

12/16/2016
Mr. Curt Lueckenhoff
Missouri Dept. of Natural Resources
2710 West Main

Jefferson City MO 65109

Project Name: Bridgeton Landfill
Project #:
Workorder #: 1612095

Dear Mr. Curt Lueckenhoff

The following report includes the data for the above referenced project for sample(s) received on 12/6/2016 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 #: 1612095

Work Order Summary

CLIENT:	Mr. Curt Lueckenhoff Missouri Dept. of Natural Resources 2710 West Main Jefferson City, MO 65109	BILL TO:	Accounts Payable Missouri Dept. of Natural Resources P.O Box 176 Jefferson City, MO 65102
PHONE:	573-526-3363	P.O. #	3ESP170362
FAX:	573-526-3350	PROJECT #	Bridgeton Landfill
DATE RECEIVED:	12/06/2016	CONTACT:	Brian Whittaker
DATE COMPLETED:	12/16/2016		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	D1 (163927)	Modified TO-15	5.9 "Hg	5.1 psi
02A	D2 (163928)	Modified TO-15	5.5 "Hg	5.1 psi
03A	U1 (163929)	Modified TO-15	6.3 "Hg	4.7 psi
04A	U2 (163930)	Modified TO-15	6.5 "Hg	4.9 psi
05A	Lab Blank	Modified TO-15	NA	NA
06A	CCV	Modified TO-15	NA	NA
07A	LCS	Modified TO-15	NA	NA
07AA	LCSD	Modified TO-15	NA	NA

CERTIFIED BY: 

 Technical Director

DATE: 12/16/16

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# 1612095

Four 6 Liter Summa Canister (100% Certified) samples were received on December 06, 2016. 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 (163927)

Lab ID#: 1612095-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.17	0.45	0.83	2.2
Freon 11	0.17	0.21	0.94	1.2
Ethanol	0.84	3.5	1.6	6.6
Acetone	0.84	2.4	2.0	5.8
Hexane	0.17	0.16 J	0.59	0.57 J
Benzene	0.17	0.22	0.54	0.70
Toluene	0.17	0.24	0.63	0.89
Tetrachloroethene	0.17	0.54	1.1	3.7

Client Sample ID: D2 (163928)

Lab ID#: 1612095-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.16	0.42	0.82	2.1
Freon 11	0.16	0.21	0.93	1.2
Ethanol	0.82	2.2	1.6	4.2
Acetone	0.82	4.6	2.0	11
Hexane	0.16	0.17	0.58	0.59
Benzene	0.16	0.23	0.53	0.72
Heptane	0.16	0.20	0.68	0.82
Toluene	0.16	0.22	0.62	0.81

Client Sample ID: U1 (163929)

Lab ID#: 1612095-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.17	0.45	0.82	2.2
Freon 11	0.17	0.17	0.94	0.98
Ethanol	0.84	2.7	1.6	5.0
Acetone	0.84	3.6	2.0	8.7
Benzene	0.17	0.21	0.53	0.66
Toluene	0.17	0.26	0.63	0.97

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

Client Sample ID: U2 (163930)

Lab ID#: 1612095-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.17	0.41	0.84	2.0
Freon 11	0.17	0.21	0.96	1.2
Ethanol	0.85	12	1.6	22
Acetone	0.85	7.7	2.0	18
2-Propanol	0.85	1.7	2.1	4.2
Hexane	0.17	0.19	0.60	0.67
Cyclohexane	0.17	0.31	0.58	1.1
Benzene	0.17	0.29	0.54	0.92
Heptane	0.17	0.24	0.70	1.0
1,4-Dioxane	0.17	0.41	0.61	1.5
Toluene	0.17	1.1	0.64	4.2
m,p-Xylene	0.17	0.19	0.74	0.81



Air Toxics

Client Sample ID: D1 (163927)

Lab ID#: 1612095-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e120814	Date of Collection:	11/29/16 1:05:00 PM
Dil. Factor:	1.68	Date of Analysis:	12/8/16 08:18 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.17	0.45	0.83	2.2
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	0.21	0.94	1.2
Ethanol	0.84	3.5	1.6	6.6
Freon 113	0.17	Not Detected	1.3	Not Detected
1,1-Dichloroethene	0.17	Not Detected	0.67	Not Detected
Acetone	0.84	2.4	2.0	5.8
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	0.16 J	0.59	0.57 J
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	0.22	0.54	0.70
1,2-Dichloroethane	0.17	Not Detected	0.68	Not Detected
Heptane	0.17	Not Detected	0.69	Not Detected
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	0.24	0.63	0.89
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	0.54	1.1	3.7
2-Hexanone	0.84	Not Detected	3.4	Not Detected

Client Sample ID: D1 (163927)

Lab ID#: 1612095-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e120814	Date of Collection:	11/29/16 1:05:00 PM
Dil. Factor:	1.68	Date of Analysis:	12/8/16 08:18 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

J = Estimated value.

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	107	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	90	70-130



Air Toxics

Client Sample ID: D2 (163928)

Lab ID#: 1612095-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e120815	Date of Collection:	11/29/16 1:20:00 PM
Dil. Factor:	1.65	Date of Analysis:	12/8/16 09:06 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.16	0.42	0.82	2.1
Freon 114	0.16	Not Detected	1.2	Not Detected
Chloromethane	0.82	Not Detected	1.7	Not Detected
Vinyl Chloride	0.16	Not Detected	0.42	Not Detected
1,3-Butadiene	0.16	Not Detected	0.36	Not Detected
Bromomethane	0.82	Not Detected	3.2	Not Detected
Chloroethane	0.82	Not Detected	2.2	Not Detected
Freon 11	0.16	0.21	0.93	1.2
Ethanol	0.82	2.2	1.6	4.2
Freon 113	0.16	Not Detected	1.3	Not Detected
1,1-Dichloroethene	0.16	Not Detected	0.65	Not Detected
Acetone	0.82	4.6	2.0	11
2-Propanol	0.82	Not Detected	2.0	Not Detected
Carbon Disulfide	0.82	Not Detected	2.6	Not Detected
3-Chloropropene	0.82	Not Detected	2.6	Not Detected
Methylene Chloride	0.33	Not Detected	1.1	Not Detected
Methyl tert-butyl ether	0.16	Not Detected	0.59	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.65	Not Detected
Hexane	0.16	0.17	0.58	0.59
1,1-Dichloroethane	0.16	Not Detected	0.67	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.82	Not Detected	2.4	Not Detected
cis-1,2-Dichloroethene	0.16	Not Detected	0.65	Not Detected
Tetrahydrofuran	0.82	Not Detected	2.4	Not Detected
Chloroform	0.16	Not Detected	0.80	Not Detected
1,1,1-Trichloroethane	0.16	Not Detected	0.90	Not Detected
Cyclohexane	0.16	Not Detected	0.57	Not Detected
Carbon Tetrachloride	0.16	Not Detected	1.0	Not Detected
2,2,4-Trimethylpentane	0.82	Not Detected	3.8	Not Detected
Benzene	0.16	0.23	0.53	0.72
1,2-Dichloroethane	0.16	Not Detected	0.67	Not Detected
Heptane	0.16	0.20	0.68	0.82
Trichloroethene	0.16	Not Detected	0.89	Not Detected
1,2-Dichloropropane	0.16	Not Detected	0.76	Not Detected
1,4-Dioxane	0.16	Not Detected	0.59	Not Detected
Bromodichloromethane	0.16	Not Detected	1.1	Not Detected
cis-1,3-Dichloropropene	0.16	Not Detected	0.75	Not Detected
4-Methyl-2-pentanone	0.16	Not Detected	0.68	Not Detected
Toluene	0.16	0.22	0.62	0.81
trans-1,3-Dichloropropene	0.16	Not Detected	0.75	Not Detected
1,1,2-Trichloroethane	0.16	Not Detected	0.90	Not Detected
Tetrachloroethene	0.16	Not Detected	1.1	Not Detected
2-Hexanone	0.82	Not Detected	3.4	Not Detected



Client Sample ID: D2 (163928)

Lab ID#: 1612095-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e120815	Date of Collection:	11/29/16 1:20:00 PM
Dil. Factor:	1.65	Date of Analysis:	12/8/16 09:06 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.16	Not Detected	1.4	Not Detected
1,2-Dibromoethane (EDB)	0.16	Not Detected	1.3	Not Detected
Chlorobenzene	0.16	Not Detected	0.76	Not Detected
Ethyl Benzene	0.16	Not Detected	0.72	Not Detected
m,p-Xylene	0.16	Not Detected	0.72	Not Detected
o-Xylene	0.16	Not Detected	0.72	Not Detected
Styrene	0.16	Not Detected	0.70	Not Detected
Bromoform	0.16	Not Detected	1.7	Not Detected
Cumene	0.16	Not Detected	0.81	Not Detected
1,1,2,2-Tetrachloroethane	0.16	Not Detected	1.1	Not Detected
Propylbenzene	0.16	Not Detected	0.81	Not Detected
4-Ethyltoluene	0.16	Not Detected	0.81	Not Detected
1,3,5-Trimethylbenzene	0.16	Not Detected	0.81	Not Detected
1,2,4-Trimethylbenzene	0.16	Not Detected	0.81	Not Detected
1,3-Dichlorobenzene	0.16	Not Detected	0.99	Not Detected
1,4-Dichlorobenzene	0.16	Not Detected	0.99	Not Detected
alpha-Chlorotoluene	0.16	Not Detected	0.85	Not Detected
1,2-Dichlorobenzene	0.16	Not Detected	0.99	Not Detected
1,2,4-Trichlorobenzene	0.82	Not Detected	6.1	Not Detected
Hexachlorobutadiene	0.82	Not Detected	8.8	Not Detected

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	114	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	93	70-130



Air Toxics

Client Sample ID: U1 (163929)

Lab ID#: 1612095-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e120816	Date of Collection:	11/29/16 1:00:00 PM
Dil. Factor:	1.67	Date of Analysis:	12/8/16 09:51 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.17	0.45	0.82	2.2
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	3.2	Not Detected
Chloroethane	0.84	Not Detected	2.2	Not Detected
Freon 11	0.17	0.17	0.94	0.98
Ethanol	0.84	2.7	1.6	5.0
Freon 113	0.17	Not Detected	1.3	Not Detected
1,1-Dichloroethene	0.17	Not Detected	0.66	Not Detected
Acetone	0.84	3.6	2.0	8.7
2-Propanol	0.84	Not Detected	2.0	Not Detected
Carbon Disulfide	0.84	Not Detected	2.6	Not Detected
3-Chloropropene	0.84	Not Detected	2.6	Not Detected
Methylene Chloride	0.33	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	0.66	Not Detected
Hexane	0.17	Not Detected	0.59	Not Detected
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	0.66	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	0.91	Not Detected
Cyclohexane	0.17	Not Detected	0.57	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	0.21	0.53	0.66
1,2-Dichloroethane	0.17	Not Detected	0.68	Not Detected
Heptane	0.17	Not Detected	0.68	Not Detected
Trichloroethene	0.17	Not Detected	0.90	Not Detected
1,2-Dichloropropane	0.17	Not Detected	0.77	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	0.68	Not Detected
Toluene	0.17	0.26	0.63	0.97
trans-1,3-Dichloropropene	0.17	Not Detected	0.76	Not Detected
1,1,2-Trichloroethane	0.17	Not Detected	0.91	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 (163929)

Lab ID#: 1612095-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e120816	Date of Collection:	11/29/16 1:00:00 PM
Dil. Factor:	1.67	Date of Analysis:	12/8/16 09:51 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	0.72	Not Detected
m,p-Xylene	0.17	Not Detected	0.72	Not Detected
o-Xylene	0.17	Not Detected	0.72	Not Detected
Styrene	0.17	Not Detected	0.71	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	1.1	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	0.86	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	8.9	Not Detected

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	91	70-130



Air Toxics

Client Sample ID: U2 (163930)

Lab ID#: 1612095-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e120817	Date of Collection:	11/29/16 12:50:00 P
Dil. Factor:	1.70	Date of Analysis:	12/8/16 10:36 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.17	0.41	0.84	2.0
Freon 114	0.17	Not Detected	1.2	Not Detected
Chloromethane	0.85	Not Detected	1.8	Not Detected
Vinyl Chloride	0.17	Not Detected	0.43	Not Detected
1,3-Butadiene	0.17	Not Detected	0.38	Not Detected
Bromomethane	0.85	Not Detected	3.3	Not Detected
Chloroethane	0.85	Not Detected	2.2	Not Detected
Freon 11	0.17	0.21	0.96	1.2
Ethanol	0.85	12	1.6	22
Freon 113	0.17	Not Detected	1.3	Not Detected
1,1-Dichloroethene	0.17	Not Detected	0.67	Not Detected
Acetone	0.85	7.7	2.0	18
2-Propanol	0.85	1.7	2.1	4.2
Carbon Disulfide	0.85	Not Detected	2.6	Not Detected
3-Chloropropene	0.85	Not Detected	2.7	Not Detected
Methylene Chloride	0.34	Not Detected	1.2	Not Detected
Methyl tert-butyl ether	0.17	Not Detected	0.61	Not Detected
trans-1,2-Dichloroethene	0.17	Not Detected	0.67	Not Detected
Hexane	0.17	0.19	0.60	0.67
1,1-Dichloroethane	0.17	Not Detected	0.69	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.85	Not Detected	2.5	Not Detected
cis-1,2-Dichloroethene	0.17	Not Detected	0.67	Not Detected
Tetrahydrofuran	0.85	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	0.31	0.58	1.1
Carbon Tetrachloride	0.17	Not Detected	1.1	Not Detected
2,2,4-Trimethylpentane	0.85	Not Detected	4.0	Not Detected
Benzene	0.17	0.29	0.54	0.92
1,2-Dichloroethane	0.17	Not Detected	0.69	Not Detected
Heptane	0.17	0.24	0.70	1.0
Trichloroethene	0.17	Not Detected	0.91	Not Detected
1,2-Dichloropropane	0.17	Not Detected	0.78	Not Detected
1,4-Dioxane	0.17	0.41	0.61	1.5
Bromodichloromethane	0.17	Not Detected	1.1	Not Detected
cis-1,3-Dichloropropene	0.17	Not Detected	0.77	Not Detected
4-Methyl-2-pentanone	0.17	Not Detected	0.70	Not Detected
Toluene	0.17	1.1	0.64	4.2
trans-1,3-Dichloropropene	0.17	Not Detected	0.77	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	0.85	Not Detected	3.5	Not Detected



Client Sample ID: U2 (163930)

Lab ID#: 1612095-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e120817	Date of Collection:	11/29/16 12:50:00 P
Dil. Factor:	1.70	Date of Analysis:	12/8/16 10:36 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	0.78	Not Detected
Ethyl Benzene	0.17	Not Detected	0.74	Not Detected
m,p-Xylene	0.17	0.19	0.74	0.81
o-Xylene	0.17	Not Detected	0.74	Not Detected
Styrene	0.17	Not Detected	0.72	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	0.85	Not Detected	6.3	Not Detected
Hexachlorobutadiene	0.85	Not Detected	9.1	Not Detected

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	114	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	97	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1612095-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e120806	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	12/8/16 11:03 AM

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#: 1612095-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e120806	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	12/8/16 11:03 AM

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	109	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	87	70-130



Air Toxics

Client Sample ID: CCV

Lab ID#: 1612095-06A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e120802	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 12/8/16 08:07 AM

Compound	%Recovery
Freon 12	103
Freon 114	97
Chloromethane	127
Vinyl Chloride	101
1,3-Butadiene	108
Bromomethane	98
Chloroethane	96
Freon 11	98
Ethanol	98
Freon 113	92
1,1-Dichloroethene	90
Acetone	103
2-Propanol	105
Carbon Disulfide	92
3-Chloropropene	91
Methylene Chloride	96
Methyl tert-butyl ether	88
trans-1,2-Dichloroethene	87
Hexane	100
1,1-Dichloroethane	102
2-Butanone (Methyl Ethyl Ketone)	95
cis-1,2-Dichloroethene	96
Tetrahydrofuran	119
Chloroform	99
1,1,1-Trichloroethane	95
Cyclohexane	91
Carbon Tetrachloride	98
2,2,4-Trimethylpentane	103
Benzene	113
1,2-Dichloroethane	118
Heptane	116
Trichloroethene	101
1,2-Dichloropropane	115
1,4-Dioxane	103
Bromodichloromethane	113
cis-1,3-Dichloropropene	96
4-Methyl-2-pentanone	128
Toluene	109
trans-1,3-Dichloropropene	100
1,1,2-Trichloroethane	108
Tetrachloroethene	103
2-Hexanone	109

Client Sample ID: CCV

Lab ID#: 1612095-06A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e120802	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 12/8/16 08:07 AM

Compound	%Recovery
Dibromochloromethane	109
1,2-Dibromoethane (EDB)	105
Chlorobenzene	103
Ethyl Benzene	107
m,p-Xylene	104
o-Xylene	103
Styrene	110
Bromoform	105
Cumene	108
1,1,2,2-Tetrachloroethane	117
Propylbenzene	108
4-Ethyltoluene	104
1,3,5-Trimethylbenzene	106
1,2,4-Trimethylbenzene	97
1,3-Dichlorobenzene	100
1,4-Dichlorobenzene	104
alpha-Chlorotoluene	111
1,2-Dichlorobenzene	104
1,2,4-Trichlorobenzene	89
Hexachlorobutadiene	104

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	96	70-130



Air Toxics

Client Sample ID: LCS

Lab ID#: 1612095-07A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e120803	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 12/8/16 08:50 AM

Compound	%Recovery	Method Limits
Freon 12	87	70-130
Freon 114	82	70-130
Chloromethane	107	70-130
Vinyl Chloride	88	70-130
1,3-Butadiene	88	70-130
Bromomethane	86	70-130
Chloroethane	82	70-130
Freon 11	81	70-130
Ethanol	61 Q	70-130
Freon 113	75	70-130
1,1-Dichloroethene	72	70-130
Acetone	88	70-130
2-Propanol	88	70-130
Carbon Disulfide	78	70-130
3-Chloropropene	74	70-130
Methylene Chloride	83	70-130
Methyl tert-butyl ether	74	70-130
trans-1,2-Dichloroethene	77	70-130
Hexane	85	70-130
1,1-Dichloroethane	82	70-130
2-Butanone (Methyl Ethyl Ketone)	75	70-130
cis-1,2-Dichloroethene	74	70-130
Tetrahydrofuran	98	70-130
Chloroform	83	70-130
1,1,1-Trichloroethane	77	70-130
Cyclohexane	79	70-130
Carbon Tetrachloride	62 Q	70-130
2,2,4-Trimethylpentane	86	70-130
Benzene	92	70-130
1,2-Dichloroethane	93	70-130
Heptane	96	70-130
Trichloroethene	83	70-130
1,2-Dichloropropane	92	70-130
1,4-Dioxane	81	70-130
Bromodichloromethane	91	70-130
cis-1,3-Dichloropropene	82	70-130
4-Methyl-2-pentanone	104	70-130
Toluene	87	70-130
trans-1,3-Dichloropropene	81	70-130
1,1,2-Trichloroethane	90	70-130
Tetrachloroethene	82	70-130
2-Hexanone	86	70-130

Client Sample ID: LCS

Lab ID#: 1612095-07A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e120803	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 12/8/16 08:50 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	85	70-130
1,2-Dibromoethane (EDB)	86	70-130
Chlorobenzene	84	70-130
Ethyl Benzene	86	70-130
m,p-Xylene	84	70-130
o-Xylene	82	70-130
Styrene	84	70-130
Bromoform	85	70-130
Cumene	86	70-130
1,1,2,2-Tetrachloroethane	96	70-130
Propylbenzene	87	70-130
4-Ethyltoluene	85	70-130
1,3,5-Trimethylbenzene	84	70-130
1,2,4-Trimethylbenzene	75	70-130
1,3-Dichlorobenzene	80	70-130
1,4-Dichlorobenzene	85	70-130
alpha-Chlorotoluene	77	70-130
1,2-Dichlorobenzene	83	70-130
1,2,4-Trichlorobenzene	67 Q	70-130
Hexachlorobutadiene	81	70-130

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	95	70-130



Air Toxics

Client Sample ID: LCS D

Lab ID#: 1612095-07AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e120804	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 12/8/16 09:31 AM

Compound	%Recovery	Method Limits
Freon 12	82	70-130
Freon 114	78	70-130
Chloromethane	103	70-130
Vinyl Chloride	85	70-130
1,3-Butadiene	83	70-130
Bromomethane	81	70-130
Chloroethane	80	70-130
Freon 11	77	70-130
Ethanol	60 Q	70-130
Freon 113	71	70-130
1,1-Dichloroethene	70	70-130
Acetone	85	70-130
2-Propanol	87	70-130
Carbon Disulfide	73	70-130
3-Chloropropene	72	70-130
Methylene Chloride	79	70-130
Methyl tert-butyl ether	72	70-130
trans-1,2-Dichloroethene	74	70-130
Hexane	84	70-130
1,1-Dichloroethane	79	70-130
2-Butanone (Methyl Ethyl Ketone)	73	70-130
cis-1,2-Dichloroethene	71	70-130
Tetrahydrofuran	96	70-130
Chloroform	78	70-130
1,1,1-Trichloroethane	74	70-130
Cyclohexane	74	70-130
Carbon Tetrachloride	60 Q	70-130
2,2,4-Trimethylpentane	82	70-130
Benzene	88	70-130
1,2-Dichloroethane	90	70-130
Heptane	97	70-130
Trichloroethene	78	70-130
1,2-Dichloropropane	90	70-130
1,4-Dioxane	84	70-130
Bromodichloromethane	87	70-130
cis-1,3-Dichloropropene	79	70-130
4-Methyl-2-pentanone	103	70-130
Toluene	86	70-130
trans-1,3-Dichloropropene	80	70-130
1,1,2-Trichloroethane	87	70-130
Tetrachloroethene	80	70-130
2-Hexanone	85	70-130

Client Sample ID: LCSD

Lab ID#: 1612095-07AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e120804	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 12/8/16 09:31 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	83	70-130
1,2-Dibromoethane (EDB)	82	70-130
Chlorobenzene	82	70-130
Ethyl Benzene	85	70-130
m,p-Xylene	83	70-130
o-Xylene	84	70-130
Styrene	84	70-130
Bromoform	84	70-130
Cumene	85	70-130
1,1,2,2-Tetrachloroethane	94	70-130
Propylbenzene	88	70-130
4-Ethyltoluene	85	70-130
1,3,5-Trimethylbenzene	82	70-130
1,2,4-Trimethylbenzene	75	70-130
1,3-Dichlorobenzene	78	70-130
1,4-Dichlorobenzene	84	70-130
alpha-Chlorotoluene	78	70-130
1,2-Dichlorobenzene	83	70-130
1,2,4-Trichlorobenzene	68 Q	70-130
Hexachlorobutadiene	82	70-130

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

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