

5/26/2017

Ms. Anna Kelley
Hamilton Co. Environmental Services
250 Wm. Howard Taft

Cincinnati OH 45219

Project Name: Sun Coke

Project #:

Workorder #: 1705303

Dear Ms. Anna Kelley

The following report includes the data for the above referenced project for sample(s) received on 5/15/2017 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-14A 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 Eurofins Air Toxics Inc. for your air analysis needs. Eurofins Air Toxics Inc. 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 #: 1705303

Work Order Summary

CLIENT:	Ms. Anna Kelley Hamilton Co. Environmental Services 250 Wm. Howard Taft Cincinnati, OH 45219	BILL TO:	Ms. Anna Kelley Hamilton Co. Environmental Services 250 Wm. Howard Taft Cincinnati, OH 45219
PHONE:	513-946-7725	P.O. #	
FAX:		PROJECT #	Sun Coke
DATE RECEIVED:	05/15/2017	CONTACT:	Ausha Scott
DATE COMPLETED:	05/26/2017		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	A6L1698050717	Modified TO-14A	15.0 psi	15.0 psi
02A	Y6L0972050717	Modified TO-14A	13.9 psi	13.9 psi
03A	Lab Blank	Modified TO-14A	NA	NA
04A	CCV	Modified TO-14A	NA	NA
05A	LCS	Modified TO-14A	NA	NA
05AA	LCSD	Modified TO-14A	NA	NA

CERTIFIED BY: 
 Technical Director

DATE: 05/26/17

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
 TX NELAP - T104704434-16-11, UT NELAP CA0093332016-7, VA NELAP - 8113, WA NELAP - C935
 Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
 Accreditation number: CA300005, Effective date: 10/18/2016, Expiration date: 10/17/2017.

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

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LABORATORY NARRATIVE
Modified TO-14A
Hamilton Co. Environmental Services
Workorder# 1705303

Two 6 Liter Summa Canister (100% Cert Ambient) samples were received on May 15, 2017. The laboratory performed analysis via modified EPA Method TO-14A 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.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

<i>Requirement</i>	<i>TO-14A</i>	<i>ATL Modifications</i>
Sample Drying System	Nafion Dryer	Multibed hydrophobic sorbent
Blank acceptance criteria	< 0.2 ppbv	< RL
BFB ion abundance criteria	Ion abundance criteria listed in Table 4 of TO-14A	Follow abundance criteria listed in TO-15
BFB absolute abundance criteria	Within 10% when comparing to the previous daily BFB	CCV internal standard area counts are compared to ICAL, Corrective action when recovery is less than 60%.
Blanks and standards	Zero Air	UHP Nitrogen provides a higher purity gas matrix than zero air
Initial Calibration	<=30% RSD for listed 39 VOCs	<=30% RSD with 4 compounds allowed out to <=40%.

Receiving Notes

The Chain of Custody (COC) was not relinquished properly. A signature, date and time were not provided by the field sampler.

Analytical Notes

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. All The canisters used for this project have been certified to the Reporting Limit for the target analytes included in this workorder. Concentrations that are below the level at which the canister was certified may be false positives.

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.

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, LOD, or MDL value. See data page for project specific U-flag definition.

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

Summary of Detected Compounds

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

Client Sample ID: A6L1698050717

Lab ID#: 1705303-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.10	0.63	0.49	3.1
Chloromethane	0.50	0.69	1.0	1.4
Freon 11	0.10	0.29	0.56	1.6
Ethanol	0.50	3.7	0.94	6.9
Freon 113	0.10	0.068 J	0.77	0.52 J
Acetone	0.50	5.8	1.2	14
2-Propanol	0.50	0.35 J	1.2	0.85 J
Carbon Disulfide	0.50	0.13 J	1.6	0.40 J
Methylene Chloride	0.20	0.090 J	0.69	0.31 J
2-Butanone (Methyl Ethyl Ketone)	0.50	1.3	1.5	3.8
Carbon Tetrachloride	0.10	0.16	0.63	1.0
Benzene	0.10	0.12	0.32	0.39
4-Methyl-2-pentanone	0.10	0.045 J	0.41	0.18 J
Toluene	0.10	0.091 J	0.38	0.34 J
2-Hexanone	0.50	0.28 J	2.0	1.1 J
m,p-Xylene	0.10	0.032 J	0.43	0.14 J
o-Xylene	0.10	0.015 J	0.43	0.067 J
Butane	0.50	0.14 J	1.2	0.34 J
Naphthalene	0.50	0.020 J	2.6	0.10 J

Client Sample ID: Y6L0972050717

Lab ID#: 1705303-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.10	0.60	0.49	3.0
Chloromethane	0.50	0.68	1.0	1.4
Bromomethane	0.50	0.098 J	1.9	0.38 J
Freon 11	0.10	0.29	0.56	1.6
Ethanol	0.50	2.3	0.94	4.4
Freon 113	0.10	0.075 J	0.77	0.57 J
Acetone	0.50	5.4	1.2	13
2-Propanol	0.50	0.85	1.2	2.1
Carbon Disulfide	0.50	0.12 J	1.6	0.36 J

**Summary of Detected Compounds
MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN**

Client Sample ID: Y6L0972050717

Lab ID#: 1705303-02A

Methylene Chloride	0.20	0.10 J	0.69	0.34 J
2-Butanone (Methyl Ethyl Ketone)	0.50	1.1	1.5	3.2
Chloroform	0.10	0.024 J	0.49	0.12 J
Carbon Tetrachloride	0.10	0.13	0.63	0.80
Benzene	0.10	0.097 J	0.32	0.31 J
4-Methyl-2-pentanone	0.10	0.048 J	0.41	0.20 J
Toluene	0.10	0.074 J	0.38	0.28 J
2-Hexanone	0.50	0.17 J	2.0	0.71 J
o-Xylene	0.10	0.013 J	0.43	0.057 J



Air Toxics

Client Sample ID: A6L1698050717

Lab ID#: 1705303-01A

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	e052508	Date of Collection:	5/7/17 11:59:00 PM
Dil. Factor:	1.00	Date of Analysis:	5/25/17 02:42 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.10	0.63	0.49	3.1
Freon 114	0.10	Not Detected	0.70	Not Detected
Chloromethane	0.50	0.69	1.0	1.4
Vinyl Chloride	0.10	Not Detected	0.26	Not Detected
1,3-Butadiene	0.10	Not Detected	0.22	Not Detected
Bromomethane	0.50	Not Detected	1.9	Not Detected
Chloroethane	0.50	Not Detected	1.3	Not Detected
Freon 11	0.10	0.29	0.56	1.6
Ethanol	0.50	3.7	0.94	6.9
Freon 113	0.10	0.068 J	0.77	0.52 J
1,1-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Acetone	0.50	5.8	1.2	14
2-Propanol	0.50	0.35 J	1.2	0.85 J
Carbon Disulfide	0.50	0.13 J	1.6	0.40 J
3-Chloropropene	0.50	Not Detected	1.6	Not Detected
Methylene Chloride	0.20	0.090 J	0.69	0.31 J
Methyl tert-butyl ether	0.10	Not Detected	0.36	Not Detected
trans-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Hexane	0.10	Not Detected	0.35	Not Detected
1,1-Dichloroethane	0.10	Not Detected	0.40	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.50	1.3	1.5	3.8
cis-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
Chloroform	0.10	Not Detected	0.49	Not Detected
1,1,1-Trichloroethane	0.10	Not Detected	0.54	Not Detected
Cyclohexane	0.10	Not Detected	0.34	Not Detected
Carbon Tetrachloride	0.10	0.16	0.63	1.0
2,2,4-Trimethylpentane	0.50	Not Detected	2.3	Not Detected
Benzene	0.10	0.12	0.32	0.39
1,2-Dichloroethane	0.10	Not Detected	0.40	Not Detected
Heptane	0.10	Not Detected	0.41	Not Detected
Trichloroethene	0.10	Not Detected	0.54	Not Detected
1,2-Dichloropropane	0.10	Not Detected	0.46	Not Detected
1,4-Dioxane	0.10	Not Detected	0.36	Not Detected
Bromodichloromethane	0.10	Not Detected	0.67	Not Detected
cis-1,3-Dichloropropene	0.10	Not Detected	0.45	Not Detected
4-Methyl-2-pentanone	0.10	0.045 J	0.41	0.18 J
Toluene	0.10	0.091 J	0.38	0.34 J
trans-1,3-Dichloropropene	0.10	Not Detected	0.45	Not Detected
1,1,2-Trichloroethane	0.10	Not Detected	0.54	Not Detected
Tetrachloroethene	0.10	Not Detected	0.68	Not Detected
2-Hexanone	0.50	0.28 J	2.0	1.1 J



Air Toxics

Client Sample ID: A6L1698050717

Lab ID#: 1705303-01A

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	e052508	Date of Collection:	5/7/17 11:59:00 PM
Dil. Factor:	1.00	Date of Analysis:	5/25/17 02:42 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.10	Not Detected	0.85	Not Detected
1,2-Dibromoethane (EDB)	0.10	Not Detected	0.77	Not Detected
Chlorobenzene	0.10	Not Detected	0.46	Not Detected
Ethyl Benzene	0.10	Not Detected	0.43	Not Detected
m,p-Xylene	0.10	0.032 J	0.43	0.14 J
o-Xylene	0.10	0.015 J	0.43	0.067 J
Styrene	0.10	Not Detected	0.42	Not Detected
Bromoform	0.10	Not Detected	1.0	Not Detected
Cumene	0.10	Not Detected	0.49	Not Detected
1,1,2,2-Tetrachloroethane	0.10	Not Detected	0.69	Not Detected
Propylbenzene	0.10	Not Detected	0.49	Not Detected
4-Ethyltoluene	0.10	Not Detected	0.49	Not Detected
1,3,5-Trimethylbenzene	0.10	Not Detected	0.49	Not Detected
1,2,4-Trimethylbenzene	0.10	Not Detected	0.49	Not Detected
1,3-Dichlorobenzene	0.10	Not Detected	0.60	Not Detected
1,4-Dichlorobenzene	0.10	Not Detected	0.60	Not Detected
alpha-Chlorotoluene	0.10	Not Detected	0.52	Not Detected
1,2-Dichlorobenzene	0.10	Not Detected	0.60	Not Detected
1,2,4-Trichlorobenzene	0.50	Not Detected	3.7	Not Detected
Hexachlorobutadiene	0.50	Not Detected	5.3	Not Detected
Butane	0.50	0.14 J	1.2	0.34 J
Decane	2.0	Not Detected	12	Not Detected
Dibromomethane	0.50	Not Detected	3.6	Not Detected
Nonane	0.50	Not Detected	2.6	Not Detected
Naphthalene	0.50	0.020 J	2.6	0.10 J
Octane	0.50	Not Detected	2.3	Not Detected
Pentane	0.50	Not Detected	1.5	Not Detected
Propylene	1.0	Not Detected	1.7	Not Detected
Undecane	2.0	Not Detected	13	Not Detected
Vinyl Acetate	0.50	Not Detected	1.8	Not Detected

J = Estimated value.

Container Type: 6 Liter Summa Canister (100% Cert Ambient)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	118	70-130
Toluene-d8	95	70-130
4-Bromofluorobenzene	102	70-130



Air Toxics

Client Sample ID: Y6L0972050717

Lab ID#: 1705303-02A

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	e052509	Date of Collection:	5/7/17 11:59:00 PM
Dil. Factor:	1.00	Date of Analysis:	5/25/17 03:23 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.10	0.60	0.49	3.0
Freon 114	0.10	Not Detected	0.70	Not Detected
Chloromethane	0.50	0.68	1.0	1.4
Vinyl Chloride	0.10	Not Detected	0.26	Not Detected
1,3-Butadiene	0.10	Not Detected	0.22	Not Detected
Bromomethane	0.50	0.098 J	1.9	0.38 J
Chloroethane	0.50	Not Detected	1.3	Not Detected
Freon 11	0.10	0.29	0.56	1.6
Ethanol	0.50	2.3	0.94	4.4
Freon 113	0.10	0.075 J	0.77	0.57 J
1,1-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Acetone	0.50	5.4	1.2	13
2-Propanol	0.50	0.85	1.2	2.1
Carbon Disulfide	0.50	0.12 J	1.6	0.36 J
3-Chloropropene	0.50	Not Detected	1.6	Not Detected
Methylene Chloride	0.20	0.10 J	0.69	0.34 J
Methyl tert-butyl ether	0.10	Not Detected	0.36	Not Detected
trans-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Hexane	0.10	Not Detected	0.35	Not Detected
1,1-Dichloroethane	0.10	Not Detected	0.40	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.50	1.1	1.5	3.2
cis-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
Chloroform	0.10	0.024 J	0.49	0.12 J
1,1,1-Trichloroethane	0.10	Not Detected	0.54	Not Detected
Cyclohexane	0.10	Not Detected	0.34	Not Detected
Carbon Tetrachloride	0.10	0.13	0.63	0.80
2,2,4-Trimethylpentane	0.50	Not Detected	2.3	Not Detected
Benzene	0.10	0.097 J	0.32	0.31 J
1,2-Dichloroethane	0.10	Not Detected	0.40	Not Detected
Heptane	0.10	Not Detected	0.41	Not Detected
Trichloroethene	0.10	Not Detected	0.54	Not Detected
1,2-Dichloropropane	0.10	Not Detected	0.46	Not Detected
1,4-Dioxane	0.10	Not Detected	0.36	Not Detected
Bromodichloromethane	0.10	Not Detected	0.67	Not Detected
cis-1,3-Dichloropropene	0.10	Not Detected	0.45	Not Detected
4-Methyl-2-pentanone	0.10	0.048 J	0.41	0.20 J
Toluene	0.10	0.074 J	0.38	0.28 J
trans-1,3-Dichloropropene	0.10	Not Detected	0.45	Not Detected
1,1,2-Trichloroethane	0.10	Not Detected	0.54	Not Detected
Tetrachloroethene	0.10	Not Detected	0.68	Not Detected
2-Hexanone	0.50	0.17 J	2.0	0.71 J



Air Toxics

Client Sample ID: Y6L0972050717

Lab ID#: 1705303-02A

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	e052509	Date of Collection:	5/7/17 11:59:00 PM
Dil. Factor:	1.00	Date of Analysis:	5/25/17 03:23 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.10	Not Detected	0.85	Not Detected
1,2-Dibromoethane (EDB)	0.10	Not Detected	0.77	Not Detected
Chlorobenzene	0.10	Not Detected	0.46	Not Detected
Ethyl Benzene	0.10	Not Detected	0.43	Not Detected
m,p-Xylene	0.10	Not Detected	0.43	Not Detected
o-Xylene	0.10	0.013 J	0.43	0.057 J
Styrene	0.10	Not Detected	0.42	Not Detected
Bromoform	0.10	Not Detected	1.0	Not Detected
Cumene	0.10	Not Detected	0.49	Not Detected
1,1,2,2-Tetrachloroethane	0.10	Not Detected	0.69	Not Detected
Propylbenzene	0.10	Not Detected	0.49	Not Detected
4-Ethyltoluene	0.10	Not Detected	0.49	Not Detected
1,3,5-Trimethylbenzene	0.10	Not Detected	0.49	Not Detected
1,2,4-Trimethylbenzene	0.10	Not Detected	0.49	Not Detected
1,3-Dichlorobenzene	0.10	Not Detected	0.60	Not Detected
1,4-Dichlorobenzene	0.10	Not Detected	0.60	Not Detected
alpha-Chlorotoluene	0.10	Not Detected	0.52	Not Detected
1,2-Dichlorobenzene	0.10	Not Detected	0.60	Not Detected
1,2,4-Trichlorobenzene	0.50	Not Detected	3.7	Not Detected
Hexachlorobutadiene	0.50	Not Detected	5.3	Not Detected
Butane	0.50	Not Detected	1.2	Not Detected
Decane	2.0	Not Detected	12	Not Detected
Dibromomethane	0.50	Not Detected	3.6	Not Detected
Nonane	0.50	Not Detected	2.6	Not Detected
Naphthalene	0.50	Not Detected	2.6	Not Detected
Octane	0.50	Not Detected	2.3	Not Detected
Pentane	0.50	Not Detected	1.5	Not Detected
Propylene	1.0	Not Detected	1.7	Not Detected
Undecane	2.0	Not Detected	13	Not Detected
Vinyl Acetate	0.50	Not Detected	1.8	Not Detected

J = Estimated value.

Container Type: 6 Liter Summa Canister (100% Cert Ambient)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	117	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	100	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1705303-03A

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	e052507c	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	5/25/17 01:51 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.10	Not Detected	0.49	Not Detected
Freon 114	0.10	Not Detected	0.70	Not Detected
Chloromethane	0.50	Not Detected	1.0	Not Detected
Vinyl Chloride	0.10	Not Detected	0.26	Not Detected
1,3-Butadiene	0.10	Not Detected	0.22	Not Detected
Bromomethane	0.50	0.083 J	1.9	0.32 J
Chloroethane	0.50	Not Detected	1.3	Not Detected
Freon 11	0.10	Not Detected	0.56	Not Detected
Ethanol	0.50	Not Detected	0.94	Not Detected
Freon 113	0.10	Not Detected	0.77	Not Detected
1,1-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Acetone	0.50	0.15 J	1.2	0.35 J
2-Propanol	0.50	Not Detected	1.2	Not Detected
Carbon Disulfide	0.50	0.12 J	1.6	0.36 J
3-Chloropropene	0.50	Not Detected	1.6	Not Detected
Methylene Chloride	0.20	Not Detected	0.69	Not Detected
Methyl tert-butyl ether	0.10	Not Detected	0.36	Not Detected
trans-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Hexane	0.10	Not Detected	0.35	Not Detected
1,1-Dichloroethane	0.10	Not Detected	0.40	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.50	Not Detected	1.5	Not Detected
cis-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
Chloroform	0.10	Not Detected	0.49	Not Detected
1,1,1-Trichloroethane	0.10	Not Detected	0.54	Not Detected
Cyclohexane	0.10	Not Detected	0.34	Not Detected
Carbon Tetrachloride	0.10	Not Detected	0.63	Not Detected
2,2,4-Trimethylpentane	0.50	Not Detected	2.3	Not Detected
Benzene	0.10	0.040 J	0.32	0.13 J
1,2-Dichloroethane	0.10	Not Detected	0.40	Not Detected
Heptane	0.10	Not Detected	0.41	Not Detected
Trichloroethene	0.10	Not Detected	0.54	Not Detected
1,2-Dichloropropane	0.10	Not Detected	0.46	Not Detected
1,4-Dioxane	0.10	Not Detected	0.36	Not Detected
Bromodichloromethane	0.10	Not Detected	0.67	Not Detected
cis-1,3-Dichloropropene	0.10	Not Detected	0.45	Not Detected
4-Methyl-2-pentanone	0.10	Not Detected	0.41	Not Detected
Toluene	0.10	Not Detected	0.38	Not Detected
trans-1,3-Dichloropropene	0.10	Not Detected	0.45	Not Detected
1,1,2-Trichloroethane	0.10	Not Detected	0.54	Not Detected
Tetrachloroethene	0.10	Not Detected	0.68	Not Detected
2-Hexanone	0.50	Not Detected	2.0	Not Detected

Client Sample ID: Lab Blank

Lab ID#: 1705303-03A

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	e052507c	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	5/25/17 01:51 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.10	Not Detected	0.85	Not Detected
1,2-Dibromoethane (EDB)	0.10	Not Detected	0.77	Not Detected
Chlorobenzene	0.10	Not Detected	0.46	Not Detected
Ethyl Benzene	0.10	Not Detected	0.43	Not Detected
m,p-Xylene	0.10	Not Detected	0.43	Not Detected
o-Xylene	0.10	Not Detected	0.43	Not Detected
Styrene	0.10	Not Detected	0.42	Not Detected
Bromoform	0.10	Not Detected	1.0	Not Detected
Cumene	0.10	Not Detected	0.49	Not Detected
1,1,2,2-Tetrachloroethane	0.10	Not Detected	0.69	Not Detected
Propylbenzene	0.10	Not Detected	0.49	Not Detected
4-Ethyltoluene	0.10	Not Detected	0.49	Not Detected
1,3,5-Trimethylbenzene	0.10	Not Detected	0.49	Not Detected
1,2,4-Trimethylbenzene	0.10	Not Detected	0.49	Not Detected
1,3-Dichlorobenzene	0.10	Not Detected	0.60	Not Detected
1,4-Dichlorobenzene	0.10	Not Detected	0.60	Not Detected
alpha-Chlorotoluene	0.10	Not Detected	0.52	Not Detected
1,2-Dichlorobenzene	0.10	Not Detected	0.60	Not Detected
1,2,4-Trichlorobenzene	0.50	Not Detected	3.7	Not Detected
Hexachlorobutadiene	0.50	Not Detected	5.3	Not Detected
Butane	0.50	Not Detected	1.2	Not Detected
Decane	2.0	Not Detected	12	Not Detected
Dibromomethane	0.50	Not Detected	3.6	Not Detected
Nonane	0.50	Not Detected	2.6	Not Detected
Naphthalene	0.50	Not Detected	2.6	Not Detected
Octane	0.50	Not Detected	2.3	Not Detected
Pentane	0.50	Not Detected	1.5	Not Detected
Propylene	1.0	Not Detected	1.7	Not Detected
Undecane	2.0	Not Detected	13	Not Detected
Vinyl Acetate	0.50	Not Detected	1.8	Not Detected

J = Estimated value.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	119	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	96	70-130



Air Toxics

Client Sample ID: CCV

Lab ID#: 1705303-04A

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	e052502	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/25/17 09:58 AM

Compound	%Recovery
Freon 12	106
Freon 114	97
Chloromethane	104
Vinyl Chloride	95
1,3-Butadiene	100
Bromomethane	102
Chloroethane	101
Freon 11	110
Ethanol	125
Freon 113	92
1,1-Dichloroethene	91
Acetone	101
2-Propanol	99
Carbon Disulfide	91
3-Chloropropene	90
Methylene Chloride	125
Methyl tert-butyl ether	101
trans-1,2-Dichloroethene	96
Hexane	100
1,1-Dichloroethane	96
2-Butanone (Methyl Ethyl Ketone)	101
cis-1,2-Dichloroethene	96
Tetrahydrofuran	105
Chloroform	101
1,1,1-Trichloroethane	104
Cyclohexane	98
Carbon Tetrachloride	116
2,2,4-Trimethylpentane	98
Benzene	89
1,2-Dichloroethane	105
Heptane	104
Trichloroethene	86
1,2-Dichloropropane	94
1,4-Dioxane	97
Bromodichloromethane	102
cis-1,3-Dichloropropene	102
4-Methyl-2-pentanone	108
Toluene	97
trans-1,3-Dichloropropene	101
1,1,2-Trichloroethane	95
Tetrachloroethene	98
2-Hexanone	103



Air Toxics

Client Sample ID: CCV

Lab ID#: 1705303-04A

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	e052502	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/25/17 09:58 AM

Compound	%Recovery
Dibromochloromethane	107
1,2-Dibromoethane (EDB)	100
Chlorobenzene	98
Ethyl Benzene	105
m,p-Xylene	106
o-Xylene	102
Styrene	100
Bromoform	107
Cumene	106
1,1,2,2-Tetrachloroethane	105
Propylbenzene	104
4-Ethyltoluene	98
1,3,5-Trimethylbenzene	108
1,2,4-Trimethylbenzene	102
1,3-Dichlorobenzene	97
1,4-Dichlorobenzene	93
alpha-Chlorotoluene	100
1,2-Dichlorobenzene	96
1,2,4-Trichlorobenzene	84
Hexachlorobutadiene	101
Butane	108
Decane	68
Dibromomethane	127
Nonane	68
Naphthalene	73
Octane	72
Pentane	66
Propylene	102
Undecane	62
Vinyl Acetate	100

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	111	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	103	70-130



Air Toxics

Client Sample ID: LCS

Lab ID#: 1705303-05A

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	e052503	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/25/17 10:45 AM

Compound	%Recovery	Method Limits
Freon 12	94	70-130
Freon 114	88	70-130
Chloromethane	100	70-130
Vinyl Chloride	87	70-130
1,3-Butadiene	86	70-130
Bromomethane	92	70-130
Chloroethane	89	70-130
Freon 11	96	70-130
Ethanol	98	70-130
Freon 113	81	70-130
1,1-Dichloroethene	80	70-130
Acetone	82	70-130
2-Propanol	94	70-130
Carbon Disulfide	84	70-130
3-Chloropropene	87	70-130
Methylene Chloride	81	70-130
Methyl tert-butyl ether	89	70-130
trans-1,2-Dichloroethene	91	70-130
Hexane	89	70-130
1,1-Dichloroethane	85	70-130
2-Butanone (Methyl Ethyl Ketone)	88	70-130
cis-1,2-Dichloroethene	78	70-130
Tetrahydrofuran	96	70-130
Chloroform	89	70-130
1,1,1-Trichloroethane	93	70-130
Cyclohexane	88	70-130
Carbon Tetrachloride	71	70-130
2,2,4-Trimethylpentane	85	70-130
Benzene	78	70-130
1,2-Dichloroethane	91	70-130
Heptane	92	70-130
Trichloroethene	88	70-130
1,2-Dichloropropane	84	70-130
1,4-Dioxane	90	70-130
Bromodichloromethane	93	70-130
cis-1,3-Dichloropropene	96	70-130
4-Methyl-2-pentanone	99	70-130
Toluene	86	70-130
trans-1,3-Dichloropropene	92	70-130
1,1,2-Trichloroethane	86	70-130
Tetrachloroethene	86	70-130
2-Hexanone	99	70-130



Air Toxics

Client Sample ID: LCS

Lab ID#: 1705303-05A

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	e052503	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/25/17 10:45 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	93	70-130
1,2-Dibromoethane (EDB)	90	70-130
Chlorobenzene	87	70-130
Ethyl Benzene	93	70-130
m,p-Xylene	93	70-130
o-Xylene	91	70-130
Styrene	96	70-130
Bromoform	92	70-130
Cumene	94	70-130
1,1,2,2-Tetrachloroethane	80	70-130
Propylbenzene	91	70-130
4-Ethyltoluene	90	70-130
1,3,5-Trimethylbenzene	98	70-130
1,2,4-Trimethylbenzene	92	70-130
1,3-Dichlorobenzene	86	70-130
1,4-Dichlorobenzene	84	70-130
alpha-Chlorotoluene	95	70-130
1,2-Dichlorobenzene	85	70-130
1,2,4-Trichlorobenzene	80	70-130
Hexachlorobutadiene	93	70-130
Butane	95	60-140
Decane	Not Spiked	
Dibromomethane	Not Spiked	
Nonane	Not Spiked	
Naphthalene	93	60-140
Octane	Not Spiked	
Pentane	Not Spiked	
Propylene	90	60-140
Undecane	Not Spiked	
Vinyl Acetate	90	60-140

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	112	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	100	70-130



Air Toxics

Client Sample ID: LCS D

Lab ID#: 1705303-05AA

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	e052504	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	5/25/17 11:26 AM

Compound	%Recovery	Method Limits
Freon 12	92	70-130
Freon 114	87	70-130
Chloromethane	94	70-130
Vinyl Chloride	86	70-130
1,3-Butadiene	85	70-130
Bromomethane	91	70-130
Chloroethane	90	70-130
Freon 11	95	70-130
Ethanol	94	70-130
Freon 113	79	70-130
1,1-Dichloroethene	79	70-130
Acetone	81	70-130
2-Propanol	92	70-130
Carbon Disulfide	83	70-130
3-Chloropropene	85	70-130
Methylene Chloride	79	70-130
Methyl tert-butyl ether	89	70-130
trans-1,2-Dichloroethene	89	70-130
Hexane	89	70-130
1,1-Dichloroethane	84	70-130
2-Butanone (Methyl Ethyl Ketone)	86	70-130
cis-1,2-Dichloroethene	77	70-130
Tetrahydrofuran	93	70-130
Chloroform	88	70-130
1,1,1-Trichloroethane	91	70-130
Cyclohexane	88	70-130
Carbon Tetrachloride	70	70-130
2,2,4-Trimethylpentane	84	70-130
Benzene	78	70-130
1,2-Dichloroethane	92	70-130
Heptane	92	70-130
Trichloroethene	88	70-130
1,2-Dichloropropane	85	70-130
1,4-Dioxane	88	70-130
Bromodichloromethane	92	70-130
cis-1,3-Dichloropropene	96	70-130
4-Methyl-2-pentanone	100	70-130
Toluene	86	70-130
trans-1,3-Dichloropropene	95	70-130
1,1,2-Trichloroethane	86	70-130
Tetrachloroethene	86	70-130
2-Hexanone	101	70-130



Air Toxics

Client Sample ID: LCS D

Lab ID#: 1705303-05AA

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	e052504	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/25/17 11:26 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	95	70-130
1,2-Dibromoethane (EDB)	91	70-130
Chlorobenzene	88	70-130
Ethyl Benzene	93	70-130
m,p-Xylene	94	70-130
o-Xylene	91	70-130
Styrene	97	70-130
Bromoform	95	70-130
Cumene	96	70-130
1,1,2,2-Tetrachloroethane	82	70-130
Propylbenzene	93	70-130
4-Ethyltoluene	91	70-130
1,3,5-Trimethylbenzene	101	70-130
1,2,4-Trimethylbenzene	94	70-130
1,3-Dichlorobenzene	87	70-130
1,4-Dichlorobenzene	86	70-130
alpha-Chlorotoluene	98	70-130
1,2-Dichlorobenzene	86	70-130
1,2,4-Trichlorobenzene	80	70-130
Hexachlorobutadiene	93	70-130
Butane	92	60-140
Decane	Not Spiked	
Dibromomethane	Not Spiked	
Nonane	Not Spiked	
Naphthalene	91	60-140
Octane	Not Spiked	
Pentane	Not Spiked	
Propylene	88	60-140
Undecane	Not Spiked	
Vinyl Acetate	87	60-140

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	107	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	101	70-130