



Eastern Research Group
601 Keystone Park Drive
Suite 700
Morrisville, NC 27560

February 23, 2011

Mr. Mike Crowe
U.S. Environmental Protection Agency, Region 4
61 Forsyth Street, S.W.
Atlanta, GA 30303-8960
Project Name: Reg 4 Indoor

Dear Mr. Mike Crowe,

This report contains the analytical results for the sample(s) received under chain(s) of custody by Eastern Research Group on 02/03/11 09:58.

The test results in this report are in compliance with NELAC accreditation requirements for the certified parameters. All analyses were performed as described in the US EPA-approved QAPP, under the contract for NMOC, UATMP, PAMS, HAPS, and NATTS support (US EPA Contract No. 68-D-03-049). This cover page is an integral part of this report, and any exceptions or comments are noted on the last page.

The issuance of the final Certificate of Analysis takes precedence over any previous Report. If you have any questions, please contact me at 919-468-7924.

Sincerely,

Julie Swift
Program Manager
julie.swift@erg.com

The information contained in this report and its attachment(s) are intended only for the use of the individual to whom it is addressed and may contain information that is privileged, confidential, or exempt from disclosure. If the reader of this message is not the intended recipient, you are hereby notified that any dissemination, distribution, or copying of this report is strictly prohibited. If you have received this report in error, please notify julie.swift@erg.com and delete the report without retaining any copies.



CERTIFICATE OF ANALYSIS

U.S. Environmental Protection Agency, Region 4
61 Forsyth Street, S.W.
Atlanta, GA 30303-8960
ATTN: Mr. Mike Crowe
PHONE: (706) 355-8630 FAX: -

FILE #: 0269.00.018
REPORTED: 02/23/11 08:24
SUBMITTED: 02/03/11
AQS SITE CODE:
SITE CODE: Reg 4 Indoor

ANALYTICAL REPORT FOR SAMPLES

<u>SampleName</u>	<u>LabNumber</u>	<u>Matrix</u>	<u>Sampled</u>	<u>Received</u>
YBAA01	1020301-01	Air	01/24/11 23:59	02/03/11 09:58
YBAA91	1020301-02	Air	01/24/11 23:59	02/03/11 09:58
YBBA01	1020301-03	Air	01/24/11 23:59	02/03/11 09:58
YBAA92	1020301-04	Air	01/25/11 23:59	02/03/11 09:58
YBAA02	1020301-05	Air	01/25/11 23:59	02/03/11 09:58
YBBA02	1020301-06	Air	01/25/11 23:59	02/03/11 09:58
YBAA93	1020301-07	Air	01/26/11 23:59	02/03/11 09:58
YBAA03	1020301-08	Air	01/26/11 23:59	02/03/11 09:58
YBBAB3	1020301-09	Air	01/26/11 23:59	02/03/11 09:58
YBBA03	1020301-10	Air	01/26/11 23:59	02/03/11 09:58



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FILE #: 0269.00.018
 REPORTED: 02/23/11 08:24
 SUBMITTED: 02/03/11
 AQS SITE CODE:
 SITE CODE: Reg 4 Indoor

Description: YBAA01	Lab ID: 1020301-01	Sampled: 01/24/11 23:59
Matrix: Air	Sample Volume: 1519 L	Received: 02/03/11 09:58
Comments: 1390 minutes		Analyzed: 02/07/11 20:03

Air Toxics by EPA Compendium Method TO-11A

Analyte	Results		Flag	MDL
	ppbv	ug/m³		ppbv
Formaldehyde	1.65	2.03		0.006
Acetaldehyde	0.605	1.09		0.004
Acetone	0.615	1.46		0.004
Propionaldehyde	0.082	0.20		0.001
Crotonaldehyde	0.029	0.08		0.002
Butyraldehyde	0.077	0.23		0.002
Benzaldehyde	0.036	0.16		0.001
Isovaleraldehyde	ND	ND	U	0.0009
Valeraldehyde	0.021	0.07		0.001
Tolualdehydes	0.027	0.13		0.002
Hexaldehyde	0.015	0.06		0.001
2,5-Dimethylbenzaldehyde	ND	ND	U	0.001



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FILE #: 0269.00.018
 REPORTED: 02/23/11 08:24
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 AQS SITE CODE:
 SITE CODE: Reg 4 Indoor

Description: YBAA91	Lab ID: 1020301-02	Sampled: 01/24/11 23:59
Matrix: Air	Sample Volume: 1499 L	Received: 02/03/11 09:58
Comments: 1397 minutes		Analyzed: 02/07/11 20:44

Air Toxics by EPA Compendium Method TO-11A

<u>Analyte</u>	<u>Results</u>		<u>Flag</u>	<u>MDL</u>
	<u>ppbv</u>	<u>ug/m³</u>		<u>ppbv</u>
Formaldehyde	1.79	2.20		0.006
Acetaldehyde	0.677	1.22		0.004
Acetone	0.654	1.56		0.004
Propionaldehyde	0.099	0.24		0.001
Crotonaldehyde	0.028	0.08		0.002
Butyraldehyde	0.095	0.28		0.002
Benzaldehyde	0.029	0.13		0.001
Isovaleraldehyde	ND	ND	U	0.0009
Valeraldehyde	0.030	0.11		0.001
Tolualdehydes	0.038	0.19		0.002
Hexaldehyde	0.019	0.08		0.001
2,5-Dimethylbenzaldehyde	ND	ND	U	0.001



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AQS SITE CODE:

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Description: YBBA01

Lab ID: 1020301-03

Sampled: 01/24/11 23:59

Matrix: Air

Sample Volume: 1468 L

Received: 02/03/11 09:58

Comments: 1413 minutes

Analyzed: 02/07/11 21:25

Air Toxics by EPA Compendium Method TO-11A

Analyte	Results		Flag	MDL
	ppbv	ug/m ³		ppbv
Formaldehyde	1.77	2.18		0.006
Acetaldehyde	0.815	1.47		0.004
Acetone	1.11	2.64		0.004
Propionaldehyde	0.114	0.27		0.001
Crotonaldehyde	0.023	0.07		0.002
Butyraldehyde	0.077	0.23		0.002
Benzaldehyde	0.052	0.23		0.001
Isovaleraldehyde	ND	ND	U	0.0009
Valeraldehyde	0.042	0.15		0.001
Tolualdehydes	0.024	0.12		0.002
Hexaldehyde	0.026	0.11		0.001
2,5-Dimethylbenzaldehyde	ND	ND	U	0.001



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FILE #: 0269.00.018

REPORTED: 02/23/11 08:24

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AQS SITE CODE:

SITE CODE: Reg 4 Indoor

Description: YBAA92

Lab ID: 1020301-04

Sampled: 01/25/11 23:59

Matrix: Air

Sample Volume: 1509 L

Received: 02/03/11 09:58

Comments: 1416 minutes

Analyzed: 02/07/11 22:06

Air Toxics by EPA Compendium Method TO-11A

Analyte	Results		Flag	MDL
	ppbv	ug/m ³		ppbv
Formaldehyde	1.28	1.58		0.006
Acetaldehyde	0.558	1.01		0.004
Acetone	1.05	2.50		0.004
Propionaldehyde	0.060	0.14		0.001
Crotonaldehyde	0.013	0.04		0.002
Butyraldehyde	0.053	0.16		0.002
Benzaldehyde	0.014	0.06		0.001
Isovaleraldehyde	ND	ND	U	0.0009
Valeraldehyde	ND	ND	A-01, U	0.001
Totaldehydes	0.017	0.08		0.002
Hexaldehyde	0.008	0.03		0.001
2,5-Dimethylbenzaldehyde	ND	ND	U	0.001



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REPORTED: 02/23/11 08:24

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AQS SITE CODE:

SITE CODE: Reg 4 Indoor

Description: YBAA02

Lab ID: 1020301-05

Sampled: 01/25/11 23:59

Matrix: Air

Sample Volume: 1538 L

Received: 02/03/11 09:58

Comments: 1416 minutes

Analyzed: 02/07/11 22:46

Air Toxics by EPA Compendium Method TO-11A

Analyte	Results		Flag	MDL
	ppbv	ug/m ³		ppbv
Formaldehyde	0.929	1.14		0.005
Acetaldehyde	0.405	0.73		0.004
Acetone	0.770	1.83		0.004
Propionaldehyde	0.041	0.10		0.001
Crotonaldehyde	0.010	0.03		0.002
Butyraldehyde	0.038	0.11		0.002
Benzaldehyde	0.015	0.07		0.001
Isovaleraldehyde	ND	ND	U	0.0008
Valeraldehyde	ND	ND	A-01, U	0.001
Tolualdehydes	0.013	0.06		0.002
Hexaldehyde	0.006	0.02		0.001
2,5-Dimethylbenzaldehyde	ND	ND	U	0.001



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AQS SITE CODE:

SITE CODE: Reg 4 Indoor

Description: YBBA02

Lab ID: 1020301-06

Sampled: 01/25/11 23:59

Sample Volume: 1495 L

Received: 02/03/11 09:58

Comments:

Analyzed: 02/07/11 23:27

Air Toxics by EPA Compendium Method TO-11A

Analyte	Results		Flag	MDL
	ppby	ug/m ³		ppby
Formaldehyde	0.786	0.97		0.006
Acetaldehyde	0.393	0.71		0.004
Acetone	0.781	1.86		0.004
Propionaldehyde	0.059	0.14		0.001
Crotonaldehyde	0.010	0.03		0.002
Butyraldehyde	0.051	0.15		0.002
Benzaldehyde	0.021	0.09		0.001
Isovaleraldehyde	ND	ND	U	0.0009
Valeraldehyde	0.018	0.06		0.001
Tolualdehydes	0.014	0.07		0.002
Hexaldehyde	0.013	0.05		0.001
2,5-Dimethylbenzaldehyde	ND	ND	U	0.001



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FILE #: 0269.00.018
 REPORTED: 02/23/11 08:24
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 AQS SITE CODE:
 SITE CODE: Reg 4 Indoor

Description: YBAA93	Lab ID: 1020301-07	Sampled: 01/26/11 23:59
Matrix: Air	Sample Volume: 1495 L	Received: 02/03/11 09:58
Comments: 1403 minutes		Analyzed: 02/08/11 01:30

Air Toxics by EPA Compendium Method TO-11A

<u>Analyte</u>	<u>Results</u>		<u>Flag</u>	<u>MDL</u>
	<u>ppbv</u>	<u>ug/m³</u>		<u>ppbv</u>
Formaldehyde	1.02	1.26		0.006
Acetaldehyde	0.352	0.64		0.004
Acetone	0.872	2.07		0.004
Propionaldehyde	0.049	0.12		0.001
Crotonaldehyde	0.012	0.03		0.002
Butyraldehyde	0.044	0.13		0.002
Benzaldehyde	0.010	0.04		0.001
Isovaleraldehyde	ND	ND	U	0.0009
Valeraldehyde	0.008	0.03		0.001
Tolualdehydes	0.009	0.04		0.002
Hexaldehyde	0.006	0.02		0.001
2,5-Dimethylbenzaldehyde	ND	ND	U	0.001



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 AQS SITE CODE:
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Description: YBAA03	Lab ID: 1020301-08	Sampled: 01/26/11 23:59
Matrix: Air	Sample Volume: 1516 L	Received: 02/03/11 09:58
Comments: 1403 minutes		Analyzed: 02/08/11 02:11

Air Toxics by EPA Compendium Method TO-11A

<u>Analyte</u>	<u>Results</u>		<u>Flag</u>	<u>MDL</u>
	<u>ppbv</u>	<u>ug/m³</u>		<u>ppbv</u>
Formaldehyde	1.09	1.34		0.006
Acetaldehyde	0.343	0.62		0.004
Acetone	0.873	2.08		0.004
Propionaldehyde	0.046	0.11		0.001
Crotonaldehyde	0.012	0.03		0.002
Butyraldehyde	0.043	0.13		0.002
Benzaldehyde	0.014	0.06		0.001
Isovaleraldehyde	ND	ND	U	0.0009
Valeraldehyde	0.008	0.03		0.001
Tolualdehydes	0.012	0.06		0.002
Hexaldehyde	0.008	0.03		0.001
2,5-Dimethylbenzaldehyde	ND	ND	U	0.001



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REPORTED: 02/23/11 08:24

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AQS SITE CODE:

SITE CODE: Reg 4 Indoor

Description: YBBAB3

Lab ID: 1020301-09

Sampled: 01/26/11 23:59

Matrix: Air

Sample Volume: 1501 L

Received: 02/03/11 09:58

Comments: 1406 minutes

Analyzed: 02/08/11 02:51

Air Toxics by EPA Compendium Method TO-11A

Analyte	Results		Flag	MDL
	ppbv	ug/m ³		ppbv
Formaldehyde	0.022	0.03		0.006
Acetaldehyde	0.013	0.02		0.004
Acetone	0.034	0.08		0.004
Propionaldehyde	ND	ND	U	0.001
Crotonaldehyde	ND	ND	U	0.002
Butyraldehyde	ND	ND	U	0.002
Benzaldehyde	ND	ND	U	0.001
Isovaleraldehyde	ND	ND	U	0.0009
Valeraldehyde	ND	ND	U	0.001
Tolualdehydes	ND	ND	U	0.002
Hexaldehyde	ND	ND	U	0.001
2,5-Dimethylbenzaldehyde	ND	ND	U	0.001



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AQS SITE CODE:

SITE CODE: Reg 4 Indoor

Description: YBBA03

Lab ID: 1020301-10

Sampled: 01/26/11 23:59

Matrix: Air

Sample Volume: 1441 L

Received: 02/03/11 09:58

Comments: 1406 minutes

Analyzed: 02/08/11 03:32

Air Toxics by EPA Compendium Method TO-11A

<u>Analyte</u>	<u>Results</u>		<u>Flag</u>	<u>MDL</u>
	<u>ppbv</u>	<u>ug/m³</u>		<u>ppbv</u>
Formaldehyde	0.752	0.93		0.006
Acetaldehyde	0.276	0.50		0.004
Acetone	0.629	1.50		0.004
Propionaldehyde	0.040	0.10		0.002
Crotonaldehyde	0.009	0.03		0.002
Butyraldehyde	0.032	0.09		0.002
Benzaldehyde	0.015	0.07		0.001
Isovaleraldehyde	ND	ND	U	0.0009
Valeraldehyde	0.011	0.04		0.001
Tolualdehydes	0.011	0.05		0.002
Hexaldehyde	0.009	0.04		0.001
2,5-Dimethylbenzaldehyde	ND	ND	U	0.001



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Analyte	Result	Units	Source Result	RPD	RPD Limit	Notes
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Air Toxics by EPA Compendium Method TO-11A - Quality Control

Batch B1B0302 - TO-11A extraction

Duplicate (B1B0302-DUP3)

Source: 1020301-10

Prepared: 02/03/11 Analyzed: 02/08/11

Analyte	Result	Units	Source Result	RPD	RPD Limit	Notes
Formaldehyde	0.751	ppbv	0.752	0.152	10	
Acetaldehyde	0.281	ppbv	0.276	1.87	10	
Acetone	0.632	ppbv	0.629	0.558	10	
Propionaldehyde	0.041	ppbv	0.040	3.76	10	
Crotonaldehyde	0.009	ppbv	0.009	3.29	10	
Butyraldehyde	0.032	ppbv	0.032	1.42	10	
Benzaldehyde	0.015	ppbv	0.015	2.13	10	
Isovaleraldehyde	ND	ppbv	ND		10	U
Valeraldehyde	0.011	ppbv	0.011	0.343	10	
Toluakdehydes	0.011	ppbv	0.011	1.58	10	
Hexaldehyde	0.009	ppbv	0.009	1.76	10	
2,5-Dimethylbenzaldehyde	ND	ppbv	ND		10	U

Eastern Research Group

The results in this report apply only to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



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Notes and Definitions

U Under Detection Limit
A-01 Compound not detected due to co-elution
ND Analyte NOT DETECTED at or above the Method Detection Limit (MDL)
NR Not Reported
MDL Method Detection Limit
RPD Relative Percent Difference

Note: Breakthrough cartridges were not submitted or analyzed as specified by Compendium Method TO-11A. This deviation from the method has been approved by the US EPA, under the contract for NMOC, UATMP, PAMS, HAPS, and NATTS Support (US EPA Contract No. 68-D-03-049).