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November 4, 2010

Mr. Keith Gronwald
Senior Engineering Geologist
New York State Department of Environmental Conservation
Division of Solid and Hazardous Materials
Bureau of Radiation and Hazardous Management, 9th Floor
625 Broadway
Albany, NY 12233-7258

Re: Supplemental Soil Vapor Sampling Report
Long Island Rail Road
Morris Park Yard

Dear Mr. Gronwald:

This report, submitted on behalf of the Long Island Rail Road (LIRR), presents the results of the supplemental soil vapor sampling performed at the Morris Park Yard in response to your e-mail message on March 5, 2010 to Ms. Maria Hall. The supplemental soil vapor sampling was conducted in accordance with the Soil Vapor Sampling Work Plan dated March 30, 2010, approved by the New York State Department of Environmental Conservation (NYSDEC) on April 2, 2010. Information regarding related previous site investigations is presented in the Remedial Investigation Report (RIR) for the Morris Park Yard, Richmond Hill, New York dated March 2009.

Two soil vapor samples, SG-26 and SG-27, were collected on August 30, 2010 from temporary shallow soil probes. The soil vapor probes were advanced near the northern boundary and upgradient of the Morris Park Yard to further evaluate the conclusion in the RIR that on-Site chlorinated solvent-related soil vapor contamination is due to off-site sources located upgradient of the Site.

As described in the Soil Vapor Sampling Work Plan, the soil vapor probes were advanced to eight feet below ground surface and sampled 48 hours after installation. Prior to sampling, one

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to three volumes of each soil vapor probe and sampling tube were purged. Soil vapor samples were collected in SUMMA canisters and analyzed by modified USEPA Method TO-15 for volatile organic compounds, including chlorofluorocarbons (CFCs), by Air Toxics Ltd. of Folsom, California. Air Toxics is a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP)-certified analytical laboratory. Standard chain-of-custody procedures were followed.

The supplemental soil vapor sampling results are summarized in the attached Table 1. Figure 1 shows the concentrations of CFCs and relevant chlorinated solvents detected in SG-26 and SG-27 along with results of historical soil vapor sampling conducted in 2006 and 2008. The laboratory analytical data package is also attached.

The results of the analyses of the supplemental soil vapor samples are discussed below. Note that specific screening criteria were not applied to the evaluation of the soil vapor sampling results, since there is no regulatory guidance for soil vapor in New York State. In the absence of guidance values for VOCs in soil vapor, the results were evaluated with respect to location and previous soil vapor sampling results.

- The concentrations of CFCs detected in soil vapor samples SG-26 and SG-27 are within the range of concentrations of CFCs previously detected in soil vapor on the Site. The RIR concluded that the elevated levels of CFCs detected in on-Site soil vapor are consistent with the past use of the Site.
- Elevated concentrations of PCE were detected in both soil vapor samples SG-26 and SG-27. The concentrations of PCE detected at SG-27 ($4,700 \mu\text{g}/\text{m}^3$) and at SG-26 ($620 \mu\text{g}/\text{m}^3$) are greater than the concentrations of PCE previously detected in soil vapor samples collected on the Site, with the exception of the concentrations of PCE which were detected in SG-13 and SG-23, which were attributed to their proximity to a former ink manufacturer and engraver.
- Elevated concentrations of TCE were detected in both soil vapor samples SG-26 and SG-27. The concentrations of TCE detected in SG-26 ($330 \mu\text{g}/\text{m}^3$) and SG-27 ($110 \mu\text{g}/\text{m}^3$)



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are greater than the concentrations of TCE previously detected in soil vapor samples collected on the Site.

The elevated concentrations of PCE and TCE detected in soil vapor samples SG-26 and SG-27 are likely the result of off-site source(s). These contaminants were not detected at concentrations greater than the 6 NYCRR Part 375 Restricted Residential Soil Cleanup Objectives in on-Site soil samples and were not detected at concentrations greater than Class GA Values in the shallow groundwater monitoring well adjacent to SG-26 and SG-27 during the Remedial Investigation (MW-5-60). Also, information obtained from regulatory agency databases and Historic Sanborn Maps reveal the potential use of chlorinated solvents in the off-site and upgradient surrounding area to the north and northeast. Figure 14 of the RIR shows potential sources of chlorinated solvents in the surrounding area and is included as Attachment A to this letter report.

In summary, the concentrations of CFCs detected in SG-26 and SG-27 are consistent with the range of concentrations of CFCs previously detected in on-Site soil vapor. Also, the chlorinated solvent-related contamination detected in the soil vapor samples can be attributed to an off-site soil gas contamination source (or sources).

In conclusion, based on the findings of the remedial investigation and supplemental soil vapor sampling, remedial action for the Site does not appear to be warranted. Chlorinated solvent-related contamination in deep groundwater and soil vapor at the Site is the result of off-site sources or can be attributed to background conditions. CFC-related contamination in groundwater and soil vapor can be attributed to past on-Site use; however, groundwater sampling results show a continuation of natural attenuation of CFCs in groundwater, and the on-Site conditions have been evaluated as part of the qualitative risk assessment. Therefore, no further action with respect to chlorinated solvents and CFCs is recommended on Site.

We look forward to receiving the Department's approval of this Supplemental Soil Vapor Sampling Report and the Remedial Investigation Report.



Mr. Keith Gronwald
Senior Engineering Geologist
NYSDEC
Division of Solid and Hazardous Materials
November 4, 2010
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Please do not hesitate to contact me at (212) 221-7822 x120 if you have any questions.

Very truly yours,
TRC Engineers, Inc.



Jennifer DiPilato, P.E.
Project Manager

Attachments

Figure 1 – Soil Vapor Sampling Locations with Results of Analysis for Refrigerants and Chlorinated Solvent-Related Compounds

Table 1 – Volatile Organic Compounds in Soil Vapor

Attachment A – Figure 14 of RIR: Potential Sources of Chlorinated Solvents in Surrounding Area Analytical Laboratory Report

cc: H. Wilkie, NYSDEC
M. Hall, LIRR
A. Wilson LIRR
D. Glass, TRC



FIGURE 1

**SOIL VAPOR SAMPLING LOCATIONS WITH RESULTS OF
ANALYSIS FOR REFRIGERANTS AND CHLORINATED
SOLVENT-RELATED COMPOUNDS**

TABLE 1
VOLATILE ORGANIC COMPOUNDS IN SOIL VAPOR

Table 1
Volatile Organic Compounds in Soil Vapor
Long Island Rail Road Morris Park Yard
Soil Vapor Sampling Summary

Compound	SAMPLE NAME	SG-26	SG-27	Lab Blank
	LAB SAMPLE ID	1008741-01A	1008741-02A	1008741-03A
DATE SAMPLED	8/30/2010	8/30/2010	9/14/2010	
DILUTION FACTOR	1.58	4.77	1.00	
DEPTH	8 feet	8 feet		
	ug/m ³	ug/m ³	ug/m ³	
Diclorodifluoromethane Freon 12 (DCDFM)	15	4.8	J	2.5 U
1,2-Dichlorotetrafluoroethane Freon 114	5.5	U	17	U 3.5 U
Chloromethane	6.5	U	20	U 4.1 U
Vinyl Chloride	2.0	U	6.1	U 1.3 U
1,3-Butadiene	1.7	U	5.3	U 1.1 U
Bromomethane	3.1	U	9.3	U 1.9 U
Chloroethane	2.1	U	6.3	U 1.3 U
Trichlorofluoromethane Freon 11 (TCFM)	410		210	2.8 U
Ethanol	6.0	U	18	U 3.8 U
1,1,2-Trichloro- 1,2,2-Trifluoroethane Freon 113	0.73	J	18	U 3.8 U
1,1-Dichloroethene	3.1	U	9.4	U 2.0 U
Acetone	36		55	1.3 J
2-Propanol	7.8	U	23	U 4.9 U
Carbon Disulfide	3.8		13	1.6 U
3-Chloropropene	9.9	U	30	U 6.3 U
Methylene Chloride	2.7	U	8.3	U 1.7 U
Methyl Tert-Butyl Ether	2.8	U	8.6	U 1.8 U
trans-1,2-Dichloroethene	3.1	U	9.4	U 2.0 U
Hexane	2.0	J	8.4	U 1.8 U
1,1-Dichloroethane	3.2	U	9.6	U 2.0 U
2-Butanone (Methyl Ethyl Ketone)	3.3		6.4	J 0.34 J
cis-1,2-Dichloroethene	3.1	U	9.4	U 2.0 U
Tetrahydrofuran	2.3	U	7.0	U 1.5 U
Chloroform	2.6	J	6.5	J 2.4 U
1,1,1-Trichloroethane	0.61	J	12	J 2.7 U
Cyclohexane	0.51	J	8.2	U 1.7 U
Carbon Tetrachloride	1.1	J	1.8	J 3.1 U
2,2,4-Trimethylpentane	1.1	J	11	U 2.3 U
Benzene	3.9		3.0	J 1.6 U
1,2-Dichloroethane	3.2	U	9.6	U 2.0 U
Heptane	0.80	J	9.8	U 2.0 U
Trichloroethene (TCE)	330		110	2.7 U
1,2-Dichloropropane	3.6	U	11	U 2.3 U
1,4-Dioxane	11	U	34	U 7.2 U
Bromodichloromethane	5.3	U	16	U 3.4 U
cis-1,3-Dichloropropene	3.6	U	11	U 2.3 U
4-Methyl-2-pentanone	3.2	U	9.8	U 2.0 U
Toluene	19		46	1.9 U
trans-1,3-Dichloropropene	3.6	U	11	U 2.3 U
1,1,2-Trichloroethane	4.3	U	13	U 2.7 U
Tertachloroethene (PCE)	620		4700	3.4 U
2-Hexanone	13	U	39	U 8.2 U
Dibromochloromethane	6.7	U	20	U 4.2 U
1,2-Dibromoethane (EDB)	6.1	U	18	U 3.8 U
Chlorobenzene	3.6	U	11	U 2.3 U
Ethylbenzene	2.5	J	24	2.2 U
m,p-Xylene	10		89	2.2 U
o-Xylene	3.7		22	2.2 U
Styrene	0.60	J	1.6	J 2.1 U
Bromoform	8.2	U	25	U 5.2 U
Cumene	3.9	U	2.6	J 2.4 U
1,1,2,2-Tetrachloroethane	5.4	U	16	U 3.4 U
Propylbenzene	1.3	J	14	2.4 U
4-Ethyltoluene	6.1		84	2.4 U
1,3,5-Trimethylbenzene	2.6	J	26	2.4 U
1,2,4-Trimethylbenzene	10		120	2.4 U
1,3-Dichlorobenzene	4.8	U	14	U 3.0 U
1,4-Dichlorobenzene	4.8	U	14	U 3.0 U
alpha-Chlorotoluene	4.1	U	12	U 0.41 J
1,2-Dichlorobenzene	4.7	U	14	U 0.52 J
1,2,4-Trichlorobenzene	23	U	71	U 2.6 J
Hexachlorobutadiene	34	U	100	U 21 U
Chlorodifluoromethane Freon 22 (CDFM)	230		200	7.1 U
Dichlorodifluoromethane Freon 21 (DCFM)	13	U	40	U 8.4 U

NOTES:

ug/m³ - micrograms per cubic meter

J - Estimated value

U - Not detected

ATTACHMENT A

FIGURE 14 OF RIR: POTENTIAL SOURCES OF CHLORINATED SOLVENTS IN SURROUNDING AREA

ANALYTICAL LABORATORY REPORT

9/14/2010

Ms. Jennifer DiPilato
TRC Companies, Inc.
1430 Broadway
10th Floor
New York NY 10018

Project Name: LIRR MPY
Project #: 164148.0000.0002
Workorder #: 1008741

Dear Ms. Jennifer DiPilato

The following report includes the data for the above referenced project for sample(s) received on 8/31/2010 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Ausha Scott at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Ausha Scott
Project Manager

WORK ORDER #: 1008741

Work Order Summary

CLIENT:	Ms. Jennifer DiPilato TRC Companies, Inc. 1430 Broadway 10th Floor New York, NY 10018	BILL TO:	Accounts Payable TRC Companies, Inc. 1430 Broadway 10th Floor New York, NY 10018
PHONE:	212-221-7822	P.O. #	
FAX:	212-2217840	PROJECT #	164148.0000.0002 LIRR MPY
DATE RECEIVED:	08/31/2010	CONTACT:	Ausha Scott
DATE COMPLETED:	09/14/2010		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	SG-26	Modified TO-15	4.5 "Hg	5 psi
02A	SG-27	Modified TO-15	4.0 "Hg	5 psi
03A	Lab Blank	Modified TO-15	NA	NA
04A	CCV	Modified TO-15	NA	NA
05A	LCS	Modified TO-15	NA	NA
05AA	LCSD	Modified TO-15	NA	NA

CERTIFIED BY:



DATE: 09/14/10

Laboratory Director

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763,
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/09, Expiration date: 06/30/10

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Air Toxics Ltd.

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

**LABORATORY NARRATIVE
EPA Method TO-15
TRC Companies, Inc.
Workorder# 1008741**

Two 6 Liter Summa Canister samples were received on August 31, 2010. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

The reported CCV for each daily batch may be derived from more than one analytical file due to the client's request for non-standard compounds.

Non-standard compounds may have different acceptance criteria than the standard TO-14A/TO-15 compound list as per contract or verbal agreement.

As per project specific client request the laboratory has reported estimated values for target compound hits that are below the Reporting Limit but greater than the Method Detection Limit. Concentrations that are below the level at which the canister was certified (0.2 ppbv for compounds reported at 0.5 ppbv and 0.8 ppbv for compounds reported at 2.0 ppbv) may be false positives.

Definition of Data Qualifying Flags

Eight 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 not 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:

LABORATORY REPORT

CE-OT-1000-11-A1

CE-OT-1000-11-B1

CE-OT-1000-11-C1

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue



Summary of Detected Compounds MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: SG-26

Lab ID#: 1008741-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.79	3.0	3.9	15
Freon 11	0.79	73	4.4	410
Freon 113	0.79	0.096 J	6.0	0.73 J
Acetone	3.2	15	7.5	36
Carbon Disulfide	0.79	1.2	2.5	3.8
Hexane	0.79	0.56 J	2.8	2.0 J
2-Butanone (Methyl Ethyl Ketone)	0.79	1.1	2.3	3.3
Chloroform	0.79	0.53 J	3.8	2.6 J
1,1,1-Trichloroethane	0.79	0.11 J	4.3	0.61 J
Cyclohexane	0.79	0.15 J	2.7	0.51 J
Carbon Tetrachloride	0.79	0.18 J	5.0	1.1 J
2,2,4-Trimethylpentane	0.79	0.23 J	3.7	1.1 J
Benzene	0.79	1.2	2.5	3.9
Heptane	0.79	0.20 J	3.2	0.80 J
Trichloroethylene	0.79	62	4.2	330
Toluene	0.79	5.0	3.0	19
Tetrachloroethylene	0.79	92	5.4	620
Ethyl Benzene	0.79	0.58 J	3.4	2.5 J
m,p-Xylene	0.79	2.3	3.4	10
o-Xylene	0.79	0.85	3.4	3.7
Styrene	0.79	0.14 J	3.4	0.60 J
Propylbenzene	0.79	0.26 J	3.9	1.3 J
4-Ethyltoluene	0.79	1.2	3.9	6.1
1,3,5-Trimethylbenzene	0.79	0.52 J	3.9	2.6 J
1,2,4-Trimethylbenzene	0.79	2.1	3.9	10
Chlorodifluoromethane	3.2	65	11	230

Client Sample ID: SG-27

Lab ID#: 1008741-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
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Summary of Detected Compounds MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: SG-27

Lab ID#: 1008741-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	2.4	0.98 J	12	4.8 J
Freon 11	2.4	37	13	210
Acetone	9.5	23	23	55
Carbon Disulfide	2.4	4.3	7.4	13
2-Butanone (Methyl Ethyl Ketone)	2.4	2.2 J	7.0	6.4 J
Chloroform	2.4	1.3 J	12	6.5 J
1,1,1-Trichloroethane	2.4	2.1 J	13	12 J
Carbon Tetrachloride	2.4	0.28 J	15	1.8 J
Benzene	2.4	0.95 J	7.6	3.0 J
Trichloroethylene	2.4	20	13	110
Toluene	2.4	12	9.0	46
Tetrachloroethylene	2.4	690	16	4700
Ethyl Benzene	2.4	5.5	10	24
m,p-Xylene	2.4	20	10	89
o-Xylene	2.4	5.1	10	22
Styrene	2.4	0.38 J	10	1.6 J
Cumene	2.4	0.53 J	12	2.6 J
Propylbenzene	2.4	2.8	12	14
4-Ethyltoluene	2.4	17	12	84
1,3,5-Trimethylbenzene	2.4	5.4	12	26
1,2,4-Trimethylbenzene	2.4	24	12	120
Chlorodifluoromethane	9.5	57	34	200



Client Sample ID: SG-26

Lab ID#: 1008741-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	x091411	Date of Collection:	8/30/10 11:00:00 AM	
Dil. Factor:	1.58	Date of Analysis:	9/14/10 02:15 PM	
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.79	3.0	3.9	15
Freon 114	0.79	Not Detected	5.5	Not Detected
Chloromethane	3.2	Not Detected	6.5	Not Detected
Vinyl Chloride	0.79	Not Detected	2.0	Not Detected
1,3-Butadiene	0.79	Not Detected	1.7	Not Detected
Bromomethane	0.79	Not Detected	3.1	Not Detected
Chloroethane	0.79	Not Detected	2.1	Not Detected
Freon 11	0.79	73	4.4	410
Ethanol	3.2	Not Detected	6.0	Not Detected
Freon 113	0.79	0.096 J	6.0	0.73 J
1,1-Dichloroethene	0.79	Not Detected	3.1	Not Detected
Acetone	3.2	15	7.5	36
2-Propanol	3.2	Not Detected	7.8	Not Detected
Carbon Disulfide	0.79	1.2	2.5	3.8
3-Chloropropene	3.2	Not Detected	9.9	Not Detected
Methylene Chloride	0.79	Not Detected	2.7	Not Detected
Methyl tert-butyl ether	0.79	Not Detected	2.8	Not Detected
trans-1,2-Dichloroethene	0.79	Not Detected	3.1	Not Detected
Hexane	0.79	0.56 J	2.8	2.0 J
1,1-Dichloroethane	0.79	Not Detected	3.2	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.79	1.1	2.3	3.3
cis-1,2-Dichloroethene	0.79	Not Detected	3.1	Not Detected
Tetrahydrofuran	0.79	Not Detected	2.3	Not Detected
Chloroform	0.79	0.53 J	3.8	2.6 J
1,1,1-Trichloroethane	0.79	0.11 J	4.3	0.61 J
Cyclohexane	0.79	0.15 J	2.7	0.51 J
Carbon Tetrachloride	0.79	0.18 J	5.0	1.1 J
2,2,4-Trimethylpentane	0.79	0.23 J	3.7	1.1 J
Benzene	0.79	1.2	2.5	3.9
1,2-Dichloroethane	0.79	Not Detected	3.2	Not Detected
Heptane	0.79	0.20 J	3.2	0.80 J
Trichloroethene	0.79	62	4.2	330
1,2-Dichloropropane	0.79	Not Detected	3.6	Not Detected
1,4-Dioxane	3.2	Not Detected	11	Not Detected
Bromodichloromethane	0.79	Not Detected	5.3	Not Detected
cis-1,3-Dichloropropene	0.79	Not Detected	3.6	Not Detected
4-Methyl-2-pentanone	0.79	Not Detected	3.2	Not Detected
Toluene	0.79	5.0	3.0	19
trans-1,3-Dichloropropene	0.79	Not Detected	3.6	Not Detected
1,1,2-Trichloroethane	0.79	Not Detected	4.3	Not Detected
Tetrachloroethene	0.79	92	5.4	620



Client Sample ID: SG-26

Lab ID#: 1008741-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	x091411	Date of Collection:	8/30/10 11:00:00 AM	
Dil. Factor:	1.58	Date of Analysis:	9/14/10 02:15 PM	
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
2-Hexanone	3.2	Not Detected	13	Not Detected
Dibromochloromethane	0.79	Not Detected	6.7	Not Detected
1,2-Dibromoethane (EDB)	0.79	Not Detected	6.1	Not Detected
Chlorobenzene	0.79	Not Detected	3.6	Not Detected
Ethyl Benzene	0.79	0.58 J	3.4	2.5 J
m,p-Xylene	0.79	2.3	3.4	10
o-Xylene	0.79	0.85	3.4	3.7
Styrene	0.79	0.14 J	3.4	0.60 J
Bromoform	0.79	Not Detected	8.2	Not Detected
Cumene	0.79	Not Detected	3.9	Not Detected
1,1,2,2-Tetrachloroethane	0.79	Not Detected	5.4	Not Detected
Propylbenzene	0.79	0.26 J	3.9	1.3 J
4-Ethyltoluene	0.79	1.2	3.9	6.1
1,3,5-Trimethylbenzene	0.79	0.52 J	3.9	2.6 J
1,2,4-Trimethylbenzene	0.79	2.1	3.9	10
1,3-Dichlorobenzene	0.79	Not Detected	4.8	Not Detected
1,4-Dichlorobenzene	0.79	Not Detected	4.8	Not Detected
alpha-Chlorotoluene	0.79	Not Detected	4.1	Not Detected
1,2-Dichlorobenzene	0.79	Not Detected	4.7	Not Detected
1,2,4-Trichlorobenzene	3.2	Not Detected	23	Not Detected
Hexachlorobutadiene	3.2	Not Detected	34	Not Detected
Chlorodifluoromethane	3.2	65	11	230
Dichlorofluoromethane	3.2	Not Detected	13	Not Detected

J = Estimated value.

Container Type: 6 Liter Summa Canister

Surrogates			%Recovery	Method Limits
Toluene-d8			97	70-130
1,2-Dichloroethane-d4		Dichloroethane	98	70-130
4-Bromofluorobenzene		L-BFB	92	70-130
Bromobutane-d4	0.5	Bromobutane	91.0	
Bromobutane-d4	1.0	Bromobutane	90.0	
Bromobutane-d4	2.0	Bromobutane	91.0	
Bromobutane-d4	5.0	Bromobutane	97.0	range 0.0-100.0
Bromobutane-d4	10.0	Bromobutane	97.0	range 0.0-100.0
Bromobutane-d4	20.0	Bromobutane	97.0	range 0.0-100.0
Bromobutane-d4	50.0	Bromobutane	97.0	range 0.0-100.0



Client Sample ID: SG-27

Lab ID#: 1008741-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	x091412	Date of Collection: 8/30/10 11:25:00 AM		
Dil. Factor:	4.77	Date of Analysis: 9/14/10 02:50 PM		
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	2.4	0.98 J	12	4.8 J
Freon 114	2.4	Not Detected	17	Not Detected
Chloromethane	9.5	Not Detected	20	Not Detected
Vinyl Chloride	2.4	Not Detected	6.1	Not Detected
1,3-Butadiene	2.4	Not Detected	5.3	Not Detected
Bromomethane	2.4	Not Detected	9.3	Not Detected
Chloroethane	2.4	Not Detected	6.3	Not Detected
Freon 11	2.4	37	13	210
Ethanol	9.5	Not Detected	18	Not Detected
Freon 113	2.4	Not Detected	18	Not Detected
1,1-Dichloroethene	2.4	Not Detected	9.4	Not Detected
Acetone	9.5	23	23	55
2-Propanol	9.5	Not Detected	23	Not Detected
Carbon Disulfide	2.4	4.3	7.4	13
3-Chloropropene	9.5	Not Detected	30	Not Detected
Methylene Chloride	2.4	Not Detected	8.3	Not Detected
Methyl tert-butyl ether	2.4	Not Detected	8.6	Not Detected
trans-1,2-Dichloroethene	2.4	Not Detected	9.4	Not Detected
Hexane	2.4	Not Detected	8.4	Not Detected
1,1-Dichloroethane	2.4	Not Detected	9.6	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.4	2.2 J	7.0	6.4 J
cis-1,2-Dichloroethene	2.4	Not Detected	9.4	Not Detected
Tetrahydrofuran	2.4	Not Detected	7.0	Not Detected
Chloroform	2.4	1.3 J	12	6.5 J
1,1,1-Trichloroethane	2.4	2.1 J	13	12 J
Cyclohexane	2.4	Not Detected	8.2	Not Detected
Carbon Tetrachloride	2.4	0.28 J	15	1.8 J
2,2,4-Trimethylpentane	2.4	Not Detected	11	Not Detected
Benzene	2.4	0.95 J	7.6	3.0 J
1,2-Dichloroethane	2.4	Not Detected	9.6	Not Detected
Heptane	2.4	Not Detected	9.8	Not Detected
Trichloroethene	2.4	20	13	110
1,2-Dichloropropane	2.4	Not Detected	11	Not Detected
1,4-Dioxane	9.5	Not Detected	34	Not Detected
Bromodichloromethane	2.4	Not Detected	16	Not Detected
cis-1,3-Dichloropropene	2.4	Not Detected	11	Not Detected
4-Methyl-2-pentanone	2.4	Not Detected	9.8	Not Detected
Toluene	2.4	12	9.0	46
trans-1,3-Dichloropropene	2.4	Not Detected	11	Not Detected
1,1,2-Trichloroethane	2.4	Not Detected	13	Not Detected
Tetrachloroethene	2.4	690	16	4700



Client Sample ID: SG-27

Lab ID#: 1008741-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	x091412	Date of Collection:	8/30/10 11:25:00 AM
Dil. Factor:	4.77	Date of Analysis:	9/14/10 02:50 PM
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)
2-Hexanone	9.5	Not Detected	39
Dibromochloromethane	2.4	Not Detected	20
1,2-Dibromoethane (EDB)	2.4	Not Detected	18
Chlorobenzene	2.4	Not Detected	11
Ethyl Benzene	2.4	5.5	10
m,p-Xylene	2.4	20	89
o-Xylene	2.4	5.1	10
Styrene	2.4	0.38 J	10
Bromoform	2.4	Not Detected	25
Cumene	2.4	0.53 J	12
1,1,2,2-Tetrachloroethane	2.4	Not Detected	16
Propylbenzene	2.4	2.8	12
4-Ethyltoluene	2.4	17	12
1,3,5-Trimethylbenzene	2.4	5.4	12
1,2,4-Trimethylbenzene	2.4	24	12
1,3-Dichlorobenzene	2.4	Not Detected	14
1,4-Dichlorobenzene	2.4	Not Detected	14
alpha-Chlorotoluene	2.4	Not Detected	12
1,2-Dichlorobenzene	2.4	Not Detected	14
1,2,4-Trichlorobenzene	9.5	Not Detected	71
Hexachlorobutadiene	9.5	Not Detected	100
Chlorodifluoromethane	9.5	57	34
Dichlorofluoromethane	9.5	Not Detected	40

J = Estimated value.

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	100	70-130
4-Bromofluorobenzene	93	70-130



Client Sample ID: Lab Blank

Lab ID#: 1008741-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	x091406a	Date of Collection: NA		
Dil. Factor:	1.00	Date of Analysis: 9/14/10 11:02 AM		
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.50	Not Detected	2.5	Not Detected
Freon 114	0.50	Not Detected	3.5	Not Detected
Chloromethane	2.0	Not Detected	4.1	Not Detected
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
1,3-Butadiene	0.50	Not Detected	1.1	Not Detected
Bromomethane	0.50	Not Detected	1.9	Not Detected
Chloroethane	0.50	Not Detected	1.3	Not Detected
Freon 11	0.50	Not Detected	2.8	Not Detected
Ethanol	2.0	Not Detected	3.8	Not Detected
Freon 113	0.50	Not Detected	3.8	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Acetone	2.0	0.57 J	4.8	1.3 J
2-Propanol	2.0	Not Detected	4.9	Not Detected
Carbon Disulfide	0.50	Not Detected	1.6	Not Detected
3-Chloropropene	2.0	Not Detected	6.3	Not Detected
Methylene Chloride	0.50	Not Detected	1.7	Not Detected
Methyl tert-butyl ether	0.50	Not Detected	1.8	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Hexane	0.50	Not Detected	1.8	Not Detected
1,1-Dichloroethane	0.50	Not Detected	2.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.50	0.12 J	1.5	0.34 J
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
Chloroform	0.50	Not Detected	2.4	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Cyclohexane	0.50	Not Detected	1.7	Not Detected
Carbon Tetrachloride	0.50	Not Detected	3.1	Not Detected
2,2,4-Trimethylpentane	0.50	Not Detected	2.3	Not Detected
Benzene	0.50	Not Detected	1.6	Not Detected
1,2-Dichloroethane	0.50	Not Detected	2.0	Not Detected
Heptane	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
1,2-Dichloropropane	0.50	Not Detected	2.3	Not Detected
1,4-Dioxane	2.0	Not Detected	7.2	Not Detected
Bromodichloromethane	0.50	Not Detected	3.4	Not Detected
cis-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
4-Methyl-2-pentanone	0.50	Not Detected	2.0	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
trans-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected



Client Sample ID: Lab Blank

Lab ID#: 1008741-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	x091406a	Date of Collection: NA		
Dil. Factor:	1.00	Date of Analysis: 9/14/10 11:02 AM		
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
2-Hexanone	2.0	Not Detected	8.2	Not Detected
Dibromochloromethane	0.50	Not Detected	4.2	Not Detected
1,2-Dibromoethane (EDB)	0.50	Not Detected	3.8	Not Detected
Chlorobenzene	0.50	Not Detected	2.3	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
Styrene	0.50	Not Detected	2.1	Not Detected
Bromoform	0.50	Not Detected	5.2	Not Detected
Cumene	0.50	Not Detected	2.4	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected	3.4	Not Detected
Propylbenzene	0.50	Not Detected	2.4	Not Detected
4-Ethyltoluene	0.50	Not Detected	2.4	Not Detected
1,3,5-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,2,4-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,3-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
alpha-Chlorotoluene	0.50	0.079 J	2.6	0.41 J
1,2-Dichlorobenzene	0.50	0.087 J	3.0	0.52 J
1,2,4-Trichlorobenzene	2.0	0.34 J	15	2.6 J
Hexachlorobutadiene	2.0	Not Detected	21	Not Detected
Chlorodifluoromethane	2.0	Not Detected	7.1	Not Detected
Dichlorofluoromethane	2.0	Not Detected	8.4	Not Detected

J = Estimated value.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	96	70-130
1,2-Dichloroethane-d4	96	70-130
4-Bromofluorobenzene	90	70-130



Client Sample ID: CCV

Lab ID#: 1008741-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	x091402	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	9/14/10 07:57 AM

Compound	%Recovery
Freon 12	116
Freon 114	116
Chloromethane	98
Vinyl Chloride	95
1,3-Butadiene	100
Bromomethane	108
Chloroethane	90
Freon 11	112
Ethanol	76
Freon 113	91
1,1-Dichloroethene	90
Acetone	80
2-Propanol	80
Carbon Disulfide	84
3-Chloropropene	82
Methylene Chloride	86
Methyl tert-butyl ether	90
trans-1,2-Dichloroethene	82
Hexane	79
1,1-Dichloroethane	83
2-Butanone (Methyl Ethyl Ketone)	84
cis-1,2-Dichloroethene	82
Tetrahydrofuran	83
Chloroform	87
1,1,1-Trichloroethane	93
Cyclohexane	84
Carbon Tetrachloride	95
2,2,4-Trimethylpentane	84
Benzene	88
1,2-Dichloroethane	92
Heptane	88
Trichloroethene	87
1,2-Dichloropropane	89
1,4-Dioxane	91
Bromodichloromethane	94
cis-1,3-Dichloropropene	90
4-Methyl-2-pentanone	96
Toluene	91
trans-1,3-Dichloropropene	96
1,1,2-Trichloroethane	95
Tetrachloroethene	98



Client Sample ID: CCV

Lab ID#: 1008741-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	x091402	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	9/14/10 07:57 AM

Compound	%Recovery
2-Hexanone	96
Dibromochloromethane	98
1,2-Dibromoethane (EDB)	94
Chlorobenzene	89
Ethyl Benzene	92
m,p-Xylene	95
o-Xylene	93
Styrene	99
Bromoform	99
Cumene	92
1,1,2,2-Tetrachloroethane	90
Propylbenzene	89
4-Ethyltoluene	90
1,3,5-Trimethylbenzene	92
1,2,4-Trimethylbenzene	90
1,3-Dichlorobenzene	90
1,4-Dichlorobenzene	88
alpha-Chlorotoluene	104
1,2-Dichlorobenzene	89
1,2,4-Trichlorobenzene	80
Hexachlorobutadiene	88
Chlorodifluoromethane	107
Dichlorofluoromethane	109

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	100	70-130
4-Bromofluorobenzene	100	70-130



Client Sample ID: LCS

Lab ID#: 1008741-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	x091403	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	9/14/10 08:43 AM

Compound	%Recovery
Freon 12	107
Freon 114	110
Chloromethane	96
Vinyl Chloride	94
1,3-Butadiene	101
Bromomethane	109
Chloroethane	92
Freon 11	113
Ethanol	82
Freon 113	84
1,1-Dichloroethene	83
Acetone	82
2-Propanol	83
Carbon Disulfide	86
3-Chloropropene	86
Methylene Chloride	82
Methyl tert-butyl ether	96
trans-1,2-Dichloroethene	86
Hexane	84
1,1-Dichloroethane	85
2-Butanone (Methyl Ethyl Ketone)	92
cis-1,2-Dichloroethene	88
Tetrahydrofuran	91
Chloroform	91
1,1,1-Trichloroethane	96
Cyclohexane	89
Carbon Tetrachloride	100
2,2,4-Trimethylpentane	91
Benzene	89
1,2-Dichloroethane	93
Heptane	89
Trichloroethene	91
1,2-Dichloropropane	92
1,4-Dioxane	93
Bromodichloromethane	96
cis-1,3-Dichloropropene	95
4-Methyl-2-pentanone	96
Toluene	89
trans-1,3-Dichloropropene	103
1,1,2-Trichloroethane	99
Tetrachloroethene	101



Client Sample ID: LCS

Lab ID#: 1008741-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	x091403	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	9/14/10 08:43 AM

Compound	%Recovery
2-Hexanone	98
Dibromochloromethane	102
1,2-Dibromoethane (EDB)	100
Chlorobenzene	94
Ethyl Benzene	97
m,p-Xylene	101
o-Xylene	98
Styrene	103
Bromoform	104
Cumene	93
1,1,2,2-Tetrachloroethane	94
Propylbenzene	91
4-Ethyltoluene	96
1,3,5-Trimethylbenzene	94
1,2,4-Trimethylbenzene	94
1,3-Dichlorobenzene	93
1,4-Dichlorobenzene	94
alpha-Chlorotoluene	107
1,2-Dichlorobenzene	95
1,2,4-Trichlorobenzene	83
Hexachlorobutadiene	90
Chlorodifluoromethane	Not Spiked
Dichlorofluoromethane	Not Spiked

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	102	70-130
4-Bromofluorobenzene	100	70-130



Client Sample ID: LCSD

Lab ID#: 1008741-05AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	x091404	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	9/14/10 09:38 AM

Compound	%Recovery
Freon 12	108
Freon 114	112
Chloromethane	95
Vinyl Chloride	96
1,3-Butadiene	100
Bromomethane	111
Chloroethane	92
Freon 11	112
Ethanol	79
Freon 113	85
1,1-Dichloroethene	82
Acetone	83
2-Propanol	82
Carbon Disulfide	88
3-Chloropropene	86
Methylene Chloride	81
Methyl tert-butyl ether	96
trans-1,2-Dichloroethene	85
Hexane	84
1,1-Dichloroethane	84
2-Butanone (Methyl Ethyl Ketone)	90
cis-1,2-Dichloroethene	86
Tetrahydrofuran	88
Chloroform	89
1,1,1-Trichloroethane	96
Cyclohexane	89
Carbon Tetrachloride	99
2,2,4-Trimethylpentane	90
Benzene	90
1,2-Dichloroethane	91
Heptane	91
Trichloroethene	91
1,2-Dichloropropane	94
1,4-Dioxane	94
Bromodichloromethane	95
cis-1,3-Dichloropropene	95
4-Methyl-2-pentanone	97
Toluene	89
trans-1,3-Dichloropropene	101
1,1,2-Trichloroethane	98
Tetrachloroethene	100



Client Sample ID: LCSD

Lab ID#: 1008741-05AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	x091404	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	9/14/10 09:38 AM

Compound	%Recovery
2-Hexanone	99
Dibromochloromethane	101
1,2-Dibromoethane (EDB)	100
Chlorobenzene	94
Ethyl Benzene	97
m,p-Xylene	100
o-Xylene	97
Styrene	103
Bromoform	104
Cumene	93
1,1,2,2-Tetrachloroethane	94
Propylbenzene	91
4-Ethyltoluene	96
1,3,5-Trimethylbenzene	94
1,2,4-Trimethylbenzene	94
1,3-Dichlorobenzene	92
1,4-Dichlorobenzene	94
alpha-Chlorotoluene	106
1,2-Dichlorobenzene	95
1,2,4-Trichlorobenzene	82
Hexachlorobutadiene	90
Chlorodifluoromethane	Not Spiked
Dichlorofluoromethane	Not Spiked

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	99	70-130
4-Bromofluorobenzene	101	70-130



