

US EPA ARCHIVE DOCUMENT

## Morrison, Bruce

**From:** Hagemeister, Mike [mehagemeister@terracon.com]  
**Sent:** Thursday, February 28, 2013 5:09 PM  
**To:** Morrison, Bruce  
**Cc:** Jane Kravcik Murphy (jkmurphy@JonesDay.com); Michael F. Dolan (mfdolan@JonesDay.com); Cleary, Dave  
**Subject:** Ambient Air Analytical Results - February 13, 2013  
**Attachments:** J2638-1 UDS Level 1 Compact Report Final Report.pdf; Ambient Air Sampling Locations.pdf

Bruce,

Attached are the laboratory results for ambient air sampling event that was conducted on February 13, 2013 in accordance with February 8, 2013 plan that was submitted to you via email. The sampling was conducted based on discussions between Jones Day and you in response to reports of foreign odors during city-led demolition activities at the former Chamberlain Manufacturing facility. The approximate ambient air sampling locations are shown on the attached figure. The data has been reviewed and validated in accordance with the USEPA-approved QAPP.

For the current sampling event data set, there were reported J-flagged concentrations of PCE and TCE indicating that the results were greater than the MDL, but lower than respective the laboratory reporting limits. As a result, the reported concentrations were estimated. The remaining contaminants of concern were not reported in the samples collected. The ambient air analytical results are below the established action threshold for indoor air quality. Though comparing ambient air results to the indoor action thresholds is not directly applicable, it is useful as an initial screening of the ambient air results. A summary of j-flagged concentrations for the sampling event is presented below. A copy of the analytical report is attached.

PCE and TCE ambient air results at residence No. 4, collected as part of the Vapor Intrusion Characterization (report dated July 5, 2011), are also summarized below. The February 2013 ambient air analytical j-flagged results for PCE and TCE are similar to the results from residence No. 4 collected in April 2011 which pre-dated site construction activities.

	Sample ID	C-N-1	C-M-2	C-S-3	Blind Dup (C-S-3)	AA-4 (Res No.4)	Reporting Limit	Analytical Method Detection Limit	Indoor Action Threshold
	Date	2/13/2013	2/13/2013	2/13/2013	2/13/2013	4/29/2011			
Analyte	Units								
Tetrachloroethene	ug/m <sup>3</sup>	0.11 J	0.17 J	<0.54	0.12 J	0.19 J	0.54	0.11	9.4 <sup>1</sup>
Trichloroethene	ug/m3	0.087 J	0.10 J	0.11 J	0.10 J	0.088 J	0.21	0.075	0.43 <sup>2</sup>

<sup>1</sup> - Revised Action Threshold for PCE per USEPA e-mail dated February 17, 2012

<sup>2</sup> - Revised Action Threshold for TCE per USEPA letter dated October 27, 2011

Please let me know if you have any questions or if you would like to discuss this further.

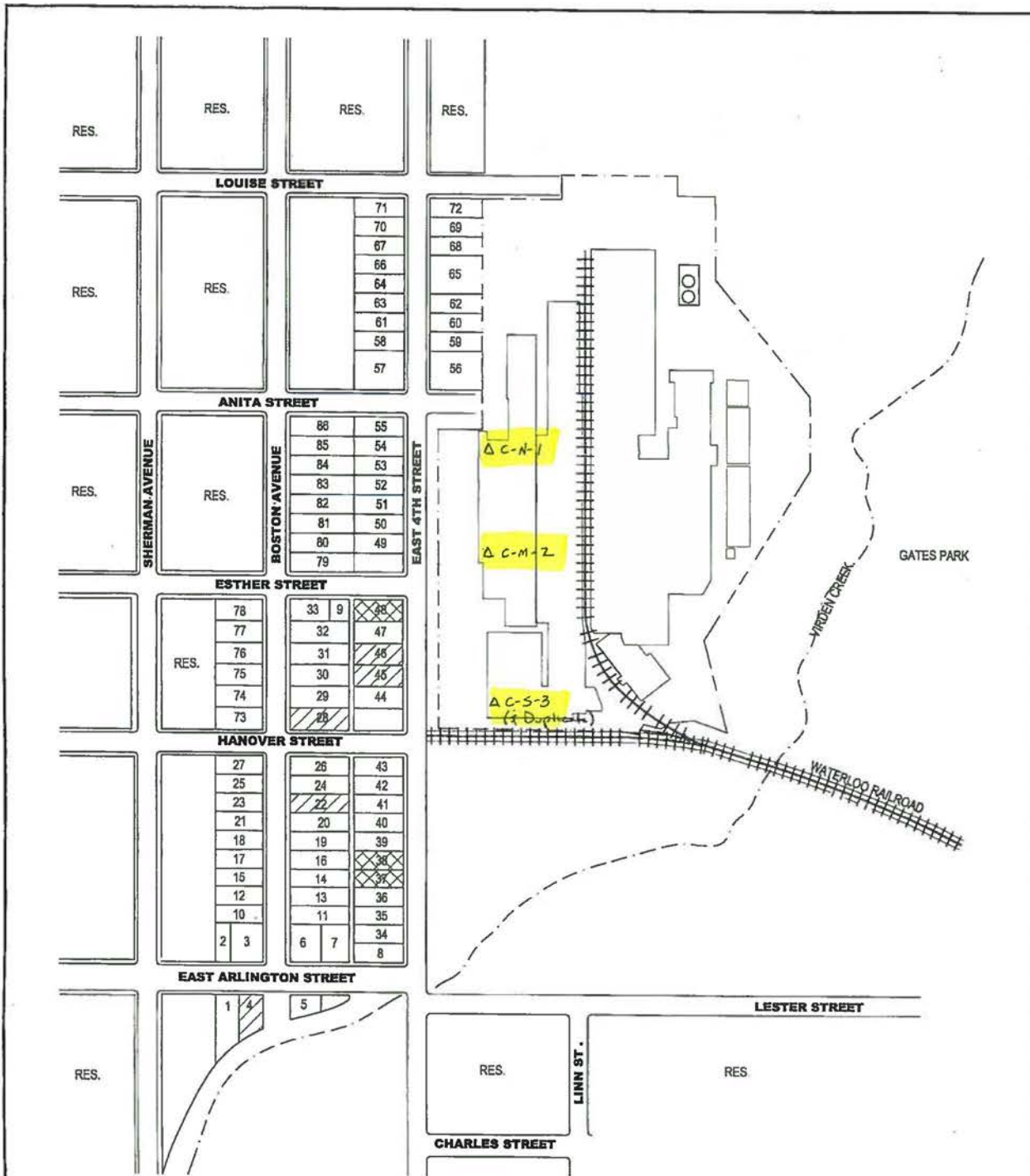
Thank you and have a nice day.

**Mike Hagemeister, P.E. \***  
Senior Principal  
Environmental Department Manager  
Terracon

15080 A Circle | Omaha, Nebraska 68144  
P 402-330-2202 | C 402-699-5254 | F 402-330-7606  
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\* Licensed in Nebraska

 Please consider the environment before printing this email.



**LEGEND**

- 40 RESIDENCES INCLUDED IN STUDY AREA WITH ID NUMBER
- RESIDENCES WITH INSTALLED SYSTEMS
- RESIDENCES WITH SYSTEMS TURNED OFF
- Δ C-N-1 Ambient Air Sampling Locations

REV.	DATE	BY	DESCRIPTION

**Terracon**  
Consulting Engineers and Scientists

875 400 AVENUE  
PH. (563) 555-0702

BETTENDORF, IOWA 52722  
FAX. (563) 365-4786

**SITE PLAN**

VIII QUARTERLY REPORT NO. 6  
**FORMER CHAMBERLAIN MANUFACTURING FACILITY**  
550 ESTER STREET  
WATERLOO IOWA

**EXHIBIT 2**

PROJECT MANAGER	
DRAWN BY	
APPROVED BY	
SCALE	AS SHOWN
DATE	1/28/13
PROJECT NO.	07107020
FILE NAME	0710702003
SHEET NO.	2 OF 2



# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.  
TestAmerica Cedar Falls  
704 Enterprise Drive  
Cedar Falls, IA 50613  
Tel: (319)277-2401

TestAmerica Job ID: 310-2638-1  
Client Project/Site: Air - Chamberlain

For:  
Terracon Consulting Eng & Scientists  
15080 A Circle  
Omaha, Nebraska 68144

Attn: Mr. Mike Hagemeister



Authorized for release by:  
2/27/2013 1:36:06 PM

Brian Graettinger  
Project Manager I  
brian.graettinger@testamericainc.com

### LINKS

Review your project  
results through  
**Total Access**

Have a Question?

 **Ask  
The  
Expert**

Visit us at:  
[www.testamericainc.com](http://www.testamericainc.com)

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*



## Sample Summary

Client: Terracon Consulting Eng & Scientists  
Project/Site: Air - Chamberlain

TestAmerica Job ID: 310-2638-1



Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-2638-1	C-N-1	Air	02/13/13 13:05	02/13/13 13:58
310-2638-2	C-M-2	Air	02/13/13 12:59	02/13/13 13:58
310-2638-3	C-S-3	Air	02/13/13 12:53	02/13/13 13:58
310-2638-4	Blind Duplicate	Air	02/13/13 12:54	02/13/13 13:58

US EPA ARCHIVE DOCUMENT

TestAmerica Cedar Falls

<b>H3B140417 Analytical Report .....</b>	<b>1</b>
<b>Sample Receipt Documentation .....</b>	<b>13</b>
<b>Total Number of Pages .....</b>	<b>15</b>



**ANALYTICAL REPORT**

PROJECT NO. 310-2638-1

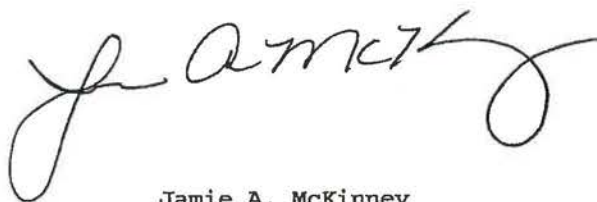
Terracon

Lot #: H3B140417

Brian Graettinger

TestAmerica Cedar Falls  
704 Enterprise Drive  
Cedar Falls, IA 50613-0625

TESTAMERICA LABORATORIES, INC.



Jamie A. McKinney  
Project Manager

February 21, 2013

## ANALYTICAL METHODS SUMMARY

H3B140417

<u>PARAMETER</u>	<u>ANALYTICAL METHOD</u>
Volatile Organics by TO15	EPA-2 TO-15

### References:

EPA-2 "Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air", EPA-625/R-96/010b, January 1999.



## SAMPLE SUMMARY

H3B140417

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MX5D8	001	C-N-1	02/13/13	13:05
MX5EA	002	C-M-2	02/13/13	12:59
MX5EC	003	C-S-3	02/13/13	12:53
MX5ED	004	BLIND DUPLICATE	02/13/13	12:54

**NOTE(S) :**

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

**PROJECT NARRATIVE**  
**H3B140417**

The results reported herein are applicable to the samples submitted for analysis only. If you have any questions about this report, please call (865) 291-3000 to speak with the TestAmerica project manager listed on the cover page.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**The original chain of custody documentation is included with this report.**

**Sample Receipt**

There were no problems with the condition of the samples received.

**Quality Control and Data Interpretation**

Unless otherwise noted, all holding times and QC criteria were met and the test results shown in this report meet all applicable NELAC requirements.

EPA methods TO-14A and TO-15 specify the use of humidified "zero air" as the blank reagent for canister cleaning, instrument calibration and sample analysis. Ultra-high purity humidified nitrogen from a cryogenic reservoir is used in place of "zero air" by TestAmerica Knoxville.

### CERTIFICATION SUMMARY

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Knoxville	ACLASS	DoD ELAP		ADE-1434
TestAmerica Knoxville	Arkansas	State Program	6	88-0688
TestAmerica Knoxville	California	State Program	9	2423
TestAmerica Knoxville	Colorado	State Program	8	N/A
TestAmerica Knoxville	Connecticut	State Program	1	PH-0223
TestAmerica Knoxville	Florida	NELAC	4	E87177
TestAmerica Knoxville	Georgia	State Program	4	906
TestAmerica Knoxville	Hawaii	State Program	9	N/A
TestAmerica Knoxville	Indiana	State Program	5	C-TN-02
TestAmerica Knoxville	Iowa	State Program	7	375
TestAmerica Knoxville	Kansas	NELAC	7	E-10349
TestAmerica Knoxville	Kentucky	State Program	4	90101
TestAmerica Knoxville	Louisiana	NELAC	6	LA110001
TestAmerica Knoxville	Louisiana	NELAC	6	83979
TestAmerica Knoxville	Maryland	State Program	3	277
TestAmerica Knoxville	Michigan	State Program	5	9933
TestAmerica Knoxville	Minnesota	NELAC	5	047-999-429
TestAmerica Knoxville	Nevada	State Program	9	TN00009
TestAmerica Knoxville	New Jersey	NELAC	2	TN001
TestAmerica Knoxville	New York	NELAC	2	10781
TestAmerica Knoxville	North Carolina	North Carolina DENR	4	64
TestAmerica Knoxville	North Carolina	North Carolina PHL	4	21705
TestAmerica Knoxville	Ohio	OVAP	5	CL0059
TestAmerica Knoxville	Oklahoma	State Program	6	9415
TestAmerica Knoxville	Pennsylvania	NELAC	3	68-00576
TestAmerica Knoxville	South Carolina	State Program	4	84001
TestAmerica Knoxville	Tennessee	State Program	4	2014
TestAmerica Knoxville	Texas	NELAC	6	T104704380-TX
TestAmerica Knoxville	USDA	USDA		P330-11-00035
TestAmerica Knoxville	Utah	NELAC	8	QUAN3
TestAmerica Knoxville	Virginia	State Program	3	165
TestAmerica Knoxville	Washington	State Program	10	C593
TestAmerica Knoxville	West Virginia	West Virginia DEP	3	345
TestAmerica Knoxville	West Virginia	West Virginia DHHR (DW)	3	9955C
TestAmerica Knoxville	Wisconsin	State Program	5	998044300

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

TestAmerica Cedar Falls  
Client Sample ID: C-N-1  
GC/MS Volatiles

Lot-Sample # H3B140417 - 001      Work Order # MX5D81AC      Matrix.....: AIR  
Date Sampled...: 02/13/2013      Date Received...: 02/14/2013  
Prep Date.....: 02/15/2013      Analysis Time...: 02/15/2013  
Prep Batch #....: 3048013      Analysis Time...: 12:03  
Dilution Factor.: 1      Method.....: TO-15

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
cis-1,2-Dichloroethene	ND	0.080	0.024	ND	0.32	0.095
1,1-Dichloroethene	ND	0.080	0.013	ND	0.32	0.052
Vinyl chloride	ND	0.080	0.029	ND	0.20	0.074
1,1-Dichloroethane	ND	0.080	0.010	ND	0.32	0.040
1,1,1-Trichloroethane	ND	0.080	0.012	ND	0.44	0.065
Trichloroethene	0.016 J	0.040	0.014	0.087 J	0.21	0.075
trans-1,2-Dichloroethene	ND	0.080	0.020	ND	0.32	0.079
Tetracloroethene	0.016 J	0.080	0.016	0.11 J	0.54	0.11
1,1,2-Trichloroethane	ND	0.080	0.021	ND	0.44	0.11

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	96	60 - 140

Qualifiers

J Estimated result. Result is less than RL.

Result (ug/m3) = Result (ppb(v/v))[unrounded] \* (Molecular Weight/24.45)

Reporting Limit (ug/m3) = Reporting Limit (ppb(v/v))[unrounded] \* (Molecular Weight/24.45)

MDL (ug/m3) = MDL (ppb(v/v))[unrounded] \* (Molecular Weight/24.45)



TestAmerica Cedar Falls  
Client Sample ID: C-M-2  
GC/MS Volatiles

Lot-Sample # H3B140417 -002      Work Order # MX5BA1AC      Matrix.....: AIR  
Date Sampled...: 02/13/2013      Date Received...: 02/14/2013  
Prep Date.....: 02/15/2013      Analysis Time....: 02/15/2013  
Prep Batch #.....: 3048013      Analysis Time....: 12:59  
Dilution Factor.: 1      Method.....: TO-15

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
1,1,2-Trichloroethane	ND	0.080	0.021	ND	0.44	0.11
Tetrachloroethene	0.025 J	0.080	0.016	0.17 J	0.54	0.11
trans-1,2-Dichloroethene	ND	0.080	0.020	ND	0.32	0.079
Trichloroethene	0.019 J	0.040	0.014	0.10 J	0.21	0.075
1,1,1-Trichloroethane	ND	0.080	0.012	ND	0.44	0.065
1,1-Dichloroethane	ND	0.080	0.010	ND	0.32	0.040
Vinyl chloride	ND	0.080	0.029	ND	0.20	0.074
1,1-Dichloroethene	ND	0.080	0.013	ND	0.32	0.052
cis-1,2-Dichloroethene	ND	0.080	0.024	ND	0.32	0.095

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	97	60 - 140

**Qualifiers**

J      Estimated result. Result is less than RL.  
Result (ug/m3) = Result (ppb(v/v))[unrounded] \* (Molecular Weight/24.45)  
Reporting Limit (ug/m3) = Reporting Limit (ppb(v/v))[unrounded] \* (Molecular Weight/24.45)  
MDL (ug/m3) = MDL (ppb(v/v))[unrounded] \* (Molecular Weight/24.45)



TestAmerica Cedar Falls  
Client Sample ID: C-S-3  
GC/MS Volatiles

Lot-Sample # H3B140417 - 003      Work Order # MX5EC1AC      Matrix.....: AIR  
Date Sampled...: 02/13/2013      Date Received...: 02/14/2013  
Prep Date.....: 02/15/2013      Analysis Time....: 02/15/2013  
Prep Batch #.....: 3048013      Analysis Time....: 16:57  
Dilution Factor.: 1      Method.....: TO-15

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
cis-1,2-Dichloroethene	ND	0.080	0.024	ND	0.32	0.095
1,1-Dichloroethene	ND	0.080	0.013	ND	0.32	0.052
Vinyl chloride	ND	0.080	0.029	ND	0.20	0.074
1,1-Dichloroethane	ND	0.080	0.010	ND	0.32	0.040
1,1,1-Trichloroethane	ND	0.080	0.012	ND	0.44	0.065
Trichloroethene	0.021 J	0.040	0.014	0.11 J	0.21	0.075
trans-1,2-Dichloroethene	ND	0.080	0.020	ND	0.32	0.079
Tetrachloroethene	ND	0.080	0.016	ND	0.54	0.11
1,1,2-Trichloroethane	ND	0.080	0.021	ND	0.44	0.11

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	96	60 - 140

**Qualifiers**

J      Estimated result. Result is less than RL.

Result (ug/m3) = Result (ppb(v/v))[unrounded] \* (Molecular Weight/24.45)

Reporting Limit (ug/m3) = Reporting Limit (ppb(v/v))[unrounded] \* (Molecular Weight/24.45)

MDL (ug/m3) = MDL (ppb(v/v))[unrounded] \* (Molecular Weight/24.45)

TestAmerica Cedar Falls  
 Client Sample ID: BLIND DUPLICATE  
 GC/MS Volatiles

Lot-Sample # H3B140417 - 004      Work Order # MX5ED1AC      Matrix.....: AIR

Date Sampled...: 02/13/2013      Date Received...: 02/14/2013  
 Prep Date.....: 02/15/2013      Analysis Time...: 02/15/2013  
 Prep Batch #....: 3048013      Analysis Time...: 17:54  
 Dilution Factor.: 1      Method.....: TO-15

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
1,1,2-Trichloroethane	ND	0.080	0.021	ND	0.44	0.11
Tetrachloroethene	0.018 J	0.080	0.016	0.12 J	0.54	0.11
trans-1,2-Dichloroethene	ND	0.080	0.020	ND	0.32	0.079
Trichloroethene	0.019 J	0.040	0.014	0.10 J	0.21	0.075
1,1,1-Trichloroethane	ND	0.080	0.012	ND	0.44	0.065
1,1-Dichloroethane	ND	0.080	0.010	ND	0.32	0.040
Vinyl chloride	ND	0.080	0.029	ND	0.20	0.074
1,1-Dichloroethene	ND	0.080	0.013	ND	0.32	0.052
cis-1,2-Dichloroethene	ND	0.080	0.024	ND	0.32	0.095

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	96	60 - 140

Qualifiers

J      Estimated result. Result is less than RL.

Result (ug/m3) = Result (ppb(v/v))[unrounded] \* (Molecular Weight/24.45)

Reporting Limit (ug/m3) = Reporting Limit (ppb(v/v))[unrounded] \* (Molecular Weight/24.45)

MDL (ug/m3) = MDL (ppb(v/v))[unrounded] \* (Molecular Weight/24.45)

TO-14 \_rev5MDL\_DOD.rpt version 5.004 09/13/2011

TestAmerica Cedar Falls  
Client Sample ID: INTRA-LAB BLANK  
GC/MS Volatiles

Lot-Sample # H3B170000 - 013B      Work Order # MX5401AA      Matrix.....: AIR

Prep Date.....: 02/13/2013      Date Received...: 02/14/2013  
Prep Date.....: 02/15/2013      Analysis Time....: 02/15/2013  
Prep Batch #.....: 3048013      Analysis Time....: 11:06  
Dilution Factor.: 1      Method.....: TO-15

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
cis-1,2-Dichloroethene	ND	0.080	0.024	ND	0.32	0.095
1,1-Dichloroethene	ND	0.080	0.013	ND	0.32	0.052
Vinyl chloride	ND	0.080	0.029	ND	0.20	0.074
1,1-Dichloroethane	ND	0.080	0.010	ND	0.32	0.040
1,1,1-Trichloroethane	ND	0.080	0.012	ND	0.44	0.065
Trichloroethene	ND	0.040	0.014	ND	0.21	0.075
trans-1,2-Dichloroethene	ND	0.080	0.020	ND	0.32	0.079
Tetrachloroethene	ND	0.080	0.016	ND	0.54	0.11
1,1,2-Trichloroethane	ND	0.080	0.021	ND	0.44	0.11

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	99	60 - 140

Result (ug/m3) = Result (ppb(v/v))[unrounded] \* (Molecular Weight/24.45)

Reporting Limit (ug/m3) = Reporting Limit (ppb(v/v))[unrounded] \* (Molecular Weight/24.45)

MDL (ug/m3) = MDL (ppb(v/v))[unrounded] \* (Molecular Weight/24.45)

TO-14 \_rev5MDL\_DOD.rpt version 5.004 09/13/2011

TestAmerica Cedar Falls  
 Client Sample ID: CHECK SAMPLE  
 GC/MS Volatiles

Lot-Sample # H3B170000 - 013C      Work Order # MX5401AC      Matrix.....: AIR  
 Prep Date.....: 02/13/2013      Date Received...: 02/14/2013  
 Prep Date.....: 02/15/2013      Analysis Time....: 02/15/2013  
 Prep Batch #.....: 3048013      Analysis Time....: 09:13  
 Dilution Factor.: 1      Method.....: TO-15

PARAMETER	SPIKE AMOUNT (ppb(v/v))	MEASURED AMOUNT (ppb(v/v))	SPIKE AMOUNT (ug/m3)	MEASURED AMOUNT (ug/m3)	PERCENT RECOVERY	RECOVERY LIMITS
1,1,2-Trichloroethane	5.00	4.69	27.3	25.6	94	70 - 130
trans-1,2-Dichloroethene	5.00	5.15	19.8	20.4	103	70 - 130
Tetrachloroethene	5.00	4.80	33.9	32.6	96	70 - 130
1,1,1-Trichloroethane	5.00	4.80	27.3	26.2	96	70 - 130
Trichloroethene	5.00	5.22	26.9	28.1	104	70 - 130
cis-1,2-Dichloroethene	5.00	4.88	19.8	19.4	98	70 - 130
1,1-Dichloroethene	5.00	5.17	19.8	20.5	103	70 - 130
Vinyl chloride	5.00	5.48	12.8	14.0	110	70 - 130
1,1-Dichloroethane	5.00	4.84	20.2	19.6	97	70 - 130

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	98	60 - 140

Result (ug/m3) = Result (ppb(v/v))[unrounded] \* (Molecular Weight/24.45)  
 Reporting Limit (ug/m3) = Reporting Limit (ppb(v/v))[unrounded] \* (Molecular Weight/24.45)  
 MDL (ug/m3) = MDL (ppb(v/v))[unrounded] \* (Molecular Weight/24.45)

Test America Knoxville GC/MS Volatiles

Lot ID: H3B140417 Batch #: 10344  
 Matrix: Air Can #: 6652  
 MethCod: 7m Method: EPA-2 TO-15

Parameter	Result	Reporting Limit	Units
cis-1,2-Dichloroethene	ND	0.080	ppb (v/v)
trans-1,2-Dichloroethene	ND	0.080	ppb (v/v)
Tetrachloroethene	ND	0.080	ppb (v/v)
Trichloroethene	ND	0.040	ppb (v/v)
Vinyl chloride	ND	0.080	ppb (v/v)
1,1-Dichloroethane	ND	0.080	ppb (v/v)
1,1-Dichloroethene	ND	0.080	ppb (v/v)
1,1,1-Trichloroethane	ND	0.080	ppb (v/v)
1,1,2-Trichloroethane	ND	0.080	ppb (v/v)

US EPA ARCHIVE DOCUMENT



TAL Knoxville  
 5815 Middlebrook Pike  
 Knoxville, TN 37921  
 phone 865-291-3000 fax 865-584-4315

438140417  
**Canister Samples Chain of Custody Record**

*TestAmerica assumes no liability with respect to the collection and shipment of these samples.*

**TestAmerica**

THE LEADER IN ENVIRONMENTAL TESTING

Client Contact Information		Project Manager: <u>Mike Hagemeister</u>		Sampled By: <u>Rob Bergman</u>		1 of 1 COCs													
Company: <u>Terracon</u>		Phone: <u>402-330-2202</u>																	
Address: <u>6612 Chancellor Dr. Ste. 102</u>		Site Contact:																	
City/State/Zip: <u>Cedar Falls, IA 50613</u>		TAL Contact:																	
Phone: <u>319-277-4016</u>																			
FAX:																			
Project Name: <u>Chamberlain Mfg.</u>		Analysis Turnaround Time																	
Site/location: <u>Waterloo, IA</u>		Standard (Specify) <u>5 day</u>																	
PO # <u>07107020</u>		Rush (Specify)																	
Sample Identification	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, "Hg (Stop)	Flow Controller ID	Canister ID	TO-15	TO-14A	EPA 3C	EPA 25C	ASTM D-1946	Other (Please specify in notes section)	Sample Type	Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (Please specify in notes section)
<u>C-N-1</u>	<u>2-12-13</u> <u>2-13-13</u>	<u>12:48</u>	<u>13:05</u>	<u>29.5</u>	<u>-3.0</u>	<u>K378</u>	<u>6593</u>	<u>X</u>								<u>X</u>			
<u>C-M-2</u>		<u>12:16</u>	<u>12:59</u>	<u>30.0</u>	<u>-3.0</u>	<u>K486</u>	<u>9461B</u>	<u>X</u>								<u>X</u>			
<u>C-S-3</u>		<u>12:34</u>	<u>12:53</u>	<u>29.0</u>	<u>-4</u>	<u>K405</u>	<u>G622</u>	<u>X</u>								<u>X</u>			
<u>Blind Duplicate</u>	<u>✓</u>	<u>12:35</u>	<u>12:54</u>	<u>29.5</u>	<u>-1.5</u>	<u>K377</u>	<u>6638</u>	<u>X</u>								<u>X</u>			
Sampled by: <u>Rob Bergman</u>		Temperature (Fahrenheit)																	
Picked up by <u>Dave Cleary</u>		Interior		Ambient															
		Start		<u>44° 39°</u>															
		Stop		<u>48° 44°</u>															
		Pressure (inches of Hg)																	
		Interior		Ambient															
		Start																	
		Stop																	
Special Instructions/QC Requirements & Comments:																			
<u>email results to dcleary@terracon.com AND mhagemeister@terracon.com</u>																			
<u>VOCs to include PCE, TCE, vinyl chloride, trans-DCE, cis-DCE, 1,1-dichloroethane, 1,1-dichloroethane, TCA, and 1,1,2-trichloroethane</u>																			
Canisters Shipped by:		Date/Time:		Canisters Received by:		Date/Time:													
<u>Dropped off @ Test America</u>		<u>2/13/13</u>		<u>Rita Hancock</u>		<u>2/14/13 10:00</u>													
Samples Relinquished by:		Date/Time:		Received by:		Date/Time:													
<u>[Signature]</u>		<u>2-13-13 13:58</u>		<u>Cornie Holst</u>															
Relinquished by:		Date/Time:		Received by:		Date/Time:													

TESTAMERICA KNOXVILLE SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST

Lot Number: H3B140417

Review Items	Yes	No	NA	If No, what was the problem?	Comments/Actions Taken
1. Do sample container labels match COC? (IDs, Dates, Times)	✓			<input type="checkbox"/> 1a Do not match COC <input type="checkbox"/> 1b Incomplete information <input type="checkbox"/> 1c Marking smeared <input type="checkbox"/> 1d Label torn <input type="checkbox"/> 1e No label <input type="checkbox"/> 1f COC not received <input type="checkbox"/> 1g Other:	
2. Is the cooler temperature within limits? (> freezing temp. of water to 6°C, VOST: 10°C)			✓	<input type="checkbox"/> 2a Temp Blank = _____ <input type="checkbox"/> 2b Cooler Temp = _____ <input type="checkbox"/> 2c Cooling initiated for recently collected samples, ice present.	
3. Were samples received with correct chemical preservative (excluding Encore)?			✓	<input type="checkbox"/> 3a Sample preservative = _____	
4. Were custody seals present/intact on cooler and/or containers?	✓			<input type="checkbox"/> 4a Not present <input type="checkbox"/> 4b Not intact <input type="checkbox"/> 4c Other:	
5. Were all of the samples listed on the COC received?	✓			<input type="checkbox"/> 5a Samples received-not on COC <input type="checkbox"/> 5b Samples not received-on COC	
6. Were all of the sample containers received intact?	✓			<input type="checkbox"/> 6a Leaking <input type="checkbox"/> 6b Broken	
7. Were VOA samples received without headspace?			✓	<input type="checkbox"/> 7a Headspace (VOA only)	
8. Were samples received in appropriate containers?	✓			<input type="checkbox"/> 8a Improper container	
9. Did you check for residual chlorine, if necessary?			✓	<input type="checkbox"/> 9a Could not be determined due to matrix interference	
10. Were samples received within holding time?	✓			<input type="checkbox"/> 10a Holding time expired	
11. For rad samples, was sample activity info. provided?			✓	<input type="checkbox"/> Incomplete information	
12. For 1613B water samples is pH<9?			✓	If no, was pH adjusted to pH 7 - 9 with sulfuric acid? _____	
13. Are the shipping containers intact?	✓			<input type="checkbox"/> 13a Leaking <input type="checkbox"/> 13b Other:	
14. Was COC relinquished? (Signed/Dated/Timed)	✓			<input type="checkbox"/> 14a Not relinquished	
15. Are tests/parameters listed for each sample?	✓			<input type="checkbox"/> 15a Incomplete information	
16. Is the matrix of the samples noted?	✓			<input type="checkbox"/> 15a Incomplete information	
17. Is the date/time of sample collection noted?	✓			<input type="checkbox"/> 15a Incomplete information	
18. Is the client and project name/# identified?	✓			<input type="checkbox"/> 15a Incomplete information	
19. Was the sampler identified on the COC?	✓			<input type="checkbox"/> 19a Other	
Quote #: <u>87209</u> PM Instructions: <u>MA</u>					

Sample Receiving Associate: Rita Hancock

Date: 2/14/13

QA026R23.doc, 022812



Test America - Knoxville ---- Air Canister Dilution Log

Lot Number: H3B140417

Initial Can Pressure							Subsequent Dilutions													
Analyst/Date	Can or Tedlar bag prep Time	Baro ID <u>B2</u> Pbarr (in)	Sample ID	Can #	Pres. upon receipt (-in or + psig)	Adj. Initial Pres. (-in or + psig)	Analyst/Date	I / S	Baro ID	Pbarr (in)	Initial Pres. Pi (in)	Final Pres. Pf (psig)	First InCan Final Pres. Pf (psig)	Second In-can Final Pres. Pf (psig)	Third InCan Final Pres. Pf (psig)	Serial Dilution Can #	Vol (mL)	Final Pres. Pf (psig)	Comments	
<u>M</u> <u>2/14/13</u>	<u>1310</u>	<u>28.9</u>	<b>MX5D8</b>	<u>6593</u> ✓	<u>-1.7</u>	<u>-</u>														<u>10344</u>
<u>↓</u>	<u>↓</u>	<u>↓</u>	<b>MX5EA</b>	<u>9461B</u> ✓	<u>-1.5</u>	<u>-</u>														<u>↓</u>
<u>↓</u>	<u>↓</u>	<u>↓</u>	<b>MX5EC</b>	<u>6622</u> ✓	<u>0</u>	<u>-</u>														<u>↓</u>
<u>↓</u>	<u>↓</u>	<u>↓</u>	<b>MX5ED</b>	<u>6638</u> ✓	<u>0</u>	<u>-</u>														<u>↓</u>

5815 Middlebrook Pike  
 Knoxville, TN 37921  
 phone 865-291-3000 fax 865-584-4315

**Canister Samples Chain of Custody Record**

TestAmerica assumes no liability with respect to the collection and shipment of these samples.

**THE LEADER IN ENVIRONMENTAL TESTING**

Client Contact Information		Project Manager: <i>Mike Hagemeister</i>		Sampled By: <i>Rob Bergman</i>		1 of 1 COCs	
Company: <i>Terracon</i>		Phone: <i>402-330-2202</i>					
Address: <i>6612 Chancellor Dr. Ste. 102</i>		Site Contact:					
City/State/Zip: <i>Cedar Falls, IA 50613</i>		TAL Contact:					
Phone: <i>319-277-4016</i>							
FAX:							
Project Name: <i>Chamberlain Mfg.</i>		Analysis Turnaround Time					
Site/location: <i>Waterloo, IA</i>		Standard (Specify) <i>5 day</i>					
PO # <i>07107020</i>		Rush (Specify)					

Sample Identification	Sample Date(s)	Time Start	Time Stop	Canister Vacuum In Field, "Hg (Start)	Canister Vacuum In Field, "Hg (Stop)	Flow Controller ID	Canister ID	TO-15	TO-14A	EPA 3C	EPA 25C	ASTM D-1946	Other (Please specify in notes section)	Sample Type	Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (Please specify in notes section)
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<i>C-M-2</i>		<i>12:16</i>	<i>12:59</i>	<i>-30.0</i>	<i>-3.0</i>	<i>K486</i>	<i>9461B</i>	<i>X</i>								<i>X</i>			
<i>C-S-3</i>		<i>12:34</i>	<i>12:53</i>	<i>-29.0</i>	<i>-4</i>	<i>K405</i>	<i>G622</i>	<i>X</i>								<i>X</i>			
<i>Blind Duplicate</i>	<i>↓</i>	<i>12:35</i>	<i>12:54</i>	<i>-29.5</i>	<i>-1.5</i>	<i>K377</i>	<i>6638</i>	<i>X</i>								<i>X</i>			

Sampled by: <i>Rob Bergman</i> Picked up by <i>Dave Cleary</i>	Temperature (Fahrenheit)	
	Interior	Ambient
	Start	<i>44° 39°</i>
	Stop	<i>48° 44°</i>

	Pressure (Inches of Hg)	
	Interior	Ambient
	Start	
	Stop	

Special Instructions/QC Requirements & Comments:

*email results to dccleary@terracon.com AND mhagemeister@terracon.com*

*VOCs to include PCE, TCE, vinyl chloride, trans-DCE, cis-DCE, 1,1-dichloroethane, 1,1-dichloroethane, TCA, and 1,1,2-trichloroethane*

Canisters Shipped by: <i>Dropped off @ Test America</i>	Date/Time: <i>2/13/13</i>	Canisters Received by:
Samples Relinquished by: <i>[Signature]</i>	Date/Time: <i>2-13-13 13:58</i>	Received by: <i>Connie Holst</i>
Relinquished by:	Date/Time:	Received by:

Ref: Dep: Date: 13Feb13 Wgt: 36.25 LBS SHIPPING: 0.00 SPECIAL: 0.00 HANDLING: 0.00 DV: 0.00 TOTAL: 0.00

Spec: PRIORITY OVERNIGHT  
 TALK: 4298 2711 0370

