

5/18/2016

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

Jefferson City MO 65109

Project Name: Bridgeton Landfill

Project #:

Workorder #: 1605190

Dear Mr. Curt Lueckenhoff

The following report includes the data for the above referenced project for sample(s) received on 5/10/2016 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 #: 1605190

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. #	3ESP160808
FAX:	573-526-3350	PROJECT #	Bridgeton Landfill
DATE RECEIVED:	05/10/2016	CONTACT:	Brian Whittaker
DATE COMPLETED:	05/18/2016		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	D1(162236)	Modified TO-15	6.5 "Hg	5 psi
02A	D2(162237)	Modified TO-15	6.0 "Hg	5 psi
03A	U1(162238)	Modified TO-15	6.5 "Hg	5 psi
04A	U2(162239)	Modified TO-15	5.0 "Hg	5 psi
05A	Lab Blank	Modified TO-15	NA	NA
06A	CCV	Modified TO-15	NA	NA
07A	LCS	Modified TO-15	NA	NA
07AA	LCSD	Modified TO-15	NA	NA

CERTIFIED BY: 

 Technical Director

DATE: 05/18/16

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# 1605190

Four 6 Liter Summa Canister (100% Certified) samples were received on May 10, 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	$\leq 30\%$ 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 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(162236)

Lab ID#: 1605190-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.17	0.48	0.84	2.4
Freon 11	0.17	0.25	0.96	1.4
Ethanol	0.86	24	1.6	45
Acetone	0.86	6.0	2.0	14
2-Propanol	0.86	1.3	2.1	3.1
2-Butanone (Methyl Ethyl Ketone)	0.86	0.87	2.5	2.6
1,4-Dioxane	0.17	0.21	0.62	0.76

Client Sample ID: D2(162237)

Lab ID#: 1605190-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.17	0.46	0.83	2.3
Freon 11	0.17	0.22	0.94	1.2
Ethanol	0.84	4.6	1.6	8.8
Acetone	0.84	4.4	2.0	10
Benzene	0.17	0.23	0.54	0.73

Client Sample ID: U1(162238)

Lab ID#: 1605190-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.17	0.51	0.84	2.5
Freon 11	0.17	0.25	0.96	1.4
Ethanol	0.86	1.6	1.6	3.0
Acetone	0.86	3.0	2.0	7.2
Methylene Chloride	0.34	0.78	1.2	2.7
Toluene	0.17	0.41	0.64	1.5

Client Sample ID: U2(162239)

Lab ID#: 1605190-04A

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

Client Sample ID: U2(162239)

Lab ID#: 1605190-04A

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	0.28	0.90	1.6
Ethanol	0.80	22	1.5	40
Acetone	0.80	8.0	1.9	19
2-Propanol	0.80	2.7	2.0	6.7
Carbon Disulfide	0.80	1.2	2.5	3.8
Methylene Chloride	0.32	1.4	1.1	4.7
Hexane	0.16	0.65	0.57	2.3
2-Butanone (Methyl Ethyl Ketone)	0.80	1.8	2.4	5.4
Cyclohexane	0.16	0.46	0.55	1.6
1,2-Dichloroethane	0.16	0.76	0.65	3.1
4-Methyl-2-pentanone	0.16	2.2	0.66	8.9
Toluene	0.16	13	0.61	49
Tetrachloroethene	0.16	0.47	1.1	3.2
Ethyl Benzene	0.16	0.38	0.70	1.6
m,p-Xylene	0.16	0.69	0.70	3.0
o-Xylene	0.16	0.36	0.70	1.6
Styrene	0.16	1.1	0.68	4.6



Air Toxics

Client Sample ID: D1(162236)

Lab ID#: 1605190-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20051107	Date of Collection:	5/4/16 1:15:00 PM
Dil. Factor:	1.71	Date of Analysis:	5/11/16 12:51 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.17	0.48	0.84	2.4
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	0.25	0.96	1.4
Ethanol	0.86	24	1.6	45
Freon 113	0.17	Not Detected	1.3	Not Detected
1,1-Dichloroethene	0.17	Not Detected	0.68	Not Detected
Acetone	0.86	6.0	2.0	14
2-Propanol	0.86	1.3	2.1	3.1
Carbon Disulfide	0.86	Not Detected	2.7	Not Detected
3-Chloropropene	0.86	Not Detected	2.7	Not Detected
Methylene Chloride	0.34	Not Detected	1.2	Not Detected
Methyl tert-butyl ether	0.17	Not Detected	0.62	Not Detected
trans-1,2-Dichloroethene	0.17	Not Detected	0.68	Not Detected
Hexane	0.17	Not Detected	0.60	Not Detected
1,1-Dichloroethane	0.17	Not Detected	0.69	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.86	0.87	2.5	2.6
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	Not Detected	0.70	Not Detected
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	0.21	0.62	0.76
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	Not Detected	0.64	Not Detected
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



Client Sample ID: D1(162236)

Lab ID#: 1605190-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20051107	Date of Collection:	5/4/16 1:15:00 PM
Dil. Factor:	1.71	Date of Analysis:	5/11/16 12:51 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% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	101	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	102	70-130



Air Toxics

Client Sample ID: D2(162237)

Lab ID#: 1605190-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20051108	Date of Collection:	5/4/16 1:25:00 PM
Dil. Factor:	1.68	Date of Analysis:	5/11/16 01:30 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.17	0.46	0.83	2.3
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	0.22	0.94	1.2
Ethanol	0.84	4.6	1.6	8.8
Freon 113	0.17	Not Detected	1.3	Not Detected
1,1-Dichloroethene	0.17	Not Detected	0.67	Not Detected
Acetone	0.84	4.4	2.0	10
2-Propanol	0.84	Not Detected	2.1	Not Detected
Carbon Disulfide	0.84	Not Detected	2.6	Not Detected
3-Chloropropene	0.84	Not Detected	2.6	Not Detected
Methylene Chloride	0.34	Not Detected	1.2	Not Detected
Methyl tert-butyl ether	0.17	Not Detected	0.60	Not Detected
trans-1,2-Dichloroethene	0.17	Not Detected	0.67	Not Detected
Hexane	0.17	Not Detected	0.59	Not Detected
1,1-Dichloroethane	0.17	Not Detected	0.68	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.84	Not Detected	2.5	Not Detected
cis-1,2-Dichloroethene	0.17	Not Detected	0.67	Not Detected
Tetrahydrofuran	0.84	Not Detected	2.5	Not Detected
Chloroform	0.17	Not Detected	0.82	Not Detected
1,1,1-Trichloroethane	0.17	Not Detected	0.92	Not Detected
Cyclohexane	0.17	Not Detected	0.58	Not Detected
Carbon Tetrachloride	0.17	Not Detected	1.0	Not Detected
2,2,4-Trimethylpentane	0.84	Not Detected	3.9	Not Detected
Benzene	0.17	0.23	0.54	0.73
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	0.90	Not Detected
1,2-Dichloropropane	0.17	Not Detected	0.78	Not Detected
1,4-Dioxane	0.17	Not Detected	0.60	Not Detected
Bromodichloromethane	0.17	Not Detected	1.1	Not Detected
cis-1,3-Dichloropropene	0.17	Not Detected	0.76	Not Detected
4-Methyl-2-pentanone	0.17	Not Detected	0.69	Not Detected
Toluene	0.17	Not Detected	0.63	Not Detected
trans-1,3-Dichloropropene	0.17	Not Detected	0.76	Not Detected
1,1,2-Trichloroethane	0.17	Not Detected	0.92	Not Detected
Tetrachloroethene	0.17	Not Detected	1.1	Not Detected
2-Hexanone	0.84	Not Detected	3.4	Not Detected



Client Sample ID: D2(162237)

Lab ID#: 1605190-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20051108	Date of Collection:	5/4/16 1:25:00 PM
Dil. Factor:	1.68	Date of Analysis:	5/11/16 01:30 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.17	Not Detected	1.4	Not Detected
1,2-Dibromoethane (EDB)	0.17	Not Detected	1.3	Not Detected
Chlorobenzene	0.17	Not Detected	0.77	Not Detected
Ethyl Benzene	0.17	Not Detected	0.73	Not Detected
m,p-Xylene	0.17	Not Detected	0.73	Not Detected
o-Xylene	0.17	Not Detected	0.73	Not Detected
Styrene	0.17	Not Detected	0.72	Not Detected
Bromoform	0.17	Not Detected	1.7	Not Detected
Cumene	0.17	Not Detected	0.82	Not Detected
1,1,2,2-Tetrachloroethane	0.17	Not Detected	1.2	Not Detected
Propylbenzene	0.17	Not Detected	0.82	Not Detected
4-Ethyltoluene	0.17	Not Detected	0.82	Not Detected
1,3,5-Trimethylbenzene	0.17	Not Detected	0.82	Not Detected
1,2,4-Trimethylbenzene	0.17	Not Detected	0.82	Not Detected
1,3-Dichlorobenzene	0.17	Not Detected	1.0	Not Detected
1,4-Dichlorobenzene	0.17	Not Detected	1.0	Not Detected
alpha-Chlorotoluene	0.17	Not Detected	0.87	Not Detected
1,2-Dichlorobenzene	0.17	Not Detected	1.0	Not Detected
1,2,4-Trichlorobenzene	0.84	Not Detected	6.2	Not Detected
Hexachlorobutadiene	0.84	Not Detected	9.0	Not Detected

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	102	70-130



Air Toxics

Client Sample ID: U1(162238)

Lab ID#: 1605190-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20051110	Date of Collection:	5/4/16 1:35:00 PM
Dil. Factor:	1.71	Date of Analysis:	5/11/16 03:51 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.17	0.51	0.84	2.5
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	0.25	0.96	1.4
Ethanol	0.86	1.6	1.6	3.0
Freon 113	0.17	Not Detected	1.3	Not Detected
1,1-Dichloroethene	0.17	Not Detected	0.68	Not Detected
Acetone	0.86	3.0	2.0	7.2
2-Propanol	0.86	Not Detected	2.1	Not Detected
Carbon Disulfide	0.86	Not Detected	2.7	Not Detected
3-Chloropropene	0.86	Not Detected	2.7	Not Detected
Methylene Chloride	0.34	0.78	1.2	2.7
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	Not Detected	0.60	Not Detected
1,1-Dichloroethane	0.17	Not Detected	0.69	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.86	Not Detected	2.5	Not Detected
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	Not Detected	0.70	Not Detected
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	0.41	0.64	1.5
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



Client Sample ID: U1(162238)

Lab ID#: 1605190-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20051110	Date of Collection:	5/4/16 1:35:00 PM
Dil. Factor:	1.71	Date of Analysis:	5/11/16 03:51 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% Certified)

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



Air Toxics

Client Sample ID: U2(162239)

Lab ID#: 1605190-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20051109	Date of Collection:	5/4/16 1:45:00 PM
Dil. Factor:	1.61	Date of Analysis:	5/11/16 02:10 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	0.80	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	0.28	0.90	1.6
Ethanol	0.80	22	1.5	40
Freon 113	0.16	Not Detected	1.2	Not Detected
1,1-Dichloroethene	0.16	Not Detected	0.64	Not Detected
Acetone	0.80	8.0	1.9	19
2-Propanol	0.80	2.7	2.0	6.7
Carbon Disulfide	0.80	1.2	2.5	3.8
3-Chloropropene	0.80	Not Detected	2.5	Not Detected
Methylene Chloride	0.32	1.4	1.1	4.7
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	0.65	0.57	2.3
1,1-Dichloroethane	0.16	Not Detected	0.65	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.80	1.8	2.4	5.4
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	0.46	0.55	1.6
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	0.76	0.65	3.1
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	2.2	0.66	8.9
Toluene	0.16	13	0.61	49
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	0.47	1.1	3.2
2-Hexanone	0.80	Not Detected	3.3	Not Detected



Client Sample ID: U2(162239)

Lab ID#: 1605190-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20051109	Date of Collection:	5/4/16 1:45:00 PM
Dil. Factor:	1.61	Date of Analysis:	5/11/16 02:10 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	0.38	0.70	1.6
m,p-Xylene	0.16	0.69	0.70	3.0
o-Xylene	0.16	0.36	0.70	1.6
Styrene	0.16	1.1	0.68	4.6
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	99	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	106	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1605190-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20051105	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	5/11/16 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



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1605190-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20051105	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	5/11/16 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	99	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	105	70-130



Air Toxics

Client Sample ID: CCV

Lab ID#: 1605190-06A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20051102	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/11/16 08:46 AM

Compound	%Recovery
Freon 12	105
Freon 114	111
Chloromethane	101
Vinyl Chloride	105
1,3-Butadiene	102
Bromomethane	111
Chloroethane	106
Freon 11	109
Ethanol	106
Freon 113	112
1,1-Dichloroethene	112
Acetone	104
2-Propanol	99
Carbon Disulfide	110
3-Chloropropene	107
Methylene Chloride	108
Methyl tert-butyl ether	113
trans-1,2-Dichloroethene	108
Hexane	107
1,1-Dichloroethane	107
2-Butanone (Methyl Ethyl Ketone)	111
cis-1,2-Dichloroethene	111
Tetrahydrofuran	111
Chloroform	109
1,1,1-Trichloroethane	109
Cyclohexane	111
Carbon Tetrachloride	117
2,2,4-Trimethylpentane	112
Benzene	114
1,2-Dichloroethane	115
Heptane	115
Trichloroethene	115
1,2-Dichloropropane	107
1,4-Dioxane	120
Bromodichloromethane	117
cis-1,3-Dichloropropene	116
4-Methyl-2-pentanone	116
Toluene	115
trans-1,3-Dichloropropene	118
1,1,2-Trichloroethane	113
Tetrachloroethene	124
2-Hexanone	115

Client Sample ID: CCV

Lab ID#: 1605190-06A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20051102	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/11/16 08:46 AM

Compound	%Recovery
Dibromochloromethane	129
1,2-Dibromoethane (EDB)	124
Chlorobenzene	116
Ethyl Benzene	121
m,p-Xylene	119
o-Xylene	124
Styrene	124
Bromoform	135 Q
Cumene	124
1,1,2,2-Tetrachloroethane	118
Propylbenzene	108
4-Ethyltoluene	103
1,3,5-Trimethylbenzene	119
1,2,4-Trimethylbenzene	117
1,3-Dichlorobenzene	108
1,4-Dichlorobenzene	107
alpha-Chlorotoluene	117
1,2-Dichlorobenzene	107
1,2,4-Trichlorobenzene	109
Hexachlorobutadiene	108

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	91	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	107	70-130



Air Toxics

Client Sample ID: LCS

Lab ID#: 1605190-07A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20051103	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	5/11/16 09:33 AM

Compound	%Recovery	Method Limits
Freon 12	106	70-130
Freon 114	116	70-130
Chloromethane	100	70-130
Vinyl Chloride	106	70-130
1,3-Butadiene	101	70-130
Bromomethane	110	70-130
Chloroethane	110	70-130
Freon 11	110	70-130
Ethanol	110	70-130
Freon 113	113	70-130
1,1-Dichloroethene	110	70-130
Acetone	105	70-130
2-Propanol	100	70-130
Carbon Disulfide	97	70-130
3-Chloropropene	94	70-130
Methylene Chloride	106	70-130
Methyl tert-butyl ether	107	70-130
trans-1,2-Dichloroethene	108	70-130
Hexane	107	70-130
1,1-Dichloroethane	104	70-130
2-Butanone (Methyl Ethyl Ketone)	109	70-130
cis-1,2-Dichloroethene	107	70-130
Tetrahydrofuran	105	70-130
Chloroform	108	70-130
1,1,1-Trichloroethane	109	70-130
Cyclohexane	110	70-130
Carbon Tetrachloride	124	70-130
2,2,4-Trimethylpentane	112	70-130
Benzene	112	70-130
1,2-Dichloroethane	113	70-130
Heptane	113	70-130
Trichloroethene	110	70-130
1,2-Dichloropropane	107	70-130
1,4-Dioxane	113	70-130
Bromodichloromethane	123	70-130
cis-1,3-Dichloropropene	107	70-130
4-Methyl-2-pentanone	114	70-130
Toluene	112	70-130
trans-1,3-Dichloropropene	118	70-130
1,1,2-Trichloroethane	117	70-130
Tetrachloroethene	129	70-130
2-Hexanone	112	70-130

Client Sample ID: LCS

Lab ID#: 1605190-07A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20051103	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/11/16 09:33 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	135 Q	70-130
1,2-Dibromoethane (EDB)	123	70-130
Chlorobenzene	116	70-130
Ethyl Benzene	122	70-130
m,p-Xylene	120	70-130
o-Xylene	122	70-130
Styrene	126	70-130
Bromoform	143 Q	70-130
Cumene	125	70-130
1,1,2,2-Tetrachloroethane	118	70-130
Propylbenzene	112	70-130
4-Ethyltoluene	104	70-130
1,3,5-Trimethylbenzene	118	70-130
1,2,4-Trimethylbenzene	116	70-130
1,3-Dichlorobenzene	112	70-130
1,4-Dichlorobenzene	110	70-130
alpha-Chlorotoluene	123	70-130
1,2-Dichlorobenzene	110	70-130
1,2,4-Trichlorobenzene	113	70-130
Hexachlorobutadiene	108	70-130

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	91	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	107	70-130



Air Toxics

Client Sample ID: LCS D

Lab ID#: 1605190-07AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20051104	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	5/11/16 10:20 AM

Compound	%Recovery	Method Limits
Freon 12	104	70-130
Freon 114	111	70-130
Chloromethane	99	70-130
Vinyl Chloride	103	70-130
1,3-Butadiene	97	70-130
Bromomethane	110	70-130
Chloroethane	106	70-130
Freon 11	109	70-130
Ethanol	110	70-130
Freon 113	111	70-130
1,1-Dichloroethene	107	70-130
Acetone	103	70-130
2-Propanol	98	70-130
Carbon Disulfide	95	70-130
3-Chloropropene	95	70-130
Methylene Chloride	102	70-130
Methyl tert-butyl ether	106	70-130
trans-1,2-Dichloroethene	108	70-130
Hexane	105	70-130
1,1-Dichloroethane	103	70-130
2-Butanone (Methyl Ethyl Ketone)	107	70-130
cis-1,2-Dichloroethene	105	70-130
Tetrahydrofuran	104	70-130
Chloroform	106	70-130
1,1,1-Trichloroethane	107	70-130
Cyclohexane	108	70-130
Carbon Tetrachloride	121	70-130
2,2,4-Trimethylpentane	113	70-130
Benzene	112	70-130
1,2-Dichloroethane	112	70-130
Heptane	118	70-130
Trichloroethene	114	70-130
1,2-Dichloropropane	109	70-130
1,4-Dioxane	112	70-130
Bromodichloromethane	123	70-130
cis-1,3-Dichloropropene	108	70-130
4-Methyl-2-pentanone	115	70-130
Toluene	114	70-130
trans-1,3-Dichloropropene	120	70-130
1,1,2-Trichloroethane	109	70-130
Tetrachloroethene	125	70-130
2-Hexanone	110	70-130

Client Sample ID: LCSD

Lab ID#: 1605190-07AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	20051104	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/11/16 10:20 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	134 Q	70-130
1,2-Dibromoethane (EDB)	127	70-130
Chlorobenzene	116	70-130
Ethyl Benzene	120	70-130
m,p-Xylene	118	70-130
o-Xylene	122	70-130
Styrene	126	70-130
Bromoform	140 Q	70-130
Cumene	124	70-130
1,1,2,2-Tetrachloroethane	119	70-130
Propylbenzene	112	70-130
4-Ethyltoluene	105	70-130
1,3,5-Trimethylbenzene	121	70-130
1,2,4-Trimethylbenzene	116	70-130
1,3-Dichlorobenzene	111	70-130
1,4-Dichlorobenzene	110	70-130
alpha-Chlorotoluene	123	70-130
1,2-Dichlorobenzene	111	70-130
1,2,4-Trichlorobenzene	110	70-130
Hexachlorobutadiene	111	70-130

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	90	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	107	70-130