

3/16/2018  
Mr. Curt Lueckenhoff  
Missouri Dept. of Natural Resources  
2710 West Main

Jefferson City MO 65109

Project Name: Bridgeton Landfill  
Project #:  
Workorder #: 1803073

Dear Mr. Curt Lueckenhoff

The following report includes the data for the above referenced project for sample(s) received on 3/5/2018 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 #: 1803073**

Work Order Summary

<b>CLIENT:</b>	Mr. Curt Lueckenhoff Missouri Dept. of Natural Resources 2710 West Main Jefferson City, MO 65109	<b>BILL TO:</b>	Accounts Payable Missouri Dept. of Natural Resources P.O Box 176 Jefferson City, MO 65102
<b>PHONE:</b>	573-526-3363	<b>P.O. #</b>	3ESP180645, 3ESP170712
<b>FAX:</b>	573-526-3350	<b>PROJECT #</b>	Bridgeton Landfill
<b>DATE RECEIVED:</b>	03/05/2018	<b>CONTACT:</b>	Brian Whittaker
<b>DATE COMPLETED:</b>	03/16/2018		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	D1 (180989)	Modified TO-15	5.1 "Hg	5 psi
02A	U1 (180990)	Modified TO-15	6.1 "Hg	5.1 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: 03/16/18

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

**LABORATORY NARRATIVE**  
**Modified TO-15**  
**Missouri Dept. of Natural Resources**  
**Workorder# 1803073**

Two 6 Liter Summa Canister (100% Certified) samples were received on March 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. 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 (180989)**

**Lab ID#: 1803073-01A**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.16	0.49	0.80	2.4
Freon 11	0.16	0.21	0.90	1.2
Ethanol	0.80	2.0	1.5	3.8
Acetone	0.80	3.3	1.9	8.0
2-Propanol	0.80	2.0	2.0	5.0
Toluene	0.16	0.18	0.61	0.70

**Client Sample ID: U1 (180990)**

**Lab ID#: 1803073-02A**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.17	0.43	0.84	2.1
Freon 11	0.17	0.20	0.95	1.2
Ethanol	0.84	2.6	1.6	4.9
Acetone	0.84	7.4	2.0	18
2-Propanol	0.84	1.3	2.1	3.3
2-Butanone (Methyl Ethyl Ketone)	0.84	1.8	2.5	5.2



Air Toxics

Client Sample ID: D1 (180989)

Lab ID#: 1803073-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21030807	Date of Collection:	2/27/18 1:25:00 PM
Dil. Factor:	1.61	Date of Analysis:	3/8/18 12:05 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.16	0.49	0.80	2.4
Freon 114	0.16	Not Detected	1.1	Not Detected
Chloromethane	0.80	Not Detected	1.7	Not Detected
Vinyl Chloride	0.16	Not Detected	0.41	Not Detected
1,3-Butadiene	0.16	Not Detected	0.36	Not Detected
Bromomethane	0.80	Not Detected	3.1	Not Detected
Chloroethane	0.80	Not Detected	2.1	Not Detected
Freon 11	0.16	0.21	0.90	1.2
Ethanol	0.80	2.0	1.5	3.8
Freon 113	0.16	Not Detected	1.2	Not Detected
1,1-Dichloroethene	0.16	Not Detected	0.64	Not Detected
Acetone	0.80	3.3	1.9	8.0
2-Propanol	0.80	2.0	2.0	5.0
Carbon Disulfide	0.80	Not Detected	2.5	Not Detected
3-Chloropropene	0.80	Not Detected	2.5	Not Detected
Methylene Chloride	0.32	Not Detected	1.1	Not Detected
Methyl tert-butyl ether	0.16	Not Detected	0.58	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.64	Not Detected
Hexane	0.16	Not Detected	0.57	Not Detected
1,1-Dichloroethane	0.16	Not Detected	0.65	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.80	Not Detected	2.4	Not Detected
cis-1,2-Dichloroethene	0.16	Not Detected	0.64	Not Detected
Tetrahydrofuran	0.80	Not Detected	2.4	Not Detected
Chloroform	0.16	Not Detected	0.79	Not Detected
1,1,1-Trichloroethane	0.16	Not Detected	0.88	Not Detected
Cyclohexane	0.16	Not Detected	0.55	Not Detected
Carbon Tetrachloride	0.16	Not Detected	1.0	Not Detected
2,2,4-Trimethylpentane	0.80	Not Detected	3.8	Not Detected
Benzene	0.16	Not Detected	0.51	Not Detected
1,2-Dichloroethane	0.16	Not Detected	0.65	Not Detected
Heptane	0.16	Not Detected	0.66	Not Detected
Trichloroethene	0.16	Not Detected	0.86	Not Detected
1,2-Dichloropropane	0.16	Not Detected	0.74	Not Detected
1,4-Dioxane	0.16	Not Detected	0.58	Not Detected
Bromodichloromethane	0.16	Not Detected	1.1	Not Detected
cis-1,3-Dichloropropene	0.16	Not Detected	0.73	Not Detected
4-Methyl-2-pentanone	0.16	Not Detected	0.66	Not Detected
Toluene	0.16	0.18	0.61	0.70
trans-1,3-Dichloropropene	0.16	Not Detected	0.73	Not Detected
1,1,2-Trichloroethane	0.16	Not Detected	0.88	Not Detected
Tetrachloroethene	0.16	Not Detected	1.1	Not Detected
2-Hexanone	0.80	Not Detected	3.3	Not Detected



Air Toxics

Client Sample ID: D1 (180989)

Lab ID#: 1803073-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21030807	Date of Collection:	2/27/18 1:25:00 PM
Dil. Factor:	1.61	Date of Analysis:	3/8/18 12:05 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	0.74	Not Detected
Ethyl Benzene	0.16	Not Detected	0.70	Not Detected
m,p-Xylene	0.16	Not Detected	0.70	Not Detected
o-Xylene	0.16	Not Detected	0.70	Not Detected
Styrene	0.16	Not Detected	0.68	Not Detected
Bromoform	0.16	Not Detected	1.7	Not Detected
Cumene	0.16	Not Detected	0.79	Not Detected
1,1,2,2-Tetrachloroethane	0.16	Not Detected	1.1	Not Detected
Propylbenzene	0.16	Not Detected	0.79	Not Detected
4-Ethyltoluene	0.16	Not Detected	0.79	Not Detected
1,3,5-Trimethylbenzene	0.16	Not Detected	0.79	Not Detected
1,2,4-Trimethylbenzene	0.16	Not Detected	0.79	Not Detected
1,3-Dichlorobenzene	0.16	Not Detected	0.97	Not Detected
1,4-Dichlorobenzene	0.16	Not Detected	0.97	Not Detected
alpha-Chlorotoluene	0.16	Not Detected	0.83	Not Detected
1,2-Dichlorobenzene	0.16	Not Detected	0.97	Not Detected
1,2,4-Trichlorobenzene	0.80	Not Detected	6.0	Not Detected
Hexachlorobutadiene	0.80	Not Detected	8.6	Not Detected

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	122	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	91	70-130



Air Toxics

Client Sample ID: U1 (180990)

Lab ID#: 1803073-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21030808	Date of Collection:	2/27/18 1:35:00 PM
Dil. Factor:	1.69	Date of Analysis:	3/8/18 12:37 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.17	0.43	0.84	2.1
Freon 114	0.17	Not Detected	1.2	Not Detected
Chloromethane	0.84	Not Detected	1.7	Not Detected
Vinyl Chloride	0.17	Not Detected	0.43	Not Detected
1,3-Butadiene	0.17	Not Detected	0.37	Not Detected
Bromomethane	0.84	Not Detected	3.3	Not Detected
Chloroethane	0.84	Not Detected	2.2	Not Detected
Freon 11	0.17	0.20	0.95	1.2
Ethanol	0.84	2.6	1.6	4.9
Freon 113	0.17	Not Detected	1.3	Not Detected
1,1-Dichloroethene	0.17	Not Detected	0.67	Not Detected
Acetone	0.84	7.4	2.0	18
2-Propanol	0.84	1.3	2.1	3.3
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	0.61	Not Detected
trans-1,2-Dichloroethene	0.17	Not Detected	0.67	Not Detected
Hexane	0.17	Not Detected	0.60	Not Detected
1,1-Dichloroethane	0.17	Not Detected	0.68	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.84	1.8	2.5	5.2
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	1.1	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	Not Detected	0.69	Not Detected
Trichloroethene	0.17	Not Detected	0.91	Not Detected
1,2-Dichloropropane	0.17	Not Detected	0.78	Not Detected
1,4-Dioxane	0.17	Not Detected	0.61	Not Detected
Bromodichloromethane	0.17	Not Detected	1.1	Not Detected
cis-1,3-Dichloropropene	0.17	Not Detected	0.77	Not Detected
4-Methyl-2-pentanone	0.17	Not Detected	0.69	Not Detected
Toluene	0.17	Not Detected	0.64	Not Detected
trans-1,3-Dichloropropene	0.17	Not Detected	0.77	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	3.5	Not Detected





Air Toxics

Client Sample ID: U1 (180990)

Lab ID#: 1803073-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21030808	Date of Collection:	2/27/18 1:35:00 PM
Dil. Factor:	1.69	Date of Analysis:	3/8/18 12:37 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.17	Not Detected	1.4	Not Detected
1,2-Dibromoethane (EDB)	0.17	Not Detected	1.3	Not Detected
Chlorobenzene	0.17	Not Detected	0.78	Not Detected
Ethyl Benzene	0.17	Not Detected	0.73	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	0.83	Not Detected
1,1,2,2-Tetrachloroethane	0.17	Not Detected	1.2	Not Detected
Propylbenzene	0.17	Not Detected	0.83	Not Detected
4-Ethyltoluene	0.17	Not Detected	0.83	Not Detected
1,3,5-Trimethylbenzene	0.17	Not Detected	0.83	Not Detected
1,2,4-Trimethylbenzene	0.17	Not Detected	0.83	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	6.3	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	115	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	91	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1803073-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21030806	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	3/8/18 11:03 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.10	Not Detected	0.49	Not Detected
Freon 114	0.10	Not Detected	0.70	Not Detected
Chloromethane	0.50	Not Detected	1.0	Not Detected
Vinyl Chloride	0.10	Not Detected	0.26	Not Detected
1,3-Butadiene	0.10	Not Detected	0.22	Not Detected
Bromomethane	0.50	Not Detected	1.9	Not Detected
Chloroethane	0.50	Not Detected	1.3	Not Detected
Freon 11	0.10	Not Detected	0.56	Not Detected
Ethanol	0.50	Not Detected	0.94	Not Detected
Freon 113	0.10	Not Detected	0.77	Not Detected
1,1-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Acetone	0.50	Not Detected	1.2	Not Detected
2-Propanol	0.50	Not Detected	1.2	Not Detected
Carbon Disulfide	0.50	Not Detected	1.6	Not Detected
3-Chloropropene	0.50	Not Detected	1.6	Not Detected
Methylene Chloride	0.20	Not Detected	0.69	Not Detected
Methyl tert-butyl ether	0.10	Not Detected	0.36	Not Detected
trans-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Hexane	0.10	Not Detected	0.35	Not Detected
1,1-Dichloroethane	0.10	Not Detected	0.40	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.50	Not Detected	1.5	Not Detected
cis-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
Chloroform	0.10	Not Detected	0.49	Not Detected
1,1,1-Trichloroethane	0.10	Not Detected	0.54	Not Detected
Cyclohexane	0.10	Not Detected	0.34	Not Detected
Carbon Tetrachloride	0.10	Not Detected	0.63	Not Detected
2,2,4-Trimethylpentane	0.50	Not Detected	2.3	Not Detected
Benzene	0.10	Not Detected	0.32	Not Detected
1,2-Dichloroethane	0.10	Not Detected	0.40	Not Detected
Heptane	0.10	Not Detected	0.41	Not Detected
Trichloroethene	0.10	Not Detected	0.54	Not Detected
1,2-Dichloropropane	0.10	Not Detected	0.46	Not Detected
1,4-Dioxane	0.10	Not Detected	0.36	Not Detected
Bromodichloromethane	0.10	Not Detected	0.67	Not Detected
cis-1,3-Dichloropropene	0.10	Not Detected	0.45	Not Detected
4-Methyl-2-pentanone	0.10	Not Detected	0.41	Not Detected
Toluene	0.10	Not Detected	0.38	Not Detected
trans-1,3-Dichloropropene	0.10	Not Detected	0.45	Not Detected
1,1,2-Trichloroethane	0.10	Not Detected	0.54	Not Detected
Tetrachloroethene	0.10	Not Detected	0.68	Not Detected
2-Hexanone	0.50	Not Detected	2.0	Not Detected

Client Sample ID: Lab Blank

Lab ID#: 1803073-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21030806	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 3/8/18 11:03 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.10	Not Detected	0.85	Not Detected
1,2-Dibromoethane (EDB)	0.10	Not Detected	0.77	Not Detected
Chlorobenzene	0.10	Not Detected	0.46	Not Detected
Ethyl Benzene	0.10	Not Detected	0.43	Not Detected
m,p-Xylene	0.10	Not Detected	0.43	Not Detected
o-Xylene	0.10	Not Detected	0.43	Not Detected
Styrene	0.10	Not Detected	0.42	Not Detected
Bromoform	0.10	Not Detected	1.0	Not Detected
Cumene	0.10	Not Detected	0.49	Not Detected
1,1,2,2-Tetrachloroethane	0.10	Not Detected	0.69	Not Detected
Propylbenzene	0.10	Not Detected	0.49	Not Detected
4-Ethyltoluene	0.10	Not Detected	0.49	Not Detected
1,3,5-Trimethylbenzene	0.10	Not Detected	0.49	Not Detected
1,2,4-Trimethylbenzene	0.10	Not Detected	0.49	Not Detected
1,3-Dichlorobenzene	0.10	Not Detected	0.60	Not Detected
1,4-Dichlorobenzene	0.10	Not Detected	0.60	Not Detected
alpha-Chlorotoluene	0.10	Not Detected	0.52	Not Detected
1,2-Dichlorobenzene	0.10	Not Detected	0.60	Not Detected
1,2,4-Trichlorobenzene	0.50	Not Detected	3.7	Not Detected
Hexachlorobutadiene	0.50	Not Detected	5.3	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	119	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	93	70-130



Air Toxics

Client Sample ID: CCV

Lab ID#: 1803073-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21030802	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 3/8/18 07:57 AM

Compound	%Recovery
Freon 12	92
Freon 114	87
Chloromethane	85
Vinyl Chloride	92
1,3-Butadiene	94
Bromomethane	95
Chloroethane	91
Freon 11	88
Ethanol	85
Freon 113	87
1,1-Dichloroethene	93
Acetone	96
2-Propanol	89
Carbon Disulfide	93
3-Chloropropene	92
Methylene Chloride	89
Methyl tert-butyl ether	91
trans-1,2-Dichloroethene	89
Hexane	92
1,1-Dichloroethane	90
2-Butanone (Methyl Ethyl Ketone)	96
cis-1,2-Dichloroethene	92
Tetrahydrofuran	95
Chloroform	90
1,1,1-Trichloroethane	89
Cyclohexane	94
Carbon Tetrachloride	77
2,2,4-Trimethylpentane	99
Benzene	90
1,2-Dichloroethane	89
Heptane	95
Trichloroethene	102
1,2-Dichloropropane	91
1,4-Dioxane	94
Bromodichloromethane	96
cis-1,3-Dichloropropene	96
4-Methyl-2-pentanone	101
Toluene	89
trans-1,3-Dichloropropene	94
1,1,2-Trichloroethane	94
Tetrachloroethene	93
2-Hexanone	101

Client Sample ID: CCV

Lab ID#: 1803073-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21030802	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 3/8/18 07:57 AM

Compound	%Recovery
Dibromochloromethane	97
1,2-Dibromoethane (EDB)	95
Chlorobenzene	92
Ethyl Benzene	96
m,p-Xylene	92
o-Xylene	94
Styrene	96
Bromoform	99
Cumene	89
1,1,2,2-Tetrachloroethane	84
Propylbenzene	86
4-Ethyltoluene	96
1,3,5-Trimethylbenzene	103
1,2,4-Trimethylbenzene	103
1,3-Dichlorobenzene	77
1,4-Dichlorobenzene	76
alpha-Chlorotoluene	77
1,2-Dichlorobenzene	77
1,2,4-Trichlorobenzene	72
Hexachlorobutadiene	77

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	98	70-130

Client Sample ID: LCS

Lab ID#: 1803073-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21030803	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 3/8/18 08:39 AM

Compound	%Recovery	Method Limits
Freon 12	95	70-130
Freon 114	93	70-130
Chloromethane	85	70-130
Vinyl Chloride	94	70-130
1,3-Butadiene	91	70-130
Bromomethane	100	70-130
Chloroethane	96	70-130
Freon 11	91	70-130
Ethanol	89	70-130
Freon 113	86	70-130
1,1-Dichloroethene	90	70-130
Acetone	90	70-130
2-Propanol	94	70-130
Carbon Disulfide	80	70-130
3-Chloropropene	90	70-130
Methylene Chloride	89	70-130
Methyl tert-butyl ether	92	70-130
trans-1,2-Dichloroethene	78	70-130
Hexane	92	70-130
1,1-Dichloroethane	90	70-130
2-Butanone (Methyl Ethyl Ketone)	94	70-130
cis-1,2-Dichloroethene	100	70-130
Tetrahydrofuran	94	70-130
Chloroform	90	70-130
1,1,1-Trichloroethane	88	70-130
Cyclohexane	95	70-130
Carbon Tetrachloride	93	70-130
2,2,4-Trimethylpentane	103	70-130
Benzene	92	70-130
1,2-Dichloroethane	89	70-130
Heptane	99	70-130
Trichloroethene	92	70-130
1,2-Dichloropropane	94	70-130
1,4-Dioxane	93	70-130
Bromodichloromethane	99	70-130
cis-1,3-Dichloropropene	93	70-130
4-Methyl-2-pentanone	103	70-130
Toluene	93	70-130
trans-1,3-Dichloropropene	96	70-130
1,1,2-Trichloroethane	94	70-130
Tetrachloroethene	94	70-130
2-Hexanone	99	70-130

Client Sample ID: LCS

Lab ID#: 1803073-05A

**MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN**

<b>File Name:</b>	<b>21030803</b>	<b>Date of Collection: NA</b>
<b>Dil. Factor:</b>	<b>1.00</b>	<b>Date of Analysis: 3/8/18 08:39 AM</b>

<b>Compound</b>	<b>%Recovery</b>	<b>Method Limits</b>
Dibromochloromethane	102	70-130
1,2-Dibromoethane (EDB)	98	70-130
Chlorobenzene	96	70-130
Ethyl Benzene	104	70-130
m,p-Xylene	104	70-130
o-Xylene	108	70-130
Styrene	106	70-130
Bromoform	114	70-130
Cumene	98	70-130
1,1,2,2-Tetrachloroethane	106	70-130
Propylbenzene	97	70-130
4-Ethyltoluene	106	70-130
1,3,5-Trimethylbenzene	107	70-130
1,2,4-Trimethylbenzene	105	70-130
1,3-Dichlorobenzene	91	70-130
1,4-Dichlorobenzene	89	70-130
alpha-Chlorotoluene	105	70-130
1,2-Dichlorobenzene	92	70-130
1,2,4-Trichlorobenzene	63 Q	70-130
Hexachlorobutadiene	72	70-130

Q = Exceeds Quality Control limits.

**Container Type: NA - Not Applicable**

<b>Surrogates</b>	<b>%Recovery</b>	<b>Method Limits</b>
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	99	70-130

Client Sample ID: LCSD

Lab ID#: 1803073-05AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21030804	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 3/8/18 09:16 AM

Compound	%Recovery	Method Limits
Freon 12	96	70-130
Freon 114	94	70-130
Chloromethane	87	70-130
Vinyl Chloride	97	70-130
1,3-Butadiene	93	70-130
Bromomethane	103	70-130
Chloroethane	98	70-130
Freon 11	93	70-130
Ethanol	94	70-130
Freon 113	88	70-130
1,1-Dichloroethene	94	70-130
Acetone	92	70-130
2-Propanol	98	70-130
Carbon Disulfide	82	70-130
3-Chloropropene	92	70-130
Methylene Chloride	91	70-130
Methyl tert-butyl ether	96	70-130
trans-1,2-Dichloroethene	79	70-130
Hexane	96	70-130
1,1-Dichloroethane	92	70-130
2-Butanone (Methyl Ethyl Ketone)	97	70-130
cis-1,2-Dichloroethene	102	70-130
Tetrahydrofuran	97	70-130
Chloroform	92	70-130
1,1,1-Trichloroethane	92	70-130
Cyclohexane	96	70-130
Carbon Tetrachloride	96	70-130
2,2,4-Trimethylpentane	104	70-130
Benzene	94	70-130
1,2-Dichloroethane	92	70-130
Heptane	99	70-130
Trichloroethene	93	70-130
1,2-Dichloropropane	96	70-130
1,4-Dioxane	95	70-130
Bromodichloromethane	102	70-130
cis-1,3-Dichloropropene	96	70-130
4-Methyl-2-pentanone	106	70-130
Toluene	95	70-130
trans-1,3-Dichloropropene	98	70-130
1,1,2-Trichloroethane	97	70-130
Tetrachloroethene	96	70-130
2-Hexanone	102	70-130



Client Sample ID: LCSD

Lab ID#: 1803073-05AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21030804	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 3/8/18 09:16 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	105	70-130
1,2-Dibromoethane (EDB)	102	70-130
Chlorobenzene	95	70-130
Ethyl Benzene	100	70-130
m,p-Xylene	96	70-130
o-Xylene	100	70-130
Styrene	97	70-130
Bromoform	115	70-130
Cumene	89	70-130
1,1,2,2-Tetrachloroethane	109	70-130
Propylbenzene	93	70-130
4-Ethyltoluene	104	70-130
1,3,5-Trimethylbenzene	110	70-130
1,2,4-Trimethylbenzene	110	70-130
1,3-Dichlorobenzene	90	70-130
1,4-Dichlorobenzene	90	70-130
alpha-Chlorotoluene	101	70-130
1,2-Dichlorobenzene	90	70-130
1,2,4-Trichlorobenzene	71	70-130
Hexachlorobutadiene	78	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	101	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	89	70-130