

7/18/2018

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

Jefferson City MO 65109

Project Name: Bridgeton Landfill

Project #:

Workorder #: 1807058

Dear Mr. Curt Lueckenhoff

The following report includes the data for the above referenced project for sample(s) received on 7/5/2018 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 #: 1807058

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. #	180525-CFL-A
FAX:	573-526-3350	PROJECT #	Bridgeton Landfill
DATE RECEIVED:	07/05/2018	CONTACT:	Brian Whittaker
DATE COMPLETED:	07/18/2018		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	D1 (182085)	Modified TO-15	5.9 "Hg	5.1 psi
02A	U1 (182086)	Modified TO-15	7.6 "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: 07/18/18

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# 1807058

Two 6 Liter Summa Canister (100% Certified) samples were received on July 05, 2018. 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 (182085)

Lab ID#: 1807058-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Acetone	0.84	7.9	2.0	19
2-Propanol	0.84	1.7	2.1	4.2
Hexane	0.17	0.40	0.59	1.4
2-Butanone (Methyl Ethyl Ketone)	0.84	1.2	2.5	3.4
Heptane	0.17	0.24	0.69	0.98

Client Sample ID: U1 (182086)

Lab ID#: 1807058-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 11	0.18	0.24	1.0	1.3
Ethanol	0.89	3.2	1.7	5.9
Acetone	0.89	7.9	2.1	19
2-Propanol	0.89	2.8	2.2	6.8
Hexane	0.18	0.32	0.63	1.1
2-Butanone (Methyl Ethyl Ketone)	0.89	1.2	2.6	3.6
Heptane	0.18	0.24	0.73	1.0



Air Toxics

Client Sample ID: D1 (182085)

Lab ID#: 1807058-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21071312	Date of Collection:	6/27/18 12:40:00 PM
Dil. Factor:	1.68	Date of Analysis:	7/13/18 04:26 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.84	Not Detected	4.2	Not Detected
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	Not Detected	0.94	Not Detected
Ethanol	0.84	Not Detected	1.6	Not Detected
Freon 113	0.17	Not Detected	1.3	Not Detected
1,1-Dichloroethene	0.17	Not Detected	0.67	Not Detected
Acetone	0.84	7.9	2.0	19
2-Propanol	0.84	1.7	2.1	4.2
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	0.40	0.59	1.4
1,1-Dichloroethane	0.17	Not Detected	0.68	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.84	1.2	2.5	3.4
cis-1,2-Dichloroethene	0.17	Not Detected	0.67	Not Detected
Tetrahydrofuran	0.84	Not Detected	2.5	Not Detected
Chloroform	0.17	Not Detected	0.82	Not Detected
1,1,1-Trichloroethane	0.17	Not Detected	0.92	Not Detected
Cyclohexane	0.17	Not Detected	0.58	Not Detected
Carbon Tetrachloride	0.17	Not Detected	1.0	Not Detected
2,2,4-Trimethylpentane	0.84	Not Detected	3.9	Not Detected
Benzene	0.17	Not Detected	0.54	Not Detected
1,2-Dichloroethane	0.17	Not Detected	0.68	Not Detected
Heptane	0.17	0.24	0.69	0.98
Trichloroethene	0.17	Not Detected	0.90	Not Detected
1,2-Dichloropropane	0.17	Not Detected	0.78	Not Detected
1,4-Dioxane	0.17	Not Detected	0.60	Not Detected
Bromodichloromethane	0.17	Not Detected	1.1	Not Detected
cis-1,3-Dichloropropene	0.17	Not Detected	0.76	Not Detected
4-Methyl-2-pentanone	0.17	Not Detected	0.69	Not Detected
Toluene	0.17	Not Detected	0.63	Not Detected
trans-1,3-Dichloropropene	0.17	Not Detected	0.76	Not Detected
1,1,2-Trichloroethane	0.17	Not Detected	0.92	Not Detected
Tetrachloroethene	0.17	Not Detected	1.1	Not Detected
2-Hexanone	0.84	Not Detected	3.4	Not Detected

Client Sample ID: D1 (182085)

Lab ID#: 1807058-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21071312	Date of Collection:	6/27/18 12:40:00 PM
Dil. Factor:	1.68	Date of Analysis:	7/13/18 04:26 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	0.77	Not Detected
Ethyl Benzene	0.17	Not Detected	0.73	Not Detected
m,p-Xylene	0.17	Not Detected	0.73	Not Detected
o-Xylene	0.17	Not Detected	0.73	Not Detected
Styrene	0.17	Not Detected	0.72	Not Detected
Bromoform	0.17	Not Detected	1.7	Not Detected
Cumene	0.17	Not Detected	0.82	Not Detected
1,1,2,2-Tetrachloroethane	0.17	Not Detected	1.2	Not Detected
Propylbenzene	0.17	Not Detected	0.82	Not Detected
4-Ethyltoluene	0.17	Not Detected	0.82	Not Detected
1,3,5-Trimethylbenzene	0.17	Not Detected	0.82	Not Detected
1,2,4-Trimethylbenzene	0.17	Not Detected	0.82	Not Detected
1,3-Dichlorobenzene	0.17	Not Detected	1.0	Not Detected
1,4-Dichlorobenzene	0.17	Not Detected	1.0	Not Detected
alpha-Chlorotoluene	0.17	Not Detected	0.87	Not Detected
1,2-Dichlorobenzene	0.17	Not Detected	1.0	Not Detected
1,2,4-Trichlorobenzene	0.84	Not Detected	6.2	Not Detected
Hexachlorobutadiene	0.84	Not Detected	9.0	Not Detected

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	124	70-130
Toluene-d8	95	70-130
4-Bromofluorobenzene	91	70-130



Air Toxics

Client Sample ID: U1 (182086)

Lab ID#: 1807058-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21071313	Date of Collection:	6/27/18 1:15:00 PM
Dil. Factor:	1.78	Date of Analysis:	7/13/18 05:02 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.89	Not Detected	4.4	Not Detected
Freon 114	0.18	Not Detected	1.2	Not Detected
Chloromethane	0.89	Not Detected	1.8	Not Detected
Vinyl Chloride	0.18	Not Detected	0.46	Not Detected
1,3-Butadiene	0.18	Not Detected	0.39	Not Detected
Bromomethane	0.89	Not Detected	3.4	Not Detected
Chloroethane	0.89	Not Detected	2.3	Not Detected
Freon 11	0.18	0.24	1.0	1.3
Ethanol	0.89	3.2	1.7	5.9
Freon 113	0.18	Not Detected	1.4	Not Detected
1,1-Dichloroethene	0.18	Not Detected	0.70	Not Detected
Acetone	0.89	7.9	2.1	19
2-Propanol	0.89	2.8	2.2	6.8
Carbon Disulfide	0.89	Not Detected	2.8	Not Detected
3-Chloropropene	0.89	Not Detected	2.8	Not Detected
Methylene Chloride	0.36	Not Detected	1.2	Not Detected
Methyl tert-butyl ether	0.18	Not Detected	0.64	Not Detected
trans-1,2-Dichloroethene	0.18	Not Detected	0.70	Not Detected
Hexane	0.18	0.32	0.63	1.1
1,1-Dichloroethane	0.18	Not Detected	0.72	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.89	1.2	2.6	3.6
cis-1,2-Dichloroethene	0.18	Not Detected	0.70	Not Detected
Tetrahydrofuran	0.89	Not Detected	2.6	Not Detected
Chloroform	0.18	Not Detected	0.87	Not Detected
1,1,1-Trichloroethane	0.18	Not Detected	0.97	Not Detected
Cyclohexane	0.18	Not Detected	0.61	Not Detected
Carbon Tetrachloride	0.18	Not Detected	1.1	Not Detected
2,2,4-Trimethylpentane	0.89	Not Detected	4.2	Not Detected
Benzene	0.18	Not Detected	0.57	Not Detected
1,2-Dichloroethane	0.18	Not Detected	0.72	Not Detected
Heptane	0.18	0.24	0.73	1.0
Trichloroethene	0.18	Not Detected	0.96	Not Detected
1,2-Dichloropropane	0.18	Not Detected	0.82	Not Detected
1,4-Dioxane	0.18	Not Detected	0.64	Not Detected
Bromodichloromethane	0.18	Not Detected	1.2	Not Detected
cis-1,3-Dichloropropene	0.18	Not Detected	0.81	Not Detected
4-Methyl-2-pentanone	0.18	Not Detected	0.73	Not Detected
Toluene	0.18	Not Detected	0.67	Not Detected
trans-1,3-Dichloropropene	0.18	Not Detected	0.81	Not Detected
1,1,2-Trichloroethane	0.18	Not Detected	0.97	Not Detected
Tetrachloroethene	0.18	Not Detected	1.2	Not Detected
2-Hexanone	0.89	Not Detected	3.6	Not Detected

Client Sample ID: U1 (182086)

Lab ID#: 1807058-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21071313	Date of Collection: 6/27/18 1:15:00 PM
Dil. Factor:	1.78	Date of Analysis: 7/13/18 05:02 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.18	Not Detected	1.5	Not Detected
1,2-Dibromoethane (EDB)	0.18	Not Detected	1.4	Not Detected
Chlorobenzene	0.18	Not Detected	0.82	Not Detected
Ethyl Benzene	0.18	Not Detected	0.77	Not Detected
m,p-Xylene	0.18	Not Detected	0.77	Not Detected
o-Xylene	0.18	Not Detected	0.77	Not Detected
Styrene	0.18	Not Detected	0.76	Not Detected
Bromoform	0.18	Not Detected	1.8	Not Detected
Cumene	0.18	Not Detected	0.88	Not Detected
1,1,2,2-Tetrachloroethane	0.18	Not Detected	1.2	Not Detected
Propylbenzene	0.18	Not Detected	0.88	Not Detected
4-Ethyltoluene	0.18	Not Detected	0.88	Not Detected
1,3,5-Trimethylbenzene	0.18	Not Detected	0.88	Not Detected
1,2,4-Trimethylbenzene	0.18	Not Detected	0.88	Not Detected
1,3-Dichlorobenzene	0.18	Not Detected	1.1	Not Detected
1,4-Dichlorobenzene	0.18	Not Detected	1.1	Not Detected
alpha-Chlorotoluene	0.18	Not Detected	0.92	Not Detected
1,2-Dichlorobenzene	0.18	Not Detected	1.1	Not Detected
1,2,4-Trichlorobenzene	0.89	Not Detected	6.6	Not Detected
Hexachlorobutadiene	0.89	Not Detected	9.5	Not Detected

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	124	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	91	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1807058-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21071307	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	7/13/18 12:25 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.50	Not Detected	2.5	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#: 1807058-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21071307	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	7/13/18 12:25 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	121	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	88	70-130



Air Toxics

Client Sample ID: CCV

Lab ID#: 1807058-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21071302	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 7/13/18 07:05 AM

Compound	%Recovery
Freon 12	99
Freon 114	92
Chloromethane	98
Vinyl Chloride	96
1,3-Butadiene	100
Bromomethane	106
Chloroethane	99
Freon 11	93
Ethanol	86
Freon 113	94
1,1-Dichloroethene	95
Acetone	89
2-Propanol	88
Carbon Disulfide	102
3-Chloropropene	104
Methylene Chloride	94
Methyl tert-butyl ether	95
trans-1,2-Dichloroethene	96
Hexane	101
1,1-Dichloroethane	98
2-Butanone (Methyl Ethyl Ketone)	100
cis-1,2-Dichloroethene	97
Tetrahydrofuran	101
Chloroform	97
1,1,1-Trichloroethane	96
Cyclohexane	102
Carbon Tetrachloride	82
2,2,4-Trimethylpentane	128
Benzene	100
1,2-Dichloroethane	96
Heptane	106
Trichloroethene	92
1,2-Dichloropropane	99
1,4-Dioxane	101
Bromodichloromethane	99
cis-1,3-Dichloropropene	99
4-Methyl-2-pentanone	105
Toluene	100
trans-1,3-Dichloropropene	97
1,1,2-Trichloroethane	101
Tetrachloroethene	94
2-Hexanone	97



Air Toxics

Client Sample ID: CCV

Lab ID#: 1807058-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21071302	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 7/13/18 07:05 AM

Compound	%Recovery
Dibromochloromethane	104
1,2-Dibromoethane (EDB)	104
Chlorobenzene	96
Ethyl Benzene	101
m,p-Xylene	105
o-Xylene	104
Styrene	108
Bromoform	109
Cumene	107
1,1,2,2-Tetrachloroethane	110
Propylbenzene	106
4-Ethyltoluene	109
1,3,5-Trimethylbenzene	117
1,2,4-Trimethylbenzene	119
1,3-Dichlorobenzene	98
1,4-Dichlorobenzene	97
alpha-Chlorotoluene	98
1,2-Dichlorobenzene	97
1,2,4-Trichlorobenzene	120
Hexachlorobutadiene	107

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	96	70-130



Air Toxics

Client Sample ID: LCS

Lab ID#: 1807058-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21071303	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	7/13/18 08:21 AM

Compound	%Recovery	Method Limits
Freon 12	109	70-130
Freon 114	99	70-130
Chloromethane	100	70-130
Vinyl Chloride	103	70-130
1,3-Butadiene	103	70-130
Bromomethane	109	70-130
Chloroethane	106	70-130
Freon 11	98	70-130
Ethanol	106	70-130
Freon 113	98	70-130
1,1-Dichloroethene	99	70-130
Acetone	99	70-130
2-Propanol	100	70-130
Carbon Disulfide	105	70-130
3-Chloropropene	121	70-130
Methylene Chloride	99	70-130
Methyl tert-butyl ether	101	70-130
trans-1,2-Dichloroethene	112	70-130
Hexane	109	70-130
1,1-Dichloroethane	102	70-130
2-Butanone (Methyl Ethyl Ketone)	110	70-130
cis-1,2-Dichloroethene	95	70-130
Tetrahydrofuran	109	70-130
Chloroform	102	70-130
1,1,1-Trichloroethane	104	70-130
Cyclohexane	109	70-130
Carbon Tetrachloride	110	70-130
2,2,4-Trimethylpentane	138 Q	70-130
Benzene	106	70-130
1,2-Dichloroethane	102	70-130
Heptane	115	70-130
Trichloroethene	100	70-130
1,2-Dichloropropane	108	70-130
1,4-Dioxane	112	70-130
Bromodichloromethane	113	70-130
cis-1,3-Dichloropropene	116	70-130
4-Methyl-2-pentanone	117	70-130
Toluene	106	70-130
trans-1,3-Dichloropropene	110	70-130
1,1,2-Trichloroethane	113	70-130
Tetrachloroethene	100	70-130
2-Hexanone	112	70-130

Client Sample ID: LCS

Lab ID#: 1807058-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21071303	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 7/13/18 08:21 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	122	70-130
1,2-Dibromoethane (EDB)	117	70-130
Chlorobenzene	104	70-130
Ethyl Benzene	110	70-130
m,p-Xylene	106	70-130
o-Xylene	107	70-130
Styrene	110	70-130
Bromoform	129	70-130
Cumene	107	70-130
1,1,2,2-Tetrachloroethane	119	70-130
Propylbenzene	99	70-130
4-Ethyltoluene	104	70-130
1,3,5-Trimethylbenzene	114	70-130
1,2,4-Trimethylbenzene	114	70-130
1,3-Dichlorobenzene	95	70-130
1,4-Dichlorobenzene	91	70-130
alpha-Chlorotoluene	111	70-130
1,2-Dichlorobenzene	89	70-130
1,2,4-Trichlorobenzene	92	70-130
Hexachlorobutadiene	73	70-130

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	101	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	96	70-130



Air Toxics

Client Sample ID: LCS D

Lab ID#: 1807058-05AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21071304	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	7/13/18 09:27 AM

Compound	%Recovery	Method Limits
Freon 12	109	70-130
Freon 114	99	70-130
Chloromethane	101	70-130
Vinyl Chloride	104	70-130
1,3-Butadiene	104	70-130
Bromomethane	110	70-130
Chloroethane	108	70-130
Freon 11	99	70-130
Ethanol	120	70-130
Freon 113	98	70-130
1,1-Dichloroethene	100	70-130
Acetone	101	70-130
2-Propanol	105	70-130
Carbon Disulfide	106	70-130
3-Chloropropene	122	70-130
Methylene Chloride	99	70-130
Methyl tert-butyl ether	103	70-130
trans-1,2-Dichloroethene	112	70-130
Hexane	110	70-130
1,1-Dichloroethane	103	70-130
2-Butanone (Methyl Ethyl Ketone)	112	70-130
cis-1,2-Dichloroethene	95	70-130
Tetrahydrofuran	111	70-130
Chloroform	103	70-130
1,1,1-Trichloroethane	104	70-130
Cyclohexane	111	70-130
Carbon Tetrachloride	111	70-130
2,2,4-Trimethylpentane	107	70-130
Benzene	107	70-130
1,2-Dichloroethane	104	70-130
Heptane	116	70-130
Trichloroethene	102	70-130
1,2-Dichloropropane	111	70-130
1,4-Dioxane	115	70-130
Bromodichloromethane	117	70-130
cis-1,3-Dichloropropene	120	70-130
4-Methyl-2-pentanone	123	70-130
Toluene	109	70-130
trans-1,3-Dichloropropene	116	70-130
1,1,2-Trichloroethane	118	70-130
Tetrachloroethene	106	70-130
2-Hexanone	120	70-130

Client Sample ID: LCSD

Lab ID#: 1807058-05AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21071304	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 7/13/18 09:27 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	126	70-130
1,2-Dibromoethane (EDB)	124	70-130
Chlorobenzene	109	70-130
Ethyl Benzene	115	70-130
m,p-Xylene	114	70-130
o-Xylene	115	70-130
Styrene	120	70-130
Bromoform	134 Q	70-130
Cumene	115	70-130
1,1,2,2-Tetrachloroethane	124	70-130
Propylbenzene	113	70-130
4-Ethyltoluene	119	70-130
1,3,5-Trimethylbenzene	128	70-130
1,2,4-Trimethylbenzene	131 Q	70-130
1,3-Dichlorobenzene	102	70-130
1,4-Dichlorobenzene	101	70-130
alpha-Chlorotoluene	121	70-130
1,2-Dichlorobenzene	99	70-130
1,2,4-Trichlorobenzene	105	70-130
Hexachlorobutadiene	91	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