



July 18, 2022

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. 104F 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 15, 2022, Ashley Anstaett & Eric Wenger 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 104F.

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 (μm) 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.

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RESULTS AND DISCUSSION

Results of the air sampling are summarized in the table below by identifying the range of results for Building 104F for each of the seven (7) metals that were sampled. Results indicate that all 5 air samples collected from Building 104F 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 ^(a) ($\mu\text{g}/\text{m}^3$) ^(b)	Highest Concentration ^(a) ($\mu\text{g}/\text{m}^3$) ^(b)	Permissible Exposure Limit (PEL) ($\mu\text{g}/\text{m}^3$) ^(b)
Arsenic	<0.25	<0.26	10
Barium	<0.25	<0.26	500
Cadmium	<0.049	<0.052	5
Chromium (Total)	<1.3	<1.3	500
Lead	<0.25	<0.26	1
Selenium	<1.3	<1.3	200
Silver	<0.25	<0.26	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 &



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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)

A large black rectangular redaction box covering the signature area of the letter.

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.

APPENDIX A – RESULTS SUMMARY BY LOCATION

Appendix A
Results Summary by Location

Sample Number	Location	Analyte	Result	Units	Recommended Limits ¹
104F-A-01	2nd floor, south lobby, windowsill	Arsenic	< 0.25	µg/m ³	10
		Barium	< 0.25	µg/m ³	500
		Cadmium	< 0.049	µg/m ³	5
		Chromium	< 1.3	µg/m ³	500
		Lead ²	< 0.25	µg/m ³	1
		Selenium	< 1.3	µg/m ³	200
		Silver	< 0.25	µg/m ³	10
104F-A-02	2nd floor, Oaks room, windowsill	Arsenic	< 0.26	µg/m ³	10
		Barium	< 0.26	µg/m ³	500
		Cadmium	< 0.052	µg/m ³	5
		Chromium	< 1.3	µg/m ³	500
		Lead ²	< 0.26	µg/m ³	1
		Selenium	< 1.3	µg/m ³	200
		Silver	< 0.26	µg/m ³	10
104F-A-03	2nd floor, east hall, windowsill at column C32	Arsenic	< 0.26	µg/m ³	10
		Barium	< 0.26	µg/m ³	500
		Cadmium	< 0.052	µg/m ³	5
		Chromium	< 1.3	µg/m ³	500
		Lead ²	< 0.26	µg/m ³	1
		Selenium	< 1.3	µg/m ³	200
		Silver	< 0.26	µg/m ³	10
104F-A-04	2nd floor, north lobby, top stair	Arsenic	< 0.26	µg/m ³	10
		Barium	< 0.26	µg/m ³	500
		Cadmium	< 0.052	µg/m ³	5
		Chromium	< 1.3	µg/m ³	500
		Lead ²	< 0.26	µg/m ³	1
		Selenium	< 1.3	µg/m ³	200
		Silver	< 0.26	µg/m ³	10
104F-A-05	Field blank	Arsenic	< 0.15	µg	--
		Barium	< 0.15	µg	--
		Cadmium	< 0.030	µg	--
		Chromium	< 0.75	µg	--
		Lead ²	< 0.15	µg	--
		Selenium	< 0.75	µg	--
		Silver	< 0.15	µg	--

Notes:

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

²Limits equal to the World Health organization (WHO) Ambient Air Limit

APPENDIX B – AIR SAMPLE LABORATORY REPORT



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

Air Metals Analysis Report

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

Report Number: 22-06-03526
 Received Date: 06/17/2022
 Reported Date: 06/27/2022

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 ³)	Narrative ID
22-06-03526-001	104F-A-01	06/24/2022	Arsenic (As)	616	<0.15	<0.25	
			Barium (Ba)		<0.15	<0.25	
			Cadmium (Cd)		<0.030	<0.049	
			Chromium (Cr)		<0.75	<1.3	
			Lead (Pb)		<0.15	<0.25	
			Selenium (Se)		<0.75	<1.3	
			Silver (Ag)		<0.15	<0.25	
22-06-03526-002	104F-A-02	06/24/2022	Arsenic (As)	584	<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	
22-06-03526-003	104F-A-03	06/24/2022	Arsenic (As)	580	<0.15	<0.26	
			Barium (Ba)		<0.15	<0.26	
			Cadmium (Cd)		<0.030	<0.052	

Environmental Hazards Services, L.L.C

Client Number: 26-3514

Report Number: 22-06-03526

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 ³)	Narrative ID
			Chromium (Cr)		<0.75	<1.3	
			Lead (Pb)		<0.15	<0.26	
			Selenium (Se)		<0.75	<1.3	
			Silver (Ag)		<0.15	<0.26	
22-06-03526-004	104F-A-04	06/24/2022	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	
22-06-03526-005	104F-A-05	06/24/2022	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	---	

