



February 26, 2023

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

Re: Goodfellow Federal Center –Building 104 Air and Wipe Sampling Evaluation Addendum  
Project No. 121244

Dear Ms. Czarnecki:

Thank you for the opportunity to provide the General Services Administration (GSA) with the above referenced environmental sampling activities. The following is our report.

## **INTRODUCTION**

As requested, Burns & McDonnell conducted area air sampling and wipe sampling for the presence of seven (7) RCRA metals including arsenic, barium, cadmium, chromium, lead, selenium, and silver within the data center of the second floor of building 104 of the Goodfellow Federal Center located at 4300 Goodfellow Boulevard in St. Louis, Missouri. The purpose of the investigation was to provide ongoing sampling data to monitor conditions at the site. This report serves as an addendum to the *Goodfellow Federal Center – Building 104 Air and Wipe Sampling Evaluation*, dated February 16, 2021.

## **SAMPLING METHODOLOGY**

Dust wipe sampling was conducted in accordance with ASTM Standard E1728: *Standard Practice for Collection of Settled Dust Samples Using Wipe Sampling Methods for Subsequent Lead Determination* and ASTM Standard D6966: *Standard Practice for Collection of Settled Dust Samples Using Wipe Sampling Methods for Subsequent Determination of Metals*. ASTM Standards E1728 and D6966 are consistent with the methodology described in the Housing and Urban Development Guidelines-Appendix 13.1 and 40 CFR 745.63. The Brookhaven National Laboratory's Surface Wipe Sampling Procedure (IH75190) was also used as a guideline.

A representative surface area of approximately one square foot (1 SF) was measured and delineated. The dust wipe samples were collected using dedicated dust wipe cloths meeting ASTM E1792 Standard. Each dust wipe cloth was pre-moistened and individually wrapped. Each sample was collected by wiping in a back and forth “S” pattern over a measured sampling area using a clean, disposable glove. Then, the wipe was folded over itself and the area was wiped again in a direction perpendicular to the first wipe orientation. Then, the wipe folded over itself again and the area was wiped around the perimeter. The wipe sample was then placed into a labeled, clean container.



Diane Czarnecki  
Facilities Management Division  
February 26, 2023  
Page 2

Air samples for RCRA metals were 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 the National Institute for Occupational Safety and Health (NIOSH) Method 7300. The sampling strategy included collecting a minimum sample volume of 500 liters based on the calibrated pump flow rate and sample duration.

All samples were submitted under chain-of-custody to Environmental Hazards Services, LLC (EHS) in Richmond, Virginia for independent analysis of 7 RCRA metals. Air samples were analyzed by Inductively Coupled Plasma (ICP) according to NIOSH method 7300. Wipe samples were analyzed according to Environmental Protection Agency (EPA) method SW846-3050B/6010D. EHS is accredited under the American Industrial Hygiene Association (AIHA) Industrial Hygiene Laboratory Accreditation Program (IHLAP) program, identification number LAP-100420.

### **SAMPLE SUMMARY AND RESULTS**

Air and wipe sample(s) were collected on February 7, 2023, by Jeff Smith of OCCU-TEC.

One (1) air sample was collected on February 7, 2023. The sample was collected on the 2<sup>nd</sup> floor data center, room 2, on top of the transformer at column E11. All analytes were below laboratory reporting limits. The complete air sampling laboratory reports from EHS are included as Appendix A.

One (1) wipe sample was collected on February 7, 2023. The sample location and results are listed below. The complete wipe sampling laboratory report from EHS is included in Appendix B.

- 2<sup>nd</sup> floor, data center, room 2, top of table at column D3
  - Arsenic, cadmium, chromium, selenium, and silver were all below laboratory reporting limits
  - Barium was detected at 1.1  $\mu\text{g}/\text{sq. ft}$ , below the clean area limit of 3,094  $\mu\text{g}/\text{sq. ft}$
  - Lead was detected at 22  $\mu\text{g}/\text{sq. ft}$ , in exceedance of the clean area limit of 10  $\mu\text{g}/\text{sq. ft}$

### **LIMITATIONS**

The scope of this assessment was limited in nature. Burns & McDonnell collected samples from a representative number of surfaces in an effort to minimize cost while providing a general overview of site conditions. Sample locations do not encompass all surfaces at the site.



Diane Czarnecki  
Facilities Management Division  
February 26, 2023  
Page 3

Additionally, samples were only analyzed for a select number of potential contaminants. Burns & McDonnell is not responsible for potential contaminants not identified in this report.

Burns & McDonnell appreciates the opportunity to work for GSA on this project. Please contact us if you have any questions regarding this report or if we may be of any additional service.

Sincerely,

(b) (6)

A large black rectangular redaction box covers the signature area, with the text '(b) (6)' in red to its left.

Matt Shanahan, CHMM  
Project Manager

Attachments:

- Appendix A – Air Sampling Laboratory Report
- Appendix B – Wipe Sampling Laboratory Report

Information in Appendices A and B are not accessible for people using screen reader technology. If this information is required, it can be furnished upon request by contacting 816-223-6198 or [r6environmental@gsa.gov](mailto:r6environmental@gsa.gov).

**APPENDIX A – AIR SAMPLING LABORATORY REPORT**



# Air Metals Analysis Report

Environmental Hazards Services, L.L.C.  
7469 Whitepine Rd  
Richmond, VA 23237  
Telephone: 800.347.4010

Client: Burns & McDonnell Engineering  
9400 Ward Pkwy.  
Kansas City, MO 64114

Report Number: 23-02-01801  
Received Date: 02/10/2023  
Reported Date: 02/17/2023

Project/Test Address: 168765; GFC / 4300 Goodfellow Blvd

Client Number:  
26-3514

Fax Number:  
816-822-3494

## Laboratory Results

Lab Sample Number	Client Sample Number	Analyzed Date	Analyte	Air Volume (L)	Total Metal (ug)	Concentration (ug/m <sup>3</sup> )	Narrative ID
23-02-01801-001	104-A-01	02/16/2023	Arsenic (As)	488	<0.15	<0.31	
			Barium (Ba)		<0.15	<0.31	
			Cadmium (Cd)		<0.030	<0.062	
			Chromium (Cr)		<0.75	<1.6	
			Lead (Pb)		<0.15	<0.31	
			Selenium (Se)		<0.75	<1.6	
			Silver (Ag)		<0.15	<0.31	
23-02-01801-002	104-A-02	02/16/2023	Arsenic (As)	--	<0.15	---	
			Barium (Ba)		<0.15	---	
			Cadmium (Cd)		<0.030	---	
			Chromium (Cr)		<0.75	---	
			Lead (Pb)		<0.15	---	
			Selenium (Se)		<0.75	---	
			Silver (Ag)		<0.15	---	
23-02-01801-003	107-A-01	02/16/2023	Arsenic (As)	465	<0.15	<0.33	
			Barium (Ba)		<0.15	<0.33	
			Cadmium (Cd)		<0.030	<0.065	

# Environmental Hazards Services, L.L.C

Client Number: 26-3514

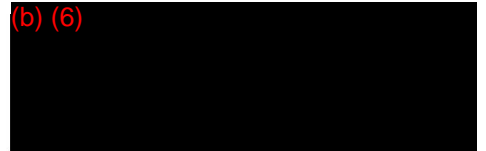
Report Number: 23-02-01801

Project/Test Address: 168765; GFC / 4300 Goodfellow Blvd

Lab Sample Number	Client Sample Number	Analyzed Date	Analyte	Air Volume (L)	Total Metal (ug)	Concentration (ug/m <sup>3</sup> )	Narrative ID
			Chromium (Cr)		<0.75	<1.7	
			Lead (Pb)		<0.15	<0.33	
			Selenium (Se)		<0.75	<1.7	
			Silver (Ag)		<0.15	<0.33	
23-02-01801-004	107-A-02	02/16/2023	Arsenic (As)	--	<0.15	---	
			Barium (Ba)		<0.15	---	
			Cadmium (Cd)		<0.030	---	
			Chromium (Cr)		<0.75	---	
			Lead (Pb)		<0.15	---	
			Selenium (Se)		<0.75	---	
			Silver (Ag)		<0.15	---	

**Sample Narratives:**

Method: NIOSH 7300M  
 Analyst: Carlos Gonzalez



Reviewed By Authorized Signatory:

*Tasha Eaddy*  
 QA/QC Clerk

Sample Results denoted with a "less than" (<) sign contains less than the reporting limit for each particular metal, based on a 15mL volume. The reporting limit is 0.03ug for Cadmium, 0.15ug for Arsenic, Barium, Lead and Silver, and 0.75ug for Chromium and Selenium.

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Results represent the analysis of samples submitted by the client. Unless otherwise noted, samples are reported without a dry weight correction. Sample location, description, area, volume, etc., was provided by the client. If the report does not contain the result for a field blank, it is due to the fact that the client did not include a field blank with their samples. These sample results do not reflect blank correction. This report shall not be reproduced except in full, without the written consent of Environmental Hazards Services, L.L.C. NY ELAP #11714.

LEGEND      ug = microgram      ug/m<sup>3</sup> = micrograms per cubic meter  
                  mL = milliliter      L= Liters

# ENVIRONMENTAL HAZARDS SERVICES, LLC

## Metals Chain of Custody Form

Pg 1 of 1

Company Name		Burns & McDonnell			Account #		26-3514											
Company Address		9400 Ward Parkway			City/State/Zip		Kansas City, MO 64114											
Phone		314-302-4661			Email		alanstaett@burnsmcd.com											
Project Name / Testing Address				GFC / 4300 Goodfellow Blvd														
PO Number		168765		Collected By		Jeff Smith												
Turn-Around Time		<input checked="" type="radio"/> 5 DAY <input type="radio"/> 3 DAY <input type="radio"/> 2 DAY <input type="radio"/> 1 DAY <input type="radio"/> SAME DAY OR WEEKEND - Must Call Ahead																
LAB NUMBER	Client Sample ID	Collection Date & Time	METALS						Other Metals	PARTICULATES					AIR			WIPES
			Pb TCLP	TCLP RCRA 8	RCRA 8 Total	Toxic Metal Profile	Welding Fume Profile	TX 11 TCLP		CA 17 Total	Total Nuisance Dust	Respirable Dust	TSP Gravimetric	TSP Pb	PM-10	Total Time Mins.	Flow Rate L/min.	Vol. Total Liters
1	104-A-01	2-7-23 1000							Ag, As, Ba, Cd, Cr, Pb, Se						193	2.53	488	x
2	104-A-02	2-7-23 1000													-	-	-	x
3																		x
4	104-W-01	2-7-23 1315																12 x 12
5	104-W-02	2-7-23 1320																<del>x</del>
6																		x
7	107-A-01	2-8-23 0800													183	2.53	465	x
8	107-A-02	2-8-23 0800													-	-	-	x
9																		x
10	107-W-01	2-8-23 0830																12 x 12
11	107-W-02	2-8-23 0830																<del>x</del>
12																		x
13																		x
14																		x
15																		x
Released By:		Jeff Smith			Date:		2-9-23		Time:		0900							
Signature:		(b) (6)																

LAB USE ONLY - BELOW THIS LINE

Received By: A. Walker  
 Signature: (b) (6)  
 Date: 02, 10, 23 Time: 3 : 43  AM  PM

23-02-01801



Due Date:  
 02/17/2023  
 (Friday)

Portal Contact Added

EL MM-L

**APPENDIX B – WIPE SAMPLING LABORATORY REPORT**





Environmental Hazards Services, L.L.C.  
 7469 Whitepine Rd  
 Richmond, VA 23237  
 Telephone: 800.347.4010

## Wipe Metals Analysis Report

Client: Burns & McDonnell Engineering  
 9400 Ward Pkwy.  
 Kansas City, MO 64114

Report Number: 23-02-01805

Received Date: 02/10/2023

Analyzed Date: 02/16/2023

Reported Date: 02/17/2023

Project/Test Address: 168765; GFC / 4300 Goodfellow Blvd

Client Number:  
 26-3514

# Laboratory Results

Fax Number:  
 816-822-3494

Lab Sample Number	Client Sample Number	Analyte:	Wipe Area (ft <sup>2</sup> )	Total Metal (ug)	Concentration (ug/ft <sup>2</sup> )	Narrative ID
23-02-01805-001	104-W-01	Arsenic (As)	1.00	<2.50	<2.5	L01
		Barium (Ba)	1.00	1.06	1.1	L01
		Cadmium (Cd)	1.00	<0.100	<0.10	L01
		Chromium (Cr)	1.00	<1.00	<1.0	L01
		Lead (Pb)	1.00	22.0	22	L01
		Selenium (Se)	1.00	<2.50	<2.5	L01
		Silver (Ag)	1.00	<0.500	<0.50	L01
23-02-01805-002	104-W-02	Arsenic (As)		<2.50	---	L01
		Barium (Ba)		<0.500	---	L01
		Cadmium (Cd)		<0.100	---	L01
		Chromium (Cr)		<1.00	---	L01

# Environmental Hazards Services, L.L.C

Client Number: 26-3514

Report Number: 23-02-01805

Project/Test Address: 168765; GFC / 4300 Goodfellow Blvd

Lab Sample Number	Client Sample Number	Analyte:	Wipe Area (ft <sup>2</sup> )	Total Metal (ug)	Concentration (ug/ft <sup>2</sup> )	Narrative ID
		Lead (Pb)		<0.500	---	L01
		Selenium (Se)		<2.50	---	L01
		Silver (Ag)		<0.500	---	L01
23-02-01805-003	107-W-01	Arsenic (As)	1.00	<2.50	<2.5	L01
		Barium (Ba)	1.00	<0.500	<0.50	L01
		Cadmium (Cd)	1.00	<0.100	<0.10	L01
		Chromium (Cr)	1.00	<1.00	<1.0	L01
		Lead (Pb)	1.00	<0.500	<0.50	L01
		Selenium (Se)	1.00	<2.50	<2.5	L01
		Silver (Ag)	1.00	<0.500	<0.50	L01
23-02-01805-004	107-W-02	Arsenic (As)		<2.50	---	L01
		Barium (Ba)		<0.500	---	L01
		Cadmium (Cd)		<0.100	---	L01
		Chromium (Cr)		<1.00	---	L01
		Lead (Pb)		<0.500	---	L01
		Selenium (Se)		<2.50	---	L01
		Silver (Ag)		<0.500	---	L01

# Environmental Hazards Services, L.L.C

Client Number: 26-3514

Report Number: 23-02-01805

Project/Test Address: 168765; GFC / 4300 Goodfellow Blvd

Lab Sample Number	Client Sample Number	Analyte:	Wipe Area (ft <sup>2</sup> )	Total Metal (ug)	Concentration (ug/ft <sup>2</sup> )	Narrative ID
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Sample Narratives:

L01: LCS and LCSD percent recovery for Se were outside of acceptable control limits.

Analyst: Carlos Gonzalez

Method: EPA SW846 3050B/6010D

(b) (6)

Reviewed By Authorized Signatory:

Tasha Eaddy  
QA/QC Clerk

Sample Results denoted with a "less than" (<) sign contains less than the reporting limit based on a 50mL volume. The reporting limit for Lead is 0.5ug.

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Results represent the analysis of samples submitted by the client. Unless otherwise noted, samples are reported without a dry weight correction. Sample location, description, area, volume, etc., was provided by the client. If the report does not contain the result for a field blank, it is due to the fact that the client did not include a field blank with their samples. These sample results do not reflect blank correction. This report shall not be reproduced except in full, without the written consent of Environmental Hazards Services, L.L.C. NY ELAP #11714.

Legend	ug = microgram	ug/ft <sup>2</sup> = micrograms per square foot
	mL = milliliter	ft <sup>2</sup> = square foot

# ENVIRONMENTAL HAZARDS SERVICES, LLC

## Metals Chain of Custody Form

Pg 1 of 1

Company Name	Burns & McDonnell	Account #	26-3514
Company Address	9400 Ward Parkway	City/State/Zip	Kansas City, MO 64114
Phone	314-302-4661	Email	alanstaett@burnsmcd.com
Project Name / Testing Address		GFC / 4300 Goodfellow Blvd	
PO Number	168765	Collected By	Jeff Smith
Turn-Around Time	<input checked="" type="radio"/> 5 DAY <input type="radio"/> 3 DAY <input type="radio"/> 2 DAY <input type="radio"/> 1 DAY <input type="radio"/> SAME DAY OR WEEKEND - Must Call Ahead		

LAB NUMBER	Client Sample ID	Collection Date & Time	METALS							Other Metals	PARTICULATES					AIR			WIPES AREA Circle The Unit of Measurement Used cm or <u>in</u>
			Pb TCLP	TCLP RCRA 8	RCRA 8 Total	Toxic Metal Profile	Welding Fume Profile	TX 11 TCLP	CA 17 Total		Total Nuisance Dust	Respirable Dust	TSP Gravimetric	TSP Pb	PM-10	Total Time Mins.	Flow Rate L/min.	Vol. Total Liters	
1	104-A-01	2-7-23 1000							Ag, As, Ba, Cd, Cr, Pb, Se						193	2.53	488	x	
2	104-A-02	2-7-23 1000													-	-	-	x	
3																		x	
4	104-W-01	2-7-23 1315																12 x 12	
5	104-W-02	2-7-23 1320																<del>x</del>	
6																		x	
7	107-A-01	2-8-23 0800													183	2.53	465	x	
8	107-A-02	2-8-23 0800													-	-	-	x	
9																		x	
10	107-W-01	2-8-23 0830																12 x 12	
11	107-W-02	2-8-23 0830																<del>x</del>	
12																		x	
13																		x	
14																		x	
15																		x	

Released By:	Jeff Smith	Date:	2-9-23	Time:	0900
Signature:	(b) (6)				

LAB USE ONLY - BELOW THIS LINE

Received By: A. Walker  
 Signature: (b) (6)  
 Date: 02/10/23 Time: 3:43  AM  PM

23-02-01805



Due Date:  
02/17/2023  
(Friday)

EL                      MM-L