

11/30/2016

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

Jefferson City MO 65109

Project Name: Bridgeton Landfill

Project #:

Workorder #: 1611279

Dear Mr. Curt Lueckenhoff

The following report includes the data for the above referenced project for sample(s) received on 11/15/2016 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 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 #: 1611279

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. #	3ESP170304
FAX:	573-526-3350	PROJECT #	Bridgeton Landfill
DATE RECEIVED:	11/15/2016	CONTACT:	Brian Whittaker
DATE COMPLETED:	11/30/2016		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	D1 (163920)	Modified TO-15	4.9 "Hg	5 psi
02A	U1 (163921)	Modified TO-15	5.1 "Hg	4.9 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: 11/30/16

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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180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
 (916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified TO-15
Missouri Dept. of Natural Resources
Workorder# 1611279

Two 6 Liter Summa Canister (100% Certified) samples were received on November 15, 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

There were no receiving discrepancies.

Analytical Notes

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

Definition of Data Qualifying Flags

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

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

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

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

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

Client Sample ID: D1 (163920)

Lab ID#: 1611279-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.16	0.44	0.79	2.2
Freon 11	0.16	0.30	0.90	1.7
Ethanol	0.80	6.0	1.5	11
Acetone	0.80	13	1.9	32
2-Propanol	0.80	1.0	2.0	2.5
Hexane	0.16	0.16	0.56	0.57
2-Butanone (Methyl Ethyl Ketone)	0.80	2.5	2.4	7.4
Benzene	0.16	0.19	0.51	0.59
Toluene	0.16	0.25	0.60	0.95

Client Sample ID: U1 (163921)

Lab ID#: 1611279-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.16	0.44	0.80	2.2
Freon 11	0.16	0.19	0.90	1.0
Ethanol	0.80	9.0	1.5	17
Acetone	0.80	6.9	1.9	16
2-Propanol	0.80	5.7	2.0	14
Hexane	0.16	0.24	0.57	0.87
2,2,4-Trimethylpentane	0.80	1.2	3.8	5.6
Heptane	0.16	0.25	0.66	1.0
Toluene	0.16	0.42	0.61	1.6



Air Toxics

Client Sample ID: D1 (163920)

Lab ID#: 1611279-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e112220	Date of Collection:	11/8/16 12:45:00 PM
Dil. Factor:	1.60	Date of Analysis:	11/22/16 08:44 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.16	0.44	0.79	2.2
Freon 114	0.16	Not Detected	1.1	Not Detected
Chloromethane	0.80	Not Detected	1.6	Not Detected
Vinyl Chloride	0.16	Not Detected	0.41	Not Detected
1,3-Butadiene	0.16	Not Detected	0.35	Not Detected
Bromomethane	0.80	Not Detected	3.1	Not Detected
Chloroethane	0.80	Not Detected	2.1	Not Detected
Freon 11	0.16	0.30	0.90	1.7
Ethanol	0.80	6.0	1.5	11
Freon 113	0.16	Not Detected	1.2	Not Detected
1,1-Dichloroethene	0.16	Not Detected	0.63	Not Detected
Acetone	0.80	13	1.9	32
2-Propanol	0.80	1.0	2.0	2.5
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	0.63	Not Detected
Hexane	0.16	0.16	0.56	0.57
1,1-Dichloroethane	0.16	Not Detected	0.65	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.80	2.5	2.4	7.4
cis-1,2-Dichloroethene	0.16	Not Detected	0.63	Not Detected
Tetrahydrofuran	0.80	Not Detected	2.4	Not Detected
Chloroform	0.16	Not Detected	0.78	Not Detected
1,1,1-Trichloroethane	0.16	Not Detected	0.87	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	3.7	Not Detected
Benzene	0.16	0.19	0.51	0.59
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	0.25	0.60	0.95
trans-1,3-Dichloropropene	0.16	Not Detected	0.73	Not Detected
1,1,2-Trichloroethane	0.16	Not Detected	0.87	Not Detected
Tetrachloroethene	0.16	Not Detected	1.1	Not Detected
2-Hexanone	0.80	Not Detected	3.3	Not Detected

Client Sample ID: D1 (163920)

Lab ID#: 1611279-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e112220	Date of Collection:	11/8/16 12:45:00 PM
Dil. Factor:	1.60	Date of Analysis:	11/22/16 08:44 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	0.69	Not Detected
m,p-Xylene	0.16	Not Detected	0.69	Not Detected
o-Xylene	0.16	Not Detected	0.69	Not Detected
Styrene	0.16	Not Detected	0.68	Not Detected
Bromoform	0.16	Not Detected	1.6	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	0.96	Not Detected
1,4-Dichlorobenzene	0.16	Not Detected	0.96	Not Detected
alpha-Chlorotoluene	0.16	Not Detected	0.83	Not Detected
1,2-Dichlorobenzene	0.16	Not Detected	0.96	Not Detected
1,2,4-Trichlorobenzene	0.80	Not Detected UJ	5.9	Not Detected UJ
Hexachlorobutadiene	0.80	Not Detected	8.5	Not Detected

UJ = Analyte associated with low bias in the CCV.

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	110	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	98	70-130



Air Toxics

Client Sample ID: U1 (163921)

Lab ID#: 1611279-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e112221	Date of Collection:	11/8/16 12:35:00 PM
Dil. Factor:	1.61	Date of Analysis:	11/22/16 09:33 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.16	0.44	0.80	2.2
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	0.19	0.90	1.0
Ethanol	0.80	9.0	1.5	17
Freon 113	0.16	Not Detected	1.2	Not Detected
1,1-Dichloroethene	0.16	Not Detected	0.64	Not Detected
Acetone	0.80	6.9	1.9	16
2-Propanol	0.80	5.7	2.0	14
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	0.24	0.57	0.87
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	1.2	3.8	5.6
Benzene	0.16	Not Detected	0.51	Not Detected
1,2-Dichloroethane	0.16	Not Detected	0.65	Not Detected
Heptane	0.16	0.25	0.66	1.0
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	0.42	0.61	1.6
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



Client Sample ID: U1 (163921)

Lab ID#: 1611279-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e112221	Date of Collection:	11/8/16 12:35:00 PM
Dil. Factor:	1.61	Date of Analysis:	11/22/16 09:33 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 UJ	6.0	Not Detected UJ
Hexachlorobutadiene	0.80	Not Detected	8.6	Not Detected

UJ = Analyte associated with low bias in the CCV.

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	92	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1611279-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e112206	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	11/22/16 09:10 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#: 1611279-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e112206	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/22/16 09:10 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 UJ	3.7	Not Detected UJ
Hexachlorobutadiene	0.50	Not Detected	5.3	Not Detected

UJ = Analyte associated with low bias in the CCV.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	90	70-130



Air Toxics

Client Sample ID: CCV

Lab ID#: 1611279-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e112202	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/22/16 06:05 AM

Compound	%Recovery
Freon 12	77
Freon 114	76
Chloromethane	96
Vinyl Chloride	78
1,3-Butadiene	81
Bromomethane	77
Chloroethane	76
Freon 11	74
Ethanol	76
Freon 113	71
1,1-Dichloroethene	72
Acetone	83
2-Propanol	82
Carbon Disulfide	72
3-Chloropropene	75
Methylene Chloride	74
Methyl tert-butyl ether	72
trans-1,2-Dichloroethene	75
Hexane	79
1,1-Dichloroethane	78
2-Butanone (Methyl Ethyl Ketone)	72
cis-1,2-Dichloroethene	74
Tetrahydrofuran	90
Chloroform	77
1,1,1-Trichloroethane	72
Cyclohexane	72
Carbon Tetrachloride	73
2,2,4-Trimethylpentane	80
Benzene	85
1,2-Dichloroethane	86
Heptane	90
Trichloroethene	79
1,2-Dichloropropane	88
1,4-Dioxane	82
Bromodichloromethane	83
cis-1,3-Dichloropropene	81
4-Methyl-2-pentanone	96
Toluene	82
trans-1,3-Dichloropropene	81
1,1,2-Trichloroethane	84
Tetrachloroethene	78
2-Hexanone	87

Client Sample ID: CCV

Lab ID#: 1611279-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e112202	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/22/16 06:05 AM

Compound	%Recovery
Dibromochloromethane	84
1,2-Dibromoethane (EDB)	81
Chlorobenzene	81
Ethyl Benzene	80
m,p-Xylene	81
o-Xylene	80
Styrene	81
Bromoform	84
Cumene	82
1,1,2,2-Tetrachloroethane	89
Propylbenzene	82
4-Ethyltoluene	82
1,3,5-Trimethylbenzene	82
1,2,4-Trimethylbenzene	76
1,3-Dichlorobenzene	76
1,4-Dichlorobenzene	80
alpha-Chlorotoluene	80
1,2-Dichlorobenzene	82
1,2,4-Trichlorobenzene	67 Q
Hexachlorobutadiene	76

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	95	70-130

Client Sample ID: LCS

Lab ID#: 1611279-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e112203	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/22/16 06:48 AM

Compound	%Recovery	Method Limits
Freon 12	100	70-130
Freon 114	98	70-130
Chloromethane	124	70-130
Vinyl Chloride	103	70-130
1,3-Butadiene	105	70-130
Bromomethane	100	70-130
Chloroethane	99	70-130
Freon 11	95	70-130
Ethanol	72	70-130
Freon 113	93	70-130
1,1-Dichloroethene	91	70-130
Acetone	104	70-130
2-Propanol	106	70-130
Carbon Disulfide	90	70-130
3-Chloropropene	91	70-130
Methylene Chloride	96	70-130
Methyl tert-butyl ether	91	70-130
trans-1,2-Dichloroethene	95	70-130
Hexane	105	70-130
1,1-Dichloroethane	98	70-130
2-Butanone (Methyl Ethyl Ketone)	94	70-130
cis-1,2-Dichloroethene	90	70-130
Tetrahydrofuran	114	70-130
Chloroform	96	70-130
1,1,1-Trichloroethane	91	70-130
Cyclohexane	92	70-130
Carbon Tetrachloride	72	70-130
2,2,4-Trimethylpentane	101	70-130
Benzene	105	70-130
1,2-Dichloroethane	104	70-130
Heptane	117	70-130
Trichloroethene	101	70-130
1,2-Dichloropropane	109	70-130
1,4-Dioxane	101	70-130
Bromodichloromethane	104	70-130
cis-1,3-Dichloropropene	100	70-130
4-Methyl-2-pentanone	122	70-130
Toluene	103	70-130
trans-1,3-Dichloropropene	100	70-130
1,1,2-Trichloroethane	106	70-130
Tetrachloroethene	100	70-130
2-Hexanone	107	70-130

Client Sample ID: LCS

Lab ID#: 1611279-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e112203	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/22/16 06:48 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	103	70-130
1,2-Dibromoethane (EDB)	102	70-130
Chlorobenzene	101	70-130
Ethyl Benzene	102	70-130
m,p-Xylene	101	70-130
o-Xylene	100	70-130
Styrene	102	70-130
Bromoform	103	70-130
Cumene	103	70-130
1,1,2,2-Tetrachloroethane	108	70-130
Propylbenzene	103	70-130
4-Ethyltoluene	103	70-130
1,3,5-Trimethylbenzene	102	70-130
1,2,4-Trimethylbenzene	93	70-130
1,3-Dichlorobenzene	97	70-130
1,4-Dichlorobenzene	100	70-130
alpha-Chlorotoluene	102	70-130
1,2-Dichlorobenzene	100	70-130
1,2,4-Trichlorobenzene	82	70-130
Hexachlorobutadiene	102	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	101	70-130



Air Toxics

Client Sample ID: LCS D

Lab ID#: 1611279-05AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e112204	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/22/16 07:32 AM

Compound	%Recovery	Method Limits
Freon 12	94	70-130
Freon 114	93	70-130
Chloromethane	117	70-130
Vinyl Chloride	100	70-130
1,3-Butadiene	101	70-130
Bromomethane	96	70-130
Chloroethane	96	70-130
Freon 11	91	70-130
Ethanol	69 Q	70-130
Freon 113	89	70-130
1,1-Dichloroethene	86	70-130
Acetone	100	70-130
2-Propanol	103	70-130
Carbon Disulfide	87	70-130
3-Chloropropene	90	70-130
Methylene Chloride	95	70-130
Methyl tert-butyl ether	88	70-130
trans-1,2-Dichloroethene	91	70-130
Hexane	102	70-130
1,1-Dichloroethane	93	70-130
2-Butanone (Methyl Ethyl Ketone)	92	70-130
cis-1,2-Dichloroethene	85	70-130
Tetrahydrofuran	113	70-130
Chloroform	93	70-130
1,1,1-Trichloroethane	88	70-130
Cyclohexane	92	70-130
Carbon Tetrachloride	70	70-130
2,2,4-Trimethylpentane	99	70-130
Benzene	104	70-130
1,2-Dichloroethane	104	70-130
Heptane	113	70-130
Trichloroethene	102	70-130
1,2-Dichloropropane	108	70-130
1,4-Dioxane	102	70-130
Bromodichloromethane	104	70-130
cis-1,3-Dichloropropene	102	70-130
4-Methyl-2-pentanone	120	70-130
Toluene	103	70-130
trans-1,3-Dichloropropene	94	70-130
1,1,2-Trichloroethane	100	70-130
Tetrachloroethene	96	70-130
2-Hexanone	103	70-130

Client Sample ID: LCSD

Lab ID#: 1611279-05AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	e112204	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/22/16 07:32 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	99	70-130
1,2-Dibromoethane (EDB)	98	70-130
Chlorobenzene	98	70-130
Ethyl Benzene	99	70-130
m,p-Xylene	99	70-130
o-Xylene	98	70-130
Styrene	98	70-130
Bromoform	99	70-130
Cumene	99	70-130
1,1,2,2-Tetrachloroethane	105	70-130
Propylbenzene	100	70-130
4-Ethyltoluene	100	70-130
1,3,5-Trimethylbenzene	100	70-130
1,2,4-Trimethylbenzene	92	70-130
1,3-Dichlorobenzene	94	70-130
1,4-Dichlorobenzene	98	70-130
alpha-Chlorotoluene	99	70-130
1,2-Dichlorobenzene	97	70-130
1,2,4-Trichlorobenzene	80	70-130
Hexachlorobutadiene	96	70-130

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	95	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	97	70-130