



July 8, 2024

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

Re: Goodfellow Federal Center – Bldg. 110 Air Sampling  
Project No. 121244

Dear Ms. Czarnecki:

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

#### **METHODOLOGY**

On June 5, 2024, Ashley Anstaett of Burns & McDonnell conducted area air-sampling for the presence of seven (7) of the RCRA metals including arsenic, barium, cadmium, chromium, lead, selenium, and silver. Sampling was conducted in various locations throughout Building 110.

The sampling plan, number of samples, sample distribution, and general methodology was developed based on previous investigation methodology and in coordination with the GSA. Sample locations and samples collected from discretionary locations were determined by sampling personnel while on-site.

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. Air samples were submitted under chain-of-custody to Environmental Hazards Services, LLC (EHS) in Richmond, Virginia for independent analysis of 7 RCRA metals according to NIOSH method 7300. EHS is accredited under the American Industrial Hygiene Association (AIHA) Industrial Hygiene Laboratory Accreditation Program (IHLAP) program, identification number LAP-100420.

Diane Czarnecki  
 Facilities Management Division  
 July 8, 2024  
 Page 2

**RESULTS AND DISCUSSION**

Results of the air sampling are summarized in the table below by identifying the range of results for Building 110 for each of the seven (7) metals that were sampled. Results indicate that all 6 air samples collected from Building 110 and analyzed for RCRA metals were below their respective OSHA Permissible Exposure Limit (PEL), as based on a time-weighted-average.

**Table 1. Summary of Air Sampling Results**

Analyte	Lowest Concentration <sup>(a)</sup> ( $\mu\text{g}/\text{m}^3$ ) <sup>(b)</sup>	Highest Concentration <sup>(a)</sup> ( $\mu\text{g}/\text{m}^3$ ) <sup>(b)</sup>	Permissible Exposure Limit (PEL) ( $\mu\text{g}/\text{m}^3$ ) <sup>(b)</sup>
Arsenic	<0.25	<0.27	10
Barium	<0.25	<0.27	500
Cadmium	<0.050	<0.053	5
Chromium (Total)	<1.3	<1.4	500
Lead	<0.25	<0.27	1
Selenium	<1.3	<1.4	200
Silver	<0.25	<0.27	10

Notes:

- (a) Samples with a “<” sign indicate that the results were below the laboratory’s reporting limit, which varies based on sample air volume.
- (b)  $\mu\text{g}/\text{m}^3$  = micrograms per cubic meter of air.

GSA may choose to compare results with guidance limits from additional organizations for risk evaluation, including but not limited to the American Conference of Governmental Industrial Hygienists (ACGIH) and/or the World Health Organization (WHO).

A summary table of all sampling results by location is included in Appendix A. The complete laboratory report for the air sampling from EHS is attached in Appendix B.

**LIMITATIONS**

The scope of this assessment was limited as follows. Burns & McDonnell collected samples from a select number of locations in an effort to minimize cost while providing a general overview of the air quality at the site. Sample locations do not encompass every indoor space at the site. Additionally, based on previous sampling history, samples were only analyzed for a select number of potential contaminants likely to affect the air quality at the site. Burns &



Diane Czarnecki  
Facilities Management Division  
July 8, 2024  
Page 3

McDonnell is not responsible for potential contaminants not identified in this report. This report was prepared for the sole use of GSA.

Burns & McDonnell appreciates the opportunity to work with the 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)

Matt Shanahan, CHMM  
Project Manager

Attachments:

- Appendix A – Results Summary by Location
- Appendix B – Air Sample Laboratory Report

Information in Appendices A and B is 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 – RESULTS SUMMARY BY LOCATION**

## Appendix A

### Results Summary by Location

Sample Number	Location	Analyte	Result	Units	Recommended Limits <sup>1</sup>
110-A-01	Warehouse mezzanine, north wall	Arsenic	< 0.25	µg/m <sup>3</sup>	10
		Barium	< 0.25	µg/m <sup>3</sup>	500
		Cadmium	< 0.050	µg/m <sup>3</sup>	5
		Chromium	< 1.3	µg/m <sup>3</sup>	500
		Lead <sup>2</sup>	< 0.25	µg/m <sup>3</sup>	1
		Selenium	< 1.3	µg/m <sup>3</sup>	200
		Silver	< 0.25	µg/m <sup>3</sup>	10
110-A-02	Warehouse, top of filing cabinet, east of mechanical room	Arsenic	< 0.26	µg/m <sup>3</sup>	10
		Barium	< 0.26	µg/m <sup>3</sup>	500
		Cadmium	< 0.052	µg/m <sup>3</sup>	5
		Chromium	< 1.3	µg/m <sup>3</sup>	500
		Lead <sup>2</sup>	< 0.26	µg/m <sup>3</sup>	1
		Selenium	< 1.3	µg/m <sup>3</sup>	200
		Silver	< 0.26	µg/m <sup>3</sup>	10
110-A-03	Office area, southwest room, top of microwave	Arsenic	< 0.27	µg/m <sup>3</sup>	10
		Barium	< 0.27	µg/m <sup>3</sup>	500
		Cadmium	< 0.053	µg/m <sup>3</sup>	5
		Chromium	< 1.4	µg/m <sup>3</sup>	500
		Lead <sup>2</sup>	< 0.27	µg/m <sup>3</sup>	1
		Selenium	< 1.4	µg/m <sup>3</sup>	200
		Silver	< 0.27	µg/m <sup>3</sup>	10
110-A-04	Office area, break room, top of refrigerator	Arsenic	< 0.26	µg/m <sup>3</sup>	10
		Barium	< 0.26	µg/m <sup>3</sup>	500
		Cadmium	< 0.052	µg/m <sup>3</sup>	5
		Chromium	< 1.3	µg/m <sup>3</sup>	500
		Lead <sup>2</sup>	< 0.26	µg/m <sup>3</sup>	1
		Selenium	< 1.3	µg/m <sup>3</sup>	200
		Silver	< 0.26	µg/m <sup>3</sup>	10
110-A-05	Office area, top of desk on northwest wall	Arsenic	< 0.26	µg/m <sup>3</sup>	10
		Barium	< 0.26	µg/m <sup>3</sup>	500
		Cadmium	< 0.052	µg/m <sup>3</sup>	5
		Chromium	< 1.3	µg/m <sup>3</sup>	500
		Lead <sup>2</sup>	< 0.26	µg/m <sup>3</sup>	1
		Selenium	< 1.3	µg/m <sup>3</sup>	200
		Silver	< 0.26	µg/m <sup>3</sup>	10
110-A-06	Field blank	Arsenic	< 0.15	µg	--
		Barium	< 0.15	µg	--
		Cadmium	< 0.030	µg	--
		Chromium	< 0.75	µg	--
		Lead <sup>2</sup>	< 0.15	µg	--
		Selenium	< 0.75	µg	--
		Silver	< 0.15	µg	--

**Notes:**

<sup>1</sup>Limits equal to the Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits (PELs)

<sup>2</sup>Limits equal to the World Health organization (WHO) Ambient Air Limit

**APPENDIX B – AIR SAMPLE LABORATORY REPORT**



7469 Whitepine Rd  
 North Chesterfield, VA 23237  
 Telephone: 800.347.4010

## Air Metals Analysis Report

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

Report Number: 24-06-01640  
 Received Date: 06/11/2024  
 Reported Date: 06/18/2024

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
24-06-01640-001	110-A-01	06/17/2024	Arsenic (As)	600	<0.15	<0.25	
			Barium (Ba)		<0.15	<0.25	
			Cadmium (Cd)		<0.030	<0.050	
			Chromium (Cr)		<0.75	<1.3	
			Lead (Pb)		<0.15	<0.25	
			Selenium (Se)		<0.75	<1.3	
			Silver (Ag)		<0.15	<0.25	
24-06-01640-002	110-A-02	06/17/2024	Arsenic (As)	587	<0.15	<0.26	
			Barium (Ba)		<0.15	<0.26	
			Cadmium (Cd)		<0.030	<0.052	
			Chromium (Cr)		<0.75	<1.3	
			Lead (Pb)		<0.15	<0.26	
			Selenium (Se)		<0.75	<1.3	
			Silver (Ag)		<0.15	<0.26	
24-06-01640-003	110-A-03	06/17/2024	Arsenic (As)	572	<0.15	<0.27	
			Barium (Ba)		<0.15	<0.27	
			Cadmium (Cd)		<0.030	<0.053	

# Environmental Hazards Services, L.L.C

Client Number: 26-3514

Report Number: 24-06-01640

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	<1.4	
			Lead (Pb)		<0.15	<0.27	
			Selenium (Se)		<0.75	<1.4	
			Silver (Ag)		<0.15	<0.27	
24-06-01640-004	110-A-04	06/17/2024	Arsenic (As)	587	<0.15	<0.26	
			Barium (Ba)		<0.15	<0.26	
			Cadmium (Cd)		<0.030	<0.052	
			Chromium (Cr)		<0.75	<1.3	
			Lead (Pb)		<0.15	<0.26	
			Selenium (Se)		<0.75	<1.3	
			Silver (Ag)		<0.15	<0.26	
24-06-01640-005	110-A-05	06/17/2024	Arsenic (As)	583	<0.15	<0.26	
			Barium (Ba)		<0.15	<0.26	
			Cadmium (Cd)		<0.030	<0.052	
			Chromium (Cr)		<0.75	<1.3	
			Lead (Pb)		<0.15	<0.26	
			Selenium (Se)		<0.75	<1.3	
			Silver (Ag)		<0.15	<0.26	
24-06-01640-006	110-A-06	06/17/2024	Arsenic (As)	0	<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	---	





# ENVIRONMENTAL HAZARDS SERVICES, LLC

## Metals Chain of Custody Form

Page 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: **A. Anstatt**  
 Turn-Around Time:  5 DAY  3 DAY  2 DAY  1 DAY  SAME DAY OR WEEKEND - Must Call Ahead

Client Sample ID	Collection Date & Time	METALS							Other Metals	PARTICULATES			AIR			WIPES AREA Specify the area tested (e.g., floor, wall)			
		Pb TCIP	TCIP RCRA 8	RCRA 8 Total	Toxic Metal Profile	Welding Fume Profile	PX 11 TCIP	CA17 Total		Total Nuisance Dust	Respirable Dust	TSP Gravimetric	TSP Pb	Pb-10	Total Time Min		Flow Rate Min	Total Liters	
110-A-01	6/5 1151								Ag, As, Ba, Cd, Cr, Pb, Se				234	-	600				X
110-A-02	1151												233	-	587				X
110-A-03	1152												233	-	572				X
110-A-04	1153												233	-	587				X
110-A-05	1153												232	-	583				X
110-A-06	0745												-	-	-				X

Released By: A. Anstatt Date: 6/7/24 Time: 1400  
 Signature: (b) (6)


LAB USE ONLY - BELOW THIS LINE

Received By: J. Snider  
 Signature: (b) (6)  
 Date: 6/11/24 Time: 4:47  AM  PM

Portal Contact Added

7469 WHITEPINE RD, RICHMOND, VA 23237 (800)-347-4010  
 RESULTS VIA CLIENT PORTAL AVAILABLE @ www.leadlab.com

24-06-01640



Due Date:  
**06/18/2024**  
 (Tuesday)  
 EL MM-L