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June 9, 2019

Ms. Diane Czarnecki  
Industrial Hygienist  
Facilities Management Division  
GSA Public Buildings Service – Heartland Region  
2300 Main Street  
Kansas City, Missouri 64108

**RE: Goodfellow Federal Center - Metals in Air Investigation  
Building – #103E  
4300 Goodfellow Boulevard  
St. Louis, Missouri 63120  
OCCU-TEC Project No. 919083**

Dear Ms. Czarnecki:

Thank you for the opportunity to assist the General Services Administration (GSA) with the Resource Conservation and Recovery Act (RCRA) metals air sampling investigation of the above referenced buildings located at the Goodfellow Federal Center, in St. Louis, Missouri. OCCU-TEC understands that the purpose of the investigation was to provide sampling data regarding pre-existing conditions noted in investigation reports previously prepared for the facility. The following report summarizes the sample collection activities and the laboratory analytical results of the samples submitted.

On May 16, 2019, Missouri licensed air sampling professionals from OCCU-TEC conducted air sampling for the presence of seven of the RCRA metals including Silver, Arsenic, Barium, Cadmium, Chromium, Lead, and Selenium. Sampling was conducted on Building #103E.

The proposed sampling scheme, the numbers of samples, sample distribution and general methodology was developed based on previous investigation methodology and in coordination with the GSA. Sample locations were determined by OCCU-TEC field personnel while on-site.

### ***Resource Conservation and Recovery Act Metals Air Sampling***

Air sampling for RCRA metals was collected on 37-millimeter (mm) cassettes with 0.8 micrometer ( $\mu\text{m}$ ) mixed cellulose ester (MCE) filters using powered air sampling pumps in accordance with National Institute for Occupational Safety and Health (NIOSH) sampling methods. Samples were collected in a method sufficient to collect a minimum sample volume of 300 liters. Air samples were submitted under chain-of-custody to Scientific Analytical Institute, Inc. (SAI), for independent analysis of RCRA metals in accordance with NIOSH Method 7300. SAI is accredited by the American Industrial Hygiene Association (AIHA) utilizing the Industrial Hygiene Proficiency Analytical Testing (IHPAT) program. SAI's IHPAT Laboratory ID is 173190.

Results of the air sampling are summarized in the table below by identifying the range of results for Building #103E for each of the seven metals that were sampled. **Samples with a “<” sign indicate that the results were below the laboratory’s method reporting limit.**

Analysis	Lowest Concentration ( $\mu\text{g}/\text{m}^3$ )	Highest Concentration ( $\mu\text{g}/\text{m}^3$ )
Silver (Ag)	<0.64	<0.64
Arsenic (As)	<0.64	<0.64
Barium (Ba) *	<0.097	0.24
Cadmium (Cd)	<0.064	<0.064
Total Chromium (Cr) *	<0.64	0.84
Lead (Pb)	<0.33	<0.33
Selenium (Se)	<0.64	<0.64

\* The laboratory reported trace amounts of total chromium and Barium above the laboratory detection limit on many samples, including field blanks. According to the lab, low levels of Chromium and Barium can be found as a contaminant in varying levels on MCE filters for different manufacturers and lots.

Results of the air samples collected indicate that the air samples collected from Building #103E contained concentrations of RCRA metals below the laboratory’s method reporting limit and the OSHA Permissible Exposure Limit (PEL) with the exception of total Chromium and Barium. As previously noted, the elevated total chromium and Barium results were likely due to contaminated MCE filter media. Sample location diagrams are included in Appendix A. Sample locations and the corresponding results are summarized

in the laboratory analytical results that are included in Appendix B. The air sampling professional's Missouri Lead license is included in Appendix C.

It should be noted that this air sampling investigation was only a screening of airborne RCRA metals and should not be interpreted or used to determine compliance or non-compliance with OSHA personnel monitoring regulations.

OCCU-TEC appreciates the opportunity to work with GSA on this project. If you have any questions concerning this report, or if we may be of any additional service, please feel free to contact us.

Sincerely,

(b) (6)

Justin Arnold, CIEC  
Environmental Scientist



(b) (6)

Jeff Smith  
Senior Project Manager (QA/QC)

Appendices:

- A: Sample Location Diagrams
- B: Laboratory Analytical Results and Chain of Custody Documentation
- C: Qualifications and Licenses

# **Appendix A**

## Sample Location Diagrams



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**Figure 1: Air Sample Location Maps—Bldg. 103E**

Goodfellow Federal Center  
4300 Goodfellow Boulevard  
St. Louis, Missouri  
Project Number: 919083

# **Appendix B**

## Laboratory Analytical Results and Chain of Custody Documentation





# Airborne Metals Concentration by Inductively-Coupled Plasma Analysis (ICP)

NIOSH Method 7303



<b>Client:</b>	OCCU-TEC Inc. 2604 NE Industrial Drive, Suite 230 North Kansas City, MO 64117	<b>Attn:</b> Justin Arnold	<b>Lab Order ID:</b> 71913749
			<b>Date Received:</b> 05/21/2019
<b>Project:</b>	919083.001 GFC		<b>Date Reported:</b> 06/06/2019
			<b>Page:</b> 1 of 3

Sample ID	Description	Volume (L)	Element	Reporting Limit (µg)	Concentration (µg)	Concentration (µg/m <sup>3</sup> )
Lab Sample ID	Lab Notes					
103E-A-01	LL L27	392	Ag	0.25	< 0.25	< 0.64
			As	0.25	< 0.25	< 0.64
			Ba	0.038	< 0.038	< 0.097
			Cd	0.025	< 0.025	< 0.064
			Cr	0.25	0.33	0.84
71913749IPA_1			Pb	0.13	< 0.13	< 0.33
			Se	0.25	< 0.25	< 0.64
103E-A-02	LL L28	392	Ag	0.25	< 0.25	< 0.64
			As	0.25	< 0.25	< 0.64
			Ba	0.038	0.054	0.14
			Cd	0.025	< 0.025	< 0.064
			Cr	0.25	< 0.25	< 0.64
71913749IPA_2			Pb	0.13	< 0.13	< 0.33
			Se	0.25	< 0.25	< 0.64

Melissa Ferrell

**Analyst**

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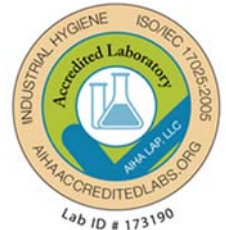
**Lab Director**

This report relates only to the samples tested and may not be reproduced, except in full, without the written approval of SAI. This report may not be used by the client to claim product endorsement by AIHA or any other agency of the U.S. government. Scientific Analytical Institute participates in the AIHA IHPAT program. IHPAT Laboratory ID: 173190. Unless otherwise noted blank sample correction was not performed on analytical results. MDLs are available upon request. Reporting limits stated above.



# Airborne Metals Concentration by Inductively-Coupled Plasma Analysis (ICP)

NIOSH Method 7303



<b>Client:</b>	OCCU-TEC Inc. 2604 NE Industrial Drive, Suite 230 North Kansas City, MO 64117	<b>Attn:</b>	Justin Arnold	<b>Lab Order ID:</b>	71913749
				<b>Date Received:</b>	05/21/2019
<b>Project:</b>	919083.001 GFC			<b>Date Reported:</b>	06/06/2019
				<b>Page:</b>	2 of 3

Sample ID	Description	Volume (L)	Element	Reporting Limit (µg)	Concentration (µg)	Concentration (µg/m³)
Lab Sample ID	Lab Notes					
103E-A-03	UL P27	392	Ag	0.25	< 0.25	< 0.64
			As	0.25	< 0.25	< 0.64
			Ba	0.038	0.096	0.24
			Cd	0.025	< 0.025	< 0.064
			Cr	0.25	0.28	0.71
71913749IPA_3			Pb	0.13	< 0.13	< 0.33
			Se	0.25	< 0.25	< 0.64
103E-A-04	LL P21	392	Ag	0.25	< 0.25	< 0.64
			As	0.25	< 0.25	< 0.64
			Ba	0.038	0.071	0.18
			Cd	0.025	< 0.025	< 0.064
			Cr	0.25	< 0.25	< 0.64
71913749IPA_4			Pb	0.13	< 0.13	< 0.33
			Se	0.25	< 0.25	< 0.64

Melissa Ferrell

**Analyst**

(b) (6)

**Lab Director**

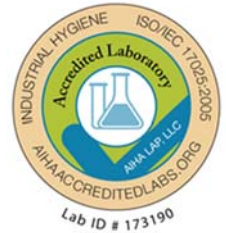
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# Airborne Metals Concentration by Inductively-Coupled Plasma Analysis (ICP)

NIOSH Method 7303



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<b>Project:</b>	919083.001 GFC		<b>Date Reported:</b> 06/06/2019
			<b>Page:</b> 3 of 3

Sample ID	Description	Volume (L)	Element	Reporting Limit (µg)	Concentration (µg)	Concentration (µg/m³)
Lab Sample ID	Lab Notes					
103E-A-05	UL P20	392	Ag	0.25	< 0.25	< 0.64
			As	0.25	< 0.25	< 0.64
			Ba	0.038	< 0.038	< 0.097
			Cd	0.025	< 0.025	< 0.064
			Cr	0.25	0.26	0.66
			Pb	0.13	< 0.13	< 0.33
71913749IPA_5			Se	0.25	< 0.25	< 0.64
103E-A-06	FB	-	Ag	0.25	< 0.25	--
			As	0.25	< 0.25	--
			Ba	0.038	0.089	--
			Cd	0.025	< 0.025	--
			Cr	0.25	0.27	--
			Pb	0.13	< 0.13	--
71913749IPA_6			Se	0.25	< 0.25	--

Melissa Ferrell

**Analyst**

(b) (6)

**Lab Director**

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**Scientific Analytical Institute, Inc.**  
 4604 Dundas Dr. Greensboro, NC 27407  
 Phone: 336.292.3888 Fax: 336.292.3313  
 www.sailab.com lab@sailab.com

Lab Use Only  
 Lab Order ID: 71913749  
 Client Code: \_\_\_\_\_

Company Contact Information	
Company: OCCU-TEC Inc.	Contact: Justin Arnold
Address: 2604 NE Industrial Drive, Suite 230	Phone <input type="checkbox"/> : 816-810-3276
North Kansas City, MO 64117	Fax <input type="checkbox"/> : 816-994-3478
	Email :jarnold@occutec.com

Industrial Hygiene Test Types	
Silica as Alpha Quartz (XSZ)* <input type="checkbox"/>	With Respirable Dust (XDZ) <input type="checkbox"/>
Silica as Cristobalite (XSC)* <input type="checkbox"/>	With Respirable Dust (XDC) <input type="checkbox"/>
Silica as Tridymite (XST)* <input type="checkbox"/>	With Respirable Dust (XDT) <input type="checkbox"/>
Silica as Alpha Quartz, Cristobalite, Tridymite (XSA)* <input type="checkbox"/>	With Respirable Dust (XDA) <input type="checkbox"/>
Silica Bulk (XSI)* <input type="checkbox"/>	
Bulk Phase ID/Whole Rock (XUK) <input type="checkbox"/>	
Total Dust NIOSH Method 0500 (GTD) <input type="checkbox"/>	
Respirable Dust NIOSH Method 0600 (GRD) <input type="checkbox"/>	
PCM NIOSH 7400-A Rules (PCM) <input type="checkbox"/>	
B Rules (PCB) <input type="checkbox"/>	TWA (PTA) <input type="checkbox"/>
TEM NIOSH 7402 (Asbestos) (TNI) <input type="checkbox"/>	
Hexavalent Chromium (OSHA ID-215) (Note if from spray paint operations) <input type="checkbox"/>	
Metals (NIOSH 7300) (Specify Metals Under Comments) <input type="checkbox"/>	
Other 6010 C <input checked="" type="checkbox"/>	

Billing/Invoice Information	Turn Around Times <sup>^</sup>	
SAME <input checked="" type="checkbox"/>	90 Min. <input type="checkbox"/>	48 Hours <input type="checkbox"/>
Company:	3 Hours <input type="checkbox"/>	72 Hours <input type="checkbox"/>
Contact:	6 Hours <input type="checkbox"/>	96 Hours <input type="checkbox"/>
Address:	12 Hours <input type="checkbox"/>	120 Hours <input type="checkbox"/>
	24 Hours <input type="checkbox"/>	144 <sup>+</sup> Hours <input checked="" type="checkbox"/>
	<sup>^</sup> TATs not available for certain test types	
PO Number:		
Project Name/Number:	919083.001 GFC	

Sample ID #	Description/Location	Volume/Area	Comments
103E-A-01	LL L27	392 L	Ag, As, Ba, Cd, Cr, Pb, Se
103E-A-02	LL L28	392 L	Ag, As, Ba, Cd, Cr, Pb, Se
103E-A-03	UL P27	392 L	Ag, As, Ba, Cd, Cr, Pb, Se
103E-A-04	LL P21	392 L	Ag, As, Ba, Cd, Cr, Pb, Se
103E-A-05	UL P20	392 L	Ag, As, Ba, Cd, Cr, Pb, Se
103E-A-06	FB	N/A	Ag, As, Ba, Cd, Cr, Pb, Se
			Ag, As, Ba, Cd, Cr, Pb, Se
			Ag, As, Ba, Cd, Cr, Pb, Se
			Ag, As, Ba, Cd, Cr, Pb, Se
			Ag, As, Ba, Cd, Cr, Pb, Se
			Ag, As, Ba, Cd, Cr, Pb, Se
			Ag, As, Ba, Cd, Cr, Pb, Se
			Ag, As, Ba, Cd, Cr, Pb, Se
			Ag, As, Ba, Cd, Cr, Pb, Se
			Ag, As, Ba, Cd, Cr, Pb, Se

Total # of Samples \_\_\_\_\_

Relinquished by	Date/Time	Received by	Date/Time
(b) (6)	5/17/14 17:00	(b) (6)	5:22 10:30am

# **Appendix C**

## Qualifications and Licenses



**STATE OF MISSOURI**  
**DEPARTMENT OF HEALTH AND SENIOR SERVICES**

**LEAD OCCUPATION LICENSE REGISTRATION**

Issued to:

**Justin E. Arnold**

The person, firm or corporation whose name appears on this certificate has fulfilled the requirements for licensure as set forth in the Missouri Revised Statutes 701.300-701.338, as long as not suspended or revoked, and is hereby authorized to engage in the activity listed below.

Lead Risk Assessor  
Category of License

Issuance Date: **6/11/2018**  
Expiration Date: **6/11/2020**  
License Number: **120611-300003622**

(b) (6)



Randall W. Williams, MD, FACOG  
Director  
Department of Health and Senior Services

Lead Licensing Program, PO Box 570, Jefferson City, MO 65102