

8/25/2017

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

Jefferson City MO 65109

Project Name: Bridgeton Landfill

Project #:

Workorder #: 1708248

Dear Mr. Curt Lueckenhoff

The following report includes the data for the above referenced project for sample(s) received on 8/14/2017 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 #: 1708248

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. #	3ESP180013; 3ESP180051
FAX:	573-526-3350	PROJECT #	Bridgeton Landfill
DATE RECEIVED:	08/14/2017	CONTACT:	Brian Whittaker
DATE COMPLETED:	08/25/2017		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	D1 (172360)	Modified TO-15	6.5 "Hg	5.1 psi
02A	U1 (172361)	Modified TO-15	1.2 "Hg	4.9 psi
03A	Lab Blank	Modified TO-15	NA	NA
04A	CCV	Modified TO-15	NA	NA
05A	LCS	Modified TO-15	NA	NA
05AA	LCSD	Modified TO-15	NA	NA

CERTIFIED BY: 

 Technical Director

DATE: 08/25/17

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

LABORATORY NARRATIVE
Modified TO-15
Missouri Dept. of Natural Resources
Workorder# 1708248

One 6 Liter Summa Canister (100% Cert Ambient) and one 6 Liter Summa Canister (100% Certified) samples were received on August 14, 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

Ethanol and 2-Propanol exceeded the instrument's calibration range for sample U1 (172361) and were flagged accordingly.

Due to the linear calibration range of the instrument, the reporting limit for Acetone was raised from 0.5ppbv to 1.0ppbv.

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 (172360)

Lab ID#: 1708248-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.17	0.34	0.85	1.7
Freon 11	0.17	0.19	0.97	1.1
Ethanol	0.86	2.5	1.6	4.8
Acetone	1.7	4.3	4.1	10
2-Propanol	0.86	1.2	2.1	3.0
Hexane	0.17	0.57	0.61	2.0
2-Butanone (Methyl Ethyl Ketone)	0.86	0.99	2.5	2.9
Heptane	0.17	0.47	0.70	1.9

Client Sample ID: U1 (172361)

Lab ID#: 1708248-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.14	0.33	0.69	1.6
Chloromethane	0.70	1.2	1.4	2.5
Bromomethane	0.70	1.7	2.7	6.5
Freon 11	0.14	0.31	0.78	1.8
Ethanol	0.70	210 E	1.3	400 E
Acetone	1.4	31	3.3	73
2-Propanol	0.70	62 E	1.7	150 E
Carbon Disulfide	0.70	6.7	2.2	21
Methylene Chloride	0.28	9.6	0.96	33
Methyl tert-butyl ether	0.14	0.50	0.50	1.8
trans-1,2-Dichloroethene	0.14	0.16	0.55	0.63
Hexane	0.14	4.6	0.49	16
2-Butanone (Methyl Ethyl Ketone)	0.70	44	2.0	130
Cyclohexane	0.14	3.6	0.48	12
2,2,4-Trimethylpentane	0.70	7.7	3.2	36
Benzene	0.14	0.87	0.44	2.8
1,2-Dichloroethane	0.14	0.17	0.56	0.67
Heptane	0.14	14	0.57	57
4-Methyl-2-pentanone	0.14	1.2	0.57	4.9
Toluene	0.14	17	0.52	65

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

Client Sample ID: U1 (172361)

Lab ID#: 1708248-02A

Ethyl Benzene	0.14	3.4	0.60	15
m,p-Xylene	0.14	8.3	0.60	36
o-Xylene	0.14	3.4	0.60	15
Styrene	0.14	1.4	0.59	6.0
Cumene	0.14	0.20	0.68	0.97
Propylbenzene	0.14	0.19	0.68	0.93
4-Ethyltoluene	0.14	0.81	0.68	4.0
1,3,5-Trimethylbenzene	0.14	0.25	0.68	1.2
1,2,4-Trimethylbenzene	0.14	0.81	0.68	4.0



Air Toxics

Client Sample ID: D1 (172360)

Lab ID#: 1708248-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e081609	Date of Collection:	8/8/17 1:35:00 PM
Dil. Factor:	1.72	Date of Analysis:	8/16/17 02:13 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.17	0.34	0.85	1.7
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	2.3	Not Detected
Freon 11	0.17	0.19	0.97	1.1
Ethanol	0.86	2.5	1.6	4.8
Freon 113	0.17	Not Detected	1.3	Not Detected
1,1-Dichloroethene	0.17	Not Detected	0.68	Not Detected
Acetone	1.7	4.3	4.1	10
2-Propanol	0.86	1.2	2.1	3.0
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	0.57	0.61	2.0
1,1-Dichloroethane	0.17	Not Detected	0.70	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.86	0.99	2.5	2.9
cis-1,2-Dichloroethene	0.17	Not Detected	0.68	Not Detected
Tetrahydrofuran	0.86	Not Detected	2.5	Not Detected
Chloroform	0.17	Not Detected	0.84	Not Detected
1,1,1-Trichloroethane	0.17	Not Detected	0.94	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	0.70	Not Detected
Heptane	0.17	0.47	0.70	1.9
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	1.2	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	0.65	Not Detected
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: D1 (172360)

Lab ID#: 1708248-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e081609	Date of Collection:	8/8/17 1:35:00 PM
Dil. Factor:	1.72	Date of Analysis:	8/16/17 02:13 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	0.79	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	0.73	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	0.89	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% Cert Ambient)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	102	70-130



Air Toxics

Client Sample ID: U1 (172361)

Lab ID#: 1708248-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e081610	Date of Collection:	8/8/17 1:45:00 PM
Dil. Factor:	1.39	Date of Analysis:	8/16/17 02:58 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.14	0.33	0.69	1.6
Freon 114	0.14	Not Detected	0.97	Not Detected
Chloromethane	0.70	1.2	1.4	2.5
Vinyl Chloride	0.14	Not Detected	0.36	Not Detected
1,3-Butadiene	0.14	Not Detected	0.31	Not Detected
Bromomethane	0.70	1.7	2.7	6.5
Chloroethane	0.70	Not Detected	1.8	Not Detected
Freon 11	0.14	0.31	0.78	1.8
Ethanol	0.70	210 E	1.3	400 E
Freon 113	0.14	Not Detected	1.1	Not Detected
1,1-Dichloroethene	0.14	Not Detected	0.55	Not Detected
Acetone	1.4	31	3.3	73
2-Propanol	0.70	62 E	1.7	150 E
Carbon Disulfide	0.70	6.7	2.2	21
3-Chloropropene	0.70	Not Detected	2.2	Not Detected
Methylene Chloride	0.28	9.6	0.96	33
Methyl tert-butyl ether	0.14	0.50	0.50	1.8
trans-1,2-Dichloroethene	0.14	0.16	0.55	0.63
Hexane	0.14	4.6	0.49	16
1,1-Dichloroethane	0.14	Not Detected	0.56	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.70	44	2.0	130
cis-1,2-Dichloroethene	0.14	Not Detected	0.55	Not Detected
Tetrahydrofuran	0.70	Not Detected	2.0	Not Detected
Chloroform	0.14	Not Detected	0.68	Not Detected
1,1,1-Trichloroethane	0.14	Not Detected	0.76	Not Detected
Cyclohexane	0.14	3.6	0.48	12
Carbon Tetrachloride	0.14	Not Detected	0.87	Not Detected
2,2,4-Trimethylpentane	0.70	7.7	3.2	36
Benzene	0.14	0.87	0.44	2.8
1,2-Dichloroethane	0.14	0.17	0.56	0.67
Heptane	0.14	14	0.57	57
Trichloroethene	0.14	Not Detected	0.75	Not Detected
1,2-Dichloropropane	0.14	Not Detected	0.64	Not Detected
1,4-Dioxane	0.14	Not Detected	0.50	Not Detected
Bromodichloromethane	0.14	Not Detected	0.93	Not Detected
cis-1,3-Dichloropropene	0.14	Not Detected	0.63	Not Detected
4-Methyl-2-pentanone	0.14	1.2	0.57	4.9
Toluene	0.14	17	0.52	65
trans-1,3-Dichloropropene	0.14	Not Detected	0.63	Not Detected
1,1,2-Trichloroethane	0.14	Not Detected	0.76	Not Detected
Tetrachloroethene	0.14	Not Detected	0.94	Not Detected
2-Hexanone	0.70	Not Detected	2.8	Not Detected

Client Sample ID: U1 (172361)

Lab ID#: 1708248-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e081610	Date of Collection: 8/8/17 1:45:00 PM
Dil. Factor:	1.39	Date of Analysis: 8/16/17 02:58 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.14	Not Detected	1.2	Not Detected
1,2-Dibromoethane (EDB)	0.14	Not Detected	1.1	Not Detected
Chlorobenzene	0.14	Not Detected	0.64	Not Detected
Ethyl Benzene	0.14	3.4	0.60	15
m,p-Xylene	0.14	8.3	0.60	36
o-Xylene	0.14	3.4	0.60	15
Styrene	0.14	1.4	0.59	6.0
Bromoform	0.14	Not Detected	1.4	Not Detected
Cumene	0.14	0.20	0.68	0.97
1,1,2,2-Tetrachloroethane	0.14	Not Detected	0.95	Not Detected
Propylbenzene	0.14	0.19	0.68	0.93
4-Ethyltoluene	0.14	0.81	0.68	4.0
1,3,5-Trimethylbenzene	0.14	0.25	0.68	1.2
1,2,4-Trimethylbenzene	0.14	0.81	0.68	4.0
1,3-Dichlorobenzene	0.14	Not Detected	0.84	Not Detected
1,4-Dichlorobenzene	0.14	Not Detected	0.84	Not Detected
alpha-Chlorotoluene	0.14	Not Detected	0.72	Not Detected
1,2-Dichlorobenzene	0.14	Not Detected	0.84	Not Detected
1,2,4-Trichlorobenzene	0.70	Not Detected	5.2	Not Detected
Hexachlorobutadiene	0.70	Not Detected	7.4	Not Detected

E = Exceeds instrument calibration range.

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	102	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1708248-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e081607	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	8/16/17 12:41 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	1.0	Not Detected	2.4	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#: 1708248-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e081607	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/16/17 12:41 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	103	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	102	70-130



Air Toxics

Client Sample ID: CCV

Lab ID#: 1708248-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e081603	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/16/17 09:41 AM

Compound	%Recovery
Freon 12	99
Freon 114	98
Chloromethane	95
Vinyl Chloride	90
1,3-Butadiene	97
Bromomethane	119
Chloroethane	117
Freon 11	125
Ethanol	96
Freon 113	96
1,1-Dichloroethene	96
Acetone	80
2-Propanol	101
Carbon Disulfide	95
3-Chloropropene	90
Methylene Chloride	93
Methyl tert-butyl ether	99
trans-1,2-Dichloroethene	102
Hexane	99
1,1-Dichloroethane	96
2-Butanone (Methyl Ethyl Ketone)	98
cis-1,2-Dichloroethene	99
Tetrahydrofuran	102
Chloroform	98
1,1,1-Trichloroethane	102
Cyclohexane	98
Carbon Tetrachloride	99
2,2,4-Trimethylpentane	96
Benzene	96
1,2-Dichloroethane	94
Heptane	95
Trichloroethene	101
1,2-Dichloropropane	99
1,4-Dioxane	107
Bromodichloromethane	99
cis-1,3-Dichloropropene	100
4-Methyl-2-pentanone	103
Toluene	102
trans-1,3-Dichloropropene	107
1,1,2-Trichloroethane	100
Tetrachloroethene	103
2-Hexanone	117



Air Toxics

Client Sample ID: CCV

Lab ID#: 1708248-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e081603	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/16/17 09:41 AM

Compound	%Recovery
Dibromochloromethane	102
1,2-Dibromoethane (EDB)	103
Chlorobenzene	102
Ethyl Benzene	108
m,p-Xylene	110
o-Xylene	111
Styrene	110
Bromoform	102
Cumene	108
1,1,2,2-Tetrachloroethane	101
Propylbenzene	109
4-Ethyltoluene	112
1,3,5-Trimethylbenzene	105
1,2,4-Trimethylbenzene	118
1,3-Dichlorobenzene	104
1,4-Dichlorobenzene	105
alpha-Chlorotoluene	112
1,2-Dichlorobenzene	107
1,2,4-Trichlorobenzene	109
Hexachlorobutadiene	105

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	105	70-130



Air Toxics

Client Sample ID: LCS

Lab ID#: 1708248-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e081604	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	8/16/17 10:24 AM

Compound	%Recovery	Method Limits
Freon 12	89	70-130
Freon 114	93	70-130
Chloromethane	95	70-130
Vinyl Chloride	85	70-130
1,3-Butadiene	86	70-130
Bromomethane	107	70-130
Chloroethane	107	70-130
Freon 11	106	70-130
Ethanol	90	70-130
Freon 113	86	70-130
1,1-Dichloroethene	88	70-130
Acetone	74	70-130
2-Propanol	93	70-130
Carbon Disulfide	76	70-130
3-Chloropropene	79	70-130
Methylene Chloride	83	70-130
Methyl tert-butyl ether	86	70-130
trans-1,2-Dichloroethene	75	70-130
Hexane	86	70-130
1,1-Dichloroethane	86	70-130
2-Butanone (Methyl Ethyl Ketone)	89	70-130
cis-1,2-Dichloroethene	102	70-130
Tetrahydrofuran	88	70-130
Chloroform	88	70-130
1,1,1-Trichloroethane	89	70-130
Cyclohexane	90	70-130
Carbon Tetrachloride	75	70-130
2,2,4-Trimethylpentane	88	70-130
Benzene	86	70-130
1,2-Dichloroethane	82	70-130
Heptane	88	70-130
Trichloroethene	91	70-130
1,2-Dichloropropane	88	70-130
1,4-Dioxane	95	70-130
Bromodichloromethane	90	70-130
cis-1,3-Dichloropropene	86	70-130
4-Methyl-2-pentanone	95	70-130
Toluene	92	70-130
trans-1,3-Dichloropropene	92	70-130
1,1,2-Trichloroethane	84	70-130
Tetrachloroethene	90	70-130
2-Hexanone	101	70-130

Client Sample ID: LCS

Lab ID#: 1708248-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e081604	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/16/17 10:24 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	89	70-130
1,2-Dibromoethane (EDB)	90	70-130
Chlorobenzene	87	70-130
Ethyl Benzene	92	70-130
m,p-Xylene	95	70-130
o-Xylene	96	70-130
Styrene	94	70-130
Bromoform	89	70-130
Cumene	94	70-130
1,1,2,2-Tetrachloroethane	86	70-130
Propylbenzene	95	70-130
4-Ethyltoluene	95	70-130
1,3,5-Trimethylbenzene	89	70-130
1,2,4-Trimethylbenzene	98	70-130
1,3-Dichlorobenzene	88	70-130
1,4-Dichlorobenzene	86	70-130
alpha-Chlorotoluene	96	70-130
1,2-Dichlorobenzene	91	70-130
1,2,4-Trichlorobenzene	85	70-130
Hexachlorobutadiene	92	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	97	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	101	70-130



Air Toxics

Client Sample ID: LCSD

Lab ID#: 1708248-05AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e081605	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	8/16/17 11:10 AM

Compound	%Recovery	Method Limits
Freon 12	86	70-130
Freon 114	91	70-130
Chloromethane	82	70-130
Vinyl Chloride	82	70-130
1,3-Butadiene	104	70-130
Bromomethane	98	70-130
Chloroethane	86	70-130
Freon 11	90	70-130
Ethanol	87	70-130
Freon 113	84	70-130
1,1-Dichloroethene	84	70-130
Acetone	72	70-130
2-Propanol	92	70-130
Carbon Disulfide	74	70-130
3-Chloropropene	76	70-130
Methylene Chloride	77	70-130
Methyl tert-butyl ether	83	70-130
trans-1,2-Dichloroethene	73	70-130
Hexane	81	70-130
1,1-Dichloroethane	84	70-130
2-Butanone (Methyl Ethyl Ketone)	76	70-130
cis-1,2-Dichloroethene	98	70-130
Tetrahydrofuran	85	70-130
Chloroform	85	70-130
1,1,1-Trichloroethane	86	70-130
Cyclohexane	86	70-130
Carbon Tetrachloride	74	70-130
2,2,4-Trimethylpentane	85	70-130
Benzene	82	70-130
1,2-Dichloroethane	79	70-130
Heptane	84	70-130
Trichloroethene	85	70-130
1,2-Dichloropropane	84	70-130
1,4-Dioxane	90	70-130
Bromodichloromethane	88	70-130
cis-1,3-Dichloropropene	83	70-130
4-Methyl-2-pentanone	92	70-130
Toluene	89	70-130
trans-1,3-Dichloropropene	92	70-130
1,1,2-Trichloroethane	84	70-130
Tetrachloroethene	91	70-130
2-Hexanone	102	70-130

Client Sample ID: LCSD

Lab ID#: 1708248-05AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e081605	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/16/17 11:10 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	85	70-130
1,2-Dibromoethane (EDB)	88	70-130
Chlorobenzene	86	70-130
Ethyl Benzene	88	70-130
m,p-Xylene	94	70-130
o-Xylene	92	70-130
Styrene	93	70-130
Bromoform	89	70-130
Cumene	92	70-130
1,1,2,2-Tetrachloroethane	87	70-130
Propylbenzene	95	70-130
4-Ethyltoluene	92	70-130
1,3,5-Trimethylbenzene	87	70-130
1,2,4-Trimethylbenzene	96	70-130
1,3-Dichlorobenzene	87	70-130
1,4-Dichlorobenzene	86	70-130
alpha-Chlorotoluene	95	70-130
1,2-Dichlorobenzene	90	70-130
1,2,4-Trichlorobenzene	84	70-130
Hexachlorobutadiene	90	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	101	70-130