

8/7/2017

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

Jefferson City MO 65109

Project Name: Bridgeton Landfill

Project #:

Workorder #: 1707384

Dear Mr. Curt Lueckenhoff

The following report includes the data for the above referenced project for sample(s) received on 7/25/2017 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 #: 1707384

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. #	3ESP171236; 3ESP171181
FAX:	573-526-3350	PROJECT #	Bridgeton Landfill
DATE RECEIVED:	07/25/2017	CONTACT:	Brian Whittaker
DATE COMPLETED:	08/07/2017		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	D1 (172352)	Modified TO-15	6.5 "Hg	5psi
02A	U1 (172353)	Modified TO-15	7.0 "Hg	5psi
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: 08/07/17

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
 TX NELAP - T104704434-16-11, UT NELAP CA0093332016-7, VA NELAP - 8113, WA NELAP - C935
 Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
 Accreditation number: CA300005, Effective date: 10/18/2016, Expiration date: 10/17/2017.

Eurofins Air Toxics Inc. certifies that the test results contained in this report meet all requirements of the NELAC standards

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LABORATORY NARRATIVE
Modified TO-15
Missouri Dept. of Natural Resources
Workorder# 1707384

Two 6 Liter Summa Canister (100% Cert Ambient) samples were received on July 25, 2017. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

<i>Requirement</i>	<i>TO-15</i>	<i>ATL Modifications</i>
Initial Calibration	</=30% RSD with 2 compounds allowed out to < 40% RSD	</=30% RSD with 4 compounds allowed out to < 40% RSD
Blank and standards	Zero Air	UHP Nitrogen provides a higher purity gas matrix than zero air

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

All Quality Control Limit exceedances and affected sample results are noted by flags. Each flag is defined at the bottom of this Case Narrative and on each Sample Result Summary page.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

- B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).
- J - Estimated value.
- E - Exceeds instrument calibration range.
- S - Saturated peak.
- Q - Exceeds quality control limits.
- U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.
- UJ- Non-detected compound associated with low bias in the CCV
- N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

- a-File was requantified
- b-File was quantified by a second column and detector
- r1-File was requantified for the purpose of reissue

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

Client Sample ID: D1 (172352)

Lab ID#: 1707384-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.17	0.47	0.84	2.3
Ethanol	0.86	5.5	1.6	10
Acetone	0.86	12	2.0	28
2-Propanol	0.86	6.1	2.1	15
Methylene Chloride	0.34	0.49	1.2	1.7
Hexane	0.17	0.61	0.60	2.1
2-Butanone (Methyl Ethyl Ketone)	0.86	1.6	2.5	4.8
Heptane	0.17	0.27	0.70	1.1
Toluene	0.17	0.29	0.64	1.1

Client Sample ID: U1 (172353)

Lab ID#: 1707384-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.18	0.45	0.86	2.2
Freon 11	0.18	0.22	0.98	1.2
Ethanol	0.88	7.7	1.6	14
Acetone	0.88	21	2.1	50
2-Propanol	0.88	9.8	2.2	24
Methylene Chloride	0.35	0.62	1.2	2.2
Hexane	0.18	0.23	0.62	0.82
2-Butanone (Methyl Ethyl Ketone)	0.88	3.5	2.6	10
Benzene	0.18	0.19	0.56	0.61
Heptane	0.18	0.31	0.72	1.3
Toluene	0.18	0.33	0.66	1.2



Air Toxics

Client Sample ID: D1 (172352)

Lab ID#: 1707384-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21072709	Date of Collection:	7/19/17 1:45:00 PM
Dil. Factor:	1.71	Date of Analysis:	7/27/17 02:04 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.17	0.47	0.84	2.3
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	Not Detected	0.96	Not Detected
Ethanol	0.86	5.5	1.6	10
Freon 113	0.17	Not Detected	1.3	Not Detected
1,1-Dichloroethene	0.17	Not Detected	0.68	Not Detected
Acetone	0.86	12	2.0	28
2-Propanol	0.86	6.1	2.1	15
Carbon Disulfide	0.86	Not Detected	2.7	Not Detected
3-Chloropropene	0.86	Not Detected	2.7	Not Detected
Methylene Chloride	0.34	0.49	1.2	1.7
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	0.61	0.60	2.1
1,1-Dichloroethane	0.17	Not Detected	0.69	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.86	1.6	2.5	4.8
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	0.83	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	0.27	0.70	1.1
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	0.29	0.64	1.1
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



Air Toxics

Client Sample ID: D1 (172352)

Lab ID#: 1707384-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21072709	Date of Collection: 7/19/17 1:45:00 PM
Dil. Factor:	1.71	Date of Analysis: 7/27/17 02:04 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

Container Type: 6 Liter Summa Canister (100% Cert Ambient)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	117	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	100	70-130



Air Toxics

Client Sample ID: U1 (172353)

Lab ID#: 1707384-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21072710	Date of Collection:	7/19/17 2:00:00 PM
Dil. Factor:	1.75	Date of Analysis:	7/27/17 02:37 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.18	0.45	0.86	2.2
Freon 114	0.18	Not Detected	1.2	Not Detected
Chloromethane	0.88	Not Detected	1.8	Not Detected
Vinyl Chloride	0.18	Not Detected	0.45	Not Detected
1,3-Butadiene	0.18	Not Detected	0.39	Not Detected
Bromomethane	0.88	Not Detected	3.4	Not Detected
Chloroethane	0.88	Not Detected	2.3	Not Detected
Freon 11	0.18	0.22	0.98	1.2
Ethanol	0.88	7.7	1.6	14
Freon 113	0.18	Not Detected	1.3	Not Detected
1,1-Dichloroethene	0.18	Not Detected	0.69	Not Detected
Acetone	0.88	21	2.1	50
2-Propanol	0.88	9.8	2.2	24
Carbon Disulfide	0.88	Not Detected	2.7	Not Detected
3-Chloropropene	0.88	Not Detected	2.7	Not Detected
Methylene Chloride	0.35	0.62	1.2	2.2
Methyl tert-butyl ether	0.18	Not Detected	0.63	Not Detected
trans-1,2-Dichloroethene	0.18	Not Detected	0.69	Not Detected
Hexane	0.18	0.23	0.62	0.82
1,1-Dichloroethane	0.18	Not Detected	0.71	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.88	3.5	2.6	10
cis-1,2-Dichloroethene	0.18	Not Detected	0.69	Not Detected
Tetrahydrofuran	0.88	Not Detected	2.6	Not Detected
Chloroform	0.18	Not Detected	0.85	Not Detected
1,1,1-Trichloroethane	0.18	Not Detected	0.95	Not Detected
Cyclohexane	0.18	Not Detected	0.60	Not Detected
Carbon Tetrachloride	0.18	Not Detected	1.1	Not Detected
2,2,4-Trimethylpentane	0.88	Not Detected	4.1	Not Detected
Benzene	0.18	0.19	0.56	0.61
1,2-Dichloroethane	0.18	Not Detected	0.71	Not Detected
Heptane	0.18	0.31	0.72	1.3
Trichloroethene	0.18	Not Detected	0.94	Not Detected
1,2-Dichloropropane	0.18	Not Detected	0.81	Not Detected
1,4-Dioxane	0.18	Not Detected	0.63	Not Detected
Bromodichloromethane	0.18	Not Detected	1.2	Not Detected
cis-1,3-Dichloropropene	0.18	Not Detected	0.79	Not Detected
4-Methyl-2-pentanone	0.18	Not Detected	0.72	Not Detected
Toluene	0.18	0.33	0.66	1.2
trans-1,3-Dichloropropene	0.18	Not Detected	0.79	Not Detected
1,1,2-Trichloroethane	0.18	Not Detected	0.95	Not Detected
Tetrachloroethene	0.18	Not Detected	1.2	Not Detected
2-Hexanone	0.88	Not Detected	3.6	Not Detected



Client Sample ID: U1 (172353)

Lab ID#: 1707384-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21072710	Date of Collection: 7/19/17 2:00:00 PM
Dil. Factor:	1.75	Date of Analysis: 7/27/17 02:37 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	1.3	Not Detected
Chlorobenzene	0.18	Not Detected	0.80	Not Detected
Ethyl Benzene	0.18	Not Detected	0.76	Not Detected
m,p-Xylene	0.18	Not Detected	0.76	Not Detected
o-Xylene	0.18	Not Detected	0.76	Not Detected
Styrene	0.18	Not Detected	0.74	Not Detected
Bromoform	0.18	Not Detected	1.8	Not Detected
Cumene	0.18	Not Detected	0.86	Not Detected
1,1,2,2-Tetrachloroethane	0.18	Not Detected	1.2	Not Detected
Propylbenzene	0.18	Not Detected	0.86	Not Detected
4-Ethyltoluene	0.18	Not Detected	0.86	Not Detected
1,3,5-Trimethylbenzene	0.18	Not Detected	0.86	Not Detected
1,2,4-Trimethylbenzene	0.18	Not Detected	0.86	Not Detected
1,3-Dichlorobenzene	0.18	Not Detected	1.0	Not Detected
1,4-Dichlorobenzene	0.18	Not Detected	1.0	Not Detected
alpha-Chlorotoluene	0.18	Not Detected	0.90	Not Detected
1,2-Dichlorobenzene	0.18	Not Detected	1.0	Not Detected
1,2,4-Trichlorobenzene	0.88	Not Detected	6.5	Not Detected
Hexachlorobutadiene	0.88	Not Detected	9.3	Not Detected

Container Type: 6 Liter Summa Canister (100% Cert Ambient)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	114	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	99	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1707384-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21072706	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	7/27/17 11:32 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#: 1707384-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21072706	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 7/27/17 11:32 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	119	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	94	70-130



Air Toxics

Client Sample ID: CCV

Lab ID#: 1707384-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21072702	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 7/27/17 08:54 AM

Compound	%Recovery
Freon 12	95
Freon 114	89
Chloromethane	88
Vinyl Chloride	89
1,3-Butadiene	94
Bromomethane	110
Chloroethane	93
Freon 11	89
Ethanol	96
Freon 113	87
1,1-Dichloroethene	98
Acetone	94
2-Propanol	92
Carbon Disulfide	94
3-Chloropropene	107
Methylene Chloride	82
Methyl tert-butyl ether	98
trans-1,2-Dichloroethene	92
Hexane	100
1,1-Dichloroethane	92
2-Butanone (Methyl Ethyl Ketone)	98
cis-1,2-Dichloroethene	95
Tetrahydrofuran	97
Chloroform	91
1,1,1-Trichloroethane	90
Cyclohexane	100
Carbon Tetrachloride	104
2,2,4-Trimethylpentane	106
Benzene	92
1,2-Dichloroethane	90
Heptane	99
Trichloroethene	91
1,2-Dichloropropane	93
1,4-Dioxane	99
Bromodichloromethane	97
cis-1,3-Dichloropropene	99
4-Methyl-2-pentanone	104
Toluene	93
trans-1,3-Dichloropropene	99
1,1,2-Trichloroethane	96
Tetrachloroethene	91
2-Hexanone	103



Air Toxics

Client Sample ID: CCV

Lab ID#: 1707384-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21072702	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 7/27/17 08:54 AM

Compound	%Recovery
Dibromochloromethane	100
1,2-Dibromoethane (EDB)	100
Chlorobenzene	92
Ethyl Benzene	98
m,p-Xylene	100
o-Xylene	102
Styrene	103
Bromoform	108
Cumene	103
1,1,2,2-Tetrachloroethane	98
Propylbenzene	98
4-Ethyltoluene	100
1,3,5-Trimethylbenzene	103
1,2,4-Trimethylbenzene	102
1,3-Dichlorobenzene	92
1,4-Dichlorobenzene	91
alpha-Chlorotoluene	103
1,2-Dichlorobenzene	90
1,2,4-Trichlorobenzene	103
Hexachlorobutadiene	91

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	95	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	101	70-130



Air Toxics

Client Sample ID: LCS

Lab ID#: 1707384-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21072703	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	7/27/17 09:37 AM

Compound	%Recovery	Method Limits
Freon 12	104	70-130
Freon 114	100	70-130
Chloromethane	97	70-130
Vinyl Chloride	100	70-130
1,3-Butadiene	100	70-130
Bromomethane	121	70-130
Chloroethane	102	70-130
Freon 11	99	70-130
Ethanol	104	70-130
Freon 113	93	70-130
1,1-Dichloroethene	104	70-130
Acetone	99	70-130
2-Propanol	105	70-130
Carbon Disulfide	90	70-130
3-Chloropropene	105	70-130
Methylene Chloride	89	70-130
Methyl tert-butyl ether	105	70-130
trans-1,2-Dichloroethene	87	70-130
Hexane	108	70-130
1,1-Dichloroethane	99	70-130
2-Butanone (Methyl Ethyl Ketone)	105	70-130
cis-1,2-Dichloroethene	112	70-130
Tetrahydrofuran	105	70-130
Chloroform	98	70-130
1,1,1-Trichloroethane	98	70-130
Cyclohexane	108	70-130
Carbon Tetrachloride	50 Q	70-130
2,2,4-Trimethylpentane	117	70-130
Benzene	101	70-130
1,2-Dichloroethane	99	70-130
Heptane	110	70-130
Trichloroethene	99	70-130
1,2-Dichloropropane	104	70-130
1,4-Dioxane	107	70-130
Bromodichloromethane	106	70-130
cis-1,3-Dichloropropene	104	70-130
4-Methyl-2-pentanone	119	70-130
Toluene	102	70-130
trans-1,3-Dichloropropene	108	70-130
1,1,2-Trichloroethane	104	70-130
Tetrachloroethene	97	70-130
2-Hexanone	117	70-130



Client Sample ID: LCS

Lab ID#: 1707384-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21072703	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 7/27/17 09:37 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	103	70-130
1,2-Dibromoethane (EDB)	109	70-130
Chlorobenzene	99	70-130
Ethyl Benzene	106	70-130
m,p-Xylene	107	70-130
o-Xylene	112	70-130
Styrene	117	70-130
Bromoform	108	70-130
Cumene	113	70-130
1,1,2,2-Tetrachloroethane	108	70-130
Propylbenzene	110	70-130
4-Ethyltoluene	112	70-130
1,3,5-Trimethylbenzene	114	70-130
1,2,4-Trimethylbenzene	113	70-130
1,3-Dichlorobenzene	98	70-130
1,4-Dichlorobenzene	98	70-130
alpha-Chlorotoluene	114	70-130
1,2-Dichlorobenzene	96	70-130
1,2,4-Trichlorobenzene	110	70-130
Hexachlorobutadiene	96	70-130

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

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



Air Toxics

Client Sample ID: LCS D

Lab ID#: 1707384-05AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21072704	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	7/27/17 10:07 AM

Compound	%Recovery	Method Limits
Freon 12	100	70-130
Freon 114	99	70-130
Chloromethane	96	70-130
Vinyl Chloride	99	70-130
1,3-Butadiene	101	70-130
Bromomethane	123	70-130
Chloroethane	103	70-130
Freon 11	100	70-130
Ethanol	107	70-130
Freon 113	93	70-130
1,1-Dichloroethene	104	70-130
Acetone	102	70-130
2-Propanol	110	70-130
Carbon Disulfide	90	70-130
3-Chloropropene	108	70-130
Methylene Chloride	89	70-130
Methyl tert-butyl ether	106	70-130
trans-1,2-Dichloroethene	87	70-130
Hexane	108	70-130
1,1-Dichloroethane	100	70-130
2-Butanone (Methyl Ethyl Ketone)	107	70-130
cis-1,2-Dichloroethene	113	70-130
Tetrahydrofuran	106	70-130
Chloroform	99	70-130
1,1,1-Trichloroethane	98	70-130
Cyclohexane	109	70-130
Carbon Tetrachloride	50 Q	70-130
2,2,4-Trimethylpentane	115	70-130
Benzene	101	70-130
1,2-Dichloroethane	100	70-130
Heptane	108	70-130
Trichloroethene	99	70-130
1,2-Dichloropropane	106	70-130
1,4-Dioxane	108	70-130
Bromodichloromethane	111	70-130
cis-1,3-Dichloropropene	105	70-130
4-Methyl-2-pentanone	121	70-130
Toluene	100	70-130
trans-1,3-Dichloropropene	110	70-130
1,1,2-Trichloroethane	106	70-130
Tetrachloroethene	101	70-130
2-Hexanone	123	70-130

Client Sample ID: LCSD

Lab ID#: 1707384-05AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21072704	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 7/27/17 10:07 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	107	70-130
1,2-Dibromoethane (EDB)	112	70-130
Chlorobenzene	100	70-130
Ethyl Benzene	108	70-130
m,p-Xylene	111	70-130
o-Xylene	119	70-130
Styrene	126	70-130
Bromoform	117	70-130
Cumene	122	70-130
1,1,2,2-Tetrachloroethane	117	70-130
Propylbenzene	117	70-130
4-Ethyltoluene	118	70-130
1,3,5-Trimethylbenzene	120	70-130
1,2,4-Trimethylbenzene	116	70-130
1,3-Dichlorobenzene	101	70-130
1,4-Dichlorobenzene	101	70-130
alpha-Chlorotoluene	121	70-130
1,2-Dichlorobenzene	101	70-130
1,2,4-Trichlorobenzene	112	70-130
Hexachlorobutadiene	101	70-130

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	97	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	110	70-130