

9/29/2016

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

Jefferson City MO 65109

Project Name: Bridgeton Landfill

Project #:

Workorder #: 1609465

Dear Mr. Curt Lueckenhoff

The following report includes the data for the above referenced project for sample(s) received on 9/19/2016 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 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 #: 1609465

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. #	3ESP170129
FAX:	573-526-3350	PROJECT #	Bridgeton Landfill
DATE RECEIVED:	09/19/2016	CONTACT:	Brian Whittaker
DATE COMPLETED:	09/29/2016		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	D1 (163459)	Modified TO-15	5.5 "Hg	4.9 psi
02A	D2 (163460)	Modified TO-15	6.5 "Hg	5 psi
03A	U1 (163461)	Modified TO-15	5.9 "Hg	4.9 psi
04A	U2 (163462)	Modified TO-15	8.6 "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: 09/29/16

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
 TX NELAP - T104704434-15-9, UT NELAP CA0093332015-6, VA NELAP - 8113, WA NELAP - C935
 Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
 Accreditation number: CA300005, Effective date: 10/18/2015, Expiration date: 10/17/2016.

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# 1609465**

Three 6 Liter Summa Canister (SIM Certified Calscience) and one 6 Liter Summa Canister (100% Certified) samples were received on September 19, 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. Target compound non-detects in the samples that are associated with high bias in QC analyses have not been flagged.

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 (163459)

Lab ID#: 1609465-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.16	0.49	0.81	2.4
Freon 11	0.16	0.24	0.92	1.4
Ethanol	0.82	16	1.5	31
Acetone	0.82	8.5	1.9	20
2-Propanol	0.82	2.1	2.0	5.1
Carbon Disulfide	0.82	1.6	2.5	4.9
Methylene Chloride	0.33	0.34	1.1	1.2
Hexane	0.16	0.30	0.57	1.0
2-Butanone (Methyl Ethyl Ketone)	0.82	1.4	2.4	4.0
Cyclohexane	0.16	0.36	0.56	1.2
Benzene	0.16	0.18	0.52	0.58
Toluene	0.16	4.2	0.61	16
Ethyl Benzene	0.16	0.44	0.71	1.9
m,p-Xylene	0.16	1.6	0.71	6.8
o-Xylene	0.16	0.64	0.71	2.8
4-Ethyltoluene	0.16	0.38	0.80	1.8
1,3,5-Trimethylbenzene	0.16	0.18	0.80	0.90
1,2,4-Trimethylbenzene	0.16	0.41	0.80	2.0

Client Sample ID: D2 (163460)

Lab ID#: 1609465-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.17	0.44	0.84	2.2
Freon 11	0.17	0.23	0.96	1.3
Ethanol	0.86	6.1	1.6	12
Acetone	0.86	3.0	2.0	7.2

Client Sample ID: U1 (163461)

Lab ID#: 1609465-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.17	0.45	0.82	2.2

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

Client Sample ID: U1 (163461)

Lab ID#: 1609465-03A

Freon 11	0.17	0.23	0.93	1.3
Ethanol	0.83	21	1.6	39
Acetone	0.83	5.1	2.0	12
2-Propanol	0.83	5.0	2.0	12
Toluene	0.17	1.4	0.62	5.3
m,p-Xylene	0.17	0.20	0.72	0.89

Client Sample ID: U2 (163462)

Lab ID#: 1609465-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.19	0.37	0.92	1.8
Freon 11	0.19	0.22	1.0	1.3
Ethanol	0.94	8.7	1.8	16
Acetone	0.94	6.6	2.2	16
2-Butanone (Methyl Ethyl Ketone)	0.94	1.3	2.8	3.9



Air Toxics

Client Sample ID: D1 (163459)

Lab ID#: 1609465-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e092215	Date of Collection:	9/13/16 1:50:00 PM
Dil. Factor:	1.63	Date of Analysis:	9/22/16 06:39 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.16	0.49	0.81	2.4
Freon 114	0.16	Not Detected	1.1	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	0.24	0.92	1.4
Ethanol	0.82	16	1.5	31
Freon 113	0.16	Not Detected	1.2	Not Detected
1,1-Dichloroethene	0.16	Not Detected	0.65	Not Detected
Acetone	0.82	8.5	1.9	20
2-Propanol	0.82	2.1	2.0	5.1
Carbon Disulfide	0.82	1.6	2.5	4.9
3-Chloropropene	0.82	Not Detected	2.6	Not Detected
Methylene Chloride	0.33	0.34	1.1	1.2
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	0.30	0.57	1.0
1,1-Dichloroethane	0.16	Not Detected	0.66	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.82	1.4	2.4	4.0
cis-1,2-Dichloroethene	0.16	Not Detected	0.65	Not Detected
Tetrahydrofuran	0.82	Not Detected UJ	2.4	Not Detected UJ
Chloroform	0.16	Not Detected	0.80	Not Detected
1,1,1-Trichloroethane	0.16	Not Detected	0.89	Not Detected
Cyclohexane	0.16	0.36	0.56	1.2
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	0.18	0.52	0.58
1,2-Dichloroethane	0.16	Not Detected	0.66	Not Detected
Heptane	0.16	Not Detected	0.67	Not Detected
Trichloroethene	0.16	Not Detected	0.88	Not Detected
1,2-Dichloropropane	0.16	Not Detected	0.75	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	0.74	Not Detected
4-Methyl-2-pentanone	0.16	Not Detected	0.67	Not Detected
Toluene	0.16	4.2	0.61	16
trans-1,3-Dichloropropene	0.16	Not Detected	0.74	Not Detected
1,1,2-Trichloroethane	0.16	Not Detected	0.89	Not Detected
Tetrachloroethene	0.16	Not Detected	1.1	Not Detected
2-Hexanone	0.82	Not Detected	3.3	Not Detected



Client Sample ID: D1 (163459)

Lab ID#: 1609465-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e092215	Date of Collection:	9/13/16 1:50:00 PM
Dil. Factor:	1.63	Date of Analysis:	9/22/16 06:39 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	1.2	Not Detected
Chlorobenzene	0.16	Not Detected	0.75	Not Detected
Ethyl Benzene	0.16	0.44	0.71	1.9
m,p-Xylene	0.16	1.6	0.71	6.8
o-Xylene	0.16	0.64	0.71	2.8
Styrene	0.16	Not Detected	0.69	Not Detected
Bromoform	0.16	Not Detected	1.7	Not Detected
Cumene	0.16	Not Detected	0.80	Not Detected
1,1,2,2-Tetrachloroethane	0.16	Not Detected	1.1	Not Detected
Propylbenzene	0.16	Not Detected	0.80	Not Detected
4-Ethyltoluene	0.16	0.38	0.80	1.8
1,3,5-Trimethylbenzene	0.16	0.18	0.80	0.90
1,2,4-Trimethylbenzene	0.16	0.41	0.80	2.0
1,3-Dichlorobenzene	0.16	Not Detected	0.98	Not Detected
1,4-Dichlorobenzene	0.16	Not Detected	0.98	Not Detected
alpha-Chlorotoluene	0.16	Not Detected	0.84	Not Detected
1,2-Dichlorobenzene	0.16	Not Detected	0.98	Not Detected
1,2,4-Trichlorobenzene	0.82	Not Detected	6.0	Not Detected
Hexachlorobutadiene	0.82	Not Detected	8.7	Not Detected

UJ = Analyte associated with low bias in the CCV.

Container Type: 6 Liter Summa Canister (SIM Certified Calscience)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	116	70-130
Toluene-d8	95	70-130
4-Bromofluorobenzene	102	70-130



Air Toxics

Client Sample ID: D2 (163460)

Lab ID#: 1609465-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e092216	Date of Collection:	9/13/16 1:40:00 PM
Dil. Factor:	1.71	Date of Analysis:	9/22/16 07:26 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.17	0.44	0.84	2.2
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	0.23	0.96	1.3
Ethanol	0.86	6.1	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	3.0	2.0	7.2
2-Propanol	0.86	Not Detected	2.1	Not Detected
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 UJ	2.5	Not Detected UJ
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	Not Detected	0.55	Not Detected
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	Not Detected	0.64	Not Detected
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: D2 (163460)

Lab ID#: 1609465-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e092216	Date of Collection:	9/13/16 1:40:00 PM
Dil. Factor:	1.71	Date of Analysis:	9/22/16 07:26 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

UJ = Analyte associated with low bias in the CCV.

Container Type: 6 Liter Summa Canister (SIM Certified Calscience)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	118	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	94	70-130



Air Toxics

Client Sample ID: U1 (163461)

Lab ID#: 1609465-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e092217	Date of Collection:	9/13/16 1:20:00 PM
Dil. Factor:	1.66	Date of Analysis:	9/22/16 08:07 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	0.83	Not Detected	1.7	Not Detected
Vinyl Chloride	0.17	Not Detected	0.42	Not Detected
1,3-Butadiene	0.17	Not Detected	0.37	Not Detected
Bromomethane	0.83	Not Detected	3.2	Not Detected
Chloroethane	0.83	Not Detected	2.2	Not Detected
Freon 11	0.17	0.23	0.93	1.3
Ethanol	0.83	21	1.6	39
Freon 113	0.17	Not Detected	1.3	Not Detected
1,1-Dichloroethene	0.17	Not Detected	0.66	Not Detected
Acetone	0.83	5.1	2.0	12
2-Propanol	0.83	5.0	2.0	12
Carbon Disulfide	0.83	Not Detected	2.6	Not Detected
3-Chloropropene	0.83	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	0.58	Not Detected
1,1-Dichloroethane	0.17	Not Detected	0.67	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.83	Not Detected	2.4	Not Detected
cis-1,2-Dichloroethene	0.17	Not Detected	0.66	Not Detected
Tetrahydrofuran	0.83	Not Detected UJ	2.4	Not Detected UJ
Chloroform	0.17	Not Detected	0.81	Not Detected
1,1,1-Trichloroethane	0.17	Not Detected	0.90	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	0.83	Not Detected	3.9	Not Detected
Benzene	0.17	Not Detected	0.53	Not Detected
1,2-Dichloroethane	0.17	Not Detected	0.67	Not Detected
Heptane	0.17	Not Detected	0.68	Not Detected
Trichloroethene	0.17	Not Detected	0.89	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	0.75	Not Detected
4-Methyl-2-pentanone	0.17	Not Detected	0.68	Not Detected
Toluene	0.17	1.4	0.62	5.3
trans-1,3-Dichloropropene	0.17	Not Detected	0.75	Not Detected
1,1,2-Trichloroethane	0.17	Not Detected	0.90	Not Detected
Tetrachloroethene	0.17	Not Detected	1.1	Not Detected
2-Hexanone	0.83	Not Detected	3.4	Not Detected



Client Sample ID: U1 (163461)

Lab ID#: 1609465-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e092217	Date of Collection:	9/13/16 1:20:00 PM
Dil. Factor:	1.66	Date of Analysis:	9/22/16 08:07 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	0.76	Not Detected
Ethyl Benzene	0.17	Not Detected	0.72	Not Detected
m,p-Xylene	0.17	0.20	0.72	0.89
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	0.83	Not Detected	6.2	Not Detected
Hexachlorobutadiene	0.83	Not Detected	8.8	Not Detected

UJ = Analyte associated with low bias in the CCV.

Container Type: 6 Liter Summa Canister (SIM Certified Calscience)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	119	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	96	70-130



Air Toxics

Client Sample ID: U2 (163462)

Lab ID#: 1609465-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e092218	Date of Collection:	9/13/16 1:25:00 PM
Dil. Factor:	1.87	Date of Analysis:	9/22/16 09:06 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.19	0.37	0.92	1.8
Freon 114	0.19	Not Detected	1.3	Not Detected
Chloromethane	0.94	Not Detected	1.9	Not Detected
Vinyl Chloride	0.19	Not Detected	0.48	Not Detected
1,3-Butadiene	0.19	Not Detected	0.41	Not Detected
Bromomethane	0.94	Not Detected	3.6	Not Detected
Chloroethane	0.94	Not Detected	2.5	Not Detected
Freon 11	0.19	0.22	1.0	1.3
Ethanol	0.94	8.7	1.8	16
Freon 113	0.19	Not Detected	1.4	Not Detected
1,1-Dichloroethene	0.19	Not Detected	0.74	Not Detected
Acetone	0.94	6.6	2.2	16
2-Propanol	0.94	Not Detected	2.3	Not Detected
Carbon Disulfide	0.94	Not Detected	2.9	Not Detected
3-Chloropropene	0.94	Not Detected	2.9	Not Detected
Methylene Chloride	0.37	Not Detected	1.3	Not Detected
Methyl tert-butyl ether	0.19	Not Detected	0.67	Not Detected
trans-1,2-Dichloroethene	0.19	Not Detected	0.74	Not Detected
Hexane	0.19	Not Detected	0.66	Not Detected
1,1-Dichloroethane	0.19	Not Detected	0.76	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.94	1.3	2.8	3.9
cis-1,2-Dichloroethene	0.19	Not Detected	0.74	Not Detected
Tetrahydrofuran	0.94	Not Detected UJ	2.8	Not Detected UJ
Chloroform	0.19	Not Detected	0.91	Not Detected
1,1,1-Trichloroethane	0.19	Not Detected	1.0	Not Detected
Cyclohexane	0.19	Not Detected	0.64	Not Detected
Carbon Tetrachloride	0.19	Not Detected	1.2	Not Detected
2,2,4-Trimethylpentane	0.94	Not Detected	4.4	Not Detected
Benzene	0.19	Not Detected	0.60	Not Detected
1,2-Dichloroethane	0.19	Not Detected	0.76	Not Detected
Heptane	0.19	Not Detected	0.77	Not Detected
Trichloroethene	0.19	Not Detected	1.0	Not Detected
1,2-Dichloropropane	0.19	Not Detected	0.86	Not Detected
1,4-Dioxane	0.19	Not Detected	0.67	Not Detected
Bromodichloromethane	0.19	Not Detected	1.2	Not Detected
cis-1,3-Dichloropropene	0.19	Not Detected	0.85	Not Detected
4-Methyl-2-pentanone	0.19	Not Detected	0.77	Not Detected
Toluene	0.19	Not Detected	0.70	Not Detected
trans-1,3-Dichloropropene	0.19	Not Detected	0.85	Not Detected
1,1,2-Trichloroethane	0.19	Not Detected	1.0	Not Detected
Tetrachloroethene	0.19	Not Detected	1.3	Not Detected
2-Hexanone	0.94	Not Detected	3.8	Not Detected



Client Sample ID: U2 (163462)

Lab ID#: 1609465-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e092218	Date of Collection:	9/13/16 1:25:00 PM
Dil. Factor:	1.87	Date of Analysis:	9/22/16 09:06 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.19	Not Detected	1.6	Not Detected
1,2-Dibromoethane (EDB)	0.19	Not Detected	1.4	Not Detected
Chlorobenzene	0.19	Not Detected	0.86	Not Detected
Ethyl Benzene	0.19	Not Detected	0.81	Not Detected
m,p-Xylene	0.19	Not Detected	0.81	Not Detected
o-Xylene	0.19	Not Detected	0.81	Not Detected
Styrene	0.19	Not Detected	0.80	Not Detected
Bromoform	0.19	Not Detected	1.9	Not Detected
Cumene	0.19	Not Detected	0.92	Not Detected
1,1,2,2-Tetrachloroethane	0.19	Not Detected	1.3	Not Detected
Propylbenzene	0.19	Not Detected	0.92	Not Detected
4-Ethyltoluene	0.19	Not Detected	0.92	Not Detected
1,3,5-Trimethylbenzene	0.19	Not Detected	0.92	Not Detected
1,2,4-Trimethylbenzene	0.19	Not Detected	0.92	Not Detected
1,3-Dichlorobenzene	0.19	Not Detected	1.1	Not Detected
1,4-Dichlorobenzene	0.19	Not Detected	1.1	Not Detected
alpha-Chlorotoluene	0.19	Not Detected	0.97	Not Detected
1,2-Dichlorobenzene	0.19	Not Detected	1.1	Not Detected
1,2,4-Trichlorobenzene	0.94	Not Detected	6.9	Not Detected
Hexachlorobutadiene	0.94	Not Detected	10	Not Detected

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	112	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	104	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1609465-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e092209	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	9/22/16 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 UJ	1.5	Not Detected UJ
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#: 1609465-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e092209	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	9/22/16 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

UJ = Analyte associated with low bias in the CCV.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	119	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	96	70-130



Air Toxics

Client Sample ID: CCV

Lab ID#: 1609465-06A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e092202	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 9/22/16 07:37 AM

Compound	%Recovery
Freon 12	100
Freon 114	97
Chloromethane	74
Vinyl Chloride	78
1,3-Butadiene	73
Bromomethane	95
Chloroethane	90
Freon 11	108
Ethanol	106
Freon 113	90
1,1-Dichloroethene	88
Acetone	76
2-Propanol	78
Carbon Disulfide	86
3-Chloropropene	110
Methylene Chloride	82
Methyl tert-butyl ether	86
trans-1,2-Dichloroethene	90
Hexane	74
1,1-Dichloroethane	85
2-Butanone (Methyl Ethyl Ketone)	80
cis-1,2-Dichloroethene	83
Tetrahydrofuran	64 Q
Chloroform	94
1,1,1-Trichloroethane	104
Cyclohexane	83
Carbon Tetrachloride	102
2,2,4-Trimethylpentane	82
Benzene	93
1,2-Dichloroethane	111
Heptane	89
Trichloroethene	102
1,2-Dichloropropane	90
1,4-Dioxane	94
Bromodichloromethane	108
cis-1,3-Dichloropropene	89
4-Methyl-2-pentanone	89
Toluene	96
trans-1,3-Dichloropropene	92
1,1,2-Trichloroethane	93
Tetrachloroethene	113
2-Hexanone	82

Client Sample ID: CCV

Lab ID#: 1609465-06A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e092202	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 9/22/16 07:37 AM

Compound	%Recovery
Dibromochloromethane	108
1,2-Dibromoethane (EDB)	104
Chlorobenzene	103
Ethyl Benzene	98
m,p-Xylene	104
o-Xylene	102
Styrene	105
Bromoform	116
Cumene	95
1,1,2,2-Tetrachloroethane	78
Propylbenzene	89
4-Ethyltoluene	93
1,3,5-Trimethylbenzene	90
1,2,4-Trimethylbenzene	82
1,3-Dichlorobenzene	88
1,4-Dichlorobenzene	93
alpha-Chlorotoluene	86
1,2-Dichlorobenzene	98
1,2,4-Trichlorobenzene	135 Q
Hexachlorobutadiene	140 Q

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

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



Air Toxics

Client Sample ID: LCS

Lab ID#: 1609465-07A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e092203	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 9/22/16 08:20 AM

Compound	%Recovery	Method Limits
Freon 12	111	70-130
Freon 114	105	70-130
Chloromethane	84	70-130
Vinyl Chloride	82	70-130
1,3-Butadiene	71	70-130
Bromomethane	97	70-130
Chloroethane	92	70-130
Freon 11	112	70-130
Ethanol	98	70-130
Freon 113	90	70-130
1,1-Dichloroethene	86	70-130
Acetone	68 Q	70-130
2-Propanol	76	70-130
Carbon Disulfide	71	70-130
3-Chloropropene	101	70-130
Methylene Chloride	81	70-130
Methyl tert-butyl ether	77	70-130
trans-1,2-Dichloroethene	92	70-130
Hexane	72	70-130
1,1-Dichloroethane	79	70-130
2-Butanone (Methyl Ethyl Ketone)	78	70-130
cis-1,2-Dichloroethene	82	70-130
Tetrahydrofuran	53 Q	70-130
Chloroform	89	70-130
1,1,1-Trichloroethane	97	70-130
Cyclohexane	86	70-130
Carbon Tetrachloride	92	70-130
2,2,4-Trimethylpentane	78	70-130
Benzene	84	70-130
1,2-Dichloroethane	100	70-130
Heptane	79	70-130
Trichloroethene	98	70-130
1,2-Dichloropropane	83	70-130
1,4-Dioxane	82	70-130
Bromodichloromethane	101	70-130
cis-1,3-Dichloropropene	75	70-130
4-Methyl-2-pentanone	79	70-130
Toluene	86	70-130
trans-1,3-Dichloropropene	88	70-130
1,1,2-Trichloroethane	90	70-130
Tetrachloroethene	111	70-130
2-Hexanone	78	70-130

Client Sample ID: LCS

Lab ID#: 1609465-07A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e092203	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 9/22/16 08:20 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	108	70-130
1,2-Dibromoethane (EDB)	96	70-130
Chlorobenzene	95	70-130
Ethyl Benzene	95	70-130
m,p-Xylene	94	70-130
o-Xylene	98	70-130
Styrene	101	70-130
Bromoform	117	70-130
Cumene	92	70-130
1,1,2,2-Tetrachloroethane	75	70-130
Propylbenzene	85	70-130
4-Ethyltoluene	84	70-130
1,3,5-Trimethylbenzene	79	70-130
1,2,4-Trimethylbenzene	71	70-130
1,3-Dichlorobenzene	83	70-130
1,4-Dichlorobenzene	87	70-130
alpha-Chlorotoluene	87	70-130
1,2-Dichlorobenzene	90	70-130
1,2,4-Trichlorobenzene	121	70-130
Hexachlorobutadiene	128	70-130

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	106	70-130



Air Toxics

Client Sample ID: LCS D

Lab ID#: 1609465-07AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e092204	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	9/22/16 09:02 AM

Compound	%Recovery	Method Limits
Freon 12	94	70-130
Freon 114	93	70-130
Chloromethane	67 Q	70-130
Vinyl Chloride	76	70-130
1,3-Butadiene	65 Q	70-130
Bromomethane	86	70-130
Chloroethane	96	70-130
Freon 11	105	70-130
Ethanol	83	70-130
Freon 113	84	70-130
1,1-Dichloroethene	80	70-130
Acetone	74	70-130
2-Propanol	74	70-130
Carbon Disulfide	69 Q	70-130
3-Chloropropene	90	70-130
Methylene Chloride	78	70-130
Methyl tert-butyl ether	79	70-130
trans-1,2-Dichloroethene	85	70-130
Hexane	66 Q	70-130
1,1-Dichloroethane	78	70-130
2-Butanone (Methyl Ethyl Ketone)	69 Q	70-130
cis-1,2-Dichloroethene	72	70-130
Tetrahydrofuran	54 Q	70-130
Chloroform	89	70-130
1,1,1-Trichloroethane	94	70-130
Cyclohexane	78	70-130
Carbon Tetrachloride	94	70-130
2,2,4-Trimethylpentane	77	70-130
Benzene	83	70-130
1,2-Dichloroethane	102	70-130
Heptane	83	70-130
Trichloroethene	95	70-130
1,2-Dichloropropane	75	70-130
1,4-Dioxane	83	70-130
Bromodichloromethane	101	70-130
cis-1,3-Dichloropropene	76	70-130
4-Methyl-2-pentanone	84	70-130
Toluene	88	70-130
trans-1,3-Dichloropropene	88	70-130
1,1,2-Trichloroethane	90	70-130
Tetrachloroethene	104	70-130
2-Hexanone	79	70-130

Client Sample ID: LCSD

Lab ID#: 1609465-07AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e092204	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 9/22/16 09:02 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	103	70-130
1,2-Dibromoethane (EDB)	94	70-130
Chlorobenzene	94	70-130
Ethyl Benzene	89	70-130
m,p-Xylene	95	70-130
o-Xylene	97	70-130
Styrene	99	70-130
Bromoform	110	70-130
Cumene	87	70-130
1,1,2,2-Tetrachloroethane	71	70-130
Propylbenzene	83	70-130
4-Ethyltoluene	84	70-130
1,3,5-Trimethylbenzene	76	70-130
1,2,4-Trimethylbenzene	72	70-130
1,3-Dichlorobenzene	79	70-130
1,4-Dichlorobenzene	84	70-130
alpha-Chlorotoluene	85	70-130
1,2-Dichlorobenzene	86	70-130
1,2,4-Trichlorobenzene	117	70-130
Hexachlorobutadiene	121	70-130

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

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