



February 3, 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 –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 and dust wipe sampling and testing for lead 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 semiannual report titled *Goodfellow Federal Center – Metals in Settled Dust Sampling – Building 104*, dated January 12, 2022.

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.

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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.

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/7000B. 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 sample(s) were collected on January 13, 2022, by Ashley Anstaett of Burns & McDonnell. One (1) air sample was collected. This sample was collected from the small table near column B12 in the data center on the second floor of building 104. All analytes were below laboratory reporting limits. The complete air sampling laboratory report from EHS is included as Appendix A.

Wipe sample(s) were collected on January 13, 2022, by Ashley Anstaett of Burns & McDonnell. Two (2) wipe samples were collected. The sample locations and results are listed below. The complete wipe sampling laboratory report from EHS is included as Appendix B.

- Small table near column B12 in the data center on the second floor of building 104
 - Arsenic, cadmium, chromium, selenium, and silver were below laboratory reporting limits
 - Barium was detected at 5.6 micrograms per square foot ($\mu\text{g}/\text{sq. ft}$), below the clean area limit of 3,094 $\mu\text{g}/\text{sq. ft}$
 - Lead was detected at 5.1 $\mu\text{g}/\text{sq. ft}$, below the clean area limit of 10 $\mu\text{g}/\text{sq. ft}$
- Wooden podium with shelves near column C13 in the data center on the second floor of building 104
 - Arsenic, chromium, selenium, and silver were below laboratory reporting limits



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- Barium was detected at 1.8 $\mu\text{g}/\text{sq. ft}$, below the clean area limit of 3,094 $\mu\text{g}/\text{sq. ft}$
- Cadmium was detected at 0.16 $\mu\text{g}/\text{sq. ft}$, below the clean area limit of 31 $\mu\text{g}/\text{sq. ft}$
- Lead was detected at 0.61 $\mu\text{g}/\text{sq. ft}$, below 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. 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 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 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.

APPENDIX A – AIR SAMPLING 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: 22-01-01547
 Received Date: 01/14/2022
 Reported Date: 01/21/2022

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 |
|-------------------|----------------------|---------------|---------------|----------------|------------------|------------------------------------|--------------|
| 22-01-01547-001 | 104-A-01 | 01/21/2022 | 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 | --- | |
| 22-01-01547-002 | 104-A-02 | 01/21/2022 | Arsenic (As) | 528 | <0.15 | <0.29 | |
| | | | Barium (Ba) | | <0.15 | <0.29 | |
| | | | Cadmium (Cd) | | <0.030 | <0.057 | |
| | | | Chromium (Cr) | | <0.75 | <1.5 | |
| | | | Lead (Pb) | | <0.15 | <0.29 | |
| | | | Selenium (Se) | | <0.75 | <1.5 | |
| | | | Silver (Ag) | | <0.15 | <0.29 | |

Environmental Hazards Services, L.L.C

Client Number: 26-3514

Report Number: 22-01-01547

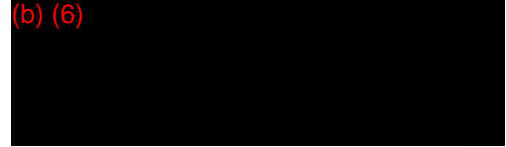
Project/Test Address: 168765; GFC; 4300 Goodfellow Blvd

| Lab Sample Number | Client Sample Number | Analyzed Date | Analyte | Air Volume (L) | Total Metal (ug) | Concentration (ug/m ³) | Narrative ID |
|-------------------|----------------------|---------------|---------|----------------|------------------|------------------------------------|--------------|
|-------------------|----------------------|---------------|---------|----------------|------------------|------------------------------------|--------------|

Sample Narratives:

Method: NIOSH 7300M
 Analyst: Ailea Cabatbat

(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 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 ³ = 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 | eapulcher@burnsmcd.com |
| Project Name / Testing Address | | GFC / 4300 Goodfellow Blvd | |
| PO Number | 168765 | Collected By | Ashley Anstalt |
| Turn-Around Time | <input checked="" type="checkbox"/> 5 DAY <input type="checkbox"/> 3 DAY <input type="checkbox"/> 2 DAY <input type="checkbox"/> 1 DAY <input type="checkbox"/> SAME DAY OR WEEKEND - Must Call Ahead | | |

| LAB NUMBER | Client Sample ID | Collection Date & Time | METALS | | | | | | | ICP Other Metals | PARTICULATES | | | | | AIR | | | WIPES AREA <small>Circle The Unit of Measurement Used</small> cm or (in) |
|------------|------------------|------------------------|---------|-------------|--------------|---------------------|----------------------|------------|----------------------------|-------------------------|---------------------|-----------------|-----------------|--------|-------|---------------------|---------------------|----------------------|---|
| | | | Pb TCLP | TCLP RCRA 8 | RCRA & 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 | 1/13 0650 | | | | | | | Ag, As, Ba, Cd, Cr, Pb, Se | | | | | | NA | NA | NA | x | |
| 2 | 104-A-02 | 1/13 1134 | | | | | | | | | | | | | 211 | | 528 | x | |
| 3 | 104-W-01 | 0645 | | | | | | | | | | | | | | | | NA x NA | |
| 4 | 104-W-02 | 0805 | | | | | | | | | | | | | | | | 12 x 12 | |
| 5 | 104-W-03 | 0809 | | | | | | | | | | | | | | | | 12 x 12 | |
| 6 | | | | | | | | | | | | | | | | | | x | |
| 7 | | | | | | | | | | | | | | | | | | x | |
| 8 | | | | | | | | | | | | | | | | | | x | |
| 9 | | | | | | | | | | | | | | | | | | x | |
| 10 | | | | | | | | | | | | | | | | | | x | |
| 11 | | | | | | | | | | | | | | | | | | x | |
| 12 | | | | | | | | | | | | | | | | | | x | |
| 13 | | | | | | | | | | | | | | | | | | x | |
| 14 | | | | | | | | | | | | | | | | | | x | |
| 15 | | | | | | | | | | | | | | | | | | x | |

| | | | | | |
|--------------|----------------|-------|-----------|-------|------|
| Released By: | Ashley Anstalt | Date: | 1/13/2022 | Time: | 1030 |
| Signature: | (b) (6) | | | | |

LAB USE ONLY - BELOW THIS LINE

Received By: T. Nolan

Signature: (b) (6)

Date: 1/19/22 Time: 11:30 AM PM

Portal Contact Added

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

22-01-01547

Due Date:
01/21/2022
(Friday)
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: 22-01-01549

Received Date: 01/14/2022

Analyzed Date: 01/21/2022

Reported Date: 01/21/2022

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 ²) | Total Metal (ug) | Concentration (ug/ft ²) | Narrative ID |
|-------------------|----------------------|---------------|------------------------------|------------------|-------------------------------------|--------------|
| 22-01-01549-001 | 104-W-01 | Arsenic (As) | | <2.50 | --- | L01 |
| | | Barium (Ba) | | <0.500 | --- | L01 |
| | | Cadmium (Cd) | | <0.100 | --- | L01 |
| | | Chromium (Cr) | | <2.50 | --- | L01 |
| | | Lead (Pb) | | <0.500 | --- | L01 |
| | | Selenium (Se) | | <2.50 | --- | L01 |
| | | Silver (Ag) | | <0.500 | --- | L01 |
| 22-01-01549-002 | 104-W-02 | Arsenic (As) | 1.00 | <2.50 | <2.5 | L01 |
| | | Barium (Ba) | 1.00 | 5.57 | 5.6 | L01 |
| | | Cadmium (Cd) | 1.00 | <0.100 | <0.10 | L01 |
| | | Chromium (Cr) | 1.00 | <2.50 | <2.5 | L01 |

Environmental Hazards Services, L.L.C

Client Number: 26-3514

Report Number: 22-01-01549

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

| Lab Sample Number | Client Sample Number | Analyte: | Wipe Area (ft ²) | Total Metal (ug) | Concentration (ug/ft ²) | Narrative ID |
|-------------------|----------------------|---------------|------------------------------|------------------|-------------------------------------|--------------|
| | | Lead (Pb) | 1.00 | 5.07 | 5.1 | L01 |
| | | Selenium (Se) | 1.00 | <2.50 | <2.5 | L01 |
| | | Silver (Ag) | 1.00 | <0.500 | <0.50 | L01 |
| 22-01-01549-003 | 104-W-03 | Arsenic (As) | 1.00 | <2.50 | <2.5 | L01 |
| | | Barium (Ba) | 1.00 | 1.76 | 1.8 | L01 |
| | | Cadmium (Cd) | 1.00 | 0.155 | 0.16 | L01 |
| | | Chromium (Cr) | 1.00 | <2.50 | <2.5 | L01 |
| | | Lead (Pb) | 1.00 | 0.610 | 0.61 | L01 |
| | | Selenium (Se) | 1.00 | <2.50 | <2.5 | L01 |
| | | Silver (Ag) | 1.00 | <0.500 | <0.50 | L01 |

Environmental Hazards Services, L.L.C

Client Number: 26-3514

Report Number: 22-01-01549

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

| Lab Sample Number | Client Sample Number | Analyte: | Wipe Area (ft ²) | Total Metal (ug) | Concentration (ug/ft ²) | Narrative ID |
|-------------------|----------------------|----------|------------------------------|------------------|-------------------------------------|--------------|
|-------------------|----------------------|----------|------------------------------|------------------|-------------------------------------|--------------|

Sample Narratives:

L01: Method blank for Ba, Se and Ag exceeded acceptance limits. LCSD for Se exceeded acceptance limits.

Analyst: Ailea Cabatbat

Method: Mercury (Hg): EPA SW846 7471B

All other metals: 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 for each particular metal, based on a 50mL volume. The reporting limit for Cadmium is 0.10ug, Barium, Lead and Silver are 0.50ug, Arsenic and Chromium are 1.0ug, and Selenium is 2.5ug.

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 ² = micrograms per square foot |
| | mL = milliliter | ft ² = 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 | | eapulcher@burnsmcd.com | | |
| Project Name / Testing Address | | GFC / 4300 Goodfellow Blvd | | | | | | | |
| PO Number | | 168765 | | | Collected By | | Ashley Anstalt | | |
| Turn-Around Time | | <input checked="" type="checkbox"/> 5 DAY <input type="checkbox"/> 3 DAY <input type="checkbox"/> 2 DAY <input type="checkbox"/> 1 DAY <input type="checkbox"/> 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 | Flow Rate | |
| 1 | 104-A-01 | 11/3 0650 | | | | | | | Ag, As, Ba, Cd, Cr, Pb, Se | | | | | | NA | NA | NA | x |
| 2 | 104-A-02 | 11/3 0734 | | | | | | | | | | | | | 211 | | 528 | x |
| 3 | 104-W-01 | 0645 | | | | | | | | | | | | | | | | NA x NA |
| 4 | 104-W-02 | 0805 | | | | | | | | | | | | | | | | 12 x 12 |
| 5 | 104-W-03 | 0809 | | | | | | | | | | | | | | | | 12 x 12 |
| 6 | | | | | | | | | | | | | | | | | | x |
| 7 | | | | | | | | | | | | | | | | | | x |
| 8 | | | | | | | | | | | | | | | | | | x |
| 9 | | | | | | | | | | | | | | | | | | x |
| 10 | | | | | | | | | | | | | | | | | | x |
| 11 | | | | | | | | | | | | | | | | | | x |
| 12 | | | | | | | | | | | | | | | | | | x |
| 13 | | | | | | | | | | | | | | | | | | x |
| 14 | | | | | | | | | | | | | | | | | | x |
| 15 | | | | | | | | | | | | | | | | | | x |

| | | | | | |
|--------------|----------------|-------|------------|-------|-------|
| Released By: | Ashley Anstalt | Date: | 11/13/2022 | Time: | 11:30 |
| Signature: | (b) (6) | | | | |

LAB USE ONLY - BELOW THIS LINE

Received By: T. Anstalt
 Signature: (b) (6)
 Date: 1/19/22 Time: 11:30 AM PM

Portal Contact Added

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

22-01-01549

Due Date:
01/21/2022
(Friday)
EL MM-L