

4/6/2017

Mr. Curt Lueckenhoff  
Missouri Dept. of Natural Resources  
2710 West Main

Jefferson City MO 65109

Project Name: Bridgeton Landfill

Project #:

Workorder #: 1703487

Dear Mr. Curt Lueckenhoff

The following report includes the data for the above referenced project for sample(s) received on 3/27/2017 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 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: Brian Whittaker at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Brian Whittaker  
Project Manager

**WORK ORDER #: 1703487**

Work Order Summary

<b>CLIENT:</b>	Mr. Curt Lueckenhoff Missouri Dept. of Natural Resources 2710 West Main Jefferson City, MO 65109	<b>BILL TO:</b>	Accounts Payable Missouri Dept. of Natural Resources P.O Box 176 Jefferson City, MO 65102
<b>PHONE:</b>	573-526-3363	<b>P.O. #</b>	3ESP170759
<b>FAX:</b>	573-526-3350	<b>PROJECT #</b>	Bridgeton Landfill
<b>DATE RECEIVED:</b>	03/27/2017	<b>CONTACT:</b>	Brian Whittaker
<b>DATE COMPLETED:</b>	04/06/2017		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	D1 (170809)	Modified TO-15	6.5 "Hg	5 psi
02A	U1 (170810)	Modified TO-15	6.0 "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:   
 \_\_\_\_\_  
 Technical Director

DATE: 04/06/17

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

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

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

**LABORATORY NARRATIVE  
Modified TO-15  
Missouri Dept. of Natural Resources  
Workorder# 1703487**

Two 6 Liter Summa Canister (100% Certified) samples were received on March 27, 2017. 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.

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-15</i>	<i>ATL Modifications</i>
Initial Calibration	</=30% RSD with 2 compounds allowed out to < 40% RSD	</=30% RSD with 4 compounds allowed out to < 40% RSD
Blank and standards	Zero Air	UHP Nitrogen provides a higher purity gas matrix than zero air

**Receiving Notes**

There were no receiving discrepancies.

**Analytical Notes**

All Quality Control Limit exceedances and affected sample results are noted by flags. Each flag is defined at the bottom of this Case Narrative and on each Sample Result Summary page.

**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-15 GC/MS FULL SCAN**

**Client Sample ID: D1 (170809)**

**Lab ID#: 1703487-01A**

<b>Compound</b>	<b>Rpt. Limit (ppbv)</b>	<b>Amount (ppbv)</b>	<b>Rpt. Limit (ug/m3)</b>	<b>Amount (ug/m3)</b>
Freon 12	0.17	0.50	0.84	2.5
Freon 11	0.17	0.24	0.96	1.3
Ethanol	0.86	4.5	1.6	8.4
Acetone	0.86	3.4	2.0	8.1
2-Propanol	0.86	1.1	2.1	2.6
Benzene	0.17	0.22	0.55	0.72
Toluene	0.17	0.24	0.64	0.89

**Client Sample ID: U1 (170810)**

**Lab ID#: 1703487-02A**

<b>Compound</b>	<b>Rpt. Limit (ppbv)</b>	<b>Amount (ppbv)</b>	<b>Rpt. Limit (ug/m3)</b>	<b>Amount (ug/m3)</b>
Freon 12	0.17	0.43	0.83	2.1
Freon 11	0.17	0.23	0.94	1.3
Ethanol	0.84	1.7	1.6	3.2
Acetone	0.84	3.0	2.0	7.0
Hexane	0.17	0.49	0.59	1.7
Heptane	0.17	0.31	0.69	1.2



Air Toxics

Client Sample ID: D1 (170809)

Lab ID#: 1703487-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v033007	Date of Collection:	3/21/17 1:00:00 PM
Dil. Factor:	1.71	Date of Analysis:	3/30/17 06:58 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.17	0.50	0.84	2.5
Freon 114	0.17	Not Detected	1.2	Not Detected
Chloromethane	0.86	Not Detected	1.8	Not Detected
Vinyl Chloride	0.17	Not Detected	0.44	Not Detected
1,3-Butadiene	0.17	Not Detected	0.38	Not Detected
Bromomethane	0.86	Not Detected	3.3	Not Detected
Chloroethane	0.86	Not Detected	2.2	Not Detected
Freon 11	0.17	0.24	0.96	1.3
Ethanol	0.86	4.5	1.6	8.4
Freon 113	0.17	Not Detected	1.3	Not Detected
1,1-Dichloroethene	0.17	Not Detected	0.68	Not Detected
Acetone	0.86	3.4	2.0	8.1
2-Propanol	0.86	1.1	2.1	2.6
Carbon Disulfide	0.86	Not Detected	2.7	Not Detected
3-Chloropropene	0.86	Not Detected	2.7	Not Detected
Methylene Chloride	0.34	Not Detected	1.2	Not Detected
Methyl tert-butyl ether	0.17	Not Detected	0.62	Not Detected
trans-1,2-Dichloroethene	0.17	Not Detected	0.68	Not Detected
Hexane	0.17	Not Detected	0.60	Not Detected
1,1-Dichloroethane	0.17	Not Detected	0.69	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.86	Not Detected	2.5	Not Detected
cis-1,2-Dichloroethene	0.17	Not Detected	0.68	Not Detected
Tetrahydrofuran	0.86	Not Detected	2.5	Not Detected
Chloroform	0.17	Not Detected	0.83	Not Detected
1,1,1-Trichloroethane	0.17	Not Detected	0.93	Not Detected
Cyclohexane	0.17	Not Detected	0.59	Not Detected
Carbon Tetrachloride	0.17	Not Detected	1.1	Not Detected
2,2,4-Trimethylpentane	0.86	Not Detected	4.0	Not Detected
Benzene	0.17	0.22	0.55	0.72
1,2-Dichloroethane	0.17	Not Detected	0.69	Not Detected
Heptane	0.17	Not Detected	0.70	Not Detected
Trichloroethene	0.17	Not Detected	0.92	Not Detected
1,2-Dichloropropane	0.17	Not Detected	0.79	Not Detected
1,4-Dioxane	0.17	Not Detected	0.62	Not Detected
Bromodichloromethane	0.17	Not Detected	1.1	Not Detected
cis-1,3-Dichloropropene	0.17	Not Detected	0.78	Not Detected
4-Methyl-2-pentanone	0.17	Not Detected	0.70	Not Detected
Toluene	0.17	0.24	0.64	0.89
trans-1,3-Dichloropropene	0.17	Not Detected	0.78	Not Detected
1,1,2-Trichloroethane	0.17	Not Detected	0.93	Not Detected
Tetrachloroethene	0.17	Not Detected	1.2	Not Detected
2-Hexanone	0.86	Not Detected	3.5	Not Detected



Client Sample ID: D1 (170809)

Lab ID#: 1703487-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v033007	Date of Collection:	3/21/17 1:00:00 PM
Dil. Factor:	1.71	Date of Analysis:	3/30/17 06:58 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.17	Not Detected	1.4	Not Detected
1,2-Dibromoethane (EDB)	0.17	Not Detected	1.3	Not Detected
Chlorobenzene	0.17	Not Detected	0.79	Not Detected
Ethyl Benzene	0.17	Not Detected	0.74	Not Detected
m,p-Xylene	0.17	Not Detected	0.74	Not Detected
o-Xylene	0.17	Not Detected	0.74	Not Detected
Styrene	0.17	Not Detected	0.73	Not Detected
Bromoform	0.17	Not Detected	1.8	Not Detected
Cumene	0.17	Not Detected	0.84	Not Detected
1,1,2,2-Tetrachloroethane	0.17	Not Detected	1.2	Not Detected
Propylbenzene	0.17	Not Detected	0.84	Not Detected
4-Ethyltoluene	0.17	Not Detected	0.84	Not Detected
1,3,5-Trimethylbenzene	0.17	Not Detected	0.84	Not Detected
1,2,4-Trimethylbenzene	0.17	Not Detected	0.84	Not Detected
1,3-Dichlorobenzene	0.17	Not Detected	1.0	Not Detected
1,4-Dichlorobenzene	0.17	Not Detected	1.0	Not Detected
alpha-Chlorotoluene	0.17	Not Detected	0.88	Not Detected
1,2-Dichlorobenzene	0.17	Not Detected	1.0	Not Detected
1,2,4-Trichlorobenzene	0.86	Not Detected	6.3	Not Detected
Hexachlorobutadiene	0.86	Not Detected	9.1	Not Detected

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	106	70-130



Air Toxics

Client Sample ID: U1 (170810)

Lab ID#: 1703487-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v033008	Date of Collection:	3/21/17 1:35:00 PM
Dil. Factor:	1.68	Date of Analysis:	3/30/17 07:41 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.17	0.43	0.83	2.1
Freon 114	0.17	Not Detected	1.2	Not Detected
Chloromethane	0.84	Not Detected	1.7	Not Detected
Vinyl Chloride	0.17	Not Detected	0.43	Not Detected
1,3-Butadiene	0.17	Not Detected	0.37	Not Detected
Bromomethane	0.84	Not Detected	3.3	Not Detected
Chloroethane	0.84	Not Detected	2.2	Not Detected
Freon 11	0.17	0.23	0.94	1.3
Ethanol	0.84	1.7	1.6	3.2
Freon 113	0.17	Not Detected	1.3	Not Detected
1,1-Dichloroethene	0.17	Not Detected	0.67	Not Detected
Acetone	0.84	3.0	2.0	7.0
2-Propanol	0.84	Not Detected	2.1	Not Detected
Carbon Disulfide	0.84	Not Detected	2.6	Not Detected
3-Chloropropene	0.84	Not Detected	2.6	Not Detected
Methylene Chloride	0.34	Not Detected	1.2	Not Detected
Methyl tert-butyl ether	0.17	Not Detected	0.60	Not Detected
trans-1,2-Dichloroethene	0.17	Not Detected	0.67	Not Detected
Hexane	0.17	0.49	0.59	1.7
1,1-Dichloroethane	0.17	Not Detected	0.68	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.84	Not Detected	2.5	Not Detected
cis-1,2-Dichloroethene	0.17	Not Detected	0.67	Not Detected
Tetrahydrofuran	0.84	Not Detected	2.5	Not Detected
Chloroform	0.17	Not Detected	0.82	Not Detected
1,1,1-Trichloroethane	0.17	Not Detected	0.92	Not Detected
Cyclohexane	0.17	Not Detected	0.58	Not Detected
Carbon Tetrachloride	0.17	Not Detected	1.0	Not Detected
2,2,4-Trimethylpentane	0.84	Not Detected	3.9	Not Detected
Benzene	0.17	Not Detected	0.54	Not Detected
1,2-Dichloroethane	0.17	Not Detected	0.68	Not Detected
Heptane	0.17	0.31	0.69	1.2
Trichloroethene	0.17	Not Detected	0.90	Not Detected
1,2-Dichloropropane	0.17	Not Detected	0.78	Not Detected
1,4-Dioxane	0.17	Not Detected	0.60	Not Detected
Bromodichloromethane	0.17	Not Detected	1.1	Not Detected
cis-1,3-Dichloropropene	0.17	Not Detected	0.76	Not Detected
4-Methyl-2-pentanone	0.17	Not Detected	0.69	Not Detected
Toluene	0.17	Not Detected	0.63	Not Detected
trans-1,3-Dichloropropene	0.17	Not Detected	0.76	Not Detected
1,1,2-Trichloroethane	0.17	Not Detected	0.92	Not Detected
Tetrachloroethene	0.17	Not Detected	1.1	Not Detected
2-Hexanone	0.84	Not Detected	3.4	Not Detected



Client Sample ID: U1 (170810)

Lab ID#: 1703487-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v033008	Date of Collection:	3/21/17 1:35:00 PM
Dil. Factor:	1.68	Date of Analysis:	3/30/17 07:41 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.17	Not Detected	1.4	Not Detected
1,2-Dibromoethane (EDB)	0.17	Not Detected	1.3	Not Detected
Chlorobenzene	0.17	Not Detected	0.77	Not Detected
Ethyl Benzene	0.17	Not Detected	0.73	Not Detected
m,p-Xylene	0.17	Not Detected	0.73	Not Detected
o-Xylene	0.17	Not Detected	0.73	Not Detected
Styrene	0.17	Not Detected	0.72	Not Detected
Bromoform	0.17	Not Detected	1.7	Not Detected
Cumene	0.17	Not Detected	0.82	Not Detected
1,1,2,2-Tetrachloroethane	0.17	Not Detected	1.2	Not Detected
Propylbenzene	0.17	Not Detected	0.82	Not Detected
4-Ethyltoluene	0.17	Not Detected	0.82	Not Detected
1,3,5-Trimethylbenzene	0.17	Not Detected	0.82	Not Detected
1,2,4-Trimethylbenzene	0.17	Not Detected	0.82	Not Detected
1,3-Dichlorobenzene	0.17	Not Detected	1.0	Not Detected
1,4-Dichlorobenzene	0.17	Not Detected	1.0	Not Detected
alpha-Chlorotoluene	0.17	Not Detected	0.87	Not Detected
1,2-Dichlorobenzene	0.17	Not Detected	1.0	Not Detected
1,2,4-Trichlorobenzene	0.84	Not Detected	6.2	Not Detected
Hexachlorobutadiene	0.84	Not Detected	9.0	Not Detected

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	106	70-130





Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1703487-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v033006	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	3/30/17 06:02 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	Not Detected	1.9	Not Detected
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	Not Detected	1.2	Not Detected
2-Propanol	0.50	Not Detected	1.2	Not Detected
Carbon Disulfide	0.50	Not Detected	1.6	Not Detected
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	Not Detected	0.32	Not Detected
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#: 1703487-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v033006	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	3/30/17 06:02 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

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	108	70-130
4-Bromofluorobenzene	107	70-130



Air Toxics

Client Sample ID: CCV

Lab ID#: 1703487-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v033002	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 3/30/17 02:33 PM

Compound	%Recovery
Freon 12	108
Freon 114	100
Chloromethane	111
Vinyl Chloride	105
1,3-Butadiene	112
Bromomethane	105
Chloroethane	106
Freon 11	103
Ethanol	99
Freon 113	110
1,1-Dichloroethene	114
Acetone	103
2-Propanol	107
Carbon Disulfide	104
3-Chloropropene	102
Methylene Chloride	101
Methyl tert-butyl ether	104
trans-1,2-Dichloroethene	100
Hexane	112
1,1-Dichloroethane	102
2-Butanone (Methyl Ethyl Ketone)	110
cis-1,2-Dichloroethene	100
Tetrahydrofuran	112
Chloroform	101
1,1,1-Trichloroethane	108
Cyclohexane	102
Carbon Tetrachloride	105
2,2,4-Trimethylpentane	110
Benzene	96
1,2-Dichloroethane	94
Heptane	106
Trichloroethene	96
1,2-Dichloropropane	93
1,4-Dioxane	98
Bromodichloromethane	82
cis-1,3-Dichloropropene	97
4-Methyl-2-pentanone	110
Toluene	96
trans-1,3-Dichloropropene	88
1,1,2-Trichloroethane	85
Tetrachloroethene	88
2-Hexanone	94



Air Toxics

Client Sample ID: CCV

Lab ID#: 1703487-04A

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

File Name:	v033002	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 3/30/17 02:33 PM

Compound	%Recovery
Dibromochloromethane	86
1,2-Dibromoethane (EDB)	86
Chlorobenzene	85
Ethyl Benzene	87
m,p-Xylene	88
o-Xylene	88
Styrene	90
Bromoform	91
Cumene	82
1,1,2,2-Tetrachloroethane	82
Propylbenzene	85
4-Ethyltoluene	89
1,3,5-Trimethylbenzene	88
1,2,4-Trimethylbenzene	87
1,3-Dichlorobenzene	84
1,4-Dichlorobenzene	79
alpha-Chlorotoluene	82
1,2-Dichlorobenzene	80
1,2,4-Trichlorobenzene	84
Hexachlorobutadiene	91

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	110	70-130
4-Bromofluorobenzene	105	70-130



Air Toxics

Client Sample ID: LCS

Lab ID#: 1703487-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v033003	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	3/30/17 03:39 PM

Compound	%Recovery	Method Limits
Freon 12	115	70-130
Freon 114	105	70-130
Chloromethane	118	70-130
Vinyl Chloride	113	70-130
1,3-Butadiene	115	70-130
Bromomethane	112	70-130
Chloroethane	115	70-130
Freon 11	108	70-130
Ethanol	99	70-130
Freon 113	113	70-130
1,1-Dichloroethene	121	70-130
Acetone	106	70-130
2-Propanol	118	70-130
Carbon Disulfide	111	70-130
3-Chloropropene	102	70-130
Methylene Chloride	108	70-130
Methyl tert-butyl ether	105	70-130
trans-1,2-Dichloroethene	112	70-130
Hexane	119	70-130
1,1-Dichloroethane	107	70-130
2-Butanone (Methyl Ethyl Ketone)	111	70-130
cis-1,2-Dichloroethene	98	70-130
Tetrahydrofuran	121	70-130
Chloroform	105	70-130
1,1,1-Trichloroethane	112	70-130
Cyclohexane	107	70-130
Carbon Tetrachloride	69 Q	70-130
2,2,4-Trimethylpentane	119	70-130
Benzene	104	70-130
1,2-Dichloroethane	98	70-130
Heptane	117	70-130
Trichloroethene	102	70-130
1,2-Dichloropropane	103	70-130
1,4-Dioxane	106	70-130
Bromodichloromethane	86	70-130
cis-1,3-Dichloropropene	110	70-130
4-Methyl-2-pentanone	123	70-130
Toluene	106	70-130
trans-1,3-Dichloropropene	88	70-130
1,1,2-Trichloroethane	90	70-130
Tetrachloroethene	90	70-130
2-Hexanone	102	70-130

Client Sample ID: LCS

Lab ID#: 1703487-05A

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

<b>File Name:</b>	<b>v033003</b>	<b>Date of Collection:</b> NA
<b>Dil. Factor:</b>	<b>1.00</b>	<b>Date of Analysis:</b> 3/30/17 03:39 PM

<b>Compound</b>	<b>%Recovery</b>	<b>Method Limits</b>
Dibromochloromethane	87	70-130
1,2-Dibromoethane (EDB)	90	70-130
Chlorobenzene	90	70-130
Ethyl Benzene	90	70-130
m,p-Xylene	94	70-130
o-Xylene	96	70-130
Styrene	95	70-130
Bromoform	94	70-130
Cumene	88	70-130
1,1,2,2-Tetrachloroethane	86	70-130
Propylbenzene	91	70-130
4-Ethyltoluene	95	70-130
1,3,5-Trimethylbenzene	93	70-130
1,2,4-Trimethylbenzene	93	70-130
1,3-Dichlorobenzene	90	70-130
1,4-Dichlorobenzene	87	70-130
alpha-Chlorotoluene	78	70-130
1,2-Dichlorobenzene	85	70-130
1,2,4-Trichlorobenzene	73	70-130
Hexachlorobutadiene	81	70-130

Q = Exceeds Quality Control limits.

**Container Type: NA - Not Applicable**

<b>Surrogates</b>	<b>%Recovery</b>	<b>Method Limits</b>
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	112	70-130
4-Bromofluorobenzene	102	70-130



Air Toxics

Client Sample ID: LCS D

Lab ID#: 1703487-05AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v033004	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	3/30/17 04:15 PM

Compound	%Recovery	Method Limits
Freon 12	109	70-130
Freon 114	100	70-130
Chloromethane	114	70-130
Vinyl Chloride	108	70-130
1,3-Butadiene	110	70-130
Bromomethane	108	70-130
Chloroethane	109	70-130
Freon 11	104	70-130
Ethanol	92	70-130
Freon 113	110	70-130
1,1-Dichloroethene	117	70-130
Acetone	101	70-130
2-Propanol	114	70-130
Carbon Disulfide	106	70-130
3-Chloropropene	98	70-130
Methylene Chloride	104	70-130
Methyl tert-butyl ether	103	70-130
trans-1,2-Dichloroethene	109	70-130
Hexane	115	70-130
1,1-Dichloroethane	101	70-130
2-Butanone (Methyl Ethyl Ketone)	116	70-130
cis-1,2-Dichloroethene	92	70-130
Tetrahydrofuran	114	70-130
Chloroform	100	70-130
1,1,1-Trichloroethane	108	70-130
Cyclohexane	106	70-130
Carbon Tetrachloride	66 Q	70-130
2,2,4-Trimethylpentane	113	70-130
Benzene	104	70-130
1,2-Dichloroethane	99	70-130
Heptane	114	70-130
Trichloroethene	103	70-130
1,2-Dichloropropane	100	70-130
1,4-Dioxane	105	70-130
Bromodichloromethane	89	70-130
cis-1,3-Dichloropropene	110	70-130
4-Methyl-2-pentanone	121	70-130
Toluene	105	70-130
trans-1,3-Dichloropropene	96	70-130
1,1,2-Trichloroethane	93	70-130
Tetrachloroethene	92	70-130
2-Hexanone	104	70-130



Client Sample ID: LCSD

Lab ID#: 1703487-05AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	v033004	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 3/30/17 04:15 PM

Compound	%Recovery	Method Limits
Dibromochloromethane	90	70-130
1,2-Dibromoethane (EDB)	93	70-130
Chlorobenzene	91	70-130
Ethyl Benzene	93	70-130
m,p-Xylene	94	70-130
o-Xylene	95	70-130
Styrene	95	70-130
Bromoform	98	70-130
Cumene	88	70-130
1,1,2,2-Tetrachloroethane	89	70-130
Propylbenzene	92	70-130
4-Ethyltoluene	97	70-130
1,3,5-Trimethylbenzene	95	70-130
1,2,4-Trimethylbenzene	98	70-130
1,3-Dichlorobenzene	92	70-130
1,4-Dichlorobenzene	90	70-130
alpha-Chlorotoluene	80	70-130
1,2-Dichlorobenzene	89	70-130
1,2,4-Trichlorobenzene	92	70-130
Hexachlorobutadiene	98	70-130

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	110	70-130
4-Bromofluorobenzene	104	70-130