

9/1/2017

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

Jefferson City MO 65109

Project Name: Bridgeton Landfill

Project #:

Workorder #: 1708404

Dear Mr. Curt Lueckenhoff

The following report includes the data for the above referenced project for sample(s) received on 8/22/2017 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 #: 1708404**

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>	3ESP180051
<b>FAX:</b>	573-526-3350	<b>PROJECT #</b>	Bridgeton Landfill
<b>DATE RECEIVED:</b>	08/22/2017	<b>CONTACT:</b>	Brian Whittaker
<b>DATE COMPLETED:</b>	09/01/2017		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	D1 (172362)	Modified TO-15	6.9 "Hg	5 psi
02A	U1 (172363)	Modified TO-15	6.9 "Hg	4.9 psi
03A	Lab Blank	Modified TO-15	NA	NA
03B	Lab Blank	Modified TO-15	NA	NA
04A	CCV	Modified TO-15	NA	NA
04B	CCV	Modified TO-15	NA	NA
05A	LCS	Modified TO-15	NA	NA
05AA	LCSD	Modified TO-15	NA	NA
05B	LCS	Modified TO-15	NA	NA
05BB	LCSD	Modified TO-15	NA	NA

CERTIFIED BY:   
 \_\_\_\_\_  
 Technical Director

DATE: 09/01/17

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-15**  
**Missouri Dept. of Natural Resources**  
**Workorder# 1708404**

Two 6 Liter Summa Canister (100% Certified) samples were received on August 22, 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 (172362)**

**Lab ID#: 1708404-01A**

<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	0.45	0.86	2.2
Ethanol	0.87	5.0	1.6	9.4
Acetone	0.87	10	2.1	25
2-Propanol	0.87	5.6 J0	2.1	14 J0
Hexane	0.17	0.21	0.61	0.74
2-Butanone (Methyl Ethyl Ketone)	0.87	1.5	2.6	4.5
Toluene	0.17	0.31	0.66	1.2

**Client Sample ID: U1 (172363)**

**Lab ID#: 1708404-02A**

<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	0.58	0.86	2.8
Freon 11	0.17	0.19	0.97	1.1
Ethanol	0.86	6.4	1.6	12
Acetone	0.86	14	2.0	33
2-Propanol	0.86	5.1	2.1	12
Methylene Chloride	0.35	35	1.2	120
trans-1,2-Dichloroethene	0.17	0.94	0.68	3.7
Hexane	0.17	0.99	0.61	3.5
2-Butanone (Methyl Ethyl Ketone)	0.86	2.4	2.6	7.0
Heptane	0.17	0.59	0.71	2.4
Toluene	0.17	0.97	0.65	3.7



Air Toxics

Client Sample ID: D1 (172362)

Lab ID#: 1708404-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21082323	Date of Collection:	8/16/17 1:35:00 PM
Dil. Factor:	1.74	Date of Analysis:	8/24/17 07:56 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.17	0.45	0.86	2.2
Freon 114	0.17	Not Detected	1.2	Not Detected
Chloromethane	0.87	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	0.87	Not Detected	3.4	Not Detected
Chloroethane	0.87	Not Detected	2.3	Not Detected
Freon 11	0.17	Not Detected	0.98	Not Detected
Ethanol	0.87	5.0	1.6	9.4
Freon 113	0.17	Not Detected	1.3	Not Detected
1,1-Dichloroethene	0.17	Not Detected	0.69	Not Detected
Acetone	0.87	10	2.1	25
2-Propanol	0.87	5.6 J0	2.1	14 J0
Carbon Disulfide	0.87	Not Detected	2.7	Not Detected
3-Chloropropene	0.87	Not Detected	2.7	Not Detected
Methylene Chloride	0.35	Not Detected	1.2	Not Detected
Methyl tert-butyl ether	0.17	Not Detected	0.63	Not Detected
trans-1,2-Dichloroethene	0.17	Not Detected	0.69	Not Detected
Hexane	0.17	0.21	0.61	0.74
1,1-Dichloroethane	0.17	Not Detected	0.70	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.87	1.5	2.6	4.5
cis-1,2-Dichloroethene	0.17	Not Detected	0.69	Not Detected
Tetrahydrofuran	0.87	Not Detected	2.6	Not Detected
Chloroform	0.17	Not Detected	0.85	Not Detected
1,1,1-Trichloroethane	0.17	Not Detected	0.95	Not Detected
Cyclohexane	0.17	Not Detected	0.60	Not Detected
Carbon Tetrachloride	0.17	Not Detected	1.1	Not Detected
2,2,4-Trimethylpentane	0.87	Not Detected	4.1	Not Detected
Benzene	0.17	Not Detected	0.56	Not Detected
1,2-Dichloroethane	0.17	Not Detected	0.70	Not Detected
Heptane	0.17	Not Detected	0.71	Not Detected
Trichloroethene	0.17	Not Detected	0.94	Not Detected
1,2-Dichloropropane	0.17	Not Detected	0.80	Not Detected
1,4-Dioxane	0.17	Not Detected	0.63	Not Detected
Bromodichloromethane	0.17	Not Detected	1.2	Not Detected
cis-1,3-Dichloropropene	0.17	Not Detected	0.79	Not Detected
4-Methyl-2-pentanone	0.17	Not Detected	0.71	Not Detected
Toluene	0.17	0.31	0.66	1.2
trans-1,3-Dichloropropene	0.17	Not Detected	0.79	Not Detected
1,1,2-Trichloroethane	0.17	Not Detected	0.95	Not Detected
Tetrachloroethene	0.17	Not Detected	1.2	Not Detected
2-Hexanone	0.87	Not Detected UJ	3.6	Not Detected UJ



Client Sample ID: D1 (172362)

Lab ID#: 1708404-01A

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

File Name:	21082323	Date of Collection:	8/16/17 1:35:00 PM
Dil. Factor:	1.74	Date of Analysis:	8/24/17 07:56 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.17	Not Detected	1.5	Not Detected
1,2-Dibromoethane (EDB)	0.17	Not Detected	1.3	Not Detected
Chlorobenzene	0.17	Not Detected	0.80	Not Detected
Ethyl Benzene	0.17	Not Detected	0.76	Not Detected
m,p-Xylene	0.17	Not Detected	0.76	Not Detected
o-Xylene	0.17	Not Detected	0.76	Not Detected
Styrene	0.17	Not Detected	0.74	Not Detected
Bromoform	0.17	Not Detected	1.8	Not Detected
Cumene	0.17	Not Detected	0.86	Not Detected
1,1,2,2-Tetrachloroethane	0.17	Not Detected	1.2	Not Detected
Propylbenzene	0.17	Not Detected	0.86	Not Detected
4-Ethyltoluene	0.17	Not Detected	0.86	Not Detected
1,3,5-Trimethylbenzene	0.17	Not Detected	0.86	Not Detected
1,2,4-Trimethylbenzene	0.17	Not Detected	0.86	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 UJ	0.90	Not Detected UJ
1,2-Dichlorobenzene	0.17	Not Detected	1.0	Not Detected
1,2,4-Trichlorobenzene	0.87	Not Detected	6.4	Not Detected
Hexachlorobutadiene	0.87	Not Detected	9.3	Not Detected

J0 = Estimated value due to bias in the CCV.

UJ = Analyte associated with low bias in the CCV.

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	118	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	88	70-130



Air Toxics

Client Sample ID: U1 (172363)

Lab ID#: 1708404-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21082408	Date of Collection:	8/16/17 1:30:00 PM
Dil. Factor:	1.73	Date of Analysis:	8/24/17 02:28 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.17	0.58	0.86	2.8
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	3.4	Not Detected
Chloroethane	0.86	Not Detected	2.3	Not Detected
Freon 11	0.17	0.19	0.97	1.1
Ethanol	0.86	6.4	1.6	12
Freon 113	0.17	Not Detected	1.3	Not Detected
1,1-Dichloroethene	0.17	Not Detected	0.68	Not Detected
Acetone	0.86	14	2.0	33
2-Propanol	0.86	5.1	2.1	12
Carbon Disulfide	0.86	Not Detected	2.7	Not Detected
3-Chloropropene	0.86	Not Detected	2.7	Not Detected
Methylene Chloride	0.35	35	1.2	120
Methyl tert-butyl ether	0.17	Not Detected	0.62	Not Detected
trans-1,2-Dichloroethene	0.17	0.94	0.68	3.7
Hexane	0.17	0.99	0.61	3.5
1,1-Dichloroethane	0.17	Not Detected	0.70	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.86	2.4	2.6	7.0
cis-1,2-Dichloroethene	0.17	Not Detected	0.68	Not Detected
Tetrahydrofuran	0.86	Not Detected	2.6	Not Detected
Chloroform	0.17	Not Detected	0.84	Not Detected
1,1,1-Trichloroethane	0.17	Not Detected	0.94	Not Detected
Cyclohexane	0.17	Not Detected	0.60	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	Not Detected	0.55	Not Detected
1,2-Dichloroethane	0.17	Not Detected	0.70	Not Detected
Heptane	0.17	0.59	0.71	2.4
Trichloroethene	0.17	Not Detected	0.93	Not Detected
1,2-Dichloropropane	0.17	Not Detected	0.80	Not Detected
1,4-Dioxane	0.17	Not Detected	0.62	Not Detected
Bromodichloromethane	0.17	Not Detected	1.2	Not Detected
cis-1,3-Dichloropropene	0.17	Not Detected	0.78	Not Detected
4-Methyl-2-pentanone	0.17	Not Detected	0.71	Not Detected
Toluene	0.17	0.97	0.65	3.7
trans-1,3-Dichloropropene	0.17	Not Detected	0.78	Not Detected
1,1,2-Trichloroethane	0.17	Not Detected	0.94	Not Detected
Tetrachloroethene	0.17	Not Detected	1.2	Not Detected
2-Hexanone	0.86	Not Detected	3.5	Not Detected



Client Sample ID: U1 (172363)

Lab ID#: 1708404-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21082408	Date of Collection:	8/16/17 1:30:00 PM
Dil. Factor:	1.73	Date of Analysis:	8/24/17 02:28 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.17	Not Detected	1.5	Not Detected
1,2-Dibromoethane (EDB)	0.17	Not Detected	1.3	Not Detected
Chlorobenzene	0.17	Not Detected	0.80	Not Detected
Ethyl Benzene	0.17	Not Detected	0.75	Not Detected
m,p-Xylene	0.17	Not Detected	0.75	Not Detected
o-Xylene	0.17	Not Detected	0.75	Not Detected
Styrene	0.17	Not Detected	0.74	Not Detected
Bromoform	0.17	Not Detected	1.8	Not Detected
Cumene	0.17	Not Detected	0.85	Not Detected
1,1,2,2-Tetrachloroethane	0.17	Not Detected	1.2	Not Detected
Propylbenzene	0.17	Not Detected	0.85	Not Detected
4-Ethyltoluene	0.17	Not Detected	0.85	Not Detected
1,3,5-Trimethylbenzene	0.17	Not Detected	0.85	Not Detected
1,2,4-Trimethylbenzene	0.17	Not Detected	0.85	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	0.90	Not Detected
1,2-Dichlorobenzene	0.17	Not Detected	1.0	Not Detected
1,2,4-Trichlorobenzene	0.86	Not Detected	6.4	Not Detected
Hexachlorobutadiene	0.86	Not Detected	9.2	Not Detected

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	115	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	95	70-130





Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1708404-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21082307	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	8/23/17 12:00 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 UJ	1.2	Not Detected UJ
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 UJ	2.0	Not Detected UJ



Client Sample ID: Lab Blank

Lab ID#: 1708404-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21082307	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	8/23/17 12:00 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 UJ	0.52	Not Detected UJ
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

UJ = Analyte associated with low bias in the CCV.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	118	70-130
Toluene-d8	95	70-130
4-Bromofluorobenzene	87	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1708404-03B

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21082406	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	8/24/17 12:51 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	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#: 1708404-03B

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

File Name:	21082406	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	8/24/17 12:51 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

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	110	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	92	70-130



Air Toxics

Client Sample ID: CCV

Lab ID#: 1708404-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21082302	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/23/17 08:41 AM

Compound	%Recovery
Freon 12	86
Freon 114	84
Chloromethane	81
Vinyl Chloride	83
1,3-Butadiene	86
Bromomethane	106
Chloroethane	87
Freon 11	84
Ethanol	74
Freon 113	82
1,1-Dichloroethene	87
Acetone	92
2-Propanol	65 Q
Carbon Disulfide	89
3-Chloropropene	70
Methylene Chloride	77
Methyl tert-butyl ether	84
trans-1,2-Dichloroethene	87
Hexane	88
1,1-Dichloroethane	84
2-Butanone (Methyl Ethyl Ketone)	84
cis-1,2-Dichloroethene	88
Tetrahydrofuran	79
Chloroform	86
1,1,1-Trichloroethane	83
Cyclohexane	89
Carbon Tetrachloride	86
2,2,4-Trimethylpentane	96
Benzene	93
1,2-Dichloroethane	90
Heptane	96
Trichloroethene	91
1,2-Dichloropropane	88
1,4-Dioxane	79
Bromodichloromethane	90
cis-1,3-Dichloropropene	87
4-Methyl-2-pentanone	81
Toluene	90
trans-1,3-Dichloropropene	82
1,1,2-Trichloroethane	89
Tetrachloroethene	84
2-Hexanone	66 Q

Client Sample ID: CCV

Lab ID#: 1708404-04A

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

File Name:	21082302	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/23/17 08:41 AM

Compound	%Recovery
Dibromochloromethane	89
1,2-Dibromoethane (EDB)	91
Chlorobenzene	86
Ethyl Benzene	91
m,p-Xylene	92
o-Xylene	94
Styrene	82
Bromoform	95
Cumene	99
1,1,2,2-Tetrachloroethane	95
Propylbenzene	94
4-Ethyltoluene	95
1,3,5-Trimethylbenzene	94
1,2,4-Trimethylbenzene	90
1,3-Dichlorobenzene	87
1,4-Dichlorobenzene	87
alpha-Chlorotoluene	68 Q
1,2-Dichlorobenzene	88
1,2,4-Trichlorobenzene	118
Hexachlorobutadiene	108

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	107	70-130



Air Toxics

Client Sample ID: CCV

Lab ID#: 1708404-04B

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21082402	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/24/17 10:02 AM

Compound	%Recovery
Freon 12	103
Freon 114	82
Chloromethane	82
Vinyl Chloride	83
1,3-Butadiene	86
Bromomethane	106
Chloroethane	89
Freon 11	78
Ethanol	82
Freon 113	80
1,1-Dichloroethene	89
Acetone	97
2-Propanol	71
Carbon Disulfide	89
3-Chloropropene	75
Methylene Chloride	78
Methyl tert-butyl ether	88
trans-1,2-Dichloroethene	87
Hexane	94
1,1-Dichloroethane	84
2-Butanone (Methyl Ethyl Ketone)	89
cis-1,2-Dichloroethene	88
Tetrahydrofuran	83
Chloroform	83
1,1,1-Trichloroethane	80
Cyclohexane	92
Carbon Tetrachloride	82
2,2,4-Trimethylpentane	100
Benzene	88
1,2-Dichloroethane	79
Heptane	92
Trichloroethene	88
1,2-Dichloropropane	86
1,4-Dioxane	77
Bromodichloromethane	85
cis-1,3-Dichloropropene	87
4-Methyl-2-pentanone	82
Toluene	88
trans-1,3-Dichloropropene	84
1,1,2-Trichloroethane	87
Tetrachloroethene	81
2-Hexanone	70

Client Sample ID: CCV

Lab ID#: 1708404-04B

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

File Name:	21082402	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/24/17 10:02 AM

Compound	%Recovery
Dibromochloromethane	88
1,2-Dibromoethane (EDB)	91
Chlorobenzene	84
Ethyl Benzene	89
m,p-Xylene	91
o-Xylene	93
Styrene	82
Bromoform	92
Cumene	94
1,1,2,2-Tetrachloroethane	90
Propylbenzene	92
4-Ethyltoluene	93
1,3,5-Trimethylbenzene	91
1,2,4-Trimethylbenzene	92
1,3-Dichlorobenzene	88
1,4-Dichlorobenzene	88
alpha-Chlorotoluene	72
1,2-Dichlorobenzene	87
1,2,4-Trichlorobenzene	116
Hexachlorobutadiene	105

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	93	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	101	70-130





Air Toxics

Client Sample ID: LCS

Lab ID#: 1708404-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21082304	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/23/17 10:03 AM

Compound	%Recovery	Method Limits
Freon 12	91	70-130
Freon 114	98	70-130
Chloromethane	93	70-130
Vinyl Chloride	96	70-130
1,3-Butadiene	99	70-130
Bromomethane	120	70-130
Chloroethane	96	70-130
Freon 11	98	70-130
Ethanol	92	70-130
Freon 113	90	70-130
1,1-Dichloroethene	98	70-130
Acetone	93	70-130
2-Propanol	93	70-130
Carbon Disulfide	88	70-130
3-Chloropropene	101	70-130
Methylene Chloride	86	70-130
Methyl tert-butyl ether	94	70-130
trans-1,2-Dichloroethene	84	70-130
Hexane	101	70-130
1,1-Dichloroethane	95	70-130
2-Butanone (Methyl Ethyl Ketone)	98	70-130
cis-1,2-Dichloroethene	108	70-130
Tetrahydrofuran	96	70-130
Chloroform	97	70-130
1,1,1-Trichloroethane	95	70-130
Cyclohexane	102	70-130
Carbon Tetrachloride	99	70-130
2,2,4-Trimethylpentane	109	70-130
Benzene	104	70-130
1,2-Dichloroethane	103	70-130
Heptane	108	70-130
Trichloroethene	99	70-130
1,2-Dichloropropane	103	70-130
1,4-Dioxane	105	70-130
Bromodichloromethane	109	70-130
cis-1,3-Dichloropropene	96	70-130
4-Methyl-2-pentanone	109	70-130
Toluene	101	70-130
trans-1,3-Dichloropropene	103	70-130
1,1,2-Trichloroethane	104	70-130
Tetrachloroethene	94	70-130
2-Hexanone	104	70-130

Client Sample ID: LCS

Lab ID#: 1708404-05A

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

File Name:	21082304	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/23/17 10:03 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	109	70-130
1,2-Dibromoethane (EDB)	110	70-130
Chlorobenzene	96	70-130
Ethyl Benzene	99	70-130
m,p-Xylene	98	70-130
o-Xylene	100	70-130
Styrene	104	70-130
Bromoform	117	70-130
Cumene	101	70-130
1,1,2,2-Tetrachloroethane	104	70-130
Propylbenzene	97	70-130
4-Ethyltoluene	98	70-130
1,3,5-Trimethylbenzene	105	70-130
1,2,4-Trimethylbenzene	101	70-130
1,3-Dichlorobenzene	91	70-130
1,4-Dichlorobenzene	90	70-130
alpha-Chlorotoluene	100	70-130
1,2-Dichlorobenzene	91	70-130
1,2,4-Trichlorobenzene	144 Q	70-130
Hexachlorobutadiene	115	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	103	70-130
4-Bromofluorobenzene	96	70-130



Air Toxics

Client Sample ID: LCSD

Lab ID#: 1708404-05AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21082305	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/23/17 10:57 AM

Compound	%Recovery	Method Limits
Freon 12	88	70-130
Freon 114	95	70-130
Chloromethane	92	70-130
Vinyl Chloride	95	70-130
1,3-Butadiene	98	70-130
Bromomethane	119	70-130
Chloroethane	96	70-130
Freon 11	97	70-130
Ethanol	93	70-130
Freon 113	89	70-130
1,1-Dichloroethene	96	70-130
Acetone	92	70-130
2-Propanol	92	70-130
Carbon Disulfide	86	70-130
3-Chloropropene	101	70-130
Methylene Chloride	85	70-130
Methyl tert-butyl ether	94	70-130
trans-1,2-Dichloroethene	82	70-130
Hexane	101	70-130
1,1-Dichloroethane	94	70-130
2-Butanone (Methyl Ethyl Ketone)	96	70-130
cis-1,2-Dichloroethene	106	70-130
Tetrahydrofuran	96	70-130
Chloroform	96	70-130
1,1,1-Trichloroethane	95	70-130
Cyclohexane	102	70-130
Carbon Tetrachloride	100	70-130
2,2,4-Trimethylpentane	109	70-130
Benzene	103	70-130
1,2-Dichloroethane	103	70-130
Heptane	110	70-130
Trichloroethene	98	70-130
1,2-Dichloropropane	104	70-130
1,4-Dioxane	105	70-130
Bromodichloromethane	110	70-130
cis-1,3-Dichloropropene	97	70-130
4-Methyl-2-pentanone	112	70-130
Toluene	102	70-130
trans-1,3-Dichloropropene	105	70-130
1,1,2-Trichloroethane	103	70-130
Tetrachloroethene	95	70-130
2-Hexanone	108	70-130

Client Sample ID: LCSD

Lab ID#: 1708404-05AA

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

File Name:	21082305	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/23/17 10:57 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	109	70-130
1,2-Dibromoethane (EDB)	110	70-130
Chlorobenzene	96	70-130
Ethyl Benzene	102	70-130
m,p-Xylene	104	70-130
o-Xylene	107	70-130
Styrene	112	70-130
Bromoform	120	70-130
Cumene	109	70-130
1,1,2,2-Tetrachloroethane	108	70-130
Propylbenzene	108	70-130
4-Ethyltoluene	108	70-130
1,3,5-Trimethylbenzene	114	70-130
1,2,4-Trimethylbenzene	108	70-130
1,3-Dichlorobenzene	98	70-130
1,4-Dichlorobenzene	97	70-130
alpha-Chlorotoluene	108	70-130
1,2-Dichlorobenzene	96	70-130
1,2,4-Trichlorobenzene	132 Q	70-130
Hexachlorobutadiene	114	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	103	70-130
4-Bromofluorobenzene	101	70-130



Air Toxics

Client Sample ID: LCS

Lab ID#: 1708404-05B

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21082403	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/24/17 10:47 AM

Compound	%Recovery	Method Limits
Freon 12	120	70-130
Freon 114	101	70-130
Chloromethane	97	70-130
Vinyl Chloride	99	70-130
1,3-Butadiene	100	70-130
Bromomethane	123	70-130
Chloroethane	103	70-130
Freon 11	94	70-130
Ethanol	100	70-130
Freon 113	92	70-130
1,1-Dichloroethene	103	70-130
Acetone	98	70-130
2-Propanol	98	70-130
Carbon Disulfide	91	70-130
3-Chloropropene	106	70-130
Methylene Chloride	90	70-130
Methyl tert-butyl ether	101	70-130
trans-1,2-Dichloroethene	87	70-130
Hexane	109	70-130
1,1-Dichloroethane	98	70-130
2-Butanone (Methyl Ethyl Ketone)	102	70-130
cis-1,2-Dichloroethene	112	70-130
Tetrahydrofuran	101	70-130
Chloroform	97	70-130
1,1,1-Trichloroethane	94	70-130
Cyclohexane	107	70-130
Carbon Tetrachloride	96	70-130
2,2,4-Trimethylpentane	117	70-130
Benzene	103	70-130
1,2-Dichloroethane	94	70-130
Heptane	109	70-130
Trichloroethene	98	70-130
1,2-Dichloropropane	104	70-130
1,4-Dioxane	106	70-130
Bromodichloromethane	104	70-130
cis-1,3-Dichloropropene	99	70-130
4-Methyl-2-pentanone	110	70-130
Toluene	103	70-130
trans-1,3-Dichloropropene	102	70-130
1,1,2-Trichloroethane	102	70-130
Tetrachloroethene	97	70-130
2-Hexanone	108	70-130

Client Sample ID: LCS

Lab ID#: 1708404-05B

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

File Name:	21082403	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/24/17 10:47 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	105	70-130
1,2-Dibromoethane (EDB)	106	70-130
Chlorobenzene	97	70-130
Ethyl Benzene	101	70-130
m,p-Xylene	100	70-130
o-Xylene	104	70-130
Styrene	107	70-130
Bromoform	118	70-130
Cumene	104	70-130
1,1,2,2-Tetrachloroethane	108	70-130
Propylbenzene	101	70-130
4-Ethyltoluene	103	70-130
1,3,5-Trimethylbenzene	105	70-130
1,2,4-Trimethylbenzene	107	70-130
1,3-Dichlorobenzene	94	70-130
1,4-Dichlorobenzene	92	70-130
alpha-Chlorotoluene	106	70-130
1,2-Dichlorobenzene	93	70-130
1,2,4-Trichlorobenzene	142 Q	70-130
Hexachlorobutadiene	111	70-130

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	93	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	98	70-130



Air Toxics

Client Sample ID: LCS D

Lab ID#: 1708404-05BB

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21082404	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	8/24/17 11:35 AM

Compound	%Recovery	Method Limits
Freon 12	114	70-130
Freon 114	99	70-130
Chloromethane	94	70-130
Vinyl Chloride	96	70-130
1,3-Butadiene	99	70-130
Bromomethane	121	70-130
Chloroethane	100	70-130
Freon 11	94	70-130
Ethanol	101	70-130
Freon 113	90	70-130
1,1-Dichloroethene	101	70-130
Acetone	98	70-130
2-Propanol	99	70-130
Carbon Disulfide	90	70-130
3-Chloropropene	107	70-130
Methylene Chloride	88	70-130
Methyl tert-butyl ether	99	70-130
trans-1,2-Dichloroethene	86	70-130
Hexane	105	70-130
1,1-Dichloroethane	97	70-130
2-Butanone (Methyl Ethyl Ketone)	102	70-130
cis-1,2-Dichloroethene	110	70-130
Tetrahydrofuran	99	70-130
Chloroform	96	70-130
1,1,1-Trichloroethane	92	70-130
Cyclohexane	104	70-130
Carbon Tetrachloride	95	70-130
2,2,4-Trimethylpentane	113	70-130
Benzene	103	70-130
1,2-Dichloroethane	95	70-130
Heptane	109	70-130
Trichloroethene	98	70-130
1,2-Dichloropropane	104	70-130
1,4-Dioxane	108	70-130
Bromodichloromethane	107	70-130
cis-1,3-Dichloropropene	100	70-130
4-Methyl-2-pentanone	112	70-130
Toluene	102	70-130
trans-1,3-Dichloropropene	103	70-130
1,1,2-Trichloroethane	102	70-130
Tetrachloroethene	95	70-130
2-Hexanone	111	70-130

Client Sample ID: LCSD

Lab ID#: 1708404-05BB

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

File Name:	21082404	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/24/17 11:35 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	107	70-130
1,2-Dibromoethane (EDB)	107	70-130
Chlorobenzene	96	70-130
Ethyl Benzene	103	70-130
m,p-Xylene	104	70-130
o-Xylene	107	70-130
Styrene	114	70-130
Bromoform	119	70-130
Cumene	109	70-130
1,1,2,2-Tetrachloroethane	107	70-130
Propylbenzene	107	70-130
4-Ethyltoluene	109	70-130
1,3,5-Trimethylbenzene	114	70-130
1,2,4-Trimethylbenzene	112	70-130
1,3-Dichlorobenzene	97	70-130
1,4-Dichlorobenzene	97	70-130
alpha-Chlorotoluene	111	70-130
1,2-Dichlorobenzene	96	70-130
1,2,4-Trichlorobenzene	131 Q	70-130
Hexachlorobutadiene	110	70-130

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	93	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	102	70-130