

1/25/2018

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

Jefferson City MO 65109

Project Name: Bridgeton Landfill

Project #:

Workorder #: 1801174

Dear Mr. Curt Lueckenhoff

The following report includes the data for the above referenced project for sample(s) received on 1/12/2018 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 #: 1801174

Work Order Summary

CLIENT: PHONE: FAX: DATE RECEIVED: DATE COMPLETED:	Mr. Curt Lueckenhoff Missouri Dept. of Natural Resources 2710 West Main Jefferson City, MO 65109 573-526-3363 573-526-3350 01/12/2018 01/25/2018	BILL TO: P.O. # PROJECT # CONTACT:	Accounts Payable Missouri Dept. of Natural Resources P.O Box 176 Jefferson City, MO 65102 3ESP180446 Bridgeton Landfill Brian Whittaker
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<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	D1 (174056)	Modified TO-15	3.5 "Hg	4.8 psi
02A	U1 (174057)	Modified TO-15	3.9 "Hg	5 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: 01/25/18

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# 1801174

Two 6 Liter Summa Canister (100% Certified) samples were received on January 12, 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	$\leq 30\%$ RSD with 2 compounds allowed out to $< 40\%$ RSD	$\leq 30\%$ 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 CCV 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 (174056)

Lab ID#: 1801174-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.15	0.38	0.74	1.9
Freon 11	0.15	0.21	0.84	1.2
Ethanol	0.75	2.4	1.4	4.5
Acetone	0.75	1.5	1.8	3.6
Hexane	0.15	0.52	0.53	1.8
Benzene	0.15	0.15	0.48	0.48
Heptane	0.15	0.34	0.61	1.4
Toluene	0.15	0.15	0.56	0.56

Client Sample ID: U1 (174057)

Lab ID#: 1801174-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.15	0.35	0.76	1.7
Freon 11	0.15	0.20	0.86	1.2
Ethanol	0.77	1.1	1.4	2.1
Acetone	0.77	2.5	1.8	5.9
Methylene Chloride	0.31	0.48	1.1	1.7
Cyclohexane	0.15	0.39	0.53	1.4
Toluene	0.15	1.1	0.58	4.0

Client Sample ID: D1 (174056)

Lab ID#: 1801174-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21011522	Date of Collection:	1/5/18 1:15:00 PM
Dil. Factor:	1.50	Date of Analysis:	1/15/18 10:01 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.15	0.38	0.74	1.9
Freon 114	0.15	Not Detected	1.0	Not Detected
Chloromethane	0.75	Not Detected	1.5	Not Detected
Vinyl Chloride	0.15	Not Detected	0.38	Not Detected
1,3-Butadiene	0.15	Not Detected	0.33	Not Detected
Bromomethane	0.75	Not Detected	2.9	Not Detected
Chloroethane	0.75	Not Detected	2.0	Not Detected
Freon 11	0.15	0.21	0.84	1.2
Ethanol	0.75	2.4	1.4	4.5
Freon 113	0.15	Not Detected	1.1	Not Detected
1,1-Dichloroethene	0.15	Not Detected	0.59	Not Detected
Acetone	0.75	1.5	1.8	3.6
2-Propanol	0.75	Not Detected	1.8	Not Detected
Carbon Disulfide	0.75	Not Detected	2.3	Not Detected
3-Chloropropene	0.75	Not Detected	2.3	Not Detected
Methylene Chloride	0.30	Not Detected	1.0	Not Detected
Methyl tert-butyl ether	0.15	Not Detected	0.54	Not Detected
trans-1,2-Dichloroethene	0.15	Not Detected	0.59	Not Detected
Hexane	0.15	0.52	0.53	1.8
1,1-Dichloroethane	0.15	Not Detected	0.61	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.75	Not Detected	2.2	Not Detected
cis-1,2-Dichloroethene	0.15	Not Detected	0.59	Not Detected
Tetrahydrofuran	0.75	Not Detected	2.2	Not Detected
Chloroform	0.15	Not Detected	0.73	Not Detected
1,1,1-Trichloroethane	0.15	Not Detected	0.82	Not Detected
Cyclohexane	0.15	Not Detected	0.52	Not Detected
Carbon Tetrachloride	0.15	Not Detected	0.94	Not Detected
2,2,4-Trimethylpentane	0.75	Not Detected	3.5	Not Detected
Benzene	0.15	0.15	0.48	0.48
1,2-Dichloroethane	0.15	Not Detected	0.61	Not Detected
Heptane	0.15	0.34	0.61	1.4
Trichloroethene	0.15	Not Detected	0.81	Not Detected
1,2-Dichloropropane	0.15	Not Detected	0.69	Not Detected
1,4-Dioxane	0.15	Not Detected	0.54	Not Detected
Bromodichloromethane	0.15	Not Detected	1.0	Not Detected
cis-1,3-Dichloropropene	0.15	Not Detected	0.68	Not Detected
4-Methyl-2-pentanone	0.15	Not Detected	0.61	Not Detected
Toluene	0.15	0.15	0.56	0.56
trans-1,3-Dichloropropene	0.15	Not Detected	0.68	Not Detected
1,1,2-Trichloroethane	0.15	Not Detected	0.82	Not Detected
Tetrachloroethene	0.15	Not Detected	1.0	Not Detected
2-Hexanone	0.75	Not Detected	3.1	Not Detected



Air Toxics

Client Sample ID: D1 (174056)

Lab ID#: 1801174-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21011522	Date of Collection:	1/5/18 1:15:00 PM
Dil. Factor:	1.50	Date of Analysis:	1/15/18 10:01 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.15	Not Detected	1.3	Not Detected
1,2-Dibromoethane (EDB)	0.15	Not Detected	1.2	Not Detected
Chlorobenzene	0.15	Not Detected	0.69	Not Detected
Ethyl Benzene	0.15	Not Detected	0.65	Not Detected
m,p-Xylene	0.15	Not Detected	0.65	Not Detected
o-Xylene	0.15	Not Detected	0.65	Not Detected
Styrene	0.15	Not Detected	0.64	Not Detected
Bromoform	0.15	Not Detected	1.6	Not Detected
Cumene	0.15	Not Detected	0.74	Not Detected
1,1,2,2-Tetrachloroethane	0.15	Not Detected	1.0	Not Detected
Propylbenzene	0.15	Not Detected	0.74	Not Detected
4-Ethyltoluene	0.15	Not Detected	0.74	Not Detected
1,3,5-Trimethylbenzene	0.15	Not Detected	0.74	Not Detected
1,2,4-Trimethylbenzene	0.15	Not Detected	0.74	Not Detected
1,3-Dichlorobenzene	0.15	Not Detected	0.90	Not Detected
1,4-Dichlorobenzene	0.15	Not Detected	0.90	Not Detected
alpha-Chlorotoluene	0.15	Not Detected	0.78	Not Detected
1,2-Dichlorobenzene	0.15	Not Detected	0.90	Not Detected
1,2,4-Trichlorobenzene	0.75	Not Detected	5.6	Not Detected
Hexachlorobutadiene	0.75	Not Detected	8.0	Not Detected

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	123	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	92	70-130

Client Sample ID: U1 (174057)

Lab ID#: 1801174-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21011523	Date of Collection:	1/5/18 1:25:00 PM
Dil. Factor:	1.54	Date of Analysis:	1/15/18 10:33 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.15	0.35	0.76	1.7
Freon 114	0.15	Not Detected	1.1	Not Detected
Chloromethane	0.77	Not Detected	1.6	Not Detected
Vinyl Chloride	0.15	Not Detected	0.39	Not Detected
1,3-Butadiene	0.15	Not Detected	0.34	Not Detected
Bromomethane	0.77	Not Detected	3.0	Not Detected
Chloroethane	0.77	Not Detected	2.0	Not Detected
Freon 11	0.15	0.20	0.86	1.2
Ethanol	0.77	1.1	1.4	2.1
Freon 113	0.15	Not Detected	1.2	Not Detected
1,1-Dichloroethene	0.15	Not Detected	0.61	Not Detected
Acetone	0.77	2.5	1.8	5.9
2-Propanol	0.77	Not Detected	1.9	Not Detected
Carbon Disulfide	0.77	Not Detected	2.4	Not Detected
3-Chloropropene	0.77	Not Detected	2.4	Not Detected
Methylene Chloride	0.31	0.48	1.1	1.7
Methyl tert-butyl ether	0.15	Not Detected	0.56	Not Detected
trans-1,2-Dichloroethene	0.15	Not Detected	0.61	Not Detected
Hexane	0.15	Not Detected	0.54	Not Detected
1,1-Dichloroethane	0.15	Not Detected	0.62	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.77	Not Detected	2.3	Not Detected
cis-1,2-Dichloroethene	0.15	Not Detected	0.61	Not Detected
Tetrahydrofuran	0.77	Not Detected	2.3	Not Detected
Chloroform	0.15	Not Detected	0.75	Not Detected
1,1,1-Trichloroethane	0.15	Not Detected	0.84	Not Detected
Cyclohexane	0.15	0.39	0.53	1.4
Carbon Tetrachloride	0.15	Not Detected	0.97	Not Detected
2,2,4-Trimethylpentane	0.77	Not Detected	3.6	Not Detected
Benzene	0.15	Not Detected	0.49	Not Detected
1,2-Dichloroethane	0.15	Not Detected	0.62	Not Detected
Heptane	0.15	Not Detected	0.63	Not Detected
Trichloroethene	0.15	Not Detected	0.83	Not Detected
1,2-Dichloropropane	0.15	Not Detected	0.71	Not Detected
1,4-Dioxane	0.15	Not Detected	0.55	Not Detected
Bromodichloromethane	0.15	Not Detected	1.0	Not Detected
cis-1,3-Dichloropropene	0.15	Not Detected	0.70	Not Detected
4-Methyl-2-pentanone	0.15	Not Detected	0.63	Not Detected
Toluene	0.15	1.1	0.58	4.0
trans-1,3-Dichloropropene	0.15	Not Detected	0.70	Not Detected
1,1,2-Trichloroethane	0.15	Not Detected	0.84	Not Detected
Tetrachloroethene	0.15	Not Detected	1.0	Not Detected
2-Hexanone	0.77	Not Detected	3.2	Not Detected

Client Sample ID: U1 (174057)

Lab ID#: 1801174-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21011523	Date of Collection: 1/5/18 1:25:00 PM
Dil. Factor:	1.54	Date of Analysis: 1/15/18 10:33 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.15	Not Detected	1.3	Not Detected
1,2-Dibromoethane (EDB)	0.15	Not Detected	1.2	Not Detected
Chlorobenzene	0.15	Not Detected	0.71	Not Detected
Ethyl Benzene	0.15	Not Detected	0.67	Not Detected
m,p-Xylene	0.15	Not Detected	0.67	Not Detected
o-Xylene	0.15	Not Detected	0.67	Not Detected
Styrene	0.15	Not Detected	0.66	Not Detected
Bromoform	0.15	Not Detected	1.6	Not Detected
Cumene	0.15	Not Detected	0.76	Not Detected
1,1,2,2-Tetrachloroethane	0.15	Not Detected	1.0	Not Detected
Propylbenzene	0.15	Not Detected	0.76	Not Detected
4-Ethyltoluene	0.15	Not Detected	0.76	Not Detected
1,3,5-Trimethylbenzene	0.15	Not Detected	0.76	Not Detected
1,2,4-Trimethylbenzene	0.15	Not Detected	0.76	Not Detected
1,3-Dichlorobenzene	0.15	Not Detected	0.92	Not Detected
1,4-Dichlorobenzene	0.15	Not Detected	0.92	Not Detected
alpha-Chlorotoluene	0.15	Not Detected	0.80	Not Detected
1,2-Dichlorobenzene	0.15	Not Detected	0.92	Not Detected
1,2,4-Trichlorobenzene	0.77	Not Detected	5.7	Not Detected
Hexachlorobutadiene	0.77	Not Detected	8.2	Not Detected

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	121	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	93	70-130

Client Sample ID: Lab Blank

Lab ID#: 1801174-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21011507	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 1/15/18 11:47 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#: 1801174-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21011507	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 1/15/18 11:47 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	113	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	98	70-130

Client Sample ID: CCV

Lab ID#: 1801174-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21011502	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 1/15/18 08:59 AM

Compound	%Recovery
Freon 12	98
Freon 114	99
Chloromethane	98
Vinyl Chloride	99
1,3-Butadiene	98
Bromomethane	115
Chloroethane	103
Freon 11	99
Ethanol	102
Freon 113	96
1,1-Dichloroethene	100
Acetone	100
2-Propanol	98
Carbon Disulfide	105
3-Chloropropene	106
Methylene Chloride	99
Methyl tert-butyl ether	100
trans-1,2-Dichloroethene	99
Hexane	100
1,1-Dichloroethane	100
2-Butanone (Methyl Ethyl Ketone)	104
cis-1,2-Dichloroethene	101
Tetrahydrofuran	100
Chloroform	101
1,1,1-Trichloroethane	97
Cyclohexane	101
Carbon Tetrachloride	97
2,2,4-Trimethylpentane	98
Benzene	102
1,2-Dichloroethane	98
Heptane	99
Trichloroethene	100
1,2-Dichloropropane	102
1,4-Dioxane	88
Bromodichloromethane	106
cis-1,3-Dichloropropene	108
4-Methyl-2-pentanone	94
Toluene	99
trans-1,3-Dichloropropene	107
1,1,2-Trichloroethane	101
Tetrachloroethene	99
2-Hexanone	95



Air Toxics

Client Sample ID: CCV

Lab ID#: 1801174-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21011502	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 1/15/18 08:59 AM

Compound	%Recovery
Dibromochloromethane	111
1,2-Dibromoethane (EDB)	103
Chlorobenzene	97
Ethyl Benzene	93
m,p-Xylene	93
o-Xylene	97
Styrene	96
Bromoform	121
Cumene	95
1,1,2,2-Tetrachloroethane	106
Propylbenzene	98
4-Ethyltoluene	105
1,3,5-Trimethylbenzene	135 Q
1,2,4-Trimethylbenzene	121
1,3-Dichlorobenzene	92
1,4-Dichlorobenzene	90
alpha-Chlorotoluene	102
1,2-Dichlorobenzene	92
1,2,4-Trichlorobenzene	91
Hexachlorobutadiene	109

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	105	70-130

Client Sample ID: LCS

Lab ID#: 1801174-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21011503	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 1/15/18 09:39 AM

Compound	%Recovery	Method Limits
Freon 12	90	70-130
Freon 114	92	70-130
Chloromethane	89	70-130
Vinyl Chloride	92	70-130
1,3-Butadiene	87	70-130
Bromomethane	107	70-130
Chloroethane	98	70-130
Freon 11	92	70-130
Ethanol	96	70-130
Freon 113	85	70-130
1,1-Dichloroethene	89	70-130
Acetone	87	70-130
2-Propanol	87	70-130
Carbon Disulfide	84	70-130
3-Chloropropene	89	70-130
Methylene Chloride	89	70-130
Methyl tert-butyl ether	89	70-130
trans-1,2-Dichloroethene	77	70-130
Hexane	91	70-130
1,1-Dichloroethane	91	70-130
2-Butanone (Methyl Ethyl Ketone)	90	70-130
cis-1,2-Dichloroethene	99	70-130
Tetrahydrofuran	88	70-130
Chloroform	91	70-130
1,1,1-Trichloroethane	88	70-130
Cyclohexane	92	70-130
Carbon Tetrachloride	87	70-130
2,2,4-Trimethylpentane	91	70-130
Benzene	95	70-130
1,2-Dichloroethane	89	70-130
Heptane	91	70-130
Trichloroethene	88	70-130
1,2-Dichloropropane	92	70-130
1,4-Dioxane	75	70-130
Bromodichloromethane	96	70-130
cis-1,3-Dichloropropene	90	70-130
4-Methyl-2-pentanone	84	70-130
Toluene	91	70-130
trans-1,3-Dichloropropene	96	70-130
1,1,2-Trichloroethane	92	70-130
Tetrachloroethene	88	70-130
2-Hexanone	84	70-130

Client Sample ID: LCS

Lab ID#: 1801174-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21011503	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 1/15/18 09:39 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	98	70-130
1,2-Dibromoethane (EDB)	95	70-130
Chlorobenzene	87	70-130
Ethyl Benzene	82	70-130
m,p-Xylene	82	70-130
o-Xylene	85	70-130
Styrene	81	70-130
Bromoform	103	70-130
Cumene	81	70-130
1,1,2,2-Tetrachloroethane	93	70-130
Propylbenzene	89	70-130
4-Ethyltoluene	96	70-130
1,3,5-Trimethylbenzene	122	70-130
1,2,4-Trimethylbenzene	109	70-130
1,3-Dichlorobenzene	87	70-130
1,4-Dichlorobenzene	86	70-130
alpha-Chlorotoluene	82	70-130
1,2-Dichlorobenzene	89	70-130
1,2,4-Trichlorobenzene	86	70-130
Hexachlorobutadiene	106	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	97	70-130

Client Sample ID: LCSD

Lab ID#: 1801174-05AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21011504	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 1/15/18 10:09 AM

Compound	%Recovery	Method Limits
Freon 12	87	70-130
Freon 114	91	70-130
Chloromethane	89	70-130
Vinyl Chloride	91	70-130
1,3-Butadiene	85	70-130
Bromomethane	104	70-130
Chloroethane	96	70-130
Freon 11	91	70-130
Ethanol	98	70-130
Freon 113	84	70-130
1,1-Dichloroethene	88	70-130
Acetone	89	70-130
2-Propanol	89	70-130
Carbon Disulfide	83	70-130
3-Chloropropene	87	70-130
Methylene Chloride	87	70-130
Methyl tert-butyl ether	88	70-130
trans-1,2-Dichloroethene	76	70-130
Hexane	90	70-130
1,1-Dichloroethane	90	70-130
2-Butanone (Methyl Ethyl Ketone)	90	70-130
cis-1,2-Dichloroethene	97	70-130
Tetrahydrofuran	88	70-130
Chloroform	90	70-130
1,1,1-Trichloroethane	86	70-130
Cyclohexane	90	70-130
Carbon Tetrachloride	86	70-130
2,2,4-Trimethylpentane	90	70-130
Benzene	91	70-130
1,2-Dichloroethane	88	70-130
Heptane	91	70-130
Trichloroethene	86	70-130
1,2-Dichloropropane	90	70-130
1,4-Dioxane	74	70-130
Bromodichloromethane	92	70-130
cis-1,3-Dichloropropene	88	70-130
4-Methyl-2-pentanone	83	70-130
Toluene	89	70-130
trans-1,3-Dichloropropene	90	70-130
1,1,2-Trichloroethane	86	70-130
Tetrachloroethene	83	70-130
2-Hexanone	81	70-130

Client Sample ID: LCSD

Lab ID#: 1801174-05AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	21011504	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 1/15/18 10:09 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	94	70-130
1,2-Dibromoethane (EDB)	90	70-130
Chlorobenzene	85	70-130
Ethyl Benzene	85	70-130
m,p-Xylene	85	70-130
o-Xylene	89	70-130
Styrene	87	70-130
Bromoform	104	70-130
Cumene	89	70-130
1,1,2,2-Tetrachloroethane	93	70-130
Propylbenzene	89	70-130
4-Ethyltoluene	88	70-130
1,3,5-Trimethylbenzene	113	70-130
1,2,4-Trimethylbenzene	100	70-130
1,3-Dichlorobenzene	84	70-130
1,4-Dichlorobenzene	80	70-130
alpha-Chlorotoluene	88	70-130
1,2-Dichlorobenzene	84	70-130
1,2,4-Trichlorobenzene	83	70-130
Hexachlorobutadiene	96	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	108	70-130