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Electronic Comprehensive Validation Package (eCVP)

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COMPREHENSIVE VALIDATION PACKAGE

Modified TO-15 (5&20 ppbv)

INVENTORY SHEET

Work Order #: 1607235B

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Comments:

Completed by:

Vera Belitsky	Vera Belitsky / Document Control	7/26/16
(Signature)	(Print Name & Title)	(Date)

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WORK ORDER #: 1607235B

Work Order Summary

CLIENT:	Mr. Terry Taylor Anderson Mulholland & Associates, Inc. 2700 Westchester Avenue Suite 417 Purchase, NY 10577	**BILL TO:**	Accounts Payable Anderson Mulholland & Associates, Inc. 2700 Westchester Avenue Suite 417 Purchase, NY 10577
PHONE:	(914) 251-0400	**P.O. #**	
FAX:		**PROJECT #**	Building 18 VI
DATE RECEIVED:	07/14/2016	**CONTACT:**	Brian Whittaker
DATE COMPLETED:	07/20/2016		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
07A	B30IA-1 (070816)	Modified TO-15 (5&20 ppbv	5.7 "Hg	4.8 psi
08A	Lab Blank	Modified TO-15 (5&20 ppbv	NA	NA
09A	CCV	Modified TO-15 (5&20 ppbv	NA	NA

CERTIFIED BY: Heidi Mayo

Technical Director

DATE: 07/20/16

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

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LABORATORY NARRATIVE
EPA Method TO-15 Soil Gas
Anderson Mulholland & Associates, Inc.
Workorder# 1607235B

One 6 Liter Summa Canister (100% Certified) sample was received on July 14, 2016. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode. The method involves concentrating up to 50 mLs of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

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.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

A single point calibration for Methanol was performed for each daily analytical batch. Recovery is reported as 100% in the associated results for each CCV.

Due to the linear calibration range of the instrument, the reporting limit for Methanol was raised from 50ppbv to 100ppbv.

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

Table 1

Client Sample ID	Lab Sample ID	Date Collected	Date Received	Date Extracted	Sample Holding Time (Days)	Sample Extract Date Analyzed	Sample Extract Holding Time (Days)	Sample Condition
B30IA-1 (070816)	1607235B-07A	7/ 9/2016	7/14/2016	NA	10	7/19/2016	NA	Good
Lab Blank	1607235B-08A	NA	NA	NA	NA	7/19/2016	NA	Good
CCV	1607235B-09A	NA	NA	NA	NA	7/19/2016	NA	Good

Sample Results and Raw Data

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

Client Sample ID: B30IA-1 (070816)

Lab ID#: 1607235B-07A

No Detections Were Found.

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Client Sample ID: B30IA-1 (070816)

Lab ID#: 1607235B-07A

EPA METHOD TO-15 GC/MS

File Name:	**14071920**	**Date of Collection:**	**7/9/16 6:12:00 PM**
Dil. Factor:	**1.64**	**Date of Analysis:**	**7/19/16 04:13 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methanol	160	Not Detected	210	Not Detected

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

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	96	70-130

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EPA TO-15/MODIFIED TO14A

Data file : /chem/msd14.i/19jul16.b/14071920.d
Lab Smp Id: 1607235B-07A
Inj Date : 19-JUL-2016 16:13
Operator : mjs Inst ID: msd14.i
Smp Info : 50ml #6L0493
Misc Info : 5.7"Hg -> 4.8psi
Comment : 5 and 20 - GC/MS
Method : /chem/msd14.i/19jul16.b/MEOH0719a.m
Meth Date : 19-Jul-2016 15:56 mskidmor Quant Type: ISTD
Cal Date : 19-JUL-2016 12:41 Cal File: 14071914.d
Als bottle: 3
Dil Factor: 1.64000
Integrator: HP RTE Compound Sublist: MEOH.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane						CAS #: 74-97-5	
5.319	5.319 (1.000)	130	119088	400.000		80.00- 120.00	100.00
5.319	5.319 (1.000)	128	93494			48.38- 108.38	78.51
5.319	5.319 (1.000)	49	254079			122.49- 182.49	213.35
* 123 1,4-Difluorobenzene						CAS #: 540-36-3	
6.444	6.444 (1.000)	114	527993	400.000		80.00- 120.00	100.00
6.444	6.444 (1.000)	88	96455			0.00- 47.28	18.27
* 163 Chlorobenzene-d5						CAS #: 3114-55-4	
8.905	8.905 (1.000)	117	481705	400.000		80.00- 120.00	100.00
8.905	8.905 (1.000)	82	318802			33.96- 93.96	66.18
$ 117 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
5.988	5.988 (1.126)	65	255976	413.279	413.28	80.00- 120.00	100.00
5.988	5.988 (1.126)	67	122895			22.50- 82.50	48.01
$ 146 Toluene-d8						CAS #: 2037-26-5	
7.813	7.813 (1.212)	98	599393	407.477	407.48	80.00- 120.00	100.00
7.813	7.813 (1.212)	70	74350			0.00- 42.36	12.40

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)							
7.813	7.813 (1.212)	100	395791			36.13- 96.13	66.03
$ 177 4-Bromofluorobenzene					CAS #: 460-00-4		
9.632	9.632 (1.082)	174	227903	382.863	382.86	80.00- 120.00	100.00
9.632	9.632 (1.082)	95	402792			113.45- 173.45	176.74
9.632	9.632 (1.082)	176	227762			68.10- 128.10	99.94

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INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd14.i
Lab File ID: 14071920.d
Lab Smp Id: 1607235B-07A
Analysis Type: VOA
Quant Type: ISTD
Operator: mjs
Method File: /chem/msd14.i/19jul16.b/MEOH0719a.m
Misc Info: 5.7"Hg -> 4.8psi

Calibration Date: 19-JUL-2016
Calibration Time: 12:41

Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	115579	69347	161811	119088	3.04
123 1,4-Difluorobenze	512594	307556	717632	527993	3.00
163 Chlorobenzene-d5	458000	274800	641200	481705	5.18

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.32	4.99	5.65	5.32	0.00
123 1,4-Difluorobenze	6.44	6.11	6.77	6.44	0.00
163 Chlorobenzene-d5	8.90	8.57	9.23	8.90	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 20-Jul-2016 07:42

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name:
Client SDG: 19jul16
Sample Matrix: GAS
Fraction: VOA
Lab Smp Id: 1607235B-07A
Level: LOW
Operator: mjs
Data Type: MS DATA
SampleType: SAMPLE
SpikeList File: 2926Spectra.spk
Quant Type: ISTD
Sublist File: MEOH.sub
Method File: /chem/msd14.i/19jul16.b/MEOH0719a.m
Misc Info: 5.7"Hg -> 4.8psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 117 1,2-Dichloroethane	400.00	413.28	103.32	70-130
$ 146 Toluene-d8	400.00	407.48	101.87	70-130
$ 177 4-Bromofluorobenze	400.00	382.86	95.72	70-130

Data File: /chem/msd14.i/19jul16.b/14071920.d

Date : 19-JUL-2016 16:13

Client ID:

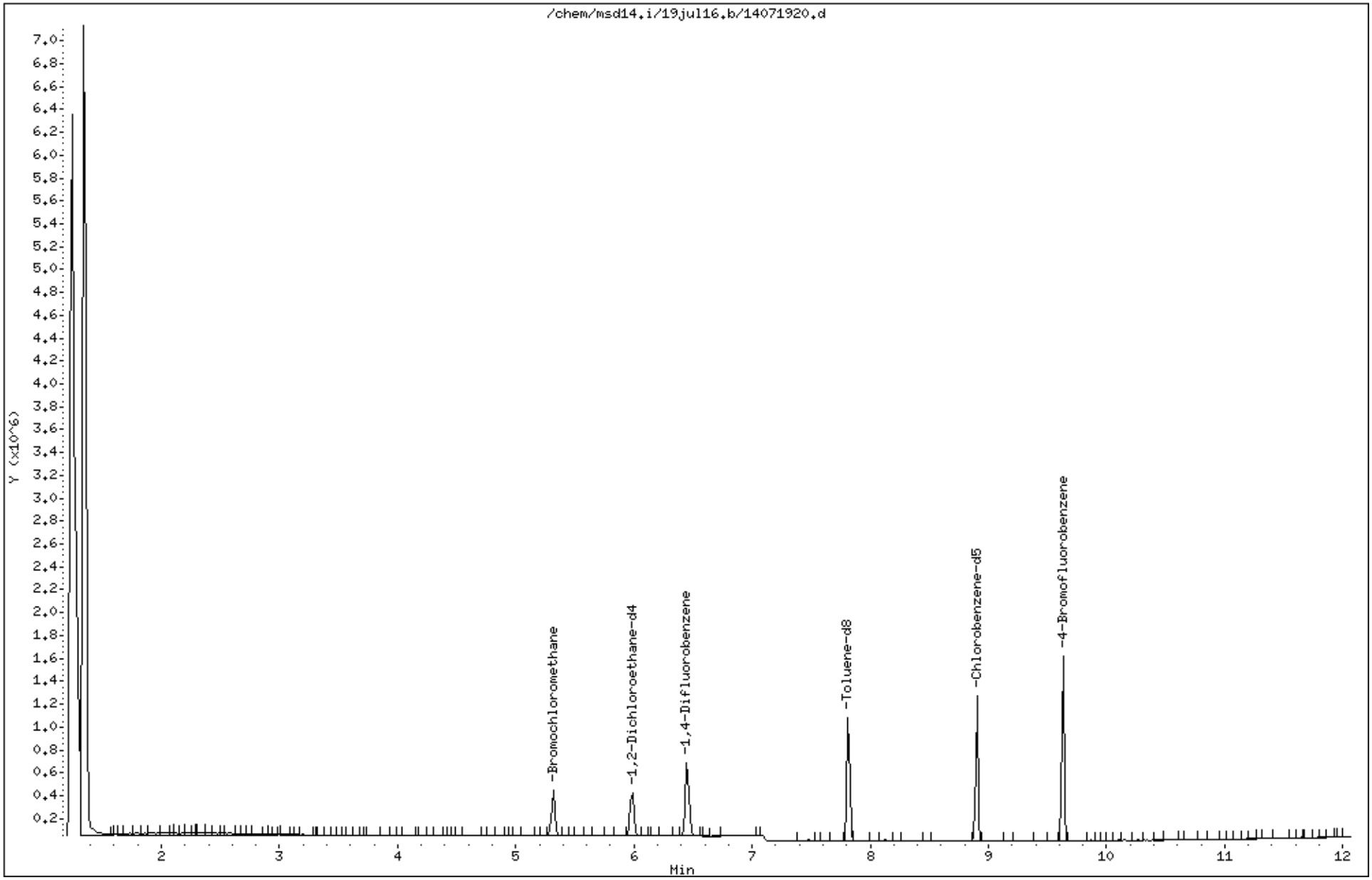
Instrument: msd14.i

Sample Info: 50ml #6L0493

Operator: mjs

Column phase: RTX-624

Column diameter: 0.18



QC Results and Raw Data

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Client Sample ID: Lab Blank

Lab ID#: 1607235B-08A

EPA METHOD TO-15 GC/MS

File Name:	**14071915**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 7/19/16 01:16 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Methanol	100	Not Detected	130	Not Detected

Container Type: NA - Not Applicable

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

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd14.i/19jul16.b/14071915.d
Lab Smp Id: Lab Blank Client Smp ID: Lab Blank
Inj Date : 19-JUL-2016 13:16
Operator : jcw Inst ID: msd14.i
Smp Info : 50mL #36041
Misc Info : Humid
Comment : 5 and 20 - GC/MS
Method : /chem/msd14.i/19jul16.b/MEOH0719a.m
Meth Date : 19-Jul-2016 13:50 jwu Quant Type: ISTD
Cal Date : 19-JUL-2016 12:41 Cal File: 14071914.d
Als bottle: 1 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: MEOH.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane						CAS #: 74-97-5	
5.319	5.319 (1.000)	130	126347	400.000		80.00- 120.00	100.00
5.319	5.319 (1.000)	128	97111			48.38- 108.38	76.86
5.319	5.319 (1.000)	49	257209			122.49- 182.49	203.57
* 123 1,4-Difluorobenzene						CAS #: 540-36-3	
6.444	6.444 (1.000)	114	552128	400.000		80.00- 120.00	100.00
6.444	6.444 (1.000)	88	107016			0.00- 47.28	19.38
* 163 Chlorobenzene-d5						CAS #: 3114-55-4	
8.905	8.905 (1.000)	117	494422	400.000		80.00- 120.00	100.00
8.905	8.905 (1.000)	82	323890			33.96- 93.96	65.51
$ 117 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
5.988	5.988 (1.126)	65	260010	395.676	395.68	80.00- 120.00	100.00
5.988	5.988 (1.126)	67	122197			22.50- 82.50	47.00
$ 146 Toluene-d8						CAS #: 2037-26-5	
7.813	7.813 (1.212)	98	620855	403.617	403.62	80.00- 120.00	100.00
7.813	7.813 (1.212)	70	79937			0.00- 42.36	12.88

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)								
7.813	7.813	(1.212)	100	408739			36.13- 96.13	65.83
$ 177 4-Bromofluorobenzene						CAS #: 460-00-4		
9.632	9.632	(1.082)	174	247352	404.848	404.85	80.00- 120.00	100.00
9.632	9.632	(1.082)	95	405151			113.45- 173.45	163.80
9.632	9.632	(1.082)	176	231398			68.10- 128.10	93.55

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd14.i
Lab File ID: 14071915.d
Lab Smp Id: Lab Blank
Analysis Type: VOA
Quant Type: ISTD
Operator: jcw
Method File: /chem/msd14.i/19jul16.b/MEOH0719a.m
Misc Info: Humid

Calibration Date: 19-JUL-2016
Calibration Time: 12:41
Client Smp ID: Lab Blank
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	115579	69347	161811	126347	9.32
123 1,4-Difluorobenze	512594	307556	717632	552128	7.71
163 Chlorobenzene-d5	458000	274800	641200	494422	7.95

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.32	4.99	5.65	5.32	0.00
123 1,4-Difluorobenze	6.44	6.11	6.77	6.44	0.00
163 Chlorobenzene-d5	8.90	8.57	9.23	8.90	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 19-Jul-2016 13:52

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name:
Client SDG: 19jul16
Sample Matrix: GAS
Fraction: VOA
Lab Smp Id: Lab Blank
Client Smp ID: Lab Blank
Level: LOW
Operator: jcw
Data Type: MS DATA
SampleType: BLANK
SpikeList File: 2926Spectra.spk
Quant Type: ISTD
Sublist File: MEOH.sub
Method File: /chem/msd14.i/19jul16.b/MEOH0719a.m
Misc Info: Humid

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 117 1,2-Dichloroethane	400.00	395.68	98.92	70-130
$ 146 Toluene-d8	400.00	403.62	100.90	70-130
$ 177 4-Bromofluorobenze	400.00	404.85	101.21	70-130

Data File: /chem/msd14.i/19jul16.b/14071915.d

Date : 19-JUL-2016 13:16

Client ID: Lab Blank

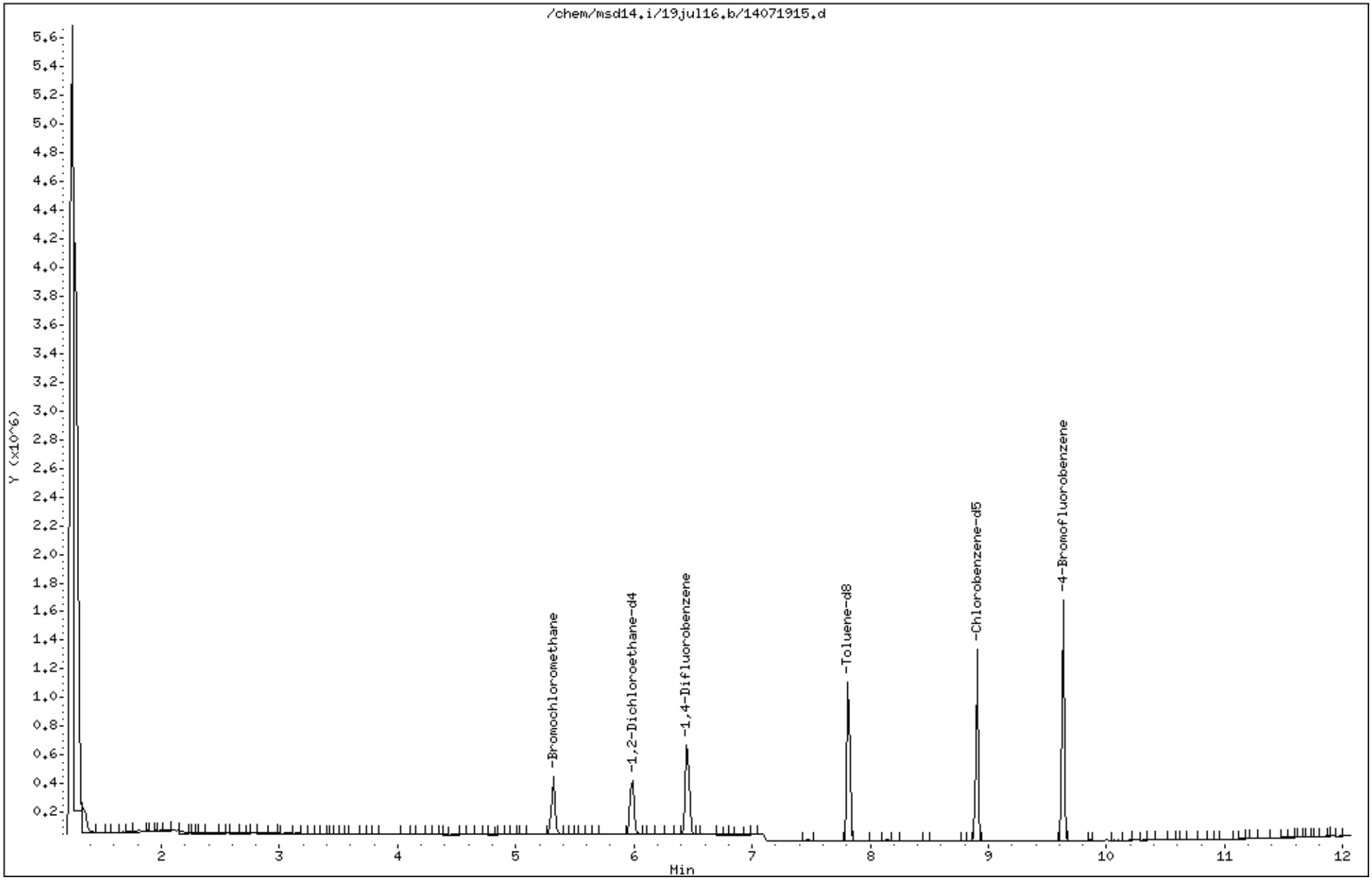
Instrument: msd14.i

Sample Info: 50mL #36041

Operator: jcw

Column phase: RTX-624

Column diameter: 0.18



LEVEL-IV VALIDATABLE

EPA METHOD TO-15 GC/MS

SURROGATE RECOVERY FORM

Lab Name: AIR TOXICS LIMITED. SDG No.: 1607235B

	CLIENT SAMPLE NO.	SURROGATE % RECOVERY								
		1,2-Dichloroethane-d4	#	Toluene-d8	#	4-Bromofluorobenzene	#		#	TOTAL OUT
01	B30IA-1 (070816)	103		102		96				0
02	Lab Blank	99		101		101				0
03	CCV	100		100		100				0
04										0
05										0
06										0
07										0
08										0
09										0
10										0
11										0
12										0
13										0
14										0
15										0
16										0
17										0
18										0
19										0
20										0
21										0
22										0
23										0
24										0

Surrogate Recovery Limits

1,2-Dichloroethane-d4 70 - 130
Toluene-d8 70 - 130
4-Bromofluorobenzene 70 - 130

* Designates values outside of QC limits

LEVEL-IV VALIDATABLE

EPA Method TO-15 GC/MS

INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name:	AIR TOXICS, LTD	SDG No:	1607235B
Lab File ID:	14071914a.d	Date Analyzed:	07/19/2016
Instrument ID:	msd14.i	Time Analyzed:	12:41 PM

		Chlorobenzene-d5 Area	#	RT	#	1,4-Difluorobenzene Area	#	RT	#	Bromochloromethane Area	#	RT	#
	24-HOUR STD	458000		8.9		512594		6.44		115579		5.32	
	UPPER LIMIT	641200		09.23		717632		06.77		161811		05.65	
	LOWER LIMIT	274800		08.57		307556		06.11		69347		04.99	
	CLIENT SAMPLE NO												
01	B30IA-1 (070816)	481705		8.9		527993		6.44		119088		5.32	
02	Lab Blank	494422		8.9		552128		6.44		126347		5.32	
03	CCV	458000		8.9		512594		6.44		115579		5.32	
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22													

'Area Upper Limit=+40% of internal standard area'
'Area Lower Limit=-40% of internal standard area'

RT Upper Limit=+0.33 minutes of internal standard RT
RT Lower Limit=-0.33 minutes of internal standard RT

* Designates values outside of QC limits

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 19-JUL-2016 12:41
End Cal Date : 19-JUL-2016 12:41
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msd14.i/19jul16.b/MEOH0719a.m
Cal Date : 19-Jul-2016 15:33 jwu
Curve Type : Average

Calibration File Names:
Level 5: /chem/msd14.i/19jul16.b/14071914.d

	100.000	___	
Compound	Level 5	RRF	% RSD
28 Methanol	0.94536	0.94536	0.000
$ 117 1,2-Dichloroethane-d4	2.08040	2.08040	0.000
$ 146 Toluene-d8	1.11440	1.11440	0.000
$ 177 4-Bromofluorobenzene	0.49429	0.49429	0.000

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 19-JUL-2016 12:41
End Cal Date : 19-JUL-2016 12:41
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msd14.i/19jul16.b/MEOH0719a.m
Cal Date : 19-Jul-2016 15:33 jwu
Curve Type : Average

Average %RSD Results.	
Calculated Average %RSD =	0
Maximun Average %RSD =	30
* Passed Average %RSD Test.	

Calibration History

Method : /chem/msd14.i/19jul16.b/MEOH0719a.m
Start Cal Date: 19-JUL-2016 12:41
End Cal Date : 19-JUL-2016 12:41

Initial Calibration

Injection Date	Sublist	Calibration File
Cal Level: 5 , Cal Amount: 100.00000		
19-JUL-2016 12:41	MEOH	/chem/msd14.i/19jul16.b/14071914.d

Continuing Calibration
Ccal Level Mode: GLOBAL LEVEL 5

Ccal Level: 5 , Ccal Amount: 100.00		
19-JUL-2016 12:41	MEOH	/chem/msd14.i/19jul16.b/14071914.d
Ccal Level: 5 , Ccal Amount: 100.00		
19-JUL-2016 12:41	MEOH	/chem/msd14.i/19jul16.b/14071914a.d

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 19-JUL-2016 12:41
End Cal Date : 19-JUL-2016 12:41
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msd14.i/19jul16.b/MEOH0719a.m
Cal Date : 19-Jul-2016 15:33 jwu
Curve Type : Average

Calibration File Names:
Level 5: /chem/msd14.i/19jul16.b/14071914.d

JW 7/19/16

Compound	100.000 Level 5	___ RRF	% RSD
28 Methanol	0.94536	0.94536	0.000
$ 117 1,2-Dichloroethane-d4	2.08040	2.08040	0.000
$ 146 Toluene-d8	1.11440	1.11440	0.000
$ 177 4-Bromofluorobenzene	0.49429	0.49429	0.000

MEOH0719a.M
Initial Calibration Narrative

A 1-point Methanol initial calibration was analyzed on MSD-14 on 7/19/16.

The quantitation ion peak (31 amu) is sufficiently resolved for accurate quantification of Methanol at the reporting limit of 100ppbv. However, the confirmation mass ion peak (32 amu) for Methanol is not baseline-resolved. Identification of Methanol based on the presence and abundance ratio of confirmation ion is less reliable at the lowest concentrations due to minimal baseline-resolvement.

No ICV or MDL needed.

BFB Tune file - 14071911

Eurofins Air Toxics, Inc. **MSD-14** **Logbook #2809**

BFB Verification of 176/174 m/z Ratio: (207488/217152)x100 ~~[illegible]~~ 95.55% 7/19/16	
Method Name: MECH0719A	

IS/S Std. #: 2789-202	Exp. Date: 9/27/16
BCM	115579
1,4-DFB	512594
CB-d5	458000

Verified CCV IS vs ICAL mid-point (-40%D): JW

SOP# (Circle one): 6 / 83 / 38 / 91 / 109 / 132 Method (Circle one): TO-14A/TO-15/TO-17

	Use	File	Lab ID#	Can#/ Standard ID#	Pressure	Amt. Loaded	DF	Loaded By Initials	Date Analyzed	Time Analyzed	Reviewed By Initials	Comments/Standard Expiration Date
1	✓	14071911	BFB TUNE check	2789-1436	50ng	2.0 mL	1.00	JW	7/19/16	1123	JW	
2	✓	12	System Blank	36041	Humid	50 mL	1.00	JW		1140	JW	
3	X	13	ICAL level 4	2789-145	50 ppbv	25 mL	1.00	JW		1200	JW	exp: 8/17/16
4	✓	14	ICAL level 5		100 ppbv	5.0 mL	1.00	JW		1241	JW	↓ MeOH
5	✓	15	Lab Blank	36041	Humid	50 mL	1.00	JW		1316	JW	
6		16	16072351-08A	~~36376~~	~~4.74 Hg 15.1 psi~~	~~50 mL~~	~~2.40~~	JW				
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												JW 7/19/16

Reviewed 7/19/16 Date

eurofins | Air Toxics

Client Sample ID: CCV

Lab ID#: 1607235B-09A

EPA METHOD TO-15 GC/MS

File Name:	**14071914a**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 7/19/16 12:41 PM**	

Compound	**%Recovery**
Methanol	100

Container Type: NA - Not Applicable

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

Eurofins Air Toxics Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: msd14.i Injection Date: 19-JUL-2016 12:41
Lab File ID: 14071914a.d Init. Cal. Date(s): 19-JUL-2016 19-JUL-2016
Analysis Type: AIR Init. Cal. Times: 12:41 12:41
Lab Sample ID: ccv Quant Type: ISTD
Method: /chem/msd14.i/19jul16.b/MEOH0719a.m

COMPOUND	RRF / AMOUNT	RF100	MIN RRF	%D / %DRIFT	%D / %DRIFT	CURVE TYPE
$ 117 1,2-Dichloroethane-d4	2.08040	2.08040	0.010	0.000e+00	30.00000	Averaged
$ 146 Toluene-d8	1.11440	1.11440	0.010	0.000e+00	30.00000	Averaged
$ 177 4-Bromofluorobenzene	0.49429	0.49429	0.010	0.000e+00	30.00000	Averaged
28 Methanol	0.94536	0.94536	0.010	0.000e+00	30.00000	Averaged

Average %D / Drift Results.

Calculated Average %D/Drift = 100
Maximun Average %D/Drift = 30.00000
* Failed Average %D/Drift Test.

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd14.i/19jul16.b/14071914a.d
Lab Smp Id: ccv Client Smp ID: ccv
Inj Date : 19-JUL-2016 12:41
Operator : JCW Inst ID: msd14.i
Smp Info : 5.0mL # 2789-145
Misc Info : 100ppbv (1000ppbv) MeOH
Comment : 5 and 20 - GC/MS
Method : /chem/msd14.i/19jul16.b/MEOH0719a.m
Meth Date : 19-Jul-2016 13:50 jwu Quant Type: ISTD
Cal Date : 19-JUL-2016 12:41 Cal File: 14071914.d
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: MEOH.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane						CAS #: 74-97-5	
5.319	5.319 (1.000)	130	115579	400.000		80.00- 120.00	100.00
5.319	5.319 (1.000)	128	92151			48.38- 108.38	79.73
5.319	5.319 (1.000)	49	232007			122.49- 182.49	200.73
* 123 1,4-Difluorobenzene						CAS #: 540-36-3	
6.444	6.444 (1.000)	114	512594	400.000		80.00- 120.00	100.00
6.444	6.444 (1.000)	88	97709			0.00- 47.28	19.06
* 163 Chlorobenzene-d5						CAS #: 3114-55-4	
8.905	8.905 (1.000)	117	458000	400.000		80.00- 120.00	100.00
8.905	8.905 (1.000)	82	300752			33.96- 93.96	65.67
$ 117 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
5.988	5.988 (1.126)	65	240450	400.000	400.00	80.00- 120.00	100.00
5.988	5.988 (1.126)	67	115055			22.50- 82.50	47.85
$ 146 Toluene-d8						CAS #: 2037-26-5	
7.813	7.813 (1.212)	98	571234	400.000	400.00	80.00- 120.00	100.00
7.813	7.813 (1.212)	70	68921			0.00- 42.36	12.07

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)							
7.813	7.813 (1.212)	100	385218			36.13- 96.13	67.44
$ 177 4-Bromofluorobenzene					CAS #: 460-00-4		
9.632	9.632 (1.082)	174	226387	400.000	400.00	80.00- 120.00	100.00
9.632	9.632 (1.082)	95	375133			113.45- 173.45	165.70
9.632	9.632 (1.082)	176	214362			68.10- 128.10	94.69
28 Methanol					CAS #: 67-56-1		
2.042	2.042 (0.384)	31	27316	100.000	100.00	0.00- 0.00	100.00
2.027	2.027 (0.381)	32	31554			0.00- 0.00	115.51

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd14.i
Lab File ID: 14071914a.d
Lab Smp Id: ccv
Analysis Type: VOA
Quant Type: ISTD
Operator: JCW
Method File: /chem/msd14.i/19jul16.b/MEOH0719a.m
Misc Info: 100ppbv (1000ppbv) MeOH

Calibration Date: 19-JUL-2016
Calibration Time: 12:41
Client Smp ID: ccv
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	115579	69347	161811	115579	0.00
123 1,4-Difluorobenze	512594	307556	717632	512594	0.00
163 Chlorobenzene-d5	458000	274800	641200	458000	0.00

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	5.32	4.99	5.65	5.32	0.00
123 1,4-Difluorobenze	6.44	6.11	6.77	6.44	0.00
163 Chlorobenzene-d5	8.90	8.57	9.23	8.90	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd14.i/19jul16.b/14071914a.d

Page 1

Date : 19-JUL-2016 12:41

Client ID: ccv

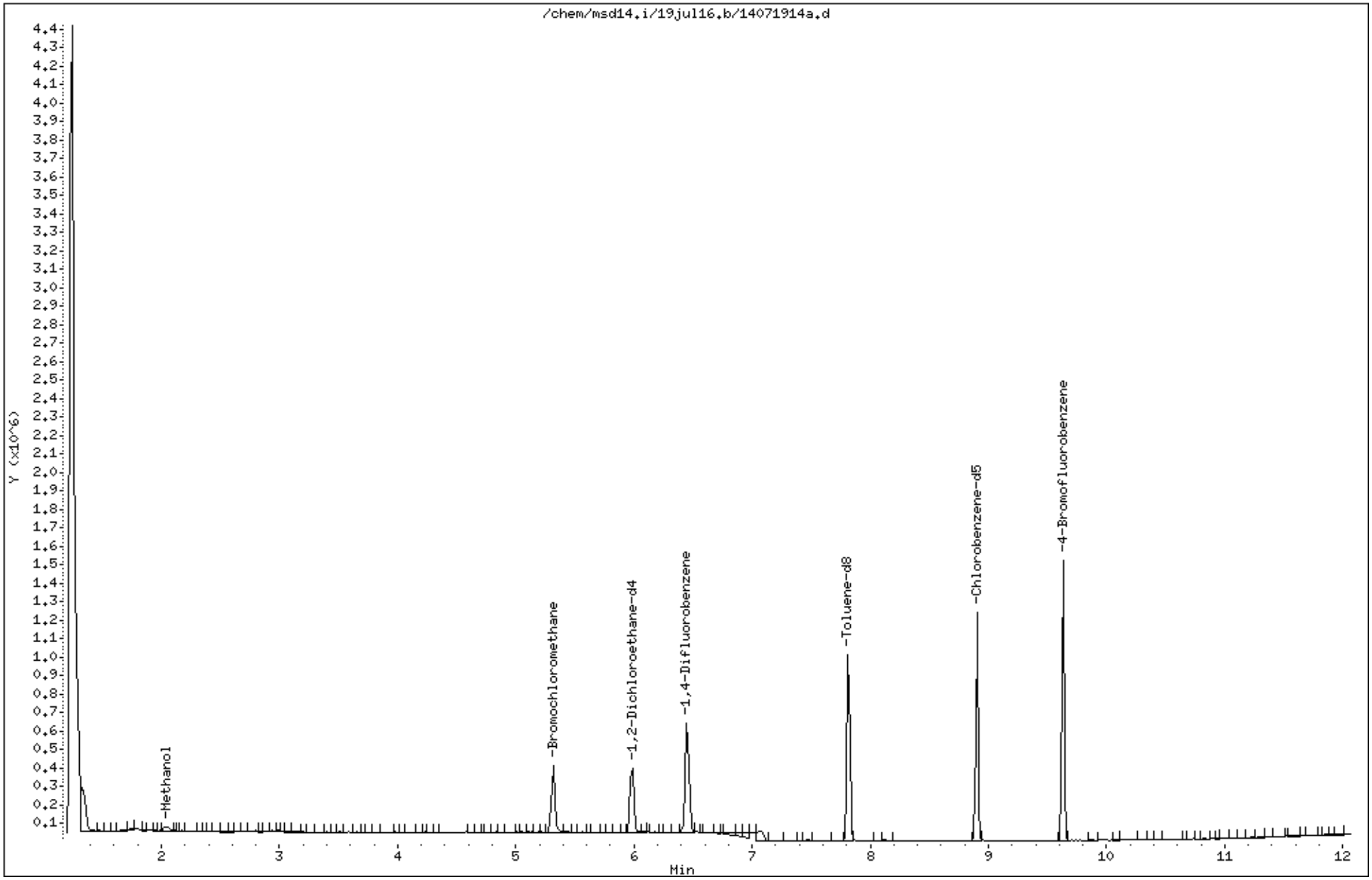
Instrument: msd14.i

Sample Info: 5.0mL # 2789-145

Operator: JCW

Column phase: RTX-624

Column diameter: 0.18



Eurofins Air Toxics, Inc. **MSD-14** **Logbook #2809**

BFB Verification of 176/174 m/z Ratio: (207488/217152)x100 = ~~45.55~~ 95.55% 7/19/16	
Method Name: MEOH0719MA	

IS/S Std. #: 2789-202	Exp. Date: 9/27/16
BCM	115579
1,4-DFB	512594
CB-d5	458000

Verified CCV IS vs ICAL mid-point (-40%D): JW

SOP# (Circle one): 6 / 83 / 38 / 91 / 109 / 132 Method (Circle one): TO-14A/TO-15/TO-17

	Use	File	Lab ID#	Can#/ Standard ID#	Pressure	Amt. Loaded	DF	Loaded By Initials	Date Analyzed	Time Analyzed	Reviewed By Initials	Comments/Standard Expiration Date
1	✓	14071911	BFB TUNE check	2789-1476	50ng	20 mL	1.00	JW	7/19/16	1123	JW	
2	✓	12	System Blank	36041	Humid	50mL	1.00	JW		1140	JW	
3	X	13	ICAL level 4	2789-145	50 ppbv	25mL	1.00	JW		1200	JW	exp: 8/17/16
4	✓	14	ICAL level 5		100 ppbv	5.0 mL	1.00	JW		1241	JW	↓ MeOH
5	✓	15	Lab Blank	36041	Humid	50mL	1.00	JW		1316	JW	
6	✓	16	1607235F-08A	36576	4.7"Hg-15.1psi	50mL	2.40	JW		1346	MB	
7	✓	17	-09A	30473	4.7"Hg→14.8psi	50mL	2.38	MB		1513	MB	
8	✓	18	-10A	8031	4.7"Hg→15.1psi	50mL	2.40	MB		1536	MB	
9	✓	19	-11A	1025	5.5"Hg→15psi	50mL	2.48	MB		1556	MB	
10	✓	20	-07A	6L0493	5.7"Hg→4.8psi	50mL	1.64	MB		1613	MB	
11	✓	21	-12A	36525	4.3"Hg→14.8psi	50mL	2.34	MB		1631	MB	
12	✓	22	-13A	30832	4.5"Hg→15.1psi	50mL	2.38	MB		1704	MB	
13	✓	23	-14A	12947	4.7"Hg→5.0psi	50mL	1.59	MB		1728	MB	
14	✓	24	-01A	33531	5.5"Hg→5.1psi	50mL	1.65	MB		1748	MB	
15	✓	25	-02A	6L0015	6.7"Hg→4.8psi	50mL	1.71	MB		1833	MB	
16	✓	26	-03A	6L0504	5.1"Hg→5.0psi	50mL	1.61	MB		1912	MB	
17	✓	27	-04A	12082	4.7"Hg→5.2psi	50mL	1.60	MB		1935	MB	

MB
Reviewed

7/19/16
Date

Eurofins Air Toxics Inc.

Data file : /var/chem/msd14.i/19jul16.b/14071911.d
Lab Smp Id: BFB Client Smp ID: BFB
Inj Date : 19-JUL-2016 11:23
Operator : jcw Inst ID: msd14.i
Smp Info : 2.0uL# 2299-1476; BFB; BFB
Misc Info : 50ng
Comment :
Method : /var/chem/msd14.i/19jul16.b/bfb20.m
Meth Date : 19-Jul-2016 11:34 Quant Type: ESTD
Cal Date : Cal File:
Als bottle: 1 QC Sample: BFB
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 3.50 Sample Matrix: WATER
Processing Host: eeyore

Concentration Formula: Amt * DF * Uf * Vf * Vi * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	1.00000	ng unit correction factor
Vf	1.00000	Volumetric correction factor
Vi	1.00000	Injection Volume

Cpnd Variable Local Compound Variable

RT	EXP RT	DLT RT	MASS	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/L)	TARGET RANGE	RATIO
1 bfb							CAS #: 460-00-4	
2.745	2.483	0.262	95	405077			100.00- 100.00	100.00
2.745	2.483	0.262	50	106528			8.00- 40.00	26.30
2.745	2.483	0.262	75	210709			30.00- 66.00	52.02
2.745	2.483	0.262	96	25602			5.00- 9.00	6.32
2.745	2.483	0.262	173	2748			0.00- 1.99	1.27
2.745	2.483	0.262	174	217173			50.01- 120.00	53.61
2.745	2.483	0.262	175	16684			4.00- 9.00	7.68
2.745	2.483	0.262	176	207488			93.00- 101.00	95.54
2.745	2.483	0.262	177	14682			5.00- 9.00	7.08

Data File: /var/chem/msd14.i/19jul16.b/14071911.d

Date : 19-JUL-2016 11:23

Client ID: BFB

Instrument: msd14.i

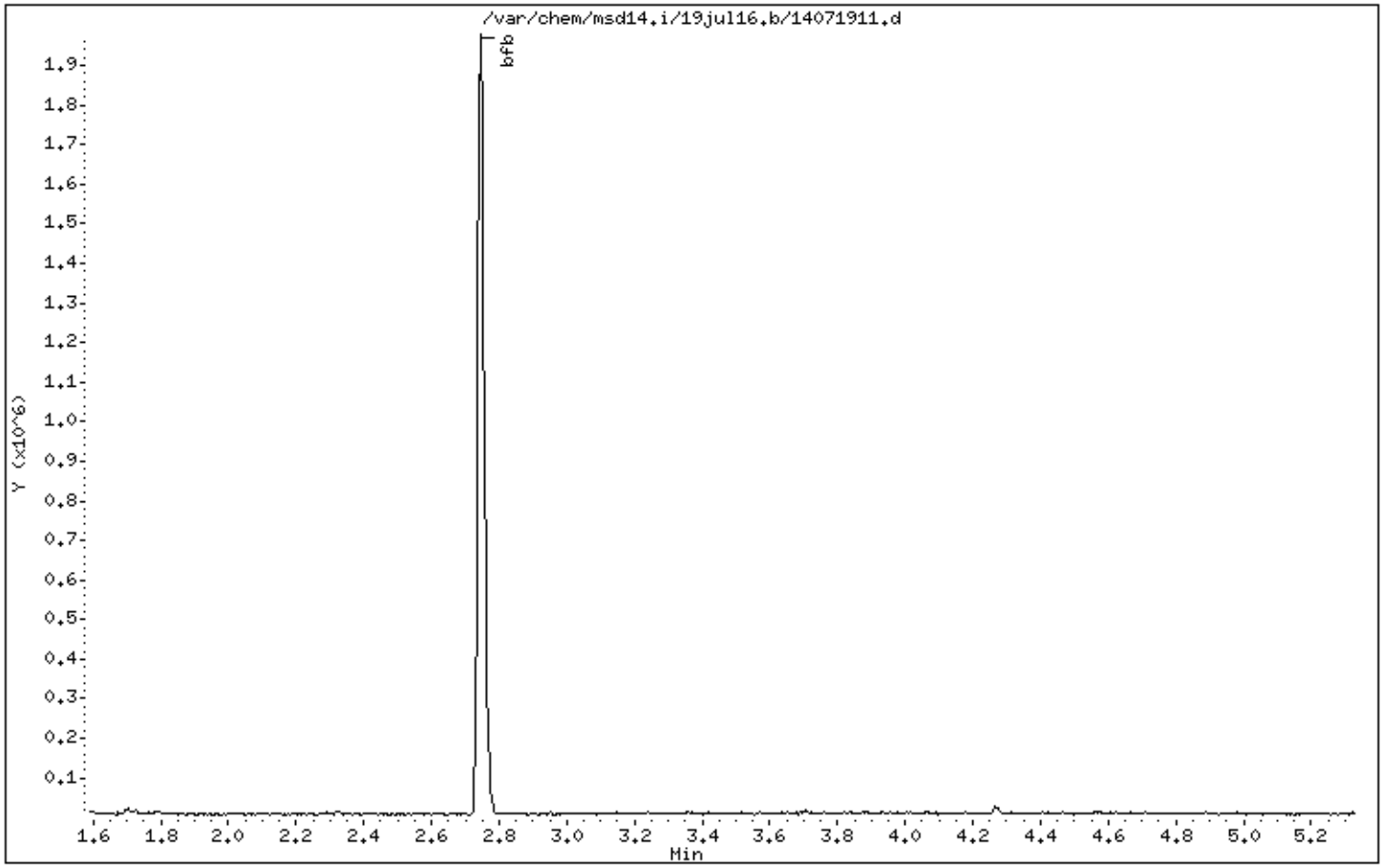
Sample Info: 2.0uL# 2299-1476; BFB; BFB

Volume Injected (uL): 1.0

Operator: jcw

Column phase:

Column diameter: 2.00



Data File: /var/chem/msd14.i/19jul16.b/14071911.d

Date : 19-JUL-2016 11:23

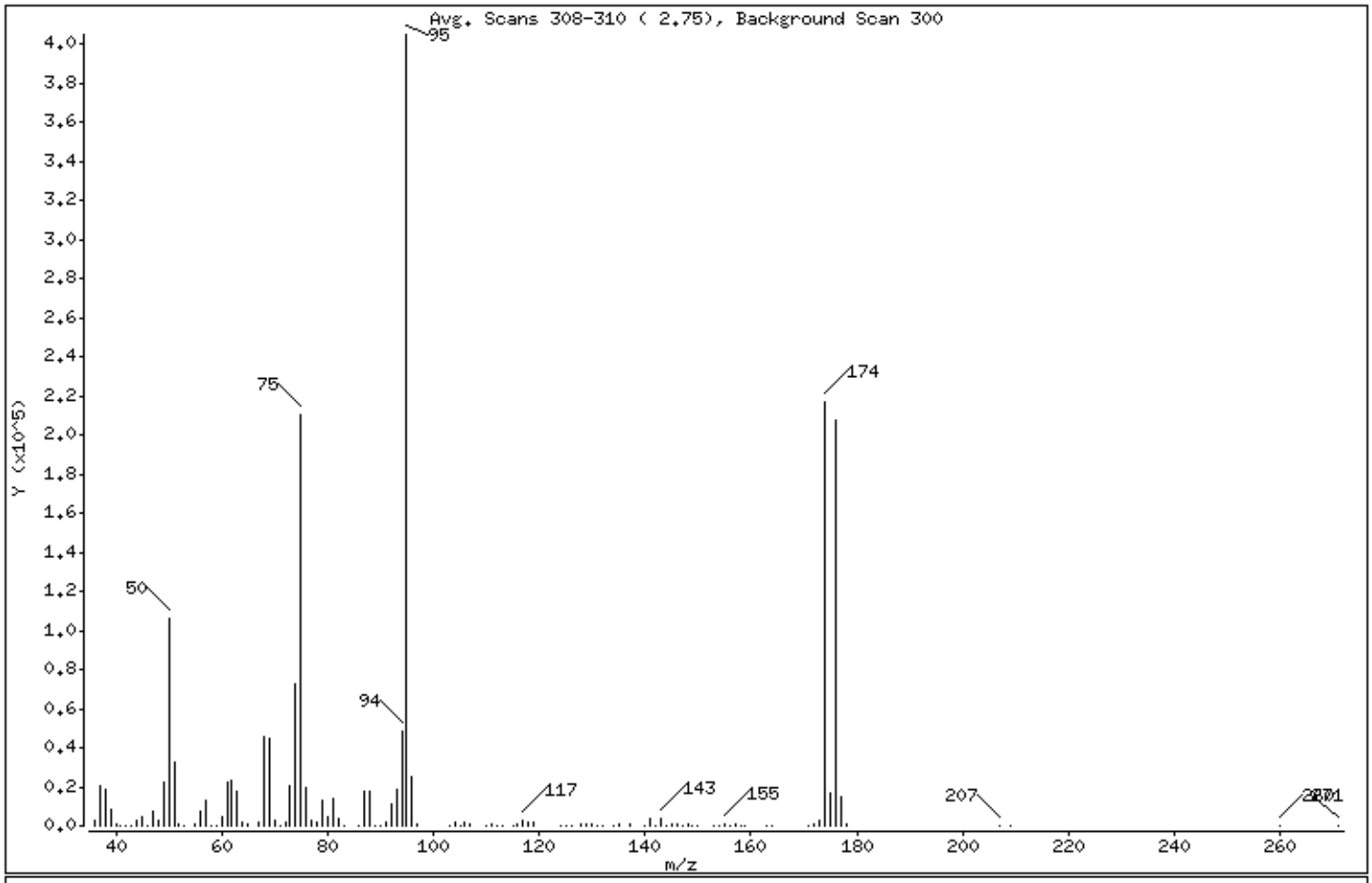
Client ID: BFB Instrument: msd14.i

Sample Info: 2.0uL# 2299-1476; BFB; BFB

Volume Injected (uL): 1.0 Operator: jcw

Column phase: Column diameter: 2.00

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	26.30
75	30.00 - 66.00% of mass 95	52.02
96	5.00 - 9.00% of mass 95	6.32
173	Less than 1.99% of mass 174	0.68 (1.27)
174	50.01 - 120.00% of mass 95	53.61
175	4.00 - 9.00% of mass 174	4.12 (7.68)
176	93.00 - 101.00% of mass 174	51.22 (95.54)
177	5.00 - 9.00% of mass 176	3.62 (7.08)

Data File: /var/chem/msd14.i/19jul16.b/14071911.d

Date : 19-JUL-2016 11:23

Client ID: BFB

Instrument: msd14.i

Sample Info: 2.0uL# 2299-1476; BFB; BFB

Volume Injected (uL): 1.0

Operator: jcw

Column phase:

Column diameter: 2.00

Data File: 14071911.d
Spectrum: Avg. Scans 308-310 (2.75), Background Scan 300
Location of Maximum: 95.00
Number of points: 115

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	3100	67.00	1632	103.00	86	144.00	286
37.00	20168	68.00	45304	104.00	1509	145.00	632
38.00	18848	69.00	44504	105.00	400	146.00	584
39.00	8528	70.00	2854	106.00	1814	147.00	195
40.00	897	71.00	218	107.00	635	148.00	780
41.00	354	72.00	2059	110.00	51	149.00	165
42.00	167	73.00	20408	111.00	469	150.00	429
43.00	73	74.00	72904	112.00	161	153.00	91
44.00	2769	75.00	210688	113.00	418	154.00	193
45.00	4998	76.00	19104	115.00	8	155.00	1012
46.00	419	77.00	2886	116.00	1077	156.00	70
47.00	7334	78.00	1738	117.00	2610	157.00	932
48.00	3103	79.00	13466	118.00	1616	158.00	151
49.00	22336	80.00	4593	119.00	1802	159.00	352
50.00	106528	81.00	13973	124.00	79	163.00	109
51.00	32216	82.00	3620	125.00	156	164.00	65
52.00	1000	83.00	326	126.00	54	171.00	338
53.00	76	86.00	307	128.00	1132	172.00	971
55.00	1392	87.00	17904	129.00	590	173.00	2748
56.00	7512	88.00	17752	130.00	1380	174.00	217152
57.00	12750	89.00	67	131.00	460	175.00	16680
58.00	442	90.00	54	132.00	145	176.00	207488
59.00	143	91.00	1620	134.00	70	177.00	14682
60.00	4590	92.00	10927	135.00	961	178.00	529
61.00	22136	93.00	18184	137.00	611	207.00	218
62.00	23592	94.00	48336	140.00	276	209.00	50
63.00	17560	95.00	405056	141.00	3543	260.00	127
64.00	1407	96.00	25600	142.00	395	271.00	79
65.00	1197	97.00	800	143.00	3903		

Shipping/ Receiving Documents

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Eurofins Air Toxics, Inc. Sample Receipt Confirmation Cover Page

Thank you for choosing Eurofins Air Toxics, Inc. (EATL). We have received your samples and have listed any Sample Receipt Descrepancies below.

In order to expedite analysis and reporting, please review the attached information for accuracy.

For corrections call: **Brian Whittaker at 916-985-1000**

EATL will proceed with the analysis as specified on the Chain of Custody (COC) and Sample Receipt Summary page.

Please note : The Sample Receipt Confirmation, including the total workorder charge, is subject to change upon secondary review. Our aim is to provide a confirmation to you in a timely manner. Sample Receipt Discrepancies, if any, may not include discrepancies regarding sample receipt pressure(s). Additionally, the COC will be provided with the final report.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000 .FAX (916) 985-1020
Hours 6:30 A.M to 5:30 P.M. PST

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Sample Transportation Notice
Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922

180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX (916) 985-1020

Project Manager Terry Taylor
Collected by: (Print and Sign) R. O'Reilly, D. Lindstrand, T. Taylor
Company AMAI Email ttaylor@amaiconsult.com
Address 2800 Westchester Ave City Purchase State NY Zip 10577
Phone 914-251-0400 x309 Fax 914-251-1286

Project Info:
P.O. #
Project # Building 18 VI
Project Name

Turn Around Time:
☒ Normal
☒ Rush *
specify

Lab Use Only
Pressurized by:
Date:
Pressurization Gas: N_2 He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum Initial	Final	Receipt	Final (psi)
	B18IA-1 ~~(070816)~~	33531	7/9/16	1902	TO-15	-30"+	-6.5"		
	B18IA-2 ~~(070816)~~	6L0015	7/9/16	1849	TO-15	-30"+	-7"		
	B18IA-3 ~~(070816)~~	0174	7/9/16	1827	TO-15	-30"+	-5.5"		
	B18IA-4 ~~(070816)~~	12082	7/9/16	1835	TO-15	-30"+	-5"		
	B18IA-5 ~~(070816)~~	31146	7/9/16	1844	TO-15	-30"+	-6.5"		
	B18IA-1D ~~(070816)~~	21011	7/9/16	1902	TO-15	-30"+	-6.5"		
	~~B18AA (070816) (070816)~~	~~31346~~	~~7/9/16~~	~~1912~~	~~TO-15~~	~~30"+~~	~~"~~		
07A	* B30IA-1 (070816) *	0152	7/9/16	1812	TO-15	-30"+	-6.5"		
	B18SS-1 ~~(070816)~~	36376	7/10/16	1800	TO-15	-28"	-5"		
	B18SS-2 ~~(070816)~~	3043	7/10/16	1937	TO-15	-30"	-5"		

Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time
[signature] 07-13-16 1[illegible]	Fed EX
Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time
	[signature] EATL 7/14/16 10:20
Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time

Notes:
* Sample B30IA-1 (070816) a 24-hour TAT is requested. All other samples are a normal TAT. Report Results to MDL

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	Fed Ex		N/A	good	Yes No (None)	1607235

Form 1293 rev.11

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SAMPLE RECEIPT SUMMARY

WORKORDER 1607235B

Client

Mr. Terry Taylor
Anderson Mulholland &
Associates, Inc.
2700 Westchester Avenue
Suite 417
Purchase, NY 10577
Sales Rep: N/A

Phone

(914) 251-0400

Fax

Date Promised: 07/20/16 2:00 pm
Date Completed: 7/20/16
Date Received: 7/14/16
PO#:
Project#: Building 18 VI

Total $: $ 98.75
Logged By: JCW

Fraction	Sample #	Analysis	Collected	Receipt Vac./Pres.	Amount$
07A	B30IA-1 (070816)	Modified TO-15 (5&20 ppbv)	7/9/2016	5.7 "Hg	$93.75
08A	Lab Blank	Modified TO-15 (5&20 ppbv)	NA	NA	$0.00
09A	CCV	Modified TO-15 (5&20 ppbv)	NA	NA	$0.00

Misc. ChargeseCVP (1) @ $5.00 each. $5.00

Note: Samples received after 3 P.M. PST are considered to be received on the following work day.
Atlas Project Name/Profile#: BMS/19256

BILL TO: Accounts Payable
Anderson Mulholland & Associates, Inc.
2700 Westchester Avenue
Suite 417
Purchase, NY 10577

Analysis Code: TO-15 (5&20)

REMARKS: A 100% surcharge is applied for a 24 hour turnaround time.

TERMS:

Reporting Method: TO-15 (5&20 ppbv) (Sp)-Methanol Only

Other Records

Eurofins Air Toxics, Inc.	Data Review Checklist			Release Date: 02/23/16
Workorder # 1607235 B	Form F1.27	Revision #13	Revision Date: 02/23/16	Page 1 of 2

S1	S2	S3	S4	D	***Section 1* – Spec Out**				
					Initials/Instrument/Date	**S1:** JCS 7/19/16	**S2:**	**S3:**	**S4:**
✓					Project Identification (PID), Project Requirements Table (PRT), Daily QC and ICAL met Criteria				
NA					Lumen QC and ICAL evaluation (ref. SOP/Method) report initialed and in folder				
NA					Manual Integrations included and approved				
✓				✓	Chain of Custody verified for special comments (add comments below)				
✓					Non-standard Target sublist verified (MDL, LOD, RL, control limits, etc.)				

Profile, analyses, reporting, special notes and unusual circumstances:

S. Dup CCV, No LCS Raised RL

A1	A2	A3	A4	D	***Section 2* – Sample Analysis**				
					Initials/Date	**A1:** MC 7/19/16	**A2:**	**A3:**	**A4:**
✓				✓	IS/Surr Recoveries, Dilution Factors, Load Volumes, leg(s) of instrument, Initial/Final Pressures, and Canister #s Verified				
NA				NA	**a)** Tedlar Bag IDs verified against COC **b)** Tedlar Bag ID confirmed with loading sequence/leg(s) of instrument				
NA				NA	Manual Integrations/Bag or Can Dilution Forms/Re-pressurization Forms/Bag-Can Transfer Forms present (circle all that apply)				
✓					12/24 Hr clock time & Hold Time met for all samples				
NA				✓	Re-analysis of sample(s) has been evaluated for comparability and/or sample(s) has/have been checked for trends (Inf/Eff), field dups/trip blanks, samples following bad loads on CIAAs have been verified (system blks, confirmation runs).				
✓				✓	All runs have been evaluated for potential carry-over (TPHg/non-Target/over-range compounds/ etc.)				

Analytical and special notes: 07A = full load.

D1	D2	D3	D4	T	3T	***Section 3* – Target Data Reduction**	**Technical Review Needed? Circle one: Yes/No**		**T:**	
						Initials/Instrument/ Date	**D1:** MC 7/20/16	**D2:**	**D3:**	**D4:**
NA						CAR # *(if applicable)*				
✓						Spectra Verified *(documentation of spectral defense included if applicable)*				
NA						TICs resemble reference spectra/ TICs between sample dups. are consistent *(if applicable)*				
✓						Lab Narrative is correct				
NA						TPH/NMOC calculations complete and included in folder				

Special notes: Meeth spt. Cal
Raised RL from 50ppbv to 100ppbv

A	3T	***Section 4*- Atlas Data Entry**	**Lumen verified and included in folder**	**Circle one: Yes/No**
		Initials/Date: MC 7/20/16	**3rd Tier:** *(needed only for DOD or per client request)*	
NA		Sample Discrepancy Report (SDR) complete and approved *(if applicable)*		
NA		Manually entered results are checked		
✓		At least one result per sample is verified against Target quant sheets		
✓		Appropriate data qualifier flags are applied		
✓		Final Invoice is correct/ Final PDF report, COC and EDD reviewed and correct		

Special Notes:

Note (1) *Please check all the appropriate boxes. Indicate "NA" for any statement that doesn't apply*
Note (2) 3rd Tier Report Reviewer and Write Up Reviewer must be separate individuals for DoD & Client Specific Projects

Workorder # :				**Reason for Reissue:**
W	T	3T	Q	
				Reissue Request form Present
				Client or QA or Lab contact present with reason for reissue
				Review all affected data
				Report header has correct R1, R2 etc
				The Lab Narrative clearly explains the reissue (Date, Reason and whether client requested)
				Date for Reissue in Report Header matches date in Lab Narrative
				Check Project Profile for correct reporting instructions (multiple clients, # hardcopies, etc)
				Corrective Action issued - #
				The reissued workorder has been approved by QA Manager or a Technical Director

Additional Comments:

Write Up (Initials/Date)	**Tech Review** (Initials/Date)	***3rd Tier Review** ** 3rd Tier Report Review is for DoD & Client Specific projects only* (Initials/Date)	**QA Review** (Initials/Date)

Workorder # :				**Reason for Reissue:**
W	T	3T	Q	
				Reissue Request form Present
				Client or QA or Lab contact present with reason for reissue
				Review all affected data
				Report header has correct R1, R2 etc
				The Lab Narrative clearly explains the reissue (Date, Reason and whether client requested)
				Date for Reissue in Report Header matches date in Lab Narrative
				Check Project Profile for correct reporting instructions (multiple clients, # hardcopies, etc)
				Corrective Action issued - #
				The reissued workorder has been approved by QA Manager or a Technical Director

Additional Comments:

Write Up (Initials/Date)	**Tech Review** (Initials/Date)	***3rd Tier Review** ** 3rd Tier Report Review is for DoD & Client Specific projects only* (Initials/Date)	**QA Review** (Initials/Date)

Note (1) *Please check all the appropriate boxes. Indicate "NA" for any statement that doesn't apply*
Note (2) 3rd Tier Report Reviewer and Write Up Reviewer must be separate individuals for DoD & Client Specific Projects

$$\text{Dilution Factor} = \frac{\text{Final Pressure}}{\text{Initial Vacuum}} = \frac{14.7\text{psi} + \text{Final Pressure (psi)}}{14.7\text{psi} - [\text{Init. Pressure ("Hg)})*(14.7\text{psi}/30\text{"Hg})]}$$

$$\text{Dilution Factor} = \frac{\text{Final Pressure}}{\text{Initial Pressure}} = \frac{14.7\text{psi} + \text{Final Pressure (psi)}}{14.7\text{psi} + \text{Initial Pressure (psi)}}$$

Initial Vacuum (" of Hg)	5 psi Final Pressure Dilution Factor	15 psi Final Pressure Dilution Factor
0.0	1.34	2.02
0.2	1.35	2.03
0.4	1.36	2.05
0.5	1.36	2.05
0.6	1.37	2.06
0.8	1.38	2.08
1.0	1.39	2.09
1.2	1.40	2.10
1.4	1.40	2.12
1.5	1.41	2.13
1.6	1.42	2.13
1.8	1.42	2.15
2.0	1.44	2.16
2.2	1.45	2.18
2.4	1.46	2.20
2.5	1.46	2.20
2.6	1.47	2.21
2.8	1.48	2.23
3.0	1.49	2.24
3.2	1.50	2.26
3.4	1.51	2.28
3.5	1.52	2.29
3.6	1.52	2.30
3.8	1.53	2.31
4.0	1.55	2.33
4.2	1.56	2.35
4.4	1.57	2.37
4.5	1.58	2.38
4.6	1.58	2.39
4.8	1.60	2.40
5.0	1.61	2.42
5.2	1.62	2.44
5.4	1.63	2.46
5.5	1.64	2.47
5.6	1.65	2.48
5.8	1.66	2.50
6.0	1.68	2.52
6.2	1.69	2.55
6.4	1.70	2.57
6.5	1.71	2.58
6.6	1.72	2.59
6.8	1.73	2.61
7.0	1.75	2.64
7.2	1.76	2.66
7.4	1.78	2.68
7.5	1.79	2.69
7.6	1.79	2.70

Initial Vacuum (" of Hg)	5 psi Final Pressure Dilution Factor	15 psi Final Pressure Dilution Factor
7.7	1.80	2.72
7.8	1.81	2.73
8.0	1.83	2.76
8.2	1.84	2.78
8.4	1.86	2.81
8.5	1.87	2.82
8.6	1.88	2.83
8.8	1.90	2.86
9.0	1.91	2.89
9.2	1.93	2.91
9.4	1.95	2.94
9.5	1.96	2.96
9.6	1.97	2.97
9.8	1.99	3.00
10.0	2.01	3.03
10.2	2.03	3.06
10.4	2.05	3.09
10.5	2.06	3.11
10.6	2.07	3.12
10.8	2.09	3.16
11.0	2.12	3.19
11.2	2.14	3.22
11.4	2.16	3.26
11.5	2.17	3.28
11.6	2.18	3.29
11.8	2.21	3.33
12.0	2.23	3.37
12.2	2.26	3.40
12.4	2.28	3.44
12.5	2.30	3.46
12.6	2.31	3.48
12.8	2.34	3.52
13.0	2.36	3.56
13.2	2.39	3.61
13.4	2.42	3.65
13.5	2.44	3.67
13.6	2.45	3.70
13.8	2.48	3.74
14.0	2.51	3.79
14.2	2.54	3.84
14.4	2.58	3.88
14.5	2.59	3.91
14.6	2.61	3.94
14.8	2.64	3.99
15.0	2.68	4.04
15.2	2.72	4.10
15.4	2.75	4.15

Initial Vacuum (" of Hg)	5 psi Final Pressure Dilution Factor	15 psi Final Pressure Dilution Factor
15.5	2.77	4.18
15.6	2.79	4.21
15.8	2.83	4.27
16.0	2.87	4.33
16.2	2.91	4.39
16.4	2.96	4.46
16.5	2.98	4.49
16.6	3.00	4.52
16.8	3.05	4.59
17.0	3.09	4.66
17.2	3.14	4.74
17.4	3.19	4.81
17.5	3.22	4.85
17.6	3.24	4.89
17.8	3.30	4.97
18.0	3.35	5.05
18.2	3.41	5.14
18.4	3.47	5.22
18.5	3.50	5.27
18.6	3.53	5.32
18.8	3.59	5.41
19.0	3.65	5.51
19.2	3.72	5.61
19.4	3.79	5.72
19.5	3.83	5.77
19.6	3.87	5.83
19.8	3.94	5.94
20.0	4.02	6.06
20.2	4.10	6.18
20.4	4.19	6.31
20.5	4.23	6.38
20.6	4.28	6.45
20.8	4.37	6.59
21.0	4.47	6.73
21.2	4.57	6.89
21.4	4.67	7.05
21.5	4.73	7.13
21.6	4.79	7.22
21.8	4.90	7.39
22.0	5.03	7.58
22.4	5.29	7.98

Initial Vacuum (" of Hg)	5 psi Final Pressure Dilution Factor	15 psi Final Pressure Dilution Factor
22.5	5.36	8.08
22.6	5.43	8.19
22.8	5.58	8.42
23.0	5.74	8.66
23.2	5.91	8.91
23.4	6.09	9.18
23.5	6.19	9.32
23.6	6.28	9.47
23.8	6.48	9.78
24.0	6.70	10.10
24.2	6.93	10.45
24.4	7.18	10.82
24.5	7.31	11.02
24.6	7.45	11.22
24.8	7.73	11.66
25.0	8.04	12.12
25.2	8.38	12.63
25.4	8.74	13.18
25.5	8.93	13.47
25.6	9.14	13.78
25.8	9.57	14.43
26.0	10.05	15.15
26.2	10.58	15.95
26.4	11.17	16.84
26.5	11.49	17.32
26.6	11.82	17.83
26.8	12.56	18.94
27.0	13.40	20.20
27.2	14.36	21.65
27.4	15.46	23.31
27.5	16.08	24.24
27.6	16.75	25.26
27.8	18.27	27.55
28.0	20.10	30.31
28.2	22.34	33.67
28.4	25.13	37.88
28.5	26.80	40.41
28.6	28.72	43.29
28.8	33.50	50.51
29.0	40.20	60.61

Compound List

TO-15 (5&20 ppbv) (Sp)-Methanol Only

CAS Number	Compound	Detection Limit ppbv	Type
67-56-1	Methanol	50	
17060-07-0	1,2-Dichloroethane-d4		
460-00-4	4-Bromofluorobenzene		
2037-26-5	Toluene-d8		

Eurofins Air Toxics, Inc.	Data Review Checklist			Release Date: 02/23/16
Workorder # 1607235 B	Form F1.27	Revision #13	Revision Date: 02/23/16	Page 1 of 2

S1	S2	S3	S4	D	Section 1 – Spec Out				
					Initials/Instrument/Date	S1: JCL 7/19/16	S2:	S3:	S4:
✓					Project Identification (PID), Project Requirements Table (PRT), Daily QC and ICAL met Criteria				
NA					Lumen QC and ICAL evaluation (ref. SOP/Method) report initialed and in folder				
NA					Manual Integrations included and approved				
✓				✓	Chain of Custody verified for special comments (add comments below)				
✓					Non-standard Target sublist verified (MDL, LOD, RL, control limits, etc.)				

Profile, analyses, reporting, special notes and unusual circumstances:

S. Dup CCV, No LCS Raised RL

A1	A2	A3	A4	D	Section 2 – Sample Analysis				
					Initials/Date	A1: MC 7/19/16	A2:	A3:	A4:
✓				✓	IS/Surr Recoveries, Dilution Factors, Load Volumes, leg(s) of instrument, Initial/Final Pressures, and Canister #s Verified				
NA				NA	a) Tedlar Bag IDs verified against COC b) Tedlar Bag ID confirmed with loading sequence/leg(s) of instrument				
NA				NA	Manual Integrations/Bag or Can Dilution Forms/Re-pressurization Forms/Bag-Can Transfer Forms present (circle all that apply)				
✓					12/24 Hr clock time & Hold Time met for all samples				
NA				✓	Re-analysis of sample(s) has been evaluated for comparability and/or sample(s) has/have been checked for trends (Inf/Eff), field dups/trip blanks, samples following bad loads on CIAAs have been verified (system blks, confirmation runs).				
✓				✓	All runs have been evaluated for potential carry-over (TPHg/non-Target/over-range compounds/ etc.)				

Analytical and special notes: 07A = full load.

D1	D2	D3	D4	T	3T	Section 3 – Target Data Reduction	Technical Review Needed? Circle one: Yes/No		T:	
						Initials/Instrument/ Date	D1: MC 7/20/16	D2:	D3:	D4:
NA						CAR # (if applicable)				
✓						Spectra Verified *(documentation of spectral defense included if applicable)*				
NA						TICs resemble reference spectra/ TICs between sample dups. are consistent *(if applicable)*				
✓						Lab Narrative is correct				
NA						TPH/NMOC calculations complete and included in folder				

Special notes: Meeth spt. Cal
Raised RL from 50ppbv to 100ppbv

A	3T	Section 4- Atlas Data Entry	Lumen verified and included in folder	Circle one: Yes/No
		Initials/Date: MC 7/20/16	3rd Tier: *(needed only for DOD or per client request)*	
NA		Sample Discrepancy Report (SDR) complete and approved *(if applicable)*		
NA		Manually entered results are checked		
✓		At least one result per sample is verified against Target quant sheets		
✓		Appropriate data qualifier flags are applied		
✓		Final Invoice is correct/ Final PDF report, COC and EDD reviewed and correct		

Special Notes:

Note (1) *Please check all the appropriate boxes. Indicate "NA" for any statement that doesn't apply*
Note (2) 3rd Tier Report Reviewer and Write Up Reviewer must be separate individuals for DoD & Client Specific Projects

Workorder # :				**Reason for Reissue:**
W	T	3T	Q	
				Reissue Request form Present
				Client or QA or Lab contact present with reason for reissue
				Review all affected data
				Report header has correct R1, R2 etc
				The Lab Narrative clearly explains the reissue (Date, Reason and whether client requested)
				Date for Reissue in Report Header matches date in Lab Narrative
				Check Project Profile for correct reporting instructions (multiple clients, # hardcopies, etc)
				Corrective Action issued - #
				The reissued workorder has been approved by QA Manager or a Technical Director

Additional Comments:

Write Up (Initials/Date)	**Tech Review** (Initials/Date)	***3rd Tier Review** ** 3rd Tier Report Review is for DoD & Client Specific projects only* (Initials/Date)	**QA Review** (Initials/Date)

Workorder # :				**Reason for Reissue:**
W	T	3T	Q	
				Reissue Request form Present
				Client or QA or Lab contact present with reason for reissue
				Review all affected data
				Report header has correct R1, R2 etc
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				Check Project Profile for correct reporting instructions (multiple clients, # hardcopies, etc)
				Corrective Action issued - #
				The reissued workorder has been approved by QA Manager or a Technical Director

Additional Comments:

Write Up (Initials/Date)	**Tech Review** (Initials/Date)	***3rd Tier Review** ** 3rd Tier Report Review is for DoD & Client Specific projects only* (Initials/Date)	**QA Review** (Initials/Date)

Note (1) *Please check all the appropriate boxes. Indicate "NA" for any statement that doesn't apply*
Note (2) 3rd Tier Report Reviewer and Write Up Reviewer must be separate individuals for DoD & Client Specific Projects

Not Applicable