

July 23, 2020

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

Re: Goodfellow Federal Center

Metals in Settled Dust Sampling – Building 105

Project No. 121244

Dear Ms. Czarnecki:

Thank you for the opportunity to assist the General Services Administration (GSA) with the metals in settled dust sampling investigation of Building 105 located at the Goodfellow Federal Center (GFC) in St. Louis, Missouri. Burns & McDonnell understands that the purpose of the investigation was to provide additional sampling data of existing environmental conditions that are present at GFC that could adversely impact the health and safety of building occupants as well as workers at the facility. The following report summarizes the sample collection activities and the laboratory analytical results of samples submitted.

INTRODUCTION

Per historical use and previous characterization, Burns & McDonnell was contracted to perform settled dust sampling for the analysis of seven (7) of the Resource Conservation and Recovery Act (RCRA) target metals (arsenic, barium, cadmium, chromium, lead, selenium, and silver) from various surfaces within buildings. The purpose of this testing was to further characterize the presence and concentration of target metals in common tenant-occupied areas of the building.

The proposed sampling scheme, the number of samples, the sample distribution and general methodology was developed by GSA and Burns & McDonnell. Specific sample locations were determined by sampling personnel while on-site.

Settled dust wipe sampling at Bldg. 105 was conducted on June 24, 2020 by Emily Ahlemeyer of Burns & McDonnell and Jeff Smith of OCCU-TEC.

METALS IN SETTLED DUST SAMPLING

Metals in settled dust sampling was conducted primarily within tenant-occupied areas. 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*. ASTM Standard E1728 is consistent with the methodology described in the Housing and Urban Development Guidelines and 40 CRF 745.63. The Brookhaven National Laboratory's Surface Wipe Sampling Procedure (IH75190) was also used as a guideline.



Diane Czarnecki Facilities Management Division July 23, 2020 Page 2

Dust wipe sampling for the target metals was conducted on a variety of representative surfaces that have the potential of being disturbed by building occupants. A representative surface area of approximately one square foot (1 SF) was measured and delineated with plastic templates. 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. Dust wipe samples were submitted to Environmental Hazards Services, LLC (EHS) in Richmond, Virginia for Inductively Coupled Plasma (ICP) analysis of metals analysis using Environmental Protection Agency (EPA) method SW846 3050B/6010D. EHS is accredited under the American Industrial Hygiene Association (AIHA) Laboratory Accreditation Program (LAP) identification number LAP-100420.

Whereas the Occupational Safety and Health Administration (OSHA) has not established regulatory limits for surface concentrations of metals, the OSHA Technical Manual Section II: Chapter 2 (III.A) describes a method for calculating "housekeeping" standards, as recommended acceptable surface limits. Brookhaven's IH75190 procedure uses the housekeeping standards to derive a lower, "clean area limit" for non-operational areas that can be accessed or contacted without special training or precautions. Burns & McDonnell calculated clean area limits for metals not included in the Brookhaven procedure, specifically barium, chromium (total), selenium and silver. Wipe results were compared to the Brookhaven procedure's clean area limits for each metal.

Results of the dust wipe samples collected from the building indicate that sixteen (16) of the thirty-two (32) samples contained concentrations of target metals above laboratory reporting limits. The following table identifies the range of results for each of the seven metals that were analyzed. Samples with a "<" sign indicate that the results were below the lab's reportable limit.



Diane Czarnecki Facilities Management Division July 23, 2020 Page 3

Table 1. Summary of Dust Wipe Results

| Analyte | Lowest Concentration ^(a) (µg/sq. ft) ^(b) | Highest Concentration ^(a) (μg/sq. ft) ^(b) | Clean Area Limit (c) µg/sq. ft (b) |
|------------------|--|---|---------------------------------------|
| Silver | <2.0 | 5.8 | 62 |
| Arsenic | <2.0 | <2.7 | 62 |
| Barium | <2.0 | 110 | 3,094 |
| Cadmium | <2.0 | 4.5 | 31 |
| Chromium (Total) | <2.0 | 26 | 3,094 |
| Lead | <2.0 | 63 | 10 ^(d) |
| Selenium | <5.0 | <6.9 | 1,236 |

- (a) Samples with a "<" sign indicate that the results were below the reportable limit.
- (b) μ g/sq. ft = micrograms per square foot of surface area.
- (c) Clean Area Limit per Brookhaven IH75190=OSHA Housekeeping Limit [PEL (μg/m³) x 10 m³/100cm²] / 15.
- (d) Lead clean area limit: Brookhaven references EPA/HUD limit for floors, set at 10 µg/sq. ft. as of January 2020.

Five (5) samples exceeded the lead clean area limit. Samples 105-W-05, 105-W-17, 105-W-18, 105-W-19, and 105-W-26 resulted in lead concentrations of 19, 19, 62, 63, and 34 μ g/sq. ft, respectively. The remaining target metal sample results were below housekeeping and clean area limits, as recommended and described by OSHA and the Brookhaven Procedure.

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,



Matt Shanahan, CHMM Project Manager

Attachments:

Appendix A – Sample Summary Table Appendix B – Laboratory Analysis Report

Appendix C – Licenses



| | Goodfellow Fed | eral Center - Building # 105 - Wipe | Sample Data | | | | |
|---------------|-----------------------|-------------------------------------|-------------|----------|--------|--------|----------------------|
| Sample Number | Location | Area Description | Analyte | F | Result | Units | Clean Area Limit* |
| 105-W-01 | 1st Floor North Lobby | NE Corner Lobby Floor | Silver | < | 2.0 | μg/ft² | 62 |
| | | | Arsenic | < | 2.0 | μg/ft² | 62 |
| | | | Barium | <u> </u> | 4.4 | μg/ft² | 3,094 |
| | | | Cadmium | < | 2.0 | μg/ft² | 31 |
| | | | Chromium | < | 2.0 | μg/ft² | 3,094 |
| | | | Lead | <u></u> | 4.2 | μg/ft² | 10 |
| | | | Selenium | < | 5.0 | μg/ft² | 1,236 |
| 105-W-02 | 1st Floor Office Area | Top of file cabinet, column H8 | Silver | < | 2.0 | μg/ft² | 62 |
| | | | Arsenic | < | 2.0 | μg/ft² | 62 |
| | | | Barium | < | 2.0 | μg/ft² | 3,094 |
| | | | Cadmium | < | 2.0 | μg/ft² | 31 |
| | | | Chromium | < | 2.0 | μg/ft² | 3,094 |
| | | | Lead | < | 2.0 | μg/ft² | 10 |
| | | | Selenium | < | 5.0 | μg/ft² | 1,236 |
| 105-W-03 | 1st Floor Break Room | Floor near column B9 | Silver | < | 2.0 | μg/ft² | 62 |
| | | | Arsenic | < | 2.0 | μg/ft² | 62 |
| | | | Barium | < | 2.0 | μg/ft² | 3,094 |
| | | | Cadmium | < | 2.0 | μg/ft² | 31 |
| | | | Chromium | < | 2.0 | μg/ft² | 3,094 |
| | | | Lead | < | 2.0 | μg/ft² | 10 |
| | | | Selenium | < | 5.0 | μg/ft² | 1,236 |

| | Goodfellow Fe | deral Center - Building # 105 - Wipe S | Sample Data | | | | |
|---------------|----------------------------|--|-------------|---|--------|--------------------|----------------------|
| Sample Number | Location | Area Description | Analyte | ı | Result | Units | Clean Area Limit* |
| 105-W-04 | 1st Floor Break Room | Top of vending machine, column B9 | Silver | < | 2.0 | μg/ft² | 62 |
| | | | Arsenic | < | 2.0 | μg/ft² | 62 |
| | | | Barium | | 5.0 | μg/ft² | 3,094 |
| | | | Cadmium | < | 2.0 | μg/ft² | 31 |
| | | | Chromium | < | 2.0 | μg/ft² | 3,094 |
| | | | Lead | < | 2.0 | μg/ft² | 10 |
| | | | Selenium | < | 5.0 | μg/ft² | 1,236 |
| 105-W-05 | 1st Floor Freight Elevator | Threshold floor, column B16 | Silver | < | 2.0 | μg/ft² | 62 |
| | | | Arsenic | < | 2.0 | μg/ft² | 62 |
| | | | Barium | | 35 | μg/ft² | 3,094 |
| | | | Cadmium | < | 2.0 | μg/ft² | 31 |
| | | | Chromium | | 2.7 | μg/ft² | 3,094 |
| | | | Lead | | 19 | μg/ft² | 10 |
| | | | Selenium | < | 5.0 | μg/ft² | 1,236 |
| 105-W-06 | 1st Floor Office Area | Top of tall cabinet, column C15 | Silver | < | 2.0 | μg/ft² | 62 |
| | | | Arsenic | < | 2.0 | μg/ft² | 62 |
| | | | Barium | < | 2.0 | μg/ft² | 3,094 |
| | | | Cadmium | < | 2.0 | μg/ft² | 31 |
| | | | Chromium | < | 2.0 | μg/ft ² | 3,094 |
| | | | Lead | < | 2.0 | μg/ft ² | 10 |
| | | | Selenium | < | 5.0 | μg/ft ² | 1,236 |

| | Goodfellow Fede | eral Center - Building # 105 - Wipe | Sample Data | | | | |
|---------------|----------------------|-------------------------------------|-------------|---|--------|--------|----------------------|
| Sample Number | Location | Area Description | Analyte | ı | Result | Units | Clean Area Limit* |
| 105-W-07 | 1st Floor Hallway | Floor on ramp near column H27 | Silver | < | 2.0 | μg/ft² | 62 |
| | | | Arsenic | < | 2.0 | μg/ft² | 62 |
| | | | Barium | | 3.7 | μg/ft² | 3,094 |
| | | | Cadmium | < | 2.0 | μg/ft² | 31 |
| | | | Chromium | < | 2.0 | μg/ft² | 3,094 |
| | | | Lead | < | 2.0 | μg/ft² | 10 |
| | | | Selenium | < | 5.0 | μg/ft² | 1,236 |
| 105-W-08 | 1st Floor Hallway | Window sill near column J38 | Silver | < | 2.0 | μg/ft² | 62 |
| | | | Arsenic | < | 2.0 | μg/ft² | 62 |
| | | | Barium | < | 2.0 | μg/ft² | 3,094 |
| | | | Cadmium | < | 2.0 | μg/ft² | 31 |
| | | | Chromium | < | 2.0 | μg/ft² | 3,094 |
| | | | Lead | < | 2.0 | μg/ft² | 10 |
| | | | Selenium | < | 5.0 | μg/ft² | 1,236 |
| 105-W-09 | 2nd Floor Break Room | Top of fridge near column E26 | Silver | < | 2.0 | μg/ft² | 62 |
| | | | Arsenic | < | 2.0 | μg/ft² | 62 |
| | | | Barium | < | 2.0 | μg/ft² | 3,094 |
| | | | Cadmium | < | 2.0 | μg/ft² | 31 |
| | | | Chromium | < | 2.0 | μg/ft² | 3,094 |
| | | | Lead | < | 2.0 | μg/ft² | 10 |
| | | | Selenium | < | 5.0 | μg/ft² | 1,236 |

| | Goodfellow Fed | leral Center - Building # 105 - Wipe | Sample Data | | | | |
|---------------|-----------------------|--------------------------------------|-------------|---|--------|--------|----------------------|
| Sample Number | Location | Area Description | Analyte | í | Result | Units | Clean Area Limit* |
| 105-W-10 | 2nd Floor Hallway | Floor under fountain, column G26 | Silver | < | 2.0 | μg/ft² | 62 |
| | | | Arsenic | < | 2.0 | μg/ft² | 62 |
| | | | Barium | < | 2.0 | μg/ft² | 3,094 |
| | | | Cadmium | < | 2.0 | μg/ft² | 31 |
| | | | Chromium | < | 2.0 | μg/ft² | 3,094 |
| | | | Lead | < | 2.0 | μg/ft² | 10 |
| | | | Selenium | < | 5.0 | μg/ft² | 1,236 |
| 105-W-11 | 2nd Floor Office Area | Top of cabinet at column F18 | Silver | < | 2.0 | μg/ft² | 62 |
| | | | Arsenic | < | 2.0 | μg/ft² | 62 |
| | | | Barium | < | 2.0 | μg/ft² | 3,094 |
| | | | Cadmium | < | 2.0 | μg/ft² | 31 |
| | | | Chromium | < | 2.0 | μg/ft² | 3,094 |
| | | | Lead | < | 2.0 | μg/ft² | 10 |
| | | | Selenium | < | 5.0 | μg/ft² | 1,236 |
| 105-W-12 | 2nd Floor Hallway | Floor outside stairwell, column C17 | Silver | < | 2.0 | μg/ft² | 62 |
| | | | Arsenic | < | 2.0 | μg/ft² | 62 |
| | | | Barium | | 2.0 | μg/ft² | 3,094 |
| | | | Cadmium | < | 2.0 | μg/ft² | 31 |
| | | | Chromium | < | 2.0 | μg/ft² | 3,094 |
| | | | Lead | < | 2.0 | μg/ft² | 10 |
| | | | Selenium | < | 5.0 | μg/ft² | 1,236 |

| | Goodfellow Fede | eral Center - Building # 105 - Wipe | Sample Data | | | | |
|---------------|-----------------------|--------------------------------------|-------------|---|--------|--------|----------------------|
| Sample Number | Location | Area Description | Analyte | ı | Result | Units | Clean Area Limit* |
| 105-W-13 | 2nd Floor Break Room | Top of cabinets at column B18 | Silver | < | 2.0 | μg/ft² | 62 |
| | | | Arsenic | < | 2.0 | μg/ft² | 62 |
| | | | Barium | | 23 | μg/ft² | 3,094 |
| | | | Cadmium | < | 2.0 | μg/ft² | 31 |
| | | | Chromium | | 5.2 | μg/ft² | 3,094 |
| | | | Lead | | 6.4 | μg/ft² | 10 |
| | | | Selenium | < | 5.0 | μg/ft² | 1,236 |
| 105-W-14 | 2nd Floor Hallway | Floor near janitor closet, column H8 | Silver | < | 2.0 | μg/ft² | 62 |
| | | | Arsenic | < | 2.0 | μg/ft² | 62 |
| | | | Barium | < | 2.0 | μg/ft² | 3,094 |
| | | | Cadmium | < | 2.0 | μg/ft² | 31 |
| | | | Chromium | < | 2.0 | μg/ft² | 3,094 |
| | | | Lead | < | 2.0 | μg/ft² | 10 |
| | | | Selenium | < | 5.0 | μg/ft² | 1,236 |
| 105-W-15 | 1st Floor Office Area | Floor under desk, column F53 | Silver | < | 2.0 | μg/ft² | 62 |
| | | | Arsenic | < | 2.0 | μg/ft² | 62 |
| | | | Barium | < | 2.0 | μg/ft² | 3,094 |
| | | | Cadmium | < | 2.0 | μg/ft² | 31 |
| | | | Chromium | < | 2.0 | μg/ft² | 3,094 |
| | | | Lead | < | 2.0 | μg/ft² | 10 |
| | | | Selenium | < | 5.0 | μg/ft² | 1,236 |

Appendix A
Sample Summary Table

| | Goodfellow Fede | ral Center - Building # 105 - Wip | e Sample Data | | | | |
|---------------|-----------------------|-----------------------------------|---------------|---|--------|--------|----------------------|
| Sample Number | Location | Area Description | Analyte | ı | Result | Units | Clean Area Limit* |
| 105-W-16 | 1st Floor Office Area | Shelf near column G53 | Silver | < | 2.0 | μg/ft² | 62 |
| | | | Arsenic | < | 2.0 | μg/ft² | 62 |
| | | | Barium | | 3.4 | μg/ft² | 3,094 |
| | | | Cadmium | < | 2.0 | μg/ft² | 31 |
| | | | Chromium | < | 2.0 | μg/ft² | 3,094 |
| | | | Lead | < | 2.0 | μg/ft² | 10 |
| | | | Selenium | < | 5.0 | μg/ft² | 1,236 |
| 105-W-17 | 1st Floor Warehouse | Shelf near column E47 | Silver | < | 2.0 | μg/ft² | 62 |
| | | | Arsenic | < | 2.0 | μg/ft² | 62 |
| | | | Barium | | 25 | μg/ft² | 3,094 |
| | | | Cadmium | < | 2.0 | μg/ft² | 31 |
| | | | Chromium | | 3.8 | μg/ft² | 3,094 |
| | | | Lead | | 19 | μg/ft² | 10 |
| | | | Selenium | < | 5.0 | μg/ft² | 1,236 |
| 105-W-18 | 1st Floor Warehouse | Floor near column H46 | Silver | < | 2.0 | μg/ft² | 62 |
| | | | Arsenic | < | 2.0 | μg/ft² | 62 |
| | | | Barium | | 110 | μg/ft² | 3,094 |
| | | | Cadmium | | 4.5 | μg/ft² | 31 |
| | | | Chromium | | 17 | μg/ft² | 3,094 |
| | | | Lead | | 62 | μg/ft² | 10 |
| | | | Selenium | < | 5.0 | μg/ft² | 1,236 |

Appendix A
Sample Summary Table

| | Goodfellow Fede | eral Center - Building # 105 - Wipe S | Sample Data | | | | |
|---------------|---------------------------|---------------------------------------|-------------|---|--------|--------|----------------------|
| Sample Number | Location | Area Description | Analyte | ı | Result | Units | Clean Area Limit* |
| 105-W-19 | 1st Floor Warehouse | Floor near column H48, peeling paint | Silver | < | 2.0 | μg/ft² | 62 |
| | | | Arsenic | < | 2.0 | μg/ft² | 62 |
| | | | Barium | | 69 | μg/ft² | 3,094 |
| | | | Cadmium | < | 2.0 | μg/ft² | 31 |
| | | | Chromium | | 9.7 | μg/ft² | 3,094 |
| | | | Lead | | 63 | μg/ft² | 10 |
| | | | Selenium | < | 5.0 | μg/ft² | 1,236 |
| 105-W-20 | 1st Floor Processing Area | Floor under table, column B47 | Silver | < | 2.0 | μg/ft² | 62 |
| | | | Arsenic | < | 2.0 | μg/ft² | 62 |
| | | | Barium | | 5.3 | μg/ft² | 3,094 |
| | | | Cadmium | < | 2.0 | μg/ft² | 31 |
| | | | Chromium | | 26 | μg/ft² | 3,094 |
| | | | Lead | | 2.5 | μg/ft² | 10 |
| | | | Selenium | < | 5.0 | μg/ft² | 1,236 |
| 105-W-21 | 1st Floor Loading Dock | Brick ledge near column B52 | Silver | < | 2.7 | μg/ft² | 62 |
| | | | Arsenic | < | 2.7 | μg/ft² | 62 |
| | | | Barium | | 13 | μg/ft² | 3,094 |
| | | | Cadmium | < | 2.7 | μg/ft² | 31 |
| | | | Chromium | | 3.0 | μg/ft² | 3,094 |
| | | | Lead | | 5.4 | μg/ft² | 10 |
| | | | Selenium | < | 6.9 | μg/ft² | 1,236 |

| | Goodfellow Fed | leral Center - Building # 105 - Wipe | Sample Data | | | | |
|---------------|--------------------|--------------------------------------|-------------|---|--------|--------|----------------------|
| Sample Number | Location | Area Description | Analyte | ı | Result | Units | Clean Area Limit* |
| 105-W-22 | 2nd Floor Lab Area | Room 345, floor along N wall | Silver | < | 2.0 | μg/ft² | 62 |
| | | | Arsenic | < | 2.0 | μg/ft² | 62 |
| | | | Barium | < | 2.0 | μg/ft² | 3,094 |
| | | | Cadmium | < | 2.0 | μg/ft² | 31 |
| | | | Chromium | < | 2.0 | μg/ft² | 3,094 |
| | | | Lead | < | 2.0 | μg/ft² | 10 |
| | | | Selenium | < | 5.0 | μg/ft² | 1,236 |
| 105-W-23 | 2nd Floor Lab Area | Room 337, top of fridge, E wall | Silver | < | 2.0 | μg/ft² | 62 |
| | | | Arsenic | < | 2.0 | μg/ft² | 62 |
| | | | Barium | < | 2.0 | μg/ft² | 3,094 |
| | | | Cadmium | < | 2.0 | μg/ft² | 31 |
| | | | Chromium | < | 2.0 | μg/ft² | 3,094 |
| | | | Lead | < | 2.0 | μg/ft² | 10 |
| | | | Selenium | < | 5.0 | μg/ft² | 1,236 |
| 105-W-24 | 2nd Floor Lab Area | Top of drink cooler in break room | Silver | < | 2.0 | μg/ft² | 62 |
| | | | Arsenic | < | 2.0 | μg/ft² | 62 |
| | | | Barium | < | 2.0 | μg/ft² | 3,094 |
| | | | Cadmium | < | 2.0 | μg/ft² | 31 |
| | | | Chromium | < | 2.0 | μg/ft² | 3,094 |
| | | | Lead | < | 2.0 | μg/ft² | 10 |
| | | | Selenium | < | 5.0 | μg/ft² | 1,236 |

| | Goodfellow Fede | eral Center - Building # 105 - Wipe S | Sample Data | | | | |
|---------------|--------------------|---------------------------------------|-------------|---|--------|--------|----------------------|
| Sample Number | Location | Area Description | Analyte | ı | Result | Units | Clean Area Limit* |
| 105-W-25 | 2nd Floor Lab Area | Break room threshold to roof | Silver | < | 2.0 | μg/ft² | 62 |
| | | | Arsenic | < | 2.0 | μg/ft² | 62 |
| | | | Barium | | 5.1 | μg/ft² | 3,094 |
| | | | Cadmium | < | 2.0 | μg/ft² | 31 |
| | | | Chromium | | 2.8 | μg/ft² | 3,094 |
| | | | Lead | | 5.4 | μg/ft² | 10 |
| | | | Selenium | < | 5.0 | μg/ft² | 1,236 |
| 105-W-26 | 2nd Floor Lab Area | Gas storage room, floor, column C44 | Silver | | 2.7 | μg/ft² | 62 |
| | | | Arsenic | < | 2.0 | μg/ft² | 62 |
| | | | Barium | | 71 | μg/ft² | 3,094 |
| | | | Cadmium | < | 2.0 | μg/ft² | 31 |
| | | | Chromium | | 16 | μg/ft² | 3,094 |
| | | | Lead | | 34 | μg/ft² | 10 |
| | | | Selenium | < | 5.0 | μg/ft² | 1,236 |
| 105-W-27 | 2nd Floor Lab Area | Room 319, top of fridge, E wall | Silver | < | 2.0 | μg/ft² | 62 |
| | | | Arsenic | < | 2.0 | μg/ft² | 62 |
| | | | Barium | < | 2.0 | μg/ft² | 3,094 |
| | | | Cadmium | < | 2.0 | μg/ft² | 31 |
| | | | Chromium | < | 2.0 | μg/ft² | 3,094 |
| | | | Lead | < | 2.0 | μg/ft² | 10 |
| | | | Selenium | < | 5.0 | μg/ft² | 1,236 |

| | Goodfellow Fede | eral Center - Building # 105 - Wipe S | Sample Data | | | | |
|---------------|--------------------|---------------------------------------|-------------|---|--------|--------|----------------------|
| Sample Number | Location | Area Description | Analyte | ı | Result | Units | Clean Area Limit* |
| 105-W-28 | 2nd Floor Lab Area | Room 317, top of cabinets | Silver | < | 2.0 | μg/ft² | 62 |
| | | | Arsenic | < | 2.0 | μg/ft² | 62 |
| | | | Barium | | 2.4 | μg/ft² | 3,094 |
| | | | Cadmium | < | 2.0 | μg/ft² | 31 |
| | | | Chromium | | 4.0 | μg/ft² | 3,094 |
| | | | Lead | < | 2.0 | μg/ft² | 10 |
| | | | Selenium | < | 5.0 | μg/ft² | 1,236 |
| 105-W-29 | 2nd Floor Lab Area | Floor on ramp near room 317 | Silver | < | 2.0 | μg/ft² | 62 |
| | | | Arsenic | < | 2.0 | μg/ft² | 62 |
| | | | Barium | < | 2.0 | μg/ft² | 3,094 |
| | | | Cadmium | < | 2.0 | μg/ft² | 31 |
| | | | Chromium | < | 2.0 | μg/ft² | 3,094 |
| | | | Lead | < | 2.0 | μg/ft² | 10 |
| | | | Selenium | < | 5.0 | μg/ft² | 1,236 |
| 105-W-30 | 2nd Floor Lab Area | Room 311, top of fridge, NW corner | Silver | | 5.8 | μg/ft² | 62 |
| | | | Arsenic | < | 2.0 | μg/ft² | 62 |
| | | | Barium | | 7.6 | μg/ft² | 3,094 |
| | | | Cadmium | < | 2.0 | μg/ft² | 31 |
| | | | Chromium | | 2.3 | μg/ft² | 3,094 |
| | | | Lead | < | 2.0 | μg/ft² | 10 |
| | | | Selenium | < | 5.0 | μg/ft² | 1,236 |

| | Goodfellow Federal Center - Building # 105 - Wipe Sample Data | | | | | | | | | | |
|---------------|---|------------------|----------|---|--------|-------|----------------------|--|--|--|--|
| Sample Number | Location | Area Description | Analyte | | Result | Units | Clean Area Limit* | | | | |
| 105-W-31 | Field Blank | | Silver | < | 2.0 | μg | | | | | |
| | | | Arsenic | < | 2.0 | μg | | | | | |
| | | | Barium | < | 2.0 | μg | | | | | |
| | | | Cadmium | < | 2.0 | μg | | | | | |
| | | | Chromium | < | 2.0 | μg | | | | | |
| | | | Lead | < | 2.0 | μg | | | | | |
| | | | Selenium | < | 5.0 | μg | | | | | |
| 105-W-32 | Field Blank | | Silver | < | 2.0 | μg | | | | | |
| | | | Arsenic | < | 2.0 | μg | | | | | |
| | | | Barium | < | 2.0 | μg | | | | | |
| | | | Cadmium | < | 2.0 | μg | | | | | |
| | | | Chromium | < | 2.0 | μg | | | | | |
| | | | Lead | < | 2.0 | μg | | | | | |
| | | | Selenium | < | 5.0 | μg | | | | | |

^{*} Clean Area Limit per Brookhaven IH75190=OSHA Housekeeping Limit [PEL ($\mu g/m^3$) x 10 $m^3/100cm^2$] / 15. Lead clean area limit: Brookhaven references EPA/HUD limit for floors, set at 10 $\mu g/sq$. ft. as of January 2020.

Indicates results at or above the Clean Area Limit





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

Telephone: 800.347.4010

9400 Ward Pkwy. Kansas City, MO 64114

Wipe Metals Analysis Report

Report Number: 20-06-03493

Received Date: 06/29/2020 Analyzed Date: 07/01/2020 Reported Date: 07/02/2020

Burns & McDonnell Engineering

Project/Test Address: 168765; Goodfellow IH Services; 4300 Goodfellow Blvd.

Client Number:

Client:

Fax Number: **Laboratory Results** 816-822-3494 26-3514

| Lab Sample Number | Client Sample Number | Analyte: | Wipe Area (ft²) | Total Metal (ug) | Concentration (ug/ft²) | Narrative ID |
|----------------------|-------------------------|---------------|--------------------|---------------------|------------------------|-----------------|
| 20-06-03493-001 | 105-W-01 | Arsenic (As) | 1.00 | <2.00 | <2.0 | |
| | | Barium (Ba) | 1.00 | 4.37 | 4.4 | |
| | | Cadmium (Cd) | 1.00 | <2.00 | <2.0 | |
| | | Chromium (Cr) | 1.00 | <2.00 | <2.0 | |
| | | Lead (Pb) | 1.00 | 4.21 | 4.2 | |
| | | Selenium (Se) | 1.00 | <5.00 | <5.0 | |
| | | Silver (Ag) | 1.00 | <2.00 | <2.0 | |
| 20-06-03493-002 | 105-W-02 | Arsenic (As) | 1.00 | <2.00 | <2.0 | |
| | | Barium (Ba) | 1.00 | <2.00 | <2.0 | |
| | | Cadmium (Cd) | 1.00 | <2.00 | <2.0 | |
| | | Chromium (Cr) | 1.00 | <2.00 | <2.0 | |

Client Number:

26-3514

Project/Test Address: 168765; Goodfellow IH Services; 4300 Goodfellow

Report Number:

20-06-03493

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Wipe Area **Total Metal** Concentration Lab Sample **Client Sample** Analyte: Narrative Number Number (ug/ft²) ID (ft²) (ug) Lead (Pb) 1.00 < 2.00 <2.0 Selenium (Se) 1.00 < 5.00 < 5.0 Silver (Ag) 1.00 < 2.00 < 2.0 20-06-03493-003 105-W-03 Arsenic (As) 1.00 < 2.00 < 2.0 Barium (Ba) 1.00 < 2.00 < 2.0 Cadmium (Cd) 1.00 <2.00 <2.0 Chromium (Cr) 1.00 <2.00 <2.0 Lead (Pb) 1.00 < 2.00 < 2.0 Selenium (Se) 1.00 < 5.00 < 5.0 <2.00 <2.0 Silver (Ag) 1.00 105-W-04 <2.00 <2.0 20-06-03493-004 Arsenic (As) 1.00 Barium (Ba) 4.99 5.0 1.00 Cadmium (Cd) 1.00 < 2.00 < 2.0 <2.0 Chromium (Cr) 1.00 <2.00 Lead (Pb) 1.00 < 2.00 <2.0 Selenium (Se) 1.00 < 5.00 < 5.0 Silver (Ag) 1.00 <2.00 <2.0 20-06-03493-005 105-W-05 Arsenic (As) 1.00 < 2.00 <2.0

Client Number:

26-3514

Project/Test Address: 168765; Goodfellow IH Services; 4300 Goodfellow

Report Number:

20-06-03493

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Client Sample Wipe Area **Total Metal** Concentration Lab Sample Analyte: Narrative Number Number (ug/ft²) ID (ft²) (ug) Barium (Ba) 1.00 35.1 35 Cadmium (Cd) 1.00 <2.00 < 2.0 Chromium (Cr) 1.00 2.66 2.7 19 Lead (Pb) 1.00 19.1 Selenium (Se) 1.00 < 5.00 < 5.0 Silver (Ag) 1.00 <2.00 <2.0 20-06-03493-006 105-W-06 Arsenic (As) 1.00 <2.00 <2.0 Barium (Ba) 1.00 < 2.00 < 2.0 Cadmium (Cd) 1.00 < 2.00 < 2.0 Chromium (Cr) <2.00 <2.0 1.00 <2.00 <2.0 Lead (Pb) 1.00 Selenium (Se) < 5.00 < 5.0 1.00 Silver (Ag) 1.00 < 2.00 < 2.0 105-W-07 <2.0 20-06-03493-007 Arsenic (As) 1.00 <2.00 Barium (Ba) 1.00 3.74 3.7 Cadmium (Cd) <2.0 1.00 < 2.00 Chromium (Cr) 1.00 <2.00 <2.0 Lead (Pb) 1.00 < 2.00 <2.0

Client Number:

26-3514

Report Number:

20-06-03493

Project/Test Address: 168765; Goodfellow IH Services; 4300 Goodfellow Blvd.

| Lab Sample Number | Client Sample Number | Analyte: | Wipe Area (ft²) | Total Metal (ug) | Concentration (ug/ft²) | Narrative ID |
|----------------------|-------------------------|---------------|--------------------|---------------------|------------------------|-----------------|
| | | Selenium (Se) | 1.00 | <5.00 | <5.0 | |
| | | Silver (Ag) | 1.00 | <2.00 | <2.0 | |
| 20-06-03493-008 | 105-W-08 | Arsenic (As) | 0.875 | <2.00 | <2.3 | |
| | | Barium (Ba) | 0.875 | <2.00 | <2.3 | |
| | | Cadmium (Cd) | 0.875 | <2.00 | <2.3 | |
| | | Chromium (Cr) | 0.875 | <2.00 | <2.3 | |
| | | Lead (Pb) | 0.875 | <2.00 | <2.3 | |
| | | Selenium (Se) | 0.875 | <5.00 | <5.7 | |
| | | Silver (Ag) | 0.875 | <2.00 | <2.3 | |
| 20-06-03493-009 | 105-W-09 | Arsenic (As) | 1.00 | <2.00 | <2.0 | |
| | | Barium (Ba) | 1.00 | <2.00 | <2.0 | |
| | | Cadmium (Cd) | 1.00 | <2.00 | <2.0 | |
| | | Chromium (Cr) | 1.00 | <2.00 | <2.0 | |
| | | Lead (Pb) | 1.00 | <2.00 | <2.0 | |
| | | Selenium (Se) | 1.00 | <5.00 | <5.0 | |
| | | Silver (Ag) | 1.00 | <2.00 | <2.0 | |
| 20-06-03493-010 | 105-W-10 | Arsenic (As) | 1.00 | <2.00 | <2.0 | |
| | | Barium (Ba) | 1.00 | <2.00 | <2.0 | |

Client Number:

26-3514

Project/Test Address: 168765; Goodfellow IH Services; 4300 Goodfellow Blvd.

Report Number:

20-06-03493

| Lab Sample Number | Client Sample Number | Analyte: | Wipe Area (ft²) | Total Metal (ug) | Concentration (ug/ft²) | Narrative ID |
|----------------------|-------------------------|---------------|--------------------|---------------------|------------------------|-----------------|
| | | Cadmium (Cd) | 1.00 | <2.00 | <2.0 | |
| | | Chromium (Cr) | 1.00 | <2.00 | <2.0 | |
| | | Lead (Pb) | 1.00 | <2.00 | <2.0 | |
| | | Selenium (Se) | 1.00 | <5.00 | <5.0 | |
| | | Silver (Ag) | 1.00 | <2.00 | <2.0 | |
| 20-06-03493-011 | 105-W-11 | Arsenic (As) | 1.00 | <2.00 | <2.0 | |
| | | Barium (Ba) | 1.00 | <2.00 | <2.0 | |
| | | Cadmium (Cd) | 1.00 | <2.00 | <2.0 | |
| | | Chromium (Cr) | 1.00 | <2.00 | <2.0 | |
| | | Lead (Pb) | 1.00 | <2.00 | <2.0 | |
| | | Selenium (Se) | 1.00 | <5.00 | <5.0 | |
| | | Silver (Ag) | 1.00 | <2.00 | <2.0 | |
| 20-06-03493-012 | 105-W-12 | Arsenic (As) | 1.00 | <2.00 | <2.0 | |
| | | Barium (Ba) | 1.00 | 2.01 | 2.0 | |
| | | Cadmium (Cd) | 1.00 | <2.00 | <2.0 | |
| | | Chromium (Cr) | 1.00 | <2.00 | <2.0 | |
| | | Lead (Pb) | 1.00 | <2.00 | <2.0 | |
| | | Selenium (Se) | 1.00 | <5.00 | <5.0 | |

Client Number:

26-3514

Report Number:

20-06-03493

Project/Test Address: 168765; Goodfellow IH Services; 4300 Goodfellow Blvd.

| Lab Sample Number | Client Sample Number | Analyte: | Wipe Area (ft²) | Total Metal (ug) | Concentration (ug/ft²) | Narrative ID |
|----------------------|-------------------------|---------------|--------------------|---------------------|------------------------|-----------------|
| | | Silver (Ag) | 1.00 | <2.00 | <2.0 | |
| 20-06-03493-013 | 105-W-13 | Arsenic (As) | 1.00 | <2.00 | <2.0 | |
| | | Barium (Ba) | 1.00 | 22.8 | 23 | |
| | | Cadmium (Cd) | 1.00 | <2.00 | <2.0 | |
| | | Chromium (Cr) | 1.00 | 5.16 | 5.2 | |
| | | Lead (Pb) | 1.00 | 6.42 | 6.4 | |
| | | Selenium (Se) | 1.00 | <5.00 | <5.0 | |
| | | Silver (Ag) | 1.00 | <2.00 | <2.0 | |
| 20-06-03493-014 | 105-W-14 | Arsenic (As) | 1.00 | <2.00 | <2.0 | |
| | | Barium (Ba) | 1.00 | <2.00 | <2.0 | |
| | | Cadmium (Cd) | 1.00 | <2.00 | <2.0 | |
| | | Chromium (Cr) | 1.00 | <2.00 | <2.0 | |
| | | Lead (Pb) | 1.00 | <2.00 | <2.0 | |
| | | Selenium (Se) | 1.00 | <5.00 | <5.0 | |
| | | Silver (Ag) | 1.00 | <2.00 | <2.0 | |
| 20-06-03493-015 | 105-W-15 | Arsenic (As) | 1.00 | <2.00 | <2.0 | |
| | | Barium (Ba) | 1.00 | <2.00 | <2.0 | |
| | | Cadmium (Cd) | 1.00 | <2.00 | <2.0 | |

Client Number:

26-3514

Project/Test Address: 168765; Goodfellow IH Services; 4300 Goodfellow

Report Number:

20-06-03493

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Client Sample Wipe Area **Total Metal** Concentration Lab Sample Analyte: Narrative Number Number (ug/ft²) ID (ft²) (ug) Chromium (Cr) 1.00 < 2.00 <2.0 Lead (Pb) 1.00 <2.00 <2.0 Selenium (Se) 1.00 < 5.00 < 5.0 Silver (Ag) 1.00 < 2.00 < 2.0 105-W-16 <2.0 20-06-03493-016 Arsenic (As) 1.00 < 2.00 Barium (Ba) 1.00 3.45 3.4 Cadmium (Cd) 1.00 <2.00 <2.0 Chromium (Cr) 1.00 < 2.00 < 2.0 Lead (Pb) 1.00 < 2.00 < 2.0 Selenium (Se) 1.00 < 5.00 < 5.0 <2.00 <2.0 Silver (Ag) 1.00 105-W-17 Arsenic (As) < 2.00 < 2.0 20-06-03493-017 1.00 Barium (Ba) 1.00 24.6 25 <2.00 <2.0 Cadmium (Cd) 1.00 Chromium (Cr) 1.00 3.81 3.8 Lead (Pb) 1.00 18.6 19 Selenium (Se) 1.00 < 5.00 < 5.0 Silver (Ag) 1.00 < 2.00 <2.0

Client Number:

26-3514

Project/Test Address: 168765; Goodfellow IH Services; 4300 Goodfellow

Report Number:

20-06-03493

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Blvd.

Client Sample Wipe Area **Total Metal** Concentration **Lab Sample** Analyte: Narrative Number Number (ug/ft²) ID (ft²) (ug) 20-06-03493-018 105-W-18 Arsenic (As) 1.00 < 2.00 <2.0 Barium (Ba) 1.00 111 110 Cadmium (Cd) 1.00 4.49 4.5 17 Chromium (Cr) 1.00 17.0 62 Lead (Pb) 1.00 61.9 Selenium (Se) 1.00 < 5.00 < 5.0 Silver (Ag) 1.00 <2.00 <2.0 105-W-19 20-06-03493-019 Arsenic (As) 1.00 < 2.00 <2.0 Barium (Ba) 1.00 68.9 69 Cadmium (Cd) <2.00 <2.0 1.00 Chromium (Cr) 9.72 9.7 1.00 Lead (Pb) 63.0 63 1.00 Selenium (Se) 1.00 < 5.00 < 5.0 <2.0 Silver (Ag) 1.00 <2.00 20-06-03493-020 105-W-20 Arsenic (As) 1.00 < 2.00 <2.0 Barium (Ba) 1.00 5.34 5.3 Cadmium (Cd) 1.00 <2.00 <2.0 Chromium (Cr) 1.00 25.8 26

Client Number:

26-3514

Project/Test Address: 168765; Goodfellow IH Services; 4300 Goodfellow

Report Number:

20-06-03493

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Blvd.

Client Sample Wipe Area **Total Metal** Concentration Lab Sample Analyte: Narrative Number Number (ug/ft²) ID (ft²) (ug) Lead (Pb) 1.00 2.53 2.5 Selenium (Se) 1.00 < 5.00 < 5.0 Silver (Ag) 1.00 < 2.00 < 2.0 <2.7 20-06-03493-021 105-W-21 Arsenic (As) 0.729 < 2.00 Barium (Ba) 0.729 9.24 13 Cadmium (Cd) 0.729 <2.00 <2.7 Chromium (Cr) 0.729 2.21 3.0 Lead (Pb) 0.729 3.91 5.4 Selenium (Se) 0.729 < 5.00 <6.9 <2.00 <2.7 Silver (Ag) 0.729 105-W-22 <2.00 <2.0 20-06-03493-022 Arsenic (As) 1.00 Barium (Ba) < 2.00 < 2.0 1.00 Cadmium (Cd) 1.00 < 2.00 < 2.0 <2.00 <2.0 Chromium (Cr) 1.00 Lead (Pb) 1.00 < 2.00 <2.0 Selenium (Se) < 5.0 1.00 < 5.00 Silver (Ag) 1.00 <2.00 <2.0 20-06-03493-023 105-W-23 Arsenic (As) 1.00 < 2.00 <2.0

Client Number:

26-3514

Report Number:

20-06-03493

Project/Test Address: 168765; Goodfellow IH Services; 4300 Goodfellow

Blvd.

| Lab Sample Number | Client Sample Number | Analyte: | Wipe Area (ft²) | Total Metal (ug) | Concentration (ug/ft²) | Narrative ID |
|----------------------|-------------------------|---------------|--------------------|---------------------|------------------------|-----------------|
| | | Barium (Ba) | 1.00 | <2.00 | <2.0 | |
| | | Cadmium (Cd) | 1.00 | <2.00 | <2.0 | |
| | | Chromium (Cr) | 1.00 | <2.00 | <2.0 | |
| | | Lead (Pb) | 1.00 | <2.00 | <2.0 | |
| | | Selenium (Se) | 1.00 | <5.00 | <5.0 | |
| | | Silver (Ag) | 1.00 | <2.00 | <2.0 | |
| 20-06-03493-024 | 105-W-24 | Arsenic (As) | 1.00 | <2.00 | <2.0 | |
| | | Barium (Ba) | 1.00 | <2.00 | <2.0 | |
| | | Cadmium (Cd) | 1.00 | <2.00 | <2.0 | |
| | | Chromium (Cr) | 1.00 | <2.00 | <2.0 | |
| | | Lead (Pb) | 1.00 | <2.00 | <2.0 | |
| | | Selenium (Se) | 1.00 | <5.00 | <5.0 | |
| | | Silver (Ag) | 1.00 | <2.00 | <2.0 | |
| 20-06-03493-025 | 105-W-25 | Arsenic (As) | 1.00 | <2.00 | <2.0 | |
| | | Barium (Ba) | 1.00 | 5.14 | 5.1 | |
| | | Cadmium (Cd) | 1.00 | <2.00 | <2.0 | |
| | | Chromium (Cr) | 1.00 | 2.81 | 2.8 | |
| | | Lead (Pb) | 1.00 | 5.36 | 5.4 | |

Client Number:

26-3514

Project/Test Address: 168765; Goodfellow IH Services; 4300 Goodfellow

Report Number:

20-06-03493

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Blvd.

Wipe Area **Total Metal** Concentration Lab Sample **Client Sample** Analyte: **Narrative** Number Number (ug/ft²) ID (ft²) (ug) Selenium (Se) 1.00 < 5.00 <5.0 Silver (Ag) 1.00 <2.00 < 2.0 20-06-03493-026 105-W-26 Arsenic (As) 1.00 < 2.00 < 2.0 71 Barium (Ba) 1.00 71.3 <2.0 Cadmium (Cd) 1.00 < 2.00 Chromium (Cr) 1.00 16.3 16 Lead (Pb) 1.00 33.7 34 Selenium (Se) 1.00 < 5.00 < 5.0 Silver (Ag) 1.00 2.69 2.7 <2.00 <2.0 20-06-03493-027 105-W-27 Arsenic (As) 1.00 <2.00 <2.0 Barium (Ba) 1.00 Cadmium (Cd) < 2.00 < 2.0 1.00 Chromium (Cr) 1.00 < 2.00 < 2.0 <2.0 Lead (Pb) 1.00 <2.00 Selenium (Se) 1.00 < 5.00 < 5.0 Silver (Ag) 1.00 < 2.00 < 2.0 20-06-03493-028 105-W-28 Arsenic (As) 1.00 <2.00 < 2.0 Barium (Ba) 1.00 2.45 2.4

Client Number:

26-3514

Project/Test Address: 168765; Goodfellow IH Services; 4300 Goodfellow

Report Number:

20-06-03493

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Blvd.

| Lab Sample Number | Client Sample Number | Analyte: | Wipe Area (ft²) | Total Metal (ug) | Concentration (ug/ft²) | Narrative ID |
|----------------------|-------------------------|---------------|--------------------|---------------------|------------------------|-----------------|
| | | Cadmium (Cd) | 1.00 | <2.00 | <2.0 | |
| | | Chromium (Cr) | 1.00 | 3.95 | 4.0 | |
| | | Lead (Pb) | 1.00 | <2.00 | <2.0 | |
| | | Selenium (Se) | 1.00 | <5.00 | <5.0 | |
| | | Silver (Ag) | 1.00 | <2.00 | <2.0 | |
| 20-06-03493-029 | 105-W-29 | Arsenic (As) | 1.00 | <2.00 | <2.0 | |
| | | Barium (Ba) | 1.00 | <2.00 | <2.0 | |
| | | Cadmium (Cd) | 1.00 | <2.00 | <2.0 | |
| | | Chromium (Cr) | 1.00 | <2.00 | <2.0 | |
| | | Lead (Pb) | 1.00 | <2.00 | <2.0 | |
| | | Selenium (Se) | 1.00 | <5.00 | <5.0 | |
| | | Silver (Ag) | 1.00 | <2.00 | <2.0 | |
| 20-06-03493-030 | 105-W-30 | Arsenic (As) | 1.00 | <2.00 | <2.0 | |
| | | Barium (Ba) | 1.00 | 7.59 | 7.6 | |
| | | Cadmium (Cd) | 1.00 | <2.00 | <2.0 | |
| | | Chromium (Cr) | 1.00 | 2.32 | 2.3 | |
| | | Lead (Pb) | 1.00 | <2.00 | <2.0 | |
| | | Selenium (Se) | 1.00 | <5.00 | <5.0 | |

Client Number:

26-3514

Report Number:

20-06-03493

Project/Test Address: 168765; Goodfellow IH Services; 4300 Goodfellow

Blvd.

| Lab Sample Number | Client Sample Number | Analyte: | Wipe Area (ft²) | Total Metal (ug) | Concentration (ug/ft²) | Narrative ID |
|----------------------|-------------------------|---------------|--------------------|---------------------|------------------------|-----------------|
| | | Silver (Ag) | 1.00 | 5.84 | 5.8 | |
| 20-06-03493-031 | 105-W-31 | Arsenic (As) | | <2.00 | | |
| | | Barium (Ba) | | <2.00 | | |
| | | Cadmium (Cd) | | <2.00 | | |
| | | Chromium (Cr) | | <2.00 | | |
| | | Lead (Pb) | | <2.00 | | |
| | | Selenium (Se) | | <5.00 | | |
| | | Silver (Ag) | | <2.00 | | |
| 20-06-03493-032 | 105-W-32 | Arsenic (As) | | <2.00 | | |
| | | Barium (Ba) | | <2.00 | | |
| | | Cadmium (Cd) | | <2.00 | | |
| | | Chromium (Cr) | | <2.00 | | |
| | | Lead (Pb) | | <2.00 | | |
| | | Selenium (Se) | | <5.00 | | |
| | | Silver (Ag) | | <2.00 | | |

Client Number: 26-3514 **Report Number:** 20-06-03493

Project/Test Address: 168765; Goodfellow IH Services; 4300 Goodfellow

Blvd.

Lab Sample Client Sample Analyte: Wipe Area Total Metal Concentration Narrative Number (ft²) (ug) (ug/ft²) ID

Sample Narratives:

Analyst: Brittany Meyer

Method: Mercury (Hg): EPA SW846 7471B

All other metals: EPA SW846 3050B/6010D

Reviewed By Authorized Signatory:

(b) (6)

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 100mL volume. The reporting limit for Mercury is 0.10ug, Aluminum, Iron and Zinc are 50ug, Antimony and Selenium are 5.0ug and 2.0ug for all other metals.

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. EHS sample results do not reflect blank correction. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714.

Legend ug = microgram ug/ft² = micrograms per square foot

mL = milliliter $ft^2 = square foot$

ENVIRONMENTAL HAZARDS SERVICES, LLC

Metals Chain of Custody Form

Pg____of__3__

| (| Company Name | Burns | & McDonnell | | | | | - Harris Carre | | | *************************************** | Ad | cou | unt | # | 26 | -35 | 14 | | | |
|-----------|-------------------|--|------------------|---------|-------------|--------------|---------------------|----------------------|------------|-------------|--|-------------------|---------------------|-----------------|-----------------|-----------------|-------|---|-----------|-----------------|--|
| Со | mpany Address | 9400 | Ward Parkway | | | | | | | | | City/S | tate | e/Zi | р | Ka | nsa | as City | , MO | 6411 | 4 |
| | Phone | 816-3 | 349-6646 | | | | | | | | | | E | ma | il | ms | sha | ınaha | n@bı | ırnsn | ncd.com |
| Pi | roject Name / Tes | sting Ad | dress Goodfellow | ' IH | S | erv | ice | s/ | 430 | 00 | Good | fellow E | 3lv | d. | | | | | - | | |
| | PO Number | 16876 | 35 | - | | | | | Coll | ect | ed By | Emil | <u>Y</u> | Ar | ٦١, | en | \Q | Jer | 3) | eff | Smith |
| Tui | n-Around Time | X | 3 DAY | ¥Υ | | | ť, | | DA' | | | SAME | | | | | | | | | |
| | | | | | | MI | ET# | ۱LS | | | | | P/ | ARTI | CUI | LAT | ES | | AIR | | WIPES |
| AB NUMBER | Client | | Collection | | 8 4 | tal | rofile | Profile | Ъ | <u></u> | - | | e Dust | Just | etric | Total Flow Vol. | | | AREA | | |
| LAB N | Sample ID | | Date & Time | Pb TCLP | TCLP RCRA 8 | RCRA 8 Total | Toxic Metal Profile | Welding Fume Profile | TX 11 TCLP | CA 17 Total | | ther etals | Total Nuisance Dust | Respirable Dust | TSP Gravimetric | TSP Pb | PM-10 | Mins. | L∕min. | Total Liters | Circle The Unit of Measurement Used cm or (in) |
| 1 | 105-W-01 | 6/2 | 4/2020 0836 | | | | | | | | Ag, As Cri | Ba, Cd, Pb, Se | | | www | | | | 100 0 100 | | 12×12 |
| 2 - | 105-W-02 | | 0840 | | | | | | | | 1 | • | | | | | | | | | 12 × 12 |
| 3 | 105-W-03 | | 0845 | | | | | | | | · · | | | | | | | | | | 12×12 |
| 4 | 105-W-04 | | 0847 | | | | | | | | COS Name | | | | | | | | | | 12 × 12 |
| 5 | 105-W-05 | | 0855 | | | | | | | | The state of the s | | | | | | | | | | 12×12 |
| 6 | 105-W-06 | | 0900 | | | | | | | | | | - | | | | | THE PERSON NAMED IN COLUMN | | | 12 ×12 |
| 7 | 105-W-07 | | 0908 | | | | | | | | L TOTAL PROGRAME | | | | | | | | | | 12 x12 |
| 8 | 105 - W -08 | owen and the | 0913 | | | | | | | | 2110 | | | | | | | | | | 10.5×12 |
| 9 | 105-W-09 | MATERIAL PARTY AND ADDRESS OF THE PARTY AND AD | 0920 | | | | | | | | 140000 | | | | | | | | | | 12 x12 |
| 10 | 105-W-10 | | 0923 | | | | | | | | Water Children | | | | | | | *************************************** | | | 12 x12 |
| 11 | 105 - W-11 | CF Supplied Section 1 | 0926 | | | | | | | | Contract to the contract of th | | | | | | | | | | 12 × 12 |
| 12 | 105-W-12 | | 0930 | | | | | | | | | | | | | | | | | | 12 x12 |
| 13 | 105 -W-13 | | 0932 | | | | | | | | | | | | | | | *************************************** | | | 12 ×12 |
| 14 | 105-W-14 | | 0939 | | | | | | | | 000 | | | | | | | *************************************** | | | 12 ×12 |
| 15 | 105 - W - 15 | A CONTRACTOR OF THE PARTY OF TH | 1132 | | | | | | | | | | | | | | | | | | 12 x12 |
| | Released By: | Emil | y Ahlemey, | 08 | | h | | | ·! | T | Date: | 6/24 | 01. | 20 | 20 | I | | Time: | 4: | 001 | 2M |
| | Signature: (| b) (6) | | | | | | | | | | | | | | | | | | | |
| | | | | | | LAB | USE | ON | LY — | BEL | OW THIS | LINE | | | | | | | | | |

20-06-03493



Due Date: 07/02/2020 (Thursday) EL

ENVIRONMENTAL HAZARDS SERVICES, LLC

Metals Chain of Custody Form

Pg 2 of 3

| (| Company Name | Burns | & McDonnell | | | | *************************************** | | | | | | A | ccoı | unt | # | 26 | -35 | 14 | | | |
|-----------|------------------|--|----------------|---|-------|-------------|---|---------------------|----------------------|------------|---|--|-------------------|---------------------|-----------------|-----------------|--------|-------|---|--------------|-----------------|--|
| Со | mpany Address | 9400 V | Vard Parkway | *************************************** | | *********** | ********** | | | | *************************************** | | City/S | State | e/Zi | р | Ka | nsa | as City | , MO | 6411 | 4 |
| | Phone | 816-34 | 49-6646 | | | | | | | | | | | E | ma | iil | ms | sha | ınaha | n@bı | urnsn | ncd.com |
| Pi | oject Name / Tes | sting Add | ress Goodfello | w l | Н | Se | rvi | ces | s / | 43 | 00 | Good | fellow I | Blv | d. | ······ | | | ne të turjë ma ne ma jena pa a ga ne | | | |
| | PO Number | 168765 | 5 | | | | | | | Coll | lect | ed By | Emil | 1 A | m | P.1 | n- | esi. | er \$ | Jeff | Sm | ith |
| Tui | n-Around Time | 炎 3 | DAY C 2 | DAY | • | | | (" | ` 1 | DΑ | Y | ł | SAME | DAY | / 0 | 3 W | EEK | ENI | D - Mus | t Call A | head | |
| | | | | | | ſ | ИE | TA | ۱LS | | | | , | P | ART | ICU | LAT | ES: | | AIR | | WIPES |
| AB NUMBER | Client | | Collection | | | ∞ ∞ | | rofile | Profile | a. | a. | | | Dust | ust | tric | | | Total Time | Flow Rate | Vol. | AREA |
| LAB N | Sample ID | | Date & Time | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | PD OL | TCLP RCRA 8 | RCRA 8 Total | Toxic Metal Profile | Welding Fume Profile | TX 11 TCLP | CA 17 Total | _ | ther etals | Total Nuisance Dust | Respirable Dust | TSP Gravimetric | TSP Pb | PM-10 | Mins. | L/min. | Total Liters | Circle The Unit of Measurement Used |
| 1 | 105-W-16 | 6/24 | 1/2020 1134 | 5 | | | | | | | | Ag, As | Ba, Cd. Pb, Se | 4 | | | | 2028 | | | | 12 ×12 |
| 2 | 105-W-17 | 1 | 1138 | | | | | | | | | 1 | , | | | | | | ` | | | 12 ×12 |
| 3 | 105-W-18 | | | | | | | | | | | | | | | | | | | | | 12 × 12 |
| 4 | 105 -W -19 | | 1145 | 5 | | | | | | | | To be seen a | | | | | | | | | | 12 × 12 |
| 5 | 105-W-20 | | 1150 | | | | | | | | | and a second | | | | | | | | | | 12×12 |
| 6 | 105-W-21 | 2000 | 1154 | | | | | | | | | WITH CHARGE TO A | | | | | | | | | | 15 ×7 |
| 7 | 105-W-22 | rancing of the control of the contro | 1201 | 0 | | | | | | | | ETEZZZZYPAG (GOO) (PE | | | | | | | | | | 12 × 12 |
| 8 | 105-W-23 | | 1210 |) | | | | | | | | | | | | | | | | | | 12 ×12 |
| 9 | 105-W-24 | (All his safety constitution | 1213 | | | | | | | | | endinanci/skile | | | | | | | | | | 12 ×12 |
| 10 | 105 - W -25 | | 1211 | 2 | | | | | | | | chathathar page | | | | | | | | | | 12 ×12 |
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| 15 | 105 - W - 30 |) | 1235 | 5 | | | 1 | | | | | | | | | | | | | | | 12 ×12 |
| | Released By: | Emile | Ahleme | y.e | 1 | - | | L | | | T | Date: | 6/24 | 0/5 | 200 | 20 | L | - | Time: | 4 | :00 p | |
| | Signature: | (b) (6) | | | | | | | | | | | | | | | | | e-e-iterationalistication | | | |
| - | | | | | | | AB | USE | ON | LY - | BEL | OW THIS | LINE | | | , | | | | | | |

| Received By: | Stone | |
|--|--|-------|
| (b) Signature: | 9) (6) | |
| Date: 6 / 29 20 | O Time: 11 : 10 | AM PM |
| Portal Contact Added | | |
| 2 7469 WHITEPINE RD, R Li RESULTS VIA CLIENT PO | ICHMOND, VA 23237 (800)-347- RTAL AVAILABLE @ www.leadlab | |



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ENVIRONMENTAL HAZARDS SERVICES, LLC

Metals Chain of Custody Form

Pg <u>3</u> of <u>3</u>

| | Company Name | Burns & McD | onnell | | *************************************** | | - | | | - | | A | cco | unt | # | 26 | -35 | 14 | | | | | |
|---|--|-----------------|--|---------|---|--------------------------|---------------------|----------------------|---|---|-----------------|---|---------------------|-----------------|-----------------|---|---|---|--------------|-----------------|---|--|--|
| Co | mpany Address | 9400 Ward Pa | arkway | | | | | | | *************************************** | | City/S | State | e/Zi | р | Ka | nsa | as City | , MO | 6411 | 4 | | |
| | Phone | 816-349-664 | 16 | | | | | | | *************************************** | | | E | Ēma | ail | m | sha | naha | n@bı | urnsn | ncd.com | | |
| Р | roject Name / Te | sting Address G | oodfellov | v IH | S | erv | ice | s/ | 43 | 00 | Good | fellow l | Blv | d. | L | | *************************************** | | | * | | | |
| | PO Number | 168765 | | | | | | T | Coll | lect | ed By | Emil | U | Av | 10 | m | 01 | 10x \$ | loff | Sm | ith | | |
| Tu | rn-Around Time | Ж з DAY | (^ 2 D/ | AY | | | (* | | DA | | | SAME | | | | | | | | | | | |
| | | | | | | M | ET# | ٩LS | | | | | P | ART | ICU | LAT | ES | | AIR | | WIPES | | |
| AB NUMBER | Client | Collect | | | 8, | tal | rofile | Profile | ٩ | le | | | e Dust | Sust | etric | | | Total Time | Flow Rate | Vol. | AREA | | |
| LAB N | Sample ID | Date & ' | Time | Pb TCLP | TCLP RCRA 8 | RCRA 8 Total | Toxic Metal Profile | Welding Fume Profile | TX 11 TCLP | CA 17 Total | 1 | her etals | Total Nuisance Dust | Respirable Dust | TSP Gravimetric | TSP Pb | PM-10 | Mins. | L/min. | Total Liters | Circle The Unit of Measurement Used | | |
| 1 | 105-W-31 | 6/24/2020 | 6956 | | | | | - 1000 | 255.9 | 58.53 | AgiAsi Co. P | Ba, Cd, b, Se | 1,08005 | | | 1 | véán | | | 0.01 17,4453 | NA ×NA | | |
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| 15 | | | | 1 | T | | | | | | | | \vdash | | | <u> </u> | | *************************************** | | | x | | |
| | Released By: | Emily Abl | 10000 | .0 | V | | | L | L | \top | Date: | 6/2 | | 0/ | \sim | \triangle | L | Time | lu: | 00 P | | | |
| | ······································ | (b) (6) | | | | | | | *************************************** | | <u> </u> | 1 4/2 | V | | 1 | <u>~</u> | | | | 001 | , - j. | | |
| *************************************** | | , | | | | LAB | USE | ON | LY – | - BEL | OW THIS | LINE | | | | *************************************** | | | | | Without the Art County Arrange and a second | | |
| Rec | eived By: | TS41 | One | | | nia constanta | | | | | | | | ſ | | - | | | 71 | 19 | 7 | | |

| Received By: TS+One | |
|--|--|
| (b) (6) Signature: | |
| Date: 6 79 20 Time: 11 : 10 | |
| Portal Contact Added | |
| 2 7469 WHITEPINE RD, RICHMOND, VA 23237 (800)-347-4 Fi RESULTS VIA CLIENT PORTAL AVAILABLE @ www.leadlab | |



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STATE OF MISSOURI DEPARTMENT OF HEALTH AND SENIOR SERVICES

LEAD OCCUPATION LICENSE REGISTRATION

Issued to:

Jeffrey T. Smith

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: 3/16/2019
Expiration Date: 3/16/2021

License Number: 010316-200089640





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