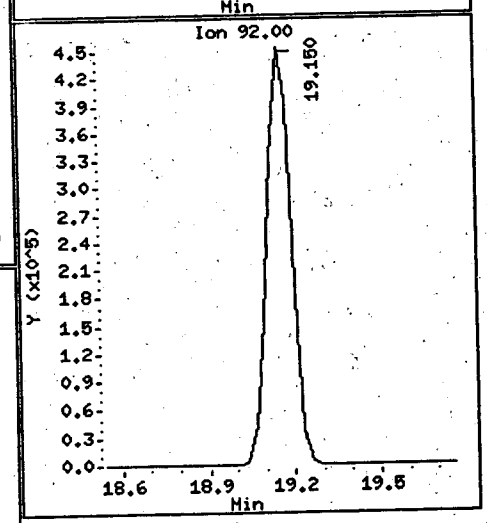
Concentration: 6769.5 PPBV

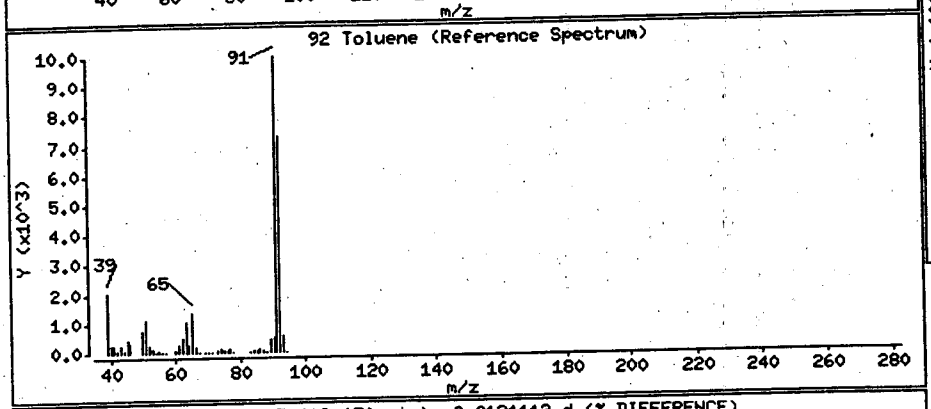
92 Toluene

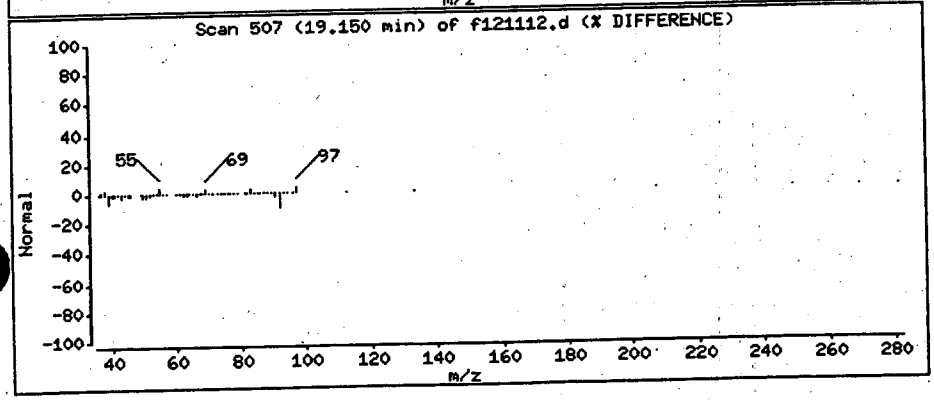












Data File: /chem/msdf.i/f-11dec.b/f121112.d

Date : 11-DEC-2002 14:57

Client ID: INFLUENT

Sample Info: 4.0mL Can#4255

Instrument: msdf.i

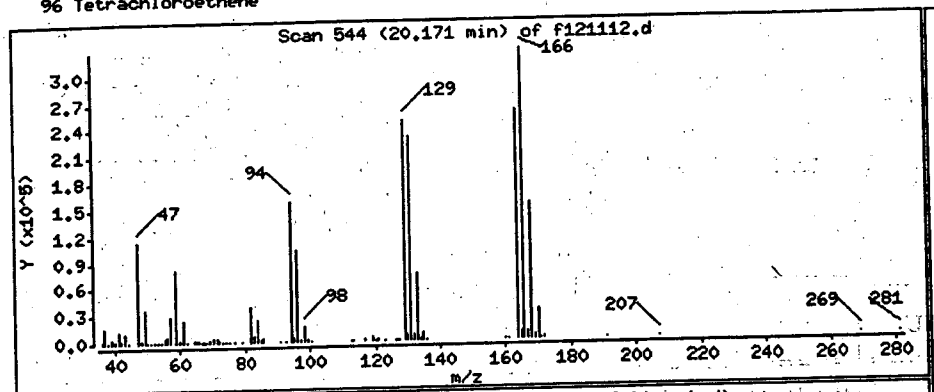
Operator: ct

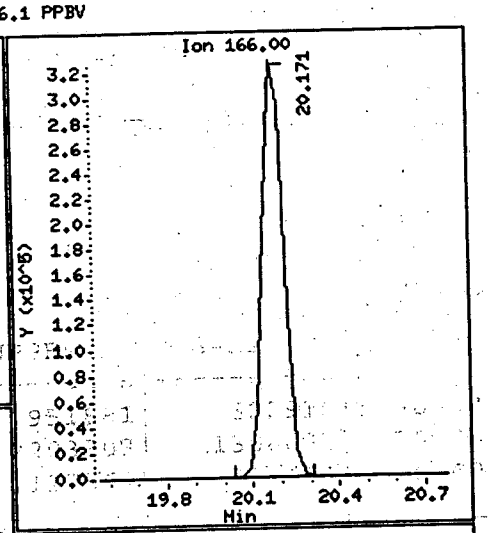
Column phase: RTx-624

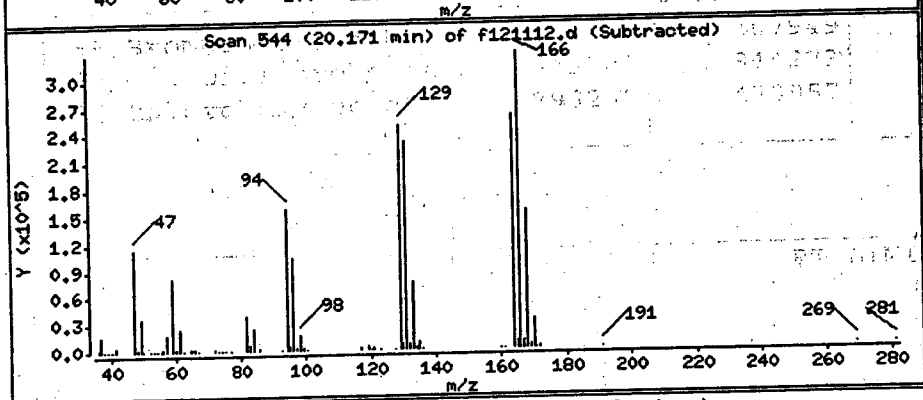
Column diameter: 0.53

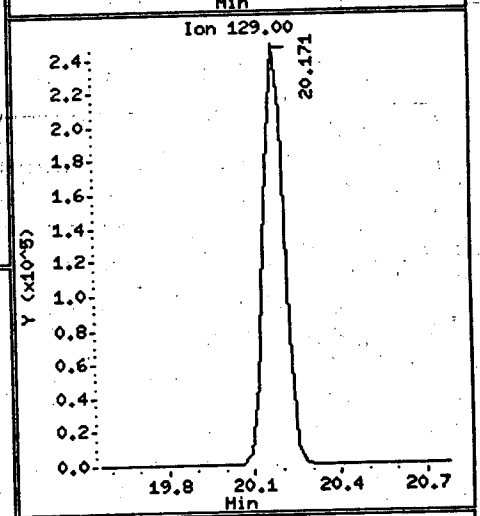
Concentration: 5576.1 PPBV

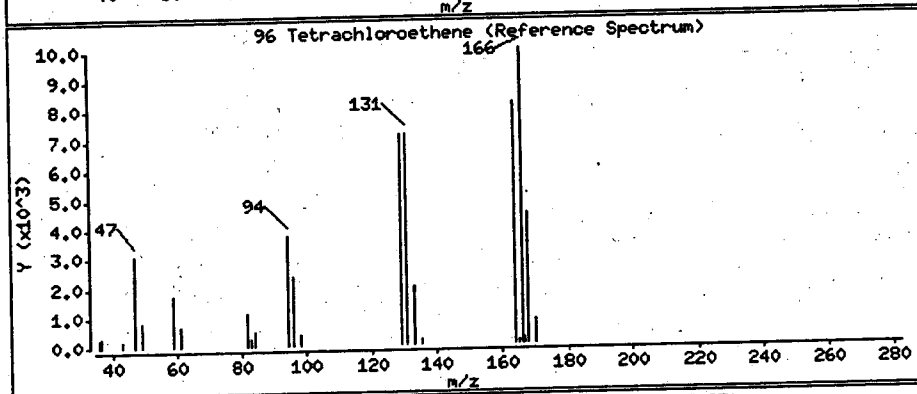
96 Tetrachloroethene

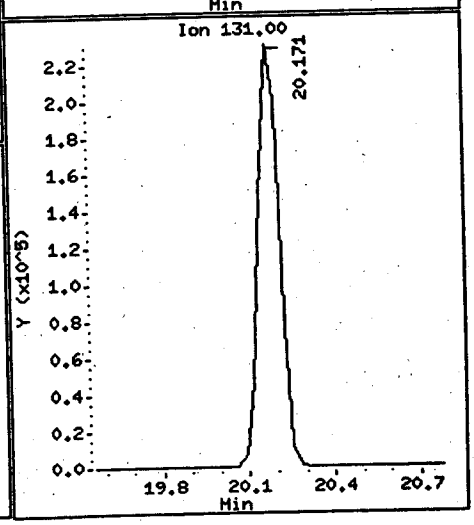


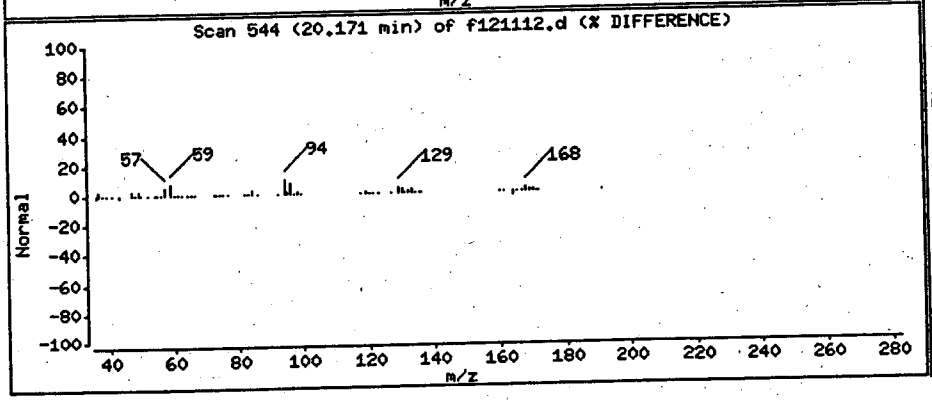












Data File: /chem/msdf.i/f-11dec.b/f121112.d

Date : 11-DEC-2002 14:57

Client ID: INFLUENT

Instrument: msdf.i

Sample Info: 4.0mL Can#4255

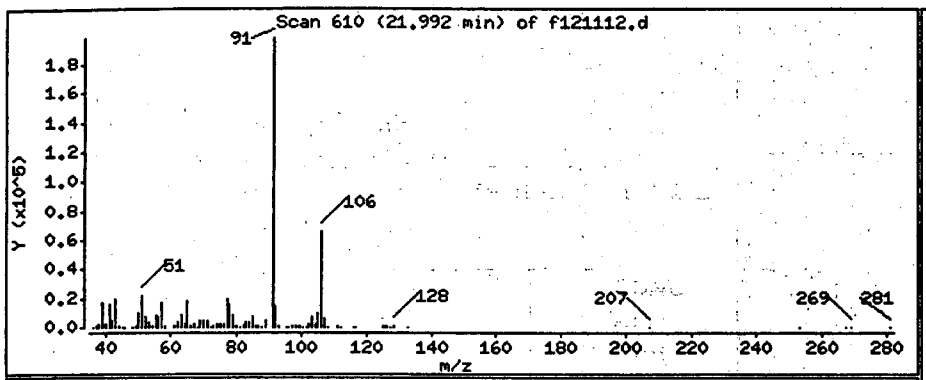
Operator: ct

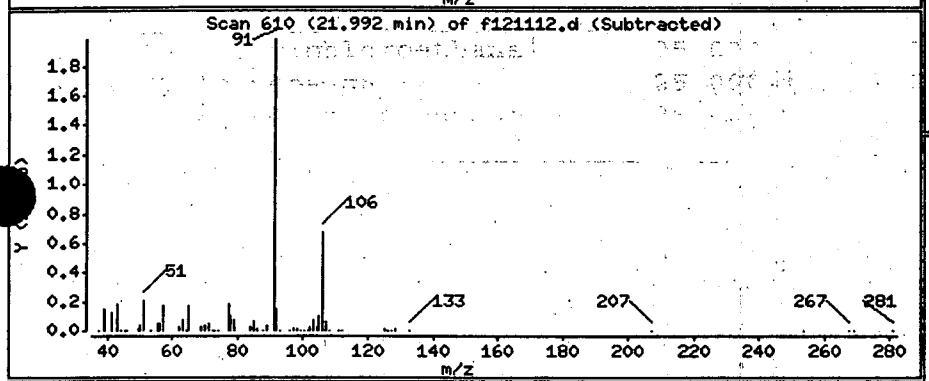
Column phase: RTx-624

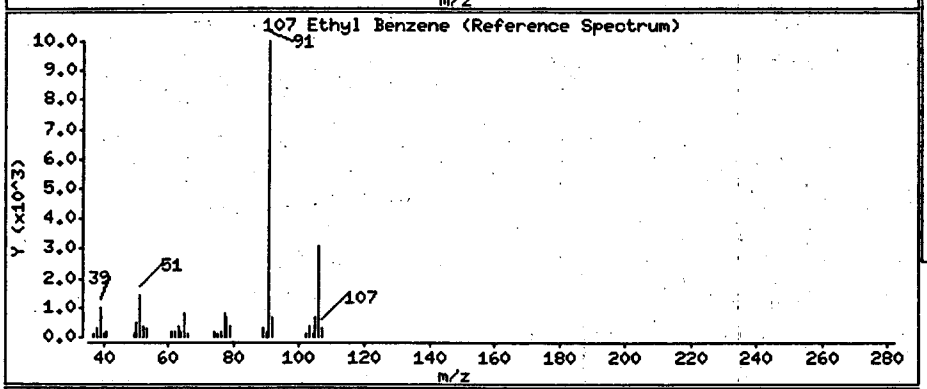
Column diameter: 0.53

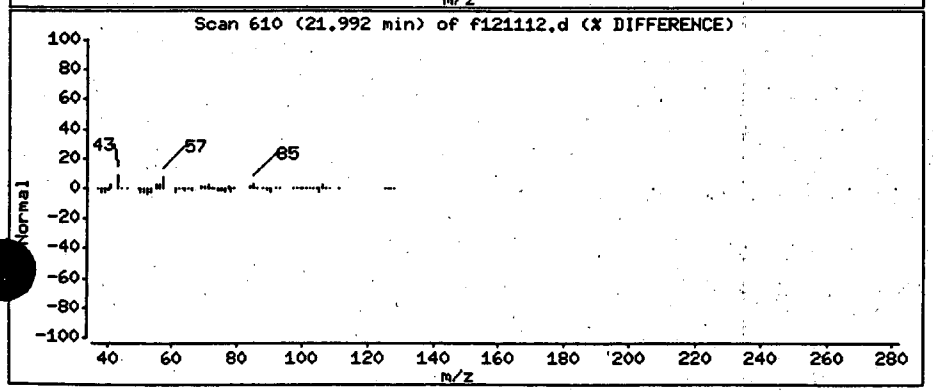
107 Ethyl Benzene

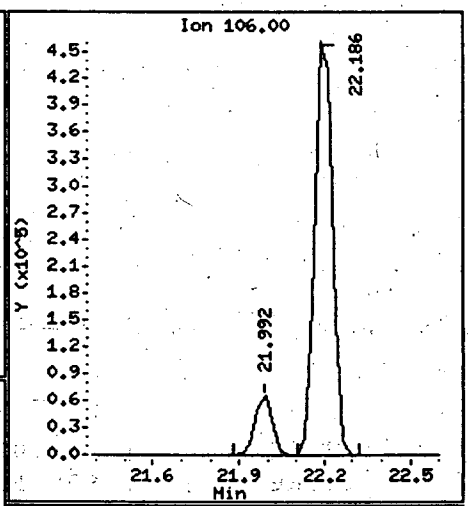
Concentration: 1789.8 PPBV

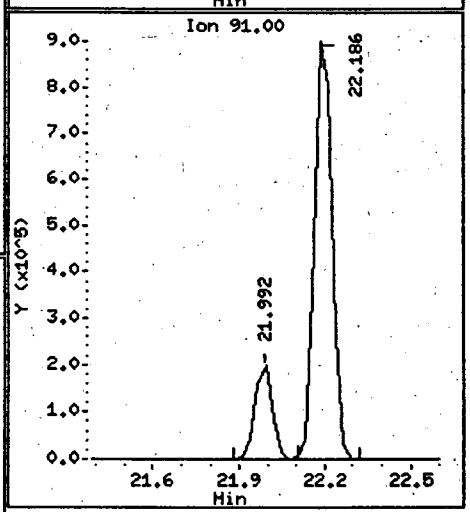












Data File: /chem/msdf.i/f-11dec.b/f121112.d

Date : 11-DEC-2002 14:57

Client ID: INFLUENT

Instrument: msdf.i

Sample Info: 4.0mL Can#4255

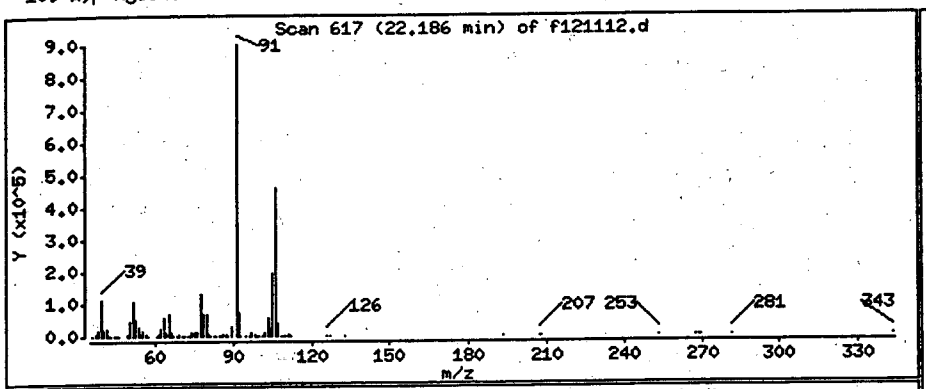
Operator: ct

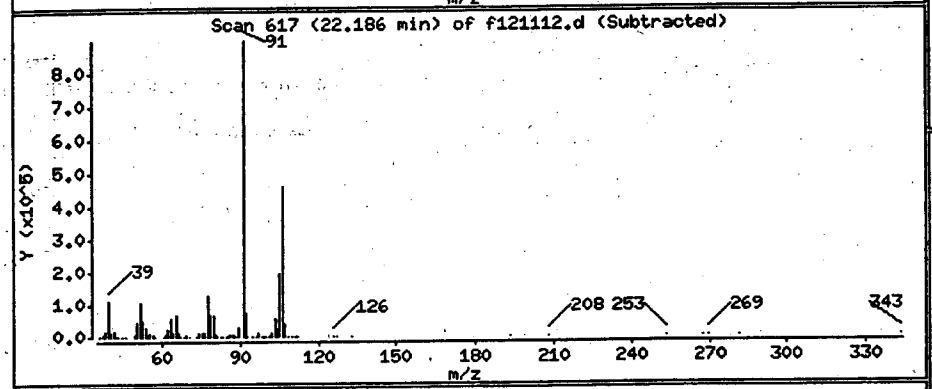
Column phase: RTx-624

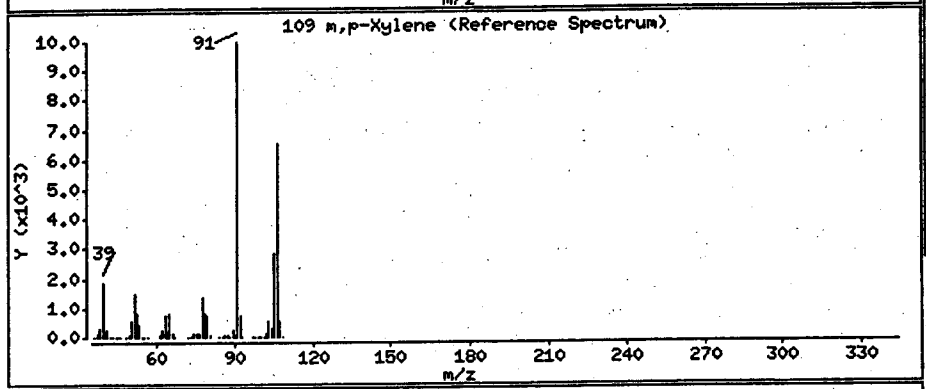
Column diameter: 0.53

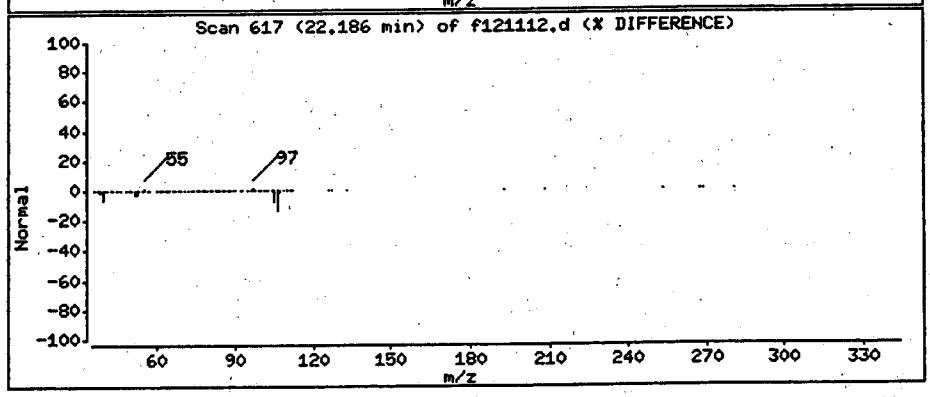
Concentration: 14633 PPBV

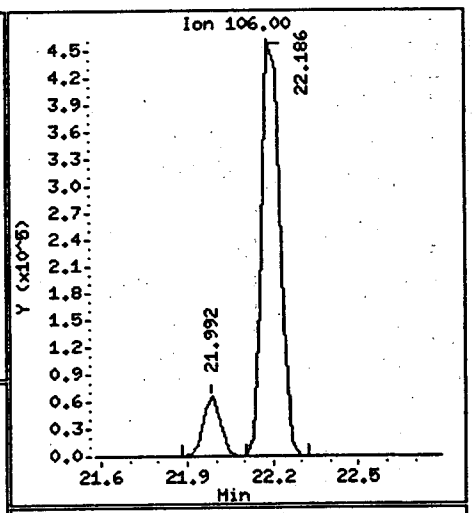
109 m,p-Xylene

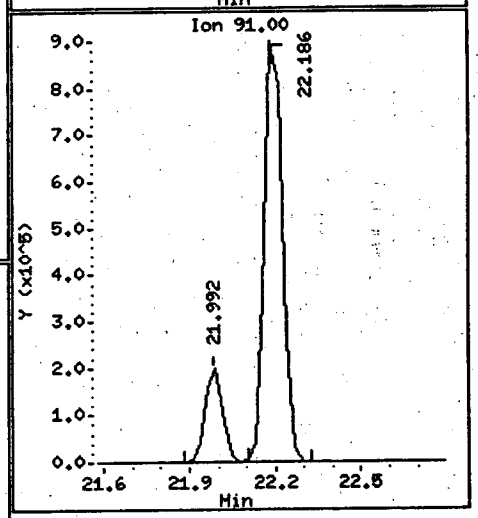












Data File: /chem/msdf.i/f-11dec.b/f121112.d

Date : 11-DEC-2002 14:57

Client ID: INFLUENT

Sample Info: 4.0mL Can#4255

Instrument: msdf.i

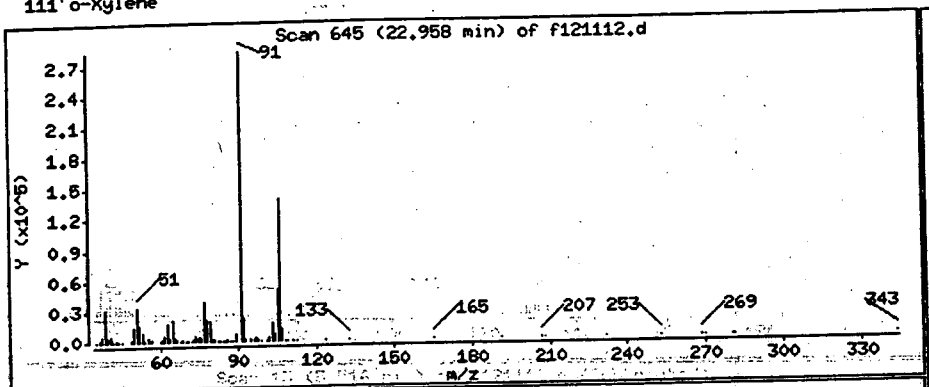
Operator: ct

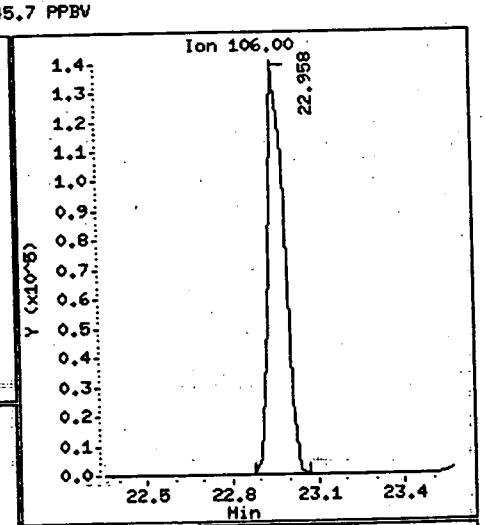
Column phase: RTx-624

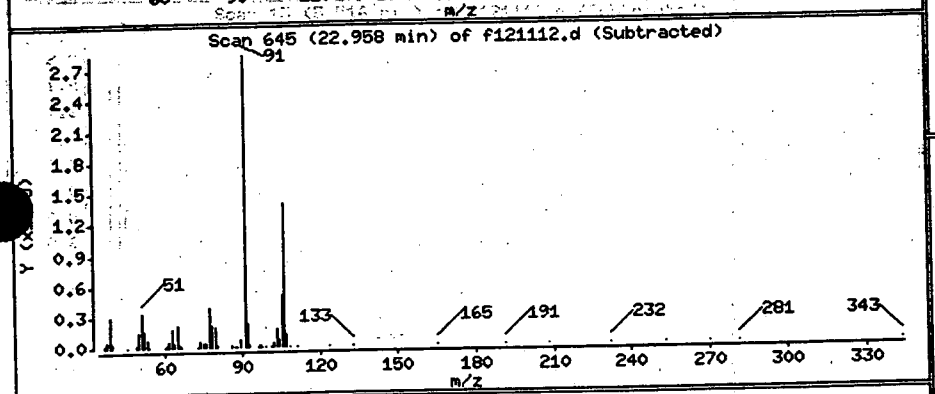
Column diameter: 0.53

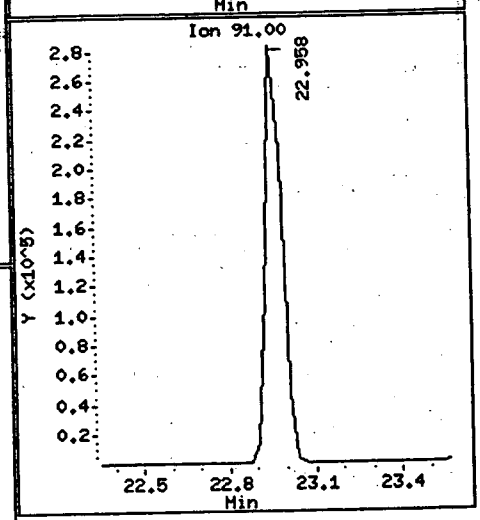
Concentration: 4145.7 PPBV

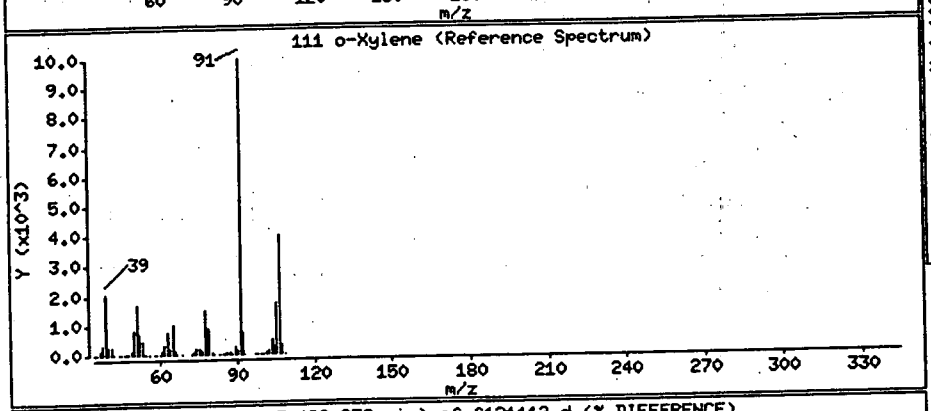
111 o-Xylene

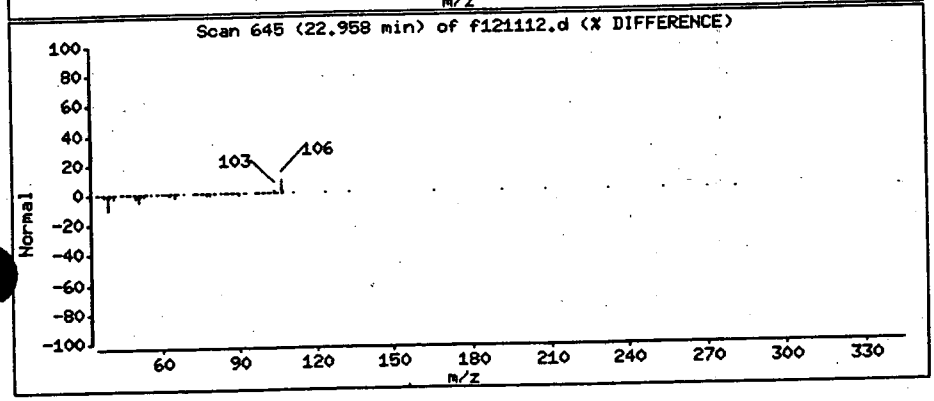












Data File: /chem/msdf.i/f-11dec.b/f121112.d

Date : 11-DEC-2002 14:57

Client ID: INFLUENT

Instrument: msdf.i

Sample Info: 4.0mL Can#4255

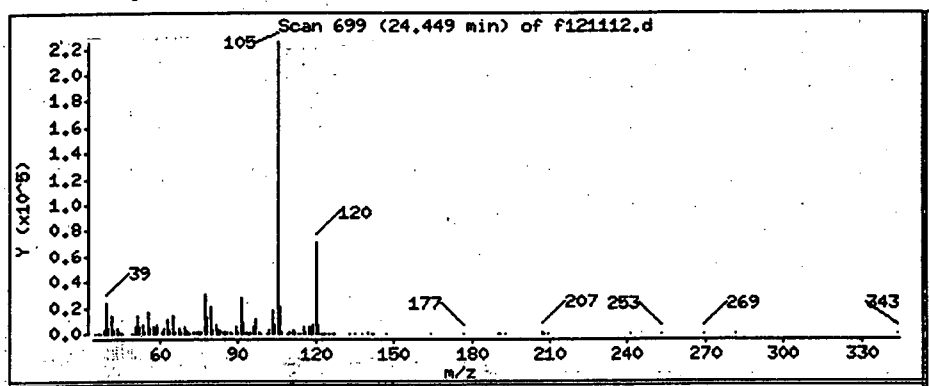
Operator: ct

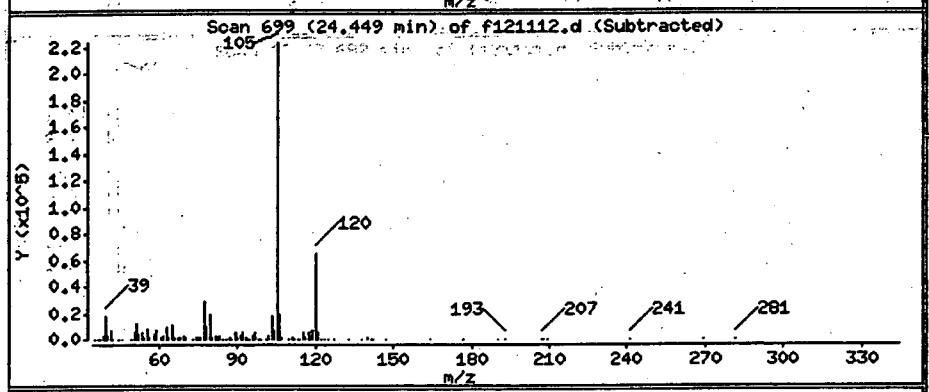
Column phase: RTx-624

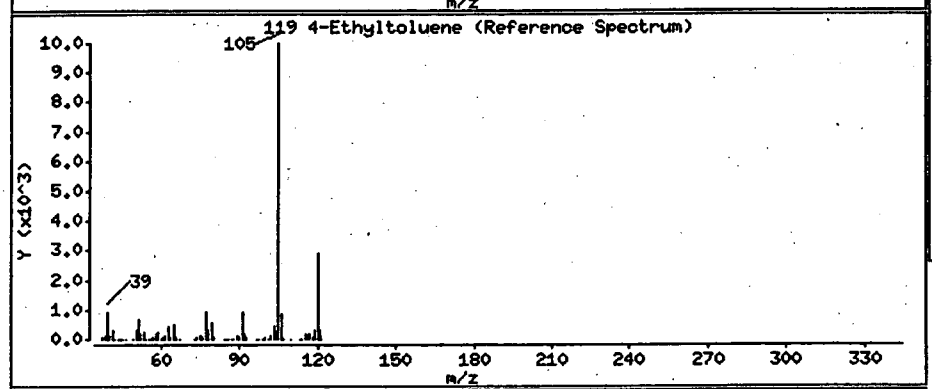
Column diameter: 0.53

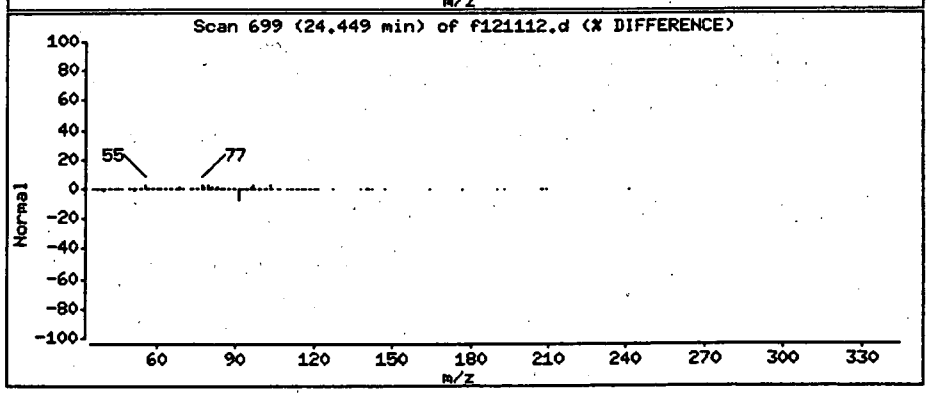
119 4-Ethyltoluene

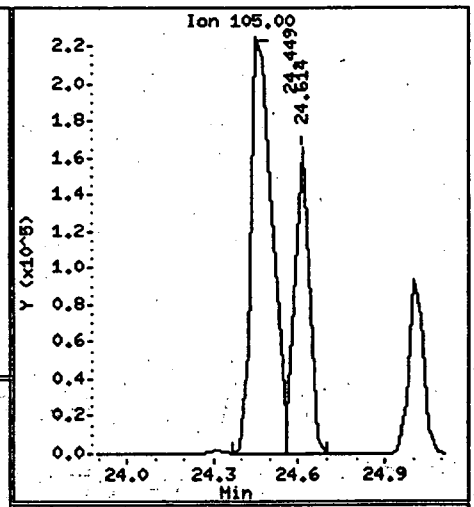
Concentration: 3323.0 PPBV

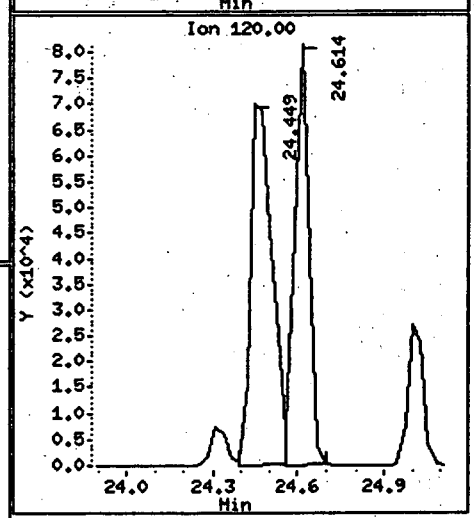












Data File: /chem/msdf.i/f-11dec.b/f121112.d

Date : 11-DEC-2002 14:57

Client ID: INFLUENT

Instrument: msdf.i

Sample Info: 4.0mL Can#4255

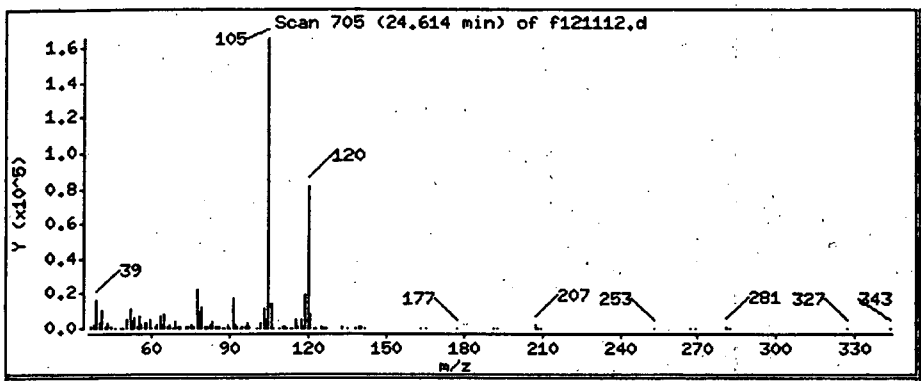
Operator: ct

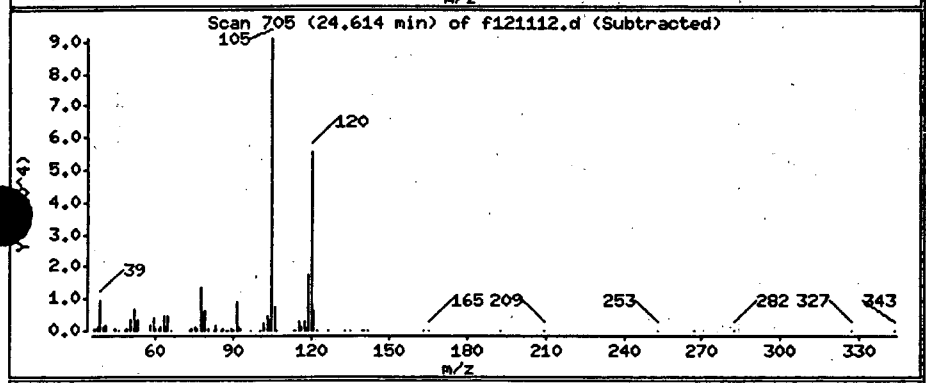
Column phase: RTx-624

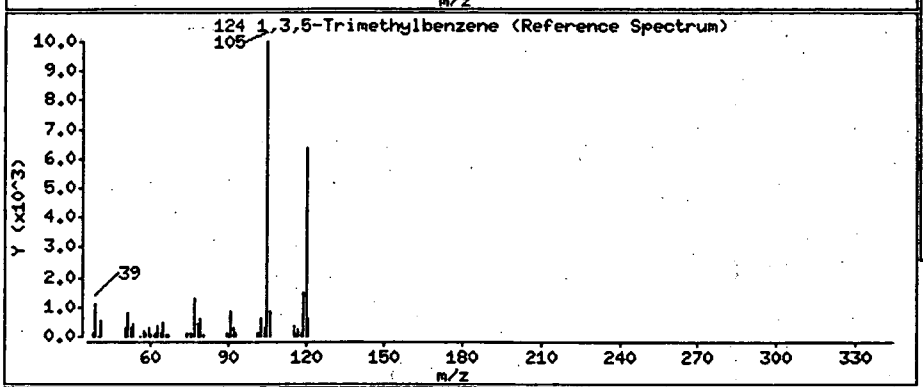
Column diameter: 0.53

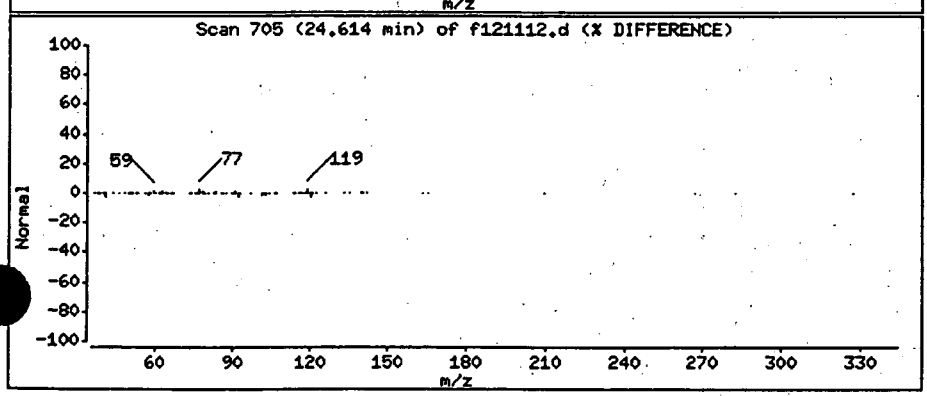
124 1,3,5-Trimethylbenzene

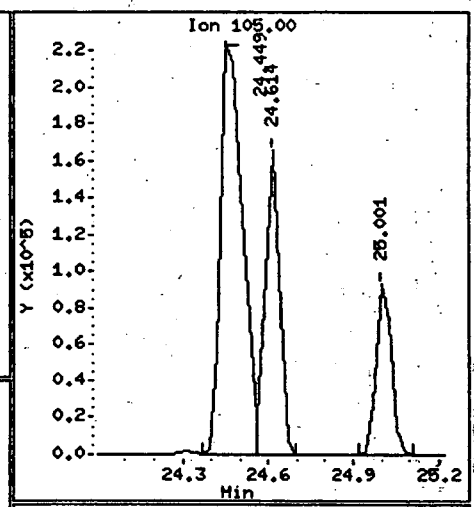
Concentration: 2399.3 PPBV

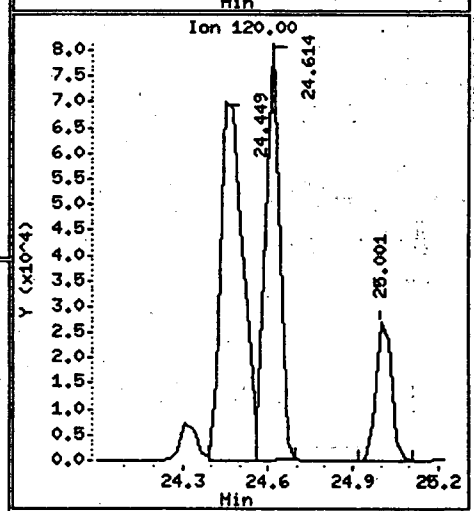












Data File: /chem/msdf.i/f-11dec.b/f121112.d

Date : 11-DEC-2002 14:57

Client ID: INFLUENT

Instrument: msdf.i

Sample Info: 4.0mL Can#4255

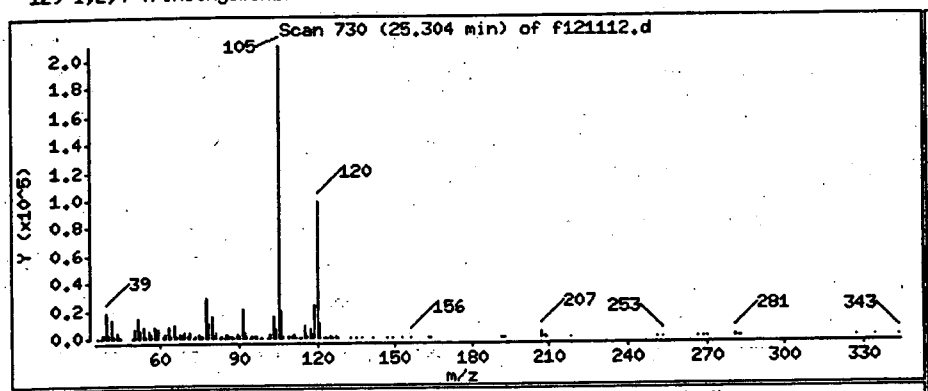
Operator: ct

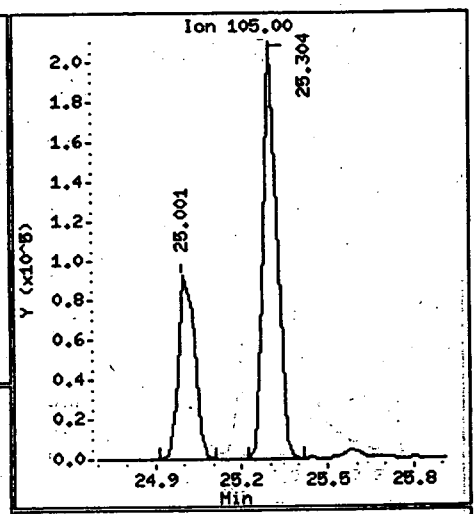
Column phase: RTx-624

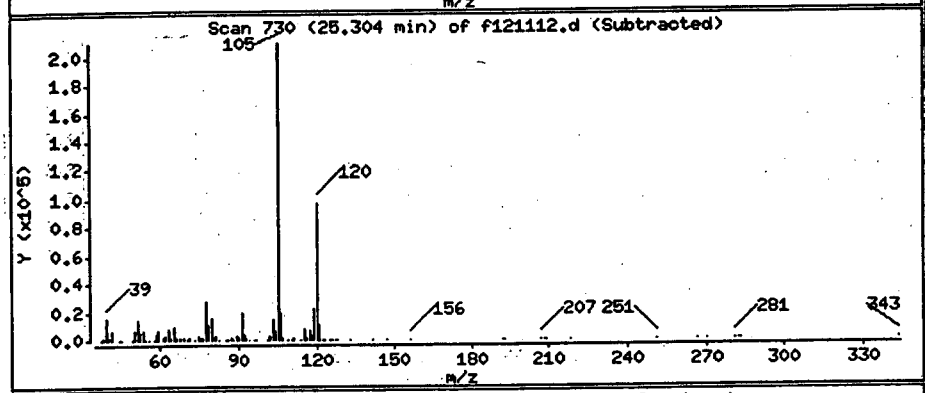
Column diameter: 0.53

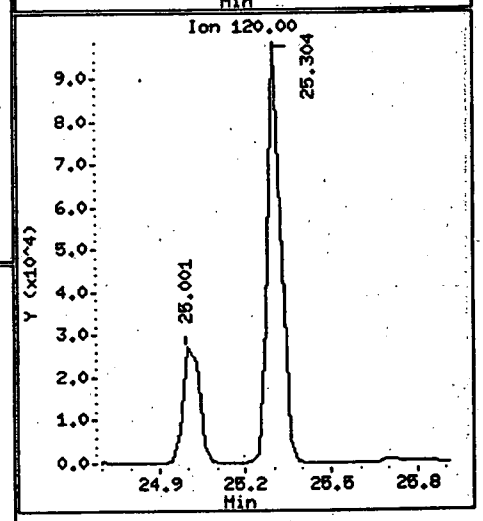
129 1,2,4-Trimethylbenzene

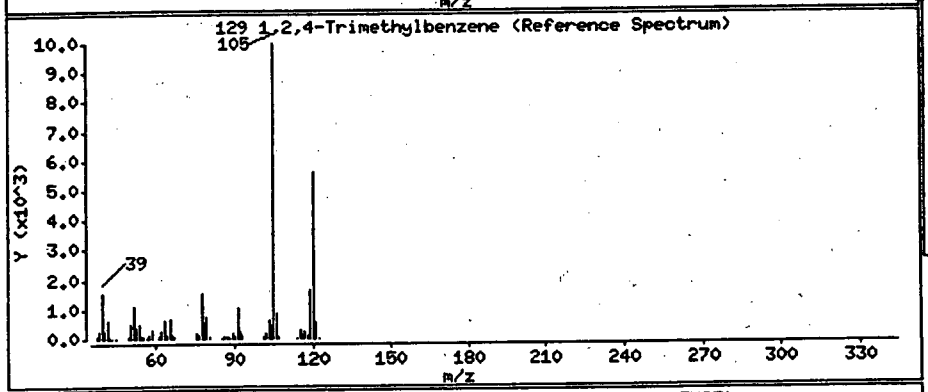
Concentration: 3413.7 PPBV

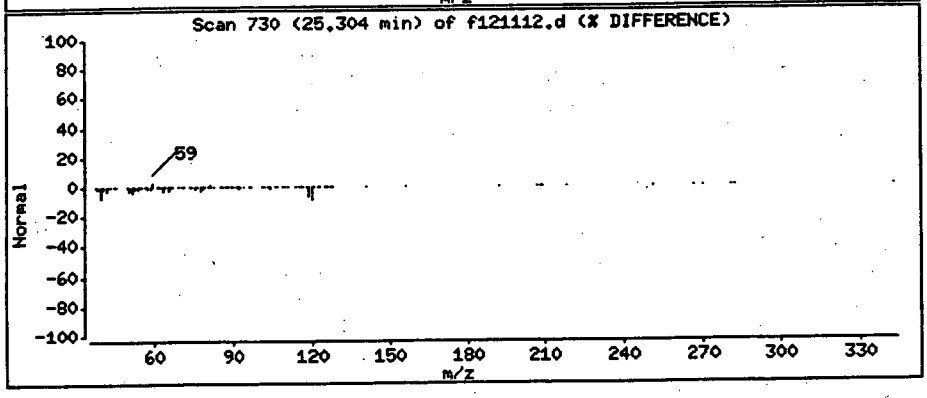












AIR TOXICS LTD.

SAMPLE NAME: EFFLUENT

ID#: 0212071-02A

MODIFIED EPA METHOD TO-14 GC/MS FULL SCAN

File Name:	f121111	Date of Collection:	11/27/02
Dil. Factor:	1.34	Date of Analysis:	12/11/02

Compound	Rpt. Limit (ppbv)	Rpt. Limit (uG/m3)	Amount (ppbv)	Amount (uG/m3)
Freon 12	0.67	3.4	1.7	8.5
Freon 114	0.67	4.8	Not Detected	Not Detected
Chloromethane	0.67	1.4	2.6	5.4
Vinyl Chloride	0.67	1.7	100	260
Bromomethane	0.67	2.6	Not Detected	Not Detected
Chloroethane	0.67	1.8	3.2	8.7
Freon 11	0.67	3.8	Not Detected	Not Detected
1,1-Dichloroethene	0.67	2.7	Not Detected	Not Detected
Freon 113	0.67	5.2	Not Detected	Not Detected
Methylene Chloride	0.67	2.4	18	64
1,1-Dichloroethane	0.67	2.8	Not Detected	Not Detected
cis-1,2-Dichloroethene	0.67	2.7	0.72	2.9
Chloroform	0.67	3.3	Not Detected	Not Detected
1,1,1-Trichloroethane	0.67	3.7	Not Detected	Not Detected
Carbon Tetrachloride	0.67	4.3	Not Detected	Not Detected
Benzene	0.67	2.2	Not Detected	Not Detected
1,2-Dichloroethane	0.67	2.8	Not Detected	Not Detected
Trichloroethene	0.67	3.6	Not Detected	Not Detected
1,2-Dichloropropane	0.67	3.1	Not Detected	Not Detected
cis-1,3-Dichloropropene	0.67	3.1	Not Detected	Not Detected
Toluene	0.67	2.6	1.3	5.1
trans-1,3-Dichloropropene	0.67	3.1	Not Detected	Not Detected
1,1,2-Trichloroethane	0.67	3.7	Not Detected	Not Detected
Tetrachloroethene	0.67	4.6	2.1	15
1,2-Dibromoethane (EDB)	0.67	5.2	Not Detected	Not Detected
Chlorobenzene	0.67	3.1	Not Detected	Not Detected
Ethyl Benzene	0.67	3.0	Not Detected	Not Detected
m,p-Xylene	0.67	3.0	4.4	20
o-Xylene	0.67	3.0	1.2	5.2
Styrene	0.67	2.9	Not Detected	Not Detected
1,1,2,2-Tetrachloroethane	0.67	4.7	Not Detected	Not Detected
1,3,5-Trimethylbenzene	0.67	3.3	0.91	4.5
1,2,4-Trimethylbenzene	0.67	3.3	1.4	7.2
1,3-Dichlorobenzene	0.67	4.1	Not Detected	Not Detected
1,4-Dichlorobenzene	0.67	4.1	Not Detected	Not Detected
alpha-Chlorotoluene	0.67	3.5	Not Detected	Not Detected
1,2-Dichlorobenzene	0.67	4.1	Not Detected	Not Detected
1,2,4-Trichlorobenzene	2.7	20	Not Detected	Not Detected
Hexachlorobutadiene	2.7	29	Not Detected	Not Detected
Propylene	2.7	4.7	70	120
1,3-Butadiene	2.7	6.0	Not Detected	Not Detected
Acetone	2.7	6.5	Not Detected	Not Detected

AIR TOXICS LTD.

SAMPLE NAME: EFFLUENT

ID#: 0212071-02A

MODIFIED EPA METHOD TO-14 GC/MS FULL SCAN

File Name:	f121111	Date of Collection:	11/27/02
Dil. Factor:	1.34	Date of Analysis:	12/11/02

Compound	Rpt. Limit (ppbv)	Rpt. Limit (uG/m3)	Amount (ppbv)	Amount (uG/m3)
Carbon Disulfide	2.7	8.5	Not Detected	Not Detected
2-Propanol	2.7	6.7	Not Detected	Not Detected
trans-1,2-Dichloroethene	2.7	11	Not Detected	Not Detected
Vinyl Acetate	2.7	9.6	Not Detected	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.7	8.0	Not Detected	Not Detected
Hexane	2.7	9.6	Not Detected	Not Detected
Tetrahydrofuran	2.7	8.0	Not Detected	Not Detected
Cyclohexane	2.7	9.4	Not Detected	Not Detected
1,4-Dioxane	2.7	9.8	Not Detected	Not Detected
Bromodichloromethane	2.7	18	Not Detected	Not Detected
4-Methyl-2-pentanone	2.7	11	Not Detected	Not Detected
2-Hexanone	2.7	11	Not Detected	Not Detected
Dibromochloromethane	2.7	23	Not Detected	Not Detected
Bromoform	2.7	28	Not Detected	Not Detected
4-Ethyltoluene	2.7	13	Not Detected	Not Detected
Ethanol	2.7	5.1	Not Detected	Not Detected
Methyl tert-Butyl Ether	2.7	9.8	Not Detected	Not Detected
Heptane	2.7	11	Not Detected	Not Detected

Container Type: 6 Liter Silonite Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	70	70-130
Toluene-d8	84	70-130
4-Bromofluorobenzene	99	70-130

Data File: /chem/msdf.i/f-11dec.b/f121111.d
Report Date: 16-Dec-2002 13:14

Air Toxics Ltd.

METHOD TO14

Data file : /chem/msdf.i/f-11dec.b/f121111.d
Lab Smp Id: 0212071-02A
Client Smp ID: EFFLUENT
Inj Date : 11-DEC-2002 14:20
Operator : ct
Inst ID: msdf.i
Smp Info : 200mL Can#3733
Misc Info : 0.0"Hg-5psi Mactec notics
Comment :
Method : /var/chem/msdf.i/f-11dec.b/to14n25c.m
Meth Date : 11-Dec-2002 10:57 ctaylor
Quant Type: ISTD
Cal Date : 09-DEC-2002 10:49
Cal File: f120907.d
Als bottle: 1
Dil Factor: 1.34000
Integrator: HP RTE
Compound Sublist: AT.sub
Target Version: 3.50
Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
* 59 Bromochloromethane						CAS #: 74-97-5			
14.293	14.265	(1.000)	130	622916	25.0000		80.00- 120.00	100.00	9432
14.293	14.265	(0.000)	128	86608			29.33- 129.33	13.90	
14.293	14.265	(0.000)	49	170855			122.65- 222.65	27.43	
* 72 1,4-Difluorobenzene						CAS #: 540-36-3			
16.197	16.169	(1.000)	114	1308631	25.0000		80.00- 120.00	100.00	9455
16.197	16.169	(0.000)	88	21904			0.00- 66.58	1.67	
* 105 Chlorobenzene-d5						CAS #: 3114-55-4			
21.854	21.854	(1.000)	117	595464	25.0000		80.00- 120.00	100.00	
21.854	21.854	(1.000)	82	338331			6.52- 106.52	56.82	
$ 65 1,2-Dichloroethane-d4						CAS #: 17060-07-0			
15.479	15.452	(1.083)	65	656234	17.5071	17.507	80.00- 120.00	100.00	10000
15.479	15.452	(0.000)	67	51672			1.64- 101.64	7.87	
$ 91 Toluene-d8						CAS #: 2037-26-5			
19.012	19.012	(1.174)	98	745435	20.8854	20.885	80.00- 120.00	100.00	9823
19.012	19.012	(0.000)	70	16298			0.00- 62.97	2.19	

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
$ 91 Toluene-d8 (continued)									
19.012	19.012	(0.000)	100	87304			18.10- 118.10	11.71	
$ 117 Bromofluorobenzene						CAS #: 460-00-4			
23.980	23.979	(1.097)	95	304649	24.7028	24.703	80.00- 120.00	100.00	8157
23.980	23.979	(0.000)	174	50248			15.71- 115.71	16.49	
23.980	23.979	(0.000)	176	47968			12.57- 112.57	15.75	
2 Propylene						CAS #: 115-07-1			
5.516	5.516	(0.386)	41	2056288	51.8948	69.539	80.00- 120.00	100.00	7686
5.516	5.516	(0.000)	42	148156			0.00- 70.46	7.21	
5.516	5.516	(0.000)	39	188470			52.89- 152.89	9.17	
4 Dichlorodifluoromethane/Fr12						CAS #: 75-71-8			
5.682	5.654	(0.398)	85	136843	1.26140	1.690	80.00- 120.00	100.00	2873
5.682	5.654	(0.000)	87	4421			0.00- 82.26	3.23	
8 Chloromethane						CAS #: 74-87-3			
6.399	6.372	(0.448)	50	67814	1.90955	2.559	80.00- 120.00	100.00	
6.399	6.372	(0.448)	52	41954			0.00- 94.08	61.87	
10 Vinyl Chloride						CAS #: 75-01-4			
6.841	6.841	(0.479)	62	3112816	76.0376	101.89	80.00- 120.00	100.00	4529
6.841	6.841	(0.000)	64	103515			0.00- 79.95	3.33	
15 Chloroethane						CAS #: 75-00-3			
8.359	8.359	(0.585)	64	49009	2.41156	3.231	80.00- 120.00	100.00	3931
8.359	8.359	(0.000)	66	1564			0.00- 79.89	3.19	
36 Methylene Chloride						CAS #: 75-09-2			
11.367	11.339	(0.795)	49	855404	13.6425	18.281	80.00- 120.00	100.00	9376
11.367	11.339	(0.000)	84	89888			17.09- 117.09	10.51	
11.367	11.339	(0.000)	51	38096			0.00- 76.78	4.45	
54 cis-1,2-Dichloroethene						CAS #: 156-59-2			
13.851	13.823	(0.969)	61	36292	0.53727	0.7199	80.00- 120.00	100.00	8180
13.851	13.823	(0.000)	96	2741			20.12- 120.12	7.55	
13.851	13.823	(0.000)	98	1971			0.00- 95.80	5.43	
92 Toluene						CAS #: 108-88-3			
19.150	19.150	(1.182)	91	56388	1.00156	1.342	80.00- 120.00	100.00	8264
19.150	19.150	(0.000)	92	5752			12.27- 112.27	10.20	
96 Tetrachloroethene						CAS #: 127-18-4			
20.171	20.171	(0.923)	166	44851	1.59258	2.134	80.00- 120.00	100.00	9089
20.171	20.171	(0.000)	129	6635			22.15- 122.15	14.79	

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
96 Tetrachloroethene (continued)									
20.171	20.171	(0.000)	131	5462			20.31- 120.31	12.18	
109 m,p-Xylene						CAS #: 108-38-3			
22.186	22.186	(1.015)	106	43098	3.30678	4.431	80.00- 120.00	100.00	
22.186	22.186	(1.015)	91	85841			151.15- 251.15	199.18	
111 o-Xylene						CAS #: 95-47-6			
22.958	22.958	(1.050)	106	10820	0.88136	1.181	80.00- 120.00	100.00	8875
22.958	22.958	(0.000)	91	5708			150.69- 250.69	52.75	
124 1,3,5-Trimethylbenzene						CAS #: 108-67-8			
24.614	24.614	(1.126)	105	15188	0.67839	0.9090	80.00- 120.00	100.00	
24.614	24.614	(1.126)	120	6617			0.00- 98.67	43.57	
129 1,2,4-Trimethylbenzene						CAS #: 95-63-6			
25.304	25.304	(1.158)	105	19542	1.06994	1.434	80.00- 120.00	100.00	8444
25.304	25.304	(0.000)	120	2946			0.00- 95.51	15.08	

Data File: /chem/msdf.i/f-11dec.b/f121111.d
Report Date: 16-Dec-2002 13:14

Air Toxics Ltd.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdf.i
Lab File ID: f121111.d
Lab Smp Id: 0212071-02A
Analysis Type: VOA
Quant Type: ISTD
Operator: ct
Method File: /var/chem/msdf.i/f-11dec.b/to14n25c.m
Misc Info: 0.0"Hg-5psi Mactec notics

Calibration Date: 11-DEC-2002
Calibration Time: 09:38
Client Smp ID: EFFLUENT
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
59 Bromochloromethan	679915	407949	951881	622916	-8.38
72 1,4-Difluorobenze	1573788	944273	2203303	1308631	-16.85
105 Chlorobenzene-d5	798262	478957	1117567	595464	-25.40

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
59 Bromochloromethan	14.26	13.93	14.59	14.29	0.19
72 1,4-Difluorobenze	16.17	15.84	16.50	16.20	0.17
105 Chlorobenzene-d5	21.85	21.52	22.18	21.85	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Air Toxics Ltd.

RECOVERY REPORT

Client Name:
Sample Matrix: GAS
Lab Smp Id: 0212071-02A
Level: LOW
Data Type: MS DATA
SpikeList File:
Sublist File: AT.sub
Method File: /var/chem/msdf.i/f-11dec.b/to14n25c.m
Misc Info: 0.0"Hg-5psi Mactec notics

Client SDG: f-11dec
Fraction: VOA
Client Smp ID: EFFLUENT
Operator: ct
SampleType: SAMPLE
Quant Type: ISTD

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 65 1,2-Dichloroethane	25.000	17.507	70.03	70-130
$ 91 Toluene-d8	25.000	20.885	83.54	70-130
$ 117 Bromofluorobenzene	25.000	24.703	98.81	70-130

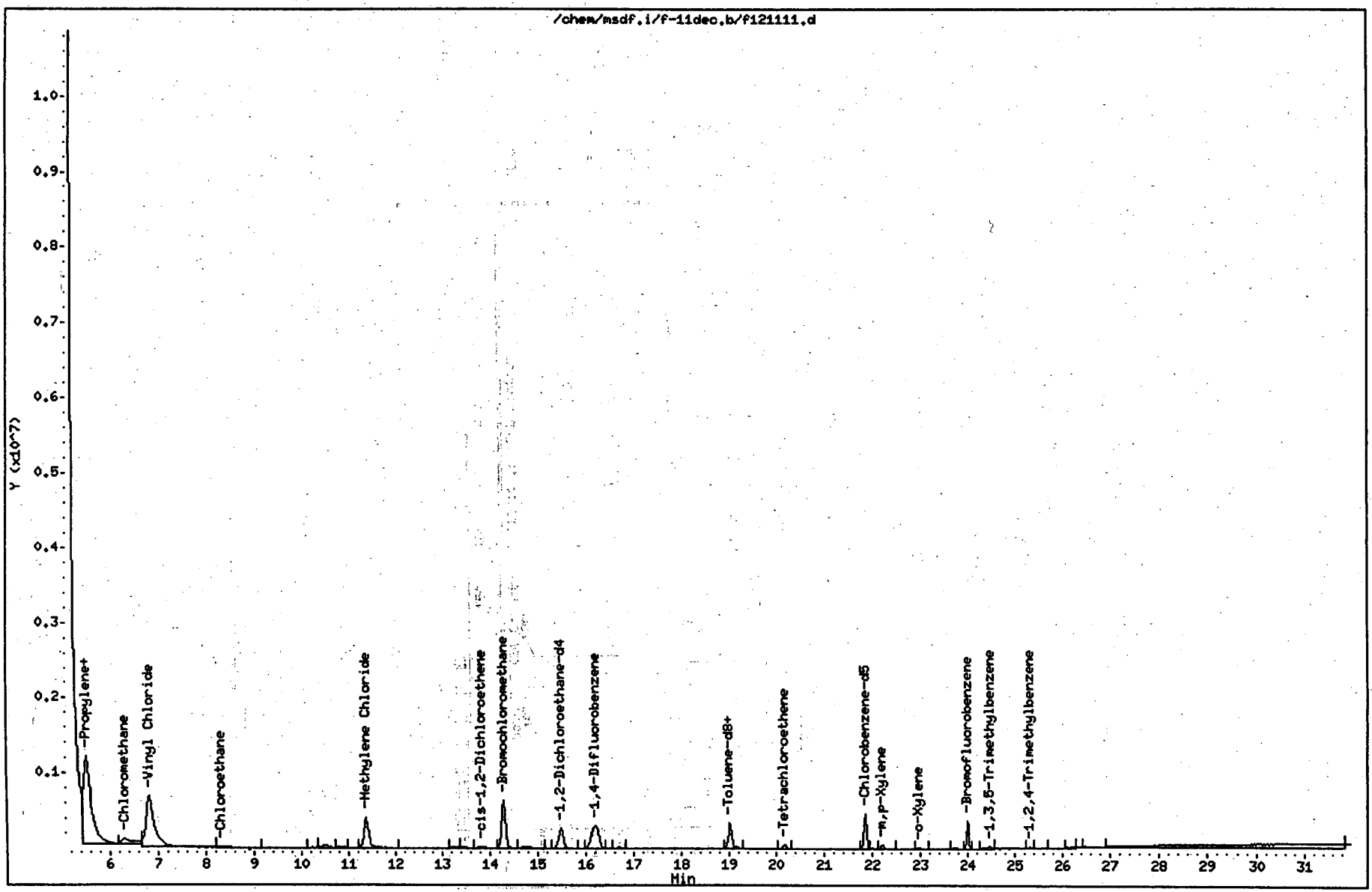
Data File: /chem/msdf.i/f-11dec.b/f121111.d
Date : 11-DEC-2002 14:20
Client ID: EFFLUENT
Sample Info: 200mL Can#3733

Column phase: RTx-624

Instrument: msdf.i

Operator: ct
Column diameter: 0.53

0037



Data File: /chem/msdf.i/f-11dec.b/f121111.d

Date : 11-DEC-2002 14:20

Client ID: EFFLUENT

Instrument: msdf.i

Sample Info: 200mL Can#3733

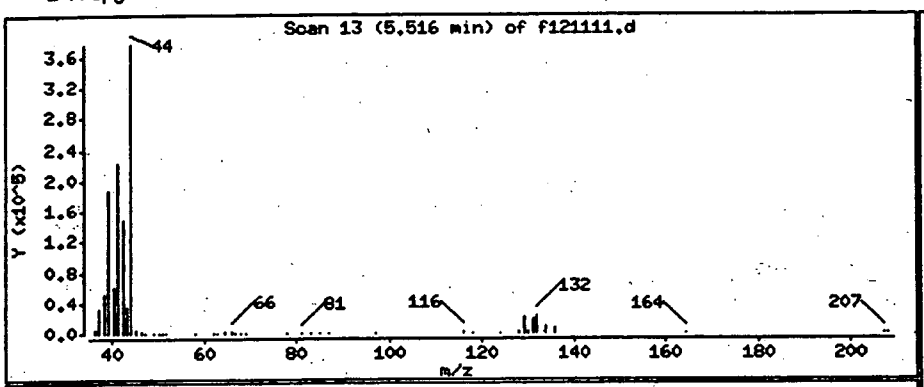
Operator: ct

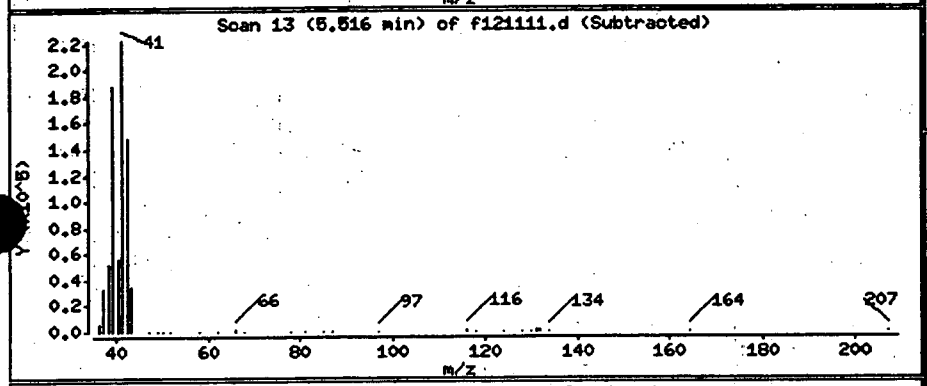
Column phase: RTx-624

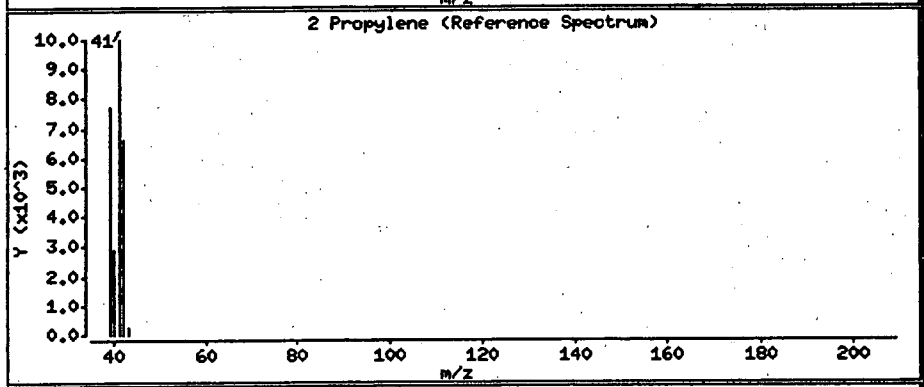
Column diameter: 0.53

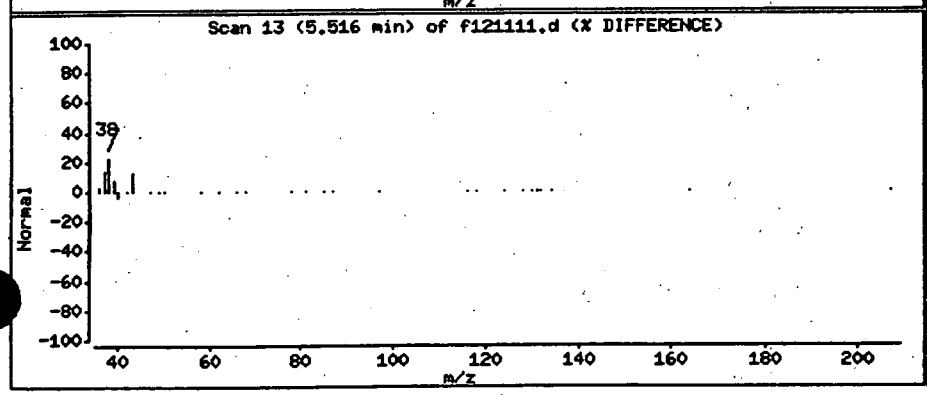
2 Propylene

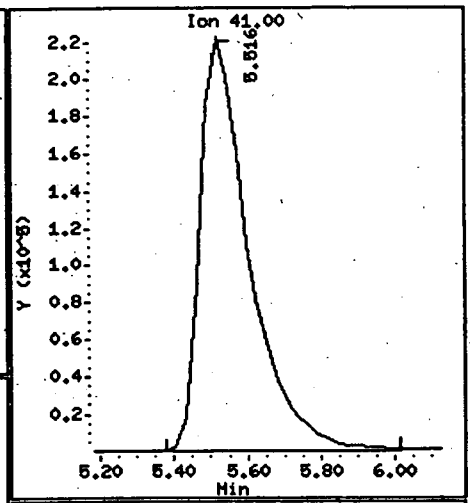
Concentration: 69.539 PPBV

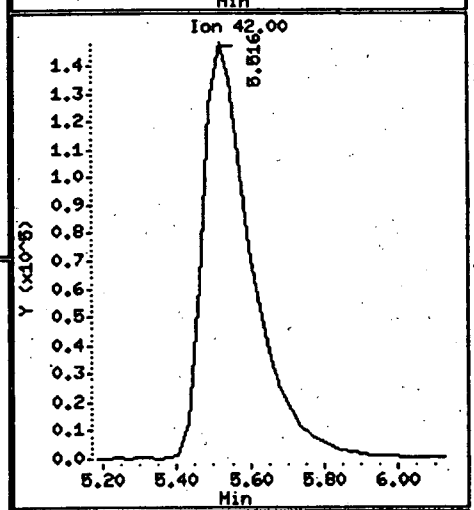


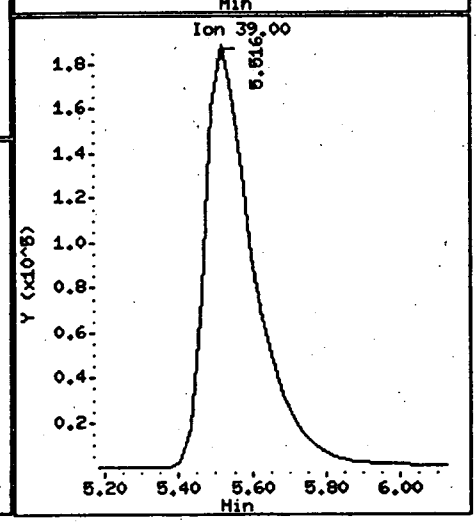












Data File: /chem/msdf.i/f-11dec.b/f121111.d

Date : 11-DEC-2002 14:20

Client ID: EFFLUENT

Instrument: msdf.i

Sample Info: 200mL Can#3733

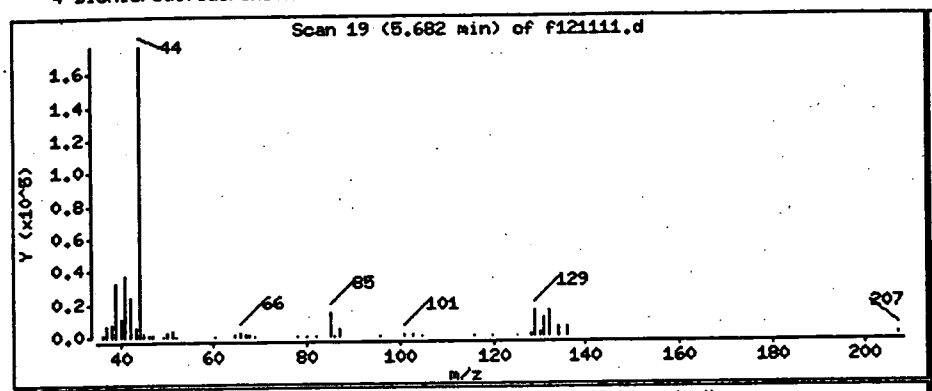
Operator: ct

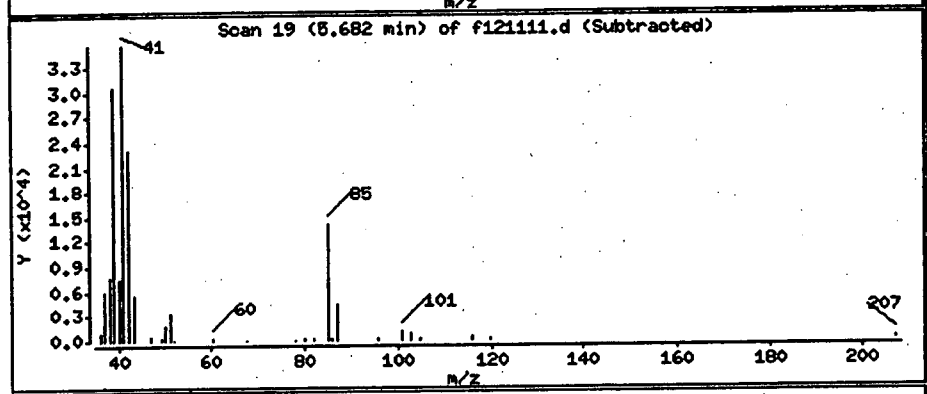
Column phase: RTx-624

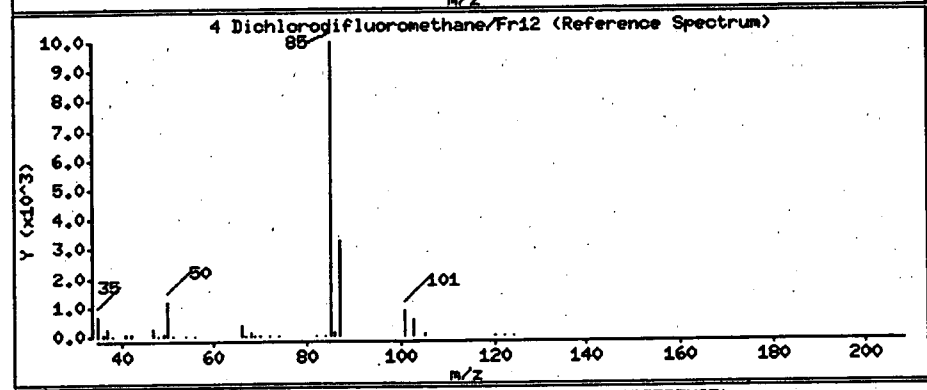
Column diameter: 0.53

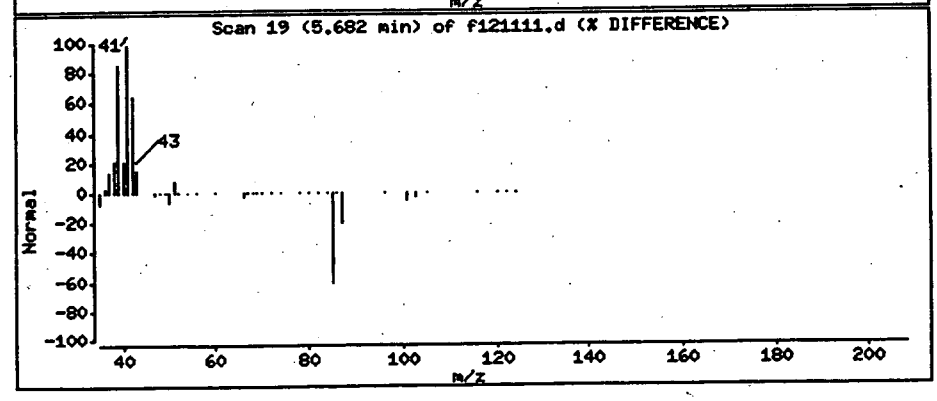
4 Dichlorodifluoromethane/Fr12

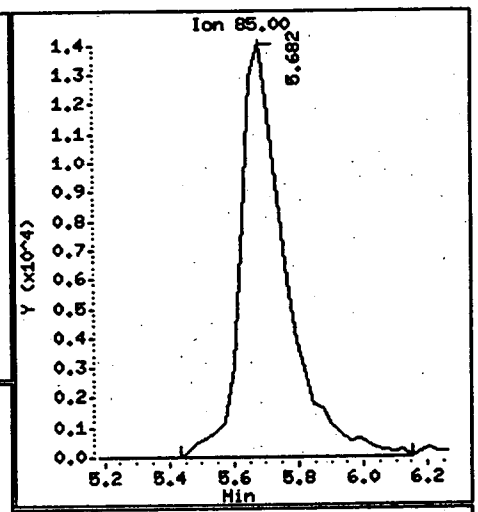
Concentration: 1.690 PPBV

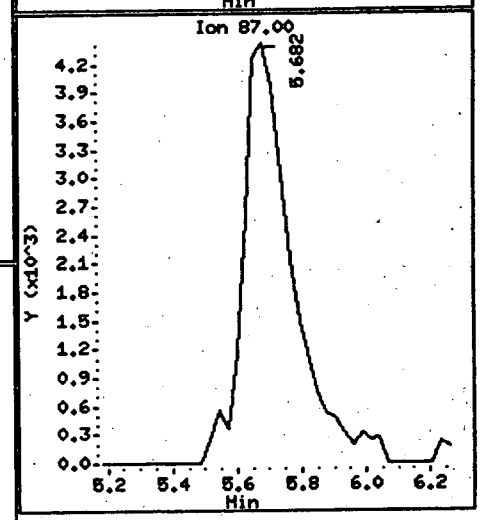












Data File: /chem/msdf.i/f-11dec.b/f121111.d

Date : 11-DEC-2002 14:20

Client ID: EFFLUENT

Instrument: msdf.i

Sample Info: 200mL Can#3733

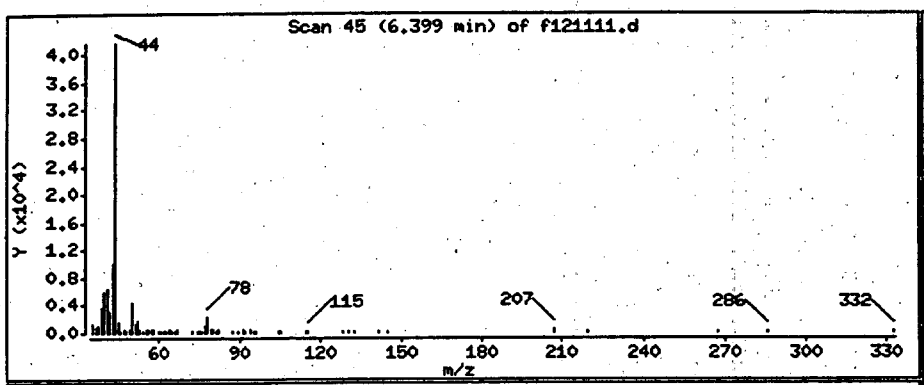
Operator: ct

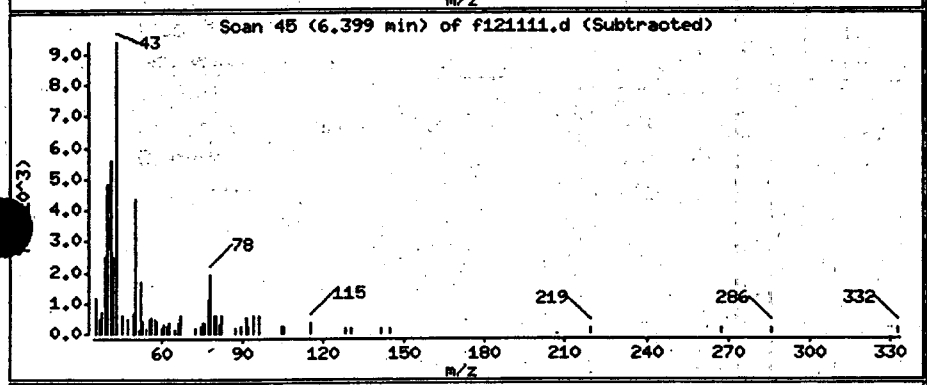
Column phase: RTx-624

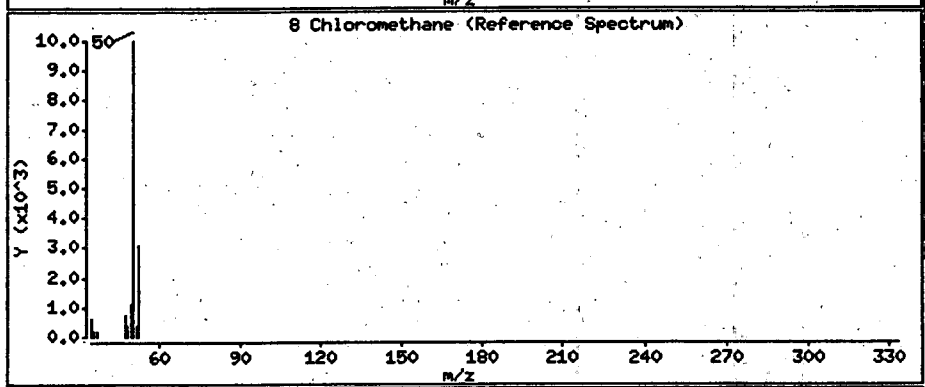
Column diameter: 0.53

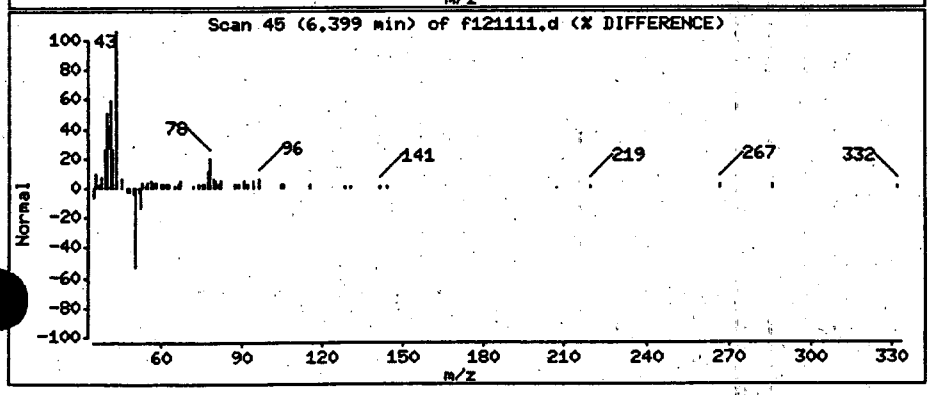
8 Chloromethane

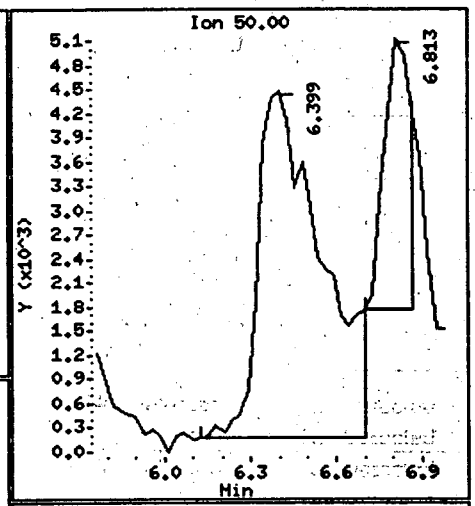
Concentration: 2.559 PPBV

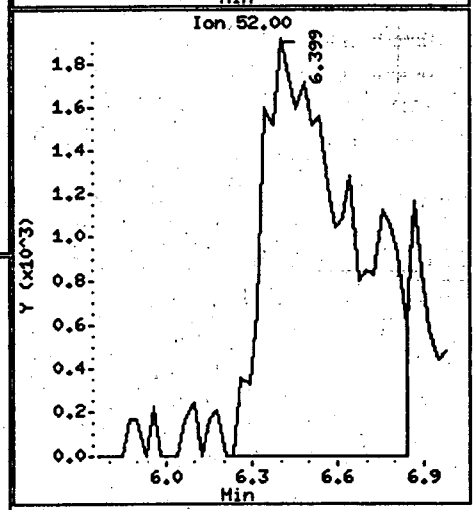












Data File: /chem/msdf.i/f-11dec.b/f121111.d

Date : 11-DEC-2002 14:20

Client ID: EFFLUENT

Instrument: msdf.i

Sample Info: 200mL Can#3733

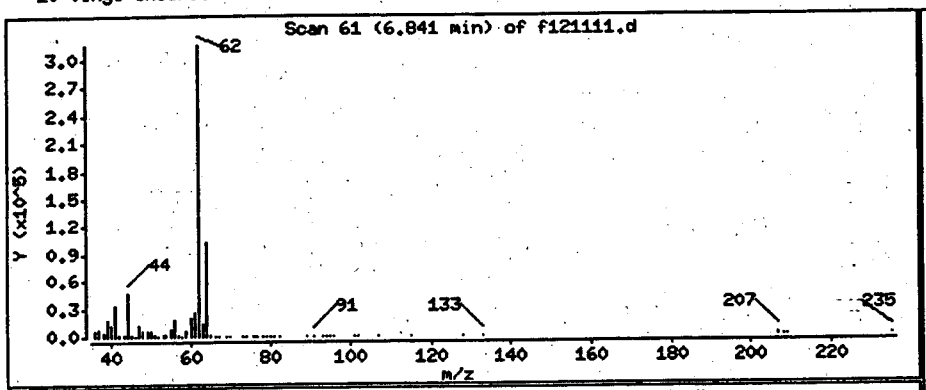
Operator: ct

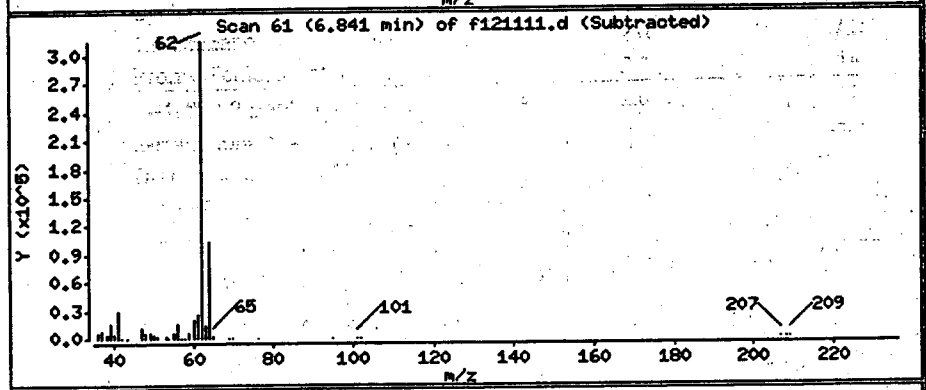
Column phase: RTx-624

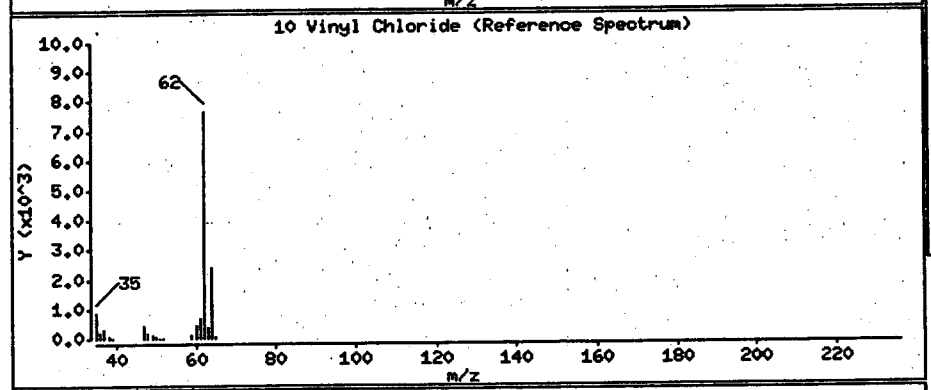
Column diameter: 0.53

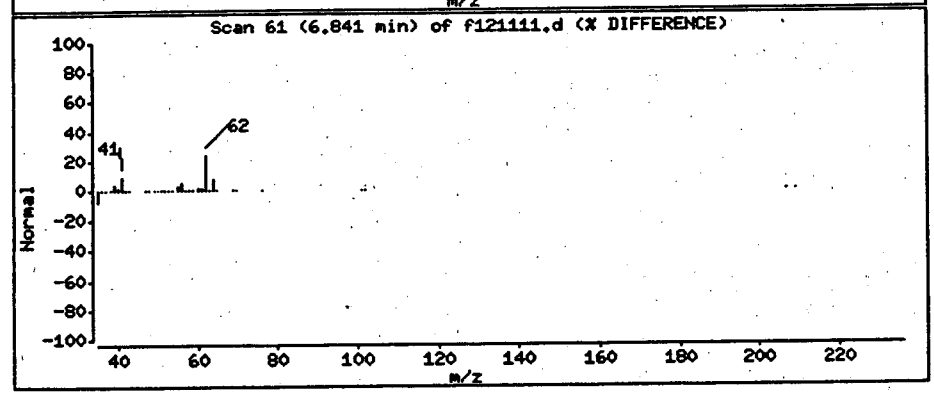
10 Vinyl Chloride

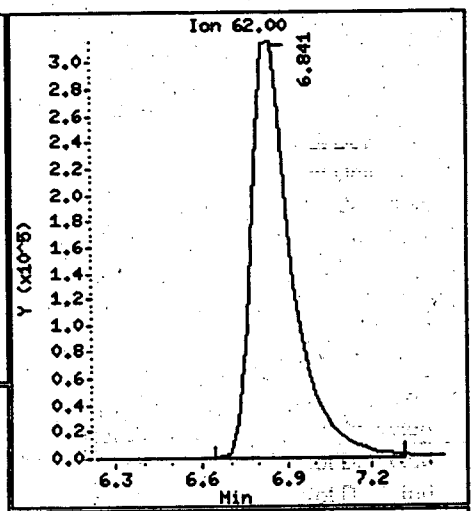
Concentration: 101.89 PPBV

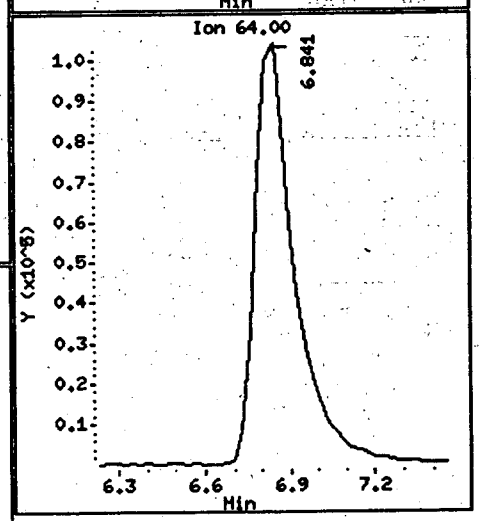












Data File: /chem/msdf.i/f-11dec.b/f121111.d

Date : 11-DEC-2002 14:20

Client ID: EFFLUENT

Instrument: msdf.i

Sample Info: 200mL Can#3733

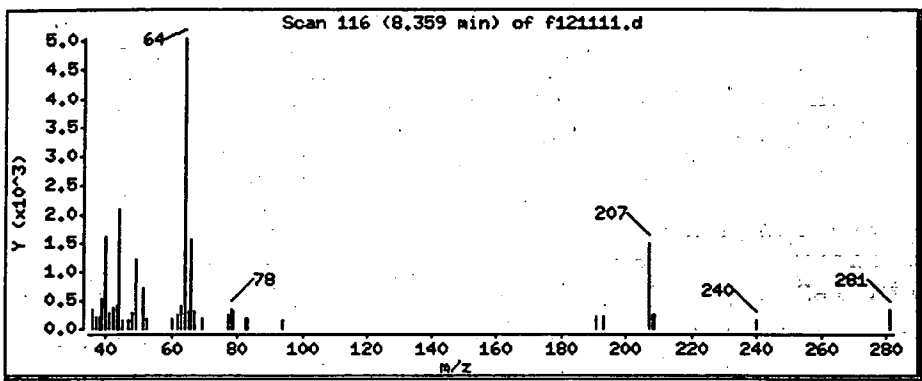
Operator: ct

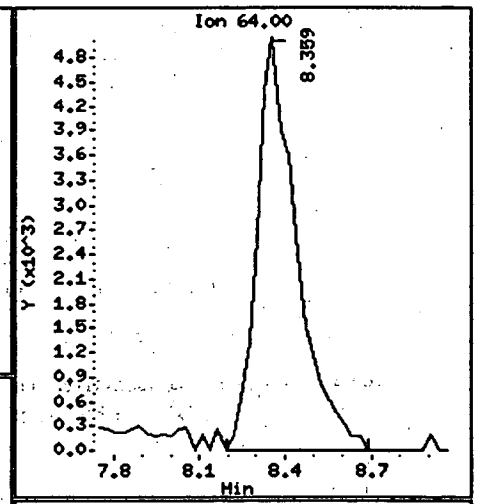
Column phase: RTx-624

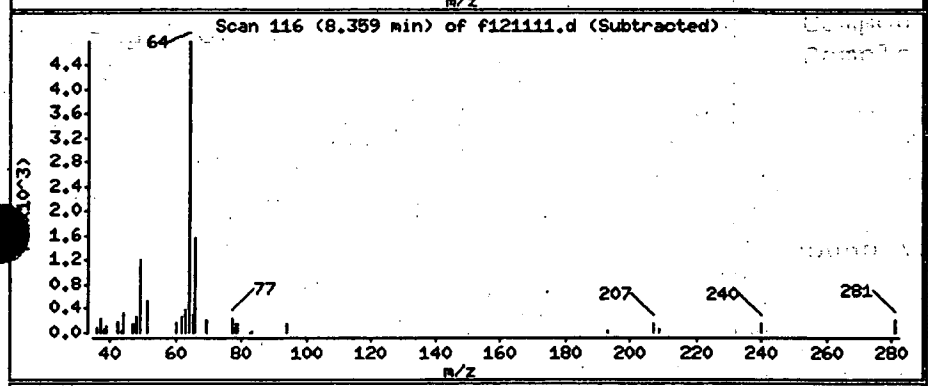
Column diameter: 0.53

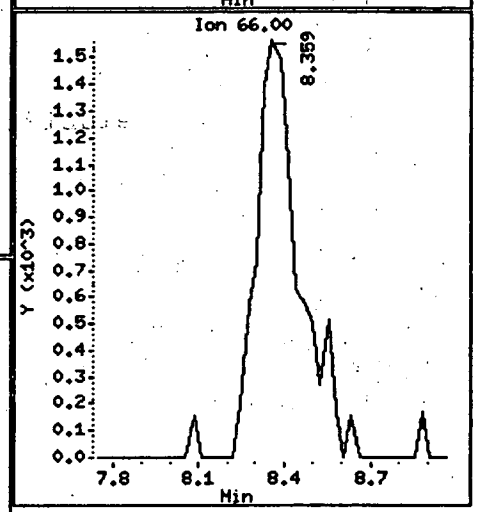
15 Chloroethane

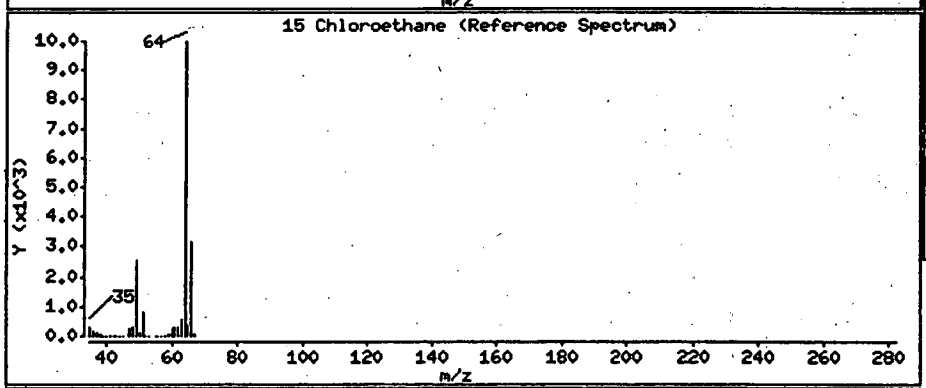
Concentration: 3.231 PPBV

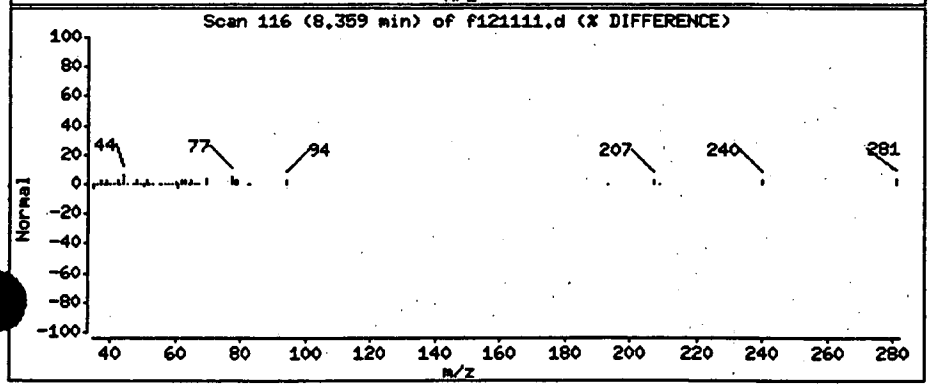












Data File: /chem/msdf.i/f-11dec.b/f121111.d

Date : 11-DEC-2002 14:20

Client ID: EFFLUENT

Sample Info: 200mL Can#3733

Instrument: msdf.i

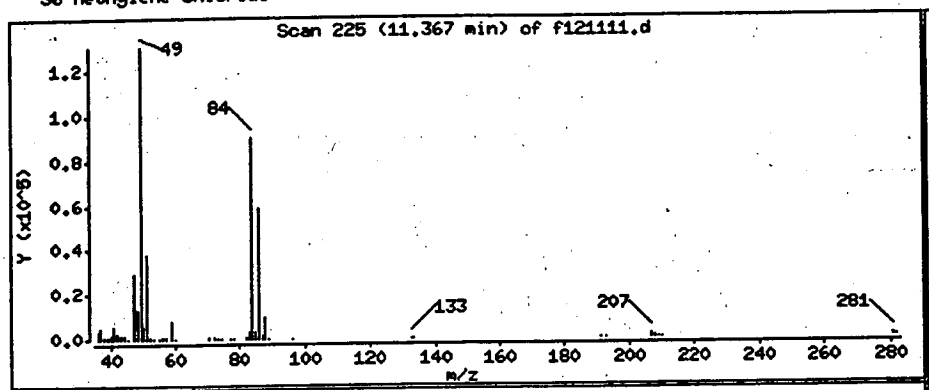
Operator: ct

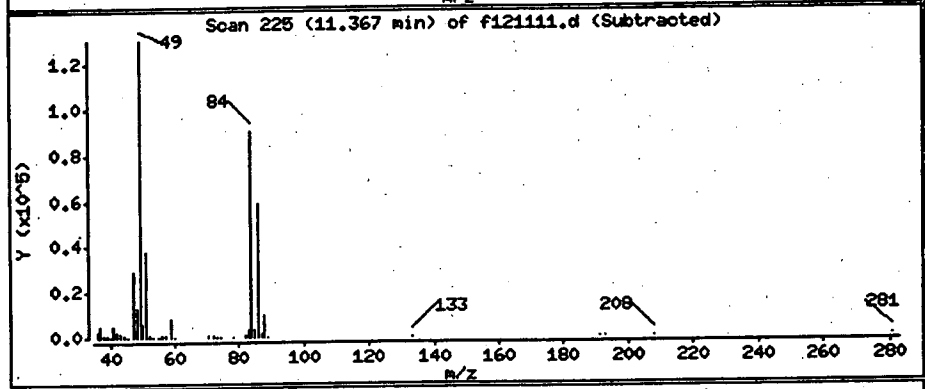
Column phase: RTx-624

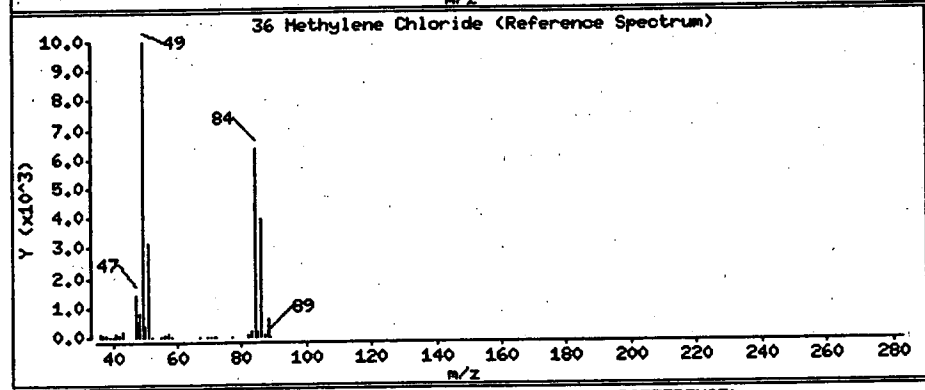
Column diameter: 0.53

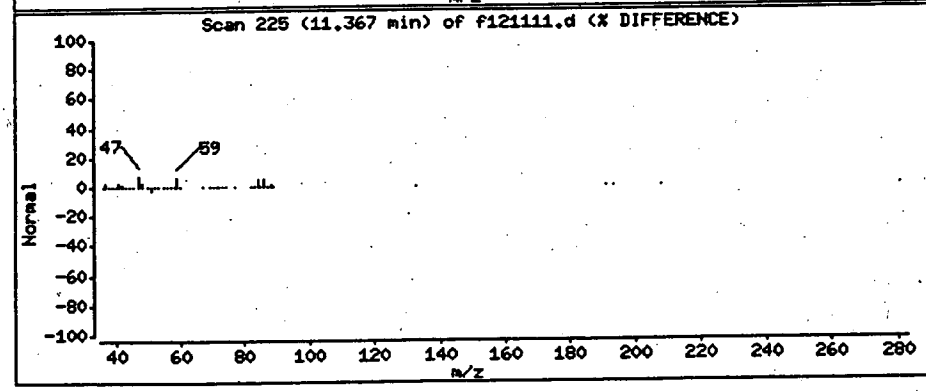
36 Methylene Chloride

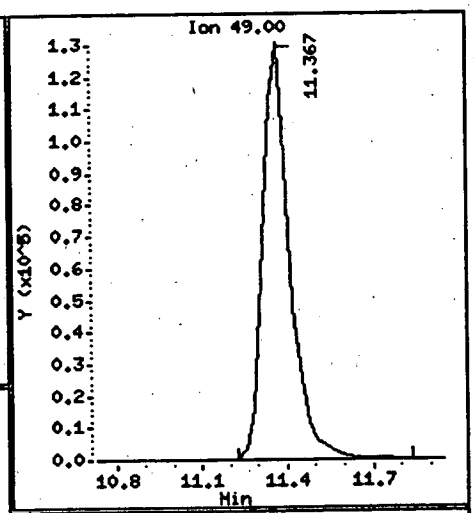
Concentration: 18.281 PPBV

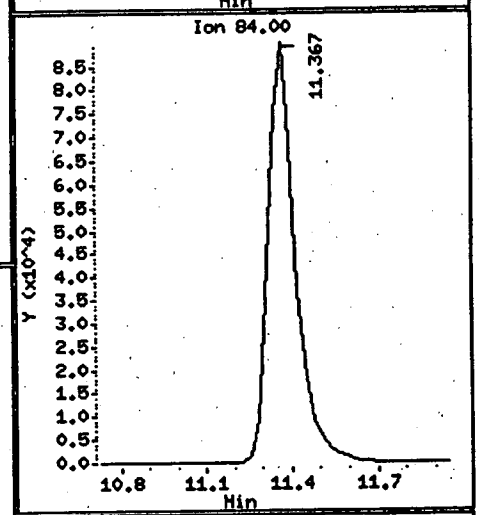


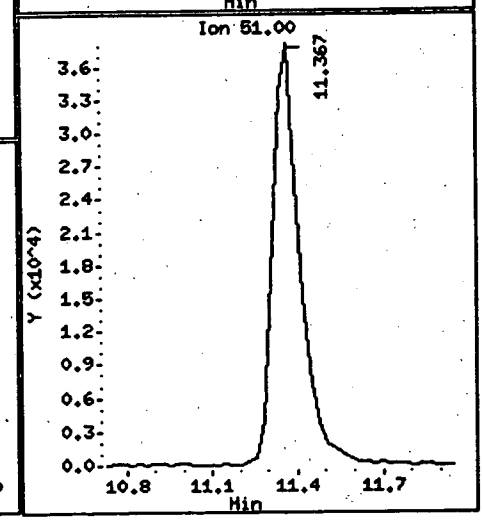












Data File: /chem/msdf.i/f-11dec.b/f121111.d

Date : 11-DEC-2002 14:20

Client ID: EFFLUENT

Sample Info: 200mL Can#3733

Instrument: msdf.i

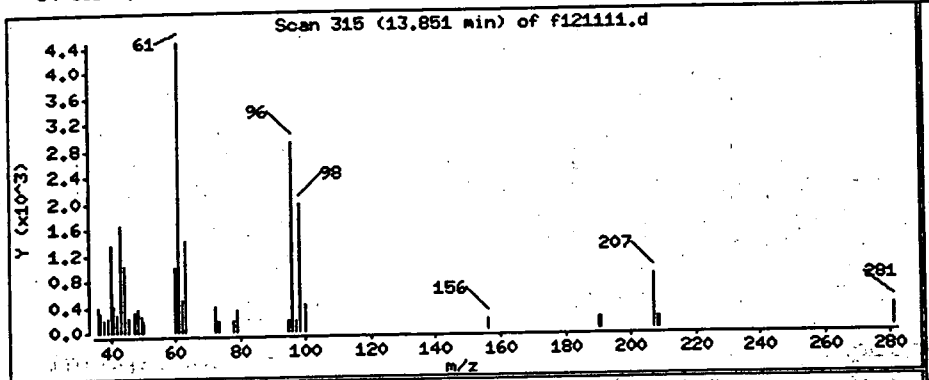
Operator: ct

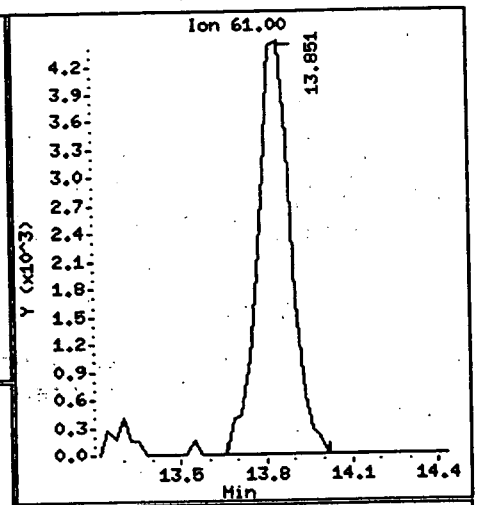
Column phase: RTx-624

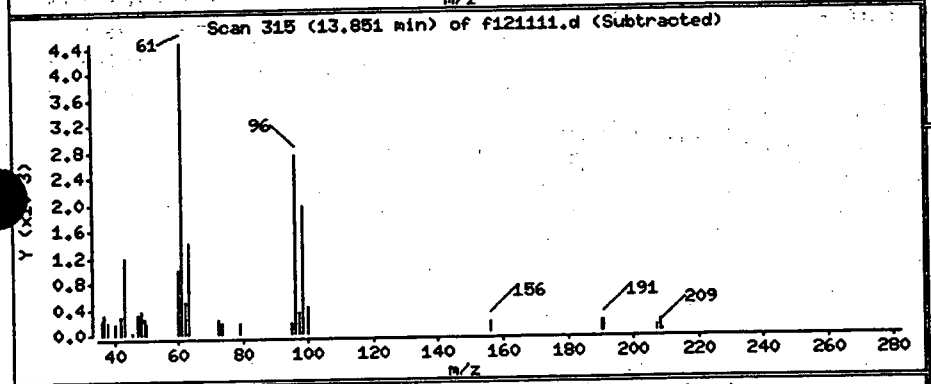
Column diameter: 0.53

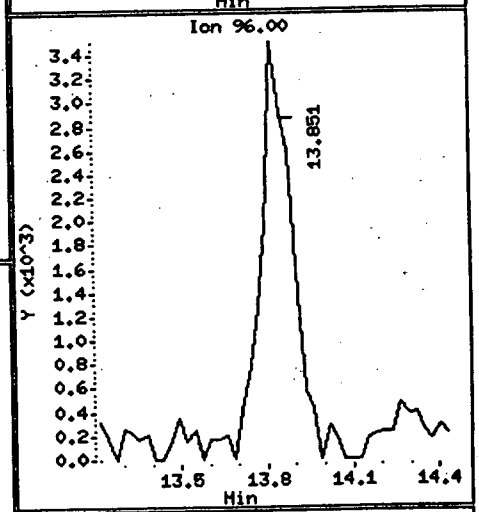
Concentration: 0.7199 PPBV

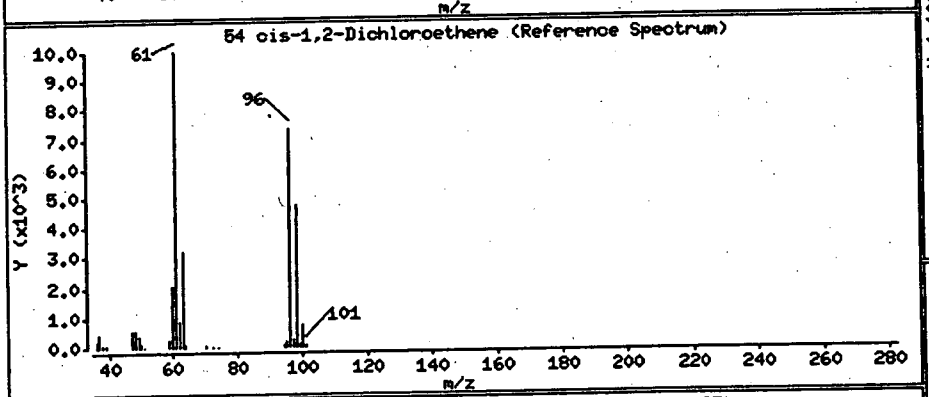
54 cis-1,2-Dichloroethene

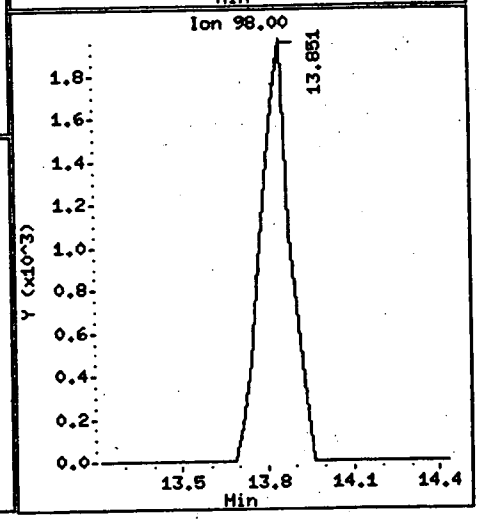


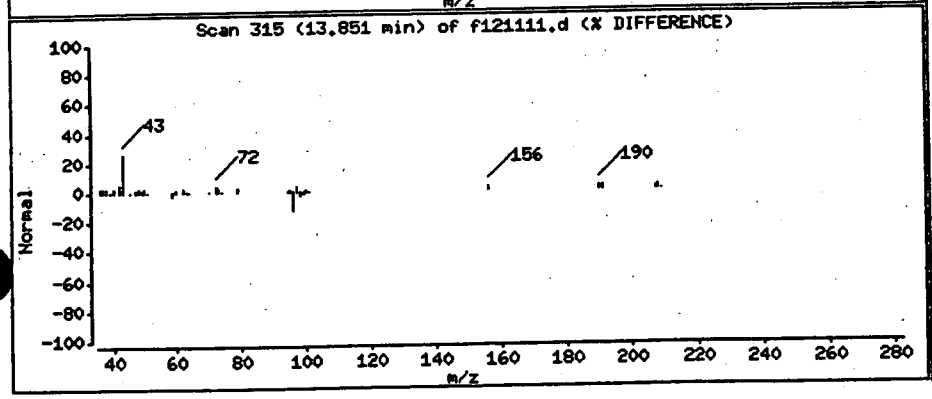












Data File: /chem/msdf.i/f-11dec.b/f121111.d

Date : 11-DEC-2002 14:20

Client ID: EFFLUENT

Instrument: msdf.i

Sample Info: 200mL Can#3733

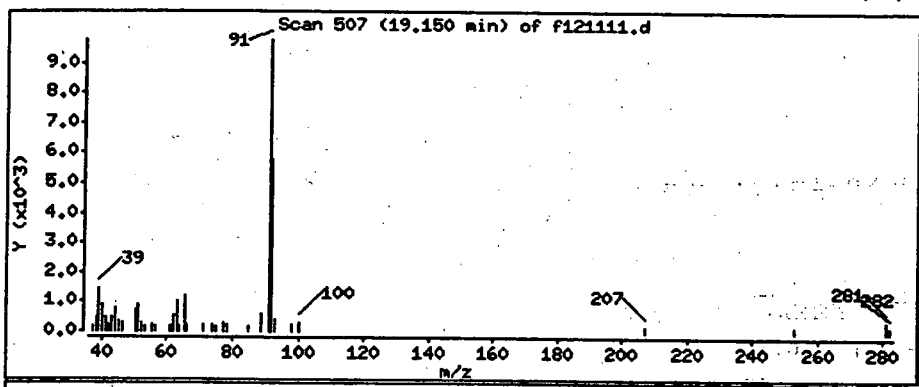
Operator: ct

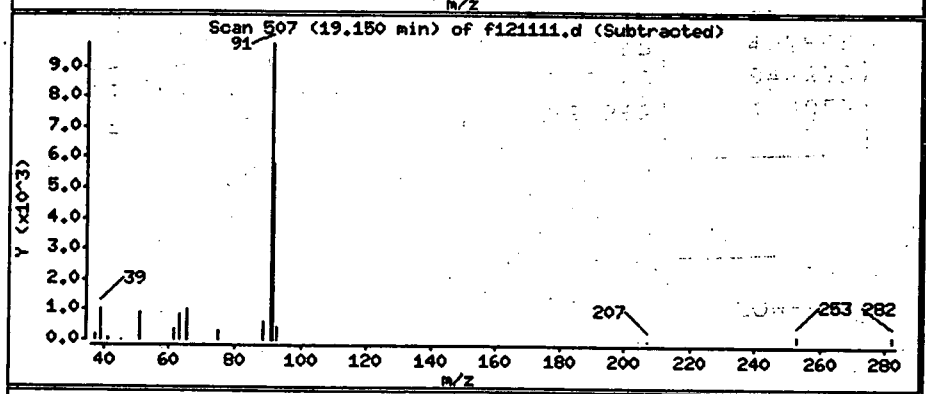
Column phase: RTx-624

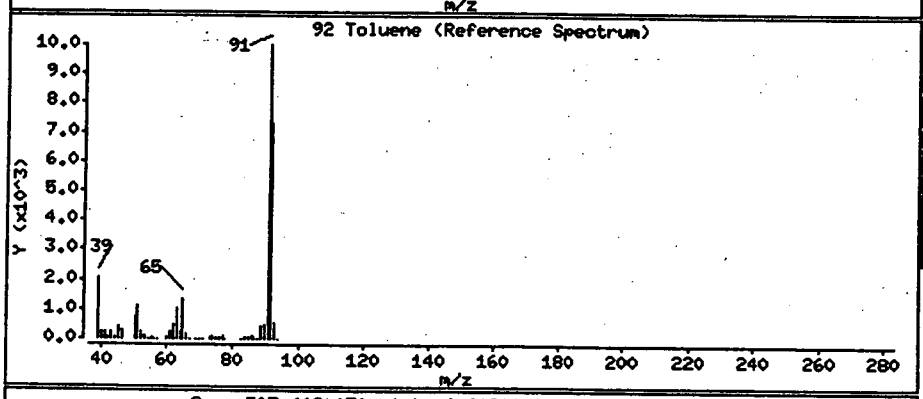
Column diameter: 0.53

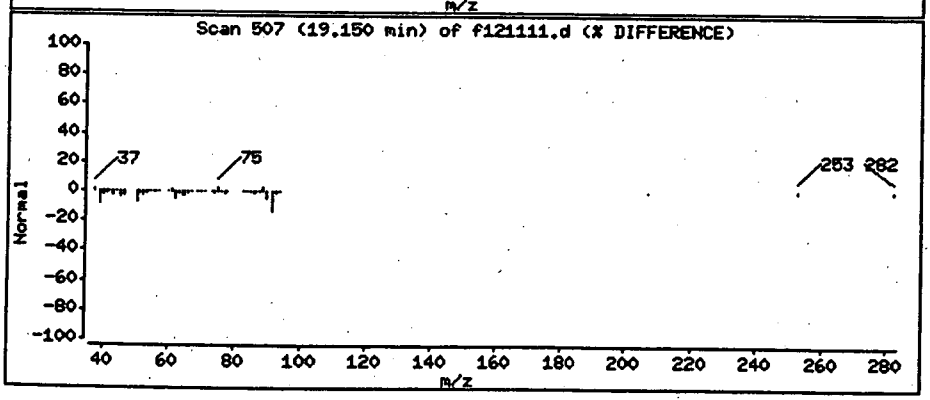
92 Toluene

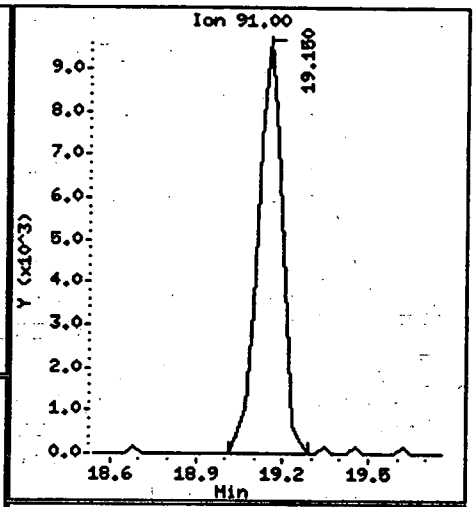
Concentration: 1.342 PPBV

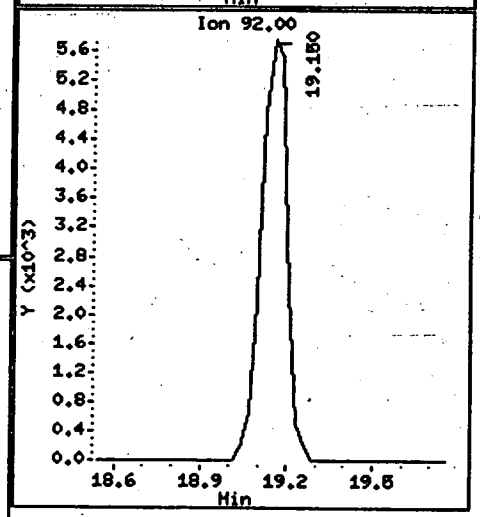












Data File: /chem/msdf.i/f-11dec.b/f121111.d

Date : 11-DEC-2002 14:20

Client ID: EFFLUENT

Sample Info: 200mL Can#3733

Instrument: msdf.i

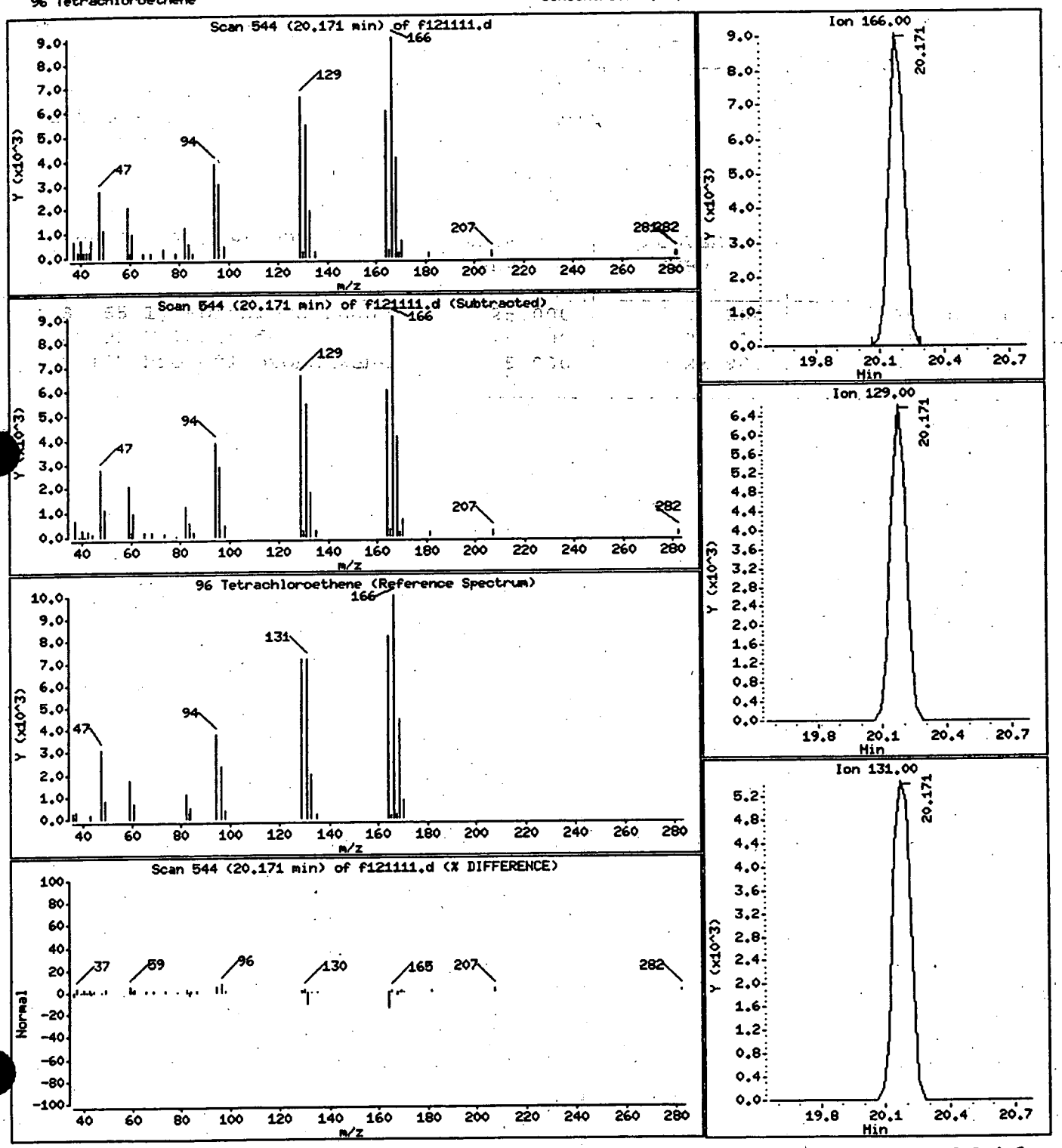
Operator: ct

Column phase: RTx-624

Column diameter: 0.53

96 Tetrachloroethene

Concentration: 2.134 PPBV



Data File: /chem/msdf.i/f-11dec.b/f121111.d

Date : 11-DEC-2002 14:20

Client ID: EFFLUENT

Sample Info: 200mL Can#3733

Instrument: msdf.i

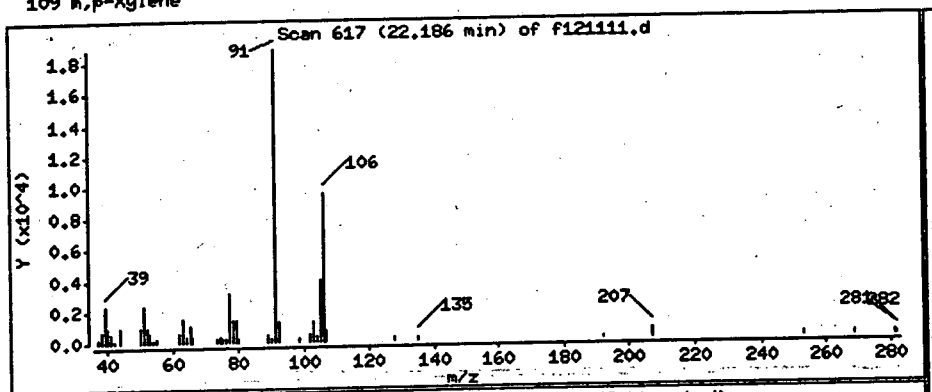
Operator: ct

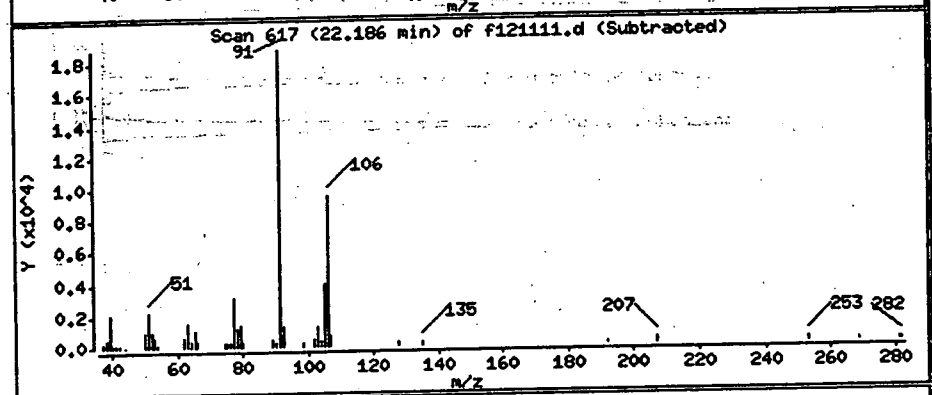
Column phase: RTx-624

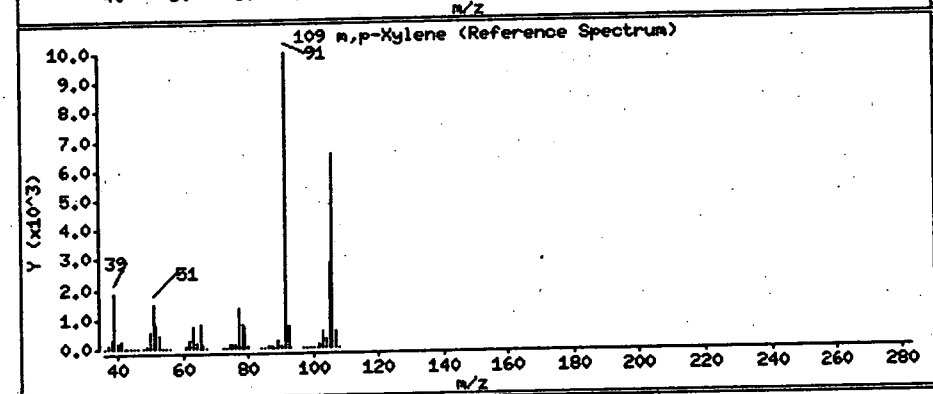
Column diameter: 0.53

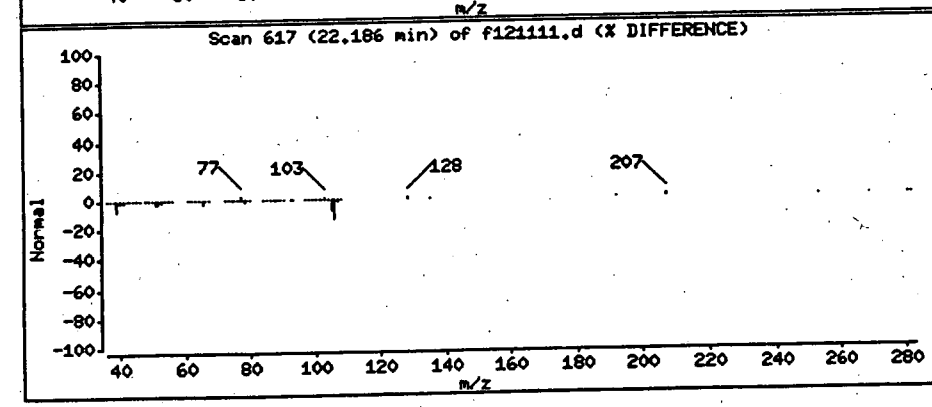
Concentration: 4.431 PPBV

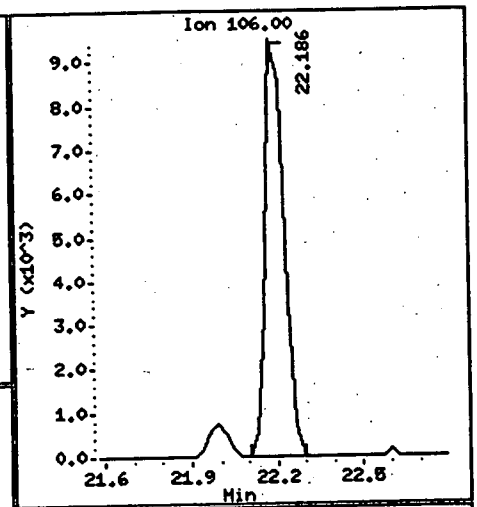
109 m,p-Xylene

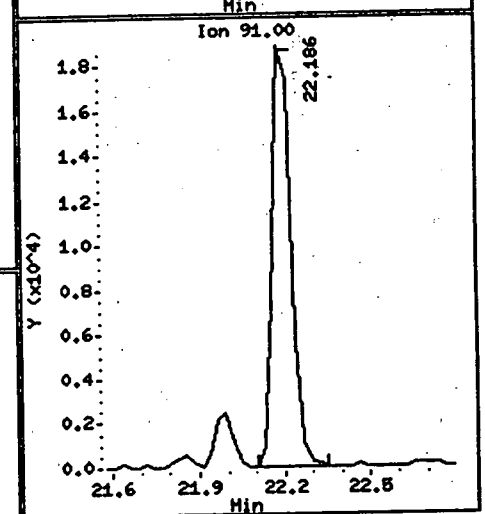












Data File: /chem/msdf.i/f-11dec.b/f121111.d

Date : 11-DEC-2002 14:20

Client ID: EFFLUENT

Instrument: msdf.i

Sample Info: 200mL Can#3733

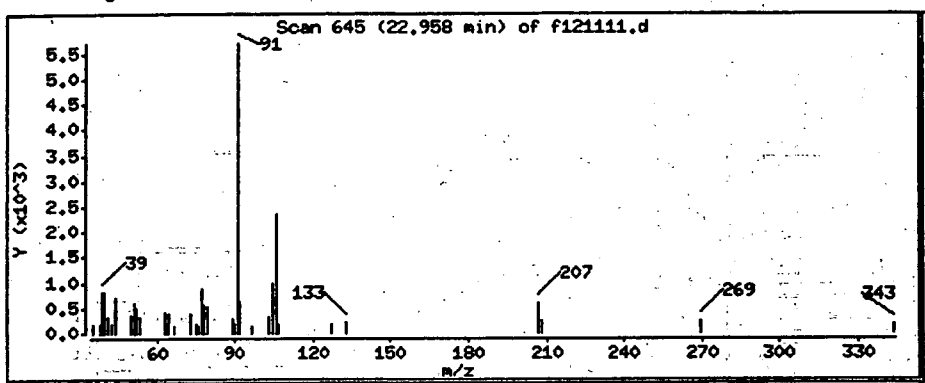
Operator: ct

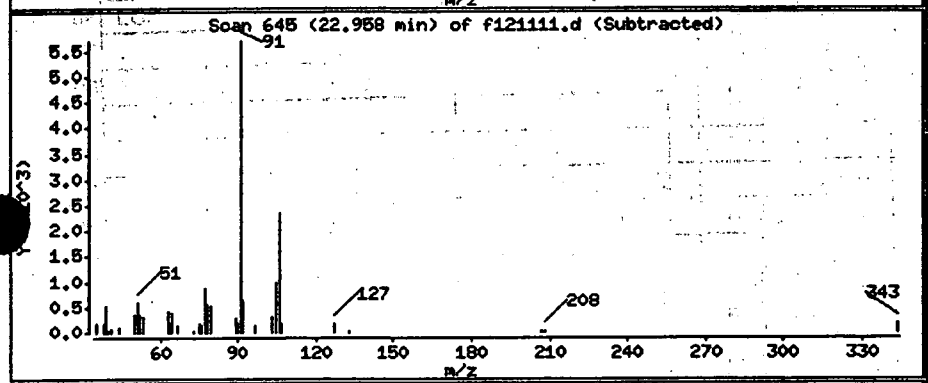
Column phase: RTx-624

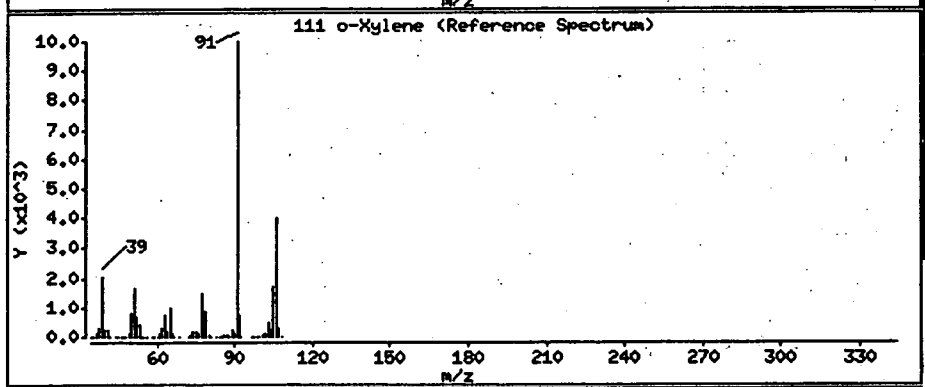
Column diameter: 0.53

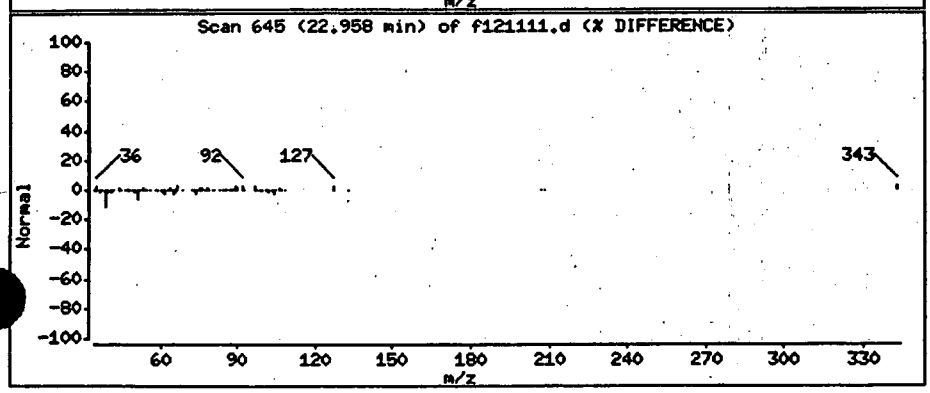
111 o-Xylene

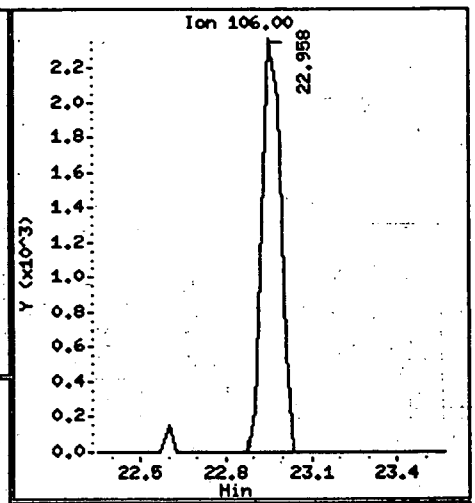
Concentration: 1.181 PPBV

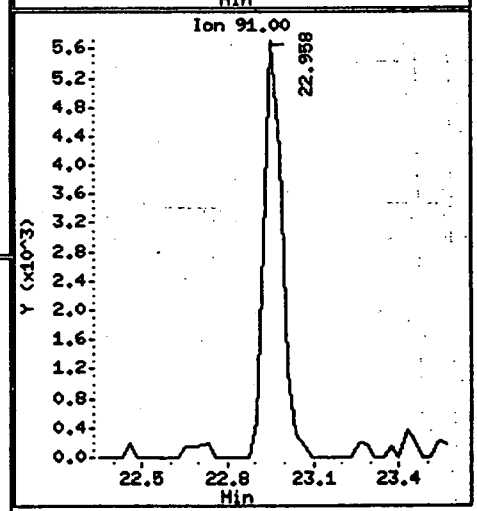












Data File: /chem/msdf.i/f-11dec.b/f121111.d

Date : 11-DEC-2002 14:20

Client ID: EFFLUENT

Sample Info: 200mL Can#3733

Instrument: msdf.i

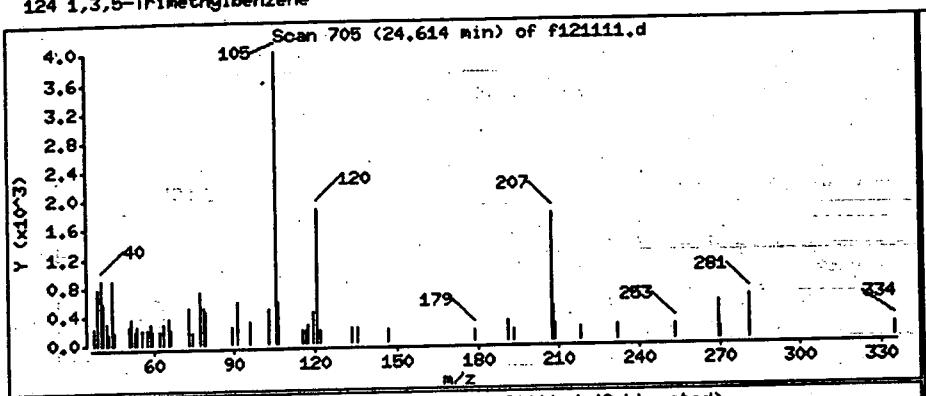
Operator: ct

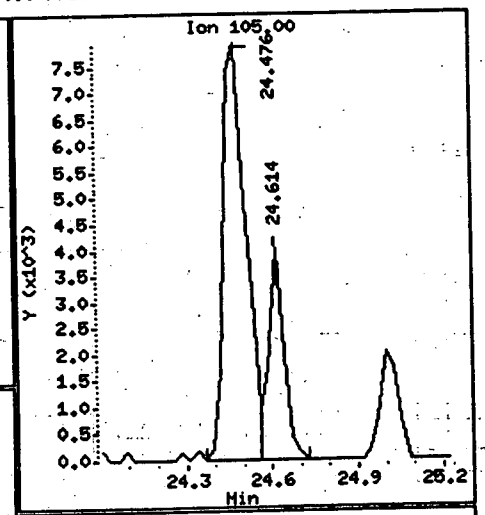
Column phase: RTx-624

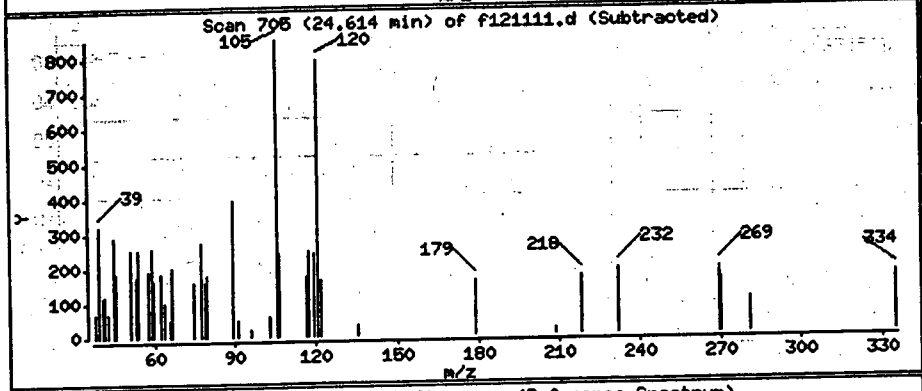
Column diameter: 0.53

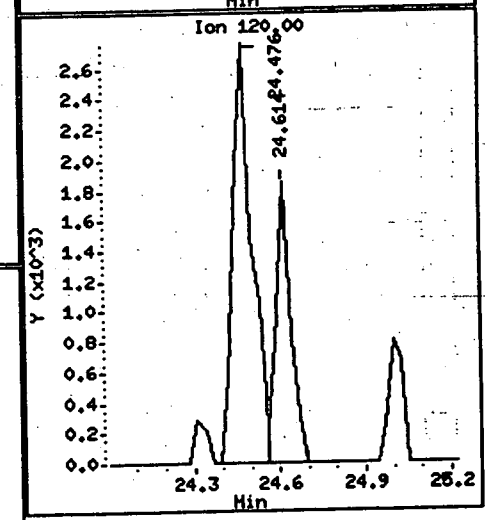
Concentration: 0.9090 PPBV

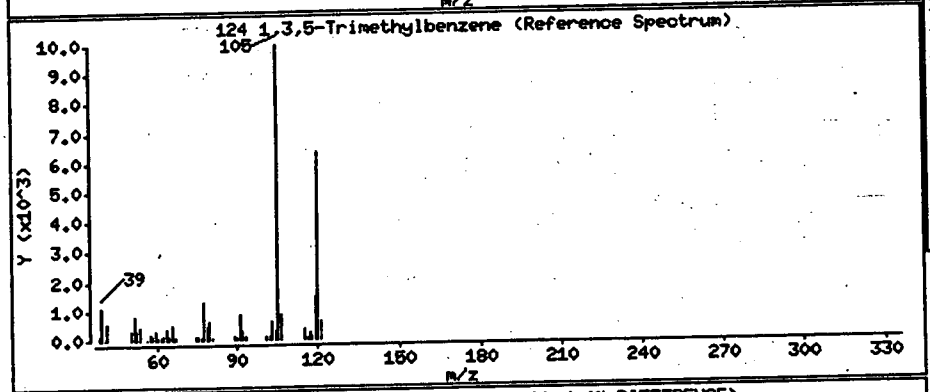
124 1,3,5-Trimethylbenzene

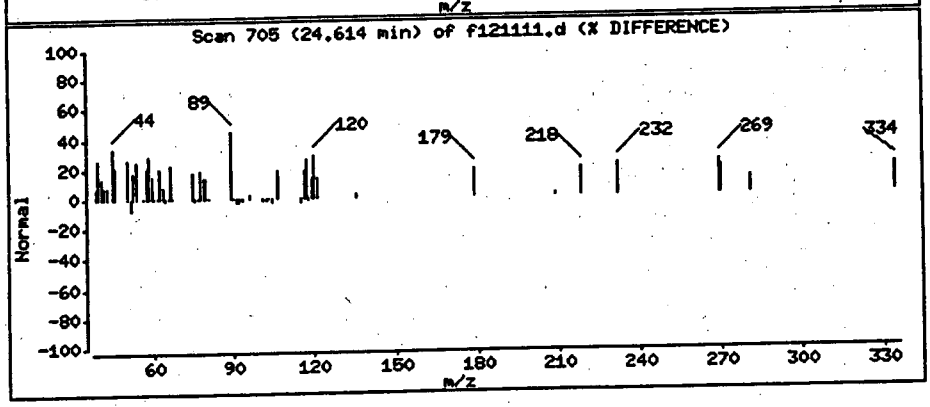












Data File: /chem/msdf.i/f-11dec.b/f121111.d

Date : 11-DEC-2002 14:20

Client ID: EFFLUENT

Instrument: msdf.i

Sample Info: 200mL Can#3733

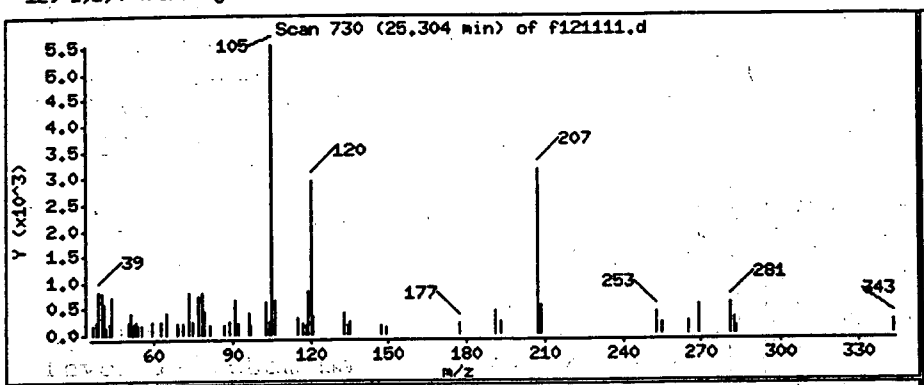
Operator: ct

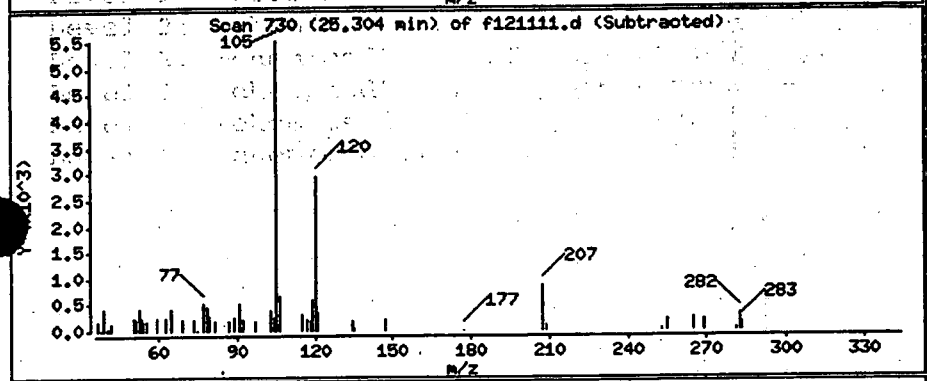
Column phase: RTx-624

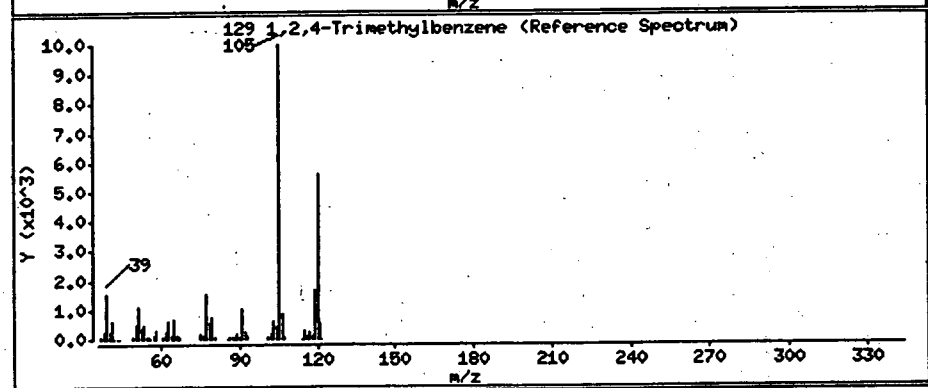
Column diameter: 0.53

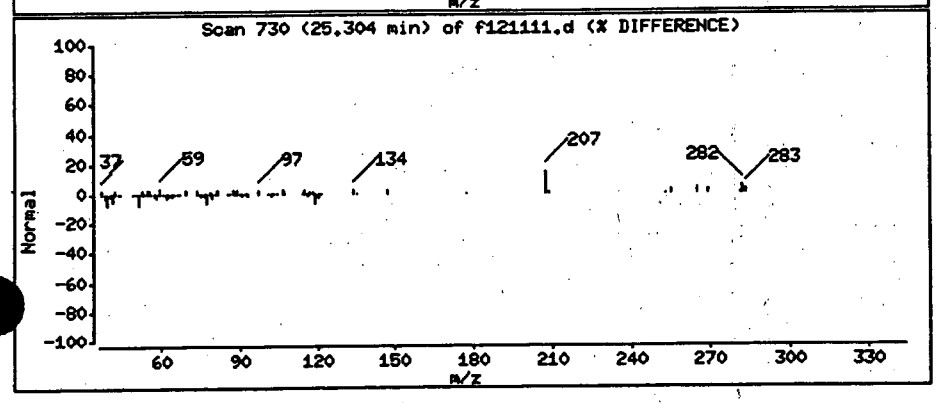
129 1,2,4-Trimethylbenzene

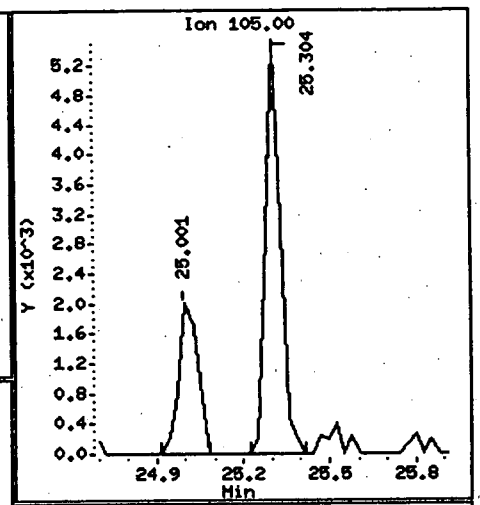
Concentration: 1.434 PPBV

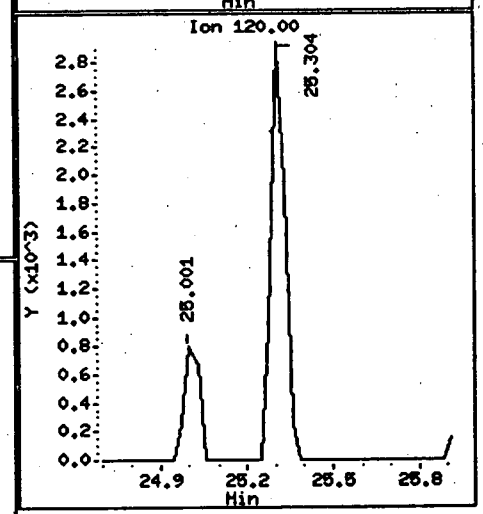












QC Results and Raw Data

AIR TOXICS LTD.

SAMPLE NAME: Lab Blank

ID#: 0212071-03A

MODIFIED EPA METHOD TO-14 GC/MS FULL SCAN

File Name:	f121107	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	12/11/02

Compound	Rpt. Limit (ppbv)	Rpt. Limit (uG/m3)	Amount (ppbv)	Amount (uG/m3)
Freon 12	0.50	2.5	Not Detected	Not Detected
Freon 114	0.50	3.6	Not Detected	Not Detected
Chloromethane	0.50	1.0	Not Detected	Not Detected
Vinyl Chloride	0.50	1.3	Not Detected	Not Detected
Bromomethane	0.50	2.0	Not Detected	Not Detected
Chloroethane	0.50	1.3	Not Detected	Not Detected
Freon 11	0.50	2.8	Not Detected	Not Detected
1,1-Dichloroethene	0.50	2.0	Not Detected	Not Detected
Freon 113	0.50	3.9	Not Detected	Not Detected
Methylene Chloride	0.50	1.8	Not Detected	Not Detected
1,1-Dichloroethane	0.50	2.0	Not Detected	Not Detected
cis-1,2-Dichloroethene	0.50	2.0	Not Detected	Not Detected
Chloroform	0.50	2.5	Not Detected	Not Detected
1,1,1-Trichloroethane	0.50	2.8	Not Detected	Not Detected
Carbon Tetrachloride	0.50	3.2	Not Detected	Not Detected
Benzene	0.50	1.6	Not Detected	Not Detected
1,2-Dichloroethane	0.50	2.0	Not Detected	Not Detected
Trichloroethene	0.50	2.7	Not Detected	Not Detected
1,2-Dichloropropane	0.50	2.3	Not Detected	Not Detected
cis-1,3-Dichloropropene	0.50	2.3	Not Detected	Not Detected
Toluene	0.50	1.9	Not Detected	Not Detected
trans-1,3-Dichloropropene	0.50	2.3	Not Detected	Not Detected
1,1,2-Trichloroethane	0.50	2.8	Not Detected	Not Detected
Tetrachloroethene	0.50	3.4	Not Detected	Not Detected
1,2-Dibromoethane (EDB)	0.50	3.9	Not Detected	Not Detected
Chlorobenzene	0.50	2.3	Not Detected	Not Detected
Ethyl Benzene	0.50	2.2	Not Detected	Not Detected
m,p-Xylene	0.50	2.2	Not Detected	Not Detected
o-Xylene	0.50	2.2	Not Detected	Not Detected
Styrene	0.50	2.2	Not Detected	Not Detected
1,1,2,2-Tetrachloroethane	0.50	3.5	Not Detected	Not Detected
1,3,5-Trimethylbenzene	0.50	2.5	Not Detected	Not Detected
1,2,4-Trimethylbenzene	0.50	2.5	Not Detected	Not Detected
1,3-Dichlorobenzene	0.50	3.0	Not Detected	Not Detected
1,4-Dichlorobenzene	0.50	3.0	Not Detected	Not Detected
alpha-Chlorotoluene	0.50	2.6	Not Detected	Not Detected
1,2-Dichlorobenzene	0.50	3.0	Not Detected	Not Detected
1,2,4-Trichlorobenzene	2.0	15	Not Detected	Not Detected
Hexachlorobutadiene	2.0	22	Not Detected	Not Detected
Propylene	2.0	3.5	Not Detected	Not Detected
1,3-Butadiene	2.0	4.5	Not Detected	Not Detected
Acetone	2.0	4.8	Not Detected	Not Detected

AIR TOXICS LTD.

SAMPLE NAME: Lab Blank

ID#: 0212071-03A

MODIFIED EPA METHOD TO-14 GC/MS FULL SCAN

File Name:	f121107	Date of Collection:	NA
Dil Factor:	1.00	Date of Analysis:	12/11/02

Compound	Rpt. Limit (ppbv)	Rpt. Limit (uG/m3)	Amount (ppbv)	Amount (uG/m3)
Carbon Disulfide	2.0	6.3	Not Detected	Not Detected
2-Propanol	2.0	5.0	Not Detected	Not Detected
trans-1,2-Dichloroethene	2.0	8.0	Not Detected	Not Detected
Vinyl Acetate	2.0	7.2	Not Detected	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.0	6.0	Not Detected	Not Detected
Hexane	2.0	7.2	Not Detected	Not Detected
Tetrahydrofuran	2.0	6.0	Not Detected	Not Detected
Cyclohexane	2.0	7.0	Not Detected	Not Detected
1,4-Dioxane	2.0	7.3	Not Detected	Not Detected
Bromodichloromethane	2.0	14	Not Detected	Not Detected
4-Methyl-2-pentanone	2.0	8.3	Not Detected	Not Detected
2-Hexanone	2.0	8.3	Not Detected	Not Detected
Dibromochloromethane	2.0	17	Not Detected	Not Detected
Bromoform	2.0	21	Not Detected	Not Detected
4-Ethyltoluene	2.0	10	Not Detected	Not Detected
Ethanol	2.0	3.8	Not Detected	Not Detected
Methyl tert-Butyl Ether	2.0	7.3	Not Detected	Not Detected
Heptane	2.0	8.3	Not Detected	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	77	70-130
Toluene-d8	86	70-130
4-Bromofluorobenzene	96	70-130

Data File: /chem/msdf.i/f-11dec.b/f121107.d
Report Date: 11-Dec-2002 12:15

Air Toxics Ltd.

METHOD TO14

Data file : /chem/msdf.i/f-11dec.b/f121107.d
Lab Smp Id: Lab Blank
Client Smp ID: Lab Blank
Inj Date : 11-DEC-2002 11:34
Operator : ct
Inst ID: msdf.i
Smp Info : 200mL Can#21001
Misc Info : Humid
Comment :
Method : /var/chem/msdf.i/f-11dec.b/to14n25c.m
Meth Date : 11-Dec-2002 10:57 ctaylor
Quant Type: ISTD
Cal Date : 09-DEC-2002 10:49
Cal File: f120907.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE
Compound Sublist: AT+14.sub
Target Version: 3.50
Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
* 59 Bromochloromethane						CAS #: 74-97-5			
14.293	14.265	(1.000)	130	633120	25.0000		80.00- 120.00	100.00	9397
14.293	14.265	(0.000)	128	87328			29.33- 129.33	77.45	
14.293	14.265	(0.000)	49	170496			122.65- 222.65	151.20	
* 72 1,4-Difluorobenzene						CAS #: 540-36-3			
16.197	16.169	(1.000)	114	1364513	25.0000		80.00- 120.00	100.00	9405
16.197	16.169	(0.000)	88	22968			0.00- 66.58	16.92	
* 105 Chlorobenzene-d5						CAS #: 3114-55-4			
21.855	21.854	(1.000)	117	622948	25.0000		80.00- 120.00	100.00	
21.855	21.854	(1.000)	82	365077			6.52- 106.52	58.60	
$ 65 1,2-Dichloroethane-d4						CAS #: 17060-07-0			
15.479	15.452	(1.083)	65	730102	19.1638	19.164	80.00- 120.00	100.00	10000
15.479	15.452	(0.000)	67	54896			1.64- 101.64	50.77	
$ 91 Toluene-d8						CAS #: 2037-26-5			
19.012	19.012	(1.174)	98	804337	21.6128	21.613	80.00- 120.00	100.00	9928
19.012	19.012	(0.000)	70	16203			0.00- 62.97	12.15	

Data File: /chem/msdf.i/f-11dec.b/f121107.d
Report Date: 11-Dec-2002 12:15

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
$ 91 Toluene-d8 (continued)									
19.012	19.012	(0.000)	100	93432			18.10- 118.10	70.05	
$ 117 Bromofluorobenzene						CAS #: 460-00-4			
23.980	23.979	(1.097)	95	309478	23.9872	23.987	80.00- 120.00	100.00	8270
23.980	23.979	(0.000)	174	53176			15.71- 115.71	63.78	
23.980	23.979	(0.000)	176	51400			12.57- 112.57	61.65	

Air Toxics Ltd.

METHOD TO14

Data file : /chem/msdf.i/f-11dec.b/f121107.d
Lab Smp Id: Lab Blank
Client Smp ID: Lab Blank
Inj Date : 11-DEC-2002 11:34
Operator : ct
Inst ID: msdf.i
Smp Info : 200mL Can#21001
Misc Info : Humid
Comment :
Method : /var/chem/msdf.i/f-11dec.b/to14n25c.m
Meth Date : 11-Dec-2002 10:57 ctaylor
Quant Type: ISTD
Cal Date : 09-DEC-2002 10:49
Cal File: f120907.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE
Compound Sublist: AT+14.sub
Target Version: 3.50
Sample Matrix: AIR
Processing Host: eeyore

- NO TENTATIVELY IDENTIFIED COMPOUNDS -

Data File: /chem/msdf.i/f-11dec.b/f121107.d
Report Date: 11-Dec-2002 12:15

Air Toxics Ltd.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdf.i
Lab File ID: f121107.d
Lab Smp Id: Lab Blank
Analysis Type: VOA
Quant Type: ISTD
Operator: ct
Method File: /var/chem/msdf.i/f-11dec.b/to14n25c.m
Misc Info: Humid

Calibration Date: 11-DEC-2002
Calibration Time: 09:38
Client Smp ID: Lab Blank
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
59 Bromochloromethan	679915	407949	951881	633120	-6.88
72 1,4-Difluorobenze	1573788	944273	2203303	1364513	-13.30
105 Chlorobenzene-d5	798262	478957	1117567	622948	-21.96

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
59 Bromochloromethan	14.26	13.93	14.59	14.29	0.19
72 1,4-Difluorobenze	16.17	15.84	16.50	16.20	0.17
105 Chlorobenzene-d5	21.85	21.52	22.18	21.85	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Air Toxics Ltd.

RECOVERY REPORT

Client Name:
Sample Matrix: GAS
Lab Smp Id: Lab Blank
Level: LOW
Data Type: MS DATA
SpikeList File:
Sublist File: AT+14.sub
Method File: /var/chem/msdf.i/f-11dec.b/to14n25c.m
Misc Info: Humid

Client SDG: f-11dec
Fraction: VOA
Client Smp ID: Lab Blank
Operator: ct
SampleType: SAMPLE
Quant Type: ISTD

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 65 1,2-Dichloroethane	25.000	19.164	76.66	70-130
$ 91 Toluene-d8	25.000	21.613	86.45	70-130
$ 117 Bromofluorobenzene	25.000	23.987	95.95	70-130

Data File: /chem/msdf.i/f-11dec.b/f121107.d
Date : 11-DEC-2002 11:34
Client ID: Lab Blank
Sample Info: 200mL Can#21001

Column phase: RTx-624

Instrument: msdf.i

Operator: ct
Column diameter: 0.53

0059

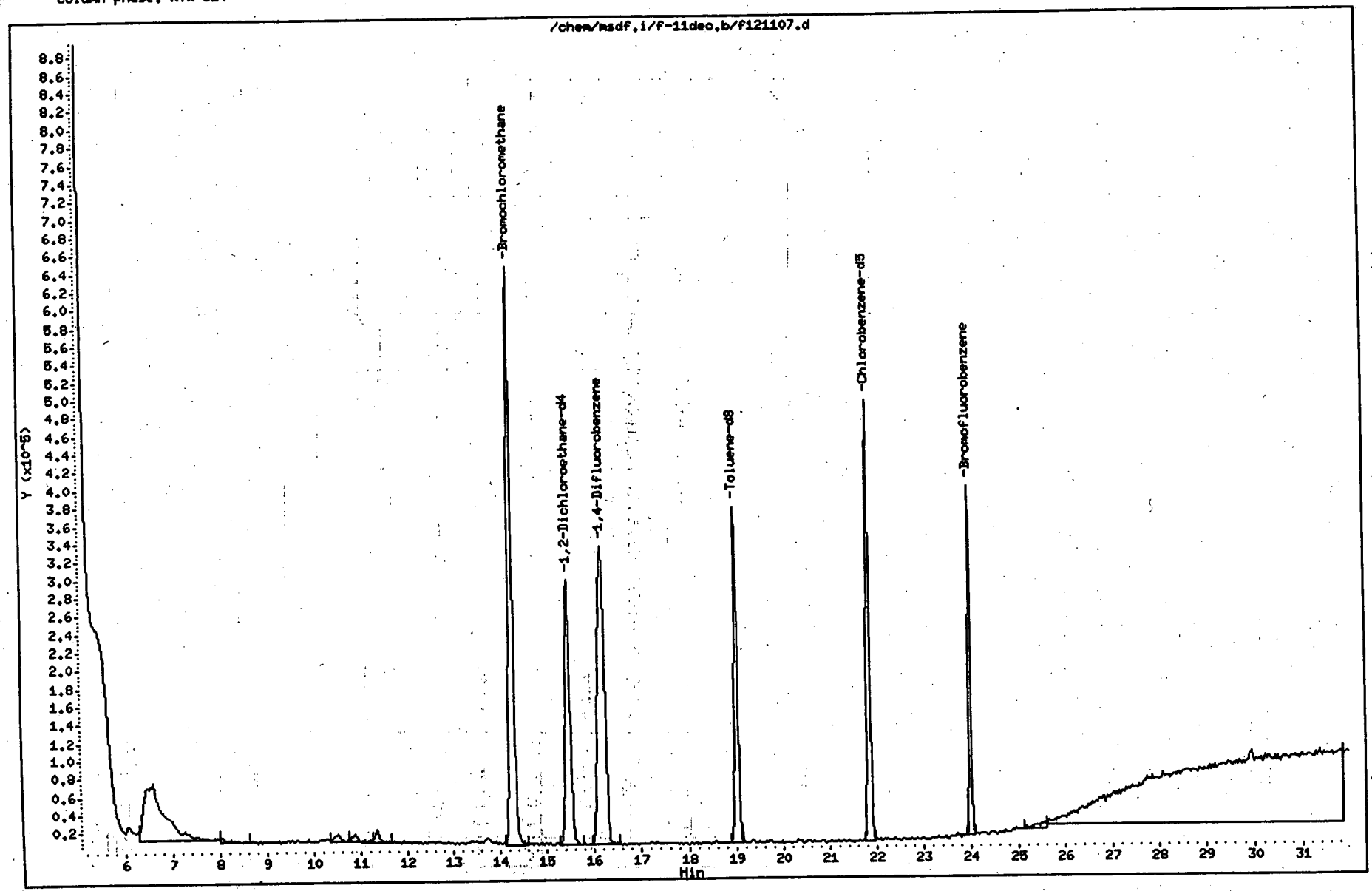


Fig 1

LEVEL-IV VALIDATABLE

MODIFIED EPA METHOD TO-14 GC/MS FULL SCAN

SURROGATE RECOVERY FORM

Lab Name: AIR TOXICS LIMITED. SDG No.: 0212071

	CLIENT SAMPLE NO.	SURROGATE % RECOVERY								TOTAL OUT
		1,2-Dichloroethane-d4	#	Toluene-d8	#	4-Bromofluorobenzene	#		#	
01	INFLUENT	91		86		114				0
02	EFFLUENT	70		84		99				0
03	Lab Blank	77		86		96				0
04	LCS	101		85		100				0
05										0
06										0
07										0
08										0
09										0
10										0
11										0
12										0
13										0
14										0
15										0
16										0
17										0
18										0
19										0
20										0
21										0
22										0
23										0
24										

Surrogate Recovery Limits

1,2-Dichloroethane-d4 70 - 130
Toluene-d8 70 - 130
4-Bromofluorobenzene 70 - 130

* Designates values outside of QC limits

LEVEL-IV VALIDATABLE

Modified EPA Method TO-14 GC/MS Full Scan

INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: AIR TOXICS, LTD

Lab File ID: f121104.d

Instrument ID: msdf.i

SDG No: 0212071

Date Analyzed: 12/11/2002

Time Analyzed: 09:38 AM

		Chlorobenzene-d5 Area	#	RT	#	1,4-Difluorobenzene Area	#	RT	#	Bromochloromethane Area	#	RT	#
	12-HOUR STD	798262		21.85		1573788		16.17		679915		14.26	
	UPPER LIMIT	1117567		22.35		2203303		16.67		951881		14.76	
	LOWER LIMIT	478957		21.35		944273		15.67		407949		13.76	
	CLIENT SAMPLE NO												
01	INFLUENT	644382		21.85		1464727		16.17		645799		14.26	
02	EFFLUENT	595464		21.85		1308631		16.2		622916		14.29	
03	Lab Blank	622948		21.85		1364513		16.2		633120		14.29	
04	LCS	689637		21.85		1524145		16.2		665840		14.26	
05													
06													
07													
08													
09													
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													
21													
22													

'Area Upper Limit=+40% of internal standard area'
'Area Lower Limit=-40% of internal standard area'

RT Upper Limit=+0.50 minutes of internal standard RT
RT Lower Limit=-0.50 minutes of internal standard RT

* Designates values outside of QC limits

Air Toxics Ltd.

INITIAL CALIBRATION DATA

Start Cal Date : 25-NOV-2002 18:10
End Cal Date : 09-DEC-2002 10:49
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msdf.i/f-09dec.b/to14n25c.m
Cal Date : 09-Dec-2002 13:41 ctaylor
Curve Type : Average

Calibration File Names:
Level 1: /chem/msdf.i/f-25nova.b/f112508.d
Level 2: /chem/msdf.i/f-09dec.b/f120905.d
Level 3: /chem/msdf.i/f-25nova.b/f112510.d
Level 4: /chem/msdf.i/f-09dec.b/f120906.d
Level 5: /chem/msdf.i/f-09dec.b/f120907.d
Level 6: /chem/msdf.i/f-03dec.b/f120306.d

Compound	0.50000 Level 1	2.000 Level 2	25.000 Level 3	50.000 Level 4	100.000 Level 5	200.000 Level 6	RRF	% RSD
1 Vinyl Fluoride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
2 Propylene	+++++	1.75233	1.70629	1.54876	1.45579	1.48817	1.59027	8.316
3 Propane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
4 Dichlorodifluoromethane/Fr12	3.86470	3.68792	5.18972	4.68218	4.36055	4.33840	4.35391	12.536
5 Freon 22	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
6 Freon 114	3.13629	2.67119	3.68235	3.32323	3.10290	3.03047	3.15774	10.589
7 Dimethyl Ether	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
8 Chloromethane	1.96386	1.21258	1.56881	1.37285	1.25248	1.18105	1.42527	21.006
9 1-Butene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
10 Vinyl Chloride	1.49869	1.37919	1.94559	1.76095	1.64340	1.63012	1.64299	12.052
11 Butane	+++++	2.18296	+++++	2.32365	2.23171	+++++	2.24611	3.181
12 1,3-Butadiene	+++++	1.25617	1.82058	1.65262	1.57418	1.57798	1.57630	13.001
13 Methanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
14 Bromomethane	0.96445	0.93726	1.18812	1.18412	1.18633	1.28320	1.12391	12.411
15 Chloroethane	0.72598	0.60377	0.87868	0.85343	0.88921	0.94266	0.81562	15.496
16 Isopentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
17 Trichlorofluoromethane/Fr11	5.34270	4.91284	7.04610	6.29666	5.85534	5.78168	5.87255	12.669
18 Freon 21	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
19 Vinyl Bromide	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
20 1-Pentene	+++++	2.18830	+++++	2.09709	1.78046	+++++	2.02195	10.586
21 Ethanol	+++++	0.72025	1.01464	0.94511	0.89366	0.93498	0.90173	12.241
22 Pentane	+++++	4.18605	+++++	3.54916	2.88561	+++++	3.54027	18.368
23 Ethyl Ether	+++++	0.88107	+++++	1.03121	0.91954	+++++	0.94394	8.262
24 Freon123	+++++	1.90133	+++++	2.14743	+++++	2.15576	2.06817	6.989
25 Freon 113	3.42696	3.25031	4.62105	4.15084	3.81471	3.70696	3.82847	13.021

Air Toxics Ltd.

INITIAL CALIBRATION DATA

Start Cal Date : 25-NOV-2002 18:10
End Cal Date : 09-DEC-2002 10:49
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msdf.i/f-09dec.b/to14n25c.m
Cal Date : 09-Dec-2002 13:41 ctaylor
Curve Type : Average

Compound	0.50000 Level 1	2.000 Level 2	25.000 Level 3	50.000 Level 4	100.000 Level 5	200.000 Level 6	RRF	% RSD
26 1,1-Dichloroethene	3.19406	2.92443	4.25909	3.90752	3.68984	3.65218	3.60452	13.368
27 Acetone	+++++	5.73755	4.64538	4.37762	4.12229	4.15147	4.60686	14.459
28 Acrolein	+++++	0.98409	+++++	0.54514	0.51749	+++++	0.68224	38.369
29 Propanal	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
30 2-Propanol	+++++	2.80595	4.63761	4.45767	4.35369	4.54372	4.15973	18.367
31 Carbon Disulfide	+++++	5.18436	7.77298	7.16355	6.81700	6.89780	6.76714	14.200
32 Bromoethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
33 Acetonitrile	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
34 Allyl Chloride	+++++	0.88530	+++++	1.06065	+++++	1.04677	0.99757	9.772
35 2,3-Dimethylbutane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
36 Methylene Chloride	3.03681	2.02259	2.71639	2.46952	2.37390	2.47948	2.51645	13.517
37 2-Methyl-2-Propanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
38 tert-Butyl-Alcohol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
39 MTBE	+++++	5.96672	9.02961	8.07297	7.38478	7.24454	7.53972	14.961
40 trans-1,2-Dichloroethene	+++++	1.97812	2.91819	2.65907	2.48337	2.46380	2.50051	13.769
41 Hexane	+++++	2.39851	3.68477	3.23399	2.90812	2.85693	3.01647	15.838
42 Acrylonitrile	+++++	2.01548	+++++	1.61166	1.53173	+++++	1.71962	15.080
43 1-Hexene	+++++	1.81763	+++++	1.11994	0.96527	+++++	1.30095	34.905
44 Vinyl Acetate	+++++	4.62882	7.71909	7.11571	6.67637	6.79356	6.58671	17.715
45 1,1-Dichloroethane	3.48004	3.25717	4.75201	4.35511	4.07265	4.08105	3.99967	13.811
46 Isopropyl ether	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
47 1-Propanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
48 Chloroprene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
49 2,4-Dimethylpentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
50 Ethyl tert-Butyl ether	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
51 2-Butanone	+++++	4.14380	5.76877	5.47144	5.23090	5.33779	5.19054	11.924
52 Methylcyclopentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
53 Butanal	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
54 cis-1,2-Dichloroethene	2.42865	2.18529	3.20183	2.93763	2.76034	2.75215	2.71098	13.325
55 Ethyl Acetate	+++++	5.33411	+++++	3.83495	3.20243	+++++	4.12383	26.548
56 2,2-Dichloropropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
57 Tetrahydrofuran	+++++	1.97863	3.09735	2.86576	2.78464	2.85682	2.71664	15.791
58 2-Butanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

Air Toxics Ltd.

INITIAL CALIBRATION DATA

Start Cal Date : 25-NOV-2002 18:10
End Cal Date : 09-DEC-2002 10:49
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msdf.i/f-09dec.b/to14n25c.m
Cal Date : 09-Dec-2002 13:41 ctaylor
Curve Type : Average

Compound	0.50000 Level 1	2.000 Level 2	25.000 Level 3	50.000 Level 4	100.000 Level 5	200.000 Level 6	RRF	% RSD
60 Chloroform	3.81539	3.31384	4.79719	4.35679	4.06860	4.01274	4.06076	12.315
61 Cyclohexane	+++++	2.14335	3.33038	2.89526	2.54430	2.40693	2.66404	17.294
62 1,1,1-Trichloroethane	3.42885	3.04172	4.75076	4.16055	3.70488	3.49428	3.76350	16.124
63 2,3-Dimethylpentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
64 Carbon Tetrachloride	2.71925	2.56769	4.25658	3.67718	3.32296	3.11068	3.27572	19.131
66 Isobutanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
67 Benzene	1.47743	1.21208	1.68498	1.54902	1.51872	1.57794	1.50336	10.575
68 Heptane	+++++	0.61463	0.85097	0.78731	0.74660	0.90915	0.78173	14.333
69 2,2,4-Trimethylpentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
70 1,2-Dichloroethane	0.88556	0.75702	1.04777	1.00452	1.03760	1.12519	0.97628	13.600
71 tert-Amyl Methyl ether	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
73 n-Butanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
74 1-Butanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
75 2,4,4,-Trimethyl-1-Pentene	+++++	1.15458	+++++	0.95604	1.06464	+++++	1.05842	9.393
76 Trichloroethene	0.67116	0.54024	0.78510	0.72441	0.71176	0.72763	0.69338	12.037
77 2,5-Dimethylfuran	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
78 2,4,4-Trimethyl-2-Pentene	+++++	0.86014	+++++	0.82460	0.89228	+++++	0.85901	3.941
79 1,4-Dioxane	+++++	0.37023	0.52355	0.50497	0.52612	0.57435	0.49985	15.377
80 2-Pentanone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
81 1,2-Dichloropropane	0.55106	0.46611	0.65937	0.61537	0.60275	0.62751	0.58703	11.762
82 Pentanal	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
83 3-Pentanone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
84 Bromodichloromethane	+++++	1.11320	1.73075	1.61908	1.63214	1.72208	1.56345	16.422
85 bis(Chloromethyl)Ether	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
86 Dibromomethane	+++++	0.48381	+++++	0.70969	0.75154	+++++	0.64834	22.214
87 2,3,4-Trimethylpentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
88 cis-1,3-Dichloropropene	0.90861	0.76865	1.19455	1.10953	1.09842	1.15202	1.03863	15.854
89 4-Methyl-2-pentanone	+++++	0.89218	1.46740	1.40211	1.40061	1.56993	1.34645	19.543
90 Octane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
92 Toluene	1.08395	0.85568	1.20002	1.10891	1.00373	1.20106	1.07556	12.188
93 trans-1,3-Dichloropropene	1.51936	1.23103	1.99537	1.83347	1.90921	1.67265	1.69351	16.741
94 1,1,2-Trichloroethane	1.20412	0.91132	1.32061	1.19416	1.24994	1.07426	1.15907	12.573
95 2-Hexanone	+++++	1.32650	2.25856	2.17686	2.28007	2.26350	2.06110	20.018

Air Toxics Ltd.

INITIAL CALIBRATION DATA

Start Cal Date : 25-NOV-2002 18:10
End Cal Date : 09-DEC-2002 10:49
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msdf.i/f-09dec.b/to14n25c.m
Cal Date : 09-Dec-2002 13:41 ctaylor
Curve Type : Average

Compound	0.50000 Level 1	2.000 Level 2	25.000 Level 3	50.000 Level 4	100.000 Level 5	200.000 Level 6	RRF	% RSD
96 Tetrachloroethene	1.24870	0.96802	1.34972	1.21019	1.19989	1.11776	1.18238	10.937
97 1,3-Dichloropropane	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++
98 Butyl Acetate	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++
99 Dibromochloromethane	++++++	1.47603	2.67114	2.41806	2.50908	2.11101	2.23707	21.088
100 1,2-Dibromoethane	1.67406	1.31131	2.00321	1.81262	1.87281	1.58670	1.71012	14.287
101 Methyl Methacrylate	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++
102 N,N-Dimethylformamide	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++
103 Nonane	++++++	0.28260	++++++	0.24940	0.29433	++++++	0.27544	8.460
104 Butyl Ether	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++
106 Chlorobenzene	1.55027	1.30337	1.73868	1.58024	1.50742	1.53509	1.53585	9.124
107 Ethyl Benzene	0.62283	0.46858	0.65538	0.60223	0.58664	0.62502	0.59345	11.027
108 Epichlorohydrin	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++
109 m,p-Xylene	0.55501	0.41713	0.59834	0.56624	0.55064	0.59577	0.54719	12.212
110 1,1,1,2-Tetrachloroethane	++++++	0.70689	++++++	0.85490	++++++	0.81832	0.79337	9.718
111 o-Xylene	0.53309	0.39405	0.56688	0.53809	0.51388	0.54650	0.51541	12.015
112 Styrene	0.78269	0.56143	0.99359	0.95747	0.95190	1.03850	0.88093	20.316
113 2-Heptanone	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++
114 Bromoform	++++++	1.20599	2.25183	2.06705	2.15632	1.82915	1.90207	22.057
115 Heptanal	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++
116 Cumene	++++++	1.30893	++++++	1.31977	++++++	1.59765	1.40879	11.617
118 1,1,2,2-Tetrachloroethane	2.52484	1.83108	2.39527	2.18601	2.29035	2.10067	2.22137	10.939
119 4-Ethyltoluene	++++++	1.04113	1.47883	1.51378	1.48691	1.57165	1.41846	15.090
120 Propylbenzene	++++++	1.75463	++++++	1.72467	1.74824	++++++	1.74252	0.906
121 Bromobenzene	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++
122 Decane	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++
123 1,2,3-Trichloropropane	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++
124 1,3,5-Trimethylbenzene	0.88472	0.70282	0.98806	1.02867	0.99389	1.04158	0.93996	13.683
125 alpha Methyl Styrene	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++
126 2-Chlorotoluene	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++
127 Diisobutyl Ketone	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++
128 4-Chlorotoluene	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++
129 1,2,4-Trimethylbenzene	0.72678	0.56978	0.75313	0.83191	0.82308	0.89626	0.76682	14.842
130 tert-Butylbenzene	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++

Air Toxics Ltd.

INITIAL CALIBRATION DATA

Start Cal Date : 25-NOV-2002 18:10
End Cal Date : 09-DEC-2002 10:49
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msdf.i/f-09dec.b/to14n25c.m
Cal Date : 09-Dec-2002 13:41 ctaylor
Curve Type : Average

Compound	0.50000 Level 1	2.000 Level 2	25.000 Level 3	50.000 Level 4	100.000 Level 5	200.000 Level 6	RRF	% RSD
131 p-Cymene	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++
132 1,3-Dichlorobenzene	1.00989	0.91816	1.02589	0.99473	0.95277	1.00870	0.98502	4.174
133 bis(2-Chloroethyl)Ether	++++++	0.87098	++++++	1.28013	1.38801	++++++	1.17971	23.121
134 sec-Butylbenzene	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++
135 1,4-Dichlorobenzene	1.01527	0.80819	0.97762	0.95619	0.92743	0.98412	0.94480	7.732
136 1,2,3-Trimethylbenzene	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++
137 alpha-Chlorotoluene	1.95005	1.47560	1.84687	1.81332	1.81193	2.00306	1.81681	10.143
138 Undecane	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++
139 Butylbenzene	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++
140 1,2-Dichlorobenzene	1.03878	0.92867	1.00478	0.97729	0.95053	1.00200	0.98368	4.062
141 1,2-Dibromo-3-Chloropropane	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++
142 Dodecane	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++
143 1,2,4-Trichlorobenzene	++++++	0.33057	0.27804	0.34026	0.36250	0.43819	0.34991	16.655
144 Hexachlorobutadiene	++++++	0.40704	0.34318	0.42394	0.49206	0.55833	0.44491	18.572
145 Naphthalene	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++
146 Aniline	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++
147 Isooctyl Alcohol	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++
148 1,3,5-Trichlorobenzene	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++
149 Isooctyl Acrylate	++++++	++++++	++++++	++++++	++++++	++++++	++++++	++++++
$ 65 1,2-Dichloroethane-d4	1.48782	1.47599	1.52546	1.52872	1.52430	1.48397	1.50437	1.609
$ 91 Toluene-d8	0.66518	0.68461	0.67991	0.67072	0.64980	0.74088	0.68185	4.603
$ 117 Bromofluorobenzene	0.49196	0.48806	0.50506	0.52330	0.53122	0.56703	0.51777	5.695

Calibration History

Method : /chem/msdf.i/f-09dec.b/to14n25c.m
Start Cal Date: 25-NOV-2002 18:10
End Cal Date : 09-DEC-2002 10:49

Initial Calibration

Injection Date	Sublist	Calibration File
Cal Level: 1 , Cal Amount: 0.50000		
25-NOV-2002 18:10	TO14	/chem/msdf.i/f-25nova.b/f112508.d
Cal Level: 2 , Cal Amount: 2.00000		
09-DEC-2002 09:17	sp14	/chem/msdf.i/f-09dec.b/f120905.d
03-DEC-2002 11:05	4	/chem/msdf.i/f-03dec.b/f120304.d
25-NOV-2002 19:00	AT	/chem/msdf.i/f-25nova.b/f112509.d
Cal Level: 3 , Cal Amount: 25.00000		
25-NOV-2002 19:43	AT	/chem/msdf.i/f-25nova.b/f112510.d
Cal Level: 4 , Cal Amount: 50.00000		
09-DEC-2002 09:57	sp14	/chem/msdf.i/f-09dec.b/f120906.d
03-DEC-2002 11:42	4	/chem/msdf.i/f-03dec.b/f120305.d
25-NOV-2002 20:24	AT	/chem/msdf.i/f-25nova.b/f112511.d
Cal Level: 5 , Cal Amount: 100.00000		
09-DEC-2002 10:49	sp14	/chem/msdf.i/f-09dec.b/f120907.d
25-NOV-2002 21:01	AT	/chem/msdf.i/f-25nova.b/f112512.d
Cal Level: 6 , Cal Amount: 200.00000		
03-DEC-2002 12:21	4	/chem/msdf.i/f-03dec.b/f120306.d
25-NOV-2002 21:42	AT	/chem/msdf.i/f-25nova.b/f112513.d

Continuing Calibration
Ccal Level Mode: GLOBAL LEVEL 3

Ccal Level: 3 , Ccal Amount: 25.000		
09-DEC-2002 09:57	sp14	/chem/msdf.i/f-09dec.b/f120906a.d

GC/MS Tuning and Mass Calibration (BFB)

BFB File ID: F112507
BFB Injection Date: 1746 11-25-02
BFB Injection Time: 1746

m/e	Ion Abundance Criteria	% Relative Abundance
50	15 - 40% of the base peak	20.27
75	30 - 60% of the base peak	47.36
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.78
173	Less than 2% of mass 174	(0.00) 1
174	Greater than 50% of mass 95	78.41
175	5.0 - 9.0% of mass 174	(7.46) 1
176	Greater than 95% but less than 101% of mass 174	(96.68) 1
177	5.0 - 9.0% of mass 176	(6.65) 2

1 - value in parenthesis is % mass 174 2 - value in parenthesis is % mass 176

Tekmar Purge Flow:	2
Vacuum:	

# 995-52 LS.	Area counts
BCM	632639
1,4-DFB	1805412
CB-d_5	1005333

EM≈2000

THIS TUNE CHECK APPLIES TO THE FOLLOWING SAMPLES, BLANKS AND STANDARDS

	Use	File #	Sample Name/Client	Can #	Pressure	Amount	Dilution Factor	Date Analyzed	Time Analyzed	Init.	Comments
1	✓	F112507	BFB Tune Check	#843-548	50ng	2ml	1.0	11-25-02	1746	XP	
2	✓	F112508	ICAL Level 1	200ppbv #995-55	0.5ppbv	0.5ml	1.0	11-25-02	1810	XP	
3	✓	F112509	ICAL Level 2	200ppbv #995-55	2.0ppbv	2.0ml	1.0	11-25-02	1900	XP	
4	✓	F112510	ICAL Level 3	200ppbv #995-55	25ppbv	25ml	1.0	11-25-02	1943	XP	
5	✓	F112511	ICAL Level 4	200ppbv #995-55	50ppbv	50ml	1.0	11-25-02	2024	XP	
6	✓	F112512	ICAL Level 5	200ppbv #995-55	100ppbv	100ml	1.0	11-25-02	2101	XP	
7	✓	F112513	ICAL Level 6	200ppbv #995-55	200ppbv	200ml	1.0	11-25-02	2142	XP	
8	X	F112514	System Blank	12399	Humid	200ml	1.0	11-25-02	2245	XP	
9											
10											
11											
12											
13											
14											
15											

Initials: ——

Calculation Check: File ID: —— Compound: ——

ppbv in sample = $\frac{\text{Area of Compound in Sample}}{\text{Area of Int. Standard in Sample}} \times \frac{\text{Conc. Int. Standard (ppbv)}}{\text{ICAL RRF}} \times$ Dilution Factor

ppbv in sample = ( ) x ( ) x ( ) =
( ) ( )

Reported Result: ——

K. Badal
Signed

11-26-02
Date

Revised: 06/29/99

Instrument RunLog

@Air Toxics Ltd.

Log Book #: 812

318

GC/MS Tuning and Mass Calibration (BFB)

m/e	Ion Abundance Criteria	% Relative Abundance
50	15 - 40% of the base peak	21.00
75	30 - 60% of the base peak	47.75
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	7.14
173	Less than 2% of mass 174	(0.00) 1
174	Greater than 50% of mass 95	76.15
175	5.0 - 9.0% of mass 174	(7.29) 1
176	Greater than 95% but less than 101% of mass 174	(96.45) 1
177	5.0 - 9.0% of mass 176	(6.72) 2

1 - value in parenthesis is % mass 174 2 - value in parenthesis is % mass 176

BFB File ID: F112601
BFB Injection Date: 11-26-02
BFB Injection Time: 5:43

Tekmar Purge Flow:	
Vacuum:	

#99552 LS.	Area counts
BCM	623241
1,4-DFB	1810960
CB-d_5	1017061

THIS TUNE CHECK APPLIES TO THE FOLLOWING SAMPLES, BLANKS AND STANDARDS

	U ✓	File #	Sample Name/Client	Can #	Pressure	Amount	Dilution Factor	Date Analyzed	Time Analyzed	Init.	Comments
1	✓	F112601	BFB Tune Check	843-548	50ng	2ml	1.0	112602	5:43	KB	
2	✓	F112602	Method Spike	#995-55 200ppbv	50ppbv	50mL	1.0		5:56	KB	
3	✓	F112603	LCS	#995-39 200ppbv	50ppbv	50mL	1.0		639	CP	
4	✓	F112604	LCSD	↓	↓	↓	↓		719	CP	
5	✓	F112605	TVH Calib 2	200ppbv 995-10	100ppbv	100 mL	1.0		813	CP	
6	X	F112606	Lab Blank	33571	Humid	200 mL			901	CP	
7											
8											
9											
10											
11											
12											
13											
14											
15											

Calculation Check: File ID: F112602 Compound: 1,2-DCA-d_4 Initials: KB

$$\text{ppbv in sample} = \frac{\text{Area of Compound in Sample}}{\text{Area of Int. Standard in Sample}} \times \frac{\text{Conc. Int. Standard (ppbv)}}{\text{ICAL RRF}} \times \text{Dilution Factor}$$

$$\text{ppbv in sample} = \frac{(943819)}{(623241)} \times \frac{(25)}{(1.50437)} \times (1.0) = \boxed{25.16623}$$

Reported Result: 25.166

C Taylor
Signed

11-26-02
Date

Revised: 08/26/99

Instrument RunLog

@Air Toxics Ltd.

Log Book #: 812

329

GC/MS Tuning and Mass Calibration (BFB)

BFB File ID: F120301
BFB Injection Date: 12-3-02
BFB Injection Time: 0855

m/e	Ion Abundance Criteria	% Relative Abundance
50	15 - 40% of the base peak	20.39
75	30 - 60% of the base peak	47.20
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.54
173	Less than 2% of mass 174	(0.00) 1
174	Greater than 50% of mass 95	77.55
175	5.0 - 9.0% of mass 174	(7.56) 1
176	Greater than 95% but less than 101% of mass 174	(96.04) 1
177	5.0 - 9.0% of mass 176	(6.64) 2

1 - value in parenthesis is % mass 174 2 - value in parenthesis is % mass 176

Tekmar Purge Flow:	2
Vacuum:	

# 995-52 I.S.	Area counts
BCM	590799
1,4-DFB	1546541
CB-d_5	824720

THIS TUNE CHECK APPLIES TO THE FOLLOWING SAMPLES, BLANKS AND STANDARDS

	Use	File #	Sample Name/Client	Can #	Pressure	Amount	Dilution Factor	Date Analyzed	Time Analyzed	Init.	Comments
1	✓	F120301	BFB Tune Check	843-559	50 psi	2 mL	1.0	12-3-02	0855	EJ	
2	✓	F120302	Method Spike	200ppbv 995-55	50 ppbv	50 mL	1.0		0921	EJ	
3	✓	F120303	LCS	200ppbv 995-39	50 ppbv	50 mL	1.0		1012	EJ	
4	✓	F120304	ICAL Level 2	200ppbv 995-60	2.0 ppbv	2.0 mL	1.0		1105	EJ	
5	✓	F120305	ICAL Level 4	200ppbv 995-60	50 ppbv	50 mL	1.0		1142	EJ	Allyl chloride
6	✓	F120306	ICAL Level 6	200ppbv 995-60	200 ppbv	200 mL	1.0		1231	EJ	
7	✓	F120307	TVH/BP	200ppbv 995-10	100 ppbv	100 mL	1.0		1300	EJ	
8	X	F120308	Lab Blank	12335	Humid	200 mL	1.0		1344	EJ	meCl
9	✓	F120309	Lab Blank	12044	Humid	200 mL	1.0		1435	EJ	
10	✓	F120310	URS 0211644A-02A	12957	7.0"Hg → 5psi	200 mL	1.75		1524	EJ	
11	✓	F120311	-03A	12076	6.5"Hg → 5psi	200 mL	1.71		1608	EJ	
12	✓	F120312	-01A	33661	7.5"Hg → 5psi	200 mL	1.79		1646	KB	
13	✓	F120313	-04A	33916	4.5"Hg 5psi	200 mL	1.58		1724	KB	R.R @ 50 mls
14	✓	F120314	Blank	33998	—	200 mL	1.0		1812	KB	
15	✓	F120315	URS 0211644A -04A	33916	4.5"Hg -5psi	50 mL	6.32		1856	KB	

Calculation Check: File ID: F120302 Compound: Toluene-d8 Initials: EJ

$$\text{ppbv in sample} = \frac{\text{Area of Compound in Sample}}{\text{Area of Int. Standard in Sample}} \times \frac{\text{Conc. Int. Standard (ppbv)}}{\text{ICAL RRF}} \times \text{Dilution Factor}$$

$$\text{ppbv in sample} = \frac{(1035459)}{(1546541)} \times \frac{(25.0)}{(0.68185)} \times (1.0) = 24.5483$$

Reported Result: 24.548

K. Badue
Signed

12-4-02
Date

Revised 06/23/99

Instrument RunLog

@Air Toxics Ltd.

Log Book #: 812

342

GC/MS Tuning and Mass Calibration (BFB)

m/e	Ion Abundance Criteria	% Relative Abundance
50	15 - 40% of the base peak	20.38
75	30 - 60% of the base peak	47.21
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.45
173	Less than 2% of mass 174	(0.00) 1
174	Greater than 50% of mass 95	79.49
175	5.0 - 9.0% of mass 174	(7.41) 1
176	Greater than 95% but less than 101% of mass 174	(96.45) 1
177	5.0 - 9.0% of mass 176	(6.44) 2

1 - value in parenthesis is % mass 174 2 - value in parenthesis is % mass 176

BFB File ID: F120901
BFB Injection Date: 12-9-02
BFB Injection Time: 6:00

Tekmar Purge Flow:	
Vacuum:	

#995-52 I.S.	Area counts
BCM	550488
1,4-DFB	1355563
CB-d_5	660646

THIS TUNE CHECK APPLIES TO THE FOLLOWING SAMPLES, BLANKS AND STANDARDS

	Use	File #	Sample Name/Client	Can #	Pressure	Amount	Dilution Factor	Date Analyzed	Time Analyzed	Init.	Comments
1	✓	F120901	BFB Tune Check	#843-559	50 ng	2 ul	1.0	12-9-02	6:00	KB	
2	✓	F120902	Method Spike	#995-55 100 ppbv	50 ppbv	100 mL	1.0		6:02	KB	
3	X	F120903	LCS	#995-39 100 ppbv	50 ppbv	100 mL	1.0		7:10	KB	
4	✓	F120904	LCS	#959-172 200 ppbv	50 ppbv	50 mL	1.0		7:59	KB	
5	✓	F120905	Level 2	#959-158 100 ppbv	2 ppbv	4 mL			917	C.T.	AT Specials
6	✓	F120906	Level 4		50 ppbv	100 mL			957	C.T.	
7	✓	F120907	Level 5		100 ppbv	200 mL			1049	C.T.	
8	X	F120908	Lab ~~System~~ Blank 12-9-02 C.T.	Humid	12044 ppbv	200 mL	1.0		1128	C.T.	Surr
9	X	F120909	Bag dilution of 0212055-01A	33632	12-9-02 C.T. 4.0" Hg → 15 psi	50 mL of 100x Bag	932		1257	C.T.	50 mL of a 100x Oil RR@200mL
10	X	F120910 12-9-02 C.T.	↓ -02A	SC 39	4.5" Hg → 15 psi	50 mL of 1000x Bag	9520		1354	C.T.	50 mL of a 1000x Oil
11	✓	F120911	Lab Blank	12044	Humid	200 mL	1.0		1441	C.T.	ok per RH
12	✓	F120912	MW 0212055-01A	33632	4.0" Hg → 15 psi	25 mL	186		1521	C.T.	
13	✓	F120913	↓ -02A	SC39	4.5" Hg → 15 psi	50 mL	952		1558	C.T.	50 mL of 100x Oil
14	✓	F120914	-03A	25204	5.0" Hg → 15 psi	25 mL	194		1637	C.T.	Surr BFB + matrix
15	✓	F120915	↓ -02AA	SC39	4.5" Hg → 15 psi	50 mL	952	↓	1714	C.T.	

Calculation Check: File ID: F120902 Compound: 1,2DCA-d_4 Initials: KB

ppbv in sample = $\frac{\text{Area of Compound in Sample}}{\text{Area of Int. Standard in Sample}} \times \frac{\text{Conc. Int. Standard (ppbv)}}{\text{ICAL RRF}} \times$ Dilution Factor

ppbv in sample = $\frac{(848728)}{(550488)} \times \frac{(25)}{(1.50437)} \times (1.0) =$ 25.622

Reported Result: 25.622

C Taylor
Signed

12-9-02
Date

0072
Revised: 06/29/99

Bag Blend Standard Preparation Log

@Air Toxics Ltd. Logbook #: 995

Standard ID: 995-55
Analyst: CT
Preparation Date: 11-25-02
Expiration Date: 2-22-03

T014
Zero Air
200ppbv

Bag Blend Standard Calculation:

$$ppmv = \frac{(\text{Volume added uL})(\text{density})(1000)(24.055)(\text{Purity*})}{(\text{Formula Weight})(\text{Final Volume L})}$$

*Standards are corrected for purity when purity is ≤ 96%, otherwise a purity of 100% is assumed.

Final Volume: 6.0 L

Compound	Supplier	Lot #	Purity	CAS #	Density	F.W.	µL	ppmv	Purity Check Date
		CT		11-25-02					

To a conditioned/evacuated 6L canister # 96104 add the following:

1. 50uL of Di-H2O
2. 480mL of SCOTT #ALM025489; #843-475 Exp.6-23-03; 5ppmv.
3. 48mL of AT EXTRA #995-45; Exp. 2-22-03; 50ppmv
4. 48mL of Benzl. Chl+ #959-103; Exp. 4-1-03; 50ppmv
5. Pressurize to 15psi with Zero Air
   Final Concentration = 200ppbv

Procedu

C Taylor — Signed; 11-25-02 — Date; TSS — Reviewed; 11-25-02 — Date

0073

Rev. 06/01

Bag Blend Standard Preparation Log

@Air Toxics Ltd. Logbook #: 995

Standard ID: 995-45
Analyst: C.P.
Preparation Date: 11-22-02
Expiration Date: 2-22-03

AT Extra
50 ppmv

Bag Blend Standard Calculation:

$$ppmv = \frac{(\text{Volume added uL})(\text{density})(1000)(24.055)(\text{Purity*})}{(\text{Formula Weight})(\text{Final Volume L})}$$

*Standards are corrected for purity when purity is ≤ 96%, otherwise a purity of 100% is assumed.

Final Volume: 6.0 L

Compound	Supplier	Lot #	Purity	CAS #	Density	F.W.	µL	ppmv	Purity Check Date

CP 11-22-02

ATLISTprimary.XLS 11/22/02 12:29 PM

6 Liter Gas Standards
PPMV=(volume (mL) x concentration (ug/mL) x 24.055) / (F.W. (g) x final volume (L)
11/22/02

Compound	Supplier	Lot#	Purity	CAS #	density	FW	conc.mg/mL	Conc(ug/mL)	ug	mL	PPMV	Location
1,3-Butadiene	Aldrich	19403EQ	99.0%	106-99-0	GAS	N/A				0.60	100	Cabinet
Propylene	Aldrich	16605TI	99.0%	115-07-1	GAS	N/A				0.60	100	Cabinet
Cyclohexane	AccuStandard	B2070001	99.7%	110-82-7	0.779	84.16	34.91	34910	2094.6	0.06	100	5Q
Bromoform	AccuStandard	B2070001	100%	75-25-2	2.894	252.75	105.50	105500	6330	0.06	100	5Q
Acetone	AccuStandard	B2070005	99.7%	67-64-1	0.791	58.08	23.95	23950	1437	0.06	99	5Q
Bromodichloromethane	AccuStandard	B2070001	96.5%	75-27-4	1.980	163.83	68.17	68170	4090.2	0.06	100	5Q
Carbon Disulfide	AccuStandard	B2070001	99.9%	75-15-0	1.266	76.14	31.97	31970	1918.2	0.06	101	5Q
Chlorodibromomethane	AccuStandard	B2070001	98.5%	124-48-1	2.451	209.00	85.72	85720	5143.2	0.06	99	5Q
Vinyl Acetate	AccuStandard	B2070005	100.0%	108-05-4	0.934	86.09	35.98	35980	2158.8	0.06	101	5Q
2-Propanol	AccuStandard	B2070001	99.4%	67-63-0	0.785	60.1	24.87	24870	1492.2	0.06	100	5Q
Tetrahydrofuran	AccuStandard	B2070001	99.6%	109-99-9	0.889	72.11	30.18	30180	1810.8	0.06	101	5Q
trans-1,2-Dichloroethene	AccuStandard	B2070001	100.0%	156-60-5	1.257	96.94	40.10	40100	2406	0.06	100	5Q
2-Butanone	AccuStandard	B2070005	100.0%	78-93-3	0.805	72.11	30.02	30020	1801.2	0.06	100	5Q
4-Methyl-2-Pentanone	AccuStandard	B2070005	99.4%	108-10-1	0.800	100.16	41.77	41770	2506.2	0.06	100	5Q
2-Hexanone	AccuStandard	B2070005	100.0%	591-78-6	0.812	100.16	42.02	42020	2521.2	0.06	101	5Q
1,4-Dioxane	AccuStandard	B2070001	99.2%	123-91-1	1.034	88.11	36.72	36720	2203.2	0.06	100	5Q
MTBE	AccuStandard	B2070001	100.0%	1634-04-4	0.758	88.15	37.08	37080	2224.8	0.06	101	5Q
Ethanol	AccuStandard	B2070001	100.0%	64-17-5	0.785	46.07	19.08	19080	1144.8	0.06	100	5Q
Heptane	AccuStandard	B2070001	100.0%	142-82-5	0.684	100.21	42.19	42190	2531.4	0.06	101	5Q
Hexane	AccuStandard	B2070001	100.0%	110-54-3	0.659	86.18	36.22	36220	2173.2	0.06	101	5Q

Procedure: TO 6 L Can added: 50ul purged H20, 0.06mL (60uL) of the standard #843-525/Lot# B2070001,0.06mL of the standard #843-526 B2070005, 0.6mL of 1,3-Butadiene, 0.6mL Propylene . Pressurized canister to 15 psi with Zero Air. Final concentration: 50 ppmv.

C Taylor — Signed
11-22-02 — Date
Reviewed
Date

0074

Rev. 06/01

Bag Blend Standard Preparation Log

@Air Toxics Ltd. Logbook #: 959

Benzyl chloride +

Standard ID: 959-103
Analyst: C.T.
Preparation Date: 10-1-02
Expiration Date: 4-1-03

Bag Blend Standard Calculation:

$$ppmv = \frac{(\text{Volume added uL})(\text{density})(1000)(24.055)(\text{Purity*})}{(\text{Formula Weight})(\text{Final Volume L})}$$

*Standards are corrected for purity when purity is ≤ 96%, otherwise a purity of 100% is assumed.

Final Volume: 6.0 L

Compound	Supplier	Lot #	Purity	CAS #	Density	F.W.	µL	ppmv	Purity Check Date

10/1/02 Benzsty.xls 10 Liter Gas Standards

Compound	Supplier	Lot No.	Purity	CAS #	density	FW	uL	ppmv	Location	purity check
Benzyl Chloride	Aldrich	LX12127CX	99%	100-44-7	1.100	126.59	4.8	100	1A	21-Jan-02
Styrene	Aldrich	10517LS	99%	100-42-5	0.909	104	4.8	101	2G	21-Jan-02
cis-1,3-Dichloropropene	Chem Srvc.	282-125A	98%	10061-01-5	1.198	110.97	3.9	101	1C	exp 11/03
t-1,3-Dichloropropene	Chem Srvc.	282-126A	94%	10061-02-6	1.198	110.97	4.1	100	1C	exp 11/03
4-ethyltoluene	Aldrich	00103DM	90%	622-96-8	0.861	120.2	6.5	101	5Q	opened 1-24-02
Water							50			

Note: Store bag standard in the dark!

C.T. 10-1-02

Procedure/Comments: To a conditioned 10L Tedlar bag
1) Add 10L N_2
2) Add 50mL Di-H_2O
3) Add above quantities to bag
4) Transferred to evacuated 6L can #10974
5) Pressurized to 15psi
Final Conc = 50ppmv

C Taylor 10-1-02 10-01-02

0075

Rev 06/01

Bag Blend Standard Preparation Log

@Air Toxics Ltd. Logbook #: 995

Standard ID: 995-39
Analyst: GJ
Preparation Date: 11-21-02
Expiration Date: 1-24-03

To14
2nd Source
200ppbv

Bag Blend Standard Calculation:

$$ppmv = \frac{(\text{Volume added uL})(\text{density})(1000)(24.055)(\text{Purity*})}{(\text{Formula Weight})(\text{Final Volume L})}$$

*Standards are corrected for purity when purity is ≤ 96%, otherwise a purity of 100% is assumed.

Final Volume: 6.0 L

Compound	Supplier	Lot #	Purity	CAS #	Density	F.W.	µL	ppmv	Purity Check Date

11-21-02

Procedure/C

To a conditioned/evacuated 6L canister #94305 add the following:

1. 50uL of Di-H2O
2. 480mL of SCOTT #ALM039560; #843-059 Exp.8-16-03; 5ppmv.
3. 48mL of AT EXTRA #914-165; Exp. 2-12-03; 50ppmv
4. 48mL of Benzl. Chl+ #959-144; Exp. 1-24-03; 50ppmv
5. Pressurize to 15psi with Zero Air
   Final Concentration = 200ppbv

Signed 11-21-02 Date C Taylor Reviewed 11-21-02 Date

0076

Rev. 06/01

Bag Blend Standard Preparation Log

@Air Toxics Ltd. Logbook #: 959

Standard ID: 959-144
Analyst: L Ford
Preparation Date: 10-22-02
Expiration Date: 01-24-03

Benzyl Chloride +

Bag Blend Standard Calculation:

$$ppmv = \frac{(\text{Volume added uL})(\text{density})(1000)(24.055)(\text{Purity*})}{(\text{Formula Weight})(\text{Final Volume L})}$$

*Standards are corrected for purity when purity is ≤ 96%, otherwise a purity of 100% is assumed.

Final Volume: 6 L

Compound	Supplier	Lot #	Purity	CAS #	Density	F.W.	µL	ppmv	Purity Check Date

LF 10-22-02

10/1/02 Benzsty.xls 10 Liter Gas Standards

Compound	Supplier	Lot No.	Purity	CAS #	density	FW	uL	ppmv	Location	purity check
Benzyl Chloride	Aldrich	LX12127CX	99%	100-44-7	1.100	126.59	4.8	100	1A	5-Feb-02
Styrene	Aldrich	10517LS	99%	100-42-5	0.909	104	4.8	101	2G	5-Feb-02
cis-1,3-Dichloropropene	Chem Srvc.	282-125A	98%	10061-01-5	1.198	110.97	3.9	101	1C	exp 11/03
t-1,3-Dichloropropene	Chem Srvc.	282-126A	94%	10061-02-6	1.198	110.97	4.1	100	1C	exp 11/03
4-ethyltoluene	Aldrich	00103DM	90%	622-96-8	0.861	120.2	8.5	101	5Q	opened 1-24-02
Water							50			

Note: Store bag standard in the dark!

LF 10-22-02

Procedure/Comments: To A Conditioned 10L Tedlar Bag
① 50uL N_2 purged H_2O
② 10L N_2
③ Add the above to Tedlar Bag
④ Transferred to a conditioned/evacuated 6L Canister # 9922
⑤ Pressurize to 15psi
Final Concentration 50 ppmv

Signed 10-22-02 Date Reviewed 10/22/02 Date

0077

Bag Blend Standard Preparation Log

@Air Toxics Ltd. Logbook #: 914

Standard ID: 914-165
Analyst: MJ
Preparation Date: 8/12/02
Expiration Date: 2/12/03

T014
AT
Extras

Bag Blend Standard Calculation:

$$ppmv = \frac{(\text{Volume added uL})\,(\text{density})\,(1000)\,(24.055)\,(\text{Purity*})}{(\text{Formula Weight})\,(\text{Final Volume L})}$$

*Standards are corrected for purity when purity is ≤ 96%, otherwise a purity of 100% is assumed.

Final Volume: 1.0 L

Compound | nv | Purity Check Date

Atlist.xls 8/13/02 9:05 AM

8 Liter Gas Standards
8/12/02

Compound	Supplier	Lot#	Purity	CAS #	density	FW	uL	PPM	Neat Std. Location	purity check
1,3-Butadiene	Aldrich	00827BR	99%	106-99-0	GAS	N/A	800.0	100	Gas B1	08/12/02
Propylene	Aldrich	09123AR	99%	115-07-1	GAS	N/A	800.0	100	Gas P2	05/02/02
Cyclohexane	Aldrich	01314LV	99%	110-82-7	0.779	84.16	3.6	99	5Q	11/30/01
Bromoform	Aldrich	PX10226MX	99%	75-25-2	2.894	252.75	2.9	99	5Q	11/30/01
Acetone	Aldrich	LS00849LS	99%	67-64-1	0.791	58.08	2.5	101	2FF	11/30/01
Bromodichloromethane	Aldrich	0113BU	98%	75-27-4	1.980	163.83	2.8	100	5Q	11/30/01
Carbon Disulfide	Aldrich	CI00556B1	99%	75-15-0	1.266	76.14	2.0	99	1EE	11/30/01
Chlorodibromomethane	Aldrich	12622CL	98%	124-48-1	2.451	209.00	2.9	100	5Q	11/30/01
Vinyl Acetate	Aldrich	CY05530AY	99%	108-05-4	0.934	86.09	3.1	100	5Q	11/30/01
2-Propanol	B&J	B0352	99%	67-63-0	0.785	60.1	2.6	101	5Q	11/30/01
Tetrahydrofuran	Aldrich	04838AU	99%	109-99-9	0.889	72.11	2.7	99	5Q	11/30/01
trans-1,2-Dichloroethen	Aldrich	00920E6	98%	156-60-5	1.257	96.94	2.6	99	5Q	11/30/01
2-Butanone	Aldrich	09119JW	99%	78-93-3	0.805	72.11	3.0	100	5Q	11/30/01
4-Methyl-2-Pentanone	Aldrich	01427LW	99%	108-10-1	0.800	100.16	4.2	100	5Q	11/30/01
2-Hexanone	Aldrich	01418BM	99%	591-78-6	0.812	100.16	4.2	101	5Q	11/30/01
4-Ethyl Toluene	Aldrich	HX00103DM	95%	622-96-8	0.861	120.2	4.9	100	5Q	12/04/01
1,4-Dioxane	Aldrich	02502CX	99%	123-91-1	1.034	88.11	2.9	101	5Q	12/04/01
MTBE	Aldrich	02409EW	99%	1634-04-4	0.758	88.15	3.9	100	5Q	11/30/01
Ethanol	Aldrich	AL09115LV	99%	64-17-5	0.785	46.07	2.0	101	5R	11/30/01
Heptane	Aldrich	07440MF	99%	142-82-5	0.684	100.21	5.0	101	5Q	11/30/01
Hexane	Aldrich	01517CZ	99%	110-54-3	0.659	86.18	4.4	100	5Q	11/30/01

Procedure: Measure 8L nitrogen into a Tedlar bag and spike in amounts of analytes listed in the table. Add 50ul purged H20. Contents of Tedlar bag transferred to 6L can. Can pressurized to 15 psi. Final concentration: 50 ppmv.

Can# 13669

Procedure/Comm

M Jordan 8/12/02

Matt Jordan 8/12/02 Jack 8/13/02

Signed Date Reviewed Date

0078

Rev. 06/01

Bag Blend Standard Preparation Log

@Air Toxics Ltd. Logbook #: 995

IS/Surr

Standard ID: 995-52
Analyst: C.P.
Preparation Date: 11-25-02
Expiration Date: 2-25-03

Bag Blend Standard Calculation:

$$ppmv = \frac{(\text{Volume added uL})(\text{density})(1000)(24.055)(\text{Purity*})}{(\text{Formula Weight})(\text{Final Volume L})}$$

*Standards are corrected for purity when purity is ≤ 96%, otherwise a purity of 100% is assumed.

Final Volume: 6.0 L

Compound	Supplier	Lot #	Purity	CAS #	Density	F.W.	µL	ppmv	Purity Check Date

C.P. 11-25-02

IS/SURR

To a conditioned/evacuated 6L canister # 23986 add the following:

1. 50uL of Di-H2O
2. 200mL of #959-131 300ppmv EXP 4-17-03
3. Pressurize to 15psi with ~~Nitrogen~~ Zero Air 11-25-02 C.P.
4. Final Concentration = 5ppmv

Procedure/Comments:

C Taylor — Signed
11-25-02 — Date
Reviewed
11/25/02 — Date

0079

Rev. 06/01

Bag Blend Standard Preparation Log

@Air Toxics Ltd. Logbook #: 959

Standard ID: 959-131
Analyst: TJS
Preparation Date: 10-17-02
Expiration Date: 4-17-03

IS/Surr Parent

Bag Blend Standard Calculation:

$$ppmv = \frac{(\text{Volume added uL})(\text{density})(1000)(24.055)(\text{Purity*})}{(\text{Formula Weight})(\text{Final Volume L})}$$

*Standards are corrected for purity when purity is ≤ 96%, otherwise a purity of 100% is assumed.

Final Volume: 15 L

ls_ss300.xls

2/4/00	20 Liter Gas Standards						
Compound	Supplier	Lot#/Purity	CAS #	density	FW	uL	PPMV
ıofluorobenzene	Aldrich	09903LQ/99%	460-00-4	1.593	175.01	54.9	601.0
)ifluorobenzene	Aldrich	15521JS/99%	540-36-3	1.110	114.09	51.3	600.3
robenzene-d5	Aldrich	13225AU/98.5%	3114-55-4	1.157	117.60	50.8	601.1
)ichloroethane-d4	Aldrich	03325AU/99%	17060-07--0	1.307	102.99	39.4	601.4
ene-d8	Aldrich	02846MS/99%	2037-26-5	0.943	100.21	53.1	601.0
ıochloromethane	Aldrich	13905KS/99%	74-97-5	1.991	129.39	32.5	601.5

rocedure: Measure 20 L of nitrogen into a 25L Tedlar bag and spike in amounts of analytes listed in the table. Add 100 _ H2O. Pull the bag standard into an evacuated 15 L canister. Pressurize the canister to 15 psi (Dilution of 1:2). A final ›ncentration of 300ppmv.

TJS 10-17-02

TJS 10-17-02 TJS 11-12-02

Page 131 Signed Date Reviewed Date Rev. 06/01

0080

Rec'd 6/17/02

#843-475

CUSTOM CLASS
Exp: 6/12/2003

Scott Specialty Gases

500 WEAVER PARK RD,LONGMONT,CO 80501 Phone: 888-253-1635 Fax: 303-772-7673

CERTIFICATE OF ACCURACY: Custom Class Calibration Standard

Product Information
Project No.: 08-92203-002
Item No.: 0802BT00120ZAL
P.O. No.: 15252

Cylinder Number: ALM025489
Cylinder Size: AL
Certification Date: 06/13/2002
Expiration Date: 06/12/2003

Customer

AIR TOXICS LTD
180 BLUE RAVINE ROAD
SUITE B
FOLSOM, CA 95630

CERTIFIED CONCENTRATION

Component Name	Concentration (Moles)		Accuracy (+/-%)	
BENZENE	5.0	PPM	5	Dual-Certified
BROMOMETHANE	4.8	PPM	5	Dual-Certified
CARBON TETRACHLORIDE	5.2	PPM	5	Dual-Certified
CHLOROBENZENE	5.4	PPM	5	
CHLOROFORM	5.3	PPM	5	
CIS-1,2-DICHLOROETHYLENE	5.2	PPM	5	Dual-Certified
1,2-DIBROMOETHANE	5.3	PPM	5	
1,2-DICHLOROBENZENE	5.1	PPM	5	
1,3-DICHLOROBENZENE	5.1	PPM	5	
1,4-DICHLOROBENZENE	5.1	PPM	5	
DICHLORODIFLUOROMETHANE	4.8	PPM	5	
1,1-DICHLOROETHANE	5.2	PPM	5	Dual-Certified
1,2-DICHLOROETHANE	5.2	PPM	5	Dual-Certified
1,1 DICHLOROETHENE	5.3	PPM	5	Dual-Certified
DICHLOROMETHANE	5.2	PPM	5	Dual-Certified
1,2-DICHLOROPROPANE	5.2	PPM	5	
1,2-DICHLOROTETRAFLUOROETHANE	4.8	PPM	5	Dual-Certified
ETHYLBENZENE	5.1	PPM	5	
ETHYL CHLORIDE	4.8	PPM	5	
HALOCARBON 11	5.4	PPM	5	Dual-Certified
HEXACHLORO-1,3-BUTADIENE	5.2	PPM	5	
METHYL CHLORIDE	4.8	PPM	5	
1,1,2,2-TETRACHLOROETHANE	5.3	PPM	5	
TETRACHLOROETHYLENE	5.2	PPM	5	
TOLUENE	5.2	PPM	5	
1,1,1-TRICHLOROETHANE	5.4	PPM	5	Dual-Certified
1,1,2-TRICHLOROETHANE	5.3	PPM	5	
TRICHLOROETHYLENE	5.5	PPM	5	Dual-Certified
1,1,2-TRICHLOROTRIFLUOROETHANE	5.3	PPM	5	Dual-Certified
NITROGEN		BALANCE		

TRACEABILITY

Description	Traceability Type	Traceable To
BLEND PROCESS TRACEABILITY	WEIGHT	NIST
ANALYTICAL TRACEABILITY	GAS STANDARDS	

APPROVED BY: James R. Maurer
JIM MAURER

DATE: JUN 14 2002

0081

SPECIFICATIONS

Component Name	Requested Concentration (Moles)	Gravimetric Concentration (Moles)	Analyzed Concentration (Moles)	Blend Tolerance Result (+/- %)	Blend Process Accuracy Result (+/- %)	Analytical Accuracy Result (+/- %)	Interlocking Result (+/- %)
BENZENE	5. PPM	5.0 PPM	5.0 PPM	.0	5.00	5.00	.00
BROMOMETHANE	5. PPM	4.8 PPM	4.8 PPM	4.0	5.00	5.00	.00
CARBON TETRACHLORIDE	5. PPM	5.2 PPM	5.2 PPM	4.0	5.00	5.00	.00
CHLOROBENZENE	5. PPM	N/A	5.4 PPM	8.0	N/A	5.00	N/A
CHLOROFORM	5. PPM	N/A	5.3 PPM	6.0	N/A	5.00	N/A
CIS-1,2-DICHLOROETHYLENE	5. PPM	5.2 PPM	5.2 PPM	4.0	5.00	5.00	.00
1,2-DIBROMOETHANE	5. PPM	N/A	5.3 PPM	6.0	N/A	5.00	N/A
1,2-DICHLOROBENZENE	5. PPM	N/A	5.1 PPM	2.0	N/A	5.00	N/A
1,3-DICHLOROBENZENE	5. PPM	N/A	5.1 PPM	2.0	N/A	5.00	N/A
1,4-DICHLOROBENZENE	5. PPM	N/A	5.1 PPM	2.0	N/A	5.00	N/A
DICHLORODIFLUOROMETHANE	5. PPM	N/A	4.8 PPM	4.0	N/A	5.00	N/A
1,1-DICHLOROETHANE	5. PPM	5.2 PPM	5.2 PPM	4.0	5.00	5.00	.00
1,2-DICHLOROETHANE	5. PPM	5.2 PPM	5.2 PPM	4.0	5.00	5.00	.00
1,1-DICHLOROETHENE	5. PPM	5.3 PPM	5.3 PPM	6.0	5.00	5.00	.00
DICHLOROMETHANE	5. PPM	5.2 PPM	5.2 PPM	4.0	5.00	5.00	.00
1,2-DICHLOROPROPANE	5. PPM	N/A	5.2 PPM	4.0	N/A	5.00	N/A
1,2-DICHLOROTETRAFLUOROETHANE	5. PPM	4.8 PPM	4.8 PPM	4.0	5.00	5.00	.00
ETHYLBENZENE	5. PPM	N/A	5.1 PPM	2.0	N/A	5.00	N/A
ETHYL CHLORIDE	5. PPM	N/A	4.8 PPM	4.0	N/A	5.00	N/A
HALOCARBON 11	5. PPM	5.4 PPM	5.4 PPM	8.0	5.00	5.00	.00
HEXACHLORO-1,3-BUTADIENE	5. PPM	N/A	5.2 PPM	4.0	N/A	5.00	N/A
METHYL CHLORIDE	5. PPM	N/A	4.8 PPM	4.0	N/A	5.00	N/A
1,1,2,2-TETRACHLOROETHANE	5. PPM	N/A	5.3 PPM	6.0	N/A	5.00	N/A
TETRACHLOROETHYLENE	5. PPM	N/A	5.2 PPM	4.0	N/A	5.00	N/A
TOLUENE	5. PPM	N/A	5.2 PPM	4.0	N/A	5.00	N/A
1,1,1-TRICHLOROETHANE	5. PPM	5.4 PPM	5.4 PPM	8.0	5.00	5.00	.00
1,1,2-TRICHLOROETHANE	5. PPM	N/A	5.3 PPM	6.0	N/A	5.00	N/A
TRICHLOROETHYLENE	5. PPM	5.5 PPM	5.5 PPM	10.0	5.00	5.00	.00
1,1,2-TRICHLOROTRIFLUOROETHANE	5. PPM	5.3 PPM	5.3 PPM	6.0	5.00	5.00	.00
NITROGEN							

TRACEABILITY

Process Traceability

Method	Traceability To
GRAVIMETRIC BLENDING	NIST

Analytical Traceability

Type/SRM No.	Expiration Date	Cylinder Number	Concentration	Component
SRS CSTD	06/13/02	ALM049131	5.300 PPM	BENZENE
SRS CSTD	06/13/02	ALM049131	5.000 PPM	BROMOMETHANE
SRS CSTD	06/13/02	ALM049131	5.000 PPM	CARBON TETRACHLORIDE
SRS CSTD	06/13/02	ALM049131	5.000 PPM	CHLOROBENZENE
SRS CSTD	06/13/02	ALM049131	5.000 PPM	CHLOROFORM
SRS CSTD	06/13/02	ALM049131	5.000 PPM	CIS-1,2-DICHLOROETHYLENE
SRS CSTD	06/13/02	ALM049131	5.000 PPM	1,2-DIBROMOETHANE
SRS CSTD	06/13/02	ALM049131	5.000 PPM	1,2-DICHLOROBENZENE
SRS CSTD	06/13/02	ALM049131	5.000 PPM	1,3-DICHLOROBENZENE
SRS CSTD	06/13/02	ALM049131	5.000 PPM	1,4-DICHLOROBENZENE
SRS CSTD	06/13/02	ALM049131	5.000 PPM	DICHLORODIFLUOROMETHANE
SRS CSTD	06/13/02	ALM049131	5.000 PPM	1,1-DICHLOROETHANE
SRS CSTD	06/13/02	ALM049131	5.000 PPM	1,2-DICHLOROETHANE
SRS CSTD	06/13/02	ALM049131	5.000 PPM	1,1-DICHLOROETHENE
SRS CSTD	06/13/02	ALM049131	5.000 PPM	DICHLOROMETHANE
SRS CSTD	06/13/02	ALM049131	5.000 PPM	1,2-DICHLOROPROPANE
SRS CSTD	06/13/02	ALM049131	5.000 PPM	1,2-DICHLOROTETRAFLUOROETHANE
SRS CSTD	06/13/02	ALM049131	5.000 PPM	ETHYLBENZENE
SRS CSTD	06/13/02	ALM049131	5.000 PPM	ETHYL CHLORIDE
SRS CSTD	06/13/02	ALM049131	5.000 PPM	HALOCARBON 11
SRS CSTD	06/13/02	ALM049131	5.000 PPM	HEXACHLORO-1,3-BUTADIENE
SRS CSTD	06/13/02	ALM049131	5.000 PPM	METHYL CHLORIDE
SRS CSTD	06/13/02	ALM049131	5.000 PPM	1,1,2,2-TETRACHLOROETHANE
SRS CSTD	06/13/02	ALM049131	5.000 PPM	TETRACHLOROETHYLENE
SRS CSTD	06/13/02	ALM049131	5.000 PPM	TOLUENE
SRS CSTD	06/13/02	ALM049131	5.000 PPM	1,1,1-TRICHLOROETHANE

CUSTOM CLASS

Scott Specialty Gases

500 WEAVER PARK RD,LONGMONT,CO 80501 Phone: 888-253-1635 Fax: 303-772-7673

CERTIFICATE OF ACCURACY: Custom Class Calibration Standard

Product Information
Project No.: 08-92203-003
Item No.: 0802T800001ZAL
P.O. No.: 15252
Folio #:
Cylinder Number: ALM025489
Cylinder Size: AL
Certification Date: 06/13/2002
Expiration Date: 06/12/2003

Customer

AIR TOXICS LTD
180 BLUE RAVINE ROAD
SUITE B
FOLSOM, CA 95630

CERTIFIED CONCENTRATION

Component Name	Concentration (Moles)	Accuracy (+/-%)
1,2,4 TRICHLOROBENZENE	4.5 PPM	5
1,2,4-TRIMETHYLBENZENE	4.8 PPM	5
1,3,5-TRIMETHYLBENZENE	4.8 PPM	5
VINYL CHLORIDE	4.8 PPM	5
M-XYLENE	2.5 PPM	5
O-XYLENE	5.1 PPM	5
P-XYLENE	2.6 PPM	5
NITROGEN	BALANCE	

TRACEABILITY

Description	Traceability Type	Traceable To
ANALYTICAL TRACEABILITY	GAS STANDARDS	

APPROVED BY James R. Maurer
JIM MAURER

DATE: JUN 14 2002

0083

SPECIFICATIONS

Component Name	Requested Concentration (Moles)		Gravimetric Concentration (Moles)	Analyzed Concentration (Moles)		Blend Tolerance Result (+/- %)	Blend Process Accuracy Result (+/- %)	Analytical Accuracy Result (+/- %)	Interlocking Result (+/- %)
1,2,4 TRICHLOROBENZENE	5.	PPM	N/A	4.5	PPM	10.0	N/A	[illegible]	N/A
1,2,4-TRIMETHYLBENZENE	5.	PPM	N/A	4.8	PPM	4.0	N/A	[illegible]	N/A
1,3,5-TRIMETHYLBENZENE	5.	PPM	N/A	4.8	PPM	4.0	N/A	[illegible]	N/A
VINYL CHLORIDE	5.	PPM	N/A	4.8	PPM	4.0	N/A	[illegible]	N/A
M-XYLENE	2.5	PPM	N/A	2.5	PPM	.0	N/A	[illegible]	N/A
O-XYLENE	5.	PPM	N/A	5.1	PPM	2.0	N/A	[illegible]	N/A
P-XYLENE	2.5	PPM	N/A	2.6	PPM	4.0	N/A	[illegible]	N/A
NITROGEN									

TRACEABILITY

Analytical Traceability

Type/SRM No.	Expiration Date	Cylinder Number	Concentration	Component
SRS CSTD	06/13/02	ALM049131	5.000 PPM	1,2,4 TRICHLOROBENZENE
SRS CSTD	06/13/02	ALM049131	5.000 PPM	1,2,4-TRIMETHYLBENZENE
SRS CSTD	06/13/02	ALM049131	5.000 PPM	1,3,5-TRIMETHYLBENZENE
SRS CSTD	06/13/02	ALM049131	5.000 PPM	VINYL CHLORIDE
SRS CSTD	06/13/02	ALM049131	2.500 PPM	M-XYLENE
SRS CSTD	06/13/02	ALM049131	5.000 PPM	O-XYLENE
SRS CSTD	06/13/02	ALM049131	2.500 PPM	P-XYLENE

Instrumentation

Instrument/Model/Serial#	Date Last Calibrated	Analytical Principle	Analytical Method
HP/6890/US00006537	06/13/02	FID	
HP/6890/US00006537	06/13/02	FID	
HP/6890/US00006537	06/13/02	FID	
HP/6890/US00006537	06/13/02	FID	
HP/6890/US00006537	06/13/02	FID	
HP/6890/US00006537	06/13/02	FID	
HP/6890/US00006537	06/13/02	FID	

PHYSICAL PROPERTIES

Cylinder Size: AL

Pressure: 86 PSIG
Expiration Date: 06/12/2003

Valve Connection: 350

SPECIAL HANDLING INSTRUCTIONS

Do not use or store cylinder at or below the stated dew point temperature. Possible condensation of heavier components could result. In the event the cylinder has been exposed to temperatures at or below the dew point, place cylinder in heated area for 24 hours and then roll cylinder for 15 minutes to re-mix.

Use of calibration standards at or below dew point temperature may result in calibration error.

CUSTOM CLASS

Scott Specialty Gases
500 WEAVER PARK RD,LONGMONT,CO 80501 Phone: 888-253-1635 Fax: 303-772-7673

CERTIFICATE OF ACCURACY: Custom Class Calibration Standard

Product Information
Project No.: 08-92203-002
Item No.: 0802BT00120ZAL
P.O. No.: 15252
Folio #:
Cylinder Number: ALM025489
Cylinder Size: AL
Certification Date: 06/13/2002
Expiration Date: 06/12/2003

Customer
AIR TOXICS LTD
180 BLUE RAVINE ROAD
SUITE B
FOLSOM, CA 95630

TRACEABILITY

Process Traceability

Method
GRAVIMETRIC BLENDING

Traceability To
NIST

Analytical Traceability

Type/SRM No.	Expiration Date	Cylinder Number	Concentration	Component
SRS CSTD	06/13/02	ALM049131	5.000 PPM	1,1,2-TRICHLOROETHANE
SRS CSTD	06/13/02	ALM049131	5.000 PPM	TRICHLOROETHYLENE
SRS CSTD	06/13/02	ALM049131	5.000 PPM	1,1,2-TRICHLOROTRIFLUOROETHANE

Instrumentation

Instrument/Model/Serial#	Date Last Calibrated	Analytical Principle	Analytical Method
HP/6890/US00006537	06/13/02	FID	
HP/6890/US00006537	06/13/02	FID	
HP/6890/US00006537	06/13/02	FID	
HP/6890/US00006537	06/13/02	FID	
HP/6890/US00006537	06/13/02	FID	
HP/6890/US00006537	06/13/02	FID	
HP/6890/US00006537	06/13/02	FID	
HP/6890/US00006537	06/13/02	FID	
HP/6890/US00006537	06/13/02	FID	
HP/6890/US00006537	06/13/02	FID	
HP/6890/US00006537	06/13/02	FID	
HP/6890/US00006537	06/13/02	FID	
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HP/6890/US00006537	06/13/02	FID	
HP/6890/US00006537	06/13/02	FID	
HP/6890/US00006537	06/13/02	FID	
HP/6890/US00006537	06/13/02	FID	
HP/6890/US00006537	06/13/02	FID	
HP/6890/US00006537	06/13/02	FID	
HP/6890/US00006537	06/13/02	FID	

Instrumentation

Instrument/Model/Serial#	Date Last Calibrated	Analytical Principle	Analytical Method
HP/6890/US00006537	06/13/02	FID	
HP/6890/US00006537	06/13/02	FID	

PHYSICAL PROPERTIES

Cylinder Size: AL

Pressure: 86 PSIG
Expiration Date: 06/12/2003

Valve Connection: 350

SPECIAL HANDLING INSTRUCTIONS

Do not use or store cylinder at or below the stated dew point temperature. Possible condensation of heavier components could result. In the event the cylinder has been exposed to temperatures at or below the dew point, place cylinder in heated area for 24 hours and then roll cylinder for 15 minutes to re-mix.

Use of calibration standards at or below dew point temperature may result in calibration error.

RECEIVED: 9/18/01

STD# 843-059 c

OPENED: 9/18/01

Scott Specialty Gases

6141 EASTON ROAD, BLDG 1 PO BOX 310
Shipped From: PLUMSTEADVILLE PA 18949-0310
Phone: 800-331-4953 Fax: 215-766-7226

CERTIFICATE OF ANALYSIS

AIR TOXICS LTD

180 BLUE RAVINE ROAD
SUITE B
FOLSOM CA 95630

PROJECT #: 01-58888-002
PO#: 14481
ITEM #: 0102BT00090 AL
DATE: 9/10/01

CYLINDER #: ALM039560
FILL PRESSURE: 0154 PSIA

ANALYTICAL ACCURACY: +/-10%
PRODUCT EXPIRATION: 9/10/2002
Re certified 8/16/02 By File K051306, K051305; JK Expire 8/16/03

COMPONENT	REQUESTED GAS CONC	VOLUME	ANALYSIS (VOLUME)	
BENZENE	5.	PPM	5.29	PPM
BROMOMETHANE	5.	PPM	5.43	PPM
CARBON TETRACHLORIDE	5.	PPM	5.28	PPM
CHLOROBENZENE	5.	PPM	5.36	PPM
CHLOROFORM	5.	PPM	5.36	PPM
CHLOROMETHYLBENZENE(ALPHA)	5.	PPM	4.98	PPM
CIS-1,2-DICHLOROETHYLENE	5.	PPM	5.33	PPM
1,2-DIBROMOETHANE	5.	PPM	5.39	PPM
1,2-DICHLOROBENZENE	5.	PPM	5.29	PPM
1,3-DICHLOROBENZENE	5.	PPM	4.98	PPM
1,4-DICHLOROBENZENE	5.	PPM	5.25	PPM
1,1-DICHLOROETHANE	5.	PPM	5.25	PPM
1,2-DICHLOROETHANE	5.	PPM	5.37	PPM
1,1-DICHLOROETHENE	5.	PPM	4.75	PPM
DICHLOROMETHANE	5.	PPM	5.29	PPM
1,2-DICHLOROPROPANE	5.	PPM	5.29	PPM
ETHYL CHLORIDE	5.	PPM	5.44	PPM
HALOCARBON 114	5.	PPM	5.42	PPM
HALOCARBON 12	5.	PPM	5.42	PPM
METHYL CHLORIDE	5.	PPM	4.80	PPM
TETRACHLOROETHYLENE	5.	PPM	5.35	PPM
1,1,2-TRICHLOROETHANE	5.	PPM	5.40	PPM
1,2,4 TRICHLOROBENZENE	5.	PPM	5.23	PPM
1,2,4-TRIMETHYLBENZENE	5.	PPM	4.59	PPM
1,3,5-TRIMETHYLBENZENE	5.	PPM	4.97	PPM
VINYL CHLORIDE	5.	PPM	5.42	PPM
M-XYLENE	5.	PPM	5.40	PPM
O-XYLENE	5.	PPM	5.34	PPM
P-XYLENE	5.	PPM	5.35	PPM
NITROGEN		BALANCE		BALANCE

ANALYST: Terrance P. Boswell
TERRANCE P. BOSWELL

Scott Specialty Gases

Shipped From:
6141 EASTON ROAD, BLDG 1 PO BOX 310
PLUMSTEADVILLE PA 18949-0310
Phone: 800-331-4953 Fax: 215-766-7226

CERTIFICATE OF ANALYSIS

AIR TOXICS LTD

180 BLUE RAVINE ROAD
SUITE B
FOLSOM CA 95630

PROJECT #: 01-58888-001
PO#: 14481
ITEM #: 0102E900080 AL
DATE: 9/10/01

CYLINDER #: ALM039560
FILL PRESSURE: 0154 PSIA

ANALYTICAL ACCURACY: +/-10%
PRODUCT EXPIRATION: 9/10/2002

COMPONENT	REQUESTED GAS CONC VOLUME		ANALYSIS (VOLUME)	
ETHYLBENZENE	5.	PPM	5.37	PPM
HALOCARBON 11	5.	PPM	5.42	PPM
HALOCARBON 113	5.	PPM	5.27	PPM
HEXACHLORO-1,3-BUTADIENE	5.	PPM	5.03	PPM
1,1,2,2-TETRACHLOROETHANE	5.	PPM	5.34	PPM
TOLUENE	5.	PPM	5.33	PPM
1,1,1-TRICHLOROETHANE	5.	PPM	5.24	PPM
TRICHLOROETHYLENE	5.	PPM	5.32	PPM
NITROGEN		BALANCE		BALANCE

ANALYST: Terrance P. Boswell
TERRANCE P. BOSWELL

Bag Blend Standard Preparation Log

@Air Toxics Ltd. Logbook #: 995

Standard ID: 995-60
Analyst: C.T.
Preparation Date: 12-2-02
Expiration Date: 12-5-02

Allyl Chloride
200ppbv

Bag Blend Standard Calculation:

$$\text{ppmv} = \frac{(\text{Volume added uL})(\text{density})(1000)(24.055)(\text{Purity*})}{(\text{Formula Weight})(\text{Final Volume L})}$$

*Standards are corrected for purity when purity is ≤ 96%, otherwise a purity of 100% is assumed.

Final Volume: 1.0 L

Compound	Supplier	Lot #	Purity	CAS #	Density	F.W.	µL	ppmv	Purity Check Date

Procedure/Comments: To an empty conditioned 1L Tedlar Bag
1.) add 1.0L N_2
2) Add 10 uL H_2O
3) Remove 4 mL of N_2
4) Add 4mL of #995-22 (50ppmv, Exp 5-14-03 Canister 04586)
Final Conc → 200ppbv

C Taylor 12-2-02 N. Khan 12-2-02

Signed Date Reviewed Date

0089

Rev. 06/01

Bag Blend Standard Preparation Log

@Air Toxics Ltd. Logbook #: 959

Standard ID: 959-158
Analyst: J Mough
Preparation Date: 10/28/2002
Expiration Date: ~~4/9/2003~~ 01/28/2003
B 11-8-02

Standard ID: 959-158
Analyst: C.F.
Repressurization Date: 10-6-02
Int/Final Pressure: 0.0 "Hg / 15 psi
Final Conc: 100 ppbv

Bag Blend Standard Calculation:

$$ppmv = \frac{(\text{Volume added uL})(\text{density})(1000)(24.055)(\text{Purity*})}{(\text{Formula Weight})(\text{Final Volume L})}$$

*Standards are corrected for purity when purity is ≤ 96%, otherwise a purity of 100% is assumed.

Final Volume: 6.0 L

Compound	Supplier	Lot #	Purity	CAS #	Density	F.W.	µL	ppmv	Purity Check Date

Procedure/Comments: TO AN EVACUATED 6L CANISTER # 136602

1) ADDED 50µL Di-H_2O
2) ADDED 48-L # 959-156 (AT SPECIALS, 50ppmv, Exp 4/25/03)
3) ADDED 48-L # 959-115 (TRIMETHYLBENZENES, 50ppmv, Exp 4/9/03)
4) PRESSURIZED TO 15psi
5) FINAL CONC = 200ppbv

Signed 10/28/02 Date Reviewed 10/28/02 Date

Bag Blend Standard Preparation Log

@Air Toxics Ltd. Logbook #: 995

Standard ID: 995-22
Analyst: CP
Preparation Date: 11-14-02
Expiration Date: 5-14-03

Bag Blend Standard Calculation:

$$ppmv = \frac{(\text{Volume added uL})(\text{density})(1000)(24.055)(\text{Purity*})}{(\text{Formula Weight})(\text{Final Volume L})}$$

*Standards are corrected for purity when purity is ≤ 96%, otherwise a purity of 100% is assumed.

Final Volume: 6.0 L

CT 11-14-02

special-1 111402

special-1.xls

Prepared:	11/14/02		8	Liter Gas Standards						
Analyst:	CT									
Compound	Purity	Supplier	lot#	CAS #	density	FW	uL	PPMV	Where	Purity Chk
1,1,1,2-Tetrachloroethane	99.0%	Aldrich	HI03728JS	630-20-6	1.598	167.85	3.5	99	3J	2/5/02
Methyl Amyl Ketone	98.0%	Aldrich	00827JL	110-43-0	0.820	114.19	4.8	102	1CC	2/5/02
aka (2-Heptanone)										
Cumene	99.0%	Aldrich	16405BA	98-82-8	0.864	120.2	4.7	101	1B	Recv'd 10/23/02
Diisobutyl Ketone	99.0%	Aldrich	05029TN	108-83-8	0.808	142.24	6.0	101	2E	11/14/02
aka (2,6-Dimethyl-4-										
heptanone)										
Butyl Acetate	99.0%	Aldrich	07741MY	123-86-4	0.882	116.16	4.5	102	1AA	10/24/02
Allyl Chloride	98.0%	Aldrich	00227KX	107-05-1	0.939	76.53	2.8	101	5R	2/5/02
Dibromomethane	99.0%	Aldrich	07710TP	74-95-3	2.477	173.85	2.4	102	1CC	11/14/02
2-methyl-1-Propanol	99.0%	Aldrich	01210HY	78-83-1	0.803	74.12	3.1	100	2FF	2/5/02
aka (Isobutanol)										
n-Butanol	99.8%	Aldrich	05340CF	71-36-3	0.810	74.12	3.0	98	1AA	11/14/02
aka (1-Butanol)										
Methanol	99.9%	Omnisolv	MX0482-6	67-56-1	0.791	32.04	8.1	601	2FF	2/5/02
1-Propanol	99.0%	Aldrich	09638MF	71-23-8	0.804	60.1	2.5	100	2GG	2/5/02
2-methyl-2-Propanol	99.5%	Aldrich	PI 06359LI	75-65-0	0.775	74.12	3.2	100	2FF	6/14/02
aka (t-Butyl Alcohol)										
Freon 123A (Gas)		Scott	8013041	354-23-4	x	152.93	800	100	D4	11/14/02
Nitrogen purged H2O							50			

Procedure: Measure 8L nitrogen into a 10L Tedlar bag, add 50µL N2 purged water, and spike with amounts of analytes listed above. Transfer contents of Tedlar bag to an evacuated 6L can. Can pressurized to 15 psi. Final concentration 300 ppmv for MeOH and 50 ppmv for all other compounds.

C Taylor — Signed; 11-14-02 — Date; [signature] — Reviewed; 11/15/02 — Date

0090

Rev. 06/01

Bag Blend Standard Preparation Log

@Air Toxics Ltd. Logbook #: 959

Standard ID: 959-156
Analyst: CT.
Preparation Date: 10-25-02
Expiration Date: 4-25-03

To14 Special Blend

50 ppmv

Bag Blend Standard Calculation:

$$ppmv = \frac{(\text{Volume added uL})(\text{density})(1000)(24.055)(\text{Purity*})}{(\text{Formula Weight})(\text{Final Volume L})}$$

*Standards are corrected for purity when purity is ≤ 96%, otherwise a purity of 100% is assumed.

Final Volume: 6.0 L

10-25-02 CT

Co

Purity
Check
Date

ATspecials.xls

10 Liter Gas Standards

10/14/2002

Compound	Supplier	Lot#	Purity	CAS #	density	FW	uL	PPM	Purity Ck	Location
Ethyl Acetate	Aldrich	00612LG	99.8	141-78-6	0.902	88.11	4.1	101	8/1/02	F3, 3I
Propyl Benzene	Aldrich	04929DG	98.0	103-65-1	0.862	120.2	5.8	100	6/20/02	F3, 2G
1-Hexene	Aldrich	03827JN	99.0	592-41-6	0.673	84.16	5.2	100	4/23/02	F3, 2G
Pentane	Sig-Aldrich	14673BS	99.0	109-66-0	0.626	72.15	4.8	100	4/5/02	F3, 2G
1-Pentene	Aldrich	01105AO	95.0	109-67-1	0.641	70.14	4.8	100	Rec'd 10/23/02	F3, 2G
Nonane	Sig-Aldrich	02517JX	99.0	111-84-2	0.718	128.26	7.5	101	4/23/02	Hood, 2FF
Acrylonitrile	Aldrich	14125AI	99.0	107-13-1	0.806	53.06	2.8	102	2/5/02	F3, 1A
1,1,1,2-Tetrachloroethane	Sig-Aldrich	03728JS	99.0	630-20-6	1.598	167.85	4.4	101	2/5/02	F3, 3I
Diethylether	Sig-Aldrich	04847LZ	99.9	60-29-7	0.708	74.12	4.4	101	4/23/02	F3, 1D
Butane	Aldrich	1750ES	99.0	106-97-8	GAS	58.12	1000.0	100		Cylinder,B5
Dibromomethane	Aldrich	ER06506AR	99.0	74-95-3	2.477	173.85	2.9	99	4/5/02	F3, 3J
Cumene	Aldrich	16405BA	99.0	98-82-8	0.864	120.2	5.8	100	Rec'd 10/23/02	F3, 1B
Acrolein	Aldrich	AA03250LJ	90.0	107-02-8	0.839	56.06	3.1	100	4/11/02	F2, 6T
Bis(2-Chloroethyl) ether	Aldrich	06413MS	99.0	111-44-4	1.22	143.01	4.9	100	2/13/02	F3, 3K

Procedure: Added the above amounts to a conditioned 10 L Tedlar bag filled with 10 L N2 and 50uL DI-H2O

Procedure/Comments:

1) Added Above Amounts to a Conditioned Tedlar Bag
2) Transfer (Pull) bag Standard into an evacuated GL Can #9928
Pressurized to 15psi with N_2
Final Conc = ~~50ppbv~~ ppmv
10-25-02 CT

L Taylor — Signed
10-25-02 — Date
TJS — Reviewed
10-25-02 — Date

0092

Rev. 06/01

Bag Blend Standard Preparation Log

@Air Toxics Ltd. Logbook #: 959

Standard ID: 959-115
Analyst: J. KHATRI
Preparation Date: 10/9/02
Expiration Date: 4/9/03

Bag Blend Standard Calculation:

$$ppmv = \frac{(\text{Volume added uL})(\text{density})(1000)(24.055)(\text{Purity*})}{(\text{Formula Weight})(\text{Final Volume L})}$$

*Standards are corrected for purity when purity is ≤ 96%, otherwise a purity of 100% is assumed.

Final Volume: 1.0 L

10/9/02

2,4,4-trimethyl-pentene.xls 10/9/02 9:58 AM

10 Liter Gas Standards										
10/9/02										
Compound	Supplier	Lot#	Purity	CAS #	density	FW	uL	PPM	Location	purity check
2,4,4-trimethy-2-pent	Aldrich	08530TS	99%	107-40-4	0.720	112.2	6.6	100	1BB	Mar-02
2,4,4-trimethy-1-pent	Aldrich	MV04808JQ	97%	107-39-1	0.708	112.2	6.8	100	1BB	Mar-02
To a conditioned 10L tedlar bag added 10L of N2. Add 50uL of water and the compounds from table above. Transferred content of 10L bag to 1L canister#2073 and pressurized to 15 psi. Final concentration 50ppmV										

Procedure/Comments:

Signed 10/9/02 Date Reviewed 10/9/02 Date

0093

 Rev. 06/01

Bag Blend Standard Preparation Log

@Air Toxics Ltd. Logbook #: 995

Standard ID: 995-52
Analyst: C.P.
Preparation Date: 11-25-02
Expiration Date: 2-25-03

IS/Surr

Bag Blend Standard Calculation:

$$ppmv = \frac{(\text{Volume added uL})(\text{density})(1000)(24.055)(\text{Purity*})}{(\text{Formula Weight})(\text{Final Volume L})}$$

*Standards are corrected for purity when purity is ≤ 96%, otherwise a purity of 100% is assumed.

Final Volume: 6.0 L

Compound	Supplier	Lot #	Purity	CAS #	Density	F.W.	µL	ppmv	Purity Check Date

C.P. 11-25-02

IS/SURR

To a conditioned/evacuated 6L canister #23986 add the following:

1. 50uL of Di-H2O
2. 200mL of #959-131 300ppmv EXP 4-17-03
3. Pressurize to 15psi with ~~Nitrogen~~ Zero Air 11-25-02 C.P.
4. Final Concentration = 5ppmv

Procedure/Comments:

C Taylor 11-25-02 [signature] 11/25/02

Signed Date Reviewed Date

0094

Rev. 06/01

Bag Blend Standard Preparation Log

@Air Toxics Ltd. Logbook #: 959

Standard ID: 959-131
Analyst: TJS
Preparation Date: 10-17-02
Expiration Date: 4-17-03

IS/Surr Parent

Bag Blend Standard Calculation:

$$ppmv = \frac{(\text{Volume added uL})(\text{density})(1000)(24.055)(\text{Purity*})}{(\text{Formula Weight})(\text{Final Volume L})}$$

*Standards are corrected for purity when purity is ≤ 96%, otherwise a purity of 100% is assumed.

Final Volume: 15 L

ls_ss300.xls

2/4/00	20 Liter Gas Standards						
Compound	Supplier	Lot#/Purity	CAS #	density	FW	uL	PPMV
luorobenzene	Aldrich	09903LQ/99%	460-00-4	1.593	175.01	54.9	601.0
luorobenzene	Aldrich	15521JS/99%	540-36-3	1.110	114.09	51.3	600.3
benzene-d5	Aldrich	13225AU/98.5%	3114-55-4	1.157	117.60	50.8	601.1
chloroethane-d4	Aldrich	03325AU/99%	17060-07--0	1.307	102.99	39.4	601.4
e-d8	Aldrich	02846MS/99%	2037-26-5	0.943	100.21	53.1	601.0
chloromethane	Aldrich	13905KS/99%	74-97-5	1.991	129.39	32.5	601.5

cedure: Measure 20 L of nitrogen into a 25L Tedlar bag and spike in amounts of analytes listed in the table. Add 100 H2O. Pull the bag standard into an evacuated 15 L canister. Pressurize the canister to 15 psi (Dilution of 1:2). A final centration of 300ppmv.

TJS 10-17-02

TJS 10-17-02 TJS 11-12-02

0095

Date Rev 06/01

Team A

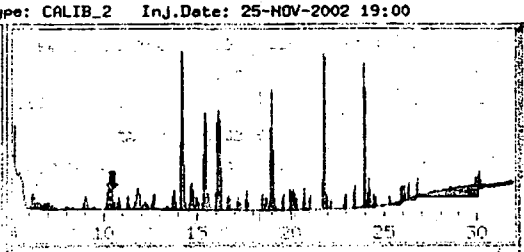
Date / Initial	11-26-02 CTP
Poor Integration	
Split Peak	
Peak Tailing	
Background Subtraction	
Zoom In	
Missed Peak	
Merged Peaks	X

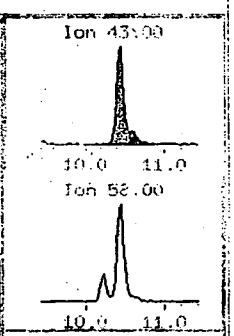
11.26 CL

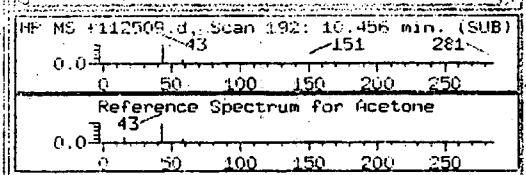
File Security Edit Display Process Spectra Help

Sample: ICAL Level 2 Type: CALIB_2 Inj.Date: 25-NOV-2002 19:00

- 59 Bromochlorometh
- 72 1,4-Difluorobe
- 105 Chlorobenzene-
- 65 1,2-Dichloroeth
- 91 Toluene-d8
- 117 Bromofluoroben
- 2 Propylene
- 4 Dichlorodifluo
- 6 Freon 114
- 8 Chloromethane
- 10 Vinyl Chloride
- 12 1,3-Butadiene
- 14 Bromomethane
- 15 Chloroethane
- 17 Trichlorofluor
- 21 Ethanol
- 25 Freon 113
- 26 1,1-Dichloroeth
- 27 Acetone
- 31 Carbon Disulfi
- 30 2-Propanol
- 36 Methylene Chlo
- 39 MTBE
- 40 trans-1,2-Dich
- 41 Hexane







+112509.d

Hit#	RT(min)	Response	Amount	Conc	Ratio	Flags	Report:
1	9.904	1438	0.01191	0.01191	100	Ta	
	9.904	0			0		
2	10.153	895	0.007415	0.007415	100	a	
	10.153	483			54		
3	10.456	224009	2.684	2.684	100		
	10.456	11590			4		

Acetone 11-26-02 CS KS 11/24/02

Manual Int

Time: 18.456 Done

Area: 292879 Help

Height: 43444

Snap to Data

Snap to Int Marks

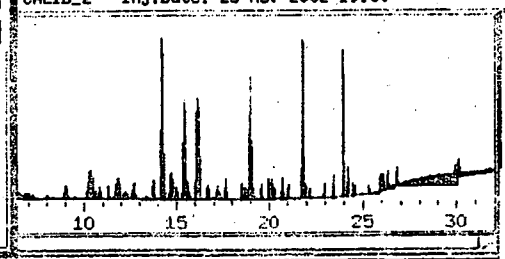
Overlap Peaks

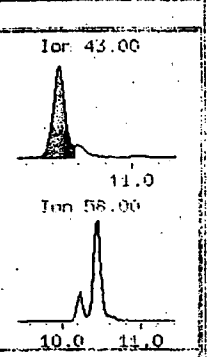
Assign Baseline

Split Peak

ay Process Spectra Help

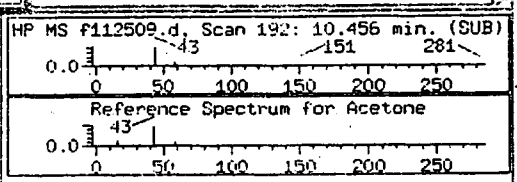
CALIB_2 Inj.Date: 25-NOV-2002 19:00





- 14 Bromomethane
- 15 Chloroethane
- 17 Trichlorofluor
- 21 Ethanol
- 25 Freon 113
- 26 1,1-Dichloroet
- 27 Acetone
- 31 Carbon Disulfi
- 30 2-Propanol
- 36 Methylene Chlo
- 39 MTBE
- 40 trans-1,2-Dich.
- 41 Hexane

f112509.d



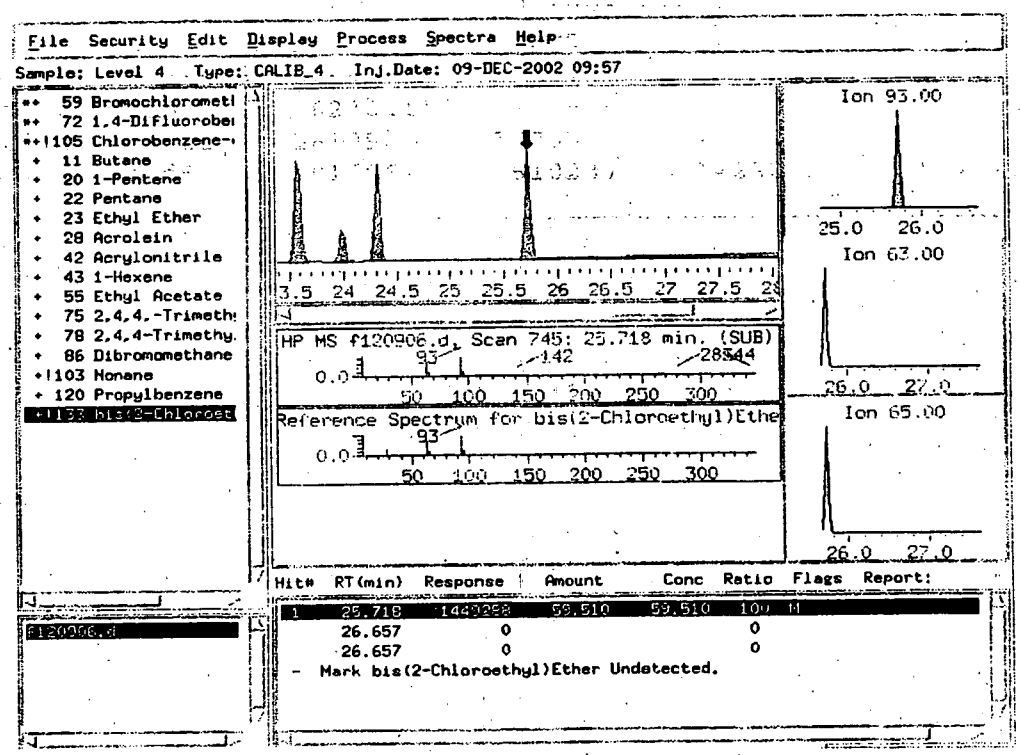
Hit#	RT(min)	Response	Amount	Conc	Ratio	Flags	Report:
1	10.456	292879	2.491	2.491	100	M	
	10.456	11590			4		

- Mark Acetone Undetected.

Team A

Date / Initial	12-9-02 CP
Poor Integration	
Split Peak	
Peak Tailing	
Background Subtraction	
Zoom In	
Missed Peak	X
Merged Peaks	

KS 12-12-02



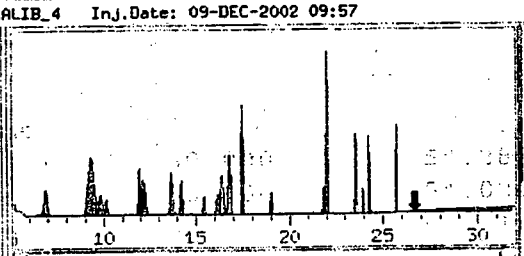
12-9-02 CP

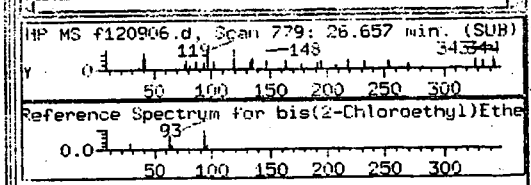
KC 12-12-02

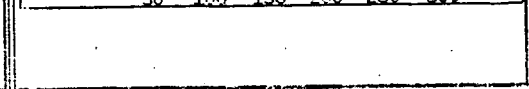
File Security Edit Display Process Spectra Help

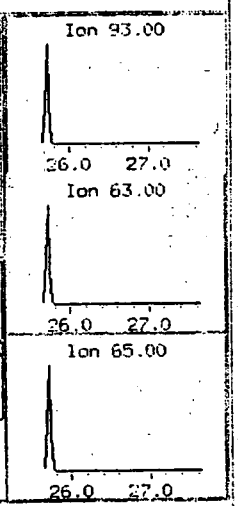
Sample: Level 4 Type: CALIB_4 Inj.Date: 09-DEC-2002 09:57

- 59 Bromochlorometh
- 72 1,4-Difluorobe
- 105 Chlorobenzene-
- 11 Butane
- 20 1-Pentene
- 22 Pentane
- 23 Ethyl Ether
- 28 Acrolein
- 42 Acrylonitrile
- 43 1-Hexene
- 55 Ethyl Acetate
- 75 2,4,4,-Trimeth
- 78 2,4,4-Trimethy
- 86 Dibromomethane
- 103 Nonane
- 120 Propylbenzene
- 135 bis(2-Chloroet









f120906.d

Hit#	RT(min)	Response	Amount	Conc	Ratio	Flags	Report:
1	26.657	507	0.01534	0.01534	100	a	
	26.657	0			0		
	26.657	0			0		

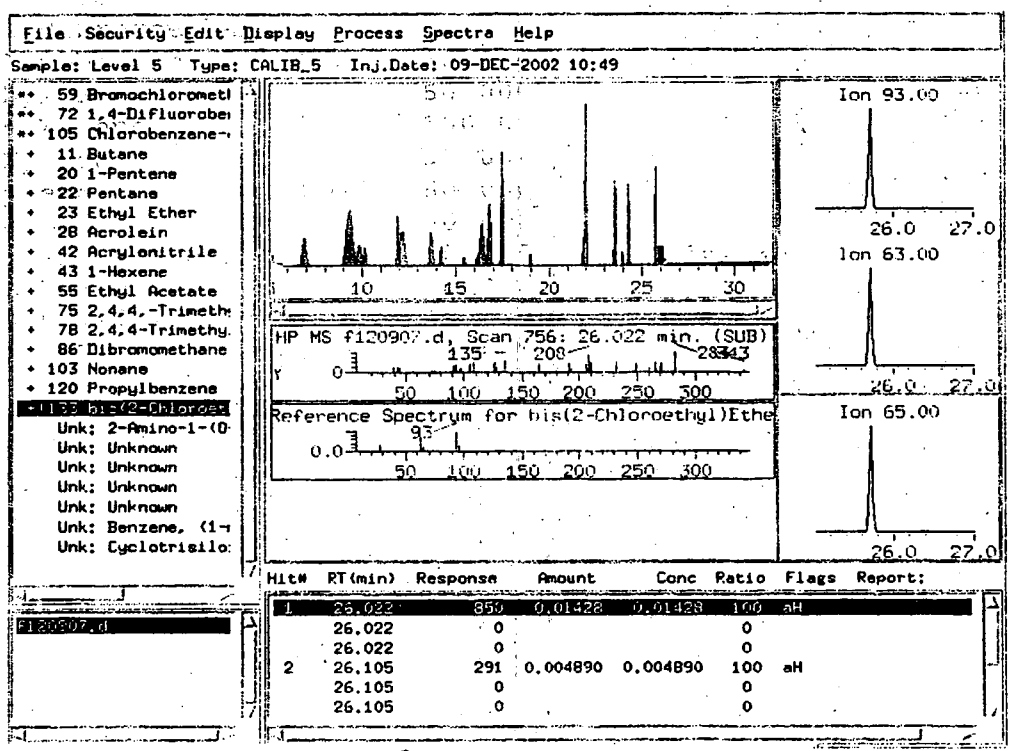
- Mark bis(2-Chloroethyl)Ether Undetected.

12-9-02 CT

Team A

Date / Initial	12-9-02 CJ
Poor Integration	
Split Peak	
Peak Tailing	
Background Subtraction	
Zoom In	
Missed Peak	X
Merged Peaks	

KS 12-12-02



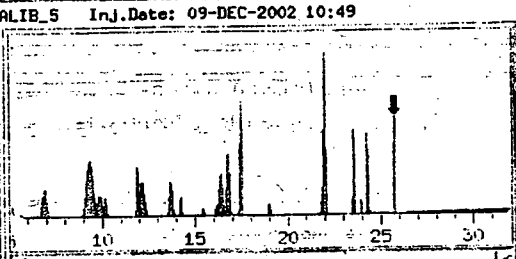
missed Peak 12-9-02 CJ

KG 12.12.02

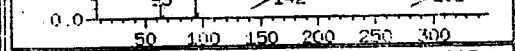
File Security Edit Display Process Spectra Help

Sample: Level 5 Type: CALIB_5 Inj.Date: 09-DEC-2002 10:49

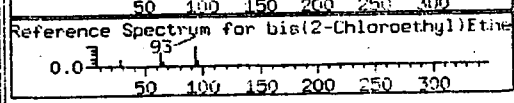
- 59 Bromochloromet
- 72 1,4-Difluorobe
- 105 Chlorobenzene-
- 11 Butane
- 20 1-Pentene
- 22 Pentane
- 23 Ethyl Ether
- 28 Acrolein
- 42 Acrylonitrile
- 43 1-Hexene
- 55 Ethyl Acetate
- 75 2,4,4,-Trimeth
- 78 2,4,4-Trimethy
- 86 Dibromomethane
- 103 Nonane
- 120 Propylbenzene
- 133 bis(2-Chloroet
- Unk: 2-Amino-1-(0
- Unk: Unknown
- Unk: Unknown
- Unk: Unknown
- Unk: Unknown
- Unk: Benzene, (1-
- Unk: Cyclotrisilo

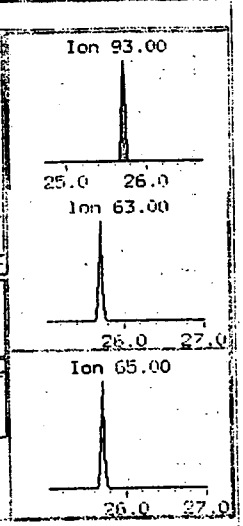


HP MS f120907.d, Scan 745: 25.718 min. (SUB)



Reference Spectrum for bis(2-Chloroethyl)Ethe





f120907.d

Hit#	RT(min)	Response	Amount	Conc	Ratio	Flags	Report:
1	25.718	3104615	44.440	44.440	100	MH	
	26.022	0			0		
	26.022	0			0		

- Mark bis(2-Chloroethyl)Ether Undetected.

12-9-02 CP

Air Toxics Ltd.

METHOD TO14

Data file : /chem/msdf.i/f-26nov.b/f112603.d
Lab Smp Id: LCS
Client Smp ID: LCS
Inj Date : 26-NOV-2002 06:39
Operator : kb
Inst ID: msdf.i
Smp Info : #995-39 200ppbv
Misc Info : 50ml 50ppbv
Comment :
Method : /chem/msdf.i/f-26nov.b/to14n25a.m
Meth Date : 26-Nov-2002 08:36 xpan
Quant Type: ISTD
Cal Date : 25-NOV-2002 19:00
Cal File: f112509.d
Als bottle: 1
QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE
Compound Sublist: AT.sub
Target Version: 3.50
Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable
Local Compound Variable

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
* 59 Bromochloromethane						CAS #: 74-97-5			
14.237	14.237	(1.000)	130	626760	25.0000		80.00- 120.00	100.00	9181
14.237	14.237	(0.000)	128	96448			27.52- 127.52	15.39	
14.237	14.237	(0.000)	49	195456			107.55- 207.55	31.19	
* 72 1,4-Difluorobenzene						CAS #: 540-36-3			
16.142	16.169	(1.000)	114	1751092	25.0000		80.00- 120.00	100.00	9438
16.142	16.169	(0.000)	88	34080			0.00- 66.63	1.95	
* 105 Chlorobenzene-d5						CAS #: 3114-55-4			
21.855	21.854	(1.000)	117	977617	25.0000		80.00- 120.00	100.00	
21.827	21.827	(1.000)	82	557779			7.04- 107.04	57.05	
$ 65 1,2-Dichloroethane-d4						CAS #: 17060-07-0			
15.424	15.424	(1.083)	65	940552	24.9382	24.938	80.00- 120.00	100.00	10000
15.424	15.424	(0.000)	67	74656			2.31- 102.31	7.94	
$ 91 Toluene-d8						CAS #: 2037-26-5			
19.012	19.012	(1.178)	98	1201145	25.1499	25.150	80.00- 120.00	100.00	9981
19.012	19.012	(0.000)	70	23224			0.00- 61.65	1.93	

Data File: /chem/msdf.i/f-26nov.b/f112603.d
Report Date: 26-Nov-2002 08:47

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
$ 91 Toluene-d8 (continued)									
19.012	19.012	(0.000)	100	141530			20.94- 120.94	11.78	
$ 117 Bromofluorobenzene						CAS #: 460-00-4			
23.980	23.979	(1.097)	95	517331	25.5506	25.550	80.00- 120.00	100.00	8555
23.980	23.979	(0.000)	174	108104			19.39- 119.39	20.90	
23.980	23.979	(0.000)	176	105520			18.19- 118.19	20.40	
2 Propylene						CAS #: 115-07-1			
5.489	5.489	(0.386)	41	1781629	44.6875	44.687	80.00- 120.00	100.00	7686
5.489	5.489	(0.000)	42	144229			4.95- 104.95	8.10	
5.489	5.489	(0.000)	39	166079			43.49- 143.49	9.32	
4 Dichlorodifluoromethane/Fr12						CAS #: 75-71-8			
5.654	5.654	(0.397)	85	6407426	58.7006	58.701	80.00- 120.00	100.00	9032
5.654	5.654	(0.000)	87	230656			0.00- 81.90	3.60	
6 Freon 114						CAS #: 76-14-2			
6.179	6.179	(0.434)	135	4613811	58.2804	58.280	80.00- 120.00	100.00	8948
6.179	6.179	(0.000)	137	167872			0.00- 81.46	3.64	
8 Chloromethane						CAS #: 74-87-3			
6.344	6.344	(0.446)	50	1930376	54.0235	54.024	80.00- 120.00	100.00	
6.344	6.344	(0.446)	52	607470			0.00- 94.08	31.47	
10 Vinyl Chloride						CAS #: 75-01-4			
6.813	6.813	(0.479)	62	2496905	60.6185	60.618	80.00- 120.00	100.00	4485
6.813	6.813	(0.000)	64	81351			0.00- 79.95	3.26	
12 1,3-Butadiene						CAS #: 106-99-0			
7.007	7.007	(0.492)	54	2147419	54.3395	54.339	80.00- 120.00	100.00	6524
7.007	7.007	(0.000)	39	218613			53.74- 153.74	10.18	
14 Bromomethane						CAS #: 74-83-9			
7.973	8.000	(0.560)	94	1789846	63.5217	63.522	80.00- 120.00	100.00	6615
7.973	8.000	(0.000)	96	187613			44.97- 144.97	10.48	
15 Chloroethane						CAS #: 75-00-3			
8.304	8.304	(0.583)	64	1104216	54.0013	54.001	80.00- 120.00	100.00	4019
8.304	8.304	(0.000)	66	43944			0.00- 79.89	3.98	
17 Trichlorofluoromethane/Fr11						CAS #: 75-69-4			
9.021	9.021	(0.634)	101	7746784	52.6179	52.618	80.00- 120.00	100.00	9057
9.021	9.021	(0.000)	103	522752			14.14- 114.14	6.75	
21 Ethanol						CAS #: 64-17-5			
9.435	9.435	(0.663)	45	1091952	48.3021	48.302	80.00- 120.00	100.00	3569

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
21 Ethanol (continued)									
9.435	9.435	(0.000)	43	33904			0.00- 74.35	3.10	
9.435	9.435	(0.000)	46	54760			0.00- 88.17	5.01	
25 Freon 113						CAS #: 76-13-1			
10.263	10.263	(0.721)	151	4951602	51.5892	51.589	80.00- 120.00	100.00	8611
10.263	10.263	(0.000)	153	226880			13.94- 113.94	4.58	
10.263	10.263	(0.000)	101	436160			73.15- 173.15	8.81	
26 1,1-Dichloroethene						CAS #: 75-35-4			
10.318	10.318	(0.725)	61	4741701	52.4717	52.472	80.00- 120.00	100.00	8931
10.318	10.318	(0.000)	96	352885			8.05- 108.05	7.44	
10.318	10.318	(0.000)	98	226880			0.00- 87.70	4.78	
27 Acetone						CAS #: 67-64-1			
10.401	10.401	(0.731)	43	5234529	45.3222	45.322	80.00- 120.00	100.00	6529
10.401	10.401	(0.000)	58	232026			0.00- 76.68	4.43	
31 Carbon Disulfide						CAS #: 75-15-0			
10.815	10.815	(0.760)	76	8520624	50.2233	50.223	80.00- 120.00	100.00	7971
30 2-Propanol						CAS #: 67-63-0			
10.567	10.567	(0.742)	45	5575618	53.4647	53.465	80.00- 120.00	100.00	7461
10.567	10.567	(0.000)	43	164178			0.00- 50.00	2.94	
10.567	10.567	(0.000)	59	13200			0.00- 51.87	0.24	
36 Methylene Chloride						CAS #: 75-09-2			
11.312	11.312	(0.795)	49	3009087	47.6964	47.696	80.00- 120.00	100.00	9386
11.312	11.312	(0.000)	84	434368			20.09- 120.09	14.44	
11.312	11.312	(0.000)	51	179906			0.00- 76.78	5.98	
39 MTBE						CAS #: 1634-04-4			
11.781	11.781	(0.827)	73	8335640	44.0983	44.098	80.00- 120.00	100.00	6155
11.781	11.781	(0.000)	57	149197			0.00- 72.63	1.79	
11.781	11.781	(0.000)	41	149886			0.00- 72.38	1.80	
40 trans-1,2-Dichloroethene						CAS #: 156-60-5			
11.864	11.864	(0.833)	96	3254736	51.9189	51.919	80.00- 120.00	100.00	8250
11.864	11.864	(0.000)	61	590016			97.11- 197.11	18.13	
11.864	11.864	(0.000)	98	265088			13.37- 113.37	8.14	
41 Hexane						CAS #: 110-54-3			
12.223	12.250	(0.858)	57	3710773	49.0687	49.069	80.00- 120.00	100.00	7280
12.223	12.250	(0.000)	43	121272			14.36- 114.36	3.27	
12.223	12.250	(0.000)	86	34048			0.00- 67.06	0.92	

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
45 1,1-Dichloroethane					CAS #: 75-34-3			
12.720	12.719 (0.893)	63	5112374	50.9844	50.984	80.00- 120.00	100.00	6406
12.720	12.719 (0.000)	65	219968			0.00- 80.50	4.30	
44 Vinyl Acetate					CAS #: 108-05-4			
12.664	12.664 (0.890)	43	8044436	48.7153	48.715	80.00- 120.00	100.00	5853
12.664	12.664 (0.000)	42	63719			0.00- 56.94	0.79	
12.664	12.664 (0.000)	86	65439			0.00- 57.24	0.81	
54 cis-1,2-Dichloroethene					CAS #: 156-59-2			
13.768	13.768 (0.967)	61	3662828	53.8925	53.892	80.00- 120.00	100.00	8240
13.768	13.768 (0.000)	96	420551			20.19- 120.19	11.48	
13.768	13.768 (0.000)	98	265280			0.00- 94.78	7.24	
51 2-Butanone					CAS #: 78-93-3			
13.741	13.741 (0.965)	43	5421208	41.6603	41.660	80.00- 120.00	100.00	7909
13.741	13.741 (0.000)	72	168576			0.00- 72.13	3.11	
13.741	13.741 (0.000)	57	53909			0.00- 57.72	0.99	
57 Tetrahydrofuran					CAS #: 109-99-9			
14.237	14.237 (1.000)	42	3063709	44.9836	44.984	80.00- 120.00	100.00	7498
14.237	14.237 (0.000)	71	186176			0.00- 87.22	6.08	
14.237	14.237 (0.000)	72	200759			0.00- 93.32	6.55	
60 Chloroform					CAS #: 67-66-3			
14.320	14.320 (1.006)	83	5082560	49.9245	49.924	80.00- 120.00	100.00	9086
14.320	14.320 (0.000)	85	526272			15.27- 115.27	10.35	
61 Cyclohexane					CAS #: 110-82-7			
14.734	14.734 (1.035)	84	2945203	44.0974	44.097	80.00- 120.00	100.00	8285
14.734	14.734 (0.000)	56	374528			69.39- 169.39	12.72	
14.734	14.734 (0.000)	41	230912			21.10- 121.10	7.84	
62 1,1,1-Trichloroethane					CAS #: 71-55-6			
14.707	14.734 (1.033)	97	4657718	49.3650	49.365	80.00- 120.00	100.00	7521
14.707	14.734 (0.000)	99	356352			13.68- 113.68	7.65	
64 Carbon Tetrachloride					CAS #: 56-23-5			
14.983	14.982 (1.052)	119	4480232	54.5547	54.555	80.00- 120.00	100.00	8471
14.983	14.982 (0.000)	117	543536			52.69- 152.69	12.13	
67 Benzene					CAS #: 71-43-2			
15.452	15.452 (0.957)	78	5706890	54.1960	54.196	80.00- 120.00	100.00	9216
15.452	15.452 (0.000)	77	131200			0.00- 72.44	2.30	
70 1,2-Dichloroethane					CAS #: 107-06-2			
15.562	15.562 (0.964)	62	3493387	51.0864	51.086	80.00- 120.00	100.00	6388

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
70 1,2-Dichloroethane (continued)									
15.562	15.562	(0.000)	64	180864			0.00- 84.04	5.18	
68 Heptane						CAS #: 142-82-5			
15.617	15.617	(0.968)	43	2393627	43.7150	43.715	80.00- 120.00	100.00	7360
15.617	15.617	(0.000)	57	96958			1.24- 101.24	4.05	
15.617	15.617	(0.000)	71	100160			1.33- 101.33	4.18	
76 Trichloroethene						CAS #: 79-01-6			
16.666	16.666	(1.032)	95	2415127	49.7276	49.728	80.00- 120.00	100.00	8704
16.666	16.666	(0.000)	130	371776			48.44- 148.44	15.39	
16.666	16.666	(0.000)	97	240576			14.64- 114.64	9.96	
81 1,2-Dichloropropane						CAS #: 78-87-5			
17.218	17.218	(1.067)	63	2085693	50.7251	50.725	80.00- 120.00	100.00	8587
17.218	17.218	(0.000)	62	251072			23.46- 123.46	12.04	
17.218	17.218	(0.000)	41	228612			15.77- 115.77	10.96	
79 1,4-Dioxane						CAS #: 123-91-1			
17.328	17.328	(1.074)	88	1487360	42.4826	42.483	80.00- 120.00	100.00	2827
17.328	17.328	(0.000)	58	186153			18.45- 118.45	12.52	
17.328	17.328	(0.000)	57	63160			0.00- 71.05	4.25	
84 Bromodichloromethane						CAS #: 75-27-4			
17.687	17.687	(1.096)	83	4699187	42.9111	42.911	80.00- 120.00	100.00	9362
17.687	17.687	(0.000)	85	578880			15.57- 115.57	12.32	
88 cis-1,3-Dichloropropene						CAS #: 10061-01-5			
18.543	18.543	(1.149)	75	4094686	56.2849	56.285	80.00- 120.00	100.00	8637
18.543	18.543	(0.000)	77	256636			0.00- 81.17	6.27	
18.543	18.543	(0.000)	39	477828			9.15- 109.15	11.67	
89 4-Methyl-2-pentanone						CAS #: 108-10-1			
18.708	18.708	(1.159)	43	4217860	44.7234	44.723	80.00- 120.00	100.00	6838
18.708	18.708	(0.000)	58	270848			0.00- 87.93	6.42	
18.708	18.708	(0.000)	85	103955			0.00- 64.51	2.46	
92 Toluene						CAS #: 108-88-3			
19.150	19.150	(1.186)	91	3991661	52.9847	52.985	80.00- 120.00	100.00	8933
19.150	19.150	(0.000)	92	412608			12.09- 112.09	10.34	
93 trans-1,3-Dichloropropene						CAS #: 10061-02-6			
19.591	19.591	(0.896)	75	3825954	57.7726	57.773	80.00- 120.00	100.00	
19.591	19.591	(0.896)	77	1201057			0.00- 81.72	31.39	
19.591	19.591	(0.896)	39	2234978			8.99- 108.99	58.42	

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
94 1,1,2-Trichloroethane						CAS #: 79-00-5			
19.978	19.978	(0.914)	97	2249843	49.6380	49.638	80.00- 120.00	100.00	8928
19.978	19.978	(0.000)	99	314304			13.35- 113.35	13.97	
19.978	19.978	(0.000)	83	431720			38.88- 138.88	19.19	
96 Tetrachloroethene						CAS #: 127-18-4			
20.171	20.171	(0.923)	166	2342373	50.6607	50.661	80.00- 120.00	100.00	8697
20.171	20.171	(0.000)	129	338253			22.01- 122.01	14.44	
20.171	20.171	(0.000)	131	330612			19.37- 119.37	14.11	
95 2-Hexanone						CAS #: 591-78-6			
20.309	20.309	(0.929)	43	3447300	42.7712	42.771	80.00- 120.00	100.00	8420
20.309	20.309	(0.000)	58	392576			0.00- 99.82	11.39	
20.309	20.309	(0.000)	100	63408			0.00- 56.85	1.84	
99 Dibromochloromethane						CAS #: 124-48-1			
20.751	20.750	(0.949)	129	3668680	41.9375	41.937	80.00- 120.00	100.00	8789
20.751	20.750	(0.000)	208	37614			0.00- 53.98	1.03	
100 1,2-Dibromoethane						CAS #: 106-93-4			
21.054	21.054	(0.963)	107	3072802	45.9494	45.949	80.00- 120.00	100.00	5533
21.054	21.054	(0.000)	109	740864			45.53- 145.53	24.11	
106 Chlorobenzene						CAS #: 108-90-7			
21.910	21.910	(1.003)	112	2917626	48.5795	48.580	80.00- 120.00	100.00	9266
21.910	21.910	(0.000)	114	216192			0.00- 82.61	7.41	
21.910	21.910	(0.000)	77	384119			6.95- 106.95	13.17	
107 Ethyl Benzene						CAS #: 100-41-4			
21.993	21.992	(1.006)	106	1234355	53.1899	53.190	80.00- 120.00	100.00	
21.965	21.965	(1.005)	91	3734818			264.91- 364.91	302.57	
109 m,p-Xylene						CAS #: 108-38-3			
22.186	22.186	(1.015)	106	2178876	101.828	101.83	80.00- 120.00	100.00	
22.186	22.186	(1.015)	91	4205399			151.15- 251.15	193.01	
111 o-Xylene						CAS #: 95-47-6			
22.958	22.958	(1.050)	106	1012322	50.2265	50.226	80.00- 120.00	100.00	8847
22.958	22.958	(0.000)	91	545571			153.32- 253.32	53.89	
112 Styrene						CAS #: 100-42-5			
22.986	22.986	(1.052)	104	1918615	55.6952	55.695	80.00- 120.00	100.00	9197
22.986	22.986	(0.000)	78	239377			0.00- 98.04	12.48	
114 Bromoform						CAS #: 75-25-2			
23.455	23.455	(1.073)	173	3077521	41.3758	41.376	80.00- 120.00	100.00	9298

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
114 Bromoform (continued)								
23.455	23.455 (0.000)	171	455424			1.81- 101.81	14.80	
118 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5			
24.228	24.228 (1.109)	83	4049680	46.6199	46.620	80.00- 120.00	100.00	9220
24.228	24.228 (0.000)	85	693696			14.92- 114.92	17.13	
119 4-Ethyltoluene					CAS #: 622-96-8			
24.504	24.504 (1.121)	105	3989392	71.9218	71.922	80.00- 120.00	100.00	(R)
24.504	24.504 (1.121)	120	1193692			0.00- 80.06	29.92	
124 1,3,5-Trimethylbenzene					CAS #: 108-67-8			
24.614	24.614 (1.126)	105	1777714	48.3643	48.364	80.00- 120.00	100.00	
24.614	24.614 (1.126)	120	863701			0.00- 99.00	48.58	
129 1,2,4-Trimethylbenzene					CAS #: 95-63-6			
25.304	25.304 (1.158)	105	1331659	44.4088	44.409	80.00- 120.00	100.00	8735
25.304	25.304 (0.000)	120	188800			0.00- 94.88	14.18	
132 1,3-Dichlorobenzene					CAS #: 541-73-1			
25.939	25.939 (1.187)	146	1687695	43.8146	43.814	80.00- 120.00	100.00	
25.939	25.939 (1.187)	148	1065216			12.10- 112.10	63.12	
25.939	25.939 (1.187)	111	661817			0.00- 88.72	39.21	
135 1,4-Dichlorobenzene					CAS #: 106-46-7			
26.105	26.105 (1.194)	146	1505831	40.7574	40.757	80.00- 120.00	100.00	
26.105	26.105 (1.194)	148	966042			14.85- 114.85	64.15	
26.105	26.105 (1.194)	111	565800			0.00- 87.46	37.57	
140 1,2-Dichlorobenzene					CAS #: 95-50-1			
26.795	26.795 (1.226)	146	1652287	42.9541	42.954	80.00- 120.00	100.00	9396
26.795	26.795 (0.000)	148	315968			13.72- 113.72	19.12	
26.795	26.795 (0.000)	111	197248			0.00- 89.69	11.94	
137 alpha-Chlorotoluene					CAS #: 100-44-7			
26.325	26.325 (1.205)	91	3143627	44.2480	44.248	80.00- 120.00	100.00	9458
26.325	26.325 (0.000)	126	211784			0.00- 70.26	6.74	
143 1,2,4-Trichlorobenzene					CAS #: 120-82-1			
29.968	29.968 (1.371)	180	553409	40.4445	40.444	80.00- 120.00	100.00	9282
29.968	29.968 (0.000)	182	124944			44.09- 144.09	22.58	
144 Hexachlorobutadiene					CAS #: 87-68-3			
30.134	30.134 (1.379)	225	676697	38.8951	38.895	80.00- 120.00	100.00	9248
30.134	30.134 (0.000)	223	91056			14.84- 114.84	13.46	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: /chem/msdf.i/f-26nov.b/f112603.d
Report Date: 26-Nov-2002 08:47

Air Toxics Ltd.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdf.i
Lab File ID: f112603.d
Lab Smp Id: LCS
Analysis Type: VOA
Quant Type: ISTD
Operator: kb
Method File: /chem/msdf.i/f-26nov.b/to14n25a.m
Misc Info: 50ml 50ppbv

Calibration Date: 26-NOV-2002
Calibration Time: 05:56
Client Smp ID: LCS
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
59 Bromochloromethan	623241	373945	872537	626760	0.56
72 1,4-Difluorobenze	1810960	1086576	2535344	1751092	-3.31
105 Chlorobenzene-d5	1017061	610237	1423885	977617	-3.88

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
59 Bromochloromethan	14.24	13.91	14.57	14.24	0.00
72 1,4-Difluorobenze	16.17	15.84	16.50	16.14	-0.17
105 Chlorobenzene-d5	21.85	21.52	22.18	21.85	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msdf.i/f-26nov.b/f112603.d
Report Date: 26-Nov-2002 08:47

Air Toxics Ltd.

RECOVERY REPORT

Client Name:
Sample Matrix: GAS
Lab Smp Id: LCS
Level: LOW
Data Type: MS DATA
SpikeList File: AT.spk
Sublist File: AT.sub
Method File: /chem/msdf.i/f-26nov.b/to14n25a.m
Misc Info: 50ml 50ppbv

Client SDG: f-26nov
Fraction: VOA
Client Smp ID: LCS
Operator: kb
SampleType: LCS
Quant Type: ISTD

SPIKE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
2 Propylene	50.000	44.687	89.37	60-140
4 Dichlorodifluorome	50.000	58.701	117.40	70-130
6 Freon 114	50.000	58.280	116.56	70-130
8 Chloromethane	50.000	54.024	108.05	70-130
10 Vinyl Chloride	50.000	60.618	121.24	70-130
12 1,3-Butadiene	50.000	54.339	108.68	60-140
14 Bromomethane	50.000	63.522	127.04	70-130
15 Chloroethane	50.000	54.001	108.00	70-130
17 Trichlorofluoromet	50.000	52.618	105.24	70-130
21 Ethanol	50.000	48.302	96.60	60-140
25 Freon 113	50.000	51.589	103.18	70-130
26 1,1-Dichloroethene	50.000	52.472	104.94	70-130
27 Acetone	50.000	45.322	90.64	60-140
30 2-Propanol	50.000	53.465	106.93	60-140
31 Carbon Disulfide	50.000	50.223	100.45	60-140
36 Methylene Chloride	50.000	47.696	95.39	70-130
39 MTBE	50.000	44.098	88.20	60-140
40 trans-1,2-Dichloro	50.000	51.919	103.84	60-140
41 Hexane	50.000	49.069	98.14	60-140
44 Vinyl Acetate	50.000	48.715	97.43	60-140
45 1,1-Dichloroethane	50.000	50.984	101.97	70-130
51 2-Butanone	50.000	41.660	83.32	60-140
54 cis-1,2-Dichloroet	50.000	53.892	107.79	70-130
57 Tetrahydrofuran	50.000	44.984	89.97	60-140
60 Chloroform	50.000	49.924	99.85	70-130
62 1,1,1-Trichloroeth	50.000	49.365	98.73	70-130
61 Cyclohexane	50.000	44.097	88.19	60-140
64 Carbon Tetrachlori	50.000	54.555	109.11	70-130
67 Benzene	50.000	54.196	108.39	70-130
70 1,2-Dichloroethane	50.000	51.086	102.17	70-130
68 Heptane	50.000	43.715	87.43	60-140
76 Trichloroethene	50.000	49.728	99.46	70-130
81 1,2-Dichloropropan	50.000	50.725	101.45	70-130

SPIKE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
79 1,4-Dioxane	50.000	42.483	84.97	60-140
84 Bromodichlorometha	50.000	42.911	85.82	60-140
88 cis-1,3-Dichloropr	50.000	56.285	112.57	70-130
89 4-Methyl-2-pentano	50.000	44.723	89.45	60-140
92 Toluene	50.000	52.985	105.97	70-130
93 trans-1,3-Dichloro	50.000	57.773	115.55	70-130
94 1,1,2-Trichloroeth	50.000	49.638	99.28	70-130
96 Tetrachloroethene	50.000	50.661	101.32	70-130
95 2-Hexanone	50.000	42.771	85.54	60-140
99 Dibromochlorometha	50.000	41.937	83.87	60-140
100 1,2-Dibromoethane	50.000	45.949	91.90	70-130
106 Chlorobenzene	50.000	48.580	97.16	70-130
107 Ethyl Benzene	50.000	53.190	106.38	70-130
109 m,p-Xylene	100.00	101.83	101.83	70-130
111 o-Xylene	50.000	50.226	100.45	70-130
112 Styrene	50.000	55.695	111.39	70-130
114 Bromoform	50.000	41.376	82.75	60-140
118 1,1,2,2-Tetrachlor	50.000	46.620	93.24	70-130
119 4-Ethyltoluene	50.000	71.922	143.84*	60-140
124 1,3,5-Trimethylben	50.000	48.364	96.73	70-130
129 1,2,4-Trimethylben	50.000	44.409	88.82	70-130
132 1,3-Dichlorobenzen	50.000	43.814	87.63	70-130
135 1,4-Dichlorobenzen	50.000	40.757	81.51	70-130
140 1,2-Dichlorobenzen	50.000	42.954	85.91	70-130
137 alpha-Chlorotoluen	50.000	44.248	88.50	70-130
143 1,2,4-Trichloroben	50.000	40.444	80.89	70-130
144 Hexachlorobutadien	50.000	38.895	77.79	70-130

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 65 1,2-Dichloroethane	25.000	24.938	99.75	70-130
$ 91 Toluene-d8	25.000	25.150	100.60	70-130
$ 117 Bromofluorobenzene	25.000	25.550	102.20	70-130

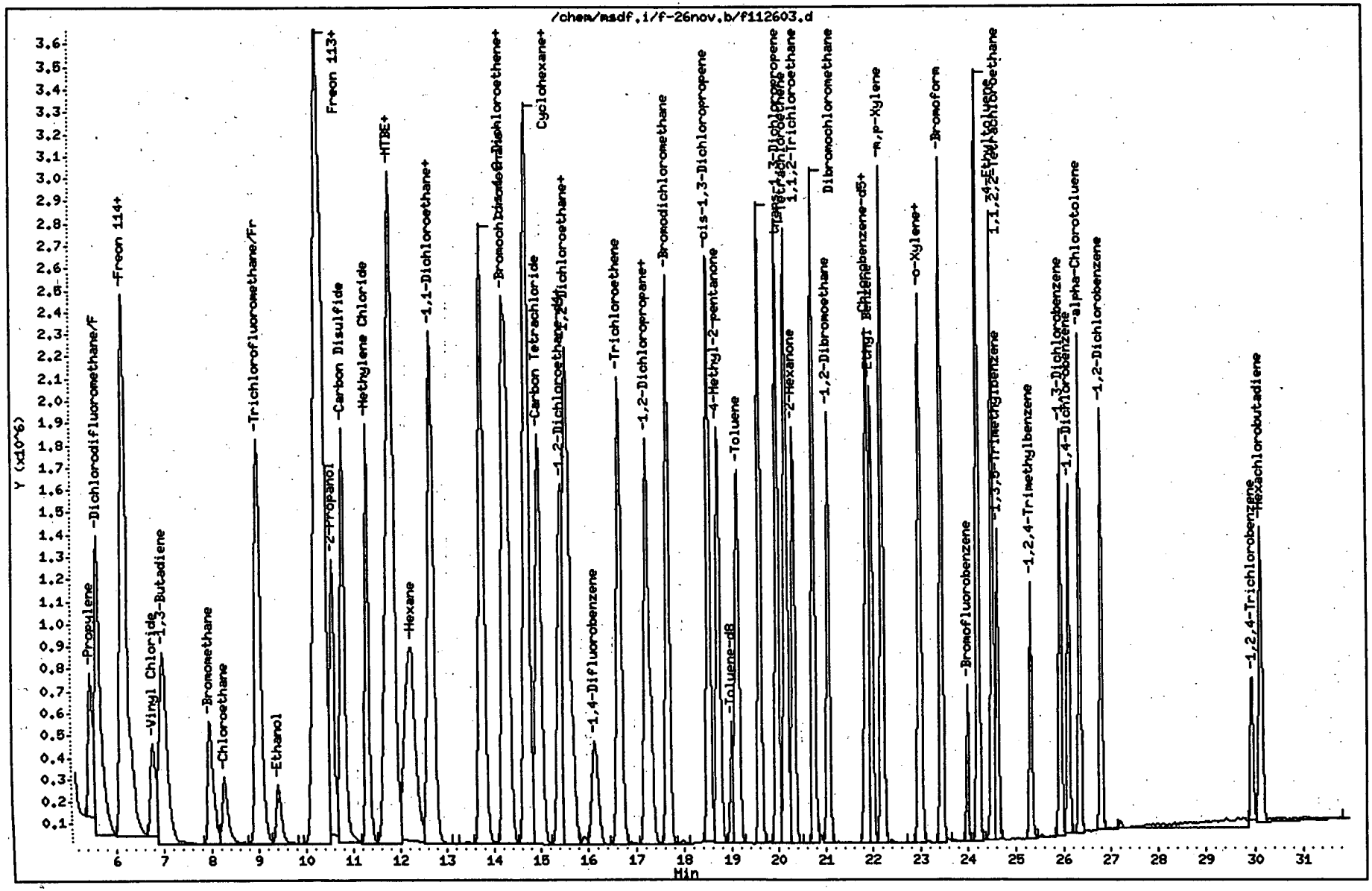
0113

Data File: /chem/msdf.i/f-26nov.b/f112603.d
Date : 26-NOV-2002 06:39
Client ID: LCS
Sample Info: #995-39 200ppbv

Instrument: msdf.i

Operator: kb
Column diameter: 0.53

Column phase: RTx-624



Data File: /chem/msdf.i/f-25nova.b/f112508.d
Report Date: 26-Nov-2002 05:39

Air Toxics Ltd.

METHOD TO14

Data file : /chem/msdf.i/f-25nova.b/f112508.d
Lab Smp Id: ICAL Level 1
Inj Date : 25-NOV-2002 18:10
Operator : xp
Smp Info : 0.5ml #995-55
Misc Info : 200ppbv-0.5ppbv
Comment :
Method : /chem/msdf.i/f-25nova.b/to14n25a.m
Meth Date : 26-Nov-2002 05:39 kbadal
Cal Date : 25-NOV-2002 18:10
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE
Target Version: 3.50
Processing Host: eeyore

Client Smp ID: Level 1

Inst ID: msdf.i

Quant Type: ISTD
Cal File: f112508.d
Calibration Sample, Level: 1

Compound Sublist: TO14.sub
Sample Matrix: AIR

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
* 59 Bromochloromethane					CAS #: 74-97-5			
14.237	14.237 (1.000)	130	637824	25.0000		50.00- 150.00	100.00	9421
14.237	14.237 (0.000)	128	94040			28.11- 128.11	14.74	
14.237	14.237 (0.000)	49	183232			102.19- 202.19	28.73	
* 72 1,4-Difluorobenzene					CAS #: 540-36-3			
16.169	16.169 (1.000)	114	1700627	25.0000		50.00- 150.00	100.00	9537
16.169	16.169 (0.000)	88	30512			0.00- 66.86	1.79	
* 105 Chlorobenzene-d5					CAS #: 3114-55-4			
21.854	21.854 (1.000)	117	939900	25.0000		50.00- 150.00	100.00	
21.827	21.827 (1.000)	82	525117			5.87- 105.87	55.87	
$ 65 1,2-Dichloroethane-d4					CAS #: 17060-07-0			
15.424	15.424 (1.083)	65	948967	25.0000	24.725	50.00- 150.00	100.00	10000
15.424	15.424 (0.000)	67	79816			1.41- 101.41	8.41	
$ 91 Toluene-d8					CAS #: 2037-26-5			
19.012	19.012 (1.176)	98	1131221	25.0000	24.389	50.00- 150.00	100.00	10000
19.012	19.012 (0.000)	70	22280			0.00- 61.77	1.97	

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
$ 91 Toluene-d8 (continued)									
19.012	19.012	(0.000)	100	136576			22.14- 122.14	12.07	
$ 117 Bromofluorobenzene						CAS #: 460-00-4			
23.980	23.980	(1.097)	95	462396	25.0000	23.754	50.00- 150.00	100.00	8579
23.980	23.980	(0.000)	174	97480			21.78- 121.78	21.08	
23.980	23.980	(0.000)	176	96160			20.81- 120.81	20.80	
4 Dichlorodifluoromethane/Fr12						CAS #: 75-71-8			
5.682	5.682	(0.399)	85	49300	0.50000	0.4438	50.00- 150.00	100.00	8454
5.682	5.682	(0.000)	87	1640			0.00- 83.32	3.33	
6 Freon 114						CAS #: 76-14-2			
6.206	6.206	(0.436)	135	40008	0.50000	0.4966	50.00- 150.00	100.00	8573
6.206	6.206	(0.000)	137	1479			0.00- 81.52	3.70	
8 Chloromethane						CAS #: 74-87-3			
6.399	6.399	(0.449)	50	25052	0.50000	0.6889	50.00- 150.00	100.00	
6.399	6.399	(0.449)	52	10140			0.00- 90.48	40.48	
10 Vinyl Chloride						CAS #: 75-01-4			
6.841	6.841	(0.480)	62	19118	0.50000	0.4561	50.00- 150.00	100.00	4118
6.841	6.841	(0.000)	64	469			0.00- 74.39	2.45	
14 Bromomethane						CAS #: 74-83-9			
8.028	8.028	(0.564)	94	12303	0.50000	0.4290	50.00- 150.00	100.00	5954
8.028	8.028	(0.000)	96	963			27.85- 127.85	7.83	
15 Chloroethane						CAS #: 75-00-3			
8.359	8.359	(0.587)	64	9261	0.50000	0.4450	50.00- 150.00	100.00	3423
8.359	8.359	(0.000)	66	334			0.00- 90.34	3.61	
17 Trichlorofluoromethane/Fr11						CAS #: 75-69-4			
9.076	9.076	(0.638)	101	68154	0.50000	0.4549	50.00- 150.00	100.00	9268
9.076	9.076	(0.000)	103	4538			12.46- 112.46	6.66	
25 Freon 113						CAS #: 76-13-1			
10.346	10.346	(0.727)	151	43716	0.50000	0.4476	50.00- 150.00	100.00	8455
10.346	10.346	(0.000)	153	1645			0.40- 100.40	3.76	
10.346	10.346	(0.000)	101	4171			77.79- 177.79	9.54	
26 1,1-Dichloroethene						CAS #: 75-35-4			
10.318	10.318	(0.725)	61	40745	0.50000	0.4431	50.00- 150.00	100.00	8712
10.318	10.318	(0.000)	96	3064			10.53- 110.53	7.52	
10.318	10.318	(0.000)	98	2040			0.00- 90.30	5.01	

Data File: /chem/msdf.i/f-25nova.b/f112508.d
Report Date: 26-Nov-2002 05:39

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
36 Methylene Chloride						CAS #: 75-09-2			
11.340	11.340	(0.796)	49	38739	0.50000	0.6034	50.00- 150.00	100.00	9180
11.340	11.340	(0.000)	84	5550			28.81- 128.81	14.33	
11.340	11.340	(0.000)	51	2257			0.00- 82.05	5.83	
45 1,1-Dichloroethane						CAS #: 75-34-3			
12.719	12.719	(0.893)	63	44393	0.50000	0.4350	50.00- 150.00	100.00	6486
12.719	12.719	(0.000)	65	2106			0.00- 82.99	4.74	
54 cis-1,2-Dichloroethene						CAS #: 156-59-2			
13.796	13.796	(0.969)	61	30981	0.50000	0.4479	50.00- 150.00	100.00	8148
13.796	13.796	(0.000)	96	3665			29.48- 129.48	11.83	
13.796	13.796	(0.000)	98	2670			7.91- 107.91	8.62	
60 Chloroform						CAS #: 67-66-3			
14.320	14.320	(1.006)	83	48671	0.50000	0.4698	50.00- 150.00	100.00	7239
14.320	14.320	(0.000)	85	4968			17.81- 117.81	10.21	
62 1,1,1-Trichloroethane						CAS #: 71-55-6			
14.734	14.734	(1.035)	97	43740	0.50000	0.4555	50.00- 150.00	100.00	7824
14.734	14.734	(0.000)	99	3080			8.06- 108.06	7.04	
64 Carbon Tetrachloride						CAS #: 56-23-5			
15.010	15.010	(1.054)	119	34688	0.50000	0.4151	50.00- 150.00	100.00	8448
15.010	15.010	(0.000)	117	3918			55.72- 155.72	11.29	
67 Benzene						CAS #: 71-43-2			
15.452	15.452	(0.956)	78	50251	0.50000	0.4914	50.00- 150.00	100.00	2134(H)
15.452	15.452	(0.000)	77	960			0.00- 72.24	1.91	
70 1,2-Dichloroethane						CAS #: 107-06-2			
15.590	15.590	(0.964)	62	30120	0.50000	0.4535	50.00- 150.00	100.00	3791
15.590	15.590	(0.000)	64	1632			0.00- 84.99	5.42	
76 Trichloroethene						CAS #: 79-01-6			
16.694	16.694	(1.032)	95	22828	0.50000	0.4840	50.00- 150.00	100.00	8750
16.694	16.694	(0.000)	130	3393			54.75- 154.75	14.86	
16.694	16.694	(0.000)	97	2042			13.04- 113.04	8.95	
81 1,2-Dichloropropane						CAS #: 78-87-5			
17.218	17.218	(1.065)	63	18743	0.50000	0.4694	50.00- 150.00	100.00	7822
17.218	17.218	(0.000)	62	1918			17.30- 117.30	10.23	
17.218	17.218	(0.000)	41	2611			41.61- 141.61	13.93	
88 cis-1,3-Dichloropropene						CAS #: 10061-01-5			
18.543	18.543	(1.147)	75	30904	0.50000	0.4374	50.00- 150.00	100.00	8955

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
88 cis-1,3-Dichloropropene (continued)									
18.543	18.543	(0.000)	77	2195			0.00- 83.21	7.10	
18.543	18.543	(0.000)	39	2884			0.00- 93.63	9.33	
92 Toluene						CAS #: 108-88-3			
19.122	19.122	(1.183)	91	36868	0.50000	0.5039	50.00- 150.00	100.00	8262
19.122	19.122	(0.000)	92	3815			20.23- 120.23	10.35	
93 trans-1,3-Dichloropropene						CAS #: 10061-02-6			
19.619	19.619	(0.898)	75	28561	0.50000	0.4486	50.00- 150.00	100.00	
19.619	19.619	(0.898)	77	9743			0.00- 84.11	34.11	
19.591	19.591	(0.896)	39	16960			9.38- 109.38	59.38	
94 1,1,2-Trichloroethane						CAS #: 79-00-5			
19.978	19.978	(0.914)	97	22635	0.50000	0.5194	50.00- 150.00	100.00	8708
19.978	19.978	(0.000)	99	2915			13.83- 113.83	12.88	
19.978	19.978	(0.000)	83	4040			38.46- 138.46	17.85	
96 Tetrachloroethene						CAS #: 127-18-4			
20.171	20.171	(0.923)	166	23473	0.50000	0.5280	50.00- 150.00	100.00	9149
20.171	20.171	(0.000)	129	3424			25.14- 125.14	14.59	
20.171	20.171	(0.000)	131	2809			11.64- 111.64	11.97	
100 1,2-Dibromoethane						CAS #: 106-93-4			
21.054	21.054	(0.963)	107	31469	0.50000	0.4894	50.00- 150.00	100.00	5390
21.054	21.054	(0.000)	109	7242			42.99- 142.99	23.01	
106 Chlorobenzene						CAS #: 108-90-7			
21.910	21.910	(1.003)	112	29142	0.50000	0.5047	50.00- 150.00	100.00	7711
21.910	21.910	(0.000)	114	1939			0.00- 78.84	6.65	
21.910	21.910	(0.000)	77	3460			1.46- 101.46	11.87	
107 Ethyl Benzene						CAS #: 100-41-4			
21.992	21.992	(1.006)	106	11708	0.50000	0.5248	50.00- 150.00	100.00	
21.965	21.965	(1.005)	91	33908			239.61- 339.61	289.61	
109 m,p-Xylene						CAS #: 108-38-3			
22.186	22.186	(1.015)	106	10433	0.50000	0.5071	50.00- 150.00	100.00	
22.186	22.186	(1.015)	91	22276			163.51- 263.51	213.51	
111 o-Xylene						CAS #: 95-47-6			
22.958	22.958	(1.050)	106	10021	0.50000	0.5171	50.00- 150.00	100.00	8208
22.958	22.958	(0.000)	91	4315			115.45- 215.45	43.06	
112 Styrene						CAS #: 100-42-5			
23.014	23.014	(1.053)	104	14713	0.50000	0.4442	50.00- 150.00	100.00	8940

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY	
112 Styrene (continued)										
23.014	23.014	(0.000)	78	1212			0.00- 86.20	8.24		
118 1,1,2,2-Tetrachloroethane						CAS #: 79-34-5				
24.228	24.228	(1.109)	83	47462	0.50000	0.5683	50.00- 150.00	100.00	8926	
24.228	24.228	(0.000)	85	7389			6.23- 106.23	15.57		
124 1,3,5-Trimethylbenzene						CAS #: 108-67-8				
24.614	24.614	(1.126)	105	16631	0.50000	0.4706	50.00- 150.00	100.00		
24.614	24.614	(1.126)	120	8243			0.00- 99.56	49.56		
129 1,2,4-Trimethylbenzene						CAS #: 95-63-6				
25.304	25.304	(1.158)	105	13662	0.50000	0.4739	50.00- 150.00	100.00	8497	
25.304	25.304	(0.000)	120	1646			1.84- 101.84	12.05		
132 1,3-Dichlorobenzene						CAS #: 541-73-1				
25.939	25.939	(1.187)	146	18984	0.50000	0.5126	50.00- 150.00	100.00		(H)
25.939	25.939	(1.187)	148	13353			20.34- 120.34	70.34		
25.939	25.939	(1.187)	111	6905			0.00- 86.37	36.37		
135 1,4-Dichlorobenzene						CAS #: 106-46-7				
26.105	26.105	(1.194)	146	19085	0.50000	0.5373	50.00- 150.00	100.00		
26.105	26.105	(1.194)	148	13778			22.19- 122.19	72.19		
26.105	26.105	(1.194)	111	6588			0.00- 84.52	34.52		
140 1,2-Dichlorobenzene						CAS #: 95-50-1				
26.795	26.795	(1.226)	146	19527	0.50000	0.5280	50.00- 150.00	100.00	8794	
26.795	26.795	(0.000)	148	3705			32.85- 132.85	18.97		
26.795	26.795	(0.000)	111	2130			0.00- 97.63	10.91		
137 alpha-Chlorotoluene						CAS #: 100-44-7				
26.325	26.325	(1.205)	91	36657	0.50000	0.5367	50.00- 150.00	100.00	9146	
26.325	26.325	(0.000)	126	1922			0.00- 67.71	5.24		

QC Flag Legend

H - Operator selected an alternate compound hit.

Data File: /chem/msdf.i/f-25nova.b/f112508.d
Report Date: 26-Nov-2002 05:39

Air Toxics Ltd.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdf.i
Lab File ID: f112508.d
Lab Smp Id: ICAL Level 1
Analysis Type: VOA
Quant Type: ISTD
Operator: xp
Method File: /chem/msdf.i/f-25nova.b/to14n25a.m
Misc Info: 200ppbv-0.5ppbv

Calibration Date: 25-NOV-2002
Calibration Time: 20:24
Client Smp ID: Level 1
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
59 Bromochloromethan	632639	379583	885695	637824	0.82
72 1,4-Difluorobenze	1805412	1083247	2527577	1700627	-5.80
105 Chlorobenzene-d5	1005333	603200	1407466	939900	-6.51

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
59 Bromochloromethan	14.24	13.91	14.57	14.24	0.00
72 1,4-Difluorobenze	16.17	15.84	16.50	16.17	0.00
105 Chlorobenzene-d5	21.85	21.52	22.18	21.85	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

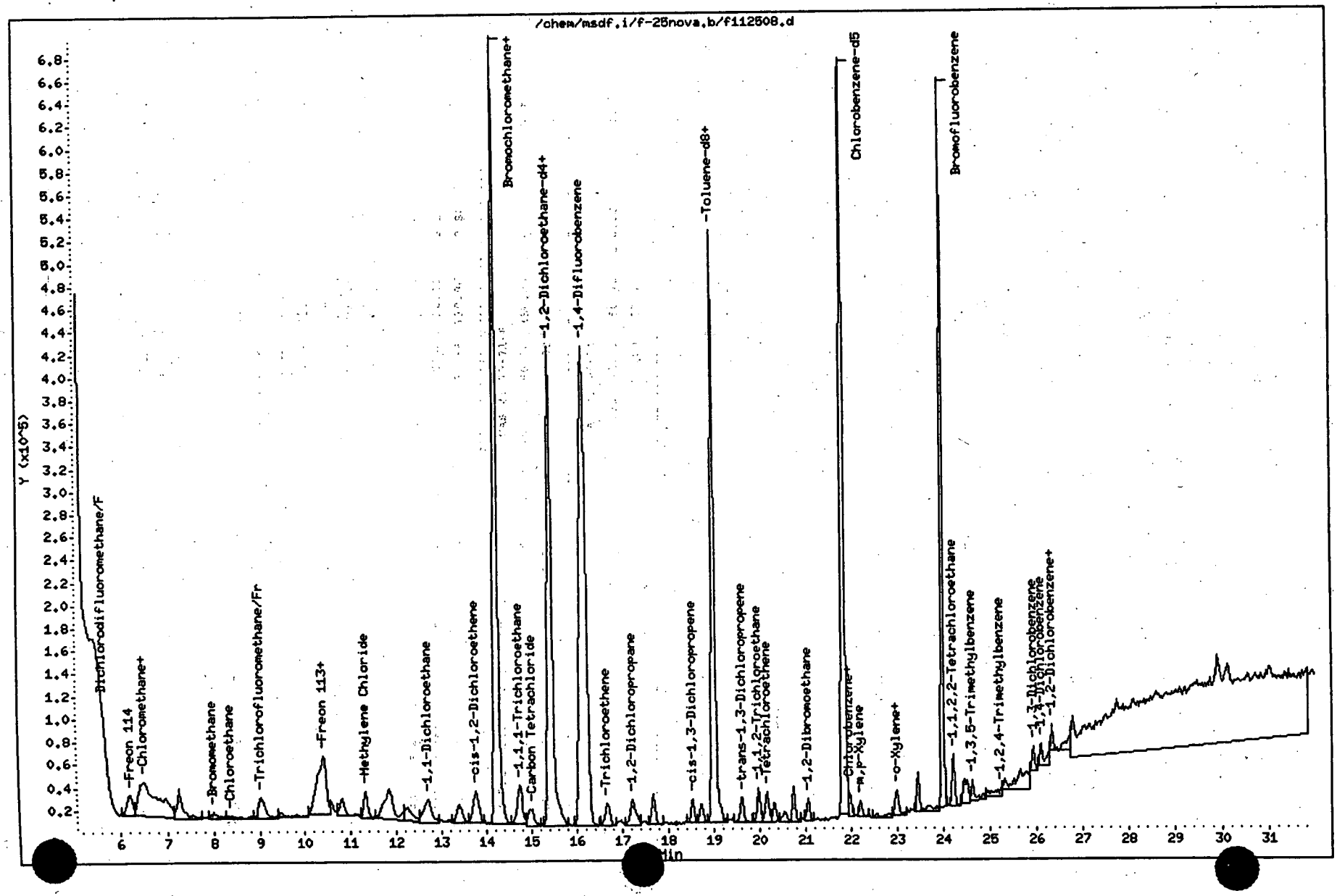
0120

Data File: /chem/msdf.i/f-25nova.b/f112508.d
Date : 25-NOV-2002 18:10
Client ID: Level 1
Sample Info: 0.5ml #995-55

Column phase: RTx-624

Instrument: msdf.i

Operator: xp
Column diameter: 0.53



Air Toxics Ltd.

METHOD TO14

Data file : /chem/msdf.i/f-25nova.b/f112509.d
Lab Smp Id: ICAL Level 2 — Client Smp ID: Level 2
Inj Date : 25-NOV-2002 19:00
Operator : xp — Inst ID: msdf.i
Smp Info : 2.0ml #995-55
Misc Info : 200ppbv-2.0ppbv
Comment :
Method : /chem/msdf.i/f-25nova.b/to14n25a.m
Meth Date : 26-Nov-2002 08:13 xpan — Quant Type: ISTD
Cal Date : 25-NOV-2002 19:00 — Cal File: f112509.d
Als bottle: 1 — Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE — Compound Sublist: AT.sub
Target Version: 3.50 — Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable — Local Compound Variable

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
* 59 Bromochloromethane						CAS #: 74-97-5			
14.237	14.237	(1.000)	130	638073	25.0000		50.00- 150.00	100.00	9439
14.237	14.237	(0.000)	128	96712			27.38- 127.38	15.16	
14.237	14.237	(0.000)	49	182912			96.35- 196.35	28.67	
* 72 1,4-Difluorobenzene						CAS #: 540-36-3			
16.169	16.169	(1.000)	114	1769899	25.0000		50.00- 150.00	100.00	9541
16.169	16.169	(0.000)	88	32936			0.00- 66.92	1.86	
* 105 Chlorobenzene-d5						CAS #: 3114-55-4			
21.855	21.855	(1.000)	117	997944	25.0000		50.00- 150.00	100.00	
21.827	21.827	(1.000)	82	569261			7.04- 107.04	57.04	
$ 65 1,2-Dichloroethane-d4						CAS #: 17060-07-0			
15.424	15.424	(1.083)	65	941787	25.0000	24.528	50.00- 150.00	100.00	9943
15.424	15.424	(0.000)	67	81552			2.31- 102.31	8.66	
$ 91 Toluene-d8						CAS #: 2037-26-5			
19.012	19.012	(1.176)	98	1211699	25.0000	25.101	50.00- 150.00	100.00	9966
19.012	19.012	(0.000)	70	23712			0.00- 61.65	1.96	

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
$ 91 Toluene-d8 (continued)									
19.012	19.012	(0.000)	100	145984			21.71- 121.71	12.05	
$ 117 Bromofluorobenzene						CAS #: 460-00-4			
23.980	23.980	(1.097)	95	487057	25.0000	23.565	50.00- 150.00	100.00	8532
23.980	23.980	(0.000)	174	100616			19.07- 119.07	20.66	
23.980	23.980	(0.000)	176	100232			18.81- 118.81	20.58	
2 Propylene						CAS #: 115-07-1			
5.489	5.489	(0.386)	41	89449	2.00000	2.204	50.00- 150.00	100.00	7311
5.489	5.489	(0.000)	42	4541			4.95- 104.95	5.08	
5.489	5.489	(0.000)	39	7726			43.49- 143.49	8.64	
4 Dichlorodifluoromethane/Fr12						CAS #: 75-71-8			
5.654	5.654	(0.397)	85	188253	2.00000	1.694	50.00- 150.00	100.00	9118
5.654	5.654	(0.000)	87	6429			0.00- 82.84	3.42	
6 Freon 114						CAS #: 76-14-2			
6.206	6.206	(0.436)	135	136353	2.00000	1.692	50.00- 150.00	100.00	8771
6.206	6.206	(0.000)	137	5873			0.00- 85.65	4.31	
8 Chloromethane						CAS #: 74-87-3			
6.372	6.372	(0.448)	50	61897	2.00000	1.702	50.00- 150.00	100.00	
6.399	6.399	(0.449)	52	27287			0.00- 94.08	44.08	
10 Vinyl Chloride						CAS #: 75-01-4			
6.813	6.813	(0.479)	62	70402	2.00000	1.679	50.00- 150.00	100.00	4402
6.813	6.813	(0.000)	64	2099			0.00- 79.95	2.98	
12 1,3-Butadiene						CAS #: 106-99-0			
7.062	7.062	(0.496)	54	64122	2.00000	1.594	50.00- 150.00	100.00	6479(a)
7.062	7.062	(0.000)	39	6178			45.13- 145.13	9.63	
14 Bromomethane						CAS #: 74-83-9			
8.000	8.000	(0.562)	94	47843	2.00000	1.668	50.00- 150.00	100.00	6551
8.000	8.000	(0.000)	96	4446			34.28- 134.28	9.29	
15 Chloroethane						CAS #: 75-00-3			
8.359	8.359	(0.587)	64	30820	2.00000	1.480	50.00- 150.00	100.00	3909
8.359	8.359	(0.000)	66	985			0.00- 79.89	3.20	
17 Trichlorofluoromethane/Fr11						CAS #: 75-69-4			
9.049	9.049	(0.636)	101	250780	2.00000	1.673	50.00- 150.00	100.00	9046
9.049	9.049	(0.000)	103	18664			19.00- 119.00	7.44	
21 Ethanol						CAS #: 64-17-5			
9.463	9.463	(0.665)	45	36766	2.00000	1.597	50.00- 150.00	100.00	3548(a)

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
21 Ethanol (continued)								
9.463	9.463 (0.000)	43	1301			0.00- 74.35	3.54	
9.463	9.463 (0.000)	46	2040			0.00- 88.17	5.55	
25 Freon 113					CAS #: 76-13-1			
10.318	10.318 (0.725)	151	165915	2.00000	1.698	50.00- 150.00	100.00	8640
10.318	10.318 (0.000)	153	7310			6.35- 106.35	4.41	
10.318	10.318 (0.000)	101	15386			68.61- 168.61	9.27	
26 1,1-Dichloroethene					CAS #: 75-35-4			
10.318	10.318 (0.725)	61	149280	2.00000	1.623	50.00- 150.00	100.00	8872
10.318	10.318 (0.000)	96	11197			6.45- 106.45	7.50	
10.318	10.318 (0.000)	98	6964			0.00- 85.11	4.67	
27 Acetone					CAS #: 67-64-1			
10.456	10.456 (0.734)	43	292878	2.00000	2.491	50.00- 150.00	100.00	6530(M)
10.456	10.456 (0.734)	58	11590			0.00- 76.68	3.96	
31 Carbon Disulfide					CAS #: 75-15-0			
10.843	10.843 (0.762)	76	264640	2.00000	1.532	50.00- 150.00	100.00	8024(a)
30 2-Propanol					CAS #: 67-63-0			
10.594	10.594 (0.744)	45	143232	2.00000	1.349	50.00- 150.00	100.00	6000(a)
10.594	10.594 (0.000)	43	0			0.00- 50.00	0.00	
10.594	10.594 (0.000)	59	356			0.00- 51.87	0.25	
36 Methylene Chloride					CAS #: 75-09-2			
11.312	11.312 (0.795)	49	103245	2.00000	1.607	50.00- 150.00	100.00	9360
11.312	11.312 (0.000)	84	12913			16.67- 116.67	12.51	
11.312	11.312 (0.000)	51	5186			0.00- 76.78	5.02	
39 MTBE					CAS #: 1634-04-4			
11.809	11.809 (0.829)	73	304576	2.00000	1.583	50.00- 150.00	100.00	6308(a)
11.809	11.809 (0.000)	57	5313			0.00- 71.65	1.74	
11.809	11.809 (0.000)	41	5493			0.00- 72.38	1.80	
40 trans-1,2-Dichloroethene					CAS #: 156-60-5			
11.864	11.864 (0.833)	96	100975	2.00000	1.582	50.00- 150.00	100.00	8247(a)
11.864	11.864 (0.000)	61	18776			91.04- 191.04	18.59	
11.864	11.864 (0.000)	98	8436			13.37- 113.37	8.35	
41 Hexane					CAS #: 110-54-3			
12.223	12.223 (0.858)	57	122434	2.00000	1.590	50.00- 150.00	100.00	7285(a)
12.223	12.223 (0.000)	43	5212			28.35- 128.35	4.26	
12.223	12.223 (0.000)	86	1299			0.00- 69.53	1.06	

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
45 1,1-Dichloroethane					CAS #: 75-34-3			
12.720	12.720 (0.893)	63	166265	2.00000	1.629	50.00- 150.00	100.00	6409
12.720	12.720 (0.000)	65	7977			0.00- 80.45	4.80	
44 Vinyl Acetate					CAS #: 108-05-4			
12.664	12.664 (0.890)	43	236282	2.00000	1.406	50.00- 150.00	100.00	5849(a)
12.664	12.664 (0.000)	42	1623			0.00- 56.94	0.69	
12.664	12.664 (0.000)	86	1695			0.00- 57.24	0.72	
54 cis-1,2-Dichloroethene					CAS #: 156-59-2			
13.796	13.796 (0.969)	61	111550	2.00000	1.612	50.00- 150.00	100.00	8235
13.796	13.796 (0.000)	96	13683			21.83- 121.83	12.27	
13.796	13.796 (0.000)	98	8195			0.00- 93.02	7.35	
51 2-Butanone					CAS #: 78-93-3			
13.741	13.741 (0.965)	43	211524	2.00000	1.597	50.00- 150.00	100.00	7904(a)
13.741	13.741 (0.000)	72	6732			0.00- 74.13	3.18	
13.741	13.741 (0.000)	57	2155			0.00- 57.72	1.02	
57 Tetrahydrofuran					CAS #: 109-99-9			
14.265	14.265 (1.002)	42	101001	2.00000	1.457	50.00- 150.00	100.00	7503(a)
14.265	14.265 (0.000)	71	5738			0.00- 91.32	5.68	
14.265	14.265 (0.000)	72	6016			0.00- 93.32	5.96	
60 Chloroform					CAS #: 67-66-3			
14.320	14.320 (1.006)	83	169158	2.00000	1.632	50.00- 150.00	100.00	8985
14.320	14.320 (0.000)	85	17856			17.17- 117.17	10.56	
61 Cyclohexane					CAS #: 110-82-7			
14.762	14.762 (1.037)	84	109409	2.00000	1.609	50.00- 150.00	100.00	8148(a)
14.762	14.762 (0.000)	56	13150			52.94- 152.94	12.02	
14.762	14.762 (0.000)	41	8132			13.66- 113.66	7.43	
62 1,1,1-Trichloroethane					CAS #: 71-55-6			
14.734	14.734 (1.035)	97	155267	2.00000	1.616	50.00- 150.00	100.00	7459
14.734	14.734 (0.000)	99	12644			12.27- 112.27	8.14	
64 Carbon Tetrachloride					CAS #: 56-23-5			
15.010	15.010 (1.054)	119	131070	2.00000	1.568	50.00- 150.00	100.00	8467
15.010	15.010 (0.000)	117	16107			50.32- 150.32	12.29	
67 Benzene					CAS #: 71-43-2			
15.479	15.479 (0.957)	78	171621	2.00000	1.612	50.00- 150.00	100.00	5509
15.479	15.479 (0.000)	77	3749			0.00- 72.44	2.18	
70 1,2-Dichloroethane					CAS #: 107-06-2			
15.590	15.590 (0.964)	62	107188	2.00000	1.551	50.00- 150.00	100.00	4006

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
70 1,2-Dichloroethane (continued)									
15.590	15.590	(0.000)	64	5702			0.00- 84.04	5.32	
68 Heptane						CAS #: 142-82-5			
15.645	15.645	(0.968)	43	87027	2.00000	1.572	50.00- 150.00	100.00	7147(a)
15.645	15.645	(0.000)	57	3453			1.24- 101.24	3.97	
15.645	15.645	(0.000)	71	3459			1.33- 101.33	3.97	
76 Trichloroethene						CAS #: 79-01-6			
16.666	16.666	(1.031)	95	76494	2.00000	1.558	50.00- 150.00	100.00	8650
16.666	16.666	(0.000)	130	10905			36.12- 136.12	14.26	
16.666	16.666	(0.000)	97	8410			16.41- 116.41	10.99	
81 1,2-Dichloropropane						CAS #: 78-87-5			
17.218	17.218	(1.065)	63	65997	2.00000	1.588	50.00- 150.00	100.00	8508
17.218	17.218	(0.000)	62	7945			19.85- 119.85	12.04	
17.218	17.218	(0.000)	41	7392			14.99- 114.99	11.20	
79 1,4-Dioxane						CAS #: 123-91-1			
17.328	17.328	(1.072)	88	52422	2.00000	1.481	50.00- 150.00	100.00	2674(a)
17.328	17.328	(0.000)	58	5762			10.93- 110.93	10.99	
17.328	17.328	(0.000)	57	1991			0.00- 71.05	3.80	
84 Bromodichloromethane						CAS #: 75-27-4			
17.687	17.687	(1.094)	83	157620	2.00000	1.424	50.00- 150.00	100.00	9503(a)
17.687	17.687	(0.000)	85	20288			18.47- 118.47	12.87	
88 cis-1,3-Dichloropropene						CAS #: 10061-01-5			
18.543	18.543	(1.147)	75	108834	2.00000	1.480	50.00- 150.00	100.00	8554
18.543	18.543	(0.000)	77	6781			0.00- 79.98	6.23	
18.543	18.543	(0.000)	39	13888			11.41- 111.41	12.76	
89 4-Methyl-2-pentanone						CAS #: 108-10-1			
18.708	18.708	(1.157)	43	126326	2.00000	1.325	50.00- 150.00	100.00	6843(a)
18.708	18.708	(0.000)	58	8141			0.00- 87.93	6.44	
18.708	18.708	(0.000)	85	3115			0.00- 64.51	2.47	
92 Toluene						CAS #: 108-88-3			
19.150	19.150	(1.184)	91	121158	2.00000	1.591	50.00- 150.00	100.00	8322
19.150	19.150	(0.000)	92	12376			10.45- 110.45	10.21	
93 trans-1,3-Dichloropropene						CAS #: 10061-02-6			
19.619	19.619	(0.898)	75	98280	2.00000	1.454	50.00- 150.00	100.00	
19.619	19.619	(0.898)	77	30600			0.00- 81.14	31.14	
19.591	19.591	(0.896)	39	59298			10.34- 110.34	60.34	

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
94 1,1,2-Trichloroethane					CAS #: 79-00-5			
19.978	19.978 (0.914)	97	72756	2.00000	1.572	50.00- 150.00	100.00	8968
19.978	19.978 (0.000)	99	10918			16.87- 116.87	15.01	
19.978	19.978 (0.000)	83	13013			29.71- 129.71	17.89	
96 Tetrachloroethene					CAS #: 127-18-4			
20.171	20.171 (0.923)	166	77282	2.00000	1.637	50.00- 150.00	100.00	9357
20.171	20.171 (0.000)	129	11157			24.14- 124.14	14.44	
20.171	20.171 (0.000)	131	10695			21.07- 121.07	13.84	
95 2-Hexanone					CAS #: 591-78-6			
20.309	20.309 (0.929)	43	105902	2.00000	1.287	50.00- 150.00	100.00	8339(a)
20.309	20.309 (0.000)	58	10812			0.00- 97.14	10.21	
20.309	20.309 (0.000)	100	1571			0.00- 56.85	1.48	
99 Dibromochloromethane					CAS #: 124-48-1			
20.751	20.751 (0.949)	129	117840	2.00000	1.320	50.00- 150.00	100.00	8767(a)
20.751	20.751 (0.000)	208	1090			0.00- 53.71	0.92	
100 1,2-Dibromoethane					CAS #: 106-93-4			
21.054	21.054 (0.963)	107	104689	2.00000	1.534	50.00- 150.00	100.00	5533
21.054	21.054 (0.000)	109	24872			43.90- 143.90	23.76	
106 Chlorobenzene					CAS #: 108-90-7			
21.910	21.910 (1.003)	112	104055	2.00000	1.697	50.00- 150.00	100.00	9185
21.910	21.910 (0.000)	114	8179			0.00- 84.52	7.86	
21.910	21.910 (0.000)	77	13353			6.35- 106.35	12.83	
107 Ethyl Benzene					CAS #: 100-41-4			
21.992	21.992 (1.006)	106	37409	2.00000	1.579	50.00- 150.00	100.00	
21.965	21.965 (1.005)	91	117804			264.91- 364.91	314.91	
109 m,p-Xylene					CAS #: 108-38-3			
22.186	22.186 (1.015)	106	33302	2.00000	1.525	50.00- 150.00	100.00	
22.186	22.186 (1.015)	91	66988			151.15- 251.15	201.15	
111 o-Xylene					CAS #: 95-47-6			
22.958	22.958 (1.050)	106	31459	2.00000	1.529	50.00- 150.00	100.00	8966
22.958	22.958 (0.000)	91	18182			154.18- 254.18	57.80	
112 Styrene					CAS #: 100-42-5			
22.986	22.986 (1.052)	104	44822	2.00000	1.275	50.00- 150.00	100.00	8857
22.986	22.986 (0.000)	78	6010			7.56- 107.56	13.41	
114 Bromoform					CAS #: 75-25-2			
23.455	23.455 (1.073)	173	96281	2.00000	1.268	50.00- 150.00	100.00	9306(a)

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY	
114 Bromoform (continued)										
23.455	23.455	(0.000)	171	14538			1.74- 101.74	15.10		
118 1,1,2,2-Tetrachloroethane						CAS #: 79-34-5				
24.228	24.228	(1.109)	83	146185	2.00000	1.649	50.00- 150.00	100.00	9110	
24.228	24.228	(0.000)	85	25824			16.27- 116.27	17.67		
119 4-Ethyltoluene						CAS #: 622-96-8				
24.504	24.504	(1.121)	105	83119	2.00000	1.468	50.00- 150.00	100.00		(a)
24.504	24.504	(1.121)	120	25129			0.00- 80.23	30.23		
124 1,3,5-Trimethylbenzene						CAS #: 108-67-8				
24.614	24.614	(1.126)	105	56110	2.00000	1.495	50.00- 150.00	100.00		
24.614	24.614	(1.126)	120	28158			0.18- 100.18	50.18		
129 1,2,4-Trimethylbenzene						CAS #: 95-63-6				
25.304	25.304	(1.158)	105	45489	2.00000	1.486	50.00- 150.00	100.00	8704	
25.304	25.304	(0.000)	120	5737			0.00- 92.94	12.61		
132 1,3-Dichlorobenzene						CAS #: 541-73-1				
25.939	25.939	(1.187)	146	73302	2.00000	1.864	50.00- 150.00	100.00		(H)
25.939	25.939	(1.187)	148	45523			12.10- 112.10	62.10		
25.939	25.939	(1.187)	111	28384			0.00- 88.72	38.72		
135 1,4-Dichlorobenzene						CAS #: 106-46-7				
26.105	26.105	(1.194)	146	64522	2.00000	1.711	50.00- 150.00	100.00		
26.105	26.105	(1.194)	148	41844			14.85- 114.85	64.85		
26.105	26.105	(1.194)	111	24173			0.00- 87.46	37.46		
140 1,2-Dichlorobenzene						CAS #: 95-50-1				
26.795	26.795	(1.226)	146	74141	2.00000	1.888	50.00- 150.00	100.00	9161	
26.795	26.795	(0.000)	148	13631			13.53- 113.53	18.39		
26.795	26.795	(0.000)	111	7945			0.00- 87.03	10.72		
137 alpha-Chlorotoluene						CAS #: 100-44-7				
26.325	26.325	(1.205)	91	117805	2.00000	1.624	50.00- 150.00	100.00	9450	
26.325	26.325	(0.000)	126	7617			0.00- 70.26	6.47		
143 1,2,4-Trichlorobenzene						CAS #: 120-82-1				
29.968	29.968	(1.371)	180	26391	2.00000	1.889	50.00- 150.00	100.00	8904	(a)
29.968	29.968	(0.000)	182	6325			61.14- 161.14	23.97		
144 Hexachlorobutadiene						CAS #: 87-68-3				
30.134	30.134	(1.379)	225	32496	2.00000	1.830	50.00- 150.00	100.00	9181	(a)
30.134	30.134	(0.000)	223	3884			5.88- 105.88	11.95		

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.

Data File: /chem/msdf.i/f-25nova.b/f112509.d
Report Date: 26-Nov-2002 08:13

Air Toxics Ltd.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdf.i
Lab File ID: f112509.d
Lab Smp Id: ICAL Level 2
Analysis Type: VOA
Quant Type: ISTD
Operator: xp
Method File: /chem/msdf.i/f-25nova.b/to14n25a.m
Misc Info: 200ppbv-2.0ppbv

Calibration Date: 25-NOV-2002
Calibration Time: 20:24
Client Smp ID: Level 2
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
59 Bromochloromethan	632639	379583	885695	638073	0.86
72 1,4-Difluorobenze	1805412	1083247	2527577	1769899	-1.97
105 Chlorobenzene-d5	1005333	603200	1407466	997944	-0.73

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
59 Bromochloromethan	14.24	13.91	14.57	14.24	0.00
72 1,4-Difluorobenze	16.17	15.84	16.50	16.17	0.00
105 Chlorobenzene-d5	21.85	21.52	22.18	21.85	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

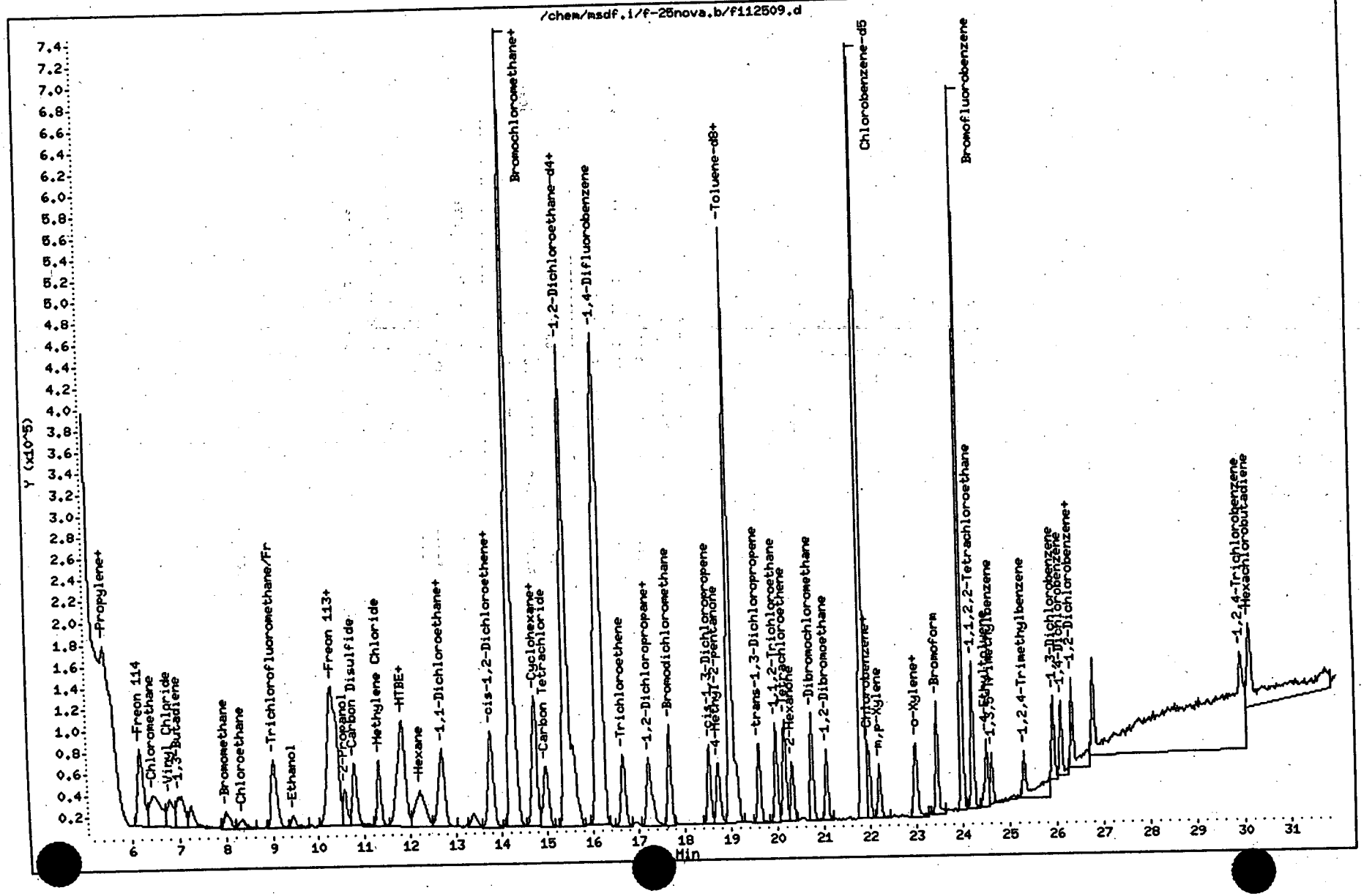
0130

Data File: /chem/msdf.i/f-25nova.b/f112509.d
Date : 25-NOV-2002 19:00
Client ID: Level 2
Sample Info: 2.0ml #995-55

Column phase: RTx-624

Instrument: msdf.i

Operator: xp
Column diameter: 0.53



Data File: /chem/msdf.i/f-25nova.b/f112510.d
Report Date: 26-Nov-2002 05:39

Air Toxics Ltd.

METHOD TO14

Data file : /chem/msdf.i/f-25nova.b/f112510.d
Lab Smp Id: ICAL Level 3 — Client Smp ID: Level 3
Inj Date : 25-NOV-2002 19:43
Operator : xp — Inst ID: msdf.i
Smp Info : 25ml #995-55
Misc Info : 200ppbv-25ppbv
Comment :
Method : /chem/msdf.i/f-25nova.b/to14n25a.m
Meth Date : 26-Nov-2002 05:39 kbadal — Quant Type: ISTD
Cal Date : 25-NOV-2002 19:43 — Cal File: f112510.d
Als bottle: 1 — Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE — Compound Sublist: AT.sub
Target Version: 3.50 — Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable — Local Compound Variable

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
* 59 Bromochloromethane						CAS #: 74-97-5			
14.237	14.237	(1.000)	130	634001	25.0000		50.00- 150.00	100.00	9256
14.237	14.237	(0.000)	128	96944			25.46- 125.46	15.29	
14.237	14.237	(0.000)	49	180608			90.59- 190.59	28.49	
* 72 1,4-Difluorobenzene						CAS #: 540-36-3			
16.142	16.142	(1.000)	114	1916933	25.0000		50.00- 150.00	100.00	9506
16.142	16.142	(0.000)	88	36808			0.00- 66.81	1.92	
* 105 Chlorobenzene-d5						CAS #: 3114-55-4			
21.854	21.854	(1.000)	117	1054875	25.0000		50.00- 150.00	100.00	
21.827	21.827	(1.000)	82	604440			7.30- 107.30	57.30	
$ 65 1,2-Dichloroethane-d4						CAS #: 17060-07-0			
15.396	15.396	(1.081)	65	967144	25.0000	25.350	50.00- 150.00	100.00	9972
15.396	15.396	(0.000)	67	79781			2.64- 102.64	8.25	
$ 91 Toluene-d8						CAS #: 2037-26-5			
19.012	19.012	(1.178)	98	1303342	25.0000	24.929	50.00- 150.00	100.00	9901
19.012	19.012	(0.000)	70	26088			0.00- 61.85	2.00	

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
$ 91 Toluene-d8 (continued)									
19.012	19.012	(0.000)	100	151040			18.62- 118.62	11.59	
$ 117 Bromofluorobenzene						CAS #: 460-00-4			
23.979	23.979	(1.097)	95	532777	25.0000	24.386	50.00- 150.00	100.00	8516
23.979	23.979	(0.000)	174	109752			19.06- 119.06	20.60	
23.979	23.979	(0.000)	176	106296			16.89- 116.89	19.95	
2 Propylene						CAS #: 115-07-1			
5.489	5.489	(0.386)	41	1081792	25.0000	26.824	50.00- 150.00	100.00	7686
5.489	5.489	(0.000)	42	87640			16.90- 116.90	8.10	
5.489	5.489	(0.000)	39	106066			30.96- 130.96	9.80	
4 Dichlorodifluoromethane/Fr12						CAS #: 75-71-8			
5.627	5.627	(0.395)	85	3290290	25.0000	29.799	50.00- 150.00	100.00	9030
5.627	5.627	(0.000)	87	119392			0.00- 81.85	3.63	
6 Freon 114						CAS #: 76-14-2			
6.179	6.179	(0.434)	135	2334611	25.0000	29.153	50.00- 150.00	100.00	8869
6.179	6.179	(0.000)	137	89160			0.00- 81.40	3.82	
8 Chloromethane						CAS #: 74-87-3			
6.344	6.344	(0.446)	50	994626	25.0000	27.518	50.00- 150.00	100.00	
6.344	6.344	(0.446)	52	323294			0.00- 82.50	32.50	
10 Vinyl Chloride						CAS #: 75-01-4			
6.786	6.786	(0.477)	62	1233508	25.0000	29.604	50.00- 150.00	100.00	4471
6.786	6.786	(0.000)	64	43107			0.00- 81.42	3.49	
12 1,3-Butadiene						CAS #: 106-99-0			
7.007	7.007	(0.492)	54	1154247	25.0000	28.874	50.00- 150.00	100.00	6479
7.007	7.007	(0.000)	39	119951			51.95- 151.95	10.39	
14 Bromomethane						CAS #: 74-83-9			
7.973	7.973	(0.560)	94	753268	25.0000	26.428	50.00- 150.00	100.00	6599
7.973	7.973	(0.000)	96	88541			44.25- 144.25	11.75	
15 Chloroethane						CAS #: 75-00-3			
8.276	8.276	(0.581)	64	557082	25.0000	26.933	50.00- 150.00	100.00	4019
8.276	8.276	(0.000)	66	27435			0.00- 82.06	4.92	
17 Trichlorofluoromethane/Fr11						CAS #: 75-69-4			
9.021	9.021	(0.634)	101	4467234	25.0000	29.996	50.00- 150.00	100.00	9069
9.021	9.021	(0.000)	103	307712			13.89- 113.89	6.89	
21 Ethanol						CAS #: 64-17-5			
9.408	9.408	(0.661)	45	643282	25.0000	28.130	50.00- 150.00	100.00	3570

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RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
21 Ethanol (continued)									
9.408	9.408	(0.000)	43	24896			0.00- 74.09	3.87	
9.408	9.408	(0.000)	46	38496			0.00- 87.25	5.98	
25 Freon 113						CAS #: 76-13-1			
10.263	10.263	(0.721)	151	2929748	25.0000	30.176	50.00- 150.00	100.00	8643
10.263	10.263	(0.000)	153	145856			14.29- 114.29	4.98	
10.263	10.263	(0.000)	101	282176			74.37- 174.37	9.63	
26 1,1-Dichloroethene						CAS #: 75-35-4			
10.291	10.291	(0.723)	61	2700270	25.0000	29.540	50.00- 150.00	100.00	8913
10.291	10.291	(0.000)	96	209725			7.11- 107.11	7.77	
10.291	10.291	(0.000)	98	138048			0.00- 87.59	5.11	
27 Acetone						CAS #: 67-64-1			
10.401	10.401	(0.731)	43	2945174	25.0000	24.559	50.00- 150.00	100.00	6493
10.401	10.401	(0.000)	58	146348			0.00- 77.72	4.97	
31 Carbon Disulfide						CAS #: 75-15-0			
10.815	10.815	(0.760)	76	4928076	25.0000	28.716	50.00- 150.00	100.00	7917
30 2-Propanol						CAS #: 67-63-0			
10.539	10.539	(0.740)	45	2940250	25.0000	27.872	50.00- 150.00	100.00	6099
10.539	10.539	(0.000)	43	0			0.00- 50.00	0.00	
10.539	10.539	(0.000)	59	8279			0.00- 51.82	0.28	
36 Methylene Chloride						CAS #: 75-09-2			
11.312	11.312	(0.795)	49	1722192	25.0000	26.986	50.00- 150.00	100.00	9314
11.312	11.312	(0.000)	84	260480			23.60- 123.60	15.12	[illegible]
11.312	11.312	(0.000)	51	104672			0.00- 79.58	6.08	
39 MTBE						CAS #: 1634-04-4			
11.753	11.753	(0.826)	73	5724779	25.0000	29.940	50.00- 150.00	100.00	6186
11.753	11.753	(0.000)	57	100656			0.00- 71.16	1.76	
11.753	11.753	(0.000)	41	109649			0.00- 73.06	1.92	
40 trans-1,2-Dichloroethene						CAS #: 156-60-5			
11.836	11.836	(0.831)	96	1850134	25.0000	29.176	50.00- 150.00	100.00	8260
11.836	11.836	(0.000)	61	361856			96.19- 196.19	19.56	
11.836	11.836	(0.000)	98	159808			14.56- 114.56	8.64	
41 Hexane						CAS #: 110-54-3			
12.223	12.223	(0.858)	57	2336149	25.0000	30.539	50.00- 150.00	100.00	7276
12.223	12.223	(0.000)	43	79261			12.64- 112.64	3.39	
12.223	12.223	(0.000)	86	22032			0.00- 67.41	0.94	

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
45 1,1-Dichloroethane						CAS #: 75-34-3			
12.692	12.692	(0.891)	63	3012780	25.0000	29.702	50.00- 150.00	100.00	6405
12.692	12.692	(0.000)	65	138560			0.00- 80.64	4.60	
44 Vinyl Acetate						CAS #: 108-05-4			
12.637	12.637	(0.888)	43	4893911	25.0000	29.298	50.00- 150.00	100.00	5894
12.637	12.637	(0.000)	42	39131			0.00- 57.90	0.80	
12.637	12.637	(0.000)	86	38830			0.00- 57.84	0.79	
54 cis-1,2-Dichloroethene						CAS #: 156-59-2			
13.768	13.768	(0.967)	61	2029963	25.0000	29.526	50.00- 150.00	100.00	8240
13.768	13.768	(0.000)	96	257086			23.32- 123.32	12.66	
13.768	13.768	(0.000)	98	165504			0.00- 97.20	8.15	
51 2-Butanone						CAS #: 78-93-3			
13.713	13.713	(0.963)	43	3657409	25.0000	27.785	50.00- 150.00	100.00	7911
13.713	13.713	(0.000)	72	115392			0.00- 72.27	3.16	
13.713	13.713	(0.000)	57	38424			0.00- 57.41	1.05	
57 Tetrahydrofuran						CAS #: 109-99-9			
14.210	14.210	(0.998)	42	1963722	25.0000	28.503	50.00- 150.00	100.00	7504
14.210	14.210	(0.000)	71	119616			0.00- 87.25	6.09	
14.210	14.210	(0.000)	72	126076			0.00- 89.26	6.42	
60 Chloroform						CAS #: 67-66-3			
14.320	14.320	(1.006)	83	3041422	25.0000	29.534	50.00- 150.00	100.00	9037
14.320	14.320	(0.000)	85	318912			13.68- 113.68	10.49	
61 Cyclohexane						CAS #: 110-82-7			
14.734	14.734	(1.035)	84	2111464	25.0000	31.253	50.00- 150.00	100.00	8255
14.734	14.734	(0.000)	56	268416			62.71- 162.71	12.71	
14.734	14.734	(0.000)	41	164740			19.18- 119.18	7.80	
62 1,1,1-Trichloroethane						CAS #: 71-55-6			
14.706	14.706	(1.033)	97	3011985	25.0000	31.558	50.00- 150.00	100.00	7517
14.706	14.706	(0.000)	99	244864			15.78- 115.78	8.13	
64 Carbon Tetrachloride						CAS #: 56-23-5			
14.982	14.982	(1.052)	119	2698677	25.0000	32.486	50.00- 150.00	100.00	8496
14.982	14.982	(0.000)	117	324472			52.45- 152.45	12.02	
67 Benzene						CAS #: 71-43-2			
15.452	15.452	(0.957)	78	3229991	25.0000	28.020	50.00- 150.00	100.00	9035
15.452	15.452	(0.000)	77	74464			0.00- 72.37	2.31	
70 1,2-Dichloroethane						CAS #: 107-06-2			
15.562	15.562	(0.964)	62	2008497	25.0000	26.831	50.00- 150.00	100.00	6411

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
70 1,2-Dichloroethane (continued)									
15.562	15.562	(0.000)	64	108888			0.00- 82.50	5.42	
68 Heptane						CAS #: 142-82-5			
15.617	15.617	(0.968)	43	1631250	25.0000	27.214	50.00- 150.00	100.00	7402
15.617	15.617	(0.000)	57	68163			2.03- 102.03	4.18	
15.617	15.617	(0.000)	71	68680			2.43- 102.43	4.21	
76 Trichloroethene						CAS #: 79-01-6			
16.666	16.666	(1.032)	95	1504990	25.0000	28.307	50.00- 150.00	100.00	8670
16.666	16.666	(0.000)	130	241792			52.25- 152.25	16.07	
16.666	16.666	(0.000)	97	151232			13.95- 113.95	10.05	
81 1,2-Dichloropropane						CAS #: 78-87-5			
17.218	17.218	(1.067)	63	1263959	25.0000	28.081	50.00- 150.00	100.00	8529
17.218	17.218	(0.000)	62	151296			22.16- 122.16	11.97	
17.218	17.218	(0.000)	41	138651			16.13- 116.13	10.97	
79 1,4-Dioxane						CAS #: 123-91-1			
17.328	17.328	(1.074)	88	1003610	25.0000	26.186	50.00- 150.00	100.00	2827
17.328	17.328	(0.000)	58	120360			12.31- 112.31	11.99	
17.328	17.328	(0.000)	57	43616			0.00- 72.58	4.35	
84 Bromodichloromethane						CAS #: 75-27-4			
17.659	17.659	(1.094)	83	3317733	25.0000	27.675	50.00- 150.00	100.00	9322
17.659	17.659	(0.000)	85	390208			13.44- 113.44	11.76	
88 cis-1,3-Dichloropropene						CAS #: 10061-01-5			
18.515	18.515	(1.147)	75	2289864	25.0000	28.753	50.00- 150.00	100.00	8483
18.515	18.515	(0.000)	77	141888			0.00- 80.68	6.20	
18.515	18.515	(0.000)	39	291200			12.96- 112.96	12.72	
89 4-Methyl-2-pentanone						CAS #: 108-10-1			
18.708	18.708	(1.159)	43	2812900	25.0000	27.246	50.00- 150.00	100.00	6856
18.708	18.708	(0.000)	58	185920			0.00- 87.67	6.61	
18.708	18.708	(0.000)	85	69478			0.00- 64.08	2.47	
92 Toluene						CAS #: 108-88-3			
19.150	19.150	(1.186)	91	2300350	25.0000	27.893	50.00- 150.00	100.00	8843
19.150	19.150	(0.000)	92	241856			12.40- 112.40	10.51	
93 trans-1,3-Dichloropropene						CAS #: 10061-02-6			
19.591	19.591	(0.896)	75	2104862	25.0000	29.456	50.00- 150.00	100.00	
19.591	19.591	(0.896)	77	665041			0.00- 81.60	31.60	
19.591	19.591	(0.896)	39	1206902			7.34- 107.34	57.34	

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RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
94 1,1,2-Trichloroethane					CAS #: 79-00-5			
19.978	19.978 (0.914)	97	1393079	25.0000	28.484	50.00- 150.00	100.00	8965
19.978	19.978 (0.000)	99	188480			10.45- 110.45	13.53	
19.978	19.978 (0.000)	83	271104			36.95- 136.95	19.46	
96 Tetrachloroethene					CAS #: 127-18-4			
20.171	20.171 (0.923)	166	1423784	25.0000	28.538	50.00- 150.00	100.00	8701
20.171	20.171 (0.000)	129	206272			21.46- 121.46	14.49	
20.171	20.171 (0.000)	131	199223			19.02- 119.02	13.99	
95 2-Hexanone					CAS #: 591-78-6			
20.309	20.309 (0.929)	43	2382494	25.0000	27.395	50.00- 150.00	100.00	8438
20.309	20.309 (0.000)	58	277312			1.17- 101.17	11.64	
20.309	20.309 (0.000)	100	46736			0.00- 58.62	1.96	
99 Dibromochloromethane					CAS #: 124-48-1			
20.750	20.750 (0.949)	129	2817721	25.0000	29.851	50.00- 150.00	100.00	8838
20.750	20.750 (0.000)	208	27664			0.00- 53.92	0.98	
100 1,2-Dibromoethane					CAS #: 106-93-4			
21.054	21.054 (0.963)	107	2113133	25.0000	29.285	50.00- 150.00	100.00	5533
21.054	21.054 (0.000)	109	513472			45.08- 145.08	24.30	
106 Chlorobenzene					CAS #: 108-90-7			
21.910	21.910 (1.003)	112	1834088	25.0000	28.302	50.00- 150.00	100.00	9246
21.910	21.910 (0.000)	114	137088			0.00- 82.11	7.47	
21.910	21.910 (0.000)	77	238537			5.88- 105.88	13.01	
107 Ethyl Benzene					CAS #: 100-41-4			
21.992	21.992 (1.006)	106	691348	25.0000	27.609	50.00- 150.00	100.00	
21.965	21.965 (1.005)	91	2093856			252.87- 352.87	302.87	
109 m,p-Xylene					CAS #: 108-38-3			
22.186	22.186 (1.015)	106	631176	25.0000	27.337	50.00- 150.00	100.00	
22.186	22.186 (1.015)	91	1199277			140.01- 240.01	190.01	
111 o-Xylene					CAS #: 95-47-6			
22.958	22.958 (1.050)	106	597983	25.0000	27.496	50.00- 150.00	100.00	8895
22.958	22.958 (0.000)	91	320320			148.85- 248.85	53.57	
112 Styrene					CAS #: 100-42-5			
22.986	22.986 (1.052)	104	1048112	25.0000	28.197	50.00- 150.00	100.00	9141
22.986	22.986 (0.000)	78	128059			0.00- 98.70	12.22	
114 Bromoform					CAS #: 75-25-2			
23.455	23.455 (1.073)	173	2375394	25.0000	29.597	50.00- 150.00	100.00	9273

Data File: /chem/msdf.i/f-25nova.b/f112510.d
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RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
114 Bromoform (continued)									
23.455	23.455	(0.000)	171	350720			1.10- 101.10	14.76	
118 1,1,2,2-Tetrachloroethane						CAS #: 79-34-5			
24.228	24.228	(1.109)	83	2526706	25.0000	26.957	50.00- 150.00	100.00	9209
24.228	24.228	(0.000)	85	441024			14.43- 114.43	17.45	
119 4-Ethyltoluene						CAS #: 622-96-8			
24.504	24.504	(1.121)	105	1559978	25.0000	26.064	50.00- 150.00	100.00	
24.504	24.504	(1.121)	120	469527			0.00- 80.10	30.10	
124 1,3,5-Trimethylbenzene						CAS #: 108-67-8			
24.614	24.614	(1.126)	105	1042278	25.0000	26.279	50.00- 150.00	100.00	
24.614	24.614	(1.126)	120	525518			0.42- 100.42	50.42	
129 1,2,4-Trimethylbenzene						CAS #: 95-63-6			
25.304	25.304	(1.158)	105	794460	25.0000	24.554	50.00- 150.00	100.00	8700
25.304	25.304	(0.000)	120	116608			0.00- 97.67	14.68	
132 1,3-Dichlorobenzene						CAS #: 541-73-1			
25.939	25.939	(1.187)	146	1082183	25.0000	26.037	50.00- 150.00	100.00	(H)
25.939	25.939	(1.187)	148	688349			13.61- 113.61	63.61	
25.939	25.939	(1.187)	111	416136			0.00- 88.45	38.45	
135 1,4-Dichlorobenzene						CAS #: 106-46-7			
26.105	26.105	(1.194)	146	1031267	25.0000	25.868	50.00- 150.00	100.00	
26.105	26.105	(1.194)	148	654463			13.46- 113.46	63.46	
26.105	26.105	(1.194)	111	392470			0.00- 88.06	38.06	
140 1,2-Dichlorobenzene						CAS #: 95-50-1			
26.794	26.794	(1.226)	146	1059917	25.0000	25.536	50.00- 150.00	100.00	9389
26.794	26.794	(0.000)	148	198160			11.96- 111.96	18.70	
26.794	26.794	(0.000)	111	128848			0.00- 90.29	12.16	
137 alpha-Chlorotoluene						CAS #: 100-44-7			
26.325	26.325	(1.205)	91	1948222	25.0000	25.414	50.00- 150.00	100.00	9427
26.325	26.325	(0.000)	126	136221			0.00- 71.38	6.99	
143 1,2,4-Trichlorobenzene						CAS #: 120-82-1			
29.968	29.968	(1.371)	180	293296	25.0000	19.865	50.00- 150.00	100.00	9205
29.968	29.968	(0.000)	182	64744			42.55- 142.55	22.07	
144 Hexachlorobutadiene						CAS #: 87-68-3			
30.134	30.134	(1.379)	225	362016	25.0000	19.284	50.00- 150.00	100.00	9152
30.134	30.134	(0.000)	223	46776			12.75- 112.75	12.92	

QC Flag Legend

H - Operator selected an alternate compound hit.

Data File: /chem/msdf.i/f-25nova.b/f112510.d
Report Date: 26-Nov-2002 05:39

Air Toxics Ltd.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdf.i
Lab File ID: f112510.d
Lab Smp Id: ICAL Level 3
Analysis Type: VOA
Quant Type: ISTD
Operator: xp
Method File: /chem/msdf.i/f-25nova.b/to14n25a.m
Misc Info: 200ppbv-25ppbv

Calibration Date: 25-NOV-2002
Calibration Time: 20:24
Client Smp ID: Level 3
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
59 Bromochloromethan	632639	379583	885695	634001	0.22
72 1,4-Difluorobenze	1805412	1083247	2527577	1916933	6.18
105 Chlorobenzene-d5	1005333	603200	1407466	1054875	4.93

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
59 Bromochloromethan	14.24	13.91	14.57	14.24	0.00
72 1,4-Difluorobenze	16.17	15.84	16.50	16.14	-0.17
105 Chlorobenzene-d5	21.85	21.52	22.18	21.85	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

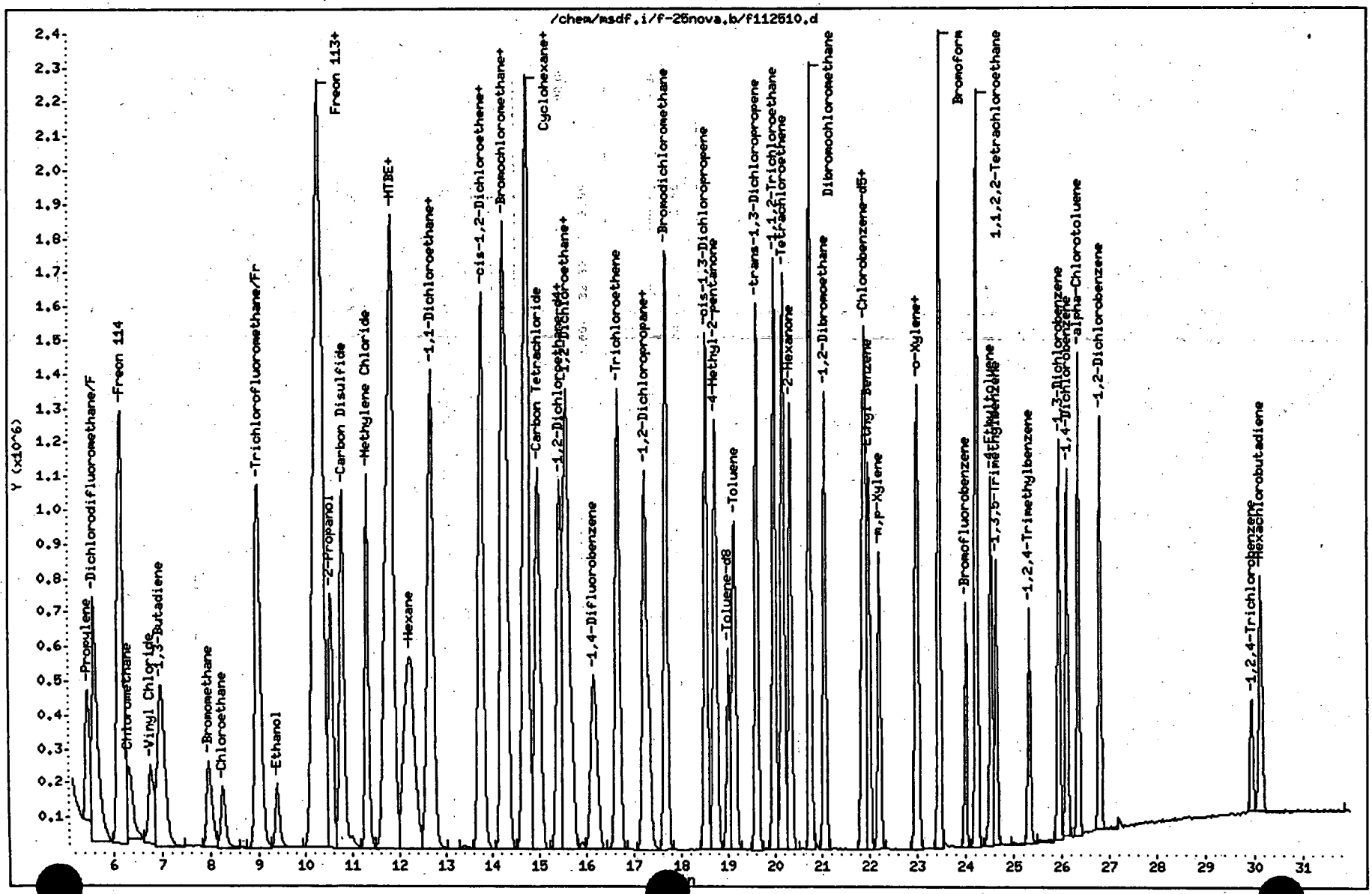
0140

Data File: /chem/msdf.i/f-25nova.b/f112510.d
Date : 25-NOV-2002 19:43
Client ID: Level 3
Sample Info: 25ml #995-55

Column phase: RTx-624

Instrument: msdf.i

Operator: xp
Column diameter: 0.53



Data File: /chem/msdf.i/f-25nova.b/f112511.d
Report Date: 26-Nov-2002 05:39

Air Toxics Ltd.

METHOD TO14

Data file : /chem/msdf.i/f-25nova.b/f112511.d
Lab Smp Id: ICAL Level 4 — Client Smp ID: Level 4
Inj Date : 25-NOV-2002 20:24
Operator : xp — Inst ID: msdf.i
Smp Info : 50ml #995-55
Misc Info : 200ppbv-50ppbv
Comment :
Method : /chem/msdf.i/f-25nova.b/to14n25a.m
Meth Date : 26-Nov-2002 05:39 kbadal — Quant Type: ISTD
Cal Date : 25-NOV-2002 20:24 — Cal File: f112511.d
Als bottle: 1 — Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE — Compound Sublist: AT.sub
Target Version: 3.50 — Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable — Local Compound Variable

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
* 59 Bromochloromethane						CAS #: 74-97-5			
14.237	14.237	(1.000)	130	632639	25.0000		80.00- 120.00	100.00	9193
14.237	14.237	(0.000)	128	99424			27.59- 127.59	15.72	
14.237	14.237	(0.000)	49	193088			100.68- 200.68	30.52	
* 72 1,4-Difluorobenzene						CAS #: 540-36-3			
16.169	16.169	(1.000)	114	1805412	25.0000		80.00- 120.00	100.00	9486
16.169	16.169	(0.000)	88	33368			0.00- 65.83	1.85	
* 105 Chlorobenzene-d5						CAS #: 3114-55-4			
21.854	21.854	(1.000)	117	1005333	25.0000		80.00- 120.00	100.00	
21.827	21.827	(1.000)	82	581919			7.88- 107.88	57.88	
$ 65 1,2-Dichloroethane-d4						CAS #: 17060-07-0			
15.424	15.424	(1.083)	65	967126	25.0000	25.404	80.00- 120.00	100.00	9956
15.424	15.424	(0.000)	67	77976			0.98- 100.98	8.06	
$ 91 Toluene-d8						CAS #: 2037-26-5			
19.012	19.012	(1.176)	98	1210931	25.0000	24.592	80.00- 120.00	100.00	9912
19.012	19.012	(0.000)	70	23968			0.00- 61.51	1.98	

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
$ 91 Toluene-d8 (continued)									
19.012	19.012	(0.000)	100	146483			20.36- 120.36	12.10	
$ 117 Bromofluorobenzene						CAS #: 460-00-4			
23.979	23.979	(1.097)	95	526095	25.0000	25.267	80.00- 120.00	100.00	8517
23.979	23.979	(0.000)	174	107664			19.00- 119.00	20.46	
23.979	23.979	(0.000)	176	103488			16.32- 116.32	19.67	
2 Propylene						CAS #: 115-07-1			
5.489	5.489	(0.386)	41	1959615	50.0000	48.695	80.00- 120.00	100.00	7686
5.489	5.489	(0.000)	42	163403			17.16- 117.16	8.34	
5.489	5.489	(0.000)	39	193762			29.64- 129.64	9.89	
4 Dichlorodifluoromethane/Fr12						CAS #: 75-71-8			
5.654	5.654	(0.397)	85	5924261	50.0000	53.770	80.00- 120.00	100.00	9033
5.654	5.654	(0.000)	87	219008			0.00- 82.57	3.70	
6 Freon 114						CAS #: 76-14-2			
6.179	6.179	(0.434)	135	4204809	50.0000	52.620	80.00- 120.00	100.00	8927
6.179	6.179	(0.000)	137	163840			0.00- 81.91	3.90	
8 Chloromethane						CAS #: 74-87-3			
6.344	6.344	(0.446)	50	1737042	50.0000	48.161	80.00- 120.00	100.00	
6.344	6.344	(0.446)	52	569901			0.00- 82.81	32.81	
10 Vinyl Chloride						CAS #: 75-01-4			
6.813	6.813	(0.479)	62	2228097	50.0000	53.590	80.00- 120.00	100.00	4495
6.813	6.813	(0.000)	64	74091			0.00- 81.78	3.33	
12 1,3-Butadiene						CAS #: 106-99-0			
7.006	7.006	(0.492)	54	2091027	50.0000	52.421	80.00- 120.00	100.00	6526
7.006	7.006	(0.000)	39	221471			51.86- 151.86	10.59	
14 Bromomethane						CAS #: 74-83-9			
7.972	7.972	(0.560)	94	1498241	50.0000	52.678	80.00- 120.00	100.00	6603
7.972	7.972	(0.000)	96	167857			45.86- 145.86	11.20	
15 Chloroethane						CAS #: 75-00-3			
8.304	8.304	(0.583)	64	1079825	50.0000	52.318	80.00- 120.00	100.00	4019
8.304	8.304	(0.000)	66	45744			0.00- 81.17	4.24	
17 Trichlorofluoromethane/Fr11						CAS #: 75-69-4			
9.021	9.021	(0.634)	101	7967027	50.0000	53.611	80.00- 120.00	100.00	9058
9.021	9.021	(0.000)	103	555648			14.01- 114.01	6.97	
21 Ethanol						CAS #: 64-17-5			
9.408	9.408	(0.661)	45	1195829	50.0000	52.406	80.00- 120.00	100.00	3570

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
21 Ethanol (continued)									
9.408	9.408	(0.000)	43	42269			0.00- 71.69	3.53	
9.408	9.408	(0.000)	46	70656			0.00- 86.26	5.91	
25 Freon 113						CAS #: 76-13-1			
10.291	10.291	(0.723)	151	5251972	50.0000	54.210	80.00- 120.00	100.00	8646
10.291	10.291	(0.000)	153	254016			13.75- 113.75	4.84	
10.291	10.291	(0.000)	101	485791			71.92- 171.92	9.25	
26 1,1-Dichloroethene						CAS #: 75-35-4			
10.318	10.318	(0.725)	61	4944095	50.0000	54.203	80.00- 120.00	100.00	8938
10.318	10.318	(0.000)	96	378013			7.57- 107.57	7.65	
10.318	10.318	(0.000)	98	245376			0.00- 87.37	4.96	
27 Acetone						CAS #: 67-64-1			
10.401	10.401	(0.731)	43	5538910	50.0000	46.286	80.00- 120.00	100.00	6529
10.401	10.401	(0.000)	58	266956			0.00- 77.65	4.82	
31 Carbon Disulfide						CAS #: 75-15-0			
10.815	10.815	(0.760)	76	9063883	50.0000	52.929	80.00- 120.00	100.00	7924
30 2-Propanol						CAS #: 67-63-0			
10.567	10.567	(0.742)	45	5640192	50.0000	53.581	80.00- 120.00	100.00	6148
10.567	10.567	(0.000)	43	0			0.00- 50.00	0.00	
10.567	10.567	(0.000)	59	20337			0.00- 52.25	0.36	
36 Methylene Chloride						CAS #: 75-09-2			
11.312	11.312	(0.795)	49	3124633	50.0000	49.068	80.00- 120.00	100.00	9322
11.312	11.312	(0.000)	84	460416			22.63- 122.63	14.74	
11.312	11.312	(0.000)	51	187551			0.00- 79.59	6.00	
39 MTBE						CAS #: 1634-04-4			
11.781	11.781	(0.827)	73	10214551	50.0000	53.536	80.00- 120.00	100.00	6179
11.781	11.781	(0.000)	57	186752			0.00- 71.84	1.83	
11.781	11.781	(0.000)	41	189093			0.00- 72.12	1.85	
40 trans-1,2-Dichloroethene						CAS #: 156-60-5			
11.864	11.864	(0.833)	96	3364468	50.0000	53.170	80.00- 120.00	100.00	8254
11.864	11.864	(0.000)	61	631936			96.58- 196.58	18.78	
11.864	11.864	(0.000)	98	278272			14.55- 114.55	8.27	
41 Hexane						CAS #: 110-54-3			
12.250	12.250	(0.860)	57	4091900	50.0000	53.606	80.00- 120.00	100.00	7287
12.250	12.250	(0.000)	43	146828			12.85- 112.85	3.59	
12.250	12.250	(0.000)	86	37721			0.00- 66.15	0.92	

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
45 1,1-Dichloroethane						CAS #: 75-34-3			
12.719	12.719	(0.893)	63	5510422	50.0000	54.443	80.00- 120.00	100.00	6406
12.719	12.719	(0.000)	65	246693			0.00- 80.84	4.48	
44 Vinyl Acetate						CAS #: 108-05-4			
12.664	12.664	(0.890)	43	9003353	50.0000	54.016	80.00- 120.00	100.00	5868
12.664	12.664	(0.000)	42	73722			0.00- 57.87	0.82	
12.664	12.664	(0.000)	86	75691			0.00- 58.08	0.84	
54 cis-1,2-Dichloroethene						CAS #: 156-59-2			
13.768	13.768	(0.967)	61	3716919	50.0000	54.180	80.00- 120.00	100.00	8240
13.768	13.768	(0.000)	96	441472			21.61- 121.61	11.88	
13.768	13.768	(0.000)	98	277504			0.00- 95.01	7.47	
51 2-Butanone						CAS #: 78-93-3			
13.740	13.740	(0.965)	43	6922895	50.0000	52.706	80.00- 120.00	100.00	7915
13.740	13.740	(0.000)	72	223936			0.00- 72.53	3.23	
13.740	13.740	(0.000)	57	74728			0.00- 57.52	1.08	
57 Tetrahydrofuran						CAS #: 109-99-9			
14.237	14.237	(1.000)	42	3625983	50.0000	52.744	80.00- 120.00	100.00	7500
14.237	14.237	(0.000)	71	232960			0.00- 87.85	6.42	
14.237	14.237	(0.000)	72	245419			0.00- 89.87	6.77	
60 Chloroform						CAS #: 67-66-3			
14.320	14.320	(1.006)	83	5512552	50.0000	53.645	80.00- 120.00	100.00	9065
14.320	14.320	(0.000)	85	584320			14.81- 114.81	10.60	
61 Cyclohexane						CAS #: 110-82-7			
14.734	14.734	(1.035)	84	3663304	50.0000	54.340	80.00- 120.00	100.00	8274
14.734	14.734	(0.000)	56	482752			68.06- 168.06	13.18	
14.734	14.734	(0.000)	41	290654			21.08- 121.08	7.93	
62 1,1,1-Trichloroethane						CAS #: 71-55-6			
14.734	14.734	(1.035)	97	5264251	50.0000	55.275	80.00- 120.00	100.00	7520
14.734	14.734	(0.000)	99	414592			13.95- 113.95	7.88	
64 Carbon Tetrachloride						CAS #: 56-23-5			
14.982	14.982	(1.052)	119	4652659	50.0000	56.128	80.00- 120.00	100.00	8472
14.982	14.982	(0.000)	117	579832			53.63- 153.63	12.46	
67 Benzene						CAS #: 71-43-2			
15.452	15.452	(0.956)	78	5593246	50.0000	51.519	80.00- 120.00	100.00	9191
15.452	15.452	(0.000)	77	130852			0.00- 72.35	2.34	
70 1,2-Dichloroethane						CAS #: 107-06-2			
15.562	15.562	(0.962)	62	3627151	50.0000	51.447	80.00- 120.00	100.00	6538

Data File: /chem/msdf.i/f-25nova.b/f112511.d
Report Date: 26-Nov-2002 05:39

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
70 1,2-Dichloroethane (continued)								
15.562	15.562 (0.000)	64	194112			0.00- 82.17	5.35	
68 Heptane					CAS #: 142-82-5			
15.617	15.617 (0.966)	43	2842839	50.0000	50.357	80.00- 120.00	100.00	7590
15.617	15.617 (0.000)	57	116675			0.00- 99.68	4.10	
15.617	15.617 (0.000)	71	119824			1.02- 101.02	4.21	
76 Trichloroethene					CAS #: 79-01-6			
16.666	16.666 (1.031)	95	2615730	50.0000	52.238	80.00- 120.00	100.00	8696
16.666	16.666 (0.000)	130	407552			51.71- 151.71	15.58	
16.666	16.666 (0.000)	97	259968			14.88- 114.88	9.94	
81 1,2-Dichloropropane					CAS #: 78-87-5			
17.218	17.218 (1.065)	63	2221980	50.0000	52.414	80.00- 120.00	100.00	8564
17.218	17.218 (0.000)	62	266624			20.48- 120.48	12.00	
17.218	17.218 (0.000)	41	246880			15.26- 115.26	11.11	
79 1,4-Dioxane					CAS #: 123-91-1			
17.328	17.328 (1.072)	88	1823365	50.0000	50.513	80.00- 120.00	100.00	2827
17.328	17.328 (0.000)	58	225536			15.59- 115.59	12.37	
17.328	17.328 (0.000)	57	80792			0.00- 73.49	4.43	
84 Bromodichloromethane					CAS #: 75-27-4			
17.687	17.687 (1.094)	83	5846225	50.0000	51.779	80.00- 120.00	100.00	9360
17.687	17.687 (0.000)	85	733632			13.94- 113.94	12.55	
88 cis-1,3-Dichloropropene					CAS #: 10061-01-5			
18.543	18.543 (1.147)	75	4006326	50.0000	53.413	80.00- 120.00	100.00	8663
18.543	18.543 (0.000)	77	260234			0.00- 81.68	6.50	
18.543	18.543 (0.000)	39	486462			9.23- 109.23	12.14	
89 4-Methyl-2-pentanone					CAS #: 108-10-1			
18.708	18.708 (1.157)	43	5062771	50.0000	52.067	80.00- 120.00	100.00	6851
18.708	18.708 (0.000)	58	321152			0.00- 86.47	6.34	
18.708	18.708 (0.000)	85	121174			0.00- 63.76	2.39	
92 Toluene					CAS #: 108-88-3			
19.150	19.150 (1.184)	91	4004072	50.0000	51.550	80.00- 120.00	100.00	8858
19.150	19.150 (0.000)	92	423808			12.37- 112.37	10.58	
93 trans-1,3-Dichloropropene					CAS #: 10061-02-6			
19.591	19.591 (0.896)	75	3686488	50.0000	54.132	80.00- 120.00	100.00	
19.619	19.619 (0.898)	77	1153518			0.00- 81.29	31.29	
19.591	19.591 (0.896)	39	2132011			7.83- 107.83	57.83	

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
94 1,1,2-Trichloroethane					CAS #: 79-00-5			
19.978	19.978 (0.914)	97	2401062	50.0000	51.514	80.00- 120.00	100.00	8950
19.978	19.978 (0.000)	99	320640			12.14- 112.14	13.35	
19.978	19.978 (0.000)	83	457536			38.68- 138.68	19.06	
96 Tetrachloroethene					CAS #: 127-18-4			
20.171	20.171 (0.923)	166	2433283	50.0000	51.176	80.00- 120.00	100.00	8661
20.171	20.171 (0.000)	129	356561			21.78- 121.78	14.65	
20.171	20.171 (0.000)	131	343872			19.22- 119.22	14.13	
95 2-Hexanone					CAS #: 591-78-6			
20.309	20.309 (0.929)	43	4376943	50.0000	52.808	80.00- 120.00	100.00	8434
20.309	20.309 (0.000)	58	490432			0.62- 100.62	11.20	
20.309	20.309 (0.000)	100	80008			0.00- 58.26	1.83	
99 Dibromochloromethane					CAS #: 124-48-1			
20.750	20.750 (0.949)	129	4861914	50.0000	54.045	80.00- 120.00	100.00	8802
20.750	20.750 (0.000)	208	48080			0.00- 53.97	0.99	
100 1,2-Dibromoethane					CAS #: 106-93-4			
21.054	21.054 (0.963)	107	3644580	50.0000	52.997	80.00- 120.00	100.00	5533
21.054	21.054 (0.000)	109	879680			44.71- 144.71	24.14	
106 Chlorobenzene					CAS #: 108-90-7			
21.910	21.910 (1.003)	112	3177334	50.0000	51.445	80.00- 120.00	100.00	9256
21.910	21.910 (0.000)	114	243392			0.00- 82.59	7.66	
21.910	21.910 (0.000)	77	419678			6.20- 106.20	13.21	
107 Ethyl Benzene					CAS #: 100-41-4			
21.992	21.992 (1.006)	106	1210888	50.0000	50.740	80.00- 120.00	100.00	
21.965	21.965 (1.005)	91	3666826			252.82- 352.82	302.82	
109 m,p-Xylene					CAS #: 108-38-3			
22.186	22.186 (1.015)	106	1138517	50.0000	51.741	80.00- 120.00	100.00	
22.186	22.186 (1.015)	91	2173634			140.92- 240.92	190.92	
111 o-Xylene					CAS #: 95-47-6			
22.958	22.958 (1.050)	106	1081918	50.0000	52.200	80.00- 120.00	100.00	8911
22.958	22.958 (0.000)	91	579894			149.97- 249.97	53.60	
112 Styrene					CAS #: 100-42-5			
22.986	22.986 (1.052)	104	1925152	50.0000	54.344	80.00- 120.00	100.00	9177
22.986	22.986 (0.000)	78	234680			0.00- 98.03	12.19	
114 Bromoform					CAS #: 75-25-2			
23.455	23.455 (1.073)	173	4156141	50.0000	54.337	80.00- 120.00	100.00	9217

AMOUNTS

RT	EXP RT	(REL RT)	MASS	RESPONSE	CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY	
114 Bromoform (continued)										
23.455	23.455	(0.000)	171	616192			1.88- 101.88	14.83		
118 1,1,2,2-Tetrachloroethane						CAS #: 79-34-5				
24.228	24.228	(1.109)	83	4395346	50.0000	49.204	80.00- 120.00	100.00	9203	
24.228	24.228	(0.000)	85	760896			14.64- 114.64	17.31		
119 4-Ethyltoluene						CAS #: 622-96-8				
24.504	24.504	(1.121)	105	3043715	50.0000	53.360	80.00- 120.00	100.00		
24.504	24.504	(1.121)	120	908999			0.00- 79.86	29.86		
124 1,3,5-Trimethylbenzene						CAS #: 108-67-8				
24.614	24.614	(1.126)	105	2068302	50.0000	54.719	80.00- 120.00	100.00		
24.614	24.614	(1.126)	120	1013162			0.00- 98.99	48.99		
129 1,2,4-Trimethylbenzene						CAS #: 95-63-6				
25.304	25.304	(1.158)	105	1672688	50.0000	54.244	80.00- 120.00	100.00	8742	
25.304	25.304	(0.000)	120	239680			0.00- 96.45	14.33		
132 1,3-Dichlorobenzene						CAS #: 541-73-1				
25.939	25.939	(1.187)	146	2000073	50.0000	50.493	80.00- 120.00	100.00		(H)
25.939	25.939	(1.187)	148	1268709			13.43- 113.43	63.43		
25.939	25.939	(1.187)	111	773995			0.00- 88.70	38.70		
135 1,4-Dichlorobenzene						CAS #: 106-46-7				
26.104	26.104	(1.194)	146	1922582	50.0000	50.603	80.00- 120.00	100.00		
26.104	26.104	(1.194)	148	1231198			14.04- 114.04	64.04		
26.104	26.104	(1.194)	111	716970			0.00- 87.29	37.29		
140 1,2-Dichlorobenzene						CAS #: 95-50-1				
26.794	26.794	(1.226)	146	1965007	50.0000	49.675	80.00- 120.00	100.00	9370	
26.794	26.794	(0.000)	148	372992			13.01- 113.01	18.98		
26.794	26.794	(0.000)	111	238528			0.00- 90.29	12.14		
137 alpha-Chlorotoluene						CAS #: 100-44-7				
26.325	26.325	(1.205)	91	3645977	50.0000	49.904	80.00- 120.00	100.00	9454	
26.325	26.325	(0.000)	126	245312			0.00- 70.69	6.73		
143 1,2,4-Trichlorobenzene						CAS #: 120-82-1				
29.968	29.968	(1.371)	180	684159	50.0000	48.622	80.00- 120.00	100.00	9254	
29.968	29.968	(0.000)	182	162176			49.61- 149.61	23.70		
144 Hexachlorobutadiene						CAS #: 87-68-3				
30.134	30.134	(1.379)	225	852395	50.0000	47.643	80.00- 120.00	100.00	9203	
30.134	30.134	(0.000)	223	112867			14.45- 114.45	13.24		

QC Flag Legend

H - Operator selected an alternate compound hit.

Data File: /chem/msdf.i/f-25nova.b/f112511.d
Report Date: 26-Nov-2002 05:39

Air Toxics Ltd.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdf.i
Lab File ID: f112511.d
Lab Smp Id: ICAL Level 4
Analysis Type: VOA
Quant Type: ISTD
Operator: xp
Method File: /chem/msdf.i/f-25nova.b/to14n25a.m
Misc Info: 200ppbv-50ppbv

Calibration Date: 25-NOV-2002
Calibration Time: 20:24
Client Smp ID: Level 4
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
59 Bromochloromethan	632639	379583	885695	632639	0.00
72 1,4-Difluorobenze	1805412	1083247	2527577	1805412	0.00
105 Chlorobenzene-d5	1005333	603200	1407466	1005333	0.00

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
59 Bromochloromethan	14.24	13.91	14.57	14.24	0.00
72 1,4-Difluorobenze	16.17	15.84	16.50	16.17	0.00
105 Chlorobenzene-d5	21.85	21.52	22.18	21.85	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

0150

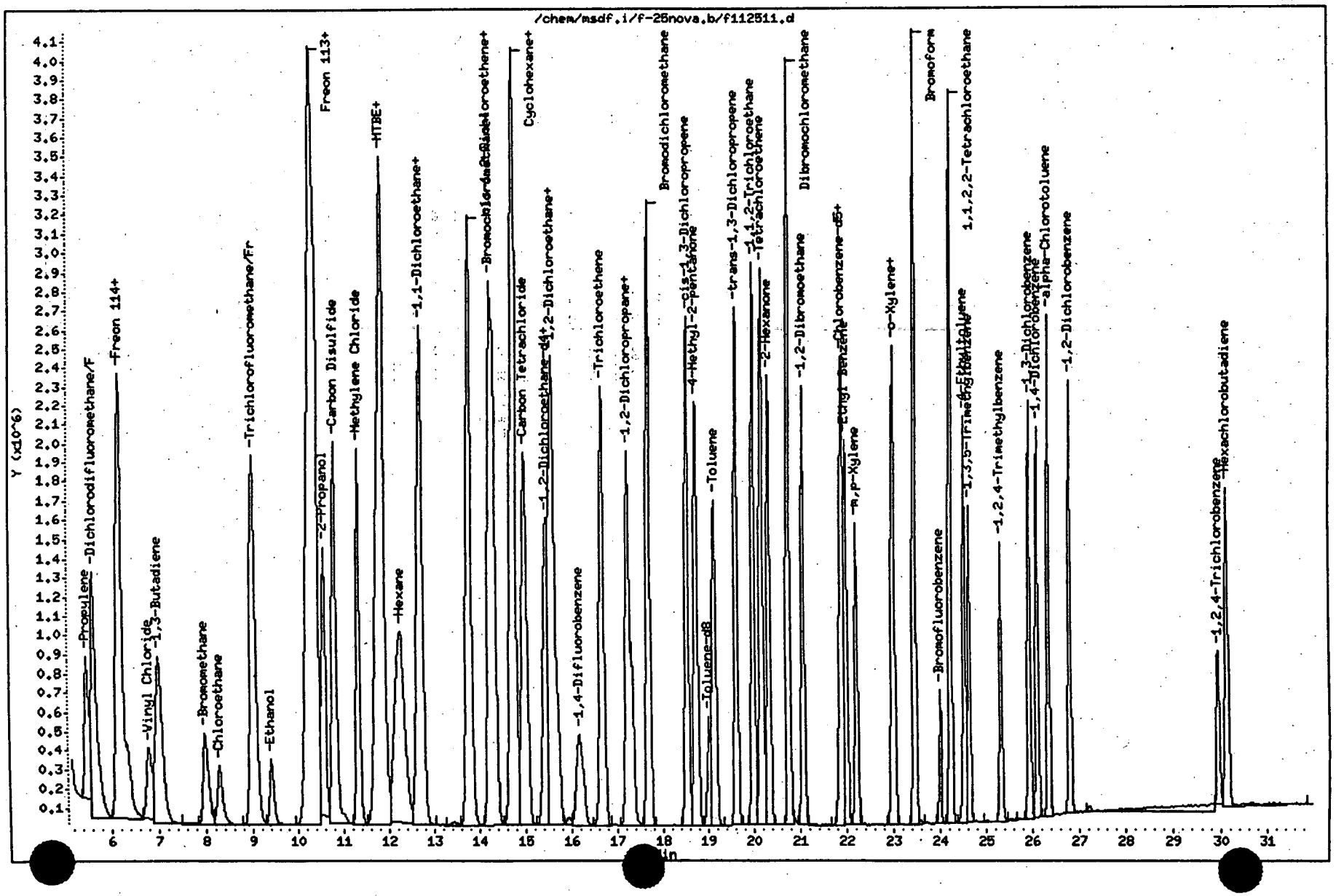
Data File: /chem/msdf.i/f-25nova.b/f112511.d
Date : 25-NOV-2002 20:24
Client ID: Level 4
Sample Info: 50ml #995-55

Instrument: msdf.i

Operator: xp

Column phase: RTx-624

Column diameter: 0.53



Air Toxics Ltd.

METHOD TO14

Data file : /chem/msdf.i/f-25nova.b/f112512.d
Lab Smp Id: ICAL Level 5 Client Smp ID: Level 5
Inj Date : 25-NOV-2002 21:01
Operator : xp Inst ID: msdf.i
Smp Info : 100ml #995-55
Misc Info : 200ppbv-100ppbv
Comment :
Method : /chem/msdf.i/f-25nova.b/to14n25a.m
Meth Date : 26-Nov-2002 05:39 kbadal Quant Type: ISTD
Cal Date : 25-NOV-2002 21:01 Cal File: f112512.d
Als bottle: 1 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
* 59 Bromochloromethane						CAS #: 74-97-5			
14.237	14.237	(1.000)	130	637210	25.0000		50.00- 150.00	100.00	8758
14.237	14.237	(0.000)	128	92736			28.91- 128.91	14.55	
14.237	14.237	(0.000)	49	198720			119.09- 219.09	31.19	
* 72 1,4-Difluorobenzene						CAS #: 540-36-3			
16.169	16.169	(1.000)	114	1635892	25.0000		50.00- 150.00	100.00	9457
16.169	16.169	(0.000)	88	30168			0.00- 66.80	1.84	
* 105 Chlorobenzene-d5						CAS #: 3114-55-4			
21.854	21.854	(1.000)	117	859346	25.0000		50.00- 150.00	100.00	
21.854	21.854	(1.000)	82	497621			7.91- 107.91	57.91	
$ 65 1,2-Dichloroethane-d4						CAS #: 17060-07-0			
15.424	15.424	(1.083)	65	971297	25.0000	25.331	50.00- 150.00	100.00	10000
15.424	15.424	(0.000)	67	79144			2.87- 102.87	8.15	
$ 91 Toluene-d8						CAS #: 2037-26-5			
19.012	19.012	(1.176)	98	1063000	25.0000	23.825	50.00- 150.00	100.00	9984
19.012	19.012	(0.000)	70	20328			0.00- 61.31	1.91	

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
$ 91 Toluene-d8 (continued)								
19.012	19.012 (0.000)	100	125016			19.54- 119.54	11.76	
$ 117 Bromofluorobenzene					CAS #: 460-00-4			
23.979	23.979 (1.097)	95	456499	25.0000	25.649	50.00- 150.00	100.00	8432
23.979	23.979 (0.000)	174	91528			19.39- 119.39	20.05	
23.979	23.979 (0.000)	176	86280			15.41- 115.41	18.90	
2 Propylene					CAS #: 115-07-1			
5.489	5.489 (0.386)	41	3710573	100.000	91.544	50.00- 150.00	100.00	7686
5.489	5.489 (0.000)	42	290978			18.29- 118.29	7.84	
5.489	5.489 (0.000)	39	340403			29.89- 129.89	9.17	
4 Dichlorodifluoromethane/Fr12					CAS #: 75-71-8			
5.654	5.654 (0.397)	85	11114340	100.000	100.15	50.00- 150.00	100.00	9038
5.654	5.654 (0.000)	87	399488			0.00- 82.32	3.59	
6 Freon 114					CAS #: 76-14-2			
6.206	6.206 (0.436)	135	7908792	100.000	98.263	50.00- 150.00	100.00	8834
6.206	6.206 (0.000)	137	305216			0.00- 82.00	3.86	
8 Chloromethane					CAS #: 74-87-3			
6.344	6.344 (0.446)	50	3192372	100.000	87.876	50.00- 150.00	100.00	
6.344	6.344 (0.446)	52	1005073			0.00- 81.48	31.48	
10 Vinyl Chloride					CAS #: 75-01-4			
6.813	6.813 (0.479)	62	4188757	100.000	100.02	50.00- 150.00	100.00	4490
6.813	6.813 (0.000)	64	144223			0.00- 82.85	3.44	
12 1,3-Butadiene					CAS #: 106-99-0			
7.034	7.034 (0.494)	54	4012344	100.000	99.865	50.00- 150.00	100.00	6545
7.034	7.034 (0.000)	39	413504			52.53- 152.53	10.31	
14 Bromomethane					CAS #: 74-83-9			
8.000	8.000 (0.562)	94	3023775	100.000	105.55	50.00- 150.00	100.00	6599
8.000	8.000 (0.000)	96	321378			44.27- 144.27	10.63	
15 Chloroethane					CAS #: 75-00-3			
8.331	8.331 (0.585)	64	2266446	100.000	109.02	50.00- 150.00	100.00	4082
8.331	8.331 (0.000)	66	80800			0.00- 81.70	3.57	
17 Trichlorofluoromethane/Fr11					CAS #: 75-69-4			
9.021	9.021 (0.634)	101	14924317	100.000	99.707	50.00- 150.00	100.00	9066
9.021	9.021 (0.000)	103	1018560			15.08- 115.08	6.82	
21 Ethanol					CAS #: 64-17-5			
9.435	9.435 (0.663)	45	2277796	100.000	99.105	50.00- 150.00	100.00	3570

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
21 Ethanol (continued)									
9.435	9.435	(0.000)	43	75300			0.00- 72.47	3.31	
9.435	9.435	(0.000)	46	120992			0.00- 86.11	5.31	
25 Freon 113						CAS #: 76-13-1			
10.291	10.291	(0.723)	151	9723088	100.000	99.640	50.00- 150.00	100.00	8654
10.291	10.291	(0.000)	153	446784			13.36- 113.36	4.60	
10.291	10.291	(0.000)	101	872896			73.79- 173.79	8.98	
26 1,1-Dichloroethene						CAS #: 75-35-4			
10.318	10.318	(0.725)	61	9404823	100.000	102.37	50.00- 150.00	100.00	8929
10.318	10.318	(0.000)	96	712902			7.26- 107.26	7.58	
10.318	10.318	(0.000)	98	457472			0.00- 86.74	4.86	
27 Acetone						CAS #: 67-64-1			
10.429	10.429	(0.732)	43	10507045	100.000	87.173	50.00- 150.00	100.00	6493
10.429	10.429	(0.000)	58	515783			0.00- 77.38	4.91	
31 Carbon Disulfide						CAS #: 75-15-0			
10.815	10.815	(0.760)	76	17375432	100.000	100.74	50.00- 150.00	100.00	7919
30 2-Propanol						CAS #: 67-63-0			
10.594	10.594	(0.744)	45	11096860	100.000	104.66	50.00- 150.00	100.00	6145
10.594	10.594	(0.000)	43	0			0.00- 50.00	0.00	
10.594	10.594	(0.000)	59	29928			0.00- 51.77	0.27	
36 Methylene Chloride						CAS #: 75-09-2			
11.339	11.339	(0.796)	49	6050687	100.000	94.335	50.00- 150.00	100.00	9295
11.339	11.339	(0.000)	84	842432			23.49- 123.49	13.92	
11.339	11.339	(0.000)	51	337408			0.00- 79.43	5.58	
39 MTBE						CAS #: 1634-04-4			
11.809	11.809	(0.829)	73	18822625	100.000	97.945	50.00- 150.00	100.00	6204
11.809	11.809	(0.000)	57	333408			0.00- 72.12	1.77	
11.809	11.809	(0.000)	41	336391			0.00- 72.32	1.79	
40 trans-1,2-Dichloroethene						CAS #: 156-60-5			
11.864	11.864	(0.833)	96	6329714	100.000	99.314	50.00- 150.00	100.00	8255
11.864	11.864	(0.000)	61	1208320			98.58- 198.58	19.09	
11.864	11.864	(0.000)	98	519744			13.91- 113.91	8.21	
41 Hexane						CAS #: 110-54-3			
12.278	12.278	(0.862)	57	7412323	100.000	96.408	50.00- 150.00	100.00	7287
12.278	12.278	(0.000)	43	237568			12.97- 112.97	3.21	
12.278	12.278	(0.000)	86	68934			0.00- 68.27	0.93	

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
.45 1,1-Dichloroethane					CAS #: 75-34-3			
12.719	12.719 (0.893)	63	10380538	100.000	101.82	50.00- 150.00	100.00	6409
12.719	12.719 (0.000)	65	466359			0.00- 80.80	4.49	
44 Vinyl Acetate					CAS #: 108-05-4			
12.692	12.692 (0.891)	43	17016997	100.000	101.36	50.00- 150.00	100.00	5784
12.692	12.692 (0.000)	42	122288			0.00- 57.30	0.72	
12.692	12.692 (0.000)	86	128800			0.00- 57.68	0.76	
54 cis-1,2-Dichloroethene					CAS #: 156-59-2			
13.796	13.796 (0.969)	61	7035663	100.000	101.82	50.00- 150.00	100.00	8240
13.796	13.796 (0.000)	96	831257			22.71- 122.71	11.81	
13.796	13.796 (0.000)	98	531648			0.00- 96.50	7.56	
51 2-Butanone					CAS #: 78-93-3			
13.740	13.740 (0.965)	43	13332729	100.000	100.78	50.00- 150.00	100.00	7907
13.740	13.740 (0.000)	72	388928			0.00- 71.62	2.92	
13.740	13.740 (0.000)	57	132381			0.00- 57.36	0.99	
57 Tetrahydrofuran					CAS #: 109-99-9			
14.237	14.237 (1.000)	42	7097599	100.000	102.50	50.00- 150.00	100.00	7499
14.237	14.237 (0.000)	71	441280			0.00- 87.80	6.22	
14.237	14.237 (0.000)	72	458691			0.00- 89.29	6.46	
60 Chloroform					CAS #: 67-66-3			
14.320	14.320 (1.006)	83	10370222	100.000	100.19	50.00- 150.00	100.00	9099
14.320	14.320 (0.000)	85	1065984			14.82- 114.82	10.28	
61 Cyclohexane					CAS #: 110-82-7			
14.762	14.762 (1.037)	84	6485002	100.000	95.505	50.00- 150.00	100.00	8261
14.762	14.762 (0.000)	56	830400			68.35- 168.35	12.80	
14.762	14.762 (0.000)	41	501349			21.45- 121.45	7.73	
62 1,1,1-Trichloroethane					CAS #: 71-55-6			
14.734	14.734 (1.035)	97	9443136	100.000	98.442	50.00- 150.00	100.00	7548
14.734	14.734 (0.000)	99	740352			14.80- 114.80	7.84	
64 Carbon Tetrachloride					CAS #: 56-23-5			
15.010	15.010 (1.054)	119	8469681	100.000	101.44	50.00- 150.00	100.00	8464
15.010	15.010 (0.000)	117	1008632			53.54- 153.54	11.91	
67 Benzene					CAS #: 71-43-2			
15.479	15.479 (0.957)	78	9937869	100.000	101.02	50.00- 150.00	100.00	9234
15.479	15.479 (0.000)	77	213665			0.00- 72.02	2.15	
70 1,2-Dichloroethane					CAS #: 107-06-2			
15.562	15.562 (0.962)	62	6789626	100.000	106.28	50.00- 150.00	100.00	6381

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
70 1,2-Dichloroethane (continued)									
15.562	15.562	(0.000)	64	338432			0.00- 82.15	4.98	
68 Heptane						CAS #: 142-82-5			
15.645	15.645	(0.968)	43	4885396	100.000	95.505	50.00- 150.00	100.00	7472
15.645	15.645	(0.000)	57	199225			1.05- 101.05	4.08	
15.645	15.645	(0.000)	71	202560			1.90- 101.90	4.15	
76 Trichloroethene						CAS #: 79-01-6			
16.693	16.693	(1.032)	95	4657420	100.000	102.65	50.00- 150.00	100.00	8624
16.693	16.693	(0.000)	130	693504			50.61- 150.61	14.89	
16.693	16.693	(0.000)	97	440384			13.89- 113.89	9.46	
81 1,2-Dichloropropane						CAS #: 78-87-5			
17.218	17.218	(1.065)	63	3944120	100.000	102.68	50.00- 150.00	100.00	8542
17.218	17.218	(0.000)	62	452736			22.38- 122.38	11.48	
17.218	17.218	(0.000)	41	420434			17.22- 117.22	10.66	
79 1,4-Dioxane						CAS #: 123-91-1			
17.328	17.328	(1.072)	88	3442687	100.000	105.26	50.00- 150.00	100.00	2827
17.328	17.328	(0.000)	58	415561			18.77- 118.77	12.07	
17.328	17.328	(0.000)	57	145920			0.00- 74.15	4.24	
84 Bromodichloromethane						CAS #: 75-27-4			
17.687	17.687	(1.094)	83	10680047	100.000	104.39	50.00- 150.00	100.00	9330
17.687	17.687	(0.000)	85	1348608			13.35- 113.35	12.63	
88 cis-1,3-Dichloropropene						CAS #: 10061-01-5			
18.543	18.543	(1.147)	75	7187581	100.000	105.76	50.00- 150.00	100.00	8588
18.543	18.543	(0.000)	77	476807			0.00- 81.64	6.63	
18.543	18.543	(0.000)	39	908086			10.27- 110.27	12.63	
89 4-Methyl-2-pentanone						CAS #: 108-10-1			
18.736	18.736	(1.159)	43	9164977	100.000	104.02	50.00- 150.00	100.00	6844
18.736	18.736	(0.000)	58	593152			0.00- 87.23	6.47	
18.736	18.736	(0.000)	85	240212			0.00- 65.08	2.62	
92 Toluene						CAS #: 108-88-3			
19.150	19.150	(1.184)	91	6567956	100.000	93.321	50.00- 150.00	100.00	8983
19.150	19.150	(0.000)	92	703360			12.36- 112.36	10.71	
93 trans-1,3-Dichloropropene						CAS #: 10061-02-6			
19.619	19.619	(0.898)	75	6562678	100.000	112.74	50.00- 150.00	100.00	
19.619	19.619	(0.898)	77	2067157			0.00- 81.50	31.50	
19.591	19.591	(0.896)	39	3848882			8.65- 108.65	58.65	

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
94 1,1,2-Trichloroethane						CAS #: 79-00-5			
20.005	20.005	(0.915)	97	4296539	100.000	107.84	50.00- 150.00	100.00	8974
20.005	20.005	(0.000)	99	561984			12.18- 112.18	13.08	
20.005	20.005	(0.000)	83	764224			34.55- 134.55	17.79	
96 Tetrachloroethene						CAS #: 127-18-4			
20.171	20.171	(0.923)	166	4124479	100.000	101.48	50.00- 150.00	100.00	8661
20.171	20.171	(0.000)	129	602031			22.75- 122.75	14.60	
20.171	20.171	(0.000)	131	580297			20.12- 120.12	14.07	
95 2-Hexanone						CAS #: 591-78-6			
20.309	20.309	(0.929)	43	7837459	100.000	110.62	50.00- 150.00	100.00	8432
20.309	20.309	(0.000)	58	823168			0.00- 99.99	10.50	
20.309	20.309	(0.000)	100	136128			0.00- 58.27	1.74	
99 Dibromochloromethane						CAS #: 124-48-1			
20.750	20.750	(0.949)	129	8624661	100.000	112.16	50.00- 150.00	100.00	8718
20.750	20.750	(0.000)	208	78352			0.00- 53.78	0.91	
100 1,2-Dibromoethane						CAS #: 106-93-4			
21.054	21.054	(0.963)	107	6437559	100.000	109.51	50.00- 150.00	100.00	5533
21.054	21.054	(0.000)	109	1491968			44.06- 144.06	23.18	
106 Chlorobenzene						CAS #: 108-90-7			
21.910	21.910	(1.003)	112	5181591	100.000	98.149	50.00- 150.00	100.00	9296
21.910	21.910	(0.000)	114	411776			0.00- 82.63	7.95	
21.910	21.910	(0.000)	77	723221			7.30- 107.30	13.96	
107 Ethyl Benzene						CAS #: 100-41-4			
21.992	21.992	(1.006)	106	2016498	100.000	98.852	50.00- 150.00	100.00	
21.992	21.992	(1.006)	91	6155798			255.27- 355.27	305.27	
109 m,p-Xylene						CAS #: 108-38-3			
22.185	22.185	(1.015)	106	1892771	100.000	100.63	50.00- 150.00	100.00	
22.185	22.185	(1.015)	91	3625248			141.53- 241.53	191.53	
111 o-Xylene						CAS #: 95-47-6			
22.958	22.958	(1.050)	106	1766417	100.000	99.703	50.00- 150.00	100.00	8962
22.958	22.958	(0.000)	91	951045			152.78- 252.78	53.84	
112 Styrene						CAS #: 100-42-5			
22.986	22.986	(1.052)	104	3272051	100.000	108.06	50.00- 150.00	100.00	9070
22.986	22.986	(0.000)	78	394076			0.00- 99.71	12.04	
114 Bromoform						CAS #: 75-25-2			
23.455	23.455	(1.073)	173	7412083	100.000	113.37	50.00- 150.00	100.00	9207

Data File: /chem/msdf.i/f-25nova.b/f112512.d
Report Date: 26-Nov-2002 05:39

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY	
114 Bromoform (continued)										
23.455	23.455	(0.000)	171	1078784			1.83- 101.83	14.55		
118 1,1,2,2-Tetrachloroethane						CAS #: 79-34-5				
24.228	24.228	(1.109)	83	7872814	100.000	103.10	50.00- 150.00	100.00	9228	
24.228	24.228	(0.000)	85	1374208			14.27- 114.27	17.46		
119 4-Ethyltoluene						CAS #: 622-96-8				
24.504	24.504	(1.121)	105	5111094	100.000	104.82	50.00- 150.00	100.00		
24.504	24.504	(1.121)	120	1520908			0.00- 79.76	29.76		
124 1,3,5-Trimethylbenzene						CAS #: 108-67-8				
24.614	24.614	(1.126)	105	3416395	100.000	105.74	50.00- 150.00	100.00		
24.614	24.614	(1.126)	120	1684336			0.00- 99.30	49.30		
129 1,2,4-Trimethylbenzene						CAS #: 95-63-6				
25.304	25.304	(1.158)	105	2829237	100.000	107.34	50.00- 150.00	100.00	8769	
25.304	25.304	(0.000)	120	400320			0.00- 96.31	14.15		
132 1,3-Dichlorobenzene						CAS #: 541-73-1				
25.939	25.939	(1.187)	146	3275031	100.000	96.725	50.00- 150.00	100.00		(TM)
0.000	1.000	(0.000)	148	0			0.00- 50.00	0.00		
0.000	1.000	(0.000)	111	0			0.00- 50.00	0.00		
135 1,4-Dichlorobenzene						CAS #: 106-46-7				
26.104	26.104	(1.194)	146	3187937	100.000	98.161	50.00- 150.00	100.00		
26.104	26.104	(1.194)	148	2017190			13.28- 113.28	63.28		
26.104	26.104	(1.194)	111	1189959			0.00- 87.33	37.33		
140 1,2-Dichlorobenzene						CAS #: 95-50-1				
26.794	26.794	(1.226)	146	3267344	100.000	96.631	50.00- 150.00	100.00	9340	
26.794	26.794	(0.000)	148	617394			13.35- 113.35	18.90		
26.794	26.794	(0.000)	111	394048			0.00- 90.43	12.06		
137 alpha-Chlorotoluene						CAS #: 100-44-7				
26.325	26.325	(1.205)	91	6228312	100.000	99.732	50.00- 150.00	100.00	9431	
26.325	26.325	(0.000)	126	414303			0.00- 70.72	6.65		
143 1,2,4-Trichlorobenzene						CAS #: 120-82-1				
29.968	29.968	(1.371)	180	1246035	100.000	103.60	50.00- 150.00	100.00	9243	
29.968	29.968	(0.000)	182	287168			45.20- 145.20	23.05		
144 Hexachlorobutadiene						CAS #: 87-68-3				
30.134	30.134	(1.379)	225	1691386	100.000	110.60	50.00- 150.00	100.00	9211	
30.134	30.134	(0.000)	223	218070			12.54- 112.54	12.89		

QC Flag Legend

T - Target compound detected outside RT window.
M - Compound response manually integrated.

Data File: /chem/msdf.i/f-25nova.b/f112512.d
Report Date: 26-Nov-2002 05:39

Air Toxics Ltd.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdf.i
Lab File ID: f112512.d
Lab Smp Id: ICAL Level 5
Analysis Type: VOA
Quant Type: ISTD
Operator: xp
Method File: /chem/msdf.i/f-25nova.b/to14n25a.m
Misc Info: 200ppbv-100ppbv

Calibration Date: 25-NOV-2002
Calibration Time: 20:24
Client Smp ID: Level 5
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
59 Bromochloromethan	632639	379583	885695	637210	0.72
72 1,4-Difluorobenze	1805412	1083247	2527577	1635892	-9.39
105 Chlorobenzene-d5	1005333	603200	1407466	859346	-14.52

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
59 Bromochloromethan	14.24	13.91	14.57	14.24	0.00
72 1,4-Difluorobenze	16.17	15.84	16.50	16.17	0.00
105 Chlorobenzene-d5	21.85	21.52	22.18	21.85	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

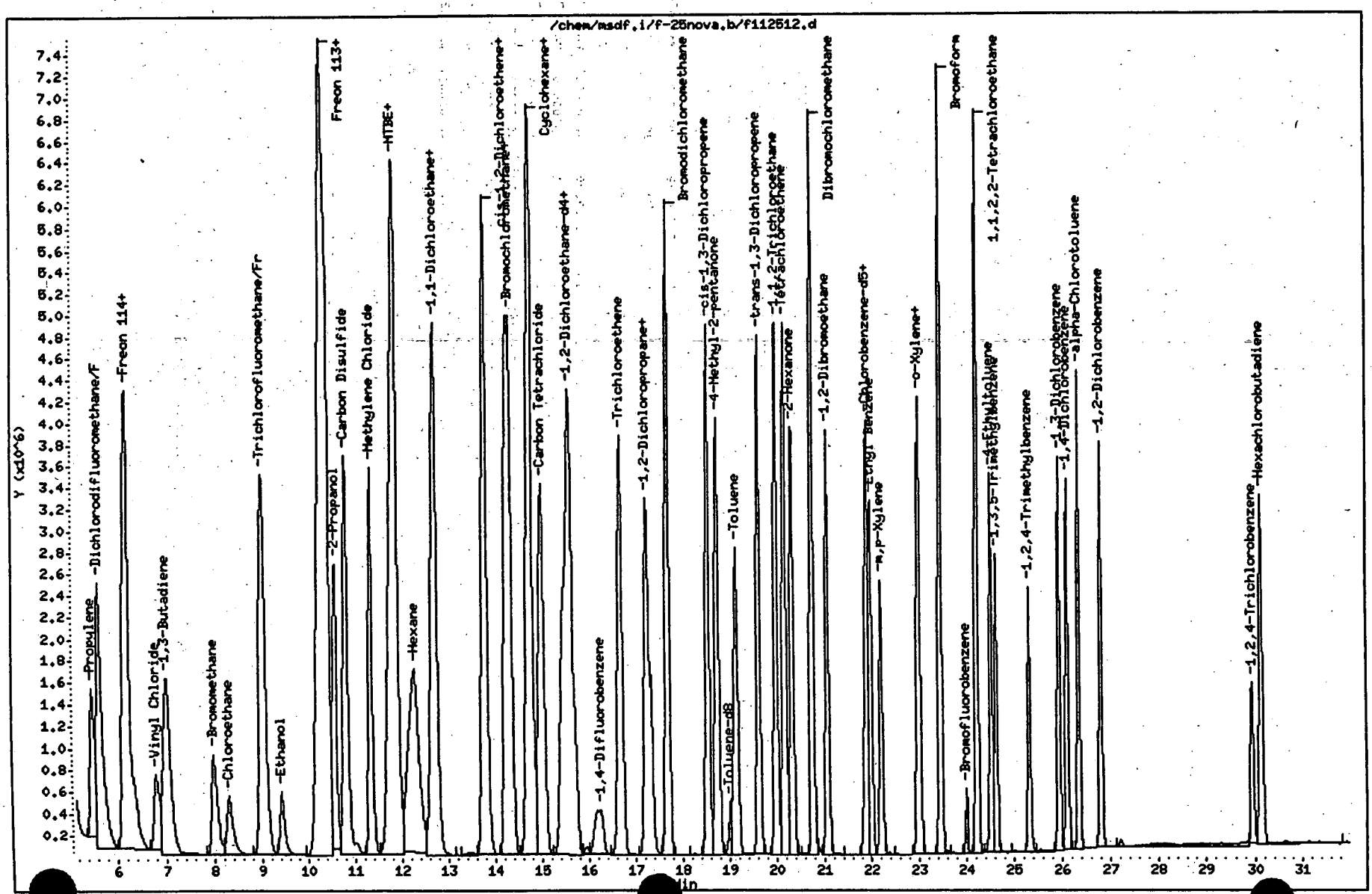
0160

Data File: /chem/msdf.i/f-25nova.b/f112512.d
Date : 25-NOV-2002 21:01
Client ID: Level 5
Sample Info: 100ml #995-55

Instrument: msdf.i

Operator: xp
Column diameter: 0.53

Column phase: RTx-624



Data File: /chem/msdf.i/f-25nova.b/f112513.d
Report Date: 26-Nov-2002 05:40

Air Toxics Ltd.

METHOD TO14

Data file : /chem/msdf.i/f-25nova.b/f112513.d
Lab Smp Id: ICAL Level 6 — Client Smp ID: Level 6
Inj Date : 25-NOV-2002 21:42 — Inst ID: msdf.i
Operator : xp
Smp Info : 200ml #995-55
Misc Info : 200ppbv-200ppbv
Comment :
Method : /chem/msdf.i/f-25nova.b/to14n25a.m
Meth Date : 26-Nov-2002 05:40 kbadal — Quant Type: ISTD
Cal Date : 25-NOV-2002 21:42 — Cal File: f112513.d
Als bottle: 1 — Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE — Compound Sublist: AT.sub
Target Version: 3.50 — Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable — Local Compound Variable

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
* 59 Bromochloromethane						CAS #: 74-97-5			
14.237	14.237	(1.000)	130	613968	25.0000		50.00- 150.00	100.00	8137
14.237	14.237	(0.000)	128	90568			31.39- 131.39	14.75	
14.237	14.237	(0.000)	49	216064			144.16- 244.16	35.19	
* 72 1,4-Difluorobenzene						CAS #: 540-36-3			
16.197	16.197	(1.000)	114	1431201	25.0000		50.00- 150.00	100.00	9397
16.197	16.197	(0.000)	88	27352			0.00- 66.19	1.91	
* 105 Chlorobenzene-d5						CAS #: 3114-55-4			
21.854	21.854	(1.000)	117	888625	25.0000		50.00- 150.00	100.00	
21.854	21.854	(1.000)	82	525390			9.12- 109.12	59.12	
$ 65 1,2-Dichloroethane-d4						CAS #: 17060-07-0			
15.424	15.424	(1.083)	65	911108	25.0000	24.661	50.00- 150.00	100.00	9956
15.424	15.424	(0.000)	67	77764			3.01- 103.01	8.54	
$ 91 Toluene-d8						CAS #: 2037-26-5			
19.012	19.012	(1.174)	98	1060353	25.0000	27.164	50.00- 150.00	100.00	9935
19.012	19.012	(0.000)	70	22320			0.00- 62.11	2.10	

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
$ 91 Toluene-d8 (continued)									
19.012	19.012	(0.000)	100	129098			20.02- 120.02	12.18	
$ 117 Bromofluorobenzene						CAS #: 460-00-4			
23.979	23.979	(1.097)	95	503875	25.0000	27.378	50.00- 150.00	100.00	8512
23.979	23.979	(0.000)	174	104808			20.80- 120.80	20.80	
23.979	23.979	(0.000)	176	99184			17.00- 117.00	19.68	
2 Propylene						CAS #: 115-07-1			
5.489	5.489	(0.386)	41	7309504	200.000	187.16	50.00- 150.00	100.00	7686
5.489	5.489	(0.000)	42	510939			17.73- 117.73	6.99	
5.489	5.489	(0.000)	39	608656			30.68- 130.68	8.33	
4 Dichlorodifluoromethane/Fr12						CAS #: 75-71-8			
5.627	5.627	(0.395)	85	21309090	200.000	199.29	50.00- 150.00	100.00	9038
5.627	5.627	(0.000)	87	694080			0.00- 81.83	3.26	
6 Freon 114						CAS #: 76-14-2			
6.179	6.179	(0.434)	135	14884886	200.000	191.94	50.00- 150.00	100.00	8932
6.179	6.179	(0.000)	137	562560			0.00- 81.94	3.78	
8 Chloromethane						CAS #: 74-87-3			
6.344	6.344	(0.446)	50	5801006	200.000	165.73	50.00- 150.00	100.00	
6.344	6.344	(0.446)	52	1879796			0.00- 82.40	32.40	
10 Vinyl Chloride						CAS #: 75-01-4			
6.786	6.786	(0.477)	62	8006756	200.000	198.43	50.00- 150.00	100.00	4478
6.786	6.786	(0.000)	64	256624			0.00- 81.90	3.21	
12 1,3-Butadiene						CAS #: 106-99-0			
7.006	7.006	(0.492)	54	7750616	200.000	200.21	50.00- 150.00	100.00	6554(A)
7.006	7.006	(0.000)	39	847947			54.21- 154.21	10.94	
14 Bromomethane						CAS #: 74-83-9			
7.972	7.972	(0.560)	94	6302736	200.000	228.34	50.00- 150.00	100.00	6603(A)
7.972	7.972	(0.000)	96	606552			45.52- 145.52	9.62	
15 Chloroethane						CAS #: 75-00-3			
8.331	8.331	(0.585)	64	4630095	200.000	231.15	50.00- 150.00	100.00	4019(A)
8.331	8.331	(0.000)	66	148864			0.00- 81.16	3.22	
17 Trichlorofluoromethane/Fr11						CAS #: 75-69-4			
9.021	9.021	(0.634)	101	28398110	200.000	196.90	50.00- 150.00	100.00	9068
9.021	9.021	(0.000)	103	1959936			14.73- 114.73	6.90	
21 Ethanol						CAS #: 64-17-5			
9.435	9.435	(0.663)	45	4592388	200.000	207.38	50.00- 150.00	100.00	3570(A)

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
21 Ethanol (continued)								
9.435	9.435 (0.000)	43	136732			0.00- 71.64	2.98	
9.435	9.435 (0.000)	46	231760			0.00- 86.68	5.05	
25 Freon 113					CAS #: 76-13-1			
10.291	10.291 (0.723)	151	18207660	200.000	193.65	50.00- 150.00	100.00	8662
10.291	10.291 (0.000)	153	845184			13.03- 113.03	4.64	
10.291	10.291 (0.000)	101	1662576			73.99- 173.99	9.13	
26 1,1-Dichloroethene					CAS #: 75-35-4			
10.318	10.318 (0.725)	61	17938580	200.000	202.64	50.00- 150.00	100.00	8935(A)
10.318	10.318 (0.000)	96	1369403			8.22- 108.22	7.63	
10.318	10.318 (0.000)	98	872896			0.00- 87.11	4.87	
27 Acetone					CAS #: 67-64-1			
10.429	10.429 (0.732)	43	20390954	200.000	175.58	50.00- 150.00	100.00	6493
10.429	10.429 (0.000)	58	980952			0.00- 77.93	4.81	
31 Carbon Disulfide					CAS #: 75-15-0			
10.815	10.815 (0.760)	76	33880235	200.000	203.86	50.00- 150.00	100.00	7957(A)
30 2-Propanol					CAS #: 67-63-0			
10.567	10.567 (0.742)	45	22317580	200.000	218.46	50.00- 150.00	100.00	6153(A)
10.567	10.567 (0.000)	43	0			0.00- 50.00	0.00	
10.567	10.567 (0.000)	59	72728			0.00- 52.15	0.33	
36 Methylene Chloride					CAS #: 75-09-2			
11.339	11.339 (0.796)	49	12178549	200.000	197.06	50.00- 150.00	100.00	9307
11.339	11.339 (0.000)	84	1356800			23.33- 123.33	11.14	
11.339	11.339 (0.000)	51	549103			0.00- 79.68	4.51	
39 MTBE					CAS #: 1634-04-4			
11.809	11.809 (0.829)	73	35583345	200.000	192.17	50.00- 150.00	100.00	6208
11.809	11.809 (0.000)	57	697856			0.00- 72.64	1.96	
11.809	11.809 (0.000)	41	691155			0.00- 72.42	1.94	
40 trans-1,2-Dichloroethene					CAS #: 156-60-5			
11.864	11.864 (0.833)	96	12101579	200.000	197.06	50.00- 150.00	100.00	8244
11.864	11.864 (0.000)	61	2297344			98.46- 198.46	18.98	
11.864	11.864 (0.000)	98	985792			13.70- 113.70	8.15	
41 Hexane					CAS #: 110-54-3			
12.305	12.305 (0.864)	57	14032533	200.000	189.42	50.00- 150.00	100.00	7286
12.305	12.305 (0.000)	43	501136			11.00- 111.00	3.57	
12.305	12.305 (0.000)	86	139779			0.00- 67.01	1.00	

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
45 1,1-Dichloroethane						CAS #: 75-34-3			
12.719	12.719	(0.893)	63	20045085	200.000	204.07	50.00- 150.00	100.00	6409(A)
12.719	12.719	(0.000)	65	867093			0.00- 80.49	4.33	
44 Vinyl Acetate						CAS #: 108-05-4			
12.692	12.692	(0.891)	43	33368217	200.000	206.28	50.00- 150.00	100.00	5812(A)
12.692	12.692	(0.000)	42	279576			0.00- 57.64	0.84	
12.692	12.692	(0.000)	86	285680			0.00- 57.81	0.86	
54 cis-1,2-Dichloroethene						CAS #: 156-59-2			
13.768	13.768	(0.967)	61	13517876	200.000	203.04	50.00- 150.00	100.00	8240(A)
13.768	13.768	(0.000)	96	1498343			19.07- 119.07	11.08	
13.768	13.768	(0.000)	98	959040			0.00- 94.21	7.09	
51 2-Butanone						CAS #: 78-93-3			
13.740	13.740	(0.965)	43	26217866	200.000	205.67	50.00- 150.00	100.00	7912(A)
13.740	13.740	(0.000)	72	785152			0.00- 71.48	2.99	
13.740	13.740	(0.000)	57	257722			0.00- 57.05	0.98	
57 Tetrahydrofuran						CAS #: 109-99-9			
14.237	14.237	(1.000)	42	14031970	200.000	210.32	50.00- 150.00	100.00	7500(A)
14.237	14.237	(0.000)	71	860096			0.00- 86.65	6.13	
14.237	14.237	(0.000)	72	890715			0.00- 87.95	6.35	
60 Chloroform						CAS #: 67-66-3			
14.320	14.320	(1.006)	83	19709552	200.000	197.63	50.00- 150.00	100.00	9084
14.320	14.320	(0.000)	85	2034176			14.19- 114.19	10.32	
61 Cyclohexane						CAS #: 110-82-7			
14.762	14.762	(1.037)	84	11822237	200.000	180.70	50.00- 150.00	100.00	8289
14.762	14.762	(0.000)	56	1602560			70.62- 170.62	13.56	
14.762	14.762	(0.000)	41	975069			23.39- 123.39	8.25	
62 1,1,1-Trichloroethane						CAS #: 71-55-6			
14.734	14.734	(1.035)	97	17163015	200.000	185.69	50.00- 150.00	100.00	7515
14.734	14.734	(0.000)	99	1380864			14.31- 114.31	8.05	
64 Carbon Tetrachloride						CAS #: 56-23-5			
15.010	15.010	(1.054)	119	15278860	200.000	189.92	50.00- 150.00	100.00	8461
15.010	15.010	(0.000)	117	1885200			53.70- 153.70	12.34	
67 Benzene						CAS #: 71-43-2			
15.479	15.479	(0.956)	78	18066792	200.000	209.92	50.00- 150.00	100.00	9331(A)
15.479	15.479	(0.000)	77	442944			0.00- 71.99	2.45	
70 1,2-Dichloroethane						CAS #: 107-06-2			
15.562	15.562	(0.961)	62	12882962	200.000	230.51	50.00- 150.00	100.00	6374(A)

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
70 1,2-Dichloroethane (continued)									
15.562	15.562	(0.000)	64	655232			0.00- 82.06	5.09	
68 Heptane						CAS #: 142-82-5			
15.645	15.645	(0.966)	43	10409371	200.000	232.60	50.00- 150.00	100.00	7612(A)
15.645	15.645	(0.000)	57	432370			0.00- 99.59	4.15	
15.645	15.645	(0.000)	71	442610			0.76- 100.76	4.25	
76 Trichloroethene						CAS #: 79-01-6			
16.693	16.693	(1.031)	95	8331033	200.000	209.88	50.00- 150.00	100.00	8671(A)
16.693	16.693	(0.000)	130	1337344			48.90- 148.90	16.05	
16.693	16.693	(0.000)	97	877440			14.89- 114.89	10.53	
81 1,2-Dichloropropane						CAS #: 78-87-5			
17.245	17.245	(1.065)	63	7184794	200.000	213.79	50.00- 150.00	100.00	8586(A)
17.245	17.245	(0.000)	62	843461			22.41- 122.41	11.74	
17.245	17.245	(0.000)	41	756003			14.90- 114.90	10.52	
79 1,4-Dioxane						CAS #: 123-91-1			
17.356	17.356	(1.072)	88	6576125	200.000	229.81	50.00- 150.00	100.00	2827(A)
17.356	17.356	(0.000)	58	776870			15.88- 115.88	11.81	
17.356	17.356	(0.000)	57	270467			0.00- 72.94	4.11	
84 Bromodichloromethane						CAS #: 75-27-4			
17.687	17.687	(1.092)	83	19717180	200.000	220.29	50.00- 150.00	100.00	9329(A)
17.687	17.687	(0.000)	85	2503680			13.41- 113.41	12.70	
88 cis-1,3-Dichloropropene						CAS #: 10061-01-5			
18.543	18.543	(1.145)	75	13190167	200.000	221.83	50.00- 150.00	100.00	8549(A)
18.543	18.543	(0.000)	77	909797			0.00- 81.59	6.90	
18.543	18.543	(0.000)	39	1765926			11.32- 111.32	13.39	
89 4-Methyl-2-pentanone						CAS #: 108-10-1			
18.736	18.736	(1.157)	43	17975095	200.000	233.20	50.00- 150.00	100.00	6846(A)
18.736	18.736	(0.000)	58	1192448			0.00- 87.05	6.63	
18.736	18.736	(0.000)	85	471168			0.00- 64.64	2.62	
92 Toluene						CAS #: 108-88-3			
19.150	19.150	(1.182)	91	13751696	200.000	223.34	50.00- 150.00	100.00	9032(A)
19.150	19.150	(0.000)	92	1476424			11.36- 111.36	10.74	
93 trans-1,3-Dichloropropene						CAS #: 10061-02-6			
19.619	19.619	(0.898)	75	11890869	200.000	197.54	50.00- 150.00	100.00	
19.619	19.619	(0.898)	77	3756199			0.00- 81.59	31.59	
19.619	19.619	(0.898)	39	7010587			8.96- 108.96	58.96	

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
70 1,2-Dichloroethane (continued)									
15.562	15.562	(0.000)	64	655232			0.00- 82.06	5.09	
68 Heptane						CAS #: 142-82-5			
15.645	15.645	(0.966)	43	10409371	200.000	232.60	50.00- 150.00	100.00	7612(A)
15.645	15.645	(0.000)	57	432370			0.00- 99.59	4.15	
15.645	15.645	(0.000)	71	442610			0.76- 100.76	4.25	
76 Trichloroethene						CAS #: 79-01-6			
16.693	16.693	(1.031)	95	8331033	200.000	209.88	50.00- 150.00	100.00	8671(A)
16.693	16.693	(0.000)	130	1337344			48.90- 148.90	16.05	
16.693	16.693	(0.000)	97	877440			14.89- 114.89	10.53	
81 1,2-Dichloropropane						CAS #: 78-87-5			
17.245	17.245	(1.065)	63	7184794	200.000	213.79	50.00- 150.00	100.00	8586(A)
17.245	17.245	(0.000)	62	843461			22.41- 122.41	11.74	
17.245	17.245	(0.000)	41	756003			14.90- 114.90	10.52	
79 1,4-Dioxane						CAS #: 123-91-1			
17.356	17.356	(1.072)	88	6576125	200.000	229.81	50.00- 150.00	100.00	2827(A)
17.356	17.356	(0.000)	58	776870			15.88- 115.88	11.81	
17.356	17.356	(0.000)	57	270467			0.00- 72.94	4.11	
84 Bromodichloromethane						CAS #: 75-27-4			
17.687	17.687	(1.092)	83	19717180	200.000	220.29	50.00- 150.00	100.00	9329(A)
17.687	17.687	(0.000)	85	2503680			13.41- 113.41	12.70	
88 cis-1,3-Dichloropropene						CAS #: 10061-01-5			
18.543	18.543	(1.145)	75	13190167	200.000	221.83	50.00- 150.00	100.00	8549(A)
18.543	18.543	(0.000)	77	909797			0.00- 81.59	6.90	
18.543	18.543	(0.000)	39	1765926			11.32- 111.32	13.39	
89 4-Methyl-2-pentanone						CAS #: 108-10-1			
18.736	18.736	(1.157)	43	17975095	200.000	233.20	50.00- 150.00	100.00	6846(A)
18.736	18.736	(0.000)	58	1192448			0.00- 87.05	6.63	
18.736	18.736	(0.000)	85	471168			0.00- 64.64	2.62	
92 Toluene						CAS #: 108-88-3			
19.150	19.150	(1.182)	91	13751696	200.000	223.34	50.00- 150.00	100.00	9032(A)
19.150	19.150	(0.000)	92	1476424			11.36- 111.36	10.74	
93 trans-1,3-Dichloropropene						CAS #: 10061-02-6			
19.619	19.619	(0.898)	75	11890869	200.000	197.54	50.00- 150.00	100.00	
19.619	19.619	(0.898)	77	3756199			0.00- 81.59	31.59	
19.619	19.619	(0.898)	39	7010587			8.96- 108.96	58.96	

Data File: /chem/msdf.i/f-25nova.b/f112513.d
Report Date: 26-Nov-2002 05:40

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
94 1,1,2-Trichloroethane						CAS #: 79-00-5			
20.005	20.005	(0.915)	97	7636918	200.000	185.36	50.00- 150.00	100.00	8981
20.005	20.005	(0.000)	99	1036672			11.99- 111.99	13.57	
20.005	20.005	(0.000)	83	1438566			36.03- 136.03	18.84	
96 Tetrachloroethene						CAS #: 127-18-4			
20.171	20.171	(0.923)	166	7946147	200.000	189.07	50.00- 150.00	100.00	8689
20.171	20.171	(0.000)	129	1163085			22.60- 122.60	14.64	
20.171	20.171	(0.000)	131	1116144			19.67- 119.67	14.05	
95 2-Hexanone						CAS #: 591-78-6			
20.309	20.309	(0.929)	43	16091250	200.000	219.64	50.00- 150.00	100.00	8438(A)
20.309	20.309	(0.000)	58	1717248			0.11- 100.11	10.67	
20.309	20.309	(0.000)	100	286592			0.00- 58.36	1.78	
99 Dibromochloromethane						CAS #: 124-48-1			
20.750	20.750	(0.949)	129	15007196	200.000	188.73	50.00- 150.00	100.00	8633
20.750	20.750	(0.000)	208	135872			0.00- 53.86	0.91	
100 1,2-Dibromoethane						CAS #: 106-93-4			
21.054	21.054	(0.963)	107	11279880	200.000	185.57	50.00- 150.00	100.00	5533
21.054	21.054	(0.000)	109	2587494			44.08- 144.08	22.94	
106 Chlorobenzene						CAS #: 108-90-7			
21.910	21.910	(1.003)	112	10912964	200.000	199.90	50.00- 150.00	100.00	9323
21.910	21.910	(0.000)	114	838592			0.00- 82.17	7.68	
21.910	21.910	(0.000)	77	1513709			8.07- 108.07	13.87	
107 Ethyl Benzene						CAS #: 100-41-4			
21.992	21.992	(1.006)	106	4443294	200.000	210.64	50.00- 150.00	100.00	(A)
21.992	21.992	(1.006)	91	13702307			258.38- 358.38	308.38	
109 m,p-Xylene						CAS #: 108-38-3			
22.186	22.186	(1.015)	106	4235306	200.000	217.76	50.00- 150.00	100.00	(A)
22.186	22.186	(1.015)	91	8086945			140.94- 240.94	190.94	
111 o-Xylene						CAS #: 95-47-6			
22.958	22.958	(1.050)	106	3885085	200.000	212.06	50.00- 150.00	100.00	8874(A)
22.958	22.958	(0.000)	91	2129166			153.21- 253.21	54.80	
112 Styrene						CAS #: 100-42-5			
22.986	22.986	(1.052)	104	7382673	200.000	235.77	50.00- 150.00	100.00	9149(A)
22.986	22.986	(0.000)	78	910193			0.00- 99.09	12.33	
114 Bromoform						CAS #: 75-25-2			
23.455	23.455	(1.073)	173	13003399	200.000	192.33	50.00- 150.00	100.00	9220

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY	
114 Bromoform (continued)										
23.455	23.455	(0.000)	171	1844224			2.09- 102.09	14.18		
118 1,1,2,2-Tetrachloroethane						CAS #: 79-34-5				
24.228	24.228	(1.109)	83	14933695	200.000	189.13	50.00- 150.00	100.00	9222	
24.228	24.228	(0.000)	85	2575175			14.71- 114.71	17.24		
119 4-Ethyltoluene						CAS #: 622-96-8				
24.504	24.504	(1.121)	105	11172889	200.000	221.60	50.00- 150.00	100.00		(A)
24.504	24.504	(1.121)	120	3326607			0.00- 79.77	29.77		
124 1,3,5-Trimethylbenzene						CAS #: 108-67-8				
24.614	24.614	(1.126)	105	7404610	200.000	221.62	50.00- 150.00	100.00		(A)
24.614	24.614	(1.126)	120	3588323			0.00- 98.46	48.46		
129 1,2,4-Trimethylbenzene						CAS #: 95-63-6				
25.304	25.304	(1.158)	105	6371513	200.000	233.76	50.00- 150.00	100.00	8723	(A)
25.304	25.304	(0.000)	120	890048			0.00- 95.56	13.97		
132 1,3-Dichlorobenzene						CAS #: 541-73-1				
25.939	25.939	(1.187)	146	7170824	200.000	204.81	50.00- 150.00	100.00		(AM)
25.249	25.249	(1.155)	148	774			0.00- 50.01	0.01		
24.642	24.642	(1.128)	111	859			0.00- 50.01	0.01		
135 1,4-Dichlorobenzene						CAS #: 106-46-7				
26.104	26.104	(1.194)	146	6996142	200.000	208.32	50.00- 150.00	100.00		(A)
26.104	26.104	(1.194)	148	4431967			13.35- 113.35	63.35		
26.104	26.104	(1.194)	111	2603616			0.00- 87.22	37.22		
140 1,2-Dichlorobenzene						CAS #: 95-50-1				
26.794	26.794	(1.226)	146	7123209	200.000	203.72	50.00- 150.00	100.00	9366	(A)
26.794	26.794	(0.000)	148	1356487			13.85- 113.85	19.04		
26.794	26.794	(0.000)	111	849366			0.00- 89.98	11.92		
137 alpha-Chlorotoluene						CAS #: 100-44-7				
26.325	26.325	(1.205)	91	14239772	200.000	220.50	50.00- 150.00	100.00	9463	(A)
26.325	26.325	(0.000)	126	926208			0.00- 70.42	6.50		
143 1,2,4-Trichlorobenzene						CAS #: 120-82-1				
29.968	29.968	(1.371)	180	3115090	200.000	250.46	50.00- 150.00	100.00	9272	(A)
29.968	29.968	(0.000)	182	704192			44.47- 144.47	22.61		
144 Hexachlorobutadiene						CAS #: 87-68-3				
30.134	30.134	(1.379)	225	3969155	200.000	250.98	50.00- 150.00	100.00	9229	(AH)
30.134	30.134	(0.000)	223	516323			13.94- 113.94	13.01		

Data File: /chem/msdf.i/f-25nova.b/f112513.d
Report Date: 26-Nov-2002 05:40

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.

Data File: /chem/msdf.i/f-25nova.b/f112513.d
Report Date: 26-Nov-2002 05:40

Air Toxics Ltd.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdf.i
Lab File ID: f112513.d
Lab Smp Id: ICAL Level 6
Analysis Type: VOA
Quant Type: ISTD
Operator: xp
Method File: /chem/msdf.i/f-25nova.b/to14n25a.m
Misc Info: 200ppbv-200ppbv

Calibration Date: 25-NOV-2002
Calibration Time: 20:24
Client Smp ID: Level 6
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
59 Bromochloromethan	632639	379583	885695	613968	-2.95
72 1,4-Difluorobenze	1805412	1083247	2527577	1431201	-20.73
105 Chlorobenzene-d5	1005333	603200	1407466	888625	-11.61

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
59 Bromochloromethan	14.24	13.91	14.57	14.24	0.00
72 1,4-Difluorobenze	16.17	15.84	16.50	16.20	0.17
105 Chlorobenzene-d5	21.85	21.52	22.18	21.85	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

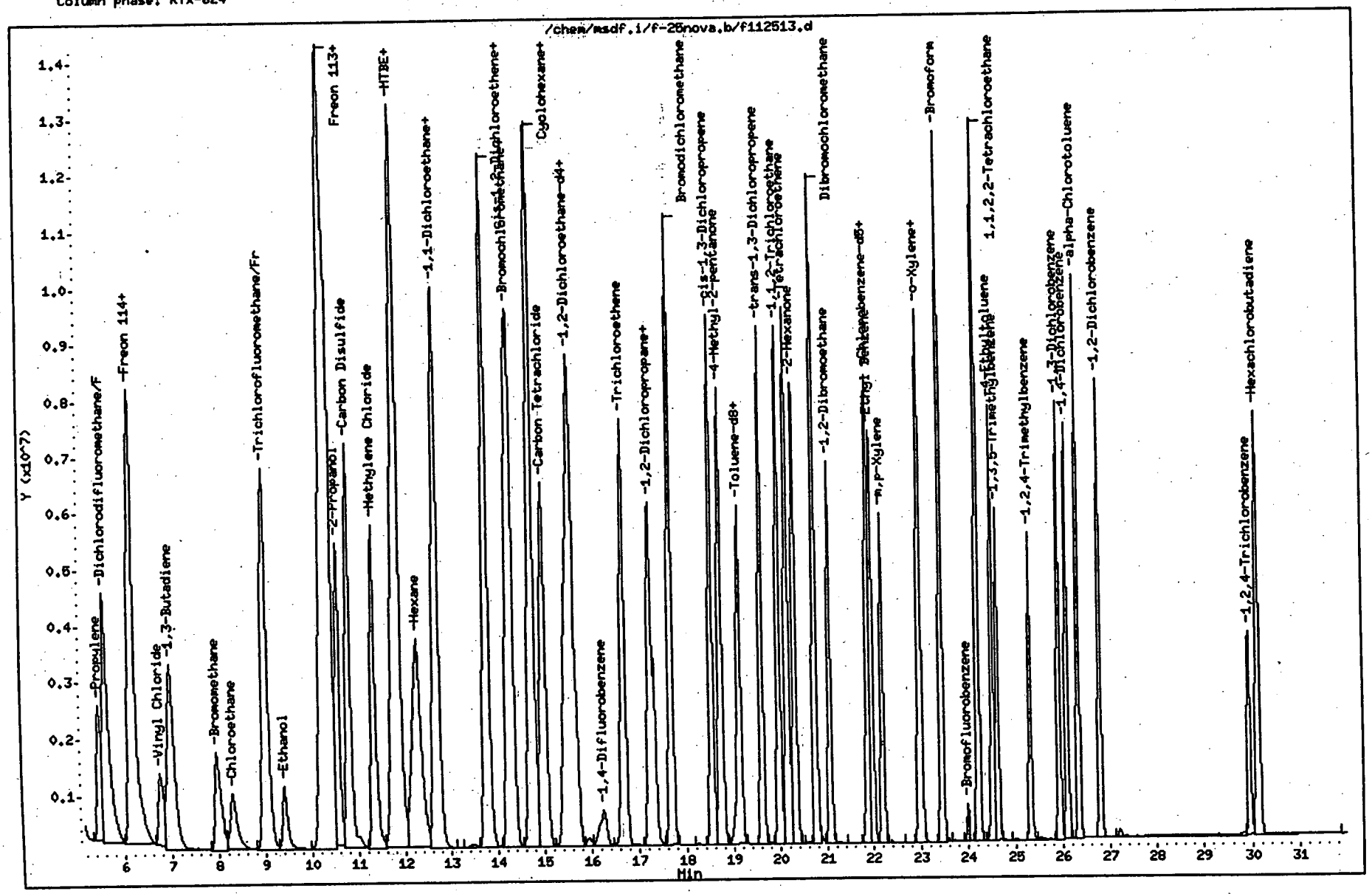
0170

Data File: /chem/msdf.i/f-26nova.b/f112513.d
Date : 26-NOV-2002 21:42
Client ID: Level 6
Sample Info: 200ml #9965-55

Column phase: RTx-624

Instrument: msdf.i

Operator: xp
Column diameter: 0.53



Data File: /chem/msdf.i/f-11dec.b/f121104.d
Report Date: 11-Dec-2002 10:57

Air Toxics Ltd.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: msdf.i Injection Date: 11-DEC-2002 09:38
Analysis Type: AIR Init. Cal. Times: 18:10 10:49
Lab Sample ID: Method Spike Quant Type: ISTD
Method: /var/chem/msdf.i/f-11dec.b/to14n25c.m

COMPOUND	RRF / AMOUNT	RF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
$ 65 1,2-Dichloroethane-d4	1.50437	1.49889	0.010	0.36465	30.00000	Averaged
$ 91 Toluene-d8	0.68185	0.63530	0.010	6.82725	30.00000	Averaged
$ 117 Bromofluorobenzene	0.51777	0.51936	0.010	-0.30728	30.00000	Averaged
2 Propylene	1.59027	1.38196	0.010	13.09924	30.00000	Averaged
4 Dichlorodifluoromethane/Fr1	4.35391	4.14328	0.010	4.83774	30.00000	Averaged
6 Freon 114	3.15774	2.82127	0.010	10.65532	30.00000	Averaged
8 Chloromethane	1.42527	1.42085	0.010	0.31028	30.00000	Averaged
10 Vinyl Chloride	1.64299	1.63763	0.010	0.32618	30.00000	Averaged
12 1,3-Butadiene	1.57630	1.63861	0.010	-3.95247	30.00000	Averaged
14 Bromomethane	1.12391	1.11002	0.010	1.23586	30.00000	Averaged
15 Chloroethane	0.81562	0.79305	0.010	2.76708	30.00000	Averaged
17 Trichlorofluoromethane/Fr11	5.87255	5.66009	0.010	3.61786	30.00000	Averaged
21 Ethanol	0.90173	0.84891	0.010	5.85773	30.00000	Averaged
25 Freon 113	3.82847	3.19657	0.010	16.50545	30.00000	Averaged
26 1,1-Dichloroethene	3.60452	3.65927	0.010	-1.51886	30.00000	Averaged
27 Acetone	4.60686	4.26462	0.010	7.42883	30.00000	Averaged
31 Carbon Disulfide	6.76714	6.55330	0.010	3.15988	30.00000	Averaged
30 2-Propanol	4.15973	4.09040	0.010	1.66667	30.00000	Averaged
36 Methylene Chloride	2.51645	2.36125	0.010	6.16738	30.00000	Averaged
39 MTBE	7.53972	6.31694	0.010	16.21784	30.00000	Averaged
40 trans-1,2-Dichloroethene	2.50051	2.29709	0.010	8.13519	30.00000	Averaged
41 Hexane	3.01647	2.69505	0.010	10.65531	30.00000	Averaged
45 1,1-Dichloroethane	3.99967	3.96988	0.010	0.74492	30.00000	Averaged
44 Vinyl Acetate	6.58671	6.04544	0.010	8.21763	30.00000	Averaged
54 cis-1,2-Dichloroethene	2.71098	2.66564	0.010	1.67256	30.00000	Averaged
51 2-Butanone	5.19054	4.62491	0.010	10.89741	30.00000	Averaged
57 Tetrahydrofuran	2.71664	2.53264	0.010	6.77307	30.00000	Averaged
60 Chloroform	4.06076	3.71726	0.010	8.45896	30.00000	Averaged
61 Cyclohexane	2.66404	2.18426	0.010	18.00971	30.00000	Averaged
62 1,1,1-Trichloroethane	3.76350	3.10149	0.010	17.59037	30.00000	Averaged
64 Carbon Tetrachloride	3.27572	2.73556	0.010	16.48978	30.00000	Averaged
67 Benzene	1.50336	1.48038	0.010	1.52869	30.00000	Averaged
70 1,2-Dichloroethane	0.97628	1.02034	0.010	-4.51393	30.00000	Averaged
68 Heptane	0.78173	0.73931	0.010	5.42656	30.00000	Averaged
76 Trichloroethene	0.69338	0.68292	0.010	1.50871	30.00000	Averaged

Air Toxics Ltd.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: msdf.i Injection Date: 11-DEC-2002 09:38
Analysis Type: AIR Init. Cal. Times: 18:10 10:49
Lab Sample ID: Method Spike Quant Type: ISTD
Method: /var/chem/msdf.i/f-11dec.b/to14n25c.m

COMPOUND	RRF / AMOUNT	RF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
81 1,2-Dichloropropane	0.58703	0.59002	0.010	-0.50981	30.00000	Averaged
79 1,4-Dioxane	0.49985	0.46318	0.010	7.33572	30.00000	Averaged
84 Bromodichloromethane	1.56345	1.49274	0.010	4.52253	30.00000	Averaged
88 cis-1,3-Dichloropropene	1.03863	1.05244	0.010	-1.32962	30.00000	Averaged
89 4-Methyl-2-pentanone	1.34645	1.38820	0.010	-3.10126	30.00000	Averaged
92 Toluene	1.07556	0.93920	0.010	12.67817	30.00000	Averaged
93 trans-1,3-Dichloropropene	1.69351	1.92884	0.010	-13.89559	30.00000	Averaged
94 1,1,2-Trichloroethane	1.15907	1.24264	0.010	-7.20975	30.00000	Averaged
96 Tetrachloroethene	1.18238	1.17760	0.010	0.40394	30.00000	Averaged
95 2-Hexanone	2.06110	2.23725	0.010	-8.54672	30.00000	Averaged
99 Dibromochloromethane	2.23707	2.45502	0.010	-9.74305	30.00000	Averaged
100 1,2-Dibromoethane	1.71012	1.86615	0.010	-9.12422	30.00000	Averaged
106 Chlorobenzene	1.53585	1.43888	0.010	6.31361	30.00000	Averaged
107 Ethyl Benzene	0.59345	0.54558	0.010	8.06660	30.00000	Averaged
109 m,p-Xylene	0.54719	0.52451	0.010	4.14424	30.00000	Averaged
111 o-Xylene	0.51541	0.49417	0.010	4.12261	30.00000	Averaged
112 Styrene	0.88093	0.85140	0.010	3.35217	30.00000	Averaged
114 Bromoform	1.90207	2.11143	0.010	-11.00726	30.00000	Averaged
118 1,1,2,2-Tetrachloroethane	2.22137	2.26316	0.010	-1.88102	30.00000	Averaged
119 4-Ethyltoluene	1.41846	1.36291	0.010	3.91657	30.00000	Averaged
124 1,3,5-Trimethylbenzene	0.93996	0.99027	0.010	-5.35311	30.00000	Averaged
129 1,2,4-Trimethylbenzene	0.76682	0.83438	0.010	-8.81009	30.00000	Averaged
132 1,3-Dichlorobenzene	0.98502	0.92799	0.010	5.79003	30.00000	Averaged
135 1,4-Dichlorobenzene	0.94480	0.88880	0.010	5.92731	30.00000	Averaged
140 1,2-Dichlorobenzene	0.98368	0.92760	0.010	5.70106	30.00000	Averaged
137 alpha-Chlorotoluene	1.81681	1.65241	0.010	9.04851	30.00000	Averaged
143 1,2,4-Trichlorobenzene	0.34991	0.44845	0.010	-28.16146	30.00000	Averaged
144 Hexachlorobutadiene	0.44491	0.41981	0.010	5.64050	30.00000	Averaged

Air Toxics Ltd.

METHOD TO14

Data file : /chem/msdf.i/f-11dec.b/f121104.d
Lab Smp Id: Method Spike
Client Smp ID: Method Spike
Inj Date : 11-DEC-2002 09:38
Operator : ct
Inst ID: msdf.i
Smp Info : 100mL #995-55
Misc Info : 50ppbv (100ppbv) notics
Comment :
Method : /var/chem/msdf.i/f-11dec.b/to14n25c.m
Meth Date : 11-Dec-2002 10:57 ctaylor
Quant Type: ISTD
Cal Date : 09-DEC-2002 10:49
Cal File: f120907.d
Als bottle: 1
Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE
Compound Sublist: AT.sub
Target Version: 3.50
Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
* 59 Bromochloromethane						CAS #: 74-97-5			
14.265	14.265	(1.000)	130	679915	25.0000		80.00- 120.00	100.00	9050
14.265	14.265	(0.000)	128	96952			29.33- 129.33	14.26	
14.265	14.265	(0.000)	49	211008			122.65- 222.65	31.03	
* 72 1,4-Difluorobenzene						CAS #: 540-36-3			
16.169	16.169	(1.000)	114	1573788	25.0000		80.00- 120.00	100.00	9448
16.169	16.169	(0.000)	88	27944			0.00- 66.58	1.78	
* 105 Chlorobenzene-d5						CAS #: 3114-55-4			
21.854	21.854	(1.000)	117	798262	25.0000		80.00- 120.00	100.00	
21.854	21.854	(1.000)	82	478396			6.52- 106.52	59.93	
$ 65 1,2-Dichloroethane-d4						CAS #: 17060-07-0			
15.452	15.452	(1.083)	65	1019117	25.0000	24.909	80.00- 120.00	100.00	10000
15.452	15.452	(0.000)	67	68608			1.64- 101.64	6.73	
$ 91 Toluene-d8						CAS #: 2037-26-5			
19.012	19.012	(1.176)	98	999827	25.0000	23.293	80.00- 120.00	100.00	9899
19.012	19.012	(0.000)	70	21488			0.00- 62.97	2.15	

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
$ 91 Toluene-d8 (continued)									
19.012	19.012	(0.000)	100	117639			18.10- 118.10	11.77	
$ 117 Bromofluorobenzene						CAS #: 460-00-4			
23.979	23.979	(1.097)	95	414588	25.0000	25.077	80.00- 120.00	100.00	8335
23.979	23.979	(0.000)	174	76776			15.71- 115.71	18.52	
23.979	23.979	(0.000)	176	73096			12.57- 112.57	17.63	
2 Propylene						CAS #: 115-07-1			
5.516	5.516	(0.387)	41	1879224	50.0000	43.450	80.00- 120.00	100.00	7686
5.516	5.516	(0.000)	42	157888			0.00- 70.46	8.40	
5.516	5.516	(0.000)	39	185813			52.89- 152.89	9.89	
4 Dichlorodifluoromethane/Fr12						CAS #: 75-71-8			
5.654	5.654	(0.396)	85	5634158	50.0000	47.581	80.00- 120.00	100.00	9037
5.654	5.654	(0.000)	87	207424			0.00- 82.26	3.68	
6 Freon 114						CAS #: 76-14-2			
6.234	6.234	(0.437)	135	3836447	50.0000	44.672	80.00- 120.00	100.00	8946
6.234	6.234	(0.000)	137	124360			0.00- 82.04	3.24	
8 Chloromethane						CAS #: 74-87-3			
6.372	6.372	(0.447)	50	1932114	50.0000	49.845	80.00- 120.00	100.00	
6.372	6.372	(0.447)	52	566397			0.00- 94.08	29.31	
10 Vinyl Chloride						CAS #: 75-01-4			
6.841	6.841	(0.480)	62	2226902	50.0000	49.837	80.00- 120.00	100.00	4484
6.841	6.841	(0.000)	64	79155			0.00- 79.95	3.55	
12 1,3-Butadiene						CAS #: 106-99-0			
7.089	7.089	(0.497)	54	2228228	50.0000	51.976	80.00- 120.00	100.00	6479
7.089	7.089	(0.000)	39	197005			56.36- 156.36	8.84	
14 Bromomethane						CAS #: 74-83-9			
8.000	8.000	(0.561)	94	1509442	50.0000	49.382	80.00- 120.00	100.00	6601
8.000	8.000	(0.000)	96	176706			44.87- 144.87	11.71	
15 Chloroethane						CAS #: 75-00-3			
8.359	8.359	(0.586)	64	1078416	50.0000	48.616	80.00- 120.00	100.00	4019
8.359	8.359	(0.000)	66	38848			0.00- 79.89	3.60	
17 Trichlorofluoromethane/Fr11						CAS #: 75-69-4			
9.104	9.104	(0.638)	101	7696761	50.0000	48.191	80.00- 120.00	100.00	9069
9.104	9.104	(0.000)	103	436288			14.67- 114.67	5.67	
21 Ethanol						CAS #: 64-17-5			
9.463	9.463	(0.663)	45	1154371	50.0000	47.071	80.00- 120.00	100.00	3548

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
21 Ethanol (continued)									
9.463	9.463	(0.000)	43	35138			0.00- 50.00	3.04	
9.463	9.463	(0.000)	46	58920			0.00- 85.14	5.10	
25 Freon 113						CAS #: 76-13-1			
10.346	10.346	(0.725)	151	4346788	50.0000	41.747	80.00- 120.00	100.00	8689
10.346	10.346	(0.000)	153	171840			11.99- 111.99	3.95	
10.346	10.346	(0.000)	101	340672			72.90- 172.90	7.84	
26 1,1-Dichloroethene						CAS #: 75-35-4			
10.374	10.374	(0.727)	61	4975984	50.0000	50.759	80.00- 120.00	100.00	8891
10.374	10.374	(0.000)	96	298804			5.85- 105.85	6.00	
10.374	10.374	(0.000)	98	195840			0.00- 86.60	3.94	
27 Acetone						CAS #: 67-64-1			
10.456	10.456	(0.733)	43	5799165	50.0000	46.286	80.00- 120.00	100.00	6529(M)
10.456	10.456	(0.733)	58	231024			0.00- 76.68	3.98	
31 Carbon Disulfide						CAS #: 75-15-0			
10.870	10.870	(0.762)	76	8911379	50.0000	48.420	80.00- 120.00	100.00	7923
30 2-Propanol						CAS #: 67-63-0			
10.594	10.594	(0.743)	45	5562247	50.0000	49.167	80.00- 120.00	100.00	7491
10.594	10.594	(0.000)	43	150371			0.00- 50.00	2.70	
10.594	10.594	(0.000)	59	14173			0.00- 51.87	0.25	
36 Methylene Chloride						CAS #: 75-09-2			
11.339	11.339	(0.795)	49	3210897	50.0000	46.916	80.00- 120.00	100.00	9469
11.339	11.339	(0.000)	84	408768			17.09- 117.09	12.73	
11.339	11.339	(0.000)	51	180416			0.00- 76.78	5.62	
39 MTBE						CAS #: 1634-04-4			
11.809	11.809	(0.828)	73	8589968	50.0000	41.891	80.00- 120.00	100.00	6284
11.809	11.809	(0.000)	57	137513			0.00- 72.41	1.60	
11.809	11.809	(0.000)	41	148494			0.00- 72.38	1.73	
40 trans-1,2-Dichloroethene						CAS #: 156-60-5			
11.919	11.919	(0.836)	96	3123653	50.0000	45.932	80.00- 120.00	100.00	8261
11.919	11.919	(0.000)	61	483584			102.17- 202.17	15.48	
11.919	11.919	(0.000)	98	198656			13.37- 113.37	6.36	
41 Hexane						CAS #: 110-54-3			
12.278	12.278	(0.861)	57	3664812	50.0000	44.672	80.00- 120.00	100.00	7273
12.278	12.278	(0.000)	43	112616			13.22- 113.22	3.07	
12.278	12.278	(0.000)	86	32121			0.00- 68.03	0.88	

AMOUNTS

RT	EXP RT (REL RT)	MASS	RESPONSE	CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
45 1,1-Dichloroethane					CAS #: 75-34-3			
12.747	12.747 (0.894)	63	5398358	50.0000	49.628	80.00- 120.00	100.00	6409
12.747	12.747 (0.000)	65	204825			0.00- 80.86	3.79	
44 Vinyl Acetate					CAS #: 108-05-4			
12.692	12.692 (0.890)	43	8220768	50.0000	45.891	80.00- 120.00	100.00	5770
12.692	12.692 (0.000)	42	52557			0.00- 56.94	0.64	
12.692	12.692 (0.000)	86	51095			0.00- 57.24	0.62	
54 cis-1,2-Dichloroethene					CAS #: 156-59-2			
13.823	13.823 (0.969)	61	3624816	50.0000	49.164	80.00- 120.00	100.00	8240
13.823	13.823 (0.000)	96	363306			20.12- 120.12	10.02	
13.823	13.823 (0.000)	98	237312			0.00- 95.80	6.55	
51 2-Butanone					CAS #: 78-93-3			
13.768	13.768 (0.965)	43	6289089	50.0000	44.551	80.00- 120.00	100.00	7911
13.768	13.768 (0.000)	72	151104			0.00- 70.79	2.40	
13.768	13.768 (0.000)	57	50911			0.00- 50.00	0.81	
57 Tetrahydrofuran					CAS #: 109-99-9			
14.265	14.265 (1.000)	42	3443960	50.0000	46.613	80.00- 120.00	100.00	7502
14.265	14.265 (0.000)	71	166208			0.00- 85.91	4.83	
14.265	14.265 (0.000)	72	169074			0.00- 93.32	4.91	
60 Chloroform					CAS #: 67-66-3			
14.348	14.348 (1.006)	83	5054845	50.0000	45.770	80.00- 120.00	100.00	9146
14.348	14.348 (0.000)	85	460160			14.57- 114.57	9.10	
61 Cyclohexane					CAS #: 110-82-7			
14.762	14.762 (1.035)	84	2970217	50.0000	40.995	80.00- 120.00	100.00	8176
14.762	14.762 (0.000)	56	365696			73.14- 173.14	12.31	
14.762	14.762 (0.000)	41	226347			26.22- 126.22	7.62	
62 1,1,1-Trichloroethane					CAS #: 71-55-6			
14.762	14.762 (1.035)	97	4217499	50.0000	41.205	80.00- 120.00	100.00	7530
14.762	14.762 (0.000)	99	301184			14.47- 114.47	7.14	
64 Carbon Tetrachloride					CAS #: 56-23-5			
15.010	15.010 (1.052)	119	3719901	50.0000	41.755	80.00- 120.00	100.00	8456
15.010	15.010 (0.000)	117	396888			54.31- 154.31	10.67	
67 Benzene					CAS #: 71-43-2			
15.479	15.479 (0.957)	78	4659609	50.0000	49.236	80.00- 120.00	100.00	9009
15.479	15.479 (0.000)	77	99904			0.00- 72.44	2.14	
70 1,2-Dichloroethane					CAS #: 107-06-2			
15.590	15.590 (0.964)	62	3211611	50.0000	52.257	80.00- 120.00	100.00	6384

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
70 1,2-Dichloroethane (continued)									
15.590	15.590	(0.000)	64	155968			0.00- 84.04	4.86	
68 Heptane						CAS #: 142-82-5			
15.672	15.672	(0.969)	43	2327033	50.0000	47.287	80.00- 120.00	100.00	7490
15.672	15.672	(0.000)	57	91036			1.24- 101.24	3.91	
15.672	15.672	(0.000)	71	88928			1.33- 101.33	3.82	
76 Trichloroethene						CAS #: 79-01-6			
16.694	16.694	(1.032)	95	2149552	50.0000	49.246	80.00- 120.00	100.00	8729
16.694	16.694	(0.000)	130	309440			46.84- 146.84	14.40	
16.694	16.694	(0.000)	97	202368			13.33- 113.33	9.41	
81 1,2-Dichloropropane						CAS #: 78-87-5			
17.245	17.245	(1.067)	63	1857132	50.0000	50.255	80.00- 120.00	100.00	8521
17.245	17.245	(0.000)	62	202176			21.80- 121.80	10.89	
17.245	17.245	(0.000)	41	192689			18.43- 118.43	10.38	
79 1,4-Dioxane						CAS #: 123-91-1			
17.356	17.356	(1.073)	88	1457888	50.0000	46.332	80.00- 120.00	100.00	2827
17.356	17.356	(0.000)	58	166464			19.43- 119.43	11.42	
17.356	17.356	(0.000)	57	57216			0.00- 71.05	3.92	
84 Bromodichloromethane						CAS #: 75-27-4			
17.687	17.687	(1.094)	83	4698527	50.0000	47.739	80.00- 120.00	100.00	9302
17.687	17.687	(0.000)	85	569152			13.74- 113.74	12.11	
88 cis-1,3-Dichloropropene						CAS #: 10061-01-5			
18.543	18.543	(1.147)	75	3312628	50.0000	50.665	80.00- 120.00	100.00	8439
18.543	18.543	(0.000)	77	218902			0.00- 81.51	6.61	
18.543	18.543	(0.000)	39	447591			14.43- 114.43	13.51	
89 4-Methyl-2-pentanone						CAS #: 108-10-1			
18.736	18.736	(1.159)	43	4369473	50.0000	51.551	80.00- 120.00	100.00	6842
18.736	18.736	(0.000)	58	279168			0.00- 87.93	6.39	
18.736	18.736	(0.000)	85	102583			0.00- 64.51	2.35	
92 Toluene						CAS #: 108-88-3			
19.150	19.150	(1.184)	91	2956195	50.0000	43.661	80.00- 120.00	100.00	9009
19.150	19.150	(0.000)	92	325184			12.27- 112.27	11.00	
93 trans-1,3-Dichloropropene						CAS #: 10061-02-6			
19.619	19.619	(0.898)	75	3079436	50.0000	56.948	80.00- 120.00	100.00	
19.619	19.619	(0.898)	77	974724			0.00- 81.65	31.65	
19.619	19.619	(0.898)	39	1883157			11.15- 111.15	61.15	

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
94 1,1,2-Trichloroethane					CAS #: 79-00-5			
20.005	20.005 (0.915)	97	1983898	50.0000	53.605	80.00- 120.00	100.00	8957
20.005	20.005 (0.000)	99	268096			11.84- 111.84	13.51	
20.005	20.005 (0.000)	83	370176			35.39- 135.39	18.66	
96 Tetrachloroethene					CAS #: 127-18-4			
20.171	20.171 (0.923)	166	1880069	50.0000	49.798	80.00- 120.00	100.00	9139
20.171	20.171 (0.000)	129	276288			22.15- 122.15	14.70	
20.171	20.171 (0.000)	131	269241			20.31- 120.31	14.32	
95 2-Hexanone					CAS #: 591-78-6			
20.336	20.336 (0.931)	43	3571830	50.0000	54.273	80.00- 120.00	100.00	8460
20.336	20.336 (0.000)	58	378560			0.16- 100.16	10.60	
20.336	20.336 (0.000)	100	64952			0.00- 56.85	1.82	
99 Dibromochloromethane					CAS #: 124-48-1			
20.750	20.750 (0.949)	129	3919505	50.0000	54.872	80.00- 120.00	100.00	8597
20.750	20.750 (0.000)	208	33760			0.00- 53.61	0.86	
100 1,2-Dibromoethane					CAS #: 106-93-4			
21.054	21.054 (0.963)	107	2979359	50.0000	54.562	80.00- 120.00	100.00	5533
21.054	21.054 (0.000)	109	685504			44.67- 144.67	23.01	
106 Chlorobenzene					CAS #: 108-90-7			
21.910	21.910 (1.003)	112	2297203	50.0000	46.843	80.00- 120.00	100.00	9293
21.910	21.910 (0.000)	114	186368			0.00- 83.08	8.11	
21.910	21.910 (0.000)	77	328969			8.39- 108.39	14.32	
107 Ethyl Benzene					CAS #: 100-41-4			
21.992	21.992 (1.006)	106	871026	50.0000	45.967	80.00- 120.00	100.00	
21.992	21.992 (1.006)	91	2686602			264.91- 364.91	308.44	
109 m,p-Xylene					CAS #: 108-38-3			
22.186	22.186 (1.015)	106	837395	50.0000	47.928	80.00- 120.00	100.00	
22.186	22.186 (1.015)	91	1594776			151.15- 251.15	190.44	
111 o-Xylene					CAS #: 95-47-6			
22.958	22.958 (1.050)	106	788948	50.0000	47.939	80.00- 120.00	100.00	9010
22.958	22.958 (0.000)	91	411648			150.69- 250.69	52.18	
112 Styrene					CAS #: 100-42-5			
23.014	23.014 (1.053)	104	1359279	50.0000	48.324	80.00- 120.00	100.00	9421
23.014	23.014 (0.000)	78	142303			0.00- 93.33	10.47	
114 Bromoform					CAS #: 75-25-2			
23.455	23.455 (1.073)	173	3370949	50.0000	55.504	80.00- 120.00	100.00	9184

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
114 Bromoform (continued)									
23.455	23.455	(0.000)	171	503424			2.09- 102.09	14.93	
118 1,1,2,2-Tetrachloroethane						CAS #: 79-34-5			
24.228	24.228	(1.109)	83	3613182	50.0000	50.940	80.00- 120.00	100.00	9164
24.228	24.228	(0.000)	85	643584			14.35- 114.35	17.81	
119 4-Ethyltoluene						CAS #: 622-96-8			
24.504	24.504	(1.121)	105	2175913	50.0000	48.042	80.00- 120.00	100.00	
24.504	24.504	(1.121)	120	646021			0.00- 79.69	29.69	
124 1,3,5-Trimethylbenzene						CAS #: 108-67-8			
24.614	24.614	(1.126)	105	1580996	50.0000	52.676	80.00- 120.00	100.00	
24.614	24.614	(1.126)	120	769405			0.00- 98.67	48.67	
129 1,2,4-Trimethylbenzene						CAS #: 95-63-6			
25.304	25.304	(1.158)	105	1332110	50.0000	54.405	80.00- 120.00	100.00	8773
25.304	25.304	(0.000)	120	188830			0.00- 95.51	14.18	
132 1,3-Dichlorobenzene						CAS #: 541-73-1			
25.939	25.939	(1.187)	146	1481559	50.0000	47.105	80.00- 120.00	100.00	
25.939	25.939	(1.187)	148	947096			12.10- 112.10	63.93	
25.939	25.939	(1.187)	111	587212			0.00- 88.72	39.63	
135 1,4-Dichlorobenzene						CAS #: 106-46-7			
26.105	26.105	(1.194)	146	1418994	50.0000	47.036	80.00- 120.00	100.00	
26.105	26.105	(1.194)	148	914156			14.85- 114.85	64.42	
26.105	26.105	(1.194)	111	531658			0.00- 87.46	37.47	
140 1,2-Dichlorobenzene						CAS #: 95-50-1			
26.794	26.794	(1.226)	146	1480929	50.0000	47.149	80.00- 120.00	100.00	9227
26.794	26.794	(0.000)	148	287488			14.16- 114.16	19.41	
26.794	26.794	(0.000)	111	182464			0.00- 90.72	12.32	
137 alpha-Chlorotoluene						CAS #: 100-44-7			
26.325	26.325	(1.205)	91	2638115	50.0000	45.476	80.00- 120.00	100.00	9406
26.325	26.325	(0.000)	126	167328			0.00- 70.26	6.34	
143 1,2,4-Trichlorobenzene						CAS #: 120-82-1			
29.968	29.968	(1.371)	180	715963	50.0000	64.081	80.00- 120.00	100.00	9207
29.968	29.968	(0.000)	182	163712			44.36- 144.36	22.87	
144 Hexachlorobutadiene						CAS #: 87-68-3			
30.134	30.134	(1.379)	225	670242	50.0000	47.180	80.00- 120.00	100.00	9117
30.134	30.134	(0.000)	223	89713			15.48- 115.48	13.39	

Data File: /chem/msdf.i/f-11dec.b/f121104.d
Report Date: 11-Dec-2002 10:57

QC Flag Legend

M - Compound response manually integrated.

Data File: /chem/msdf.i/f-11dec.b/f121104.d
Report Date: 11-Dec-2002 10:57

Air Toxics Ltd.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdf.i
Lab File ID: f121104.d
Lab Smp Id: Method Spike
Analysis Type: VOA
Quant Type: ISTD
Operator: ct
Method File: /var/chem/msdf.i/f-11dec.b/to14n25c.m
Misc Info: 50ppbv (100ppbv) notics

Calibration Date: 11-DEC-2002
Calibration Time: 10:15
Client Smp ID: Method Spike
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
59 Bromochloromethan	672342	403405	941279	679915	1.13
72 1,4-Difluorobenze	1503222	901933	2104511	1573788	4.69
105 Chlorobenzene-d5	684612	410767	958457	798262	16.60

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
59 Bromochloromethan	14.26	13.93	14.59	14.26	0.00
72 1,4-Difluorobenze	16.17	15.84	16.50	16.17	0.00
105 Chlorobenzene-d5	21.85	21.52	22.18	21.85	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

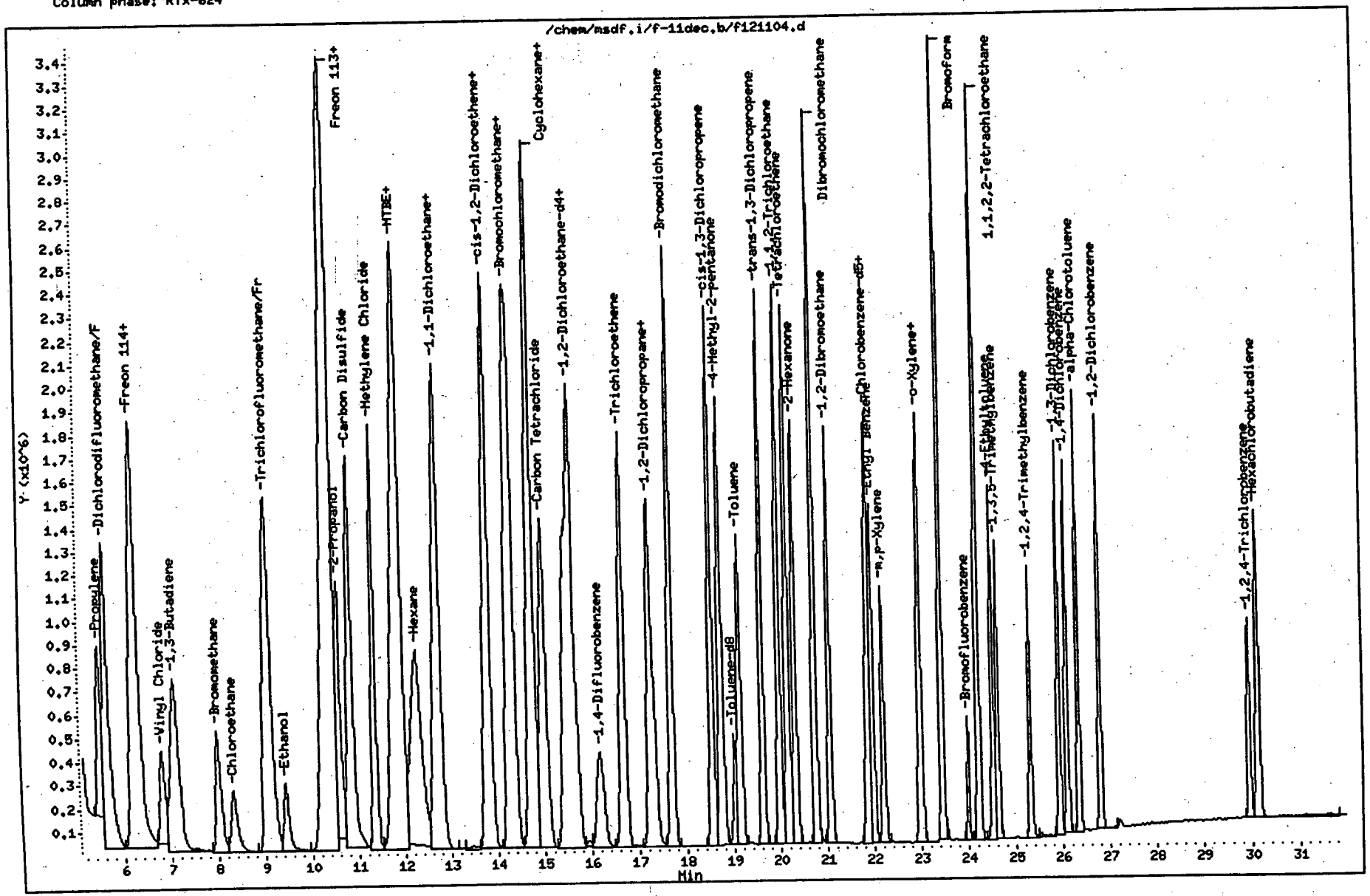
0182

Data File: /chem/msdf.i/f-11dec.b/f121104.d
Date : 11-DEC-2002 09:38
Client ID: Method Spike
Sample Info: 100mL #995-55

Column phase: RTx-624

Instrument: msdf.i

Operator: ct
Column diameter: 0.53



AIR TOXICS LTD.

SAMPLE NAME: LCS

ID#: 0212071-04A

MODIFIED EPA METHOD TO-14 GC/MS FULL SCAN

File Name: f121106a
Dil. Factor: 1.00
Date of Collection: NA
Date of Analysis: 12/11/02

Compound	Rpt. Limit (ppbv)	Rpt. Limit (uG/m3)	%Recovery
Freon 12	0.50	2.5	110
Freon 114	0.50	3.6	104
Chloromethane	0.50	1.0	123
Vinyl Chloride	0.50	1.3	117
Bromomethane	0.50	2.0	112
Chloroethane	0.50	1.3	103
Freon 11	0.50	2.8	102
1,1-Dichloroethene	0.50	2.0	103
Freon 113	0.50	3.9	83
Methylene Chloride	0.50	1.8	94
1,1-Dichloroethane	0.50	2.0	96
cis-1,2-Dichloroethene	0.50	2.0	102
Chloroform	0.50	2.5	90
1,1,1-Trichloroethane	0.50	2.8	78
Carbon Tetrachloride	0.50	3.2	87
Benzene	0.50	1.6	104
1,2-Dichloroethane	0.50	2.0	108
Trichloroethene	0.50	2.7	96
1,2-Dichloropropane	0.50	2.3	100
cis-1,3-Dichloropropene	0.50	2.3	108
Toluene	0.50	1.9	83
trans-1,3-Dichloropropene	0.50	2.3	136 Q
1,1,2-Trichloroethane	0.50	2.8	119
Tetrachloroethene	0.50	3.4	105
1,2-Dibromoethane (EDB)	0.50	3.9	109
Chlorobenzene	0.50	2.3	90
Ethyl Benzene	0.50	2.2	95
m,p-Xylene	0.50	2.2	95
o-Xylene	0.50	2.2	94
Styrene	0.50	2.2	94
1,1,2,2-Tetrachloroethane	0.50	3.5	104
1,3,5-Trimethylbenzene	0.50	2.5	108
1,2,4-Trimethylbenzene	0.50	2.5	104
1,3-Dichlorobenzene	0.50	3.0	87
1,4-Dichlorobenzene	0.50	3.0	81
alpha-Chlorotoluene	0.50	2.6	77
1,2-Dichlorobenzene	0.50	3.0	86
1,2,4-Trichlorobenzene	2.0	15	125
Hexachlorobutadiene	2.0	22	86
Propylene	2.0	3.5	83
1,3-Butadiene	2.0	4.5	112
Acetone	2.0	4.8	95

AIR TOXICS LTD.

SAMPLE NAME: LCS

ID#: 0212071-04A

MODIFIED EPA METHOD TO-14 GC/MS FULL SCAN

File Name:	f121106a	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	12/11/02

Compound	Rpt. Limit (ppbv)	Rpt. Limit (uG/m3)	%Recovery
Carbon Disulfide	2.0	6.3	97
2-Propanol	2.0	5.0	100
trans-1,2-Dichloroethene	2.0	8.0	94
Vinyl Acetate	2.0	7.2	86
2-Butanone (Methyl Ethyl Ketone)	2.0	6.0	75
Hexane	2.0	7.2	80
Tetrahydrofuran	2.0	6.0	84
Cyclohexane	2.0	7.0	71
1,4-Dioxane	2.0	7.3	84
Bromodichloromethane	2.0	14	84
4-Methyl-2-pentanone	2.0	8.3	84
2-Hexanone	2.0	8.3	92
Dibromochloromethane	2.0	17	100
Bromoform	2.0	21	95
4-Ethyltoluene	2.0	10	128
Ethanol	2.0	3.8	90
Methyl tert-Butyl Ether	2.0	7.3	72
Heptane	2.0	8.3	72

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	101	70-130
Toluene-d8	85	70-130
4-Bromofluorobenzene	100	70-130

Data File: /chem/msdf.i/f-11dec.b/f121106a.d
Report Date: 11-Dec-2002 11:58

Air Toxics Ltd.

RECOVERY REPORT

Client Name:
Sample Matrix: GAS
Lab Smp Id: LCS
Level: LOW
Data Type: MS DATA
SpikeList File: AFCEE3.1.spk
Sublist File: AT.sub
Method File: /var/chem/msdf.i/f-11dec.b/to14n25c.m
Misc Info: 50ppbv (200ppbv) notics

Client SDG: f-11dec
Fraction: VOA
Client Smp ID: LCS
Operator: ct
SampleType: LCS
Quant Type: ISTD

SPIKE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
2 Propylene	50.000	41.392	82.79	60-140
4 Dichlorodifluorome	50.000	55.098	110.20	70-130
6 Freon 114	50.000	52.128	104.26	70-130
8 Chloromethane	50.000	61.508	123.02	70-130
10 Vinyl Chloride	50.000	58.617	117.23	70-130
12 1,3-Butadiene	50.000	55.884	111.77	60-140
14 Bromomethane	50.000	56.074	112.15	70-130
15 Chloroethane	50.000	51.584	103.17	70-130
17 Trichlorofluoromet	50.000	51.112	102.22	70-130
21 Ethanol	50.000	45.184	90.37	60-140
25 Freon 113	50.000	41.576	83.15	70-130
26 1,1-Dichloroethene	50.000	51.630	103.26	70-130
27 Acetone	50.000	47.603	95.21	60-140
30 2-Propanol	50.000	50.268	100.54	60-140
31 Carbon Disulfide	50.000	48.486	96.97	60-140
36 Methylene Chloride	50.000	47.064	94.13	70-130
39 MTBE	50.000	36.116	72.23	60-140
40 trans-1,2-Dichloro	50.000	47.178	94.36	60-140
41 Hexane	50.000	40.259	80.52	60-140
44 Vinyl Acetate	50.000	43.173	86.35	60-140
45 1,1-Dichloroethane	50.000	48.292	96.58	70-130
51 2-Butanone	50.000	37.691	75.38	60-140
54 cis-1,2-Dichloroet	50.000	51.218	102.44	70-130
57 Tetrahydrofuran	50.000	42.088	84.18	60-140
60 Chloroform	50.000	44.860	89.72	75-125
62 1,1,1-Trichloroeth	50.000	39.184	78.37	72-125
61 Cyclohexane	50.000	35.367	70.73	60-140
64 Carbon Tetrachlori	50.000	43.428	86.86	72-125
67 Benzene	50.000	52.266	104.53	75-127
70 1,2-Dichloroethane	50.000	54.058	108.12	75-125
68 Heptane	50.000	35.814	71.63	60-140
76 Trichloroethene	50.000	47.894	95.79	75-125
81 1,2-Dichloropropan	50.000	50.178	100.36	70-130

Data File: /chem/msdf.i/f-11dec.b/f121106a.d
Report Date: 11-Dec-2002 11:58

SPIKE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
79 1,4-Dioxane	50.000	41.973	83.95	60-140
84 Bromodichlorometha	50.000	41.981	83.96	60-140
88 cis-1,3-Dichloropr	50.000	54.109	108.22	70-130
89 4-Methyl-2-pentano	50.000	41.992	83.98	60-140
92 Toluene	50.000	41.305	82.61	70-130
93 trans-1,3-Dichloro	50.000	68.136	136.27*	70-130
94 1,1,2-Trichloroeth	50.000	59.740	119.48	70-130
96 Tetrachloroethene	50.000	52.679	105.36	75-125
95 2-Hexanone	50.000	46.298	92.60	60-140
99 Dibromochlorometha	50.000	50.214	100.43	60-140
100 1,2-Dibromoethane	50.000	54.478	108.96	74-125
106 Chlorobenzene	50.000	45.229	90.46	70-130
107 Ethyl Benzene	50.000	47.648	95.30	70-130
109 m,p-Xylene	100.00	94.916	94.92	75-125
111 o-Xylene	50.000	46.923	93.85	75-137
112 Styrene	50.000	47.260	94.52	75-135
114 Bromoform	50.000	47.540	95.08	60-140
118 1,1,2,2-Tetrachlor	50.000	52.043	104.09	70-130
119 4-Ethyltoluene	50.000	64.118	128.24	60-140
124 1,3,5-Trimethylben	50.000	54.134	108.27	70-130
129 1,2,4-Trimethylben	50.000	51.895	103.79	70-130
132 1,3-Dichlorobenzen	50.000	43.407	86.81	70-130
135 1,4-Dichlorobenzen	50.000	40.332	80.66	70-130
140 1,2-Dichlorobenzen	50.000	43.135	86.27	70-130
137 alpha-Chlorotoluen	50.000	38.352	76.71	70-130
143 1,2,4-Trichloroben	50.000	62.342	124.68	70-130
144 Hexachlorobutadien	50.000	43.005	86.01	70-130

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 65 1,2-Dichloroethane	25.000	25.238	100.95	70-130
$ 91 Toluene-d8	25.000	21.339	85.36	70-130
$ 117 Bromofluorobenzene	25.000	24.972	99.89	70-130

Data File: /chem/msdf.i/f-11dec.b/f121106a.d
Report Date: 11-Dec-2002 11:58

Air Toxics Ltd.

METHOD TO14

Data file : /chem/msdf.i/f-11dec.b/f121106a.d
Lab Smp Id: LCS
Inj Date : 11-DEC-2002 10:53
Operator : ct
Smp Info : 50mL #959-172
Misc Info : 50ppbv (200ppbv) notics
Comment :
Method : /var/chem/msdf.i/f-11dec.b/to14n25c.m
Meth Date : 11-Dec-2002 10:57 ctaylor
Cal Date : 09-DEC-2002 10:49
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE
Target Version: 3.50
Processing Host: eeyore

Client Smp ID: LCS
Inst ID: msdf.i
Quant Type: ISTD
Cal File: f120907.d
QC Sample: LCS
Compound Sublist: AT.sub
Sample Matrix: AIR

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
* 59 Bromochloromethane						CAS #: 74-97-5			
14.265	14.265	(1.000)	130	665840	25.0000		80.00- 120.00	100.00	9032
14.265	14.265	(0.000)	128	94008			29.33- 129.33	14.12	
14.265	14.265	(0.000)	49	210560			122.65- 222.65	31.62	
* 72 1,4-Difluorobenzene						CAS #: 540-36-3			
16.197	16.169	(1.000)	114	1524145	25.0000		80.00- 120.00	100.00	9487
16.197	16.169	(0.000)	88	25616			0.00- 66.58	1.68	
* 105 Chlorobenzene-d5						CAS #: 3114-55-4			
21.854	21.854	(1.000)	117	689637	25.0000		80.00- 120.00	100.00	
21.854	21.854	(1.000)	82	409231			6.52- 106.52	59.34	
$ 65 1,2-Dichloroethane-d4						CAS #: 17060-07-0			
15.452	15.452	(1.083)	65	1011189	25.2375	25.238	80.00- 120.00	100.00	10000
15.452	15.452	(0.000)	67	66224			1.64- 101.64	6.55	
$ 91 Toluene-d8						CAS #: 2037-26-5			
19.012	19.012	(1.174)	98	887065	21.3393	21.339	80.00- 120.00	100.00	9937
19.012	19.012	(0.000)	70	18168			0.00- 62.97	2.05	

Data File: /chem/msdf.i/f-11dec.b/f121106a.d
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RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
$ 91 Toluene-d8 (continued)									
19.012	19.012	(0.000)	100	102750			18.10- 118.10	11.58	
$ 117 Bromofluorobenzene						CAS #: 460-00-4			
23.979	23.979	(1.097)	95	356678	24.9722	24.972	80.00- 120.00	100.00	8339
23.979	23.979	(0.000)	174	64624			15.71- 115.71	18.12	
23.979	23.979	(0.000)	176	63296			12.57- 112.57	17.75	
2 Propylene						CAS #: 115-07-1			
5.489	5.516	(0.385)	41	1753165	41.3926	41.392	80.00- 120.00	100.00	7686
5.489	5.516	(0.000)	42	152559			0.00- 70.46	8.70	
5.489	5.516	(0.000)	39	183040			52.89- 152.89	10.44	
4 Dichlorodifluoromethane/Fr12						CAS #: 75-71-8			
5.654	5.654	(0.396)	85	6389180	55.0980	55.098	80.00- 120.00	100.00	9036
5.654	5.654	(0.000)	87	241600			0.00- 82.26	3.78	
6 Freon 114						CAS #: 76-14-2			
6.261	6.234	(0.439)	135	4384091	52.1283	52.128	80.00- 120.00	100.00	8928
6.261	6.234	(0.000)	137	142848			0.00- 82.04	3.26	
8 Chloromethane						CAS #: 74-87-3			
6.344	6.372	(0.445)	50	2334873	61.5086	61.508	80.00- 120.00	100.00	
6.372	6.372	(0.447)	52	655658			0.00- 94.08	28.08	
10 Vinyl Chloride						CAS #: 75-01-4			
6.813	6.841	(0.478)	62	2564993	58.6166	58.617	80.00- 120.00	100.00	4502
6.813	6.841	(0.000)	64	91633			0.00- 79.95	3.57	
12 1,3-Butadiene						CAS #: 106-99-0			
7.089	7.089	(0.497)	54	2346180	55.8845	55.884	80.00- 120.00	100.00	6495
7.089	7.089	(0.000)	39	199732			56.36- 156.36	8.51	
14 Bromomethane						CAS #: 74-83-9			
8.000	8.000	(0.561)	94	1678516	56.0742	56.074	80.00- 120.00	100.00	6611
8.000	8.000	(0.000)	96	199442			44.87- 144.87	11.88	
15 Chloroethane						CAS #: 75-00-3			
8.331	8.359	(0.584)	64	1120563	51.5844	51.584	80.00- 120.00	100.00	4019
8.331	8.359	(0.000)	66	42232			0.00- 79.89	3.77	
17 Trichlorofluoromethane/Fr11						CAS #: 75-69-4			
9.104	9.104	(0.638)	101	7994328	51.1123	51.112	80.00- 120.00	100.00	9064
9.104	9.104	(0.000)	103	453248			14.67- 114.67	5.67	
21 Ethanol						CAS #: 64-17-5			
9.463	9.463	(0.663)	45	1085155	45.1841	45.184	80.00- 120.00	100.00	3548

Data File: /chem/msdf.i/f-11dec.b/f121106a.d
Report Date: 11-Dec-2002 11:58

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
21 Ethanol (continued)									
9.463	9.463	(0.000)	43	30651			0.00- 50.00	2.82	
9.463	9.463	(0.000)	46	49428			0.00- 85.14	4.55	
25 Freon 113						CAS #: 76-13-1			
10.346	10.346	(0.725)	151	4239387	41.5765	41.576	80.00- 120.00	100.00	8678
10.346	10.346	(0.000)	153	164160			11.99- 111.99	3.87	
10.346	10.346	(0.000)	101	324699			72.90- 172.90	7.66	
26 1,1-Dichloroethene						CAS #: 75-35-4			
10.374	10.374	(0.727)	61	4956551	51.6300	51.630	80.00- 120.00	100.00	8895
10.374	10.374	(0.000)	96	294364			5.85- 105.85	5.94	
10.374	10.374	(0.000)	98	187072			0.00- 86.60	3.77	
27 Acetone						CAS #: 67-64-1			
10.456	10.456	(0.733)	43	5840716	47.6027	47.603	80.00- 120.00	100.00	6530(M)
10.456	10.456	(0.733)	58	227584			0.00- 76.68	3.90	
31 Carbon Disulfide						CAS #: 75-15-0			
10.870	10.870	(0.762)	76	8738700	48.4855	48.486	80.00- 120.00	100.00	7921
30 2-Propanol						CAS #: 67-63-0			
10.594	10.594	(0.743)	45	5569148	50.2683	50.268	80.00- 120.00	100.00	7491
10.594	10.594	(0.000)	43	150369			0.00- 50.00	2.70	
10.594	10.594	(0.000)	59	13970			0.00- 51.87	0.25	
36 Methylene Chloride						CAS #: 75-09-2			
11.339	11.339	(0.795)	49	3154299	47.0636	47.064	80.00- 120.00	100.00	9421
11.339	11.339	(0.000)	84	418176			17.09- 117.09	13.26	
11.339	11.339	(0.000)	51	180894			0.00- 76.78	5.73	
39 MTBE						CAS #: 1634-04-4			
11.809	11.809	(0.828)	73	7252447	36.1160	36.116	80.00- 120.00	100.00	6229
11.809	11.809	(0.000)	57	108292			0.00- 72.41	1.49	
11.809	11.809	(0.000)	41	114788			0.00- 72.38	1.58	
40 trans-1,2-Dichloroethene						CAS #: 156-60-5			
11.919	11.919	(0.836)	96	3141965	47.1783	47.178	80.00- 120.00	100.00	8254
11.919	11.919	(0.000)	61	480896			102.17- 202.17	15.31	
11.919	11.919	(0.000)	98	203776			13.37- 113.37	6.49	
41 Hexane						CAS #: 110-54-3			
12.278	12.278	(0.861)	57	3234375	40.2589	40.259	80.00- 120.00	100.00	7218
12.278	12.278	(0.000)	43	77128			13.22- 113.22	2.38	
12.278	12.278	(0.000)	86	24357			0.00- 68.03	0.75	

Data File: /chem/msdf.i/f-11dec.b/f121106a.d
Report Date: 11-Dec-2002 11:58

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
45 1,1-Dichloroethane						CAS #: 75-34-3			
12.747	12.747	(0.894)	63	5144310	48.2917	48.292	80.00- 120.00	100.00	6402
12.747	12.747	(0.000)	65	189317			0.00- 80.86	3.68	
44 Vinyl Acetate						CAS #: 108-05-4			
12.692	12.692	(0.890)	43	7573677	43.1726	43.173	80.00- 120.00	100.00	5629
12.692	12.692	(0.000)	42	35696			0.00- 56.94	0.47	
12.692	12.692	(0.000)	86	38878			0.00- 57.24	0.51	
54 cis-1,2-Dichloroethene						CAS #: 156-59-2			
13.823	13.823	(0.969)	61	3698090	51.2178	51.218	80.00- 120.00	100.00	8240
13.823	13.823	(0.000)	96	365069			20.12- 120.12	9.87	
13.823	13.823	(0.000)	98	236160			0.00- 95.80	6.39	
51 2-Butanone						CAS #: 78-93-3			
13.768	13.768	(0.965)	43	5210474	37.6907	37.691	80.00- 120.00	100.00	7907
13.768	13.768	(0.000)	72	126392			0.00- 70.79	2.43	
13.768	13.768	(0.000)	57	39878			0.00- 50.00	0.77	
57 Tetrahydrofuran						CAS #: 109-99-9			
14.265	14.265	(1.000)	42	3045256	42.0883	42.088	80.00- 120.00	100.00	7499
14.265	14.265	(0.000)	71	147357			0.00- 85.91	4.84	
14.265	14.265	(0.000)	72	152223			0.00- 93.32	5.00	
60 Chloroform						CAS #: 67-66-3			
14.348	14.348	(1.006)	83	4851770	44.8604	44.860	80.00- 120.00	100.00	9181
14.348	14.348	(0.000)	85	436544			14.57- 114.57	9.00	
61 Cyclohexane						CAS #: 110-82-7			
14.762	14.762	(1.035)	84	2509378	35.3667	35.367	80.00- 120.00	100.00	8166(M)
14.762	14.762	(1.035)	56	289664			73.14- 173.14	11.54	
14.762	14.762	(1.035)	41	180892			26.22- 126.22	7.21	
62 1,1,1-Trichloroethane						CAS #: 71-55-6			
14.762	14.762	(1.035)	97	3927685	39.1845	39.184	80.00- 120.00	100.00	7535
14.762	14.762	(0.000)	99	272960			14.47- 114.47	6.95	
64 Carbon Tetrachloride						CAS #: 56-23-5			
15.010	15.010	(1.052)	119	3788843	43.4280	43.428	80.00- 120.00	100.00	8491
15.010	15.010	(0.000)	117	385776			54.31- 154.31	10.18	
67 Benzene						CAS #: 71-43-2			
15.479	15.479	(0.956)	78	4790330	52.2656	52.266	80.00- 120.00	100.00	8976
15.479	15.479	(0.000)	77	96464			0.00- 72.44	2.01	
70 1,2-Dichloroethane						CAS #: 107-06-2			
15.590	15.590	(0.962)	62	3217487	54.0578	54.058	80.00- 120.00	100.00	6530

Data File: /chem/msdf.i/f-11dec.b/f121106a.d
Report Date: 11-Dec-2002 11:58

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
70 1,2-Dichloroethane (continued)									
15.590	15.590	(0.000)	64	152256			0.00- 84.04	4.73	
68 Heptane						CAS #: 142-82-5			
15.672	15.672	(0.968)	43	1706878	35.8145	35.814	80.00- 120.00	100.00	7360
15.672	15.672	(0.000)	57	66531			1.24- 101.24	3.90	
15.672	15.672	(0.000)	71	68320			1.33- 101.33	4.00	
76 Trichloroethene						CAS #: 79-01-6			
16.694	16.694	(1.031)	95	2024616	47.8941	47.894	80.00- 120.00	100.00	8760
16.694	16.694	(0.000)	130	278656			46.84- 146.84	13.76	
16.694	16.694	(0.000)	97	182656			13.33- 113.33	9.02	
81 1,2-Dichloropropane						CAS #: 78-87-5			
17.218	17.245	(1.063)	63	1795815	50.1784	50.178	80.00- 120.00	100.00	8507
17.218	17.245	(0.000)	62	185920			21.80- 121.80	10.35	
17.218	17.245	(0.000)	41	176463			18.43- 118.43	9.83	
79 1,4-Dioxane						CAS #: 123-91-1			
17.356	17.356	(1.072)	88	1279062	41.9730	41.973	80.00- 120.00	100.00	2827
17.356	17.356	(0.000)	58	144448			19.43- 119.43	11.29	
17.356	17.356	(0.000)	57	49190			0.00- 71.05	3.85	
84 Bromodichloromethane						CAS #: 75-27-4			
17.687	17.687	(1.092)	83	4001482	41.9807	41.981	80.00- 120.00	100.00	9310
17.687	17.687	(0.000)	85	479744			13.74- 113.74	11.99	
88 cis-1,3-Dichloropropene						CAS #: 10061-01-5			
18.543	18.543	(1.145)	75	3426235	54.1092	54.109	80.00- 120.00	100.00	8455
18.543	18.543	(0.000)	77	222564			0.00- 81.51	6.50	
18.543	18.543	(0.000)	39	445236			14.43- 114.43	12.99	
89 4-Methyl-2-pentanone						CAS #: 108-10-1			
18.736	18.736	(1.157)	43	3447027	41.9923	41.992	80.00- 120.00	100.00	6856
18.736	18.736	(0.000)	58	219328			0.00- 87.93	6.36	
18.736	18.736	(0.000)	85	80265			0.00- 64.51	2.33	
92 Toluene						CAS #: 108-88-3			
19.150	19.150	(1.182)	91	2708462	41.3050	41.305	80.00- 120.00	100.00	9016
19.150	19.150	(0.000)	92	289216			12.27- 112.27	10.68	
93 trans-1,3-Dichloropropene						CAS #: 10061-02-6			
19.619	19.619	(0.898)	75	3183082	68.1363	68.136	80.00- 120.00	100.00	(R)
19.619	19.619	(0.898)	77	1004727			0.00- 81.65	31.56	
19.619	19.619	(0.898)	39	1953119			11.15- 111.15	61.36	

Data File: /chem/msdf.i/f-11dec.b/f121106a.d
Report Date: 11-Dec-2002 11:58

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
94 1,1,2-Trichloroethane						CAS #: 79-00-5			
20.005	20.005	(0.915)	97	1910102	59.7402	59.740	80.00- 120.00	100.00	8960
20.005	20.005	(0.000)	99	254592			11.84- 111.84	13.33	
20.005	20.005	(0.000)	83	354816			35.39- 135.39	18.58	
96 Tetrachloroethene						CAS #: 127-18-4			
20.171	20.171	(0.923)	166	1718217	52.6795	52.679	80.00- 120.00	100.00	8694
20.171	20.171	(0.000)	129	249697			22.15- 122.15	14.53	
20.171	20.171	(0.000)	131	235176			20.31- 120.31	13.69	
95 2-Hexanone						CAS #: 591-78-6			
20.337	20.336	(0.931)	43	2632330	46.2979	46.298	80.00- 120.00	100.00	8471
20.337	20.336	(0.000)	58	281280			0.16- 100.16	10.69	
20.337	20.336	(0.000)	100	49456			0.00- 56.85	1.88	
99 Dibromochloromethane						CAS #: 124-48-1			
20.750	20.750	(0.949)	129	3098760	50.2144	50.214	80.00- 120.00	100.00	8578
20.750	20.750	(0.000)	208	26528			0.00- 53.61	0.86	
100 1,2-Dibromoethane						CAS #: 106-93-4			
21.054	21.054	(0.963)	107	2569995	54.4785	54.478	80.00- 120.00	100.00	5533
21.054	21.054	(0.000)	109	577728			44.67- 144.67	22.48	
106 Chlorobenzene						CAS #: 108-90-7			
21.910	21.910	(1.003)	112	1916235	45.2294	45.229	80.00- 120.00	100.00	9284
21.910	21.910	(0.000)	114	152896			0.00- 83.08	7.98	
21.910	21.910	(0.000)	77	283892			8.39- 108.39	14.82	
107 Ethyl Benzene						CAS #: 100-41-4			
21.992	21.992	(1.006)	106	780027	47.6482	47.648	80.00- 120.00	100.00	
21.992	21.992	(1.006)	91	2390411			264.91- 364.91	306.45	
109 m,p-Xylene						CAS #: 108-38-3			
22.213	22.186	(1.016)	106	1432713	94.9166	94.916	80.00- 120.00	100.00	
22.186	22.186	(1.015)	91	2749159			151.15- 251.15	191.88	
111 o-Xylene						CAS #: 95-47-6			
22.958	22.958	(1.050)	106	667154	46.9233	46.923	80.00- 120.00	100.00	9086
22.958	22.958	(0.000)	91	342084			150.69- 250.69	51.28	
112 Styrene						CAS #: 100-42-5			
23.014	23.014	(1.053)	104	1148461	47.2601	47.260	80.00- 120.00	100.00	9459
23.014	23.014	(0.000)	78	126127			0.00- 93.33	10.98	
114 Bromoform						CAS #: 75-25-2			
23.455	23.455	(1.073)	173	2494401	47.5401	47.540	80.00- 120.00	100.00	9179

Data File: /chem/msdf.i/f-11dec.b/f121106a.d
Report Date: 11-Dec-2002 11:58

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO	SIMILARITY
114 Bromoform (continued)									
23.455	23.455	(0.000)	171	368704			2.09- 102.09	14.78	
118 1,1,2,2-Tetrachloroethane						CAS #: 79-34-5			
24.228	24.228	(1.109)	83	3189094	52.0434	52.043	80.00- 120.00	100.00	9176
24.228	24.228	(0.000)	85	568192			14.35- 114.35	17.82	
119 4-Ethyltoluene						CAS #: 622-96-8			
24.504	24.504	(1.121)	105	2508876	64.1182	64.118	80.00- 120.00	100.00	
24.504	24.504	(1.121)	120	728543			0.00- 79.69	29.04	
124 1,3,5-Trimethylbenzene						CAS #: 108-67-8			
24.614	24.614	(1.126)	105	1403640	54.1336	54.134	80.00- 120.00	100.00	
24.614	24.614	(1.126)	120	680163			0.00- 98.67	48.46	
129 1,2,4-Trimethylbenzene						CAS #: 95-63-6			
25.304	25.304	(1.158)	105	1097752	51.8953	51.895	80.00- 120.00	100.00	8775
25.304	25.304	(0.000)	120	154240			0.00- 95.51	14.05	
132 1,3-Dichlorobenzene						CAS #: 541-73-1			
25.939	25.939	(1.187)	146	1179462	43.4067	43.407	80.00- 120.00	100.00	
25.939	25.939	(1.187)	148	749442			12.10- 112.10	63.54	
25.939	25.939	(1.187)	111	457183			0.00- 88.72	38.76	
135 1,4-Dichlorobenzene						CAS #: 106-46-7			
26.105	26.105	(1.194)	146	1051173	40.3322	40.332	80.00- 120.00	100.00	
26.105	26.105	(1.194)	148	664987			14.85- 114.85	63.26	
26.105	26.105	(1.194)	111	392043			0.00- 87.46	37.30	
140 1,2-Dichlorobenzene						CAS #: 95-50-1			
26.795	26.794	(1.226)	146	1170484	43.1353	43.135	80.00- 120.00	100.00	9204
26.795	26.794	(0.000)	148	221709			14.16- 114.16	18.94	
26.795	26.794	(0.000)	111	146304			0.00- 90.72	12.50	
137 alpha-Chlorotoluene						CAS #: 100-44-7			
26.325	26.325	(1.205)	91	1922130	38.3525	38.352	80.00- 120.00	100.00	9408
26.325	26.325	(0.000)	126	121968			0.00- 70.26	6.35	
143 1,2,4-Trichlorobenzene						CAS #: 120-82-1			
29.968	29.968	(1.371)	180	601751	62.3417	62.342	80.00- 120.00	100.00	9217
29.968	29.968	(0.000)	182	140608			44.36- 144.36	23.37	
144 Hexachlorobutadiene						CAS #: 87-68-3			
30.134	30.134	(1.379)	225	527798	43.0048	43.005	80.00- 120.00	100.00	9147
30.134	30.134	(0.000)	223	68619			15.48- 115.48	13.00	

Data File: /chem/msdf.i/f-11dec.b/f121106a.d
Report Date: 11-Dec-2002 11:58

QC Flag Legend

R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.

Air Toxics Ltd.

METHOD TO14

Data file : /chem/msdf.i/f-11dec.b/f121106a.d
Lab Smp Id: LCS
Client Smp ID: LCS
Inj Date : 11-DEC-2002 10:53
Operator : ct
Inst ID: msdf.i
Smp Info : 50mL #959-172
Misc Info : 50ppbv (200ppbv) notics
Comment :
Method : /var/chem/msdf.i/f-11dec.b/to14n25c.m
Meth Date : 11-Dec-2002 10:57 ctaylor
Quant Type: ISTD
Cal Date : 09-DEC-2002 10:49
Cal File: f120907.d
Als bottle: 1
QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE
Compound Sublist: AT.sub
Target Version: 3.50
Sample Matrix: AIR
Processing Host: eeyore

- NO TENTATIVELY IDENTIFIED COMPOUNDS -

Data File: /chem/msdf.i/f-11dec.b/f121106a.d
Report Date: 11-Dec-2002 11:58

Air Toxics Ltd.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msdf.i
Lab File ID: f121106a.d
Lab Smp Id: LCS
Analysis Type: VOA
Quant Type: ISTD
Operator: ct
Method File: /var/chem/msdf.i/f-11dec.b/to14n25c.m
Misc Info: 50ppbv (200ppbv) notics

Calibration Date: 11-DEC-2002
Calibration Time: 09:38
Client Smp ID: LCS
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
59 Bromochloromethan	679915	407949	951881	665840	-2.07
72 1,4-Difluorobenze	1573788	944273	2203303	1524145	-3.15
105 Chlorobenzene-d5	798262	478957	1117567	689637	-13.61

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
59 Bromochloromethan	14.26	13.93	14.59	14.26	0.00
72 1,4-Difluorobenze	16.17	15.84	16.50	16.20	0.17
105 Chlorobenzene-d5	21.85	21.52	22.18	21.85	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

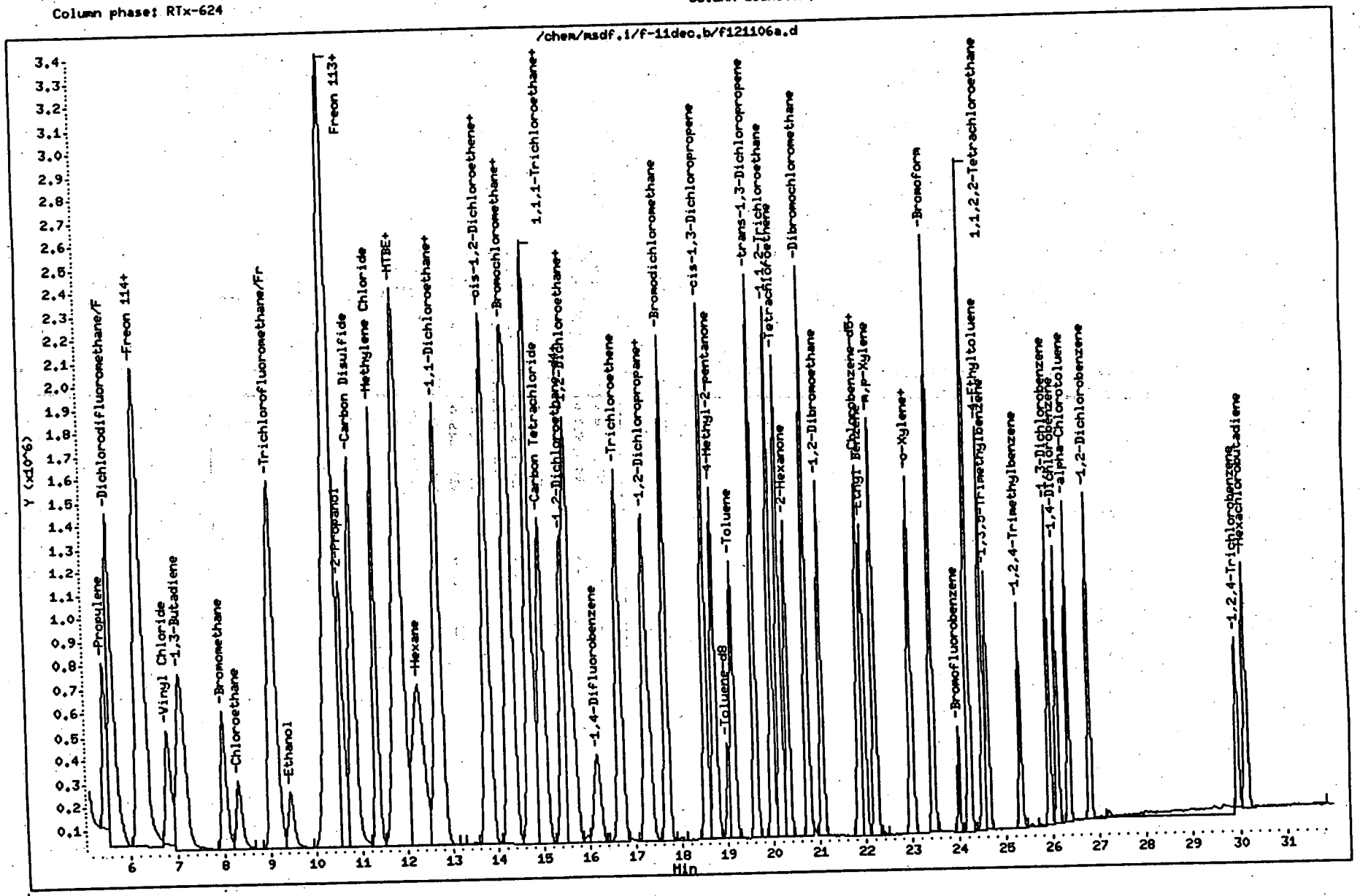
Data File: /chem/msdf.i/f-11dec.b/f121106a.d
Date : 11-DEC-2002 10:53
Client ID: LCS
Sample Info: 50mL #959-172

Column phase: RTx-624

Instrument: msdf.i

Operator: ot
Column diameter: 0.53

0197



Instrument RunLog

@Air Toxics Ltd.

Log Book #: 812

346

GC/MS Tuning and Mass Calibration (BFB)

BFB File ID: F121102
BFB Injection Date: 12-11-02
BFB Injection Time: 841

m/e	Ion Abundance Criteria	% Relative Abundance
50	15 - 40% of the base peak	20.68
75	30 - 60% of the base peak	47.84
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.67
173	Less than 2% of mass 174	(0.00) 1
174	Greater than 50% of mass 95	76.27
175	5.0 - 9.0% of mass 174	(7.47) 1
176	Greater than 95% but less than 101% of mass 174	(95.65) 1
177	5.0 - 9.0% of mass 176	(6.49) 2

1 - value in parenthesis is % mass 174 2 - value in parenthesis is % mass 176

Tekmar Purge Flow:	
Vacuum:	2.7x10^5

# 995-79 LS.	Area counts
BCM	679915
1,4-DFB	1573788
CB-d_5	798262

THIS TUNE CHECK APPLIES TO THE FOLLOWING SAMPLES, BLANKS AND STANDARDS

	Use	File #	Sample Name/Client	Can #	Pressure	Amount	Dilution Factor	Date Analyzed	Time Analyzed	Init.	Comments
1	X	F121101	BFB Tune Check	843-559	50ng	2ml	1.0	12-11-02	825	C.T.	
2	✓	F121102	BFB Tune Check	843-559	50ng	2ml	1.0	12-11-02	841	C.T.	
3	X	F121103	Method Spike	200ppbv 995-55	25 ~~5~~ppbv	50 mL			901	C.T.	Loaded incorrect Amount
4	✓	F121104	Method Spike	100ppbv 995-55	12-11-02 C.T. 5 ~~50~~ppbv	100 mL			938	C.T.	
5	✓	F121105	Method Spike	100ppbv 959-158	12-11-02 C.T. 50ppbv	100 mL			1015	C.T.	AT Specials
6	✓	F121106	LCS	200ppbv 959-172	50ppbv	50 mL			1053	C.T.	
7	✓	F121107	Lab Blank	21001	Humid	200 mL	1.0		1134	C.T.	
8	✓	F121108	mw 0212037-09A	9476	4.5" Hg → 15psi	50 mL	9.52		1220	C.T.	
9	✓	F121109	↓ -10A	97104	4.0" Hg → 15psi	50 mL	9.32		1258	C.T.	
10	✓	F121110	↓ -11A	SC67	4.0" Hg → 15psi	50 mL	9.32		1342	C.T.	
11	✓	F121111	mackie 0212071-02A	3733	0.0" Hg → 5psi	200 mL	1.34	12-11-02	1420	C.T.	
12	✓	F121112	↓ -01A	4255	10.0" Hg → 5psi	4mL	10 ~~X~~	12-11-02	1457	C.T.	
13			0212089-01A	1L	Tedlar Bag	200 mL	1.00	AS 12/11/02			
14											
15											

Calculation Check: File ID: F121104 Compound: BFB Initials: C.T.

ppbv in sample = $\frac{\text{Area of Compound in Sample}}{\text{Area of Int. Standard in Sample}} \times \frac{\text{Conc. Int. Standard (ppbv)}}{\text{ICAL RRF}} \times$ Dilution Factor

ppbv in sample = $\frac{(414588)}{(798262)} \times \frac{(25)}{(0.51777)} \times (1.0) =$ **25.077**

Reported Result: 25.077

Signed

Date

0198

Revised: 06/29/99

Air Toxics Ltd.

Data file : /var/chem/msdf.i/f-25nova.b/f112507.d
Lab Smp Id: Client Smp ID: BFB
Inj Date : 25-NOV-2002 17:46
Operator : xp Inst ID: msdf.i
Smp Info : 2ul #843-548;BFB Tune Check;BFB Tune Check
Misc Info : 50ng
Comment :
Method : /var/chem/msdf.i/f-25nova.b/bfb.m
Meth Date : 25-Nov-2002 17:57 Quant Type: ESTD
Cal Date : Cal File:
Als bottle: 1 QC Sample: BFB
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 3.50 Sample Matrix: WATER
Processing Host: eeyore

Concentration Formula: Amt * DF * Uf * Vf * Vi * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	1.00000	ng unit correction factor
Vf	1.00000	Volumetric correction factor
Vi	1.00000	Injection Volume

Cpnd Variable Local Compound Variable

RT	EXP RT	DLT RT	MASS	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/L)	TARGET RANGE	RATIO
1 bfb						CAS #: 460-00-4		
7.672	7.912	-0.240	95	1284522			100.00- 100.00	100.00
7.672	7.912	-0.240	50	244192			15.00- 40.00	20.27
7.672	7.912	-0.240	75	570470			30.00- 60.00	47.36
7.672	7.912	-0.240	96	81681			5.00- 9.00	6.78
7.672	7.912	-0.240	173	0			0.00- 2.00	0.00
7.672	7.912	-0.240	174	944448			50.00- 100.00	78.41
7.672	7.912	-0.240	175	70432			5.00- 9.00	7.46
7.672	7.912	-0.240	176	913092			95.00- 101.00	96.68
7.672	7.912	-0.240	177	60759			5.00- 9.00	6.65

Data File: /chem/msdf.i/f-25nova.b/f112507.d

Date : 25-NOV-2002 17:46

Client ID: BFB

Instrument: msdf.i

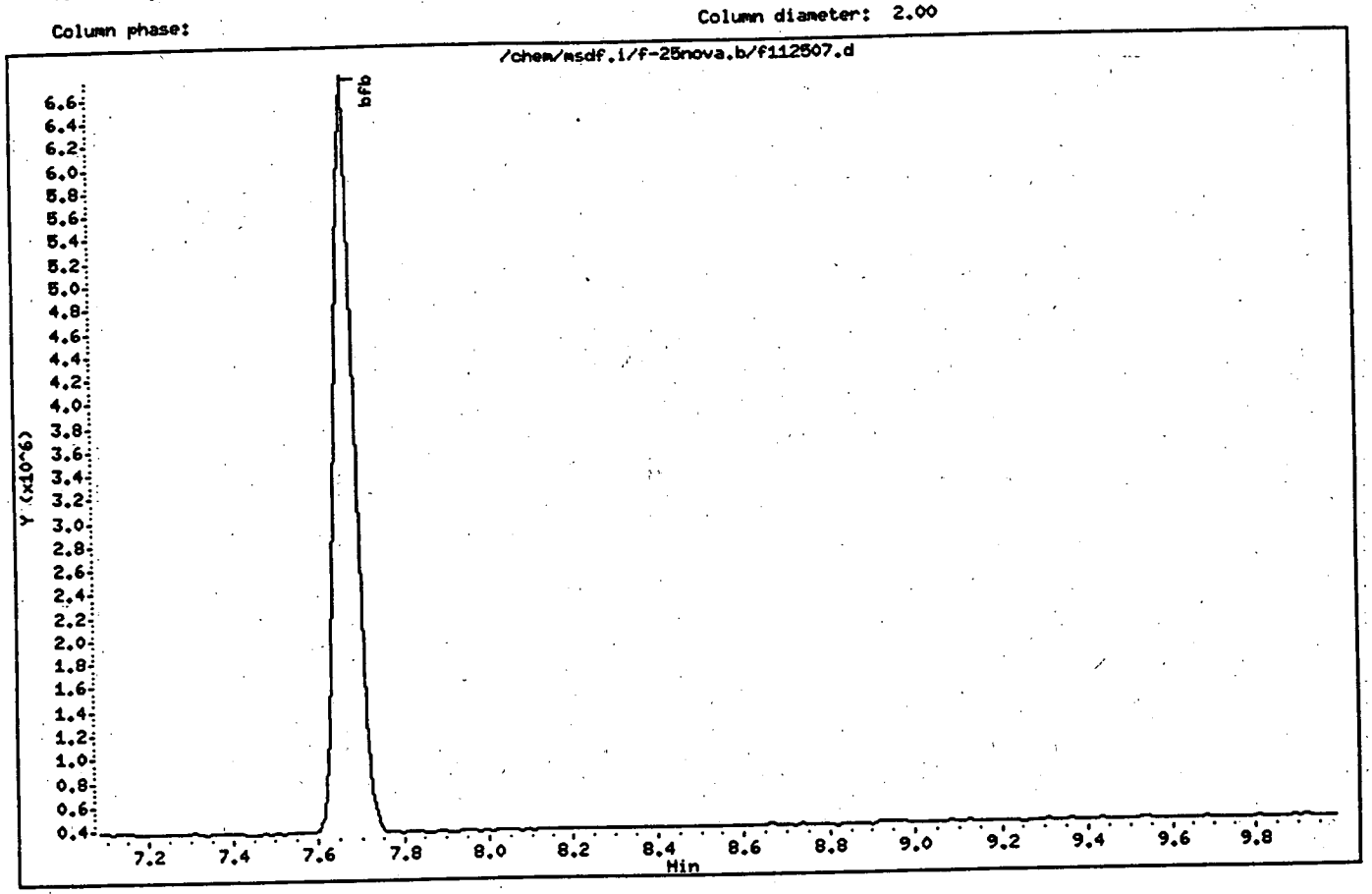
Sample Info: 2ul #843-548;BFB Tune Check;BFB Tune Check

Operator: xp

Volume Injected (uL): 1.0

Column diameter: 2.00

Column phase:



Data File: /chem/msdf.i/f-25nova.b/f112507.d

Date : 25-NOV-2002 17:46

Client ID: BFB

Instrument: msdf.i

Sample Info: 2ul #843-548;BFB Tune Check;BFB Tune Check

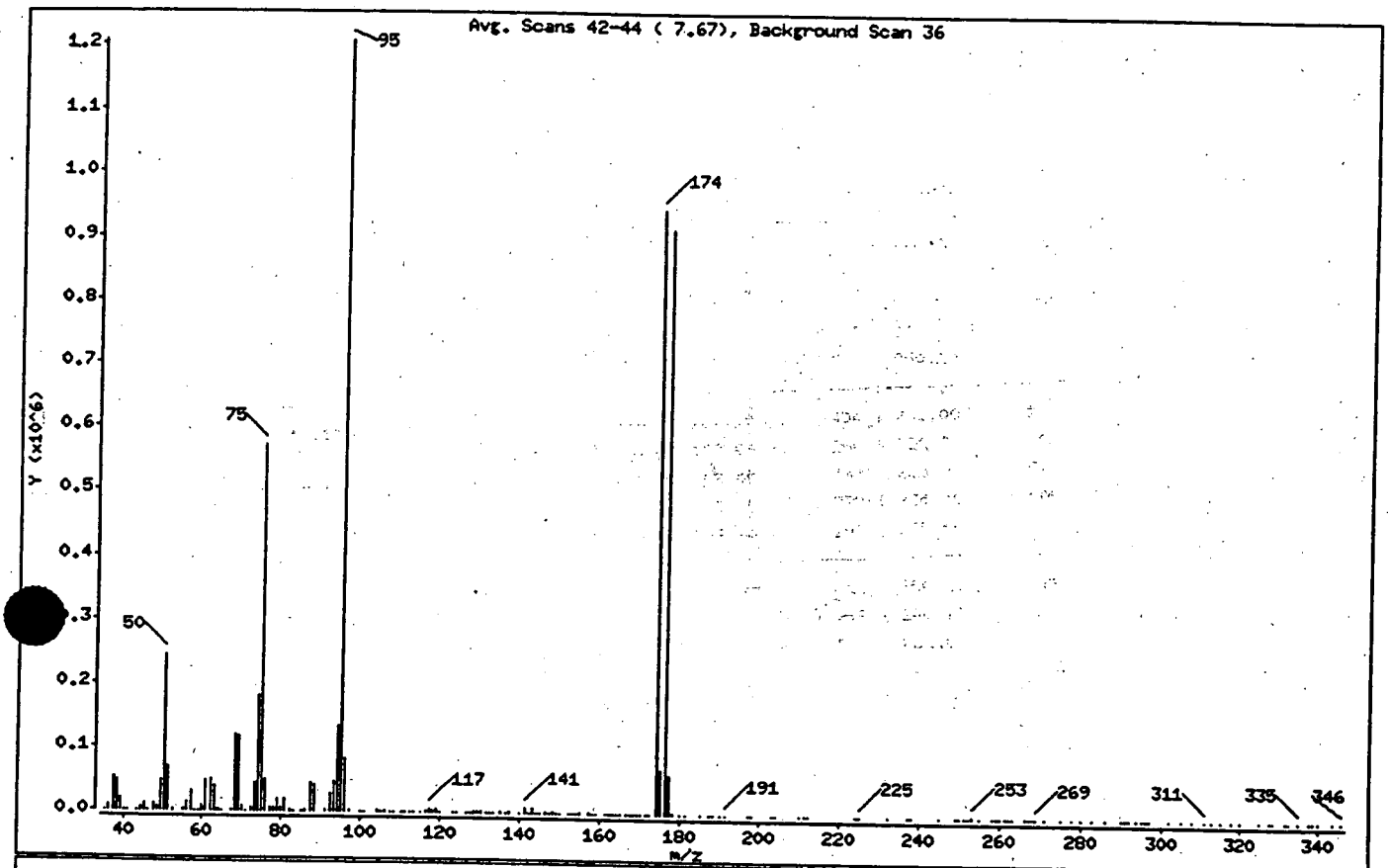
Volume Injected (uL): 1.0

Operator: xp

Column phase:

Column diameter: 2.00

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	20.27
75	30.00 - 60.00% of mass 95	47.36
96	5.00 - 9.00% of mass 95	6.78
173	Less than 2.00% of mass 174	0.00 (0.00)
174	50.00 - 100.00% of mass 95	78.41
175	5.00 - 9.00% of mass 174	5.85 (7.46)
176	95.00 - 101.00% of mass 174	75.81 (96.68)
177	5.00 - 9.00% of mass 176	5.04 (6.65)

Data File: /chem/msdf.i/f-25nova.b/f112507.d

Date : 25-NOV-2002 17:46

Client ID: BFB

Instrument: msdf.i

Sample Info: 2ul #843-548;BFB Tune Check;BFB Tune Check

Volume Injected (uL): 1.0

Operator: xp

Column phase:

Column diameter: 2.00

Data File: f112507.d

Spectrum: Avg. Scans 42-44 (7.67), Background Scan 36

Location of Maximum: 95.00

Number of points: 189

m/z	Y	m/z	Y	m/z	Y	m/z	Y
35.00	71	88.00	42712	150.00	907	252.00	64
36.00	9289	91.00	3033	152.00	655	253.00	1474
37.00	51384	92.00	28584	153.00	743	255.00	140
38.00	47320	93.00	47688	154.00	973	258.00	180
39.00	19064	94.00	131712	155.00	2645	259.00	61
40.00	525	95.00	1204224	157.00	1483	260.00	406
41.00	857	96.00	81680	158.00	254	261.00	34
43.00	286	97.00	2271	159.00	1067	262.00	11
44.00	5054	100.00	159	161.00	1086	263.00	299
45.00	10993	101.00	361	162.00	16	266.00	325
46.00	596	104.00	3212	163.00	361	267.00	208
47.00	12330	105.00	855	164.00	173	268.00	359
48.00	6051	106.00	3370	165.00	156	269.00	506
49.00	46760	107.00	1043	166.00	524	271.00	111
50.00	244160	108.00	441	167.00	502	275.00	75
51.00	70304	110.00	180	168.00	665	278.00	68
52.00	2670	111.00	503	169.00	369	280.00	126
55.00	2261	112.00	170	170.00	483	283.00	333
56.00	15198	113.00	387	171.00	634	286.00	50
57.00	30240	115.00	1060	172.00	464	290.00	72
58.00	1156	116.00	2781	174.00	944448	291.00	60
59.00	272	117.00	5460	175.00	70432	292.00	113
60.00	8391	118.00	2590	176.00	913088	294.00	102
61.00	47352	119.00	4520	177.00	60752	295.00	50
62.00	48720	120.00	233	178.00	1403	296.00	56
63.00	37680	123.00	166	180.00	52	297.00	145
64.00	3455	124.00	723	181.00	231	302.00	57
65.00	282	126.00	387	185.00	106	305.00	66
67.00	2621	127.00	29	187.00	226	308.00	126
68.00	117696	128.00	3494	188.00	147	311.00	268
69.00	115792	129.00	1776	190.00	472	313.00	53
70.00	8702	130.00	3685	191.00	1303	315.00	212
71.00	121	131.00	1128	197.00	61	318.00	56
72.00	5483	132.00	197	198.00	68	320.00	69
73.00	43216	133.00	714	203.00	228	325.00	358

Data File: /chem/msdf.i/f-25nova.b/f112507.d

Date : 25-NOV-2002 17:46

Client ID: BFB

Sample Info: 2ul #843-548;BFB Tune Check;BFB Tune Check

Volume Injected (uL): 1.0

Column phase:

Instrument: msdf.i

Operator: xp

Column diameter: 2.00

Data File: f112507.d

Spectrum: Avg. Scans 42-44 (7.67), Background Scan 36

Location of Maximum: 95.00

Number of points: 189

m/z	Y	m/z	Y	m/z	Y	m/z	Y
74.00	179712	135.00	2364	204.00	229	328.00	145
75.00	570432	136.00	338	210.00	216	329.00	9
76.00	49280	137.00	1390	211.00	171	332.00	6
77.00	6185	140.00	490	212.00	55	333.00	70
78.00	4390	141.00	8620	224.00	276	335.00	384
79.00	19040	142.00	1338	225.00	421	338.00	50
80.00	5887	143.00	8557	232.00	31	339.00	140
81.00	19968	144.00	705	237.00	183	340.00	53
82.00	3864	145.00	64	238.00	165	344.00	202
83.00	421	146.00	1546	245.00	52	346.00	240
85.00	104	147.00	614	249.00	182		
86.00	1418	148.00	2664	250.00	21		
87.00	44792	149.00	473	251.00	105		

Data File: /chem/msdf.i/f-26nov.b/f112601.d
Report Date: 26-Nov-2002 05:56

Air Toxics Ltd.

Data file : /chem/msdf.i/f-26nov.b/f112601.d
Lab Smp Id:
Inj Date : 26-NOV-2002 05:43
Operator : kb
Smp Info : BFB Tune Check #843-548
Misc Info : 2ul 50ng
Comment :
Method : /var/chem/msdf.i/f-26nov.b/bfb.m
Meth Date : 26-Nov-2002 05:52
Cal Date :
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE
Target Version: 3.50

Client Smp ID: BFB
Inst ID: msdf.i
Quant Type: ESTD
Cal File:
QC Sample: BFB
Compound Sublist: all.sub
Sample Matrix: WATER

Concentration Formula: Amt * DF * Uf * Vf * Vi * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	1.00000	ng unit correction factor
Vf	1.00000	Volumetric correction factor
Vi	1.00000	Injection Volume
Cpnd Variable		Local Compound Variable

RT	EXP RT	DLT RT	MASS	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/L)	TARGET RANGE	RATIO
1 bfb						CAS #: 460-00-4		
7.658	7.912	-0.254	95	1438208			100.00- 100.00	100.00
7.658	7.912	-0.254	50	301952			15.00- 40.00	21.00
7.658	7.912	-0.254	75	686784			30.00- 60.00	47.75
7.658	7.912	-0.254	96	102704			5.00- 9.00	7.14
7.658	7.912	-0.254	173	0			0.00- 2.00	0.00
7.658	7.912	-0.254	174	1095168			50.00- 100.00	76.15
7.658	7.912	-0.254	175	79824			5.00- 9.00	7.29
7.658	7.912	-0.254	176	1056256			95.00- 101.00	96.45
7.658	7.912	-0.254	177	71024			5.00- 9.00	6.72

Data File: /chem/msdf.i/f-26nov.b/f112601.d

Date : 26-NOV-2002 05:43

Client ID: BFB

Sample Info: BFB Tune Check #843-548

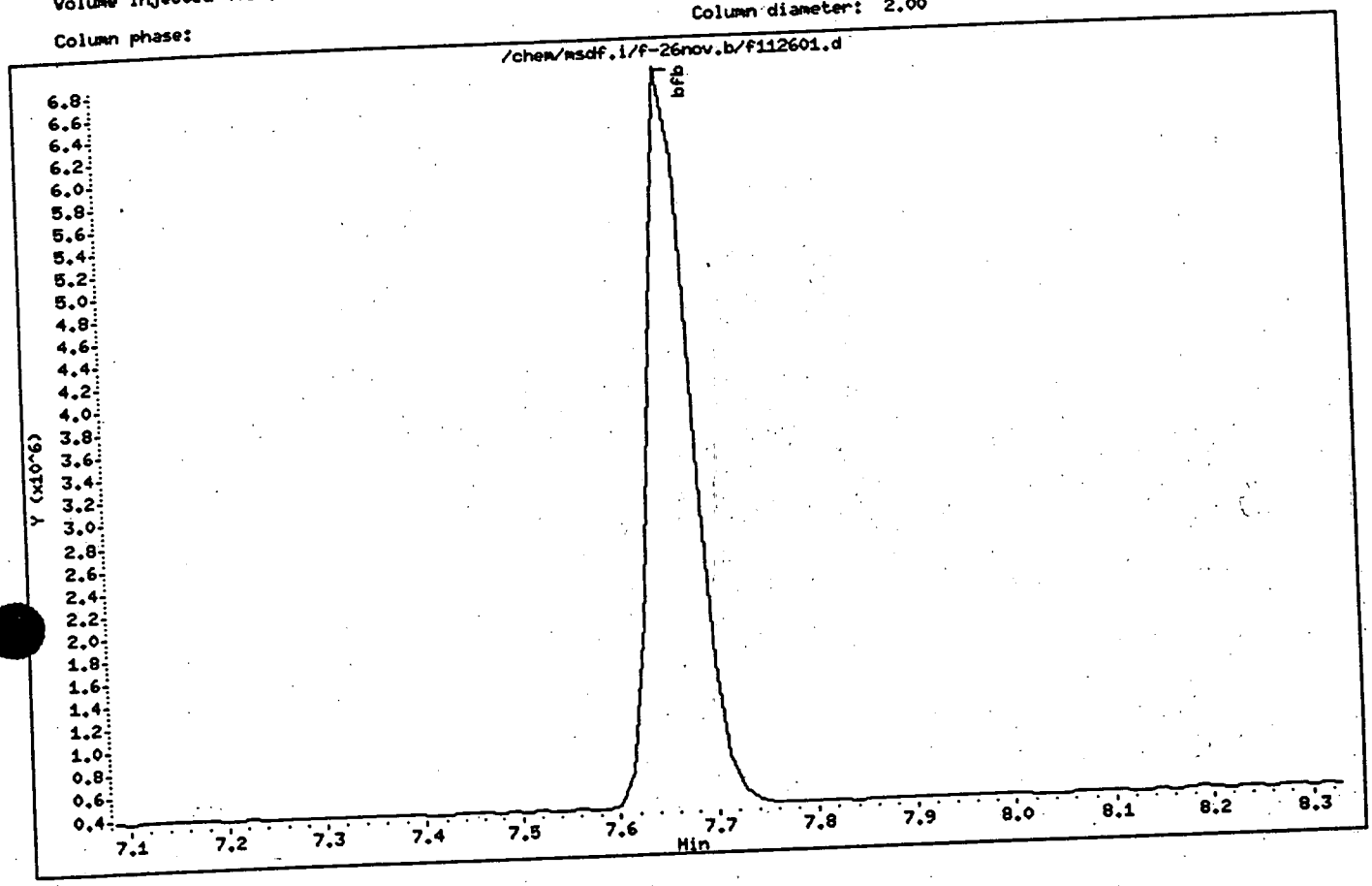
Volume Injected (uL): 1.0

Column phase:

Instrument: msdf.i

Operator: kb

Column diameter: 2.00



Data File: /chem/msdf.i/f-26nov.b/f112601.d

Date : 26-NOV-2002 05:43

Client ID: BFB

Sample Info: BFB Tune Check #843-548

Volume Injected (uL): 1.0

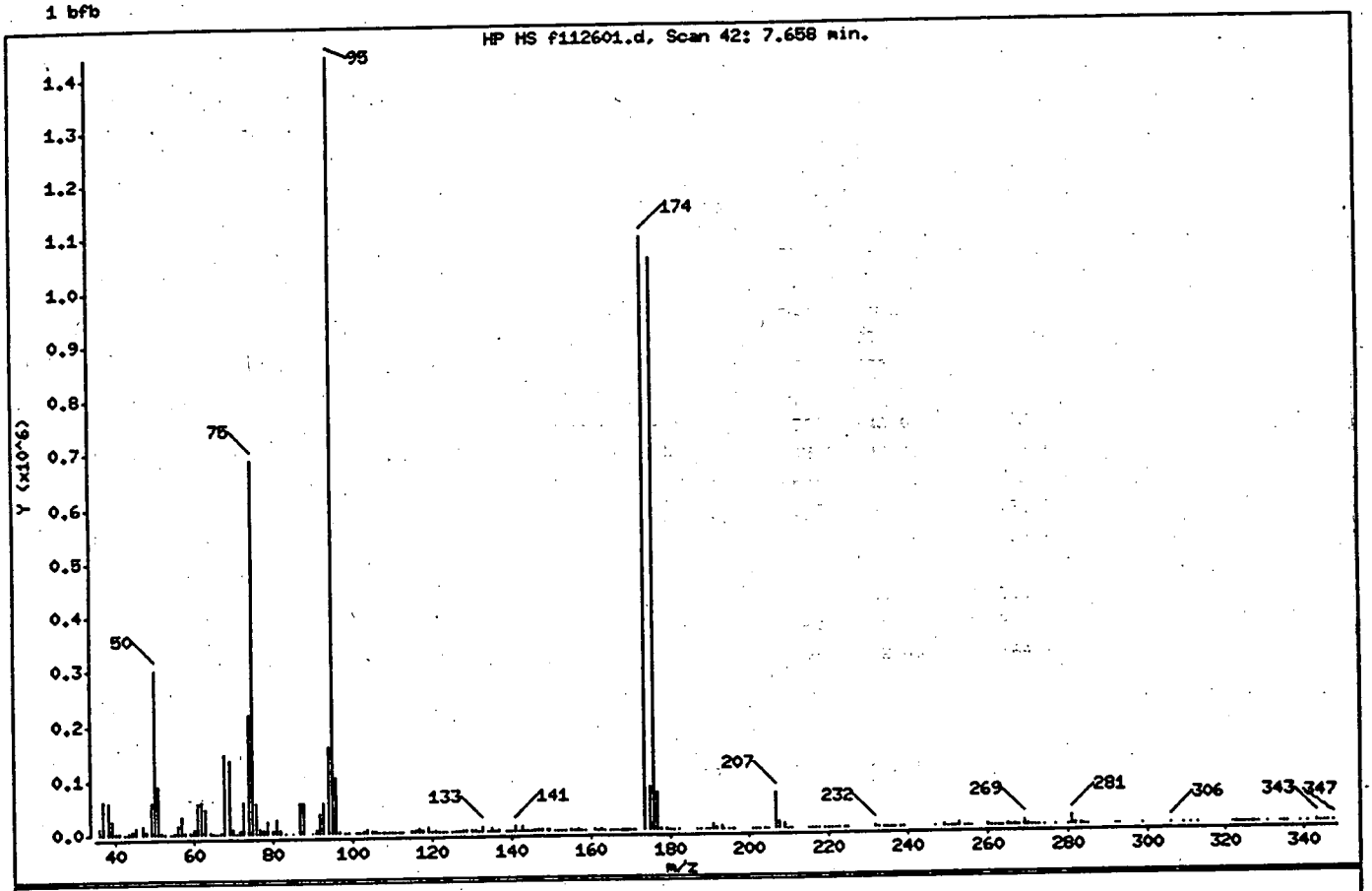
Column phase:

1 bfb

Instrument: msdf.i

Operator: kb

Column diameter: 2.00



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	21.00
75	30.00 - 60.00% of mass 95	47.75
96	5.00 - 9.00% of mass 95	7.14
173	Less than 2.00% of mass 174	0.00 (0.00)
174	50.00 - 100.00% of mass 95	76.15
175	5.00 - 9.00% of mass 174	5.55 (7.29)
176	95.00 - 101.00% of mass 174	73.44 (96.45)
177	5.00 - 9.00% of mass 176	4.94 (6.72)

Data File: /chem/msdf.i/f-26nov.b/f112601.d

Date : 26-NOV-2002 05:43

Client ID: BFB

Sample Info: BFB Tune Check #843-548

Volume Injected (uL): 1.0

Column phase:

Instrument: msdf.i

Operator: kb

Column diameter: 2.00

Data File: f112601.d

Spectrum: HP MS f112601.d, Scan 42: 7.658 min.

Location of Maximum: 95.00

Number of points: 250

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.10	11839	101.80	420	161.90	690	238.20	208
37.00	63960	102.10	296	162.90	3143	239.10	431
38.10	58552	102.90	2735	163.90	800	247.10	622
39.00	26224	103.90	4972	165.00	1447	249.00	2346
40.00	2852	104.90	3414	166.00	647	250.10	394
41.10	3723	105.90	4284	167.10	404	251.00	1178
42.20	726	106.90	1315	167.80	260	251.80	182
43.10	2964	107.80	159	168.40	434	253.00	5722
44.00	7834	108.50	663	168.70	322	254.00	1055
45.00	14099	109.30	383	168.90	282	255.10	688
47.00	16504	109.90	942	169.30	214	256.20	203
48.00	6650	110.90	1086	169.50	219	260.10	2580
49.00	58712	111.90	462	170.00	542	261.00	1076
50.00	301952	112.20	438	170.90	911	262.00	485
51.00	89472	112.80	592	171.40	1148	262.80	159
52.00	4876	114.90	2831	173.90	1095168	263.70	155
53.00	538	116.00	3386	174.90	79824	265.00	1886
54.00	505	117.00	6272	175.90	1056256	266.10	656
55.00	3526	117.90	3960	176.90	71024	267.00	2268
56.00	18184	119.00	8533	177.90	3548	268.00	541
57.00	33368	120.10	1234	179.00	2082	269.00	10497
58.00	1818	121.00	2058	180.00	176	270.00	2950
59.00	1794	122.10	406	181.00	324	271.00	1062
60.00	10324	122.90	623	182.30	221	272.10	392
61.00	56768	123.80	727	187.00	312	273.00	195
62.00	59496	125.10	1133	187.90	203	274.00	175
63.00	46424	125.90	933	189.00	485	277.00	368
64.00	4170	127.10	1648	190.10	492	279.90	194
64.90	725	127.80	4720	191.00	10067	281.00	16456
65.90	667	128.80	2331	192.00	2663	282.10	4802
67.00	3750	129.90	4403	193.10	5468	283.10	2489
68.00	146688	131.00	2072	193.90	775	284.10	843
69.00	135360	132.00	798	195.10	935	285.10	301
70.00	9199	132.90	9890	195.90	198	292.00	274
71.00	443	134.00	1476	196.70	151	293.00	343

Data File: /chem/msdf.i/f-26nov.b/f112601.d

Date : 26-NOV-2002 05:43

Client ID: BFB

Sample Info: BFB Tune Check #843-548

Volume Injected (uL): 1.0

Column phase:

Instrument: msdf.i

Operator: kb

Column diameter: 2.00

Data File: f112601.d

Spectrum: HP MS f112601.d, Scan 42: 7.658 min.

Location of Maximum: 95.00

Number of points: 250

m/z	Y	m/z	Y	m/z	Y	m/z	Y
72.00	6228	134.90	5054	200.80	216	298.90	168
73.00	58400	136.00	777	201.90	180	306.00	753
74.00	218496	136.90	1886	203.00	689	309.20	248
75.00	686784	138.80	431	204.10	326	311.00	171
76.00	56432	139.10	366	205.00	814	313.00	176
77.00	9287	139.50	403	207.00	67616	322.10	502
78.00	6371	140.00	757	208.00	14376	323.00	344
78.90	22672	140.90	9670	209.00	8779	323.20	351
80.00	7509	141.90	1287	210.00	1187	324.30	151
80.90	25552	142.90	9497	211.10	411	325.10	616
81.90	5626	143.70	476	214.90	151	326.00	162
83.10	974	144.00	453	216.00	254	327.00	1504
85.20	630	144.90	1363	216.80	239	327.60	189
86.90	57736	145.90	2523	218.00	350	327.80	192
87.90	55304	146.90	3310	219.00	1445	328.90	335
90.10	368	147.90	3515	220.00	321	330.90	346
90.90	5931	149.00	2626	221.00	377	334.10	1380
92.00	36264	149.80	1681	221.80	167	335.10	622
93.00	56960	150.80	403	222.80	708	335.90	359
94.00	158400	151.90	1044	224.00	240	339.40	168
95.00	1438208	153.00	1611	224.80	222	341.20	559
96.00	102704	153.90	993	225.20	287	343.10	3242
97.00	4359	155.00	2645	232.00	2866	344.10	1416
98.30	276	156.00	968	233.00	587	345.00	703
99.10	203	156.90	2437	234.00	293	346.10	328
100.90	271	157.80	326	235.10	481	347.30	156
101.30	290	158.90	1358	236.00	261		
101.60	367	160.90	2366	236.90	336		

Data File: /var/chem/msdf.i/f-11dec.b/f121102.d
Report Date: 11-Dec-2002 08:54

Air Toxics Ltd.

Data file : /var/chem/msdf.i/f-11dec.b/f121102.d
Lab Smp Id:
Client Smp ID: BFB
Inj Date : 11-DEC-2002 08:41
Inst ID: msdf.i
Operator : ct
Smp Info : 2uL #843-559;BFB Tune Check;BFB Tune Check
Misc Info : 50ng
Comment :
Method : /var/chem/msdf.i/f-11dec.b/bfb.m
Meth Date : 11-Dec-2002 08:38
Quant Type: ESTD
Cal Date :
Cal File:
Als bottle: 1
QC Sample: BFB
Dil Factor: 1.00000
Compound Sublist: all.sub
Integrator: HP RTE
Sample Matrix: WATER
Target Version: 3.50
Processing Host: eeyore

Concentration Formula: Amt * DF * Uf * Vf * Vi * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	1.00000	ng unit correction factor
Vf	1.00000	Volumetric correction factor
Vi	1.00000	Injection Volume
Cpnd Variable		Local Compound Variable

RT	EXP RT	DLT RT	MASS	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/L)	TARGET RANGE	RATIO
1 bfb							CAS #: 460-00-4	
7.644	7.912	-0.268	95	1239232			100.00- 100.00	100.00
7.644	7.912	-0.268	50	256324			15.00- 40.00	20.68
7.644	7.912	-0.268	75	592881			30.00- 60.00	47.84
7.644	7.912	-0.268	96	82623			5.00- 9.00	6.67
7.644	7.912	-0.268	173	0			0.00- 2.00	0.00
7.644	7.912	-0.268	174	945142			50.00- 100.00	76.27
7.644	7.912	-0.268	175	70629			5.00- 9.00	7.47
7.644	7.912	-0.268	176	904037			95.00- 101.00	95.65
7.644	7.912	-0.268	177	58672			5.00- 9.00	6.49

Data File: /chem/msdf.i/f-11dec.b/f121102.d

Date : 11-DEC-2002 08:41

Instrument: msdf.i

Client ID: BFB

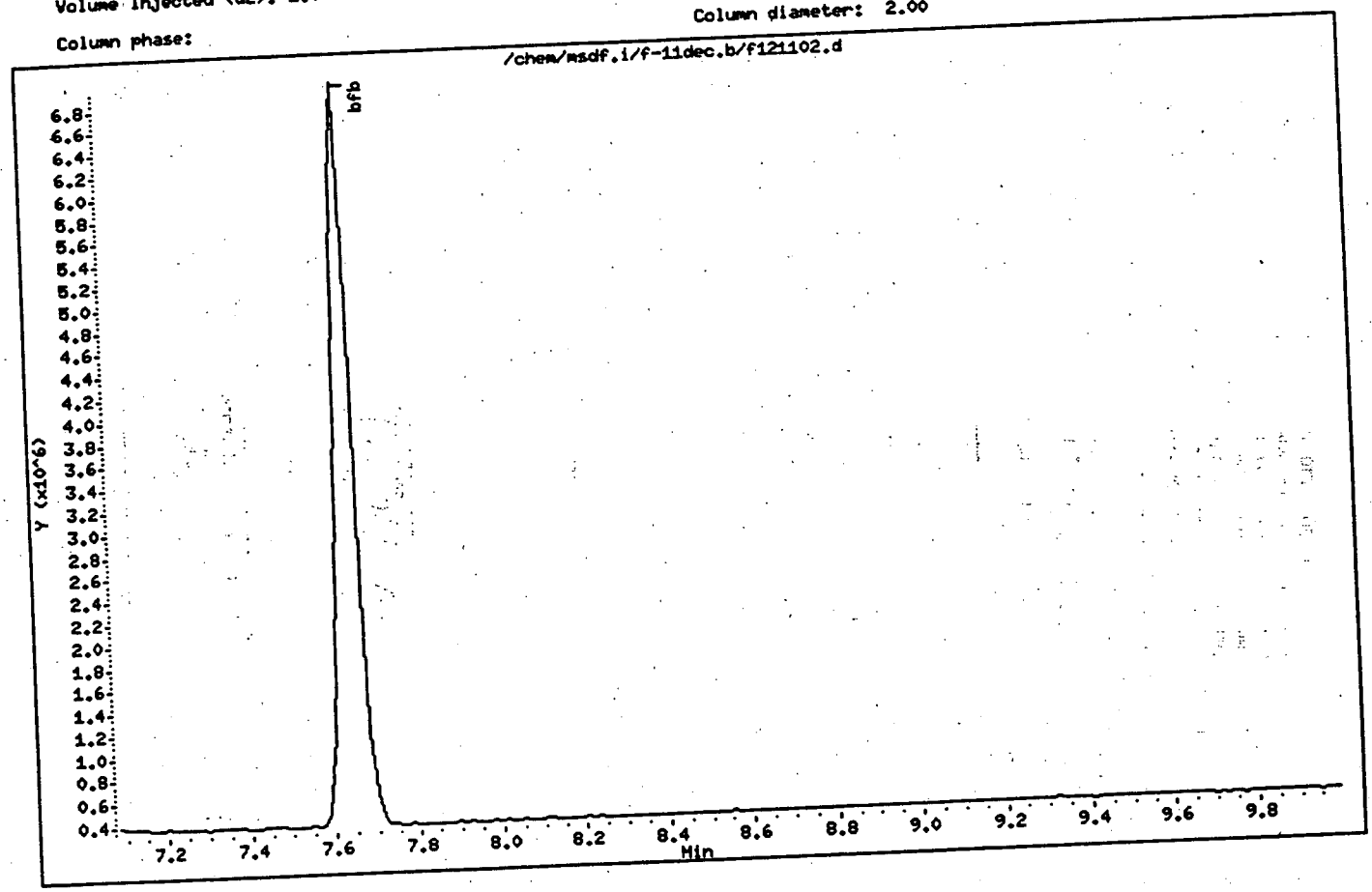
Sample Info: 2uL #843-559;BFB Tune Check;BFB Tune Check

Operator: ct

Volume Injected (uL): 1.0

Column diameter: 2.00

Column phase:



Data File: /chem/msdf.i/f-11dec.b/f121102.d

Date : 11-DEC-2002 08:41

Client ID: BFB

Instrument: msdf.i

Sample Info: 2uL #843-559;BFB Tune Check;BFB Tune Check

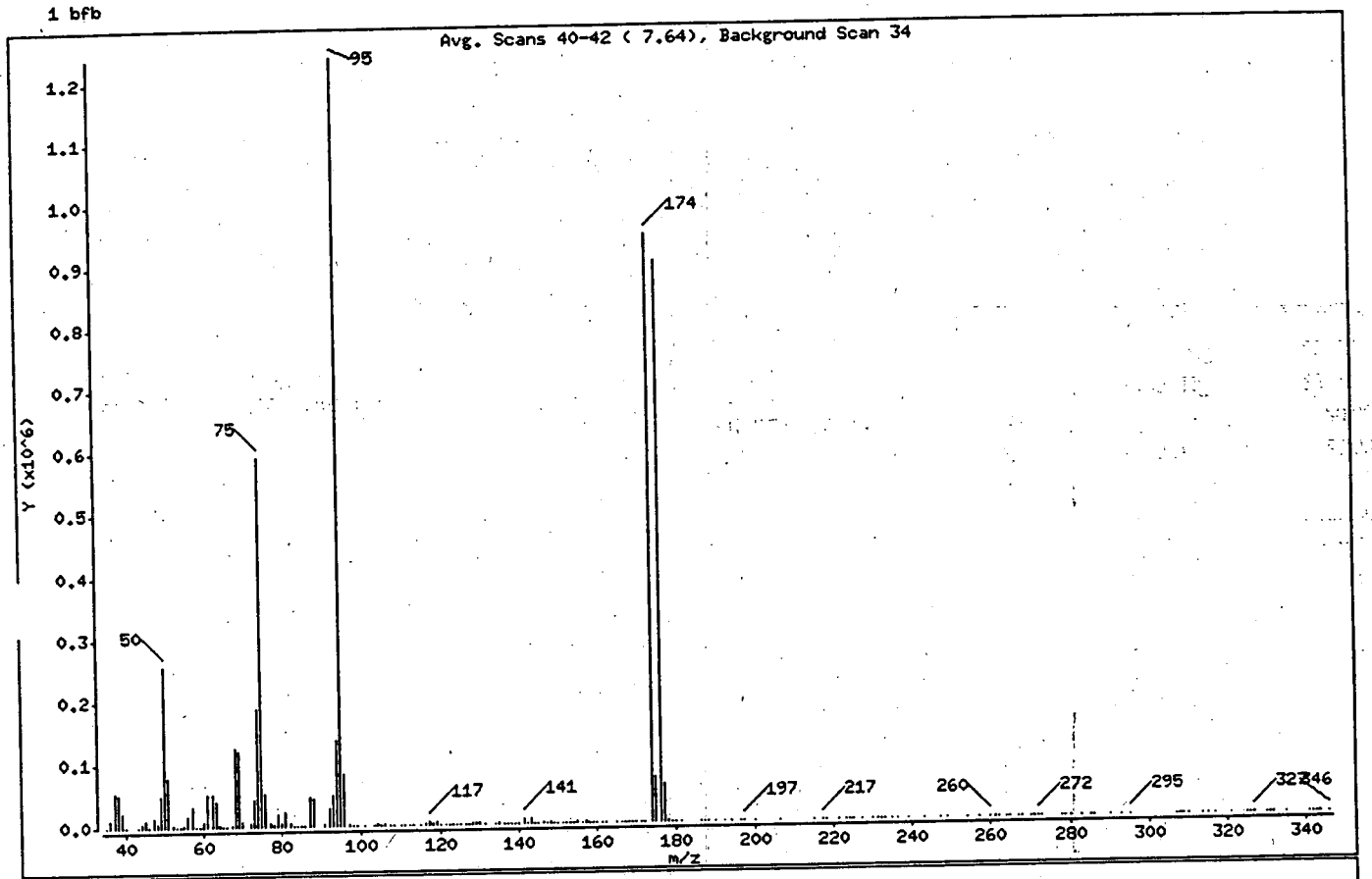
Volume Injected (uL): 1.0

Operator: ct

Column phase:

Column diameter: 2.00

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	20.68
75	30.00 - 60.00% of mass 95	47.84
96	5.00 - 9.00% of mass 95	6.67
173	Less than 2.00% of mass 174	0.00 (0.00)
174	50.00 - 100.00% of mass 95	76.27
175	5.00 - 9.00% of mass 174	5.70 (7.47)
176	95.00 - 101.00% of mass 174	72.95 (95.65)
177	5.00 - 9.00% of mass 176	4.73 (6.49)

Data File: /chem/msdf.i/f-11dec.b/f121102.d

Date : 11-DEC-2002 08:41

Client ID: BFB

Instrument: msdf.i

Sample Info: 2uL #843-559;BFB Tune Check;BFB Tune Check

Volume Injected (uL): 1.0

Operator: ct

Column phase:

Column diameter: 2.00

Data File: f121102.d

Spectrum: Avg. Scans 40-42 (7.64), Background Scan 34

Location of Maximum: 95.00

Number of points: 203

m/z	Y	m/z	Y	m/z	Y	m/z	Y
35.00	70	91.00	2203	148.00	2576	232.00	40
36.00	10459	92.00	29776	149.00	577	233.00	252
37.00	55472	93.00	48728	150.00	1180	235.00	78
38.00	51272	94.00	137024	151.00	81	236.00	124
39.00	21552	95.00	1239040	152.00	704	239.00	189
40.00	185	96.00	82616	153.00	587	243.00	55
43.00	152	97.00	2812	154.00	733	247.00	46
44.00	4974	98.00	3	155.00	2555	249.00	12
45.00	12023	99.00	61	156.00	542	254.00	137
46.00	383	101.00	86	157.00	1790	257.00	110
47.00	13578	103.00	86	158.00	350	260.00	354
48.00	6387	104.00	3278	159.00	940	261.00	339
49.00	48800	105.00	1196	160.00	26	262.00	164
50.00	256320	106.00	3715	161.00	1050	264.00	50
51.00	76960	107.00	766	162.00	149	265.00	143
52.00	3165	108.00	73	165.00	325	267.00	127
53.00	109	110.00	392	166.00	164	268.00	334
54.00	71	111.00	497	167.00	32	270.00	417
55.00	2146	112.00	406	168.00	428	271.00	180
56.00	16024	113.00	331	169.00	765	272.00	456
57.00	31504	115.00	1069	170.00	451	273.00	57
58.00	1377	116.00	3145	171.00	1364	278.00	73
59.00	140	117.00	5001	172.00	244	279.00	53
60.00	9523	118.00	3800	174.00	945088	280.00	109
61.00	50056	119.00	4638	175.00	70624	283.00	109
62.00	50712	120.00	400	176.00	904000	285.00	49
63.00	39984	121.00	16	177.00	58672	286.00	55
64.00	3389	122.00	367	178.00	1549	290.00	53
65.00	380	123.00	332	179.00	221	293.00	68
66.00	132	124.00	467	180.00	42	295.00	193
67.00	2343	125.00	464	181.00	139	307.00	142
68.00	124896	126.00	223	186.00	57	308.00	62
69.00	120720	127.00	440	187.00	132	309.00	54
70.00	8236	128.00	3168	188.00	82	310.00	56
72.00	4489	129.00	1529	190.00	467	314.00	153

Data File: /chem/msdf.i/f-11dec.b/f121102.d

Date : 11-DEC-2002 08:41

Client ID: BFB

Instrument: msdf.i

Sample Info: 2uL #843-559;BFB Tune Check;BFB Tune Check

Volume Injected (uL): 1.0

Operator: ct

Column phase:

Column diameter: 2.00

Data File: f121102.d

Spectrum: Avg. Scans 40-42 (7.64), Background Scan 34

Location of Maximum: 95.00

Number of points: 203

m/z	Y	m/z	Y	m/z	Y	m/z	Y
73.00	43008	130.00	3352	192.00	165	315.00	67
74.00	187392	131.00	1415	194.00	81	317.00	51
75.00	592832	134.00	323	196.00	61	321.00	51
76.00	50776	135.00	2057	197.00	405	325.00	88
77.00	5300	136.00	439	200.00	127	326.00	124
78.00	3526	137.00	1276	206.00	156	327.00	267
79.00	20128	138.00	366	215.00	123	330.00	218
80.00	6966	139.00	274	217.00	264	331.00	67
81.00	21424	140.00	939	218.00	214	332.00	82
82.00	4420	141.00	9063	221.00	64	335.00	41
83.00	344	142.00	1103	223.00	229	341.00	192
84.00	248	143.00	8440	224.00	172	342.00	10
85.00	144	144.00	579	225.00	20	343.00	81
86.00	581	145.00	318	227.00	115	344.00	224
87.00	44832	146.00	1555	230.00	59	346.00	170
88.00	43384	147.00	844	231.00	132		

Shipping/ Receiving Documents

@ AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABARATORY

180 Blue Ravine Road, Suite B
Folsom, CA 95630

Phone (916) 985-1000 FAX (916) 985-1020
Hours 8:00 A.M. to 6:00 P.M. Pacific

COMPANY: Law Engineering and Environmental Services, Inc.
ATTENTION: Ms. Angie Gershman
FAX #: 609-936-1020
FROM: Sample Receiving
Workorder #: 0212071
# of pages (Including Cover): 1

12/17/2002

Thank you for selecting Air Toxics Ltd. We have received your samples and have found no discrepancies. In order to expedite analysis and reporting, please review the attached information for accuracy. Corrections can be faxed to **Betty Chu at 916-985-1020.**
ATL will proceed with the analysis as specified on the Chain of Custody and Sample Login page.

0216

@ AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

CHAIN-OF-CUSTODY RECORD

Sample Transportation Notice

Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand or action of any kind related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922

180 BLUE RAVINE ROAD, SUITE B
FOLSOM CA 95630-4719
(916) 985-1000 FAX (916) 985-1020

Page 1 of 1

Contact Person: ANGIE GERSHMAN
Company: MACTEC ENGINEERING & CONSULTING
Address: 14 Washington Rd Bldg 1 City: Princeton Jct State: NJ Zip: 08550
Phone: 609 936 0700 FAX: 609 936 1020
Collected By: Signature: [signature]

Project info:
P.O. #
Project #: 22000-0-0028
Project Name: SWOPE

Turn Around Time:
☒ Normal
☐ Rush _____ Specify

Lab I.D.	Field Sample I.D.	Date & Time	Analyses Requested	Canister Pressure / Vacuum Initial	Final	Receipt
01A	INFLUENT	11/27/02 0803	TO-14	28	10	10.0 Hg
02A	EFFLUENT	↓	TO-14	26	0	0

FB 12/4/02

Relinquished By: (Signature) Date/Time: [signature] 11/27/02 1120
Received By: (Signature) Date/Time: [signature] ATL 12/4/02 0850
Relinquished By: (Signature) Date/Time:
Received By: (Signature) Date/Time:
Relinquished By: (Signature) Date/Time:
Received By: (Signature) Date/Time:

Notes:

Lab Use Only	Shipper Name	Air Bill #	Opened By:	Temp. (°C)	Condition	Custody Seals Intact?	Work Order #
	FedEx	7901510060 87	KLM	—	Good	Yes No None	0212071

@ AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

SAMPLE RECEIPT SUMMARY

WORKORDER 0212071

Client	Phone		
Ms. Angie Gershman Mactec 14 Washington Rd., Building 1 Princeton Junction, NJ 08550	609-936-0700 Fax 609-936-1020	Date Promised: Date Completed: Date Received: PO#: Project#: Total $: Logged By:	12/17/02 12/17/02 12/4/02 22000-0-0028 SWOPE $ 650.32 KLM

Sales Rep: RMW

Fraction	Sample #	Analysis	Collected	Receipt Vac./Pres.	Amount$
01A	INFLUENT	Modified TO-14	11/27/2002	10.0 "Hg	$245.00
02A	EFFLUENT	Modified TO-14	11/27/2002	0.0 "Hg	$245.00
03A	Lab Blank	Modified TO-14	NA	NA	$0.00
04A	LCS	Modified TO-14	NA	NA	$0.00
					$100.00
Misc. Charges	6 Liter Summa Canister (2) @ $50.00 each.				
	Shipping Charges (11/25/02)				$60.32

Note: Samples received after 3 P.M. PST are considered to be received on the following work day.
Atlas Project Name/Profile#: swope/2273

BILL TO: A/P Department
Mactec
1105 Sanctuary Parkway, Suite 300
Alpharetta, GA 30004

Analysis Code: TO-14

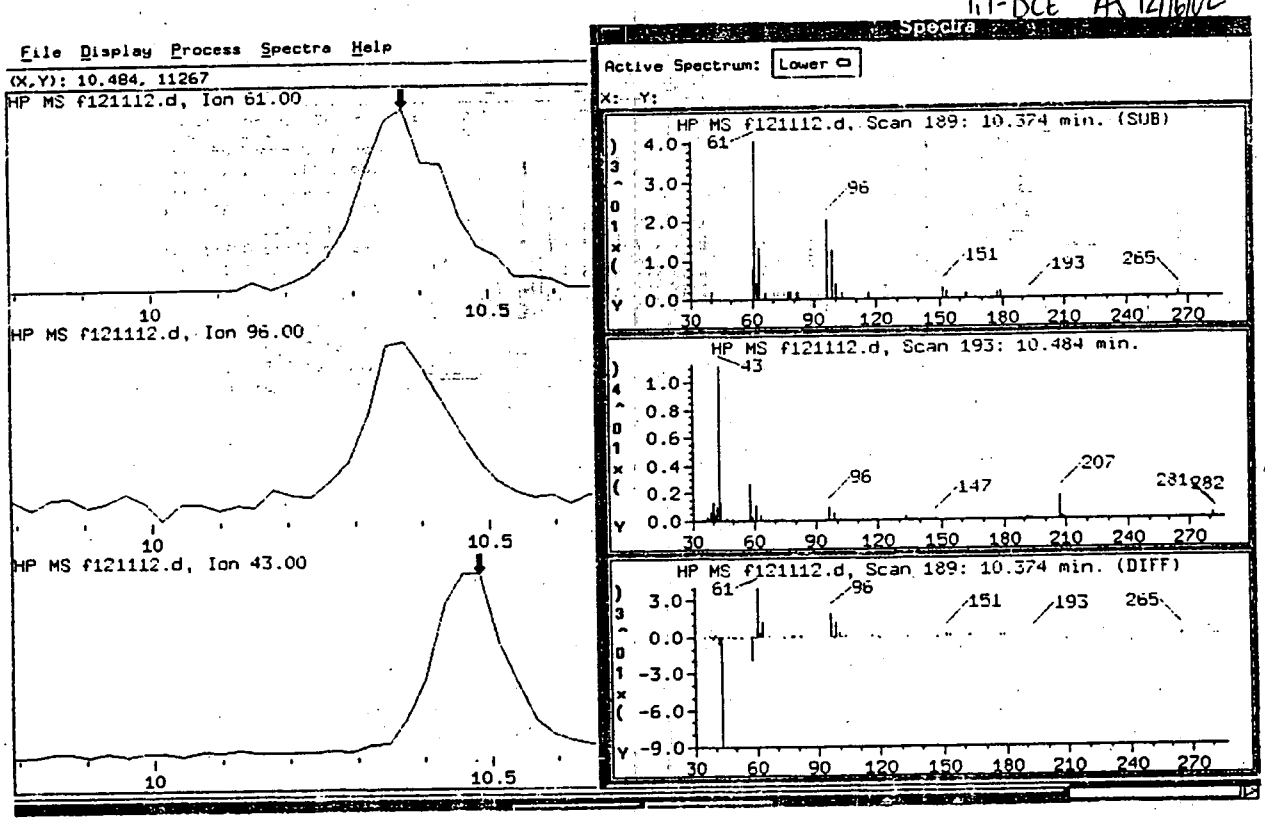
Reporting Method: Modified TO-14

180 BLUE RAVINE ROAD. SUITE B FOLSOM. CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

Other Records

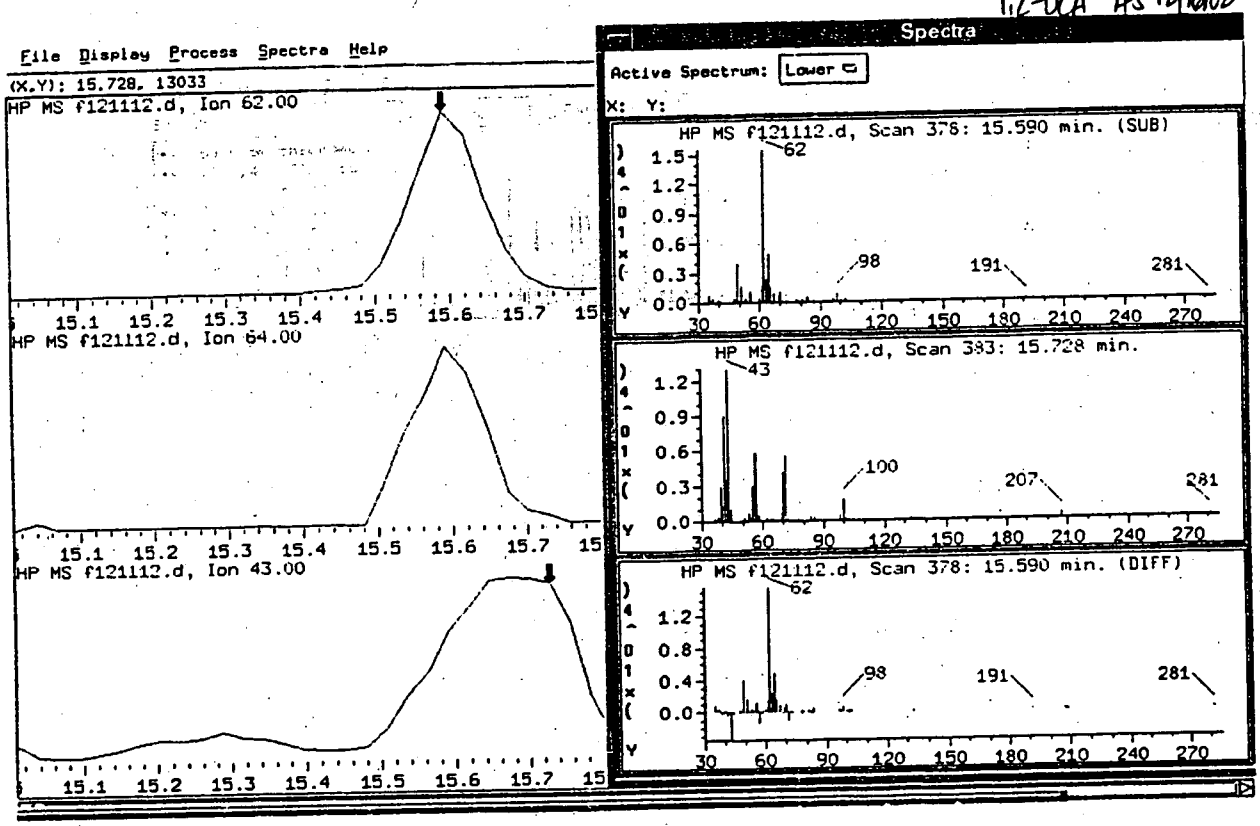
0212071-01A

1,1-DCE AS 12/16/12



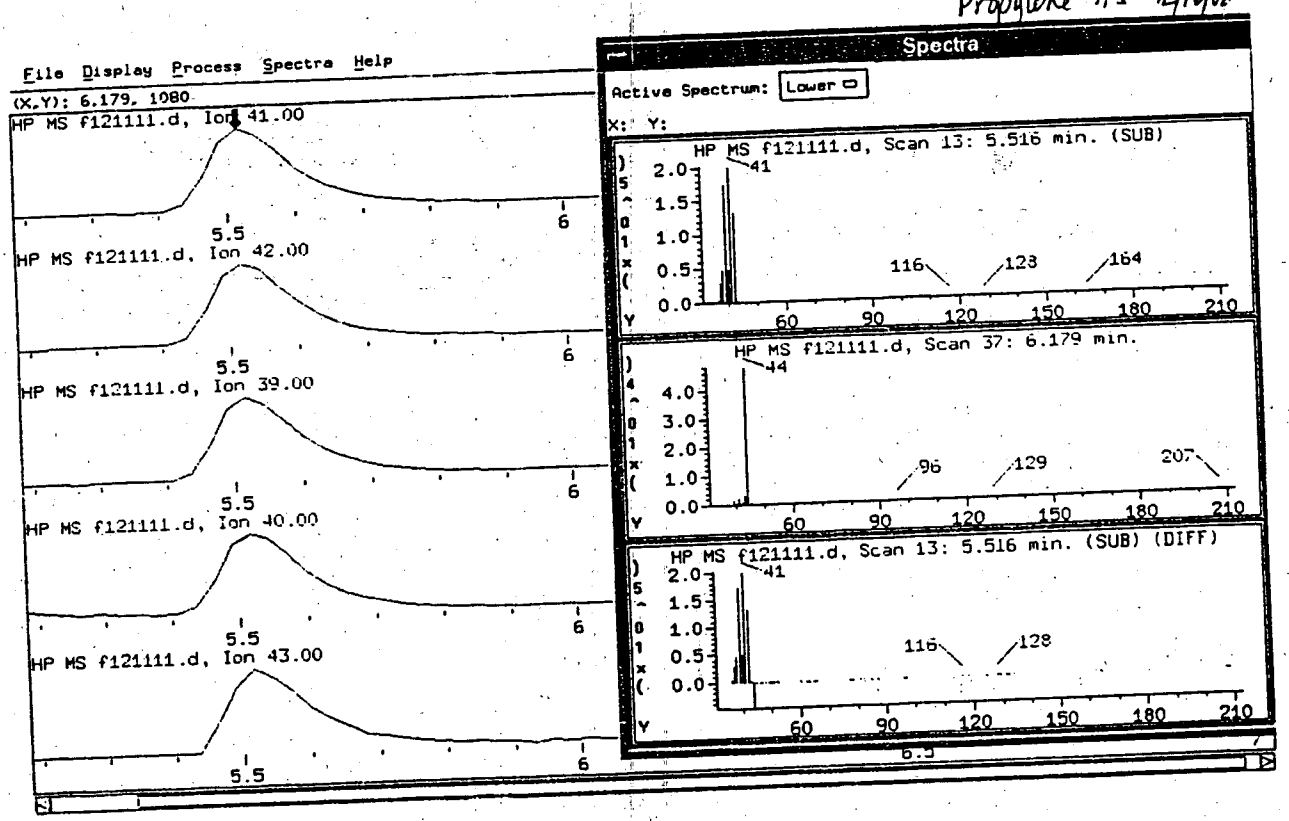
0212071-01A

1,2-DCA AS 12/11/02



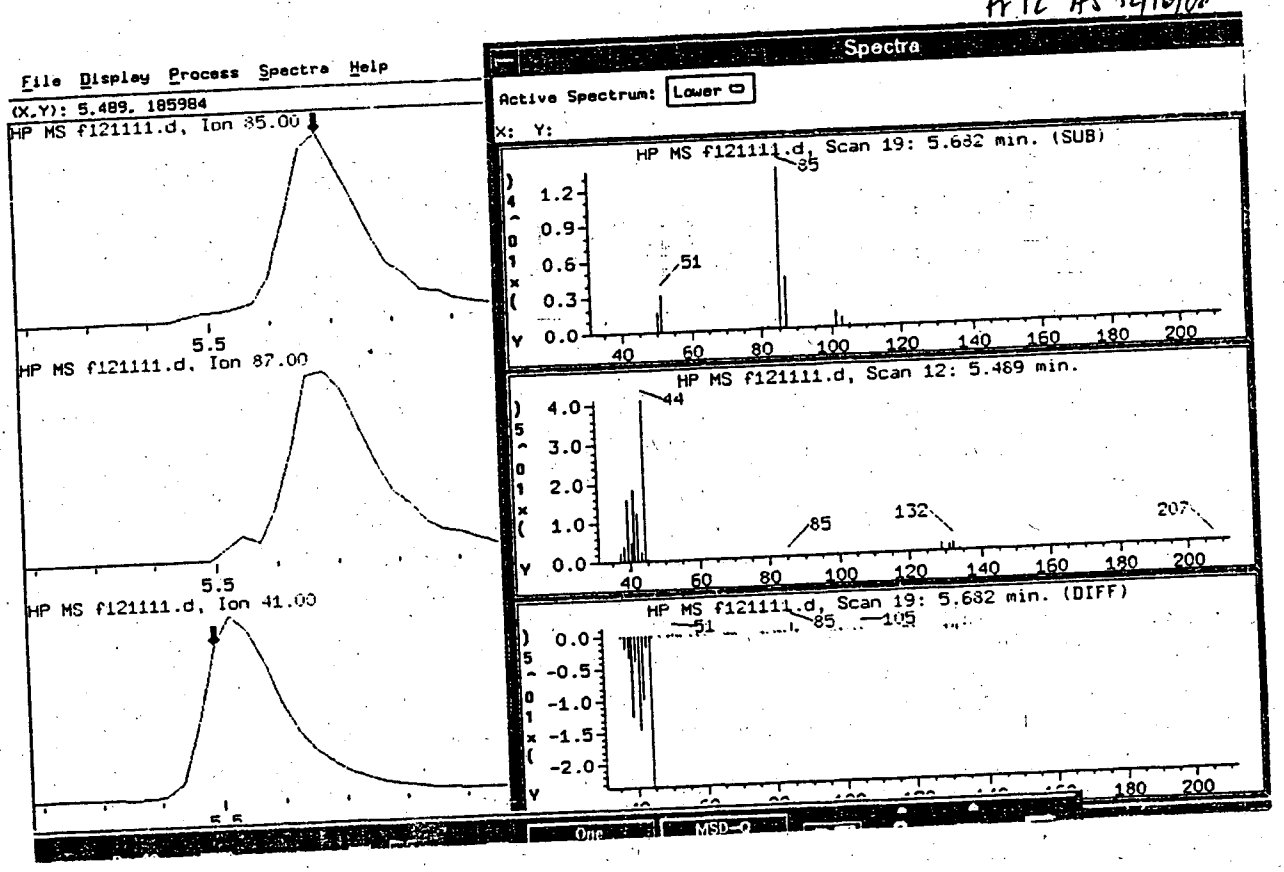
0212071-02A

Propylene AS 12/16/02



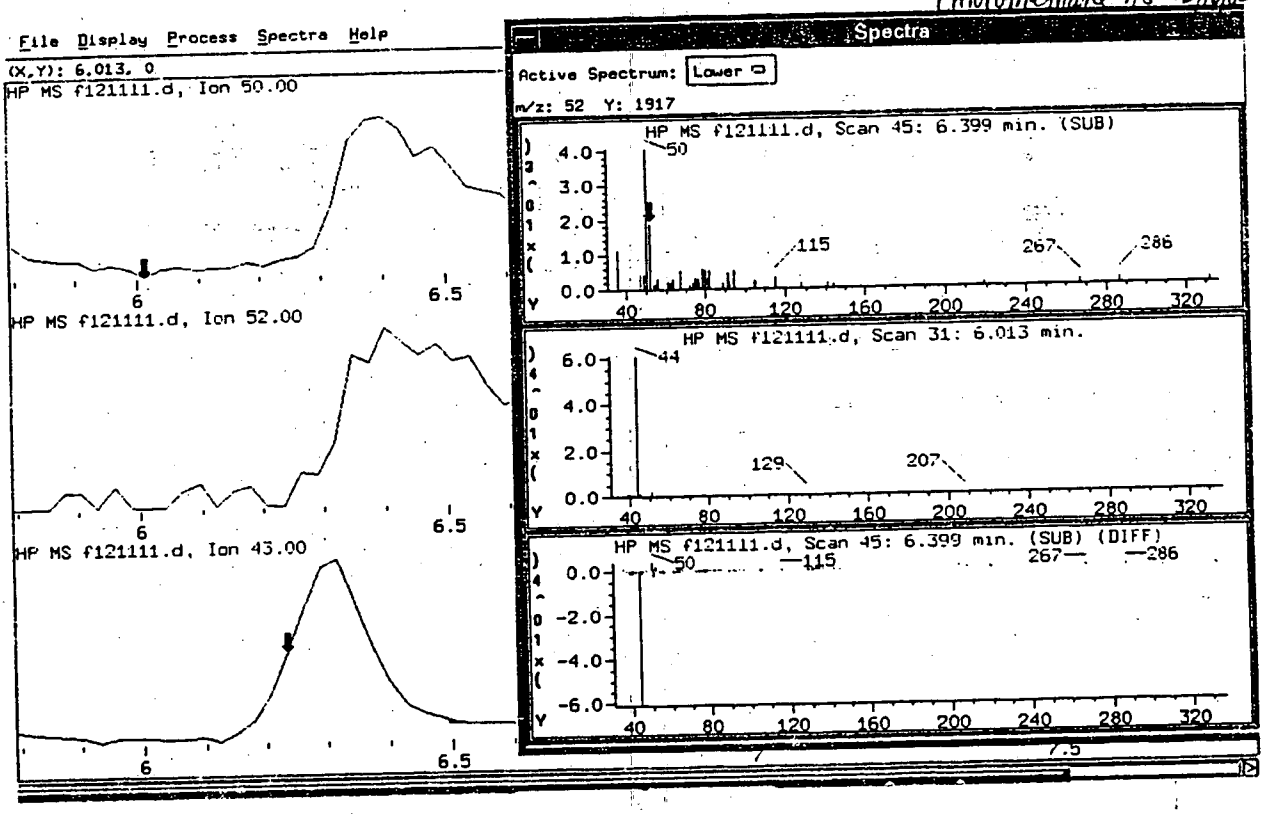
012071-02A

Fr 12 AS 12/16/02



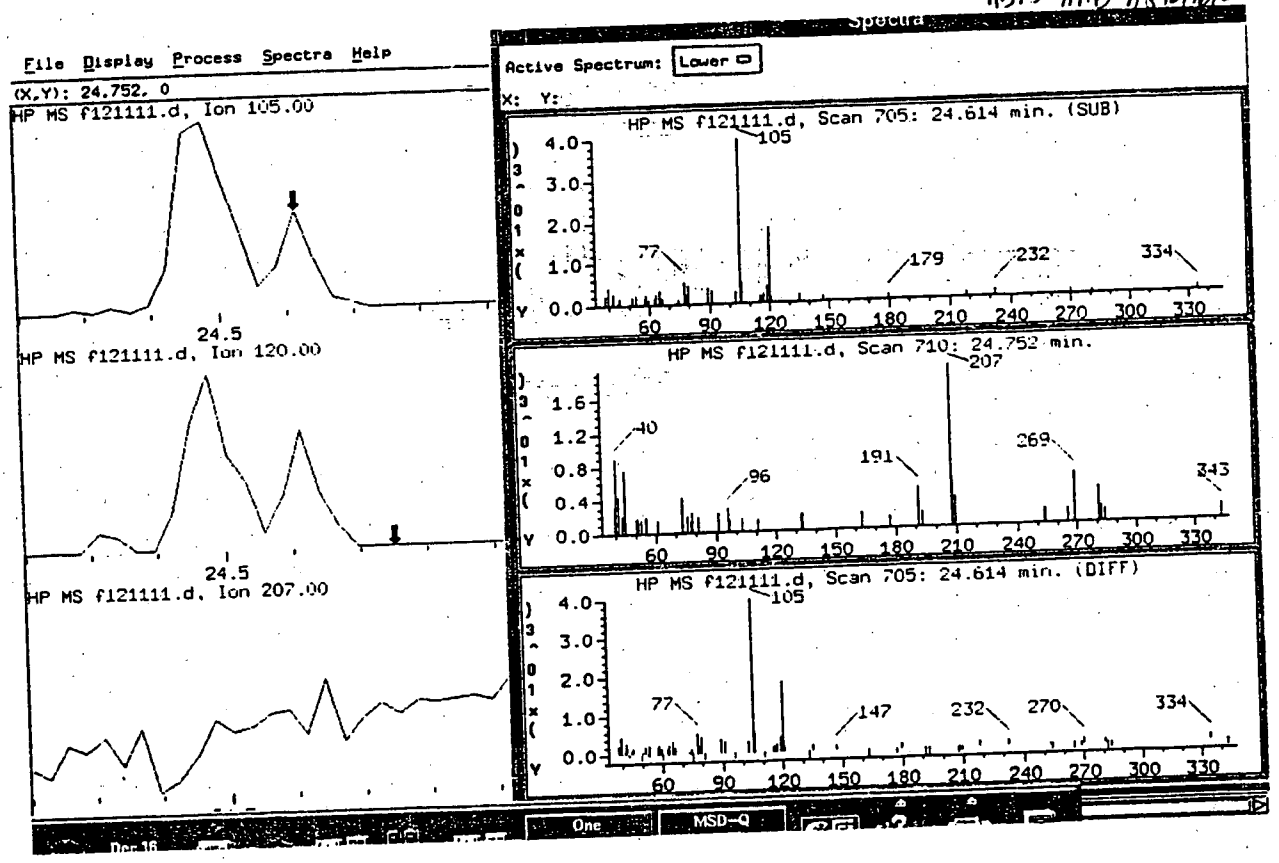
0212071-02A

chloromethane AS 12/16/02



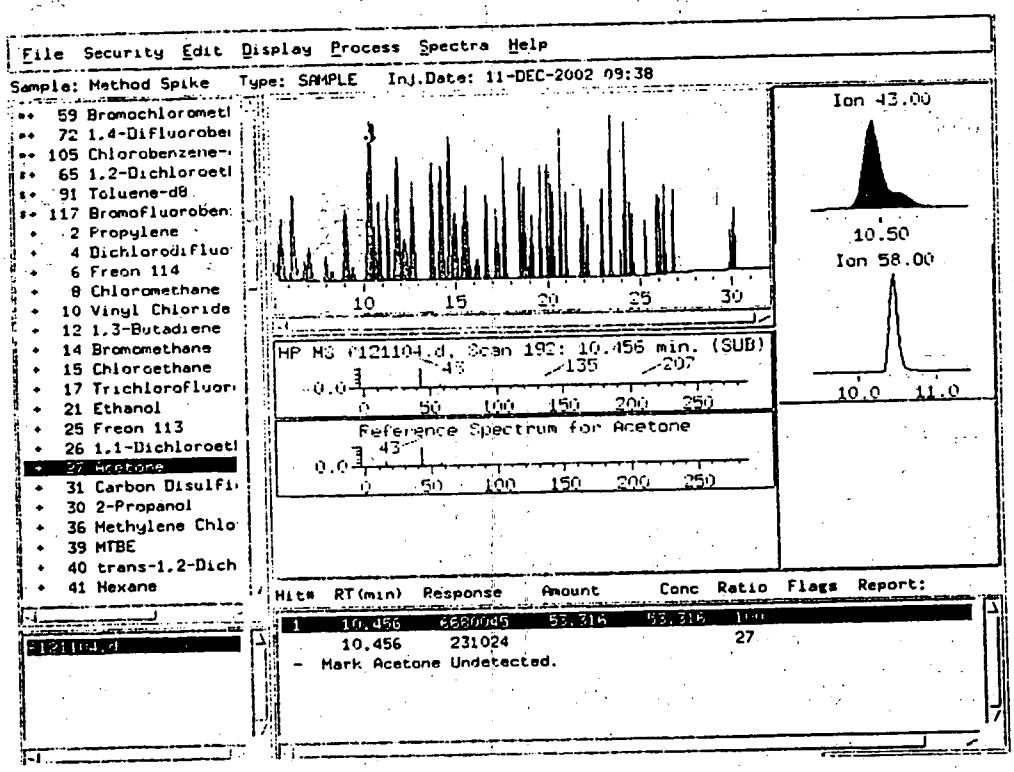
02 12071-02A

1,3,5-TMB AS 12/16/08



Team A

Date / Initial	12-11-02 CJ
Poor Integration	
Split Peak	
Peak Tailing	
Background Subtraction	
Zoom In	
Missed Peak	
Merged Peaks	X



lb 12/11/02

12-11-02 CP

File Security Edit Display Process Spectra Help

Sample: Method Spike Type: SAMPLE Inj.Date: 11-DEC-2002 09:38

59 Bromochloromethane
72 1,4-Difluorobenzene
105 Chlorobenzene-d5
65 1,2-Dichloroethane-d4
91 Toluene-d8
117 Bromofluorobenzene
2 Propylene
4 Dichlorodifluoromethane
6 Freon 114
8 Chloromethane
10 Vinyl Chloride
12 1,3-Butadiene
14 Bromomethane
15 Chloroethane
17 Trichlorofluoromethane
21 Ethanol
25 Freon 113
26 1,1-Dichloroethane
27 Acetone
31 Carbon Disulfide
30 2-Propanol
36 Methylene Chloride
39 MTBE
40 trans-1,2-Dichloroethene
41 Hexane

f121104.d

Ion 43.00

Ion 58.00

HP MS f121104.d, Scan 192: 10.456 min. (SUB)

Reference Spectrum for Acetone

Hit#	RT(min)	Response	Amount	Conc	Ratio	Flags	Report:
1	10.456	231024			4		

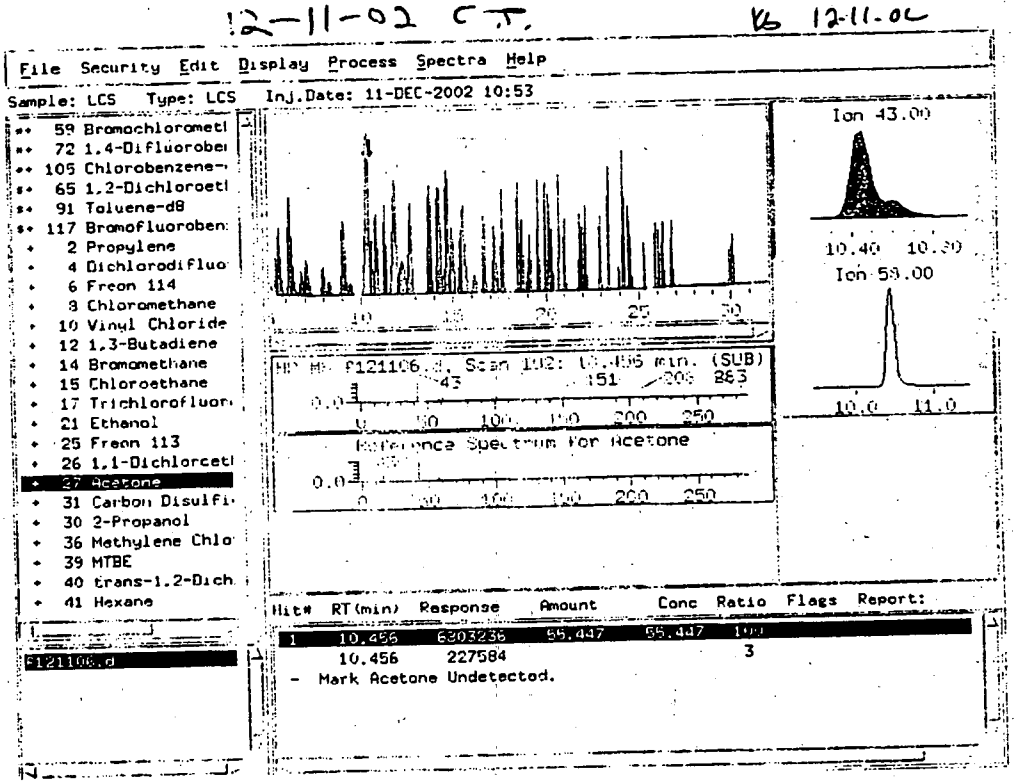
- Mark Acetone Undetected.

12/11/02

Team A

Date / Initial	12-11-02 CT.
Poor Integration	
Split Peak	
Peak Tailing	
Background Subtraction	
Zoom In	
Missed Peak	
Merged Peaks	X

12-11-02 C.T. KB 12-11-02



12-11-02 C ?

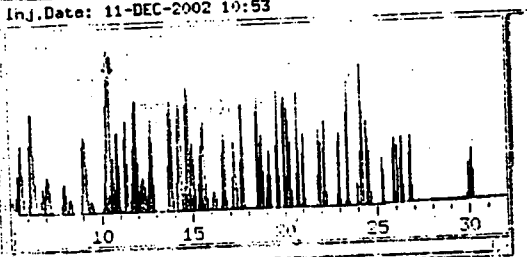
KS 12-11-02

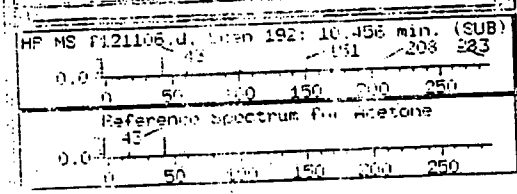
File Security Edit Display Process Spectra Help

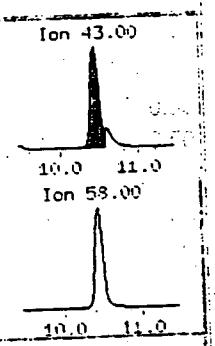
Sample: LCS Type: LCS Inj.Date: 11-DEC-2002 10:53

- 59 Bromochlorometh
- 72 1,4-Difluorobe
- 105 Chlorobenzene-
- 65 1,2-Dichloroeth
- 91 Toluene-d8
- 117 Bromofluoroben
- 2 Propylene
- 4 Dichlorodifluo
- 6 Freon 114
- 8 Chloromethane
- 10 Vinyl Chloride
- 12 1,3-Butadiene
- 14 Bromomethane
- 15 Chloroethane
- 17 Trichlorofluor
- 21 Ethanol
- 25 Freon 113
- 26 1,1-Dichloroeth
- 27 Acetone
- 31 Carbon Disulfi
- 30 2-Propanol
- 36 Methylene Chlo
- 39 MTBE
- 40 trans-1,2-Dich
- 41 Hexane

F121106.d







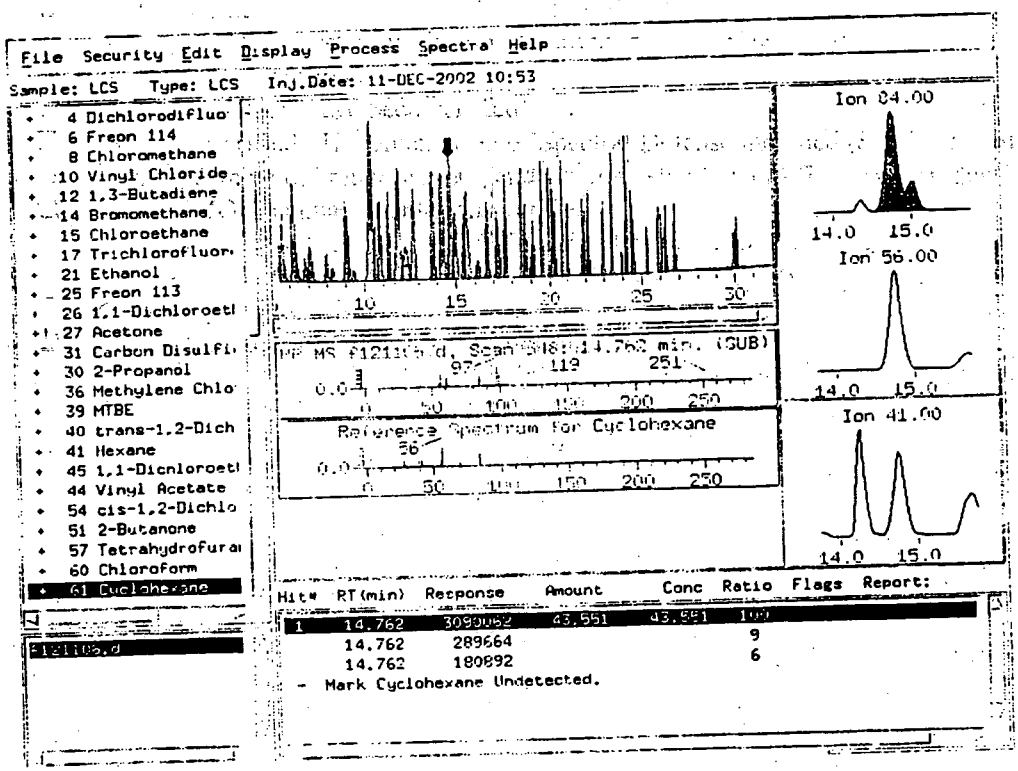
Hit#	RT(min)	Response	Amount	Conc	Ratio	Flags	Report:
1	10.456	5840717	47.603	47.603	100	H	
	10.456	227584			4		

- Mark Acetone Undetected.

Team A

Date / Initial	12-11-02 CJ.
Poor Integration	
Split Peak	
Peak Tailing	
Background Subtraction	
Zoom In	
Missed Peak	
Merged Peaks	X

B 12.11.02



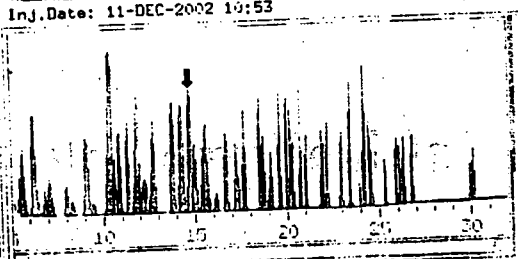
12-11-02 C.P. KS 12.11.02

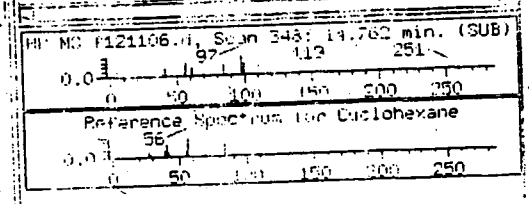
File Security Edit Display Process Spectra Help

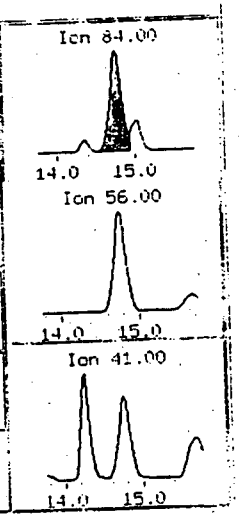
Sample: LCS Type: LCS Inj.Date: 11-DEC-2002 10:53

- 4 Dichlorodifluo
- 6 Freon 114
- 8 Chloromethane
- 10 Vinyl Chloride
- 12 1,3-Butadiene
- 14 Bromomethane
- 15 Chloroethane
- 17 Trichlorofluor
- 21 Ethanol
- 25 Freon 113
- 26 1,1-Dichloroetl
- 27 Acetone
- 31 Carbon Disulfi
- 30 2-Propanol
- 36 Methylene Chlo
- 39 MTBE
- 40 trans-1,2-Dich
- 41 Hexane
- 45 1,1-Dichloroetl
- 44 Vinyl Acetate
- 54 cis-1,2-Dichlo
- 51 2-Butanone
- 57 Tetrahydrofura
- 60 Chloroform
- 61 Cyclohexane

F121106.d







Hit#	RT(min)	Response	Amount	Conc	Ratio	Flags	Report:
1	14.762	2509378	35.367	35.367	100	M	
	14.762	289664			12		
	14.762	180892			7		

- Mark Cyclohexane Undetected.

DILUTION FACTORS

$$\text{Dilution Factor} = \frac{\text{Final Pressure}}{\text{Initial Vacuum}} = \frac{14.7\text{ psi} + \text{Final Pressure (psi)}}{14.7\text{ psi} - [(\text{Initial Pressure ("Hg)})\ (14.7\text{ psi} / 30\text{ "Hg})]}$$

$$\text{Dilution Factor} = \frac{\text{Final Pressure}}{\text{Initial Pressure}} = \frac{14.7\text{ psi} + \text{Final Pressure (psi)}}{14.7\text{ psi} + \text{Initial Pressure (psi)}}$$

Initial Vacuum ("Hg)	5 psi Final Press. Dil. Factor	10 psi Final Press. Dil. Factor	15 psi Final Press. Dil. Factor
0.0	1.34	1.68	2.02
0.5	1.36	1.71	2.05
1.0	1.39	1.74	2.09
1.5	1.41	1.77	2.13
2.0	1.44	1.80	2.16
2.5	1.46	1.83	2.20
3.0	1.49	1.87	2.24
3.5	1.52	1.90	2.29
4.0	1.55	1.94	2.33
4.5	1.58	1.98	2.38
5.0	1.61	2.02	2.42
5.5	1.64	2.06	2.47
6.0	1.68	2.10	2.53
6.5	1.71	2.15	2.58
7.0	1.75	2.19	2.64
7.5	1.79	2.24	2.69
8.0	1.83	2.29	2.76
8.5	1.87	2.34	2.82
9.0	1.91	2.40	2.89
9.5	1.96	2.46	2.96
10.0	2.01	2.52	3.03
10.5	2.06	2.59	3.11
11.0	2.12	2.65	3.19
11.5	2.17	2.72	3.28
12.0	2.23	2.80	3.37
12.5	2.30	2.88	3.46
13.0	2.36	2.97	3.57
13.5	2.44	3.06	3.67
14.0	2.51	3.15	3.79
14.5	2.59	3.25	3.91
15.0	2.68	3.36	4.04
15.5	2.77	3.48	4.18
16.0	2.87	3.60	4.33
16.5	2.98	3.73	4.49
17.0	3.09	3.88	4.66
17.5	3.22	4.03	4.85
18.0	3.35	4.20	5.05
18.5	3.50	4.38	5.27
19.0	3.65	4.58	5.51
19.5	3.83	4.80	5.77
20.0	4.02	5.04	6.06
20.5	4.23	5.31	6.38

Initial Vacuum ("Hg)	5 psi Final Press. Dil. Factor	10 psi Final Press. Dil. Factor	15 psi Final Press. Dil. Factor
21.0	4.47	5.60	6.73
21.5	4.73	5.93	7.13
22.0	5.03	6.30	7.58
22.5	5.36	6.72	8.08
23.0	5.74	7.20	8.66
23.5	6.19	7.76	9.32
24.0	6.70	8.40	10.10
24.5	7.31	9.17	11.02
25.0	8.04	10.08	12.12
25.5	8.93	11.20	13.47
26.0	10.05	12.60	15.15
26.5	11.49	14.40	17.32
27.0	13.40	16.80	20.20
27.5	16.08	20.16	24.24
28.0	20.10	25.20	30.31
28.5	26.80	33.61	40.41
29.0	40.20	50.41	60.61

Initial Pressure (psi)	5 psi Final Press. Dil. Factor	10 psi Final Press. Dil. Factor	15 psi Final Press. Dil. Factor
0.0	1.34	1.68	2.02
0.2	1.32	1.66	1.99
0.4	1.30	1.64	1.97
0.6	1.29	1.61	1.94
0.8	1.27	1.59	1.92
1.0	1.25	1.57	1.89
1.2	1.24	1.55	1.87
1.4	1.22	1.53	1.84
1.6	1.21	1.52	1.82
1.8	1.19	1.50	1.80
2.0	1.18	1.48	1.78
2.2	1.17	1.46	1.76
2.4	1.15	1.44	1.74
2.6	1.14	1.43	1.72
2.8	1.13	1.41	1.70
3.0	1.11	1.40	1.68
3.2	1.10	1.38	1.66
3.4	1.09	1.36	1.64
3.6	1.08	1.35	1.62
3.8	1.06	1.34	1.61
4.0	1.05	1.32	1.59

DILUTION FACTORS

$$\text{Dilution Factor} = \frac{\text{Final Pressure}}{\text{Initial Pressure}} = \frac{14.7\text{ psi} + \text{Final Pressure (psi)}}{14.7\text{ psi} + \text{Initial Pressure (psi)}}$$

Initial Pressure (psi)	5 psi Final Press. Dil. Factor	10 psi Final Press. Dil. Factor	15 psi Final Press. Dil. Factor
0.0	1.34	1.68	2.02
0.2	1.32	1.66	1.99
0.4	1.30	1.64	1.97
0.6	1.29	1.61	1.94
0.8	1.27	1.59	1.92
1.0	1.25	1.57	1.89
1.2	1.24	1.55	1.87
1.4	1.22	1.53	1.84
1.6	1.21	1.52	1.82
1.8	1.19	1.50	1.80
2.0	1.18	1.48	1.78
2.2	1.17	1.46	1.76
2.4	1.15	1.44	1.74
2.6	1.14	1.43	1.72
2.8	1.13	1.41	1.70
3.0	1.11	1.40	1.68
3.2	1.10	1.38	1.66
3.4	1.09	1.36	1.64
3.6	1.08	1.35	1.62
3.8	1.06	1.34	1.61
4.0	1.05	1.32	1.59
4.2	1.04	1.31	1.57
4.4	1.03	1.29	1.55
4.6	1.02	1.28	1.54
4.8	1.01	1.27	1.52
5.0	1.00	1.25	1.51
5.2	NA	1.24	1.49
5.4	NA	1.23	1.48
5.6	NA	1.22	1.46
5.8	NA	1.20	1.45
6.0	NA	1.19	1.43
6.2	NA	1.18	1.42
6.4	NA	1.17	1.41
6.6	NA	1.16	1.39
6.8	NA	1.15	1.38
7.0	NA	1.14	1.37
7.2	NA	1.13	1.36
7.4	NA	1.12	1.34

Initial Pressure (psi)	5 psi Final Press. Dil. Factor	10 psi Final Press. Dil. Factor	15 psi Final Press. Dil. Factor
7.6	NA	1.11	1.33
7.8	NA	1.10	1.32
8.0	NA	1.09	1.31
8.2	NA	1.08	1.30
8.4	NA	1.07	1.29
8.6	NA	1.06	1.27
8.8	NA	1.05	1.26
9.0	NA	1.04	1.25
9.2	NA	1.03	1.24
9.4	NA	1.02	1.23
9.6	NA	1.02	1.22
9.8	NA	1.01	1.21
10.0	NA	1.00	1.20
10.2	NA	NA	1.19
10.4	NA	NA	1.18
10.6	NA	NA	1.17
10.8	NA	NA	1.16
11.0	NA	NA	1.16
11.2	NA	NA	1.15
11.4	NA	NA	1.14
11.6	NA	NA	1.13
11.8	NA	NA	1.12
12.0	NA	NA	1.11
12.2	NA	NA	1.10
12.4	NA	NA	1.10
12.6	NA	NA	1.09
12.8	NA	NA	1.08
13.0	NA	NA	1.07
13.2	NA	NA	1.06
13.4	NA	NA	1.06
13.6	NA	NA	1.05
13.8	NA	NA	1.04
14.0	NA	NA	1.03
14.2	NA	NA	1.03
14.4	NA	NA	1.02
14.6	NA	NA	1.01
14.8	NA	NA	1.01

Compound Listing

Modified TO-14

CAS Number	Compound	Detection Limit ppbv
75-71-8	Freon 12	0.50
76-14-2	Freon 114	0.50
100-41-4	Ethyl Benzene	0.50
108-38-3	m,p-Xylene	0.50
95-47-6	o-Xylene	0.50
100-42-5	Styrene	0.50
79-34-5	1,1,2,2-Tetrachloroethane	0.50
108-67-8	1,3,5-Trimethylbenzene	0.50
95-63-6	1,2,4-Trimethylbenzene	0.50
541-73-1	1,3-Dichlorobenzene	0.50
106-46-7	1,4-Dichlorobenzene	0.50
100-44-7	alpha-Chlorotoluene	0.50
95-50-1	1,2-Dichlorobenzene	0.50
120-82-1	1,2,4-Trichlorobenzene	2.0
87-68-3	Hexachlorobutadiene	2.0
115-07-1	Propylene	2.0
106-99-0	1,3-Butadiene	2.0
67-64-1	Acetone	2.0
75-15-0	Carbon Disulfide	2.0
67-63-0	2-Propanol	2.0
156-60-5	trans-1,2-Dichloroethene	2.0
108-05-4	Vinyl Acetate	2.0
78-93-3	2-Butanone (Methyl Ethyl Ketone)	2.0
110-54-3	Hexane	2.0
109-99-9	Tetrahydrofuran	2.0
110-82-7	Cyclohexane	2.0
123-91-1	1,4-Dioxane	2.0
75-27-4	Bromodichloromethane	2.0
108-10-1	4-Methyl-2-pentanone	2.0
591-78-6	2-Hexanone	2.0
124-48-1	Dibromochloromethane	2.0
75-25-2	Bromoform	2.0
622-96-8	4-Ethyltoluene	2.0
64-17-5	Ethanol	2.0
1634-04-4	Methyl tert-Butyl Ether	2.0
142-82-5	Heptane	2.0
2037-26-5	Toluene-d8	
460-00-4	4-Bromofluorobenzene	
17060-07-0	1,2-Dichloroethane-d4	
74-87-3	Chloromethane	0.50
75-01-4	Vinyl Chloride	0.50
74-83-9	Bromomethane	0.50
75-00-3	Chloroethane	0.50
75-69-4	Freon 11	0.50
75-35-4	1,1-Dichloroethene	0.50
76-13-1	Freon 113	0.50

Compound Listing

Modified TO-14

CAS Number	Compound	Detection Limit ppbv
75-09-2	Methylene Chloride	0.50
75-34-3	1,1-Dichloroethane	0.50
156-59-2	cis-1,2-Dichloroethene	0.50
67-66-3	Chloroform	0.50
71-55-6	1,1,1-Trichloroethane	0.50
56-23-5	Carbon Tetrachloride	0.50
71-43-2	Benzene	0.50
107-06-2	1,2-Dichloroethane	0.50
79-01-6	Trichloroethene	0.50
78-87-5	1,2-Dichloropropane	0.50
10061-01-5	cis-1,3-Dichloropropene	0.50
108-88-3	Toluene	0.50
10061-02-6	trans-1,3-Dichloropropene	0.50
79-00-5	1,1,2-Trichloroethane	0.50
127-18-4	Tetrachloroethene	0.50
106-93-4	1,2-Dibromoethane (EDB)	0.50
108-90-7	Chlorobenzene	0.50

@Air Toxics Ltd.

DATA REVIEW CHECKLIST **Work Order #:** 0212071

A_1	A_2	T	Q	
	☑	☐	☐	Lab Narrative is correct (proper method & description/Receiving & Analytical notes correct)
☐ NA	☑	☐	☐	Corrective Action issued - #
☑ JM	☑	☐	☐	Unusual circumstances have been documented in the Notes section below
☑	☑		☐	Client Sample IDs are correct (checked COC against Login page)
☑	☑	☐	☐	Analysis vs. Project Profile/SOP requirements checked (i.e. 100% Dups, J-Flag to MDL, etc)
☑	☑	☐	☐	Method Spike/LCS/LCSD/Dup. RPD met QC criteria
☑	☑	☐	☐	Short list QC criteria met, 50/150% rule met for TO-14 analyses, etc.
M	☑	☐	☐	Appropriate Data Qualifier Flags are applied
☑	☑	☐	☐	Hold Time is met for all samples
☑	☑	☐	☐	12 Hour Clock verification (if required by the project)
	☑	☐	☐	Checked samples for trends (i.e. Influent>Effluent, etc)
☑	☑	☐	☐	Correct amount of sample analyzed (i.e. sample not over-diluted)
☑	☑	☐	☐	Samples pressurized w/ appropriate gas (N_2 or He)
☑	☑	☐	☐	Final Pressure consistent with Canister size (6L vs. 1L)
☑	☑	☐	☐	Dilution Factor Correctly Calculated (based on sample vol. loaded/Final Pressure)
	☑	☐	☐	CO_2, DNPH, or System Peaks are identified in chromatogram(s)
☑	☑	☐	☐	Peak area integration correct
☑	☑	☐	☐	Retention Times have been verified
☑	☑	☐	☐	Spectra Verified - Documentation of Spectral Defense included (Section 5A of eCVP pkg)
JM	☑	☐	☐	TICs resemble reference spectra, and are consistently identified between duplicate samples
JM	☑	☐	☐	TPH/NMOC manual calculations verified
☑	☑	☐	☐	Appropriate ICAL(s) included (Calibration History, Run Log(s), etc)
			☐	BFB/DFTPP Tune, Method Spike, LCS, SS, and Sample Result Calculation checked
			☐	Manually calculated/manually entered results checked
			☐	The final report has the correct Reporting List, units, and header info.
			☐	Special units for all samples in the final report are correctly calculated
			☐	CVP package/Client Specific Deliverable is complete and correct

Notes: *(to include: noting samples with QA/QC problems, Blanks with positive hits, narratives, etc.)*

A_1/A_2:

T/Q:

A_1 (Analytical Review/Date)	A_2 (Analytical Review/Date)	T (Technical Review/Date)	Q (QA Review/Date)
C Taylor 12-11-02	12/16/02		

Note:Please check all the appropriate boxes. Indicate "NA" for any statement that does not apply.

Revision Date: 09/30/02

Not Applicable