

4/5/2016

Mr. Dennis Schroeder
Missouri Dept. of Natural Resources
2710 West Main

Jefferson City MO 65109

Project Name: Bridgeton LF

Project #:

Workorder #: 1603452

Dear Mr. Dennis Schroeder

The following report includes the data for the above referenced project for sample(s) received on 3/23/2016 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 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 #: 1603452

Work Order Summary

CLIENT:	Mr. Dennis Schroeder 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:	573-526-4428	P.O. #	3ESP160682
FAX:	573-526-3350	PROJECT #	Bridgeton LF
DATE RECEIVED:	03/23/2016	CONTACT:	Brian Whittaker
DATE COMPLETED:	04/05/2016		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	D1 (160372)	Modified TO-15	0.4 psi	4.9 psi
02A	D2 (160373)	Modified TO-15	5.5 "Hg	4.8 psi
03A	U1 (160374)	Modified TO-15	6.3 "Hg	5 psi
04A	Lab Blank	Modified TO-15	NA	NA
05A	CCV	Modified TO-15	NA	NA
06A	LCS	Modified TO-15	NA	NA
06AA	LCSD	Modified TO-15	NA	NA

CERTIFIED BY: 

 Technical Director

DATE: 04/05/16

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
 TX NELAP - T104704434-15-9, UT NELAP CA0093332015-6, VA NELAP - 8113, WA NELAP - C935
 Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
 Accreditation number: CA300005, Effective date: 10/18/2015, Expiration date: 10/17/2016.

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# 1603452

Three 6 Liter Summa Canister (100% Certified) samples were received on March 23, 2016. 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

Despite the use of a flow controller for sample collection, the final canister vacuum for sample D1 (160372) was measured at ambient pressure by the laboratory upon sample receipt.

There was a significant difference (greater than 5.0" Hg) between the measured canister receipt vacuum and that which was reported on the Chain of Custody (COC) for sample D1 (160372). A leak test indicated that the valve was functioning properly.

Analytical Notes

Dilution was performed on sample D1 (160372) due to the presence of high level target species.

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 (160372)

Lab ID#: 1603452-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 11	0.26	0.39	1.5	2.2
Ethanol	1.3	44	2.4	82
Acetone	1.3	34	3.1	81
2-Propanol	1.3	5.8	3.2	14
Methylene Chloride	0.52	1.2	1.8	4.3
Hexane	0.26	5.8	0.92	20
2-Butanone (Methyl Ethyl Ketone)	1.3	2.1	3.8	6.2
Tetrahydrofuran	1.3	7.6	3.8	22
Cyclohexane	0.26	4.9	0.89	17
Benzene	0.26	1.0	0.83	3.3
1,2-Dichloroethane	0.26	4.1	1.0	17
Heptane	0.26	1.9	1.1	7.7
Trichloroethene	0.26	0.30	1.4	1.6
1,2-Dichloropropane	0.26	0.28	1.2	1.3
4-Methyl-2-pentanone	0.26	2.7	1.1	11
Toluene	0.26	70	0.98	260
Tetrachloroethene	0.26	3.1	1.8	21
Ethyl Benzene	0.26	4.5	1.1	20
m,p-Xylene	0.26	5.5	1.1	24
o-Xylene	0.26	1.6	1.1	6.9
Styrene	0.26	0.94	1.1	4.0
4-Ethyltoluene	0.26	0.43	1.3	2.1
1,2,4-Trimethylbenzene	0.26	0.44	1.3	2.2

Client Sample ID: D2 (160373)

Lab ID#: 1603452-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.16	0.50	0.80	2.5
Freon 11	0.16	0.22	0.91	1.2
Ethanol	0.81	3.4	1.5	6.3
Acetone	0.81	5.8	1.9	14
2-Butanone (Methyl Ethyl Ketone)	0.81	0.89	2.4	2.6

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

Client Sample ID: D2 (160373)

Lab ID#: 1603452-02A

Benzene	0.16	0.16	0.52	0.53
Toluene	0.16	0.18	0.61	0.66

Client Sample ID: U1 (160374)

Lab ID#: 1603452-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.17	0.53	0.84	2.6
Freon 11	0.17	0.24	0.96	1.4
Ethanol	0.85	1.6	1.6	3.0
Acetone	0.85	1.9	2.0	4.4
Hexane	0.17	0.44	0.60	1.5
Heptane	0.17	0.36	0.70	1.5
Toluene	0.17	0.16 J	0.64	0.62 J
Tetrachloroethene	0.17	0.43	1.2	2.9



Air Toxics

Client Sample ID: D1 (160372)

Lab ID#: 1603452-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20032416	Date of Collection:	3/17/16 1:15:00 PM
Dil. Factor:	2.60	Date of Analysis:	3/24/16 07:28 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.26	Not Detected	1.3	Not Detected
Freon 114	0.26	Not Detected	1.8	Not Detected
Chloromethane	1.3	Not Detected	2.7	Not Detected
Vinyl Chloride	0.26	Not Detected	0.66	Not Detected
1,3-Butadiene	0.26	Not Detected	0.58	Not Detected
Bromomethane	1.3	Not Detected	5.0	Not Detected
Chloroethane	1.3	Not Detected	3.4	Not Detected
Freon 11	0.26	0.39	1.5	2.2
Ethanol	1.3	44	2.4	82
Freon 113	0.26	Not Detected	2.0	Not Detected
1,1-Dichloroethene	0.26	Not Detected	1.0	Not Detected
Acetone	1.3	34	3.1	81
2-Propanol	1.3	5.8	3.2	14
Carbon Disulfide	1.3	Not Detected	4.0	Not Detected
3-Chloropropene	1.3	Not Detected	4.1	Not Detected
Methylene Chloride	0.52	1.2	1.8	4.3
Methyl tert-butyl ether	0.26	Not Detected	0.94	Not Detected
trans-1,2-Dichloroethene	0.26	Not Detected	1.0	Not Detected
Hexane	0.26	5.8	0.92	20
1,1-Dichloroethane	0.26	Not Detected	1.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	1.3	2.1	3.8	6.2
cis-1,2-Dichloroethene	0.26	Not Detected	1.0	Not Detected
Tetrahydrofuran	1.3	7.6	3.8	22
Chloroform	0.26	Not Detected	1.3	Not Detected
1,1,1-Trichloroethane	0.26	Not Detected	1.4	Not Detected
Cyclohexane	0.26	4.9	0.89	17
Carbon Tetrachloride	0.26	Not Detected	1.6	Not Detected
2,2,4-Trimethylpentane	1.3	Not Detected	6.1	Not Detected
Benzene	0.26	1.0	0.83	3.3
1,2-Dichloroethane	0.26	4.1	1.0	17
Heptane	0.26	1.9	1.1	7.7
Trichloroethene	0.26	0.30	1.4	1.6
1,2-Dichloropropane	0.26	0.28	1.2	1.3
1,4-Dioxane	0.26	Not Detected	0.94	Not Detected
Bromodichloromethane	0.26	Not Detected	1.7	Not Detected
cis-1,3-Dichloropropene	0.26	Not Detected	1.2	Not Detected
4-Methyl-2-pentanone	0.26	2.7	1.1	11
Toluene	0.26	70	0.98	260
trans-1,3-Dichloropropene	0.26	Not Detected	1.2	Not Detected
1,1,2-Trichloroethane	0.26	Not Detected	1.4	Not Detected
Tetrachloroethene	0.26	3.1	1.8	21
2-Hexanone	1.3	Not Detected	5.3	Not Detected

Client Sample ID: D1 (160372)

Lab ID#: 1603452-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20032416	Date of Collection:	3/17/16 1:15:00 PM
Dil. Factor:	2.60	Date of Analysis:	3/24/16 07:28 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.26	Not Detected	2.2	Not Detected
1,2-Dibromoethane (EDB)	0.26	Not Detected	2.0	Not Detected
Chlorobenzene	0.26	Not Detected	1.2	Not Detected
Ethyl Benzene	0.26	4.5	1.1	20
m,p-Xylene	0.26	5.5	1.1	24
o-Xylene	0.26	1.6	1.1	6.9
Styrene	0.26	0.94	1.1	4.0
Bromoform	0.26	Not Detected	2.7	Not Detected
Cumene	0.26	Not Detected	1.3	Not Detected
1,1,2,2-Tetrachloroethane	0.26	Not Detected	1.8	Not Detected
Propylbenzene	0.26	Not Detected	1.3	Not Detected
4-Ethyltoluene	0.26	0.43	1.3	2.1
1,3,5-Trimethylbenzene	0.26	Not Detected	1.3	Not Detected
1,2,4-Trimethylbenzene	0.26	0.44	1.3	2.2
1,3-Dichlorobenzene	0.26	Not Detected	1.6	Not Detected
1,4-Dichlorobenzene	0.26	Not Detected	1.6	Not Detected
alpha-Chlorotoluene	0.26	Not Detected	1.3	Not Detected
1,2-Dichlorobenzene	0.26	Not Detected	1.6	Not Detected
1,2,4-Trichlorobenzene	1.3	Not Detected	9.6	Not Detected
Hexachlorobutadiene	1.3	Not Detected	14	Not Detected

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	99	70-130



Air Toxics

Client Sample ID: D2 (160373)

Lab ID#: 1603452-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20032417	Date of Collection:	3/17/16 1:50:00 PM
Dil. Factor:	1.62	Date of Analysis:	3/24/16 08:08 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.16	0.50	0.80	2.5
Freon 114	0.16	Not Detected	1.1	Not Detected
Chloromethane	0.81	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	0.81	Not Detected	3.1	Not Detected
Chloroethane	0.81	Not Detected	2.1	Not Detected
Freon 11	0.16	0.22	0.91	1.2
Ethanol	0.81	3.4	1.5	6.3
Freon 113	0.16	Not Detected	1.2	Not Detected
1,1-Dichloroethene	0.16	Not Detected	0.64	Not Detected
Acetone	0.81	5.8	1.9	14
2-Propanol	0.81	Not Detected	2.0	Not Detected
Carbon Disulfide	0.81	Not Detected	2.5	Not Detected
3-Chloropropene	0.81	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	0.66	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.81	0.89	2.4	2.6
cis-1,2-Dichloroethene	0.16	Not Detected	0.64	Not Detected
Tetrahydrofuran	0.81	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	0.56	Not Detected
Carbon Tetrachloride	0.16	Not Detected	1.0	Not Detected
2,2,4-Trimethylpentane	0.81	Not Detected	3.8	Not Detected
Benzene	0.16	0.16	0.52	0.53
1,2-Dichloroethane	0.16	Not Detected	0.66	Not Detected
Heptane	0.16	Not Detected	0.66	Not Detected
Trichloroethene	0.16	Not Detected	0.87	Not Detected
1,2-Dichloropropane	0.16	Not Detected	0.75	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	0.74	Not Detected
4-Methyl-2-pentanone	0.16	Not Detected	0.66	Not Detected
Toluene	0.16	0.18	0.61	0.66
trans-1,3-Dichloropropene	0.16	Not Detected	0.74	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	0.81	Not Detected	3.3	Not Detected

Client Sample ID: D2 (160373)

Lab ID#: 1603452-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20032417	Date of Collection:	3/17/16 1:50:00 PM
Dil. Factor:	1.62	Date of Analysis:	3/24/16 08:08 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	0.69	Not Detected
Bromoform	0.16	Not Detected	1.7	Not Detected
Cumene	0.16	Not Detected	0.80	Not Detected
1,1,2,2-Tetrachloroethane	0.16	Not Detected	1.1	Not Detected
Propylbenzene	0.16	Not Detected	0.80	Not Detected
4-Ethyltoluene	0.16	Not Detected	0.80	Not Detected
1,3,5-Trimethylbenzene	0.16	Not Detected	0.80	Not Detected
1,2,4-Trimethylbenzene	0.16	Not Detected	0.80	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	0.84	Not Detected
1,2-Dichlorobenzene	0.16	Not Detected	0.97	Not Detected
1,2,4-Trichlorobenzene	0.81	Not Detected	6.0	Not Detected
Hexachlorobutadiene	0.81	Not Detected	8.6	Not Detected

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	94	70-130



Air Toxics

Client Sample ID: U1 (160374)

Lab ID#: 1603452-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20032418	Date of Collection:	3/17/16 2:05:00 PM
Dil. Factor:	1.70	Date of Analysis:	3/24/16 09:00 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.17	0.53	0.84	2.6
Freon 114	0.17	Not Detected	1.2	Not Detected
Chloromethane	0.85	Not Detected	1.8	Not Detected
Vinyl Chloride	0.17	Not Detected	0.43	Not Detected
1,3-Butadiene	0.17	Not Detected	0.38	Not Detected
Bromomethane	0.85	Not Detected	3.3	Not Detected
Chloroethane	0.85	Not Detected	2.2	Not Detected
Freon 11	0.17	0.24	0.96	1.4
Ethanol	0.85	1.6	1.6	3.0
Freon 113	0.17	Not Detected	1.3	Not Detected
1,1-Dichloroethene	0.17	Not Detected	0.67	Not Detected
Acetone	0.85	1.9	2.0	4.4
2-Propanol	0.85	Not Detected	2.1	Not Detected
Carbon Disulfide	0.85	Not Detected	2.6	Not Detected
3-Chloropropene	0.85	Not Detected	2.7	Not Detected
Methylene Chloride	0.34	Not Detected	1.2	Not Detected
Methyl tert-butyl ether	0.17	Not Detected	0.61	Not Detected
trans-1,2-Dichloroethene	0.17	Not Detected	0.67	Not Detected
Hexane	0.17	0.44	0.60	1.5
1,1-Dichloroethane	0.17	Not Detected	0.69	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.85	Not Detected	2.5	Not Detected
cis-1,2-Dichloroethene	0.17	Not Detected	0.67	Not Detected
Tetrahydrofuran	0.85	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	0.58	Not Detected
Carbon Tetrachloride	0.17	Not Detected	1.1	Not Detected
2,2,4-Trimethylpentane	0.85	Not Detected	4.0	Not Detected
Benzene	0.17	Not Detected	0.54	Not Detected
1,2-Dichloroethane	0.17	Not Detected	0.69	Not Detected
Heptane	0.17	0.36	0.70	1.5
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	0.70	Not Detected
Toluene	0.17	0.16 J	0.64	0.62 J
trans-1,3-Dichloropropene	0.17	Not Detected	0.77	Not Detected
1,1,2-Trichloroethane	0.17	Not Detected	0.93	Not Detected
Tetrachloroethene	0.17	0.43	1.2	2.9
2-Hexanone	0.85	Not Detected	3.5	Not Detected



Client Sample ID: U1 (160374)

Lab ID#: 1603452-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20032418	Date of Collection:	3/17/16 2:05:00 PM
Dil. Factor:	1.70	Date of Analysis:	3/24/16 09:00 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	0.74	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	0.72	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	0.85	Not Detected	6.3	Not Detected
Hexachlorobutadiene	0.85	Not Detected	9.1	Not Detected

J = Estimated value.

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	89	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1603452-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20032406	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	3/24/16 11:40 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#: 1603452-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20032406	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 3/24/16 11:40 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	99	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	93	70-130



Air Toxics

Client Sample ID: CCV

Lab ID#: 1603452-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20032402	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 3/24/16 08:23 AM

Compound	%Recovery
Freon 12	120
Freon 114	112
Chloromethane	112
Vinyl Chloride	111
1,3-Butadiene	106
Bromomethane	103
Chloroethane	111
Freon 11	107
Ethanol	96
Freon 113	105
1,1-Dichloroethene	100
Acetone	106
2-Propanol	82
Carbon Disulfide	114
3-Chloropropene	96
Methylene Chloride	103
Methyl tert-butyl ether	101
trans-1,2-Dichloroethene	108
Hexane	98
1,1-Dichloroethane	105
2-Butanone (Methyl Ethyl Ketone)	104
cis-1,2-Dichloroethene	101
Tetrahydrofuran	98
Chloroform	107
1,1,1-Trichloroethane	105
Cyclohexane	103
Carbon Tetrachloride	104
2,2,4-Trimethylpentane	100
Benzene	110
1,2-Dichloroethane	117
Heptane	112
Trichloroethene	106
1,2-Dichloropropane	111
1,4-Dioxane	110
Bromodichloromethane	119
cis-1,3-Dichloropropene	104
4-Methyl-2-pentanone	102
Toluene	108
trans-1,3-Dichloropropene	110
1,1,2-Trichloroethane	112
Tetrachloroethene	107
2-Hexanone	88

Client Sample ID: CCV

Lab ID#: 1603452-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20032402	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 3/24/16 08:23 AM

Compound	%Recovery
Dibromochloromethane	123
1,2-Dibromoethane (EDB)	119
Chlorobenzene	113
Ethyl Benzene	114
m,p-Xylene	117
o-Xylene	109
Styrene	110
Bromoform	119
Cumene	115
1,1,2,2-Tetrachloroethane	126
Propylbenzene	104
4-Ethyltoluene	94
1,3,5-Trimethylbenzene	100
1,2,4-Trimethylbenzene	96
1,3-Dichlorobenzene	104
1,4-Dichlorobenzene	100
alpha-Chlorotoluene	109
1,2-Dichlorobenzene	103
1,2,4-Trichlorobenzene	107
Hexachlorobutadiene	101

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	89	70-130
Toluene-d8	107	70-130
4-Bromofluorobenzene	102	70-130



Air Toxics

Client Sample ID: LCS

Lab ID#: 1603452-06A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20032403	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	3/24/16 09:03 AM

Compound	%Recovery	Method Limits
Freon 12	114	70-130
Freon 114	116	70-130
Chloromethane	109	70-130
Vinyl Chloride	113	70-130
1,3-Butadiene	106	70-130
Bromomethane	118	70-130
Chloroethane	100	70-130
Freon 11	108	70-130
Ethanol	95	70-130
Freon 113	102	70-130
1,1-Dichloroethene	102	70-130
Acetone	95	70-130
2-Propanol	91	70-130
Carbon Disulfide	98	70-130
3-Chloropropene	94	70-130
Methylene Chloride	103	70-130
Methyl tert-butyl ether	91	70-130
trans-1,2-Dichloroethene	106	70-130
Hexane	98	70-130
1,1-Dichloroethane	100	70-130
2-Butanone (Methyl Ethyl Ketone)	99	70-130
cis-1,2-Dichloroethene	99	70-130
Tetrahydrofuran	96	70-130
Chloroform	104	70-130
1,1,1-Trichloroethane	100	70-130
Cyclohexane	100	70-130
Carbon Tetrachloride	106	70-130
2,2,4-Trimethylpentane	103	70-130
Benzene	112	70-130
1,2-Dichloroethane	114	70-130
Heptane	111	70-130
Trichloroethene	108	70-130
1,2-Dichloropropane	112	70-130
1,4-Dioxane	106	70-130
Bromodichloromethane	127	70-130
cis-1,3-Dichloropropene	100	70-130
4-Methyl-2-pentanone	109	70-130
Toluene	111	70-130
trans-1,3-Dichloropropene	112	70-130
1,1,2-Trichloroethane	116	70-130
Tetrachloroethene	117	70-130
2-Hexanone	103	70-130

Client Sample ID: LCS

Lab ID#: 1603452-06A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20032403	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 3/24/16 09:03 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	129	70-130
1,2-Dibromoethane (EDB)	120	70-130
Chlorobenzene	118	70-130
Ethyl Benzene	121	70-130
m,p-Xylene	114	70-130
o-Xylene	116	70-130
Styrene	122	70-130
Bromoform	131 Q	70-130
Cumene	116	70-130
1,1,2,2-Tetrachloroethane	131 Q	70-130
Propylbenzene	108	70-130
4-Ethyltoluene	98	70-130
1,3,5-Trimethylbenzene	118	70-130
1,2,4-Trimethylbenzene	111	70-130
1,3-Dichlorobenzene	109	70-130
1,4-Dichlorobenzene	107	70-130
alpha-Chlorotoluene	124	70-130
1,2-Dichlorobenzene	108	70-130
1,2,4-Trichlorobenzene	105	70-130
Hexachlorobutadiene	101	70-130

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	88	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	100	70-130



Air Toxics

Client Sample ID: LCSD

Lab ID#: 1603452-06AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20032404	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	3/24/16 09:47 AM

Compound	%Recovery	Method Limits
Freon 12	116	70-130
Freon 114	120	70-130
Chloromethane	112	70-130
Vinyl Chloride	117	70-130
1,3-Butadiene	107	70-130
Bromomethane	130	70-130
Chloroethane	104	70-130
Freon 11	110	70-130
Ethanol	104	70-130
Freon 113	106	70-130
1,1-Dichloroethene	104	70-130
Acetone	100	70-130
2-Propanol	93	70-130
Carbon Disulfide	100	70-130
3-Chloropropene	96	70-130
Methylene Chloride	106	70-130
Methyl tert-butyl ether	93	70-130
trans-1,2-Dichloroethene	110	70-130
Hexane	102	70-130
1,1-Dichloroethane	103	70-130
2-Butanone (Methyl Ethyl Ketone)	104	70-130
cis-1,2-Dichloroethene	103	70-130
Tetrahydrofuran	102	70-130
Chloroform	106	70-130
1,1,1-Trichloroethane	105	70-130
Cyclohexane	105	70-130
Carbon Tetrachloride	110	70-130
2,2,4-Trimethylpentane	106	70-130
Benzene	115	70-130
1,2-Dichloroethane	114	70-130
Heptane	110	70-130
Trichloroethene	110	70-130
1,2-Dichloropropane	112	70-130
1,4-Dioxane	111	70-130
Bromodichloromethane	126	70-130
cis-1,3-Dichloropropene	99	70-130
4-Methyl-2-pentanone	110	70-130
Toluene	112	70-130
trans-1,3-Dichloropropene	118	70-130
1,1,2-Trichloroethane	117	70-130
Tetrachloroethene	116	70-130
2-Hexanone	110	70-130

Client Sample ID: LCSD

Lab ID#: 1603452-06AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20032404	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 3/24/16 09:47 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	128	70-130
1,2-Dibromoethane (EDB)	124	70-130
Chlorobenzene	120	70-130
Ethyl Benzene	122	70-130
m,p-Xylene	122	70-130
o-Xylene	124	70-130
Styrene	133 Q	70-130
Bromoform	135 Q	70-130
Cumene	124	70-130
1,1,2,2-Tetrachloroethane	132 Q	70-130
Propylbenzene	117	70-130
4-Ethyltoluene	105	70-130
1,3,5-Trimethylbenzene	125	70-130
1,2,4-Trimethylbenzene	117	70-130
1,3-Dichlorobenzene	114	70-130
1,4-Dichlorobenzene	113	70-130
alpha-Chlorotoluene	128	70-130
1,2-Dichlorobenzene	114	70-130
1,2,4-Trichlorobenzene	124	70-130
Hexachlorobutadiene	115	70-130

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	93	70-130
Toluene-d8	106	70-130
4-Bromofluorobenzene	104	70-130