

Riverside, MO 64158 Telephone: 816.231.5580 Fax: 816.231.5641 www.occutec.com

March 20, 2019

Diane Czarnecki Industrial Hygienist Facilities Management Division GSA Public Buildings Service - Heartland Region U.S. General Services Administration 2300 Main Street, Kansas City, MO 64108

RE: Goodfellow Federal Center Metals in Settled Dust Sampling – Building 101 4300 Goodfellow Boulevard St. Louis, Missouri 63120 OCCU-TEC Project No. 918004.002

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 101 located at the Goodfellow Federal Center (GFC), in St. Louis, Missouri. OCCU-TEC, Inc. (OCCU-TEC) 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.

On February 28, 2019, a team of OCCU-TEC personnel, including a Missouri licensed lead risk assessor, conducted settled dust sampling for the presence of seven of the Resource Conservation and Recovery Act (RCRA) target metals (lead, arsenic, barium, cadmium, total chromium, selenium, and silver) from various surfaces throughout the building. The purpose of this testing was to further characterize the presence and concentration of target metals in areas of the buildings that have had little or no previous testing.

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

Metals in Settled Dust Sampling

Metals in settled dust sampling was conducted in various floor surfaces throughout the building.

Dust wipe sampling was conducted in accordance with ASTM Standard E1728-16: Standard Practice for Collection of Settled Dust Samples Using Wipe Sampling Methods for Subsequent Lead Determination. ASTM Standard E1728-16 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.

were then placed into laboratory, clean laboratory-sug on caps. Dust wipe sample were submitted to Sc Greensboro, North Caronna for Inductively Cou analysis using Environment Protection Agency (e tubes with screw itute, Inc. (SAI) in malasis of metals B/7420.

Results of the dust wipe samples collected from the building indicate that all the thirteen (13) samples contained concentrations of target metals above laboratory detection 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 reportable limit.

| Analysis | Lowest | Highest |
|----------------|---------------|---------------|
| | Concentration | Concentration |
| | (µg/sq. ft.) | (µg/sq. ft.) |
| Silver | < 0.50 | 3.30 |
| Arsenic | 0.63 | 29.00 |
| Barium | 10.00 | 260.00 |
| Cadmium | 0.24 | 8.80 |
| Total Chromium | < 0.50 | 290.00 |
| Lead | 8.70 | 230.00 |
| Selenium | <0.50 | 0.60 |
| | | |

Many of the samples collected contained target metals above the Brookhaven recommended levels. Based on the results of the sampling, all the subject building areas should be presumed to contain measurable levels of RCRA metals and proper precautions should be taken upon entry and exit of the subject areas to protect workers and limit the spread of dust to the outside environment.

OCCU-TEC appreciates the opportunity to work with GSA on this project. If you have any questions concerning this report, or if we may be of any additional service, please feel free to contact us.

Sincerely,

(b) (6)

Jeff T. Smith Senior Project Manager



Kevin Heriford Operations Manager (QA/QC)

Appendices:



- B Laboratory Anarysis Reports
- C Licenses



Appendix A

Sample Summary Table

| | Goodfellow Federal Center - Building # 101 - Wipe Sample Data | | | | | | | | | |
|---------------|---|------------------|----------|--------|---------------------|-----------------------|--|--|--|--|
| Sample Number | Location | Area Description | Analyte | Result | Units | Recommended Limits | | | | |
| | | | Silver | 3.30 | μg/ft ² | * 139/9.3 | | | | |
| | | | Arsenic | 1.70 | $\mu g/ft^2$ | ** 62 | | | | |
| | | | Barium | 32.00 | μg/ft ² | [| | | | |
| 101-W-01 | Lower Level - Mechanical | Floor | Cadmium | 4.10 | μg/ft ² | ** 31 | | | | |
| | ROOM | | Chromium | 6.50 | μg/ft ² | | | | | |
| | | | Lead | 91.00 | μg/ft ² | ** 200/40 | | | | |
| | | | Selenium | < 0.50 | $\mu g/ft^2$ | | | | | |
| | | | Silver | < 0.50 | μg/ft ² | * 139/9.3 | | | | |
| | | | Arsenic | 0.68 | μg/ft ² | ** 62 | | | | |
| | | | Barium | 10.00 | μg/ft ² | [| | | | |
| 101-W-02 | 2nd Floor - Room 208 | Floor | Cadmium | 0.31 | μg/ft ² | ** 31 | | | | |
| | | | Chromium | < 0.50 | μg/ft ² | [| | | | |
| | | | Lead | 8.70 | μg/ft ² | ** 200/40 | | | | |
| | | | Selenium | < 0.50 | μg/ft ² | | | | | |
| | | | Silver | 0.66 | $\mu g/ft^2$ | * 139/9.3 | | | | |
| | | Floor | Arsenic | 29.00 | ug/ft ² | ** 62 | | | | |
| | | | Barium | 56.00 | ug/ft ² | | | | | |
| 101-W-03 | 2nd Floor - East Stariwell to | | Cadmium | 4.60 | ug/ft ² | ** 31 | | | | |
| | Penthouse- Landing | | Chromium | 24.00 | 110/ft ² | | | | | |
| | | | Lead | 74.00 | 110/ft ² | ** 200/40 | | | | |
| | | | Selenium | < 0.50 | $\mu g/\pi$ | 200/40 | | | | |
| | | | Silver | 0.50 | $\mu g/\pi$ | * 139/9 3 | | | | |
| | 1st Floor - Room 118 | Floor | Arsenic | 0.63 | $\mu g/\pi$ | ** 62 | | | | |
| | | | Barium | 71.00 | $\mu g/\pi$ | 02 | | | | |
| 101-\W-04 | | | Cadmium | 0.24 | $\mu g/\pi$ | ** 21 | | | | |
| 101 11 01 | | | Chromium | < 0.50 | 110/ft ² | | | | | |
| | | | Lead | 10.00 | $\mu g/\pi$ | ** 200/40 | | | | |
| | | | Selenium | < 0.50 | $\mu g/ft^2$ | 200/40 | | | | |
| | | | Silver | 0.50 | $\mu g/\pi$ | * 139/9 3 | | | | |
| | | | Arsenic | 2 70 | $\mu g/\pi$ | ** 62 | | | | |
| | | | Barium | 130.00 | 110/ft ² | | | | | |
| 101 W/ 05 | 1st Floor - Wire Closet at | Floor | Cadmium | 1 30 | $\mu g/\pi$ | ** 21 | | | | |
| 101-00-05 | Column B-12 | FIOOI | Chromium | 4.00 | $\mu g/\pi$ | 51 | | | | |
| | | | Lood | 28.00 | μg/π | ** 200/40 | | | | |
| | | | Ledu | 38.00 | μg/π | ** 200/40 | | | | |
| | | | Selenium | 0.60 | μg/π | | | | | |
| | | | Silver | 0.70 | μg/ft ⁻ | * 139/9.3 | | | | |
| | | | Arsenic | 0.84 | μg/tt² | ** 62 | | | | |
| | Lower Level - New Boiler Room | | Barium | 40.00 | μg/ft ² | | | | | |
| 101-W-06 | in South Hallway | Floor | Cadmium | 1.10 | μg/ft ² | ** 31 | | | | |
| | , , | | Chromium | 43.00 | μg/ft ² | _ | | | | |
| | | | Lead | 96.00 | μg/ft ² | ** 200/40 | | | | |
| | | | Selenium | < 0.50 | $\mu g/ft^2$ | | | | | |

| Sample Number | Location | Area Description | Analyte | Result | Units | Recommended Limits |
|---------------|---|------------------|----------|--------|--------------------|-----------------------|
| | | | Silver | 1.50 | μg/ft ² | * 139/9.3 |
| | | | Arsenic | 2.40 | μg/ft ² | ** 62 |
| | Lower Lovel South Fire Dump | | Barium | 120.00 | μg/ft ² | |
| 101-W-07 | Room | Floor | Cadmium | 6.50 | μg/ft ² | ** 31 |
| | Köölli | | Chromium | 36.00 | μg/ft ² | |
| | | | Lead | 230.00 | μg/ft ² | ** 200/40 |
| | | | Selenium | < 0.50 | μg/ft ² | |
| | | | Silver | 0.67 | μg/ft ² | * 139/9.3 |
| | | | Arsenic | 1.40 | μg/ft ² | ** 62 |
| | | | Barium | 48.00 | μg/ft ² | |
| 101-W-08 | Lower Level - Electrical Room | Floor | Cadmium | 3.10 | μg/ft ² | ** 31 |
| | | | Chromium | 1.50 | μg/ft ² | |
| | | | Lead | 29.00 | μg/ft ² | ** 200/40 |
| | | | Selenium | 0.53 | μg/ft ² | |
| | | | Silver | 2.40 | μg/ft ² | * 139/9.3 |
| | | | Arsenic | 11.00 | μg/ft ² | ** 62 |
| | Lower Level - Janitor Closet at bottom of center stairs | Floor | Barium | 260.00 | μg/ft ² | |
| 101-W-09 | | | Cadmium | 8.80 | μg/ft ² | ** 31 |
| | | | Chromium | 290.00 | μg/ft ² | |
| | | | Lead | 220.00 | μg/ft ² | ** 200/40 |
| | | | Selenium | < 5.00 | μg/ft ² | |
| | | | Silver | 1.10 | μg/ft ² | * 139/9.3 |
| | Lower Level - North Cafeteria Entrance | Floor | Arsenic | 1.10 | μg/ft ² | ** 62 |
| | | | Barium | 34.00 | μg/ft ² | |
| 101-W-10 | | | Cadmium | 1.60 | μg/ft ² | ** 31 |
| | | | Chromium | 3.80 | μg/ft ² | |
| | | | Lead | 30.00 | μg/ft ² | ** 200/40 |
| | | | Selenium | < 0.50 | μg/ft ² | |
| | | | Silver | 0.55 | μg/ft ² | * 139/9.3 |
| | | | Arsenic | 0.97 | μg/ft ² | ** 62 |
| | Lower Lovel Fast Kitchen | | Barium | 30.00 | μg/ft ² | |
| 101-W-11 | Storago Poom | Floor | Cadmium | 0.97 | μg/ft ² | ** 31 |
| | Storage Room | | Chromium | 2.90 | μg/ft ² | |
| | | | Lead | 22.00 | μg/ft ² | ** 200/40 |
| | | | Selenium | < 0.50 | μg/ft ² | |
| | | | Silver | 1.70 | μg/ft ² | * 139/9.3 |
| | | | Arsenic | 1.00 | μg/ft ² | ** 62 |
| | Pacamont SE Air Handler | | Barium | 14.00 | μg/ft ² | Γ |
| 101-W-12 | | Floor | Cadmium | 2.00 | μg/ft ² | ** 31 |
| | NUUIII | | Chromium | 4.60 | μg/ft ² | Γ |
| | | | Lead | 200.00 | μg/ft ² | ** 200/40 |
| | | | Selenium | < 0.50 | μg/ft ² | <u> </u> |

| Sample Number | Location | Area Description | Analyte | Result | Units | Recommended |
|---------------|----------------------------|------------------|----------|--------|--------------------|-------------|
| | | | | | | Limits |
| | | | Silver | 0.54 | μg/ft ² | * 139/9.3 |
| | | | Arsenic | 3.70 | μg/ft² | ** 62 |
| | Pasamant NE Lounga payt to | | Barium | 36.00 | μg/ft ² | |
| 101-W-13 | Locker Rooms | Floor | Cadmium | 4.20 | μg/ft² | ** 31 |
| | LUCKEI KOOMIS | | Chromium | 5.10 | μg/ft² | |
| | | | Lead | 170.00 | μg/ft² | ** 200/40 |
| | | | Selenium | < 0.50 | μg/ft ² | |
| | | | Silver | 0.54 | μg/ft ² | * 139/9.3 |
| | | | Arsenic | < 0.25 | μg/ft² | ** 62 |
| | | | Barium | 0.26 | μg/ft² | |
| 101-W-14 | Field Blank | | Cadmium | < 0.05 | μg/ft ² | ** 31 |
| | | | Chromium | < 0.50 | μg/ft ² | |
| | | | Lead | < 0.25 | μg/ft ² | ** 200/40 |
| | | | Selenium | < 0.50 | μg/ft ² | |

* Recommended Limits based on Table 3 (BNL Surface Wipe Criteria for Metals) of the Brookhaven Surface Wipe Sampling Procedure (IH75190), Rev 19: 3/4/14

** Recommended Limits based on Attachment 9.3 (Required & Recommended Surface Wipe Criteria) - Brookhaven Surface Wipe Sampling Procedure (IH75190), Rev 23: 6/23/17
Indicates results at or above REL

Appendix B

Laboratory Analytical Reports





| Client: | Occu-Tec, Inc. | Attn: | Jeff Smith | Lab Order ID: | 71905857 |
|----------|--------------------------|-------|------------|----------------|------------|
| | 100 NW Business Park Ln. | | | Date Received: | 03/04/2019 |
| | Riverside, MO 64150 | | | Date Reported: | 03/15/2019 |
| Project: | 918004.002 Bldg 101 | | | Page: | 1 of 5 |

| Sample ID | Description | Area | | Reporting | Concentration | Concentration |
|----------------|-------------------------------|--------------------|----------|---------------|---------------|-----------------------|
| Lab Sample ID | Lab Notes | (ft ²) | *Element | Limit (µg) | (µg) | (µg/ft ²) |
| | | | Ag | 0.50 | 3.3 | 3.3 |
| | | | As* | 0.25 | 1.7 | 1.7 |
| 101-W-01 | Floor – LL Mech Room | | Ba* | 0.50 | 32 | 32 |
| | | 1 | Cd | 0.050 | 4.1 | 4.1 |
| | | | Cr | 0.50 | 6.5 | 6.5 |
| 710059571011 | | | Pb | 2.5 | 91 | 91 |
| /190383/1Pw_1 | | | Se | 0.50 | < 0.50 | < 0.50 |
| | Floor – Room 208 | | Ag | 0.50 | < 0.50 | < 0.50 |
| | | 1 | As* | 0.25 | 0.68 | 0.68 |
| 101-W-02 | | | Ba* | 0.050 | 10. | 10. |
| | | | Cd | 0.050 | 0.31 | 0.31 |
| | | | Cr | 0.50 | < 0.50 | < 0.50 |
| 710059571011 2 | | | Pb | 0.25 | 8.7 | 8.7 |
| /190383/1Pw_2 | | | Se | 0.50 | < 0.50 | < 0.50 |
| | | | Ag | 0.50 | 0.66 | 0.66 |
| | | | As* | 0.25 | 29 | 29 |
| 101-W-03 | Floor – East Stair Landing | | Ba* | 0.50 | 56 | 56 |
| | | 1 | Cd | 0.050 | 4.6 | 4.6 |
| | | | Cr | 0.50 | 24 | 24 |
| 71005857100/ 2 | | | Pb | 2.5 | 74 | 74 |
| /190303/1FW_3 | | | Se | 0.50 | < 0.50 | < 0.50 |

*As – media matched matrix blank showed a media contribution of 1.5 μg

*Ba – media matched matrix blank showed a media contribution of 0.63 μg

Melissa Ferrell

Analyst

| (b) (6) | |
|--------------|--|
| Lab Director | |

* SAI is AIHA ELLAP accredited for Pb only for dust wipe metals.

Unless otherwise noted blank sample correction was not performed on analytical results. This report relates only to the samples tested and may not be reproduced, except in full, without the written approval of SAI. MDLs are available upon request. Time-weighted average (TWA) calculations are based on customer supplied data and valid only for samples included in the specified TWA group. Scientific Analytical Institute participates in the AIHA ELPAT program. ELPAT Laboratory ID: 173190.





| Client: | Occu-Tec, Inc. | Attn: | Jeff Smith | Lab Order ID: | 71905857 |
|----------|--------------------------|-------|------------|----------------|------------|
| | 100 NW Business Park Ln. | | | Date Received: | 03/04/2019 |
| | Riverside, MO 64150 | | | Date Reported: | 03/15/2019 |
| Project: | 918004.002 Bldg 101 | | | Page: | 2 of 5 |

| Sample ID | Description | Area | | Reporting | Concentration | Concentration |
|---------------|-------------------------------|--------------------|----------|---------------|---------------|-----------------------|
| Lab Sample ID | Lab Notes | (ft ²) | *Element | Limit (µg) | (µg) | (µg/ft ²) |
| | | | Ag | 0.50 | 0.67 | 0.67 |
| | | | As* | 0.25 | 0.63 | 0.63 |
| 101-W-04 | Floor – Room 118 | | Ba* | 0.50 | 71 | 71 |
| | | 1 | Cd | 0.050 | 0.24 | 0.24 |
| | | | Cr | 0.50 | < 0.50 | < 0.50 |
| 71905857IPW_4 | | | Pb | 0.25 | 10. | 10. |
| | | | Se | 0.50 | < 0.50 | < 0.50 |
| | | | Ag | 0.50 | 0.69 | 0.69 |
| | | | As* | 0.25 | 2.7 | 2.7 |
| 101-W-05 | Floor – Wire Closet at B12 | 1 | Ba* | 5.0 | 130 | 130 |
| | | | Cd | 0.050 | 1.3 | 1.3 |
| | | | Cr | 0.50 | 4.0 | 4.0 |
| 7100595710W 5 | | | Pb | 25 | 38 | 38 |
| /190383/IFW_3 | | | Se | 0.50 | 0.60 | 0.60 |
| | | | Ag | 0.50 | 0.70 | 0.70 |
| | | | As* | 0.25 | 0.84 | 0.84 |
| 101-W-06 | Floor – S Hall Boiler Room | | Ba* | 0.50 | 40. | 40. |
| | | 1 | Cd | 0.050 | 1.1 | 1.1 |
| | | | Cr | 5.0 | 43 | 43 |
| 710058571DW 6 | | | Pb | 2.5 | 96 | 96 |
| /190303/1FW_0 | | | Se | 0.50 | < 0.50 | < 0.50 |

*As – media matched matrix blank showed a media contribution of 1.5 μg

*Ba – media matched matrix blank showed a media contribution of 0.63 μg

Melissa Ferrell

Analyst

| (b) (6) | |
|--------------|--|
| Lab Director | |

* SAI is AIHA ELLAP accredited for Pb only for dust wipe metals.





| Client: | Occu-Tec, Inc. | Attn: | Jeff Smith | Lab Order ID: | 71905857 |
|----------|--------------------------|-------|------------|----------------|------------|
| | 100 NW Business Park Ln. | | | Date Received: | 03/04/2019 |
| | Riverside, MO 64150 | | | Date Reported: | 03/15/2019 |
| Project: | 918004.002 Bldg 101 | | | Page: | 3 of 5 |

| Sample ID | Description | Area | | Reporting | Concentration | Concentration |
|------------------------|------------------------------|--------------------|----------|---------------|---------------|-----------------------|
| Lab Sample ID | Lab Notes | (ft ²) | *Element | Limit (µg) | (μg) | (µg/ft ²) |
| | | | Ag | 0.50 | 1.5 | 1.5 |
| | | | As* | 0.25 | 2.4 | 2.4 |
| 101-W-07 | Floor – LL Fire Pump Room | | Ba* | 5.0 | 120 | 120 |
| | | 1 | Cd | 0.050 | 6.5 | 6.5 |
| | | | Cr | 0.50 | 36 | 36 |
| 710058571DW 7 | | | Pb | 25 | 230 | 230 |
| /190383/1FW_/ | | | Se | 0.50 | < 0.50 | < 0.50 |
| | | | Ag | 0.50 | 0.67 | 0.67 |
| | Floor – LL Elec Room | 1 | As* | 0.25 | 1.4 | 1.4 |
| 101-W-08 | | | Ba* | 0.50 | 48 | 48 |
| | | | Cd | 0.050 | 3.1 | 3.1 |
| | | | Cr | 0.50 | 1.5 | 1.5 |
| 710059571000 9 | | | Pb | 0.25 | 29 | 29 |
| /190383/IFW_8 | | | Se | 0.50 | 0.53 | 0.53 |
| | | | Ag | 0.50 | 2.4 | 2.4 |
| | | | As* | 0.25 | 11 | 11 |
| 101-W-09 | Floor – LL Utility Closet | | Ba* | 5.0 | 260 | 260 |
| | 5 | 1 | Cd | 0.050 | 8.8 | 8.8 |
| | | | Cr | 5.0 | 290 | 290 |
| 710058571 D W 0 | | | Pb | 25 | 220 | 220 |
| /190303/11 ₩_9 | | | Se* | 5.0 | < 5.0 | < 5.0 |

*As – media matched matrix blank showed a media contribution of 1.5 μg

*Ba – media matched matrix blank showed a media contribution of 0.63 μg

*Se – elevated RL possibly due to high levels of Al interference

Melissa Ferrell

Analyst

| (b) (6) | |
|--------------|--|
| Lab Director | |

* SAI is AIHA ELLAP accredited for Pb only for dust wipe metals.





| Client: Occu- | Tec, Inc. Att | tn: | Jeff Smith | Lab Order ID: | 71905857 |
|----------------|---------------------|-----|------------|----------------|------------|
| 100 N | W Business Park Ln. | | | Date Received: | 03/04/2019 |
| River | side, MO 64150 | | | Date Reported: | 03/15/2019 |
| Project: 91800 | 4.002 Bldg 101 | | | Page: | 4 of 5 |

| Sample ID | Description | Area | | Reporting | Concentration | Concentration | |
|----------------|-------------------------------|--------------------|----------|---------------|---------------|-----------------------|--|
| Lab Sample ID | Lab Notes | (ft ²) | *Element | Limit (µg) | (µg) | (µg/ft ²) | |
| | | | Ag | 0.50 | 1.1 | 1.1 | |
| | | | As* | 0.25 | 1.1 | 1.1 | |
| 101-W-10 | Floor – LL Café Entrance | | Ba* | 0.50 | 34 | 34 | |
| | | 1 | Cd | 0.050 | 1.6 | 1.6 | |
| | | | Cr | 0.50 | 3.8 | 3.8 | |
| 710059571DW 10 | | | Pb | 0.25 | 30. | 30. | |
| 719038371PW_10 | | | Se | 0.50 | < 0.50 | < 0.50 | |
| | Floor – LL Kitchen Storage | | Ag | 0.50 | 0.55 | 0.55 | |
| | | 1 | As* | 0.25 | 0.97 | 0.97 | |
| 101-W-11 | | | Ba* | 0.50 | 30. | 30. | |
| | | | Cd | 0.050 | 0.97 | 0.97 | |
| | | | Cr | 0.50 | 2.9 | 2.9 | |
| 710059571DW 11 | 7100505710111 | | Pb | 0.25 | 22 | 22 | |
| 719038371FW_11 | | | Se | 0.50 | < 0.50 | < 0.50 | |
| | | | Ag | 0.50 | 1.7 | 1.7 | |
| | | | As* | 0.25 | 1.0 | 1.0 | |
| 101-W-12 | Floor – Bsmt SE AHU Room | | Ba* | 0.50 | 14 | 14 | |
| | | 1 | Cd | 0.050 | 2.0 | 2.0 | |
| | | | Cr | 0.50 | 4.6 | 4.6 | |
| 710058571DW 12 | | | Pb | 2.5 | 200 | 200 | |
| 71905857IPW_12 | | | Se | 0.50 | < 0.50 | < 0.50 | |

*As – media matched matrix blank showed a media contribution of 1.5 μg

*Ba – media matched matrix blank showed a media contribution of 0.63 μg

Melissa Ferrell

Analyst

| (b) (6) | |
|--------------|--|
| Lab Director | |

* SAI is AIHA ELLAP accredited for Pb only for dust wipe metals.





| Client: | Occu-Tec, Inc. | Attn: | Jeff Smith | Lab Order ID: | 71905857 |
|----------|--------------------------|-------|------------|----------------|------------|
| | 100 NW Business Park Ln. | | | Date Received: | 03/04/2019 |
| | Riverside, MO 64150 | | | Date Reported: | 03/15/2019 |
| Project: | 918004.002 Bldg 101 | | | Page: | 5 of 5 |

| Sample ID | Description | Area | | Reporting | Concentration | Concentration | |
|----------------|----------------------|--------------------|----------|---------------|---------------|--|--|
| Lab Sample ID | Lab Notes | (ft ²) | *Element | Limit (µg) | (μg) | $(\mu g/ft^2)$ | |
| | | | Ag | 0.50 | 0.54 | 0.54 | |
| | | | As* | 0.25 | 3.7 | 3.7 | |
| 101-W-13 | Floor – NE Lounge | | Ba* | 0.50 | 36 | Concentration (µg/ft ²) 0.54 3.7 36 4.2 5.1 170 < 0.50 - - - - - - - - - - - - | |
| | | 1 | Cd | 0.050 | 4.2 | 4.2 | |
| | | - | Cr | 0.50 | 5.1 | 5.1 | |
| 71905857IPW_13 | | | Pb | 2.5 | 170 | 170 | |
| | | | Se | 0.50 | < 0.50 | < 0.50 | |
| | | | Ag | 0.50 | 0.54 | - | |
| | | | As* | 0.25 | < 0.25 | - | |
| 101-W-14 | Blank | | Ba* | 0.050 | 0.26 | - | |
| | | - | Cd | 0.050 | < 0.050 | - | |
| | | | Cr | 0.50 | < 0.50 | - | |
| 710059571DW 14 | | | Pb | 0.25 | < 0.25 | - | |
| /190383/IPW_14 | | | Se | 0.50 | < 0.50 | - | |

*As – media matched matrix blank showed a media contribution of 1.5 μ g

*Ba – media matched matrix blank showed a media contribution of 0.63 µg

Melissa Ferrell

Analyst

| (b) (6) | |
|--------------|--|
| Lab Director | |

Lab Director

* SAI is AIHA ELLAP accredited for Pb only for dust wipe metals.

Unless otherwise noted blank sample correction was not performed on analytical results. This report relates only to the samples tested and may not be reproduced, except in full, without the written approval of SAL MDLs are available upon request. Time-weighted average (TWA) calculations are based on customer supplied data and valid only for samples included in the specified TWA group. Scientific Analytical Institute participates in the AIHA ELPAT program. ELPAT Laboratory ID: 173190.



Scientific Analytical Institute, Inc. 4604 Dundas Drive Greensboro, NC 27407 Phone: 336.292.3888 Fax: 336.292.3313

www.sailab.com

lab@sailab.com

Lab Use Only Lab Order ID: 71905857 Client Code:

| Company Contact Information | | m | Industrial Hygiene Test Ty | pes |
|------------------------------------|--------------------|--------------------------|--|--------|
| Company: OccuTec | Contact: Joff | Smith | Silica as Alpha Quartz* | |
| Address: 100 NW Business Park Lane | Phone : 816- | 994-3421 | Silica as Cristobalite* | |
| Riverside, MO 64150 | Fax : | | Silica as Tridymite* | |
| | Email : 15mth | Coccutec | Silica as Alpha Quartz, Cristobalite, Tridymite* | |
| | 2 | , com | Include Respirable Dust | |
| Billing/Invoice Information | Turn Aro | und Times [^] | Silica Bulk* | |
| SAME | 90 Min. | 48 Hours | Bulk Phase ID/Whole Rock SAI Method H-SOP-003 | |
| Company: | 3 Hours | 72 Hours | Total Dust NIOSH Method 0500 | |
| Contact: | 6 Hours | 96 Hours | Respirable Dust NIOSH Method 0600 | |
| Address: | 12 Hours | 120 Hours | PCM NIOSH 7400 (Fibers) | |
| | 24 Hours | 144 ⁺ Hours | TEM NIOSH 7402 (Asbestos) | |
| | TATs not available | e for certain test types | Hexavalent Chromium (OSHA ID-215) (Note if from spray paint operations) | |
| PO Number: | | | Metals (NIOSH 7300) (Specify Metals Under Comments) | |
| Project Name/Number: 918004.00 | 2 Blda | 101 | Other 6010C | X |
| | J | | *Modified NIOSH 7500/OSHA | ID 142 |

| Sample ID # | Description/Location | Volume/Area | Comments (List Metals Here) |
|--------------|----------------------------|-----------------|-----------------------------|
| 101-W-01- | Floor - LL Mech Room | +SF- | Ag. As, Bg. Cd, Cc.Pb. Se |
| 101-10-02 | Floor - Room 208 | - | J |
| 101-10-03 | Floor - East Stair Landing | 1 | |
| 101-10-04 | Floor - Room 118 - | | |
| 101-00-05 | Floor - Wire Woset at B12 | | |
| 101-00-06 | Floor - S Hall Boiler Room | | · |
| 101-00-07 | Floor - LL Fire Pump Room | | D |
| 101-0-08 | Floor-LL Elec Room | V | |
| 101-10-09 | Floor-LL Utility Closet | | |
| 101-10-10 | Floor - LL Cafe Entrance | | |
| 101-10-11 | Floor-LL Kitchen Storage | | |
| 101-12-12 | Floor - BSINT SEAHU ROOM | A | ccepted k |
| 101-10-13 | Floor NE Lounge | | |
| 101 - W - 14 | Blank | E ¹⁰ | nineted L |
| | | | C S S CO CO |

| | | То | tal # of Samples |
|-----------------|-------------|-------------|------------------|
| Relipquished by | Date/Time | Received by | Date/Time |
| (b) (6) | 3-1-19 1500 | (b) (6) | 3/4/19 01030 |
| | | | |

Appendix C

Qualifications and Licenses

STATE OF MISSOURI DEPARTMENT OF HEALTH AND SENIOR SERVICES

LEAD OCCUPATION LICENSE REGISTRATION

Issued to:

Austin G. O'Byrne

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: Expiration Date: License Number: 12/10/2018 12/10/2020 181210-300005671

(b) (6)

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

Lead Licensing Program, PO Box 570, Jefferson City, MO 65102

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: Expiration Date: License Number: 3/16/2017 3/16/2019 010316-200089640

(b) (6)

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

Lead Licensing Program, PO Box 570, Jefferson City, MO 65102



Riverside, MO 64158 Telephone: 816.231.5580 Fax: 816.231.5641 www.occutec.com

March 29, 2019

Diane Czarnecki Industrial Hygienist Facilities Management Division GSA Public Buildings Service - Heartland Region U.S. General Services Administration 2300 Main Street, Kansas City, MO 64108

RE: Goodfellow Federal Center Metals in Settled Dust Sampling – Building 103 4300 Goodfellow Boulevard St. Louis, Missouri 63120 OCCU-TEC Project No. 918004.002

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 103 located at the Goodfellow Federal Center (GFC), in St. Louis, Missouri. OCCU-TEC, Inc. (OCCU-TEC) 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.

On March 13, 2019, a team of OCCU-TEC personnel, including a Missouri licensed lead risk assessor, conducted settled dust sampling for the presence of seven of the Resource Conservation and Recovery Act (RCRA) target metals (lead, arsenic, barium, cadmium, total chromium, selenium, and silver) from various floor surfaces throughout the building. The purpose of this testing was to further characterize the presence and concentration of target metals following the lead-based paint stabilization and rubber membrane installation project in the Basement of Building #103.

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

Metals in Settled Dust Sampling

Metals in settled dust sampling was conducted on various surfaces throughout the Basement as well as the leading stairwells to the Basement.

Dust wipe sampling was conducted in accordance with ASTM Standard E1728-16: Standard Practice for Collection of Settled Dust Samples Using Wipe Sampling Methods for Subsequent Lead Determination. ASTM Standard E1728-16 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.

Dust wipe sampling for the target metals was conducted on a variety of representative floor surfaces that have the potential of being disturbed during planned maintenance or renovation projects within the building. A representative surface area of approximately one square foot (1 SF) was measured and delineated with pre-fabricated, disposable templates. The dust wipe samples were collected using dedicated dust wipe cloths meeting

ASTM standards. Each with the wipe cloth was pre-Each sample was collected by wiping in a back sampling area. Then, the wipe was folded over n direction perpendicular to the first wipe orientation into labeled, clean labor approximation perpendicular to the supervidually wrapped. over a measured unined again in a e then placed n caps. Dust

wipe samples were submitted to Scientific Analytical Institute, Inc. (SAI) in Greensboro, North Carolina for analysis of metals analysis by flame atomic absorption (Flame AA) spectroscopy using Environmental Protection Agency (EPA) method SW846 350B/7420. It should be noted that due to the use of Flame AA only the results for lead could be verified. Results for other metals should be considered estimates.

Results of the dust wipe samples collected from the building indicate that all the eleven (11) samples contained concentrations of target metals above laboratory detection 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 reportable limit.

| Analysis | Lowest Concentration | Highest Concentration |
|----------------|-------------------------|--------------------------|
| Silver | $(\mu g/ 3q. 11.)$ | 1 30 |
| Silver | <0.30 | 1.30 |
| Arsenic | <2.00 | 5.40 |
| Barium | <7.50 | 200.00 |
| Cadmium | 0.47 | 33.00 |
| Total Chromium | < 0.50 | 32.00 |
| Lead | 6.20 | 560.00 |
| Selenium | <.1.30 | <.1.30 |

Many of the samples collected contained target metals above the Brookhaven recommended levels. Based on the results of the sampling, all the subject building areas should be presumed to contain measurable levels of RCRA metals and proper precautions should be taken upon entry and exit of the subject areas to protect workers and limit the spread of dust to the outside environment.

OCCU-TEC appreciates the opportunity to work with GSA on this project. If you have any questions concerning this report, or if we may be of any additional service, please feel free to contact us.



Appendix A

Sample Summary Table

| Sample Number Location Area Description Analyte Result Units Recommended Limits 103-WP-001 West Stainwell - stair tread to 2nd Floor Vinyl Floor Silver < 0.50 µµ/t ¹ **139/3.3 103-WP-001 West Stainwell - stair tread to basement Vinyl Floor Barium 0.94 µµ/t ¹ **200/40 103-WP-002 West Stainwell - stair tread to basement Concrete Floor Silver 1.30 µµ/t ¹ **31/0/40 103-WP-003 West Stainwell - Lower Landing by sump pump Concrete Floor Concrete Floor Silver < 1.30 µµ/t ¹ **31/0/40 103-WP-003 West Stainvell - Lower Landing by sump pump Concrete Floor Silver < 1.30 µµ/t ¹ **31/0/40 103-WP-003 Concrete Crawlspace - step up to north side Concrete Floor Silver < 0.30 µµ/t ¹ **32/0/40 103-WP-004 Concrete Crawlspace - step up to north side Concrete Floor Silver < 0.30 µµ/t ¹ **31/0/40 103-WP-006 Crawlspace Wall Ledge - South side Concrete Floor | | Goodfellow Federal Co | enter - Building # 10 | 3 - Wipe Sam | ple Data | | |
|--|---------------|--|-----------------------|--------------|-----------------|---------------------|-----------------------|
| 103-WP-001 West Stainwell - stair tread to 2nd Floor Vinyl Floor Silver < 0.50 µg/ft ² * 132/9.3 103-WP-001 2nd Floor Vinyl Floor Barium 15.00 µg/ft ² ** 32. 103-WP-002 West Stainwell - stair tread to basement Concrete Floor Silver 1.03 µg/ft ² ** 33. 103-WP-002 West Stainwell - stair tread to basement Concrete Floor Silver 1.03 µg/ft ² ** 31. 103-WP-003 West Stainwell - Lower Landing by sump pump Concrete Floor Silver < 0.50 µg/ft ² ** 31. 103-WP-003 West Stainwell - Lower Landing by sump pump Concrete Floor Silver < 0.50 µg/ft ² ** 31. 103-WP-004 Concrete Crawlspace - step up to north side Concrete Floor Silver < 0.50 µg/ft ² ** 32. 103-WP-004 Concrete Floor Concrete Floor Silver < 0.50 µg/ft ² ** 31. 103-WP-004 Concrete Floor Concrete Floor Silver < 0.50 µg/ft ² ** 32. | Sample Number | Location | Area Description | Analyte | Result | Units | Recommended Limits |
| $103 \cdot WP-001$ West Stairwell - stair tread to 2nd Floor Vinyl Floor Viny Floo | | | | Silver | < 0.50 | ug/ft ² | * 139/9.3 |
| 103-WP-001 West Stainvell - stair tread to 2nd Floor Vinyl Floor Barlum (Cadmium) 15.00 (0.94, 1µg/ft ²) 14g/ft ² 103-WP-002 West Stainvell - stair tread to basement Kest Stainvell - stair tread to basement Kest Stainwell - stair tread to chromium Kest Stainwell - stair tread to basement Kest Stainwell - stair tread to basement Kest Stainwell - stair tread to basement Kest Stainwell - stair tread to chromium Kest Stainwell - s | | | | Arsenic | 2.20 | $\mu g/ft^2$ | ** 62 |
| 103-WP-001 West startweil - start tread to 2nd Floor Vinyl Floor Cadmium (Cadmium) 0.94/ (2.40) µg/ft ² ** 31. 103-WP-001 West Stainwell - stair tread to basement Arsenic 3.30 µg/ft ² ** 200/40 103-WP-002 West Stainwell - stair tread to basement Concrete Floor Arsenic 3.30 µg/ft ² ** 200/40 103-WP-002 West Stainwell - stair tread to basement Concrete Floor Arsenic 3.30 µg/ft ² ** 200/40 103-WP-003 West Stainwell - Lower Landing by sump pump Concrete Floor Silver <0.50 | | Mart Chairman II and in the address | | Barium | 15.00 | μg/ft ² | |
| $ \begin{array}{ c c c c c c c c c c c c c c c c c c c$ | 103-WP-001 | West Stairwell - stair tread to | Vinyl Floor | Cadmium | 0.94 | μg/ft ² | ** 31 |
| 103-WP-002 West Stairwell - stair tread to basement Concrete Floor Image: Concrete Floor | | 2nd Floor | | Chromium | 2.40 | μg/ft ² | |
| Selenium < 1.30 µg/t² 103-WP-002 West Stairwell - stair tread to basement | | | | Lead | 6.20 | $\mu g/ft^2$ | ** 200/40 |
| 103-WP-002 West Stairwell - stair tread to basement Concrete Floor Silver 1.30 µg/ft ² ** 62. 103-WP-002 West Stairwell - stair tread to basement Concrete Floor Barium 9.00 µg/ft ² ** 31. 103-WP-003 West Stairwell - Lower Landing by sump pump Concrete Floor Silver 0.00 µg/ft ² ** 200/40 103-WP-003 West Stairwell - Lower Landing by sump pump Concrete Floor Silver 0.00 µg/ft ² ** 200/40 103-WP-004 West Stairwell - Lower Landing by sump pump Concrete Floor Silver < 0.00 | | | | Selenium | < 1.30 | μg/ft ² | |
| $103 \cdot WP \cdot 002$ West Stainwell - stair tread to basement $ \begin{array}{c} Arsenic 3.30 \mu g/ft^2 ** 62. \\ Barium 47.00 \mu g/ft^2 ** 62. \\ Barium 50.00 \mu g/ft^2 ** 62. \\ Barium 50.00 \mu g/ft^2 ** 62. \\ Cadmium 50.00 \mu g/ft^2 ** 62. \\ Lead 87.00 \mu g/ft^2 ** 200/40 & \\ Selenum < 0.00 \mu g/ft^2 ** 200/40 & \\ Selenum < 0.00 \mu g/ft^2 ** 62. \\ Barium 30.0 \mu g/ft^2 ** 62. \\ Barium 32.00 \mu g/ft^2 ** 62. \\ $ | | | | Silver | 1.30 | μg/ft² | * 139/9.3 |
| $103 \cdot WP \cdot 002$ $103 \cdot WP \cdot 002$ West Stairwell - tair tread to basement Concrete Floor Concre | | | | Arsenic | 3.30 | μg/ft ² | ** 62 |
| 103-WP-002 $ 103-WP-002 $ $ 103-WP-003 $ $ West Stairwell - Lower Landing by sump pump $ $ 103-WP-003 $ $ 103-WP-004 $ $ 103-WP-004 $ $ 103-WP-004 $ $ 103-WP-005 $ $ 103-WP-005$ | | Mast Stainwall stair troad to | | Barium | 47.00 | μg/ft ² | |
| Instruction Chromium 6.80 µg/ft ² 103-WP-003 West Stainwell - Lower Landing by sump pump Silver < | 103-WP-002 | west stairwell - stair tread to | Concrete Floor | Cadmium | 9.00 | $\mu g/ft^2$ | ** 31 |
| $103 \cdot WP-003$ $103 \cdot WP-003$ $103 \cdot WP-004$ $103 \cdot WP-005$ $103 $ | | basement | | Chromium | 6.80 | μg/ft ² | |
| $103 \cdot WP \cdot 003$ $103 \cdot WP \cdot 003$ $103 \cdot WP \cdot 004$ $103 \cdot WP \cdot 005$ $103 $ | | | | Lead | 87.00 | μg/ft ² | ** 200/40 |
| 103-WP-003 West Stainwell - Lower Landing by sump pump Concrete Floor Silver < 0.50 | | | | Selenium | < 1.30 | μg/ft ² | |
| 103-WP-003 West Stairwell - Lower Landing by sump pump Concrete Floor Methods in the stairwell - Lower Landing by sump pump Concrete Floor Methods in the stairwell - Lower Landing by sump pump Concrete Floor Methods in the stairwell - Lower Landing by sump pump Concrete Crawlspace - step up to north side Concrete Floor Methods in the stairwell - Concrete Crawlspace - step up to north side Concrete Floor Methods in the stairwell - Concrete Floor | 103-WP-003 | West Stairwell - Lower Landing by sump pump | Concrete Floor | Silver | < 0.50 | μg/ft ² | * 139/9.3 |
| 103-WP-003 West Stainwell - Lower Landing by sump pump Concrete Floor Mest Stainwell - Lower Landing by sump pump Concrete Floor Mest Stainwell - Lower Landing by sump pump Concrete Floor Mest Stainwell - Lower Landing by sump pump Concrete Floor Mest Stainwell - Lower Landing Selenium < 1.30 $\mu g/ft^2 = 1.30$ $\mu $ | | | | Arsenic | 5.40 | µg/ft ² | ** 62 |
| $ \begin{array}{ c c c c c c c c c c c c c c c c c c c$ | | | | Barium | 200.00 | μg/ft ² | |
| 103-WP-004 $103-WP-004$ $Concrete Crawlspace - step up to north side$ $Concrete Crawlspace - step up to north side$ $Concrete Floor$ $Concr$ | | | | Cadmium | 33.00 | μg/ft ² | ** 31 |
| $103-WP-004 = 1.30 \mug/ft^{2} **200/40 \\ Selenium < 1.30 \mug/ft^{2} **139/9.3 \\ Arsenic 3.40 \mug/ft^{2} **62 \\ Barium < 75.00 \mug/ft^{2} **62 \\ Barium < 75.00 \mug/ft^{2} **62 \\ Barium < 75.00 \mug/ft^{2} **31 \\ Chromium 14.00 \mug/ft^{2} **31 \\ Chromium 14.00 \mug/ft^{2} **200/40 \\ Selenium < 1.30 \mug/ft^{2} **200/40 \\ Selenium < 2.5.00 \mug/ft^{2} **200/40 \\ Selenium < 3.00 \mug/ft^{2} **200/40 \\ Selenium < 0.50 \mug/ft^{2} **200/40 \\ Selenium < 0.50 \mug/ft^{2} **200/40 \\ Selenium < 0.50 \mug/ft^{2} **31 \\ Chromium 3.00 \mug/ft^{2} **31 \\ Chromium Selenium Seleniu$ | | | | Chromium | 29.00 | μg/ft ² | |
| $103-WP-004 \qquad $ | | | | Lead | 280.00 | $\mu g/ft^2$ | ** 200/40 |
| 103-WP-004 $Concrete Crawlspace - step up to north side Concrete Floor Concret$ | | | | Selenium | < 1.30 | $\mu g/ft^2$ | |
| 103-WP-004 $Concrete Crawlspace - step up to north side Concrete Floor Concret$ | | | | Silver | < 0.50 | ug/ft ² | * 139/9.3 |
| 103-WP-004 $Concrete Crawlspace - step up to north side Concrete Floor Concret$ | | | | Arsenic | 3.40 | ug/ft ² | ** 62 |
| $ \begin{array}{ c c c c c } \hline 103-WP-004 & \hline Concrete Crawlspace - step up to north side & \hline Concrete Floor & \hline Cadmium & 18.00 & \mu g/ft^2 & ** 31 \\ \hline Chromium & 14.00 & \mu g/ft^2 & ** 31 \\ \hline Chromium & 14.00 & \mu g/ft^2 & ** 200/40 \\ \hline Selenium & < 1.30 & \mu g/ft^2 & ** 200/40 \\ \hline Selenium & < 1.30 & \mu g/ft^2 & ** 200/40 \\ \hline Selenium & < 0.76 & \mu g/ft^2 & ** 139/9.3 \\ \hline Arsenic & 5.00 & \mu g/ft^2 & ** 62 \\ \hline Barium & 120.00 & \mu g/ft^2 & ** 31 \\ \hline Chromium & 120.00 & \mu g/ft^2 & ** 31 \\ \hline Chromium & 25.00 & \mu g/ft^2 & ** 31 \\ \hline Chromium & 32.00 & \mu g/ft^2 & ** 31 \\ \hline Chromium & 32.00 & \mu g/ft^2 & ** 200/40 \\ \hline Selenium & < 1.30 & \mu g/ft^2 & ** 200/40 \\ \hline Selenium & < 0.50 & \mu g/ft^2 & ** 31 \\ \hline Chromium & 32.00 & \mu g/ft^2 & ** 31 \\ \hline Chromium & 32.00 & \mu g/ft^2 & ** 200/40 \\ \hline Selenium & < 0.50 & \mu g/ft^2 & ** 62 \\ \hline Barium & 8.40 & \mu g/ft^2 & ** 62 \\ \hline Selenium & & 8.40 & \mu g/ft^2 & ** 62 \\ \hline Barium & 8.40 & \mu g/ft^2 & ** 62 \\ \hline Cadmium & 3.00 & \mu g/ft^2 & ** 31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & ** 31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & ** 31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & ** 31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & ** 31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & ** 31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & ** 31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & ** 31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & ** 31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & ** 31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & ** 31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & ** 31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & ** 31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & ** 31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & ** 31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & ** 31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & ** 31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & ** 31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & ** 200/40 \\ \hline \end{array}$ | | | | Barium | < 75.00 | ug/ft ² | |
| 103-WP-006 Column Support Ledge at Col G 19 103-WP-006 Concrete/Metal Floor Concrete/Metal Floor Silver 0.50 $\mu g/ft^2$ ** 200/40 103-WP-006 Crawlspace Wall Ledge - South Silver 0.76 $\mu g/ft^2$ ** 62 103-WP-005 Crawlspace Wall Ledge - South Concrete Floor Cadmium 120.00 $\mu g/ft^2$ ** 62 103-WP-005 Easily Concrete Floor Cadmium 25.00 $\mu g/ft^2$ ** 31 103-WP-006 Column Support Ledge at Col G Silver 0.50 $\mu g/ft^2$ ** 200/40 103-WP-006 Column Support Ledge at Col G Concrete/Metal Floor Silver 0.50 $\mu g/ft^2$ ** 31 103-WP-006 Column Support Ledge at Col G 19 Silver 0.50 $\mu g/ft^2$ ** 31 | 103-WP-004 | Concrete Crawlspace - step up | Concrete Floor | Cadmium | 18.00 | $\mu g/ft^2$ | ** 31 |
| 103-WP-005 $103-WP-006$ $103-WP-006$ $Crawlspace Wall Ledge - South side Crawlspace Wall Ledge - South side Concrete Floor Concrete Floor $ | | to north side | | Chromium | 14.00 | $\mu g/ft^2$ | |
| $103-WP-005 \qquad \begin{array}{c} \mbox{Crawlspace Wall Ledge - South side} \\ 103-WP-005 \end{array} \begin{array}{c} \mbox{Crawlspace Wall Ledge - South side} \end{array} \\ \begin{tabular}{c} \mbox{Crawlspace Wall Ledge - South side} \end{array} \\ \end{tabular} \begin{array}{c} \mbox{Crawlspace Wall Ledge - South side} \end{array} \\ \end{tabular} \begin{array}{c} \mbox{Crawlspace Wall Ledge - South side} \end{array} \\ \end{tabular} \begin{array}{c} \mbox{Crawlspace Wall Ledge - South side} \end{array} \\ \end{tabular} \begin{array}{c} \mbox{Crawlspace Wall Ledge - South side} \end{array} \\ \end{tabular} \begin{array}{c} \mbox{Crawlspace Wall Ledge - South side} \end{array} \\ \end{tabular} \begin{array}{c} \mbox{Crawlspace Wall Ledge - South side} \end{array} \\ \end{tabular} \begin{array}{c} \mbox{Crawlspace Wall Ledge - South side} \end{array} \\ \end{tabular} \begin{array}{c} \mbox{Crawlspace Wall Ledge - South side} \end{array} \\ \end{tabular} \begin{array}{c} \mbox{Crawlspace Wall Ledge - South side} \end{array} \\ \end{tabular} \begin{array}{c} \mbox{Crawlspace Wall Ledge - South side} \end{array} \\ \end{tabular} \begin{array}{c} \mbox{Crawlspace Wall Ledge - South side} \end{array} \\ \end{tabular} \begin{array}{c} \mbox{Crawlspace Wall Ledge - South side} \end{array} \\ \end{tabular} \begin{array}{c} \mbox{Crawlspace Wall Ledge - South side} \end{array} \\ \end{tabular} \begin{array}{c} \mbox{Crawlspace Wall Ledge - South side} \end{array} \\ \end{tabular} \begin{array}{c} \mbox{Crawlspace Wall Ledge - South side} \end{array} \\ \end{tabular} \begin{array}{c} \mbox{Crawlspace Wall Ledge - South side} \end{array} \\ \end{tabular} \begin{array}{c} \mbox{Crawlspace Wall Ledge - South side} \end{array} \\ \end{tabular} \begin{array}{c} \mbox{Crawlspace Wall Ledge - South side} \end{array} \\ \end{tabular} \begin{array}{c} \mbox{Crawlspace Wall Ledge - South side} \end{array} \\ \end{tabular} \begin{array}{c} \mbox{Crawlspace Wall Ledge - South side} \end{array} \\ \end{tabular} \begin{array}{c} \mbox{Crawlspace Wall Ledge - South side} \end{array} \\ \end{tabular} \begin{array}{c} \mbox{Crawlspace Wall Ledge - South side} \end{array} \\ \end{tabular} \begin{array}{c} \mbox{Crawlspace Wall Ledge - South side} \end{array} \\ \end{tabular} \begin{array}{c} \mbox{Crawlspace Wall Ledge - South side} \end{array} \\ \end{tabular} \begin{array}{c} \mbox{Crawlspace Wall Ledge - South side} \end{array} \\ \end{tabular} \begin{array}{c} \mbox{Crawlspace Wall Ledge - South side} \end{array} \\ \end{tabular} \begin{array}{c} \mbox{Crawlspace Wall Ledge - South side} \end{array} \\ \end{tabular} \begin{array}{c} Crawlspace Wall Wall Wall Wall Wall Wall Wall Wal$ | | | | Lead | 140.00 | μg/ft ² | ** 200/40 |
| $103-WP-005 \qquad \begin{array}{c} Crawlspace Wall Ledge - South side \\ 103-WP-005 \end{array} \begin{array}{c} Crawlspace Wall Ledge - South side \\ Concrete Floor \end{array} \begin{array}{c} Silver & 0.76 & \mug/ft^2 & *139/9.3 \\ Arsenic & 5.00 & \mug/ft^2 & **62 \\ Barium & 120.00 & \mug/ft^2 & **31 \\ Cadmium & 32.00 & \mug/ft^2 & **31 \\ Chromium & 32.00 & \mug/ft^2 & **200/40 \\ \hline Selenium & < 1.30 & \mug/ft^2 & **200/40 \\ \hline Selenium & < 0.50 & \mug/ft^2 & **62 \\ \hline Barium & 8.40 & \mug/ft^2 & **62 \\ \hline Silver & < 0.50 & \mug/ft^2 & **62 \\ \hline Cadmium & 3.00 & \mug/ft^2 & **62 \\ \hline Cadmium & 3.00 & \mug/ft^2 & **31 \\ \hline Chromium & 3.00 & \mug/ft^2 & **62 \\ \hline Cadmium & 3.00 & \mug/ft^2 & **31 \\ \hline Chromium & 3.00 & \mug/ft^2 & **31 \\ \hline Chromium & 0.50 & \mug/ft^2 & **31 \\ \hline Chromium & 0.50 & \mug/ft^2 & **31 \\ \hline Chromium & 0.50 & \mug/ft^2 & **31 \\ \hline Chromium & < 0.50 & \mug/ft^2 & **31 \\ \hline Chromium & < 0.50 & \mug/ft^2 & **200/40 \\ \hline \end{array}$ | | | | Selenium | < 1.30 | $\mu g/ft^2$ | |
| 103-WP-005 $Crawlspace Wall Ledge - South side Concrete Floor C$ | | | | Silver | 0.76 | μg/ft ² | * 139/9.3 |
| $103-WP-005 \qquad \begin{array}{c} Crawlspace Wall Ledge - South side \\ 103-WP-006 \end{array} \begin{array}{c} Crawlspace Wall Ledge - South side \\ Concrete Floor \\ 103-WP-006 \end{array} \begin{array}{c} Barium & 120.00 & \mu g/ft^2 \\ Cadmium & 25.00 & \mu g/ft^2 \\ 120 & 120 & \mu g/ft^2 \\ \hline Chromium & 32.00 & \mu g/ft^2 \\ \hline Chromium & 32.00 & \mu g/ft^2 \\ \hline Chromium & 32.00 & \mu g/ft^2 \\ \hline Chromium & 1.30 & \mu g/ft^2 \\ \hline Selenium & < 1.30 & \mu g/ft^2 \\ \hline Silver & < 0.50 & \mu g/ft^2 & **31 \\ \hline Chromium & 8.40 & \mu g/ft^2 \\ \hline Cadmium & 8.40 & \mu g/ft^2 \\ \hline Cadmium & 8.40 & \mu g/ft^2 \\ \hline Cadmium & 3.00 & \mu g/ft^2 & **31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & **31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & **31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & **31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & **31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & **31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & **31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & **31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & **31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & **31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & **31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & **31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & **31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & **31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & **31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & **31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & **31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & **31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & **31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & **31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & **31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & **31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & **31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & **31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & **31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & **31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & **31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & **31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & **31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & **31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & **31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & **31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & **31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & **31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & **31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & **31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & **31 \\ \hline Chromium & < 0.50 & \mu g/ft^2 & **31 \\ \hline Chromium &$ | | | | Arsenic | 5.00 | μg/ft ² | ** 62 |
| 103-WP-005 Crawlspace Wall Ledge - South side Concrete Floor Cadmium 25.00 $\mu g/ft^2$ ** 31 103-WP-005 Lead 560.00 $\mu g/ft^2$ ** 200/40 Lead 560.00 $\mu g/ft^2$ ** 200/40 Selenium < | | | | Barium | 120.00 | μg/ft ² | |
| $103-WP-006 \qquad $ | 103-WP-005 | Crawlspace Wall Ledge - South | Concrete Floor | Cadmium | 25.00 | μg/ft ² | ** 31 |
| $\frac{103-WP-006}{19}$ | | side | | Chromium | 32.00 | $\mu g/ft^2$ | |
| $103-WP-006 \qquad $ | | | | Lead | 560.00 | $\mu g/ft^2$ | ** 200/40 |
| $103-WP-006 \qquad $ | | | | Selenium | < 1.30 | ug/ft ² | |
| 103-WP-006 Column Support Ledge at Col G-19 $Concrete/Metal Floor$ $Concrete/Metal Flor$ | | | | Silver | < 0.50 | ug/ft ² | * 139/9 3 |
| 103-WP-006 103-WP-006 Column Support Ledge at Col G- 19 Concrete/Metal Floor Concrete/Metal Floor Concrete/Metal Floor Cadmium $3.00 	 \mu g/ft^2 	 ** 31$ Chromium $< 0.50 	 \mu g/ft^2 	 ** 200/40$ Solonium $< 1.20 	 \mu g/ft^2 	 ** 200/40$ | | | | Arsenic | < 2.00 | 110/ft ² | ** 62 |
| 103-WP-006 103-WP-006 19 Column Support Ledge at Col G- 19 Concrete/Metal Floor Cadmium 3.00 $\mu g/ft^2$ ** 31 Chromium < 0.50 $\mu g/ft^2$ Lead 69.00 $\mu g/ft^2$ ** 200/40 Salonium < 1.20 $\mu g/ft^2$ | | | | Barium | 8 40 | 110/ft ² | |
| 19 19 $Chromium < 0.50 	 \mu g/ft^2$ Lead 69.00 $\mu g/ft^2$ ** 200/40 Sclonium < 1.20 $\mu g/ft^2$ | 103-WP-006 | Column Support Ledge at Col G- | Concrete/Metal Floor | Cadmium | 3 00 | 110/ft ² | ** 31 |
| $\frac{1200 \text{ Lead}}{1200 \text{ Lead}} = \frac{1200 \mu \text{g/ft}^2}{1200 \mu \text{g/ft}^2} = \frac{1200 \mu \text{g/ft}^2}{1200 \mu \text{g/ft}^2}$ | 200 00 000 | 19 | | Chromium | < 0.50 | μ <u>σ</u> /τι | |
| $Ledu = 0.00 \mu g/lt = 0.00/40$ | | | | Load | ς 0.50 69.00 | $\mu g/n$ | ** 200/40 |
| | | | | Selenium | 2 1 20 | μ <u>σ</u> /π | 200/40 |

| Sample Number | Location | Area Description | Analyte | Result | Units | Recommended Limits | |
|---------------|----------------------------------|--|----------|--|--|--|--|
| | | | Silver | < 0.50 | μg/ft ² | * 139/9.3 | |
| | | | Arsenic | < 2.00 | μg/ft ² | ** 62 | |
| | Top of Water Dipo Inculation at | | Barium | 10.00 | μg/ft ² | | |
| 103-WP-007 | | Figerglass pipe covering | Cadmium | 1.40 | Units Recommended Limits $\mu g/ft^2$ * 139/9.3 $\mu g/ft^2$ ** 62 $\mu g/ft^2$ ** 62 $\mu g/ft^2$ ** 31 $\mu g/ft^2$ ** 31 $\mu g/ft^2$ ** 31 $\mu g/ft^2$ ** 31 $\mu g/ft^2$ ** 139/9.3 $\mu g/ft^2$ * 139/9.3 $\mu g/ft^2$ ** 31 $\mu g/ft^2$ ** 31 $\mu g/ft^2$ ** 31 $\mu g/ft^2$ ** 31 $\mu g/ft^2$ ** 62 $\mu g/ft^2$ ** 62 $\mu g/ft^2$ ** 31 $\mu g/ft^2$ ** 62 $\mu g/ft^2$ ** 200/40 $\mu g/ft^2$ ** 31 $\mu g/ft^2$ ** 31 $\mu g/ft^2$ ** 62 $\mu g/ft^2$ ** 31 $\mu g/ft^2$ ** 62 | | |
| | COI. F-18 | | Chromium | < 0.50 | μg/ft ² | | |
| | | | Lead | 21.00 | μg/ft ² | ** 200/40 | |
| | | | Selenium | < 1.30 | μg/ft ² | | |
| | | | Silver | 1.00 | μg/ft ² | Recommended Limits g/ft ² * 139/9.3 g/ft ² * * 62 g/ft ² * * 62 g/ft ² * 31 g/ft ² * 31 g/ft ² * 31 g/ft ² * 31 g/ft ² * 200/40 g/ft ² * 62 g/ft ² * 31 g/ft ² * 139/9.3 g/ft ² * 139/9.3 g/ft ² * 8200/40 g/ft ² * 139/9.3 g/ft ² * 139/9.3 g/ft ² * 822 g/ft ² * 8200/40 g/ft ² * 822 g/ | |
| | | | Arsenic | 3.20 | μg/ft² | ** 62 | |
| | East Stainwall Troad to | | Barium | 76.00 | μg/ft ² | | |
| 103-WP-008 | East Stall well - Tread to | Concrete Floor | Cadmium | 9.70 | μg/ft ² | ** 31 | |
| | basement | | Chromium | 6.00 | μg/ft² | | |
| | | Lead 210.00 $\mu g/ft^2$ ** 200/4 Selenium < | | | | | |
| | | | Selenium | < 1.30 | μg/ft ² | | |
| | | | Silver | < 0.50 | μg/ft ² | * 139/9.3 | |
| | | | Arsenic | < 2.00 | μg/ft ² | ** 62 | |
| | Fact Stainwall landing to | | Barium | 29.00 | μg/ft ² | | |
| 103-WP-009 | East Stairwell - landing to | Concrete Floor | Cadmium | 3.90 | μg/ft ² | ** 31 | |
| | basement | | Chromium | 1.80 | μg/ft ² | | |
| | | | Lead | 55.00 | μg/ft ² | ** 200/40 | |
| | | | Selenium | | | | |
| | | | Silver | < 0.50 | μg/ft² | * 139/9.3 | |
| | | | Arsenic | < 2.00 | μg/ft ² | ** 62 | |
| | | | Barium | $\begin{array}{c c c c c c c c c c c c c c c c c c c $ | | | |
| 103-WP-010 | at landing | Concrete/Metal Floor | Cadmium | 2.40 | μg/ft ² | ** 31 | |
| | at landing | | Chromium | 1.60 | μg/ft ² | | |
| | | | Lead | 41.00 | μg/ft ² | ** 200/40 | |
| | | | Selenium | < 1.30 | μg/ft ² | | |
| | | | Silver | < 0.50 | μg/ft ² | * 139/9.3 | |
| | | | Arsenic | < 2.00 | µg/ft ² | ** 62 | |
| | Fact Stainwall, Tread to as and | | Barium | < 7.50 | μg/ft ² | | |
| 103-WP-011 | East Stairwell - Tread to second | Vinyl Floor | Cadmium | 0.47 | μg/ft ² | ** 31 | |
| | 1001 | | Chromium | < 0.50 | 0.50 $\mu g/ft^2$ * 133 2.00 $\mu g/ft^2$ *** 10.00 $\mu g/ft^2$ *** 1.40 $\mu g/ft^2$ *** 0.50 $\mu g/ft^2$ *** 0.50 $\mu g/ft^2$ *** 21.00 $\mu g/ft^2$ *** 1.00 $\mu g/ft^2$ *** 3.20 $\mu g/ft^2$ *** 76.00 $\mu g/ft^2$ *** 9.70 $\mu g/ft^2$ *** 6.00 $\mu g/ft^2$ *** 1.30 $\mu g/ft^2$ *** 210.00 $\mu g/ft^2$ *** 2.00 $\mu g/ft^2$ *** 1.30 $\mu g/ft^2$ *** 0.50 $\mu g/ft^2$ | | |
| | | | Lead | 7.60 | μg/ft ² | ** 200/40 | |
| | | | Selenium | < 1.30 | μg/ft ² | | |
| | | | Silver | < 0.50 | μg/ft ² | * 139/9.3 | |
| | | | Arsenic | < 2.00 | μg/ft ² | ** 62 | |
| | | | Barium | < 0.75 | μg/ft ² | <u> </u> | |
| 103-WP-012 | Field Blank | | Cadmium | < 0.05 | μg/ft ² | ** 31 | |
| | | | Chromium | < 0.50 | μg/ft ² | <u> </u> | |
| | | | Lead | < 0.25 | $\mu g/ft^2$ | ** 200/40 | |
| | | | Selenium | < 1.30 | μg/ft ² | Γ | |

| Sample Number | Location | Area Description | Analyte | | Result | Units | Recommended Limits |
|---------------|-------------|------------------|----------|---|--------|--------------------|-----------------------|
| | | | Silver | < | 0.50 | μg/ft² | * 139/9.3 |
| | | | Arsenic | < | 2.00 | μg/ft ² | ** 62 |
| | | | Barium | < | 0.75 | μg/ft ² | |
| 103-WP-013 | Field Blank | | Cadmium | < | 0.05 | μg/ft² | ** 31 |
| | | | Chromium | < | 0.50 | μg/ft ² | |
| | | | Lead | < | 0.25 | μg/ft ² | ** 200/40 |
| | | | Selenium | < | 1.30 | $\mu g/ft^2$ | [|

* Recommended Limits based on Table 3 (BNL Surface Wipe Criteria for Metals) of the Brookhaven Surface Wipe Sampling Procedure (IH75190), Rev 19: 3/4/14

** Recommended Limits based on Attachment 9.3 (Required & Recommended Surface Wipe Criteria) - Brookhaven Surface Wipe Sampling Procedure (IH75190), Rev 23: 6/23/17
Indicates results at or above REL

Appendix B

Laboratory Analytical Reports





| Client: | Occu-Tec, Inc. | Attn: | Justin Arnold | Lab Order ID: | 71907056 |
|----------|--------------------------|-------|---------------|----------------|------------|
| | 100 NW Business Park Ln. | | | Date Received: | 03/14/2019 |
| | Riverside, MO 64150 | | | Date Reported: | 03/28/2019 |
| Project: | GFC-103 CS Wipes | | | Page: | 1 of 5 |

| Sample ID | Description | Area | | Reporting | Concentration | Concentration |
|----------------|--------------------------------------|--------------------|----------|---------------|---------------|-----------------------|
| Lab Sample ID | Lab Notes | (ft ²) | *Element | Limit (µg) | (µg) | (µg/ft ²) |
| | | | Ag | 0.50 | < 0.50 | < 0.50 |
| | | | As | 2.0 | 2.2 | 2.2 |
| 103-WP-001 | W. stair well - stairtread to 2nd | | Ba | 7.5 | 15 | 15 |
| | | 1 | Cd | 0.050 | 0.94 | 0.94 |
| | | | Cr | 0.50 | 2.4 | 2.4 |
| 710070561DW 1 | | | Pb | 0.25 | 6.2 | 6.2 |
| /190/030IPw_1 | | | Se | 1.3 | < 1.3 | < 1.3 |
| | | | Ag | 0.50 | 1.3 | 1.3 |
| | W stair well - | 1 | As | 2.0 | 3.3 | 3.3 |
| 103-WP-002 | stairtread to basement | | Ba | 7.5 | 47 | 47 |
| | | | Cd | 0.050 | 9.0 | 9.0 |
| | | | Cr | 0.50 | 6.8 | 6.8 |
| 710070561DW 2 | | | Pb | 2.5 | 87 | 87 |
| /190/030IF w_2 | | | Se | 1.3 | < 1.3 | < 1.3 |
| | | | Ag | 0.50 | < 0.50 | < 0.50 |
| | | | As | 2.0 | 5.4 | 5.4 |
| 103-WP-003 | W. stair lower landing by s | | Ba | 75 | 200 | 200 |
| | 8, | 1 | Cd | 0.050 | 33 | 33 |
| | | | Cr | 0.50 | 29 | 29 |
| 71007056IDW 2 | | | Pb | 0.25 | 280 | 280 |
| 71907056IPW_3 | | | Se | 1.3 | < 1.3 | < 1.3 |

*NOTE: All samples where digested using a lead only digestion for Flame AA analysis, therefore only lead could be verified.

Melissa Ferrell

Analyst



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Unless otherwise noted blank sample correction was not performed on analytical results. This report relates only to the samples tested and may not be reproduced, except in full, without the written approval of SAI. MDLs are available upon request. Time-weighted average (TWA) calculations are based on customer supplied data and valid only for samples included in the specified TWA group. Scientific Analytical Institute participates in the AIHA ELPAT program. ELPAT Laboratory ID: 173190.





| Client: | Occu-Tec, Inc. | Attn: | Justin Arnold | Lab Order ID: | 71907056 |
|----------|--------------------------|-------|---------------|----------------|------------|
| | 100 NW Business Park Ln. | | | Date Received: | 03/14/2019 |
| | Riverside, MO 64150 | | | Date Reported: | 03/28/2019 |
| Project: | GFC-103 CS Wipes | | | Page: | 2 of 5 |

| Sample ID | Description | Area | | Reporting | Concentration | Concentration | | |
|---------------|-----------------------------|--------------------|----------|---------------|---------------|--|-------|-------|
| Lab Sample ID | Lab Notes | (ft ²) | *Element | Limit (µg) | (μg) | (μg/ft ²) | | |
| | | | Ag | 0.50 | < 0.50 | < 0.50 | | |
| | Concrete | | As | 2.0 | 3.4 | 3.4 | | |
| 103-WP-004 | crawlspace step | | Ba | 75 | < 75 | < 75 | | |
| | up N side | 1 | Cd | 0.050 | 18 | 18 | | |
| | | | Cr | 0.50 | 14 | 14 | | |
| 71907056IPW_4 | | | Pb | 0.25 | 140 | 140 | | |
| | _ | | | | Se | 1.3 | < 1.3 | < 1.3 |
| | | | Ag | 0.50 | 0.76 | 0.76 | | |
| | Crawlspace | | As | 2.0 | 5.0 | 5.0 | | |
| 103-WP-005 | wall ledge S. | 1 | Ba | 75 | 120 | 120 | | |
| | side | | Cd | 0.050 | 25 | 25 | | |
| | | | Cr | 0.50 | 32 | 32 | | |
| 710070561DW 5 | | | Pb | 25 | 560 | 560 | | |
| /190/030IPW_3 | | | Se | 1.3 | < 1.3 | < 1.3 | | |
| | | | Ag | 0.50 | < 0.50 | < 0.50 | | |
| | | | As | 2.0 | < 2.0 | $ \begin{array}{c} < 0.50 \\ \hline 3.4 \\ < 75 \\ \hline 18 \\ \hline 14 \\ \hline 40 \\ < 1.3 \\ \hline 0.76 \\ \hline 5.0 \\ \hline 120 \\ 25 \\ \hline 32 \\ \hline 560 \\ < 1.3 \\ < 0.50 \\ < 2.0 \\ \hline 8.4 \\ \hline 3.0 \\ < 0.50 \\ \hline 69 \\ < 1.3 \\ \end{array} $ | | |
| 103-WP-006 | Column suport ledge G-19 | | Ba | 0.75 | 8.4 | 8.4 | | |
| | 6 | 1 | Cd | 0.050 | 3.0 | Concentration (μg/ft²) < 0.50 | | |
| | | | Cr | 0.50 | < 0.50 | < 0.50 | | |
| 710070561DW 4 | | | Pb | 2.5 | 69 | 69 | | |
| 71907056IPW_6 | | | Se | 1.3 | < 1.3 | < 1.3 | | |

*NOTE: All samples where digested using a lead only digestion for Flame AA analysis, therefore only lead could be verified.

Melissa Ferrell

Analyst

(b) (6) Lab Director

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| Client: | Occu-Tec, Inc. | Attn: | Justin Arnold | Lab Order ID: | 71907056 |
|----------|--------------------------|-------|---------------|----------------|------------|
| | 100 NW Business Park Ln. | | | Date Received: | 03/14/2019 |
| | Riverside, MO 64150 | | | Date Reported: | 03/28/2019 |
| Project: | GFC-103 CS Wipes | | | Page: | 3 of 5 |

| Sample ID | Description | Area | | Reporting | Concentration | Concentration |
|---------------|-----------------------------------|--------------------|----------|---------------|---------------|---------------------------------|
| Lab Sample ID | Lab Notes | (ft ²) | *Element | Limit (µg) | (μg) | (μg/ft ²) |
| | | | Ag | 0.50 | < 0.50 | < 0.50 |
| | Top of water | | As | 2.0 | < 2.0 | < 2.0 |
| 103-WP-007 | pipe insulation | | Ba | 7.5 | 10. | 10. |
| | F-18 | 1 | Cd | 0.050 | 1.4 | 1.4 |
| | | | Cr | 0.50 | < 0.50 | < 0.50 |
| 710070561DW 7 | | | Pb | 0.25 | 21 | 21 |
| /190/030IPW_/ | | | Se | 1.3 | < 1.3 | < 1.3 |
| | | | Ag | 0.50 | 1.0 | 1.0 |
| | | | As | 2.0 | 3.2 | <1.3 1.0 3.2 76 9.7 |
| 103-WP-008 | E. stair - tread - to basement | 1 | Ba | 75 | 76 | 76 |
| | | | Cd | 0.050 | 9.7 | 9.7 |
| | | | Cr | 0.50 | 6.0 | 6.0 |
| 710070561DW 9 | | | Pb | 0.25 | 210 | 210 |
| /190/030IFW_8 | | | Se | 1.3 | < 1.3 | < 1.3 |
| | | | Ag | 0.50 | < 0.50 | < 0.50 |
| | E stair - | | As | 2.0 | < 2.0 | < 2.0 |
| 103-WP-009 | landing - to | | Ba | 7.5 | 29 | 29 |
| | basement | 1 | Cd | 0.050 | 3.9 | 3.9 |
| | | | Cr | 0.50 | 1.8 | 1.8 |
| 710070561DW 0 | | | Pb | 0.25 | 55 | 55 |
| 71907056IPW_9 | | | Se | 1.3 | < 1.3 | < 1.3 |

*NOTE: All samples where digested using a lead only digestion for Flame AA analysis, therefore only lead could be verified.

Melissa Ferrell

Analyst



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| Client: | Occu-Tec, Inc. | Attn: | Justin Arnold | Lab Order ID: | 71907056 |
|----------|--------------------------|-------|---------------|----------------|------------|
| | 100 NW Business Park Ln. | | | Date Received: | 03/14/2019 |
| | Riverside, MO 64150 | | | Date Reported: | 03/28/2019 |
| Project: | GFC-103 CS Wipes | | | Page: | 4 of 5 |

| Sample ID | Description | Area | | Reporting | Concentration | Concentration |
|-----------------|-------------------------------------|--------------------|----------|---------------|---------------|---|
| Lab Sample ID | Lab Notes | (ft ²) | *Element | Limit (µg) | (μg) | (µg/ft ²) |
| | | | Ag | 0.50 | < 0.50 | < 0.50 |
| | F stair - | | As | 2.0 | < 2.0 | < 2.0 |
| 103-WP-010 | column support | | Ba | 7.5 | 21 | 21 |
| | (a) landing | 1 | Cd | 0.050 | 2.4 | 2.4 |
| | | | Cr | 0.50 | 1.6 | 1.6 |
| 710070561000 10 | | | Pb | 0.25 | 41 | 41 |
| 71907030IPW_10 | | | Se | 1.3 | < 1.3 | < 1.3 |
| | | | Ag | 0.50 | < 0.50 | < 0.50 |
| | | | As | 2.0 | < 2.0 | < 1.3 < 0.50 < 2.0 < 7.5 0.47 |
| 103-WP-011 | E. stair - tread to second floor | 1 | Ba | 7.5 | < 7.5 | < 7.5 |
| | | | Cd | 0.050 | 0.47 | 0.47 |
| | | | Cr | 0.50 | < 0.50 | < 0.50 |
| 710070561DW 11 | | | Pb | 0.25 | 7.6 | 7.6 |
| 71907030IPw_11 | | | Se | 1.3 | < 1.3 | < 1.3 |
| | | | Ag | 0.50 | < 0.50 | - |
| | | | As | 2.0 | < 2.0 | Concentration (µg/ft ²) < 0.50 < 2.0 21 2.4 1.6 41 < 1.3 < 0.50 < 2.0 < 7.5 0.47 < 0.50 < 7.5 0.47 < 0.50 7.6 < 1.3 - - - - - - |
| 103-WP-012 | Blank | | Ba | 0.75 | < 0.75 | - |
| | | - | Cd | 0.050 | < 0.050 | concentration $(\mu g/ft^2)$ < 0.50 |
| | | | Cr | 0.50 | < 0.50 | - |
| 710070561DW 12 | | | Pb | 0.25 | < 0.25 | - |
| 71907056IPW_12 | | | Se | 1.3 | < 1.3 | - |

*NOTE: All samples where digested using a lead only digestion for Flame AA analysis, therefore only lead could be verified.

Melissa Ferrell

Analyst



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Unless otherwise noted blank sample correction was not performed on analytical results. This report relates only to the samples tested and may not be reproduced, except in full, without the written approval of SAI. MDLs are available upon request. Time-weighted average (TWA) calculations are based on customer supplied data and valid only for samples included in the specified TWA group. Scientific Analytical Institute participates in the AIHA ELPAT program. ELPAT Laboratory ID: 173190.





| Client: | Occu-Tec, Inc. | Attn: | Justin Arnold | Lab Order ID: | 71907056 |
|----------|--------------------------|-------|---------------|----------------|------------|
| | 100 NW Business Park Ln. | | | Date Received: | 03/14/2019 |
| | Riverside, MO 64150 | | | Date Reported: | 03/28/2019 |
| Project: | GFC-103 CS Wipes | | | Page: | 5 of 5 |

| Sample ID | Description | Area | | Reporting | Concentration | Concentration | |
|----------------|-------------|--------------------|----------|---------------|---------------|-----------------------|--|
| Lab Sample ID | Lab Notes | (ft ²) | *Element | Limit (µg) | (μg) | (µg/ft ²) | |
| | | | Ag | 0.50 | < 0.50 | - | |
| | | | As | 2.0 | < 2.0 | - | |
| 103-WP-013 | Blank | - | Ba | 0.75 | < 0.75 | - | |
| | | | Cd | 0.050 | < 0.050 | - | |
| | | | Cr | 0.50 | < 0.50 | - | |
| 71907056IPW_13 | | | Pb | 0.25 | < 0.25 | - | |
| | | | Se | 1.3 | < 1.3 | - | |

*NOTE: All samples where digested using a lead only digestion for Flame AA analysis, therefore only lead could be verified.

Melissa Ferrell

Analyst

| (b) (6) | |
|--------------|--|
| Lab Director | |

* SAI is AIHA ELLAP accredited for Pb only for dust wipe metals.



Lead Test Types

X

Wipe by Flame AA

(PBP)

(PBW)

Scientific Analytical Institute 4604 Dundas Dr. Greensboro, NC 27407

Phone: 336.292.3888 Fax: 336.292.3313 www.sailab.com lab@sailab.com

Other

| Lab Use Only Lab Order ID: | 71907056 |
|-------------------------------|----------|
| Client Code: _ | |

| Contact Inform | lation |
|-----------------------|---------------------|
| Company Name: (| DUCU TEL. Inc |
| Address: 100 | JW Business Park Ln |
| River | side, MO 64150 |
| Contact: Jus | tin Arnold |
| Phone : 310 | -810-3276 |
| Fax 🗀: | |
| Email : JAcu | old Countre com |
| PO Number: | 115004 |
| Project Name/Number | "GEC-103 (S Works |
| • | |

Soil by Flame AA

Air by Flame AA

(PBS)

(PBA)

| . PHILIPA | nvoice the formation |
|-----------|----------------------|
| Company: | Same |
| Address: | K |
| Contact: | AoCoccuter.com |
| Phone : | |
| Fax : | |
| Email : | |

A STATE OF STATE OF STATE

| Turn Aro | und Ti | mes | A WORK |
|----------|--------|------------|--------|
| 3 Hours | | 72 Hours | |
| 6 Hours | | 96 Hours | |
| 12 Hours | | 120 Hours | |
| 24 Hours | | 144+ Hours | 70 |
| 48 Hours | | Stando | D |

| Sample ID # | Description/Location | Volume/Area | Comments |
|---------------|--------------------------------------|----------------|------------------|
| 103-WP-001 | W Stair Well - Stair tread to 2nd | 1 SF | Vingl |
| 103-WP-002 | W Stair Well - Stair trad to Basuert | ISF | Concrete |
| 103-WP-003 | W Star Louis Landing By Sump | 1 SF | Concrete |
| 103-WP-004 | Concrete Crawlopuce Step up N'side | 1 SF | Concrete |
| 103-WP-005 | Crawlepuce Wall Ledge 5. side | 1 SF | Concrete |
| 103-WP-006 | Column Suport Ledge 6-19 | 1 SF | Concrete + Metal |
| 103-WP-007 | Top of water Pipe Insulation F-15 | 1 SF | Fiberglase Ins |
| 103-WP-005 | E Stair-Tread - To Basenew | 1 SF | Concrete |
| 103-WP-009 | E Stair - Landing - To Basen | 1 SF | Concrete |
| 103-WP-010 | EStair - Colum Support C Landin | ISF | Concrete + Metal |
| 103-WP-011 | E Stair - Tread to Social Floor | to ISF | Vingle |
| 103 - WP -012 | Blank | NA | |
| 103-WP-013 | Blank | NA | |
| | | And I want the | . th |
| | | Accept | ed 4 |
| | | | |
| | | Reject | d L |
| | | | |

Total Number of Samples

Appendix C

Qualifications and Licenses

STATE OF MISSOURI DEPARTMENT OF HEALTH AND SENIOR SERVICES

LEAD OCCUPATION LICENSE REGISTRATION

Issued to:

Justin E. Arnold

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: Expiration Date: License Number: 6/11/2018 6/11/2020 120611-300003622

(b) (6)

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

Lead Licensing Program, PO Box 570, Jefferson City, MO 65102



Riverside, MO 64150 Telephone: 816.231.5580 Fax: 816.231.5641 www.occutec.com

March 18, 2019

Diane Czarnecki Industrial Hygienist Facilities Management Division GSA Public Buildings Service - Heartland Region U.S. General Services Administration 2300 Main Street, Kansas City, MO 64108

RE: Goodfellow Federal Center Metals in Settled Dust Sampling – Building 110 Basement and Stairwells 4300 Goodfellow Boulevard St. Louis, Missouri 63120 OCCU-TEC Project No. 918004.002

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 110 located at the Goodfellow Federal Center (GFC), in St. Louis, Missouri. OCCU-TEC, Inc. (OCCU-TEC) understands that the purpose of the investigation was to provide additional sampling data of existing environmental conditions that are present at GFC – Building #110 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.

On February 28, 2019, a team of OCCU-TEC personnel including a Missouri licensed lead risk assessor, conducted settled dust sampling for the presence of seven of the Resource Conservation and Recovery Act (RCRA) target metals (lead, arsenic, barium, cadmium, total chromium, selenium, and silver) from various surfaces throughout the building The purpose of this testing was to further characterize the presence and concentration of target metals in the stairwells leading to the basement as well as currently stored equipment in the Basement. Results of this testing can be used to determine the extend of cleaning needed before the upcoming negative pressure project within the basement.

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

Metals in Settled Dust Sampling

Metals in settled dust sampling was conducted in various horizontal surfaces throughout the basement and leading stairwells.

Dust wipe sampling was conducted in accordance with ASTM Standard E1728-16: Standard Practice for Collection of Settled Dust Samples Using Wipe Sampling Methods for Subsequent Lead Determination. ASTM Standard E1728-16 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.

Dust wipe sampling for the target metals was conducted on a variety of representative surfaces that have the potential of being disturbed during routine janitorial work, and planned maintenance or renovation projects within the building. A representative surface area of approximately one square foot (1 SF) was measured and delineated with pre-fabricated, disposable templates. The dust wipe <u>samples were collected</u> using dedicated

dust wipe cloths meeting TM standards. Each individually wrapped. Each ample was collected over a measured sampling area. Then, the wipe wiped again in a direction opendicular to the fir were then placed into lab

bre-moistened and d forth "S" pattern the area was wipe samples es with screw

on caps. Dust wipe samples were submitted to Scientific Analytical Institute, Inc. (SAI) in Greensboro, North Carolina for Inductively Coupled Plasma (ICP) analysis of metals analysis using Environmental Protection Agency (EPA) method SW846 350B/7420.

Results of the dust wipe samples collected from the building indicate that all the thirteen (13) samples contained concentrations of target metals above laboratory detection 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 reportable limit.

| Analysis | Lowest | Highest |
|----------------|---------------|---------------|
| | Concentration | Concentration |
| | (µg/sq. ft.) | (µg/sq. ft.) |
| Silver | < 0.50 | 2.50 |
| Arsenic | 0.51 | 9.00 |
| Barium | 12.00 | 330.00 |
| Cadmium | 0.31 | 11.00 |
| Total Chromium | 1.10 | 48.00 |
| Lead | 22.00 | 590.00 |
| Selenium | <0.50 | <0.50 |

Many of the samples collected contained target metals above the Brookhaven recommended levels. Based on the results of the sampling, all the presently stored materials within the Basement of Bldg. 110 should be presumed to contain measurable levels of RCRA metals and proper precautions should be taken upon handling or disturbing the stored materials to protect workers and limit the spread of dust to the outside environment.

OCCU-TEC appreciates the opportunity to work with GSA on this project. If you have any questions concerning this report, or if we may be of any additional service, please feel free to contact us.



Jeff T. Smith Senior Project Manager



Kevin Heriford Operations Manager (QA/QC)

Appendices:

- A Sample Summary Table
- B Laboratory Analysis Reports
- C Licenses

3 | Page

Appendix A

Sample Summary Table

| Goodfellow Federal Center - Building # 110 - Wipe Sample Data | | | | | | | | |
|---|-------------------------------|-----------------------------------|----------|--------|---------------------|-----------------------|--|--|
| Sample Number | Location | Area Description | Analyte | Result | Units | Recommended Limits | | |
| | | | Silver | 0.84 | ug/ft ² | * 139/9.3 | | |
| | | | Arsenic | 0.72 | $\mu g/ft^2$ | ** 62 | | |
| | Deserve at Level Nexth | | Barium | 22.00 | μg/ft ² | | | |
| 110-01 | Basement Level - North | Floor | Cadmium | 0.52 | μg/ft ² | ** 31 | | |
| | Stairweil at Baement Entrance | | Chromium | 2.30 | μg/ft ² | | | |
| | | | Lead | 56.00 | $\mu g/ft^2$ | ** 200/40 | | |
| | | | Selenium | < 0.50 | μg/ft ² | | | |
| | | | Silver | 0.67 | μg/ft ² | * 139/9.3 | | |
| | | | Arsenic | 0.62 | μg/ft ² | ** 62 | | |
| | | | Barium | 17.00 | μg/ft ² | | | |
| 110-02 | North Stairwell - mid level | Stair Landing | Cadmium | 0.31 | μg/ft ² | ** 31 | | |
| | | | Chromium | 3.10 | μg/ft ² | | | |
| | | | Lead | 22.00 | μg/ft ² | ** 200/40 | | |
| | | | Selenium | < 0.50 | μg/ft ² | | | |
| | | | Silver | 2.50 | $\mu g/ft^2$ | * 139/9.3 | | |
| | Basement at Column B-4 | Pallet of stored air diffusers | Arsenic | 9.00 | $\mu g/ft^2$ | ** 62 | | |
| 110-03 | | | Barium | 330.00 | ug/ft ² | | | |
| | | | Cadmium | 11.00 | ug/ft ² | ** 31 | | |
| | | | Chromium | 48.00 | ug/ft ² | | | |
| | | | Lead | 590.00 | ug/ft ² | ** 200/40 | | |
| | | | Selenium | < 0.50 | $\mu g/ft^2$ | | | |
| | | | Silver | 0.58 | ug/ft ² | * 139/9.3 | | |
| | | | Arsenic | 1.60 | ug/ft ² | ** 62 | | |
| | | | Barium | 47.00 | $\mu g/ft^2$ | | | |
| 110-04 | Basement at Column D-4 | Top of gym treadmill | Cadmium | 1.70 | ug/ft ² | ** 31 | | |
| | | | Chromium | 7.80 | ug/ft ² | | | |
| | | | Lead | 180.00 | $\mu g/ft^2$ | ** 200/40 | | |
| | | | Selenium | < 0.50 | $\mu g/ft^2$ | | | |
| | | | Silver | 1.30 | $\mu g/ft^2$ | * 139/9.3 | | |
| | | | Arsenic | 3.20 | $\mu g/ft^2$ | ** 62 | | |
| | | | Barium | 110.00 | $\mu g/ft^2$ | | | |
| 110-05 | Basement at Column E-6 | Pallet of stored light | Cadmium | 3.80 | ug/ft ² | ** 31 | | |
| | | fixtures | Chromium | 20.00 | ug/ft ² | | | |
| | | | Lead | 450.00 | ug/ft ² | ** 200/40 | | |
| | | | Selenium | < 0.50 | 110/ft ² | | | |
| | | | Silver | 0.92 | 110/ft ² | * 130/0 3 | | |
| | | | Arsenic | 4 80 | <u> </u> | ** 62 | | |
| | | | Barium | 120.00 | $\mu g/n$ | 02 | | |
| 110-06 | Basement at Column E-7 | Wood doors in storage | Cadmium | 5 70 | $\mu g/\Pi$ | ** 21 | | |
| 110-00 | | wood doors in storage | Chromium | 24.00 | $\mu g/\pi$ | 31 | | |
| | | | | 24.00 | $\mu g/ft^{-}$ | ** 200/00 | | |
| | | | Lead | 290.00 | $\mu g/ft^2$ | ** 200/40 | | |
| | | | Selenium | < 0.50 | μg/ft ⁻ | | | |

| Sample Number | Location | Area Description | Analyte | Result | Units | Recommended Limits |
|---------------|--|------------------------|----------|--------|--------------------|-----------------------|
| | | | Silver | 0.96 | μg/ft ² | * 139/9.3 |
| | | - | Arsenic | 2.50 | μg/ft ² | ** 62 |
| | | Paired floor papels in | Barium | 130.00 | μg/ft² | |
| 110-07 | Basement at Column B-9 | storage | Cadmium | 11.00 | μg/ft ² | ** 31 |
| | | Storage | Chromium | 19.00 | μg/ft ² | |
| | | | Lead | 200.00 | μg/ft ² | ** 200/40 |
| | | | Selenium | < 0.50 | μg/ft ² | |
| | | | Silver | < 0.50 | μg/ft ² | * 139/9.3 |
| | | | Arsenic | 2.00 | μg/ft² | ** 62 |
| | | Dallat of stored air | Barium | 55.00 | μg/ft² | |
| 110-08 | Basement at Column D-14 | diffusors | Cadmium | 2.10 | μg/ft ² | ** 31 |
| | | unusers | Chromium | 21.00 | μg/ft² | |
| | | | Lead | 120.00 | μg/ft ² | ** 200/40 |
| | | | Selenium | < 0.50 | μg/ft ² | |
| | | | Silver | 2.30 | μg/ft ² | * 139/9.3 |
| 110-09 | Basement Wire Closet at Column F-12 | East Shelf | Arsenic | 1.90 | μg/ft ² | ** 62 |
| | | | Barium | 47.00 | μg/ft ² | |
| | | | Cadmium | 2.30 | μg/ft ² | ** 31 |
| | | | Chromium | 7.20 | μg/ft ² | |
| | | | Lead | 200.00 | μg/ft ² | ** 200/40 |
| | | | Selenium | < 0.50 | µg/ft² | |
| | | | Silver | 0.85 | μg/ft ² | * 139/9.3 |
| | | | Arsenic | 1.30 | μg/ft ² | ** 62 |
| | | Wire Spool on Floor | Barium | 32.00 | μg/ft ² | |
| 110-10 | Basement at Column F-13 | | Cadmium | 1.60 | μg/ft ² | ** 31 |
| | | | Chromium | 4.40 | μg/ft ² | |
| | | | Lead | 170.00 | μg/ft ² | ** 200/40 |
| | | | Selenium | < 0.50 | μg/ft² | |
| | | | Silver | 0.51 | μg/ft ² | * 139/9.3 |
| | | | Arsenic | 0.51 | μg/ft ² | ** 62 |
| | Decement Level Couth | | Barium | 15.00 | μg/ft ² | |
| 110-11 | Stainwell at Pasament Entrance | Floor | Cadmium | 0.55 | μg/ft ² | ** 31 |
| | | | Chromium | 1.10 | μg/ft ² | |
| | | | Lead | 33.00 | μg/ft² | ** 200/40 |
| | | | Selenium | < 0.50 | μg/ft² | |
| | | | Silver | 0.55 | μg/ft ² | * 139/9.3 |
| | | | Arsenic | 0.52 | μg/ft ² | ** 62 |
| | | | Barium | 12.00 | μg/ft ² | Γ |
| 110-12 | South Stairwell - mid level | Stair Landing | Cadmium | 0.49 | μg/ft ² | ** 31 |
| | | | Chromium | 1.10 | μg/ft ² | |
| | | | Lead | 69.00 | μg/ft ² | ** 200/40 |
| | | | Selenium | < 0.50 | μg/ft ² | Γ |

| Sample Number | Location | Area Description | Analyte | | Result | Units | Recommended Limits |
|---------------|-------------|------------------|----------|---|--------|--------------------|-----------------------|
| | | | Silver | | 0.53 | μg/ft² | * 139/9.3 |
| | | | Arsenic | < | 0.25 | μg/ft² | ** 62 |
| | | | Barium | | 0.32 | μg/ft² | |
| 110-13 | Field Blank | | Cadmium | < | 0.05 | μg/ft ² | ** 31 |
| | | | Chromium | < | 0.50 | μg/ft² | |
| | | | Lead | < | 0.25 | μg/ft² | ** 200/40 |
| | | | Selenium | < | 0.50 | $\mu g/ft^2$ | [|

* Recommended Limits based on Table 3 (BNL Surface Wipe Criteria for Metals) of the Brookhaven Surface Wipe Sampling Procedure (IH75190), Rev 19: 3/4/14

** Recommended Limits based on Attachment 9.3 (Required & Recommended Surface Wipe Criteria) - Brookhaven Surface Wipe Sampling Procedure (IH75190), Rev 23: 6/23/17
Indicates results at or above REL

Appendix B

Laboratory Analytical Reports





| Client: | Occu-Tec, Inc. | Attn: | Jeff Smith | Lab Order ID: | 71905855 |
|----------|--------------------------|-------|------------|----------------|------------|
| | 100 NW Business Park Ln. | | | Date Received: | 03/04/2019 |
| | Riverside, MO 64150 | | | Date Reported: | 03/15/2019 |
| Project: | 918004.002 Bldg 110 | | | Page: | 1 of 5 |

| Sample ID | Description | Area | | Reporting | Concentration | Concentration | |
|----------------|--------------------------------------|--------------------|----------|---------------|---------------|-----------------------|--------|
| Lab Sample ID | Lab Notes | (ft ²) | *Element | Limit (µg) | (μg) | (µg/ft ²) | |
| | | | Ag | 0.50 | 0.84 | 0.84 | |
| | | | As* | 0.25 | 0.72 | 0.72 | |
| 110-01 | N Stairwell – at entrance to bsmt | | Ba* | 0.50 | 22 | 22 | |
| | | 1 | Cd | 0.050 | 0.52 | 0.52 | |
| | | | Cr | 0.50 | 2.3 | 2.3 | |
| 710059551011/1 | | | Pb | 2.5 | 56 | 56 | |
| /19038331PW_1 | | | Se | 0.50 | < 0.50 | < 0.50 | |
| | N Stairwell – at middle landing | | Ag | 0.50 | 0.67 | 0.67 | |
| | | 1 | As* | 0.25 | 0.62 | 0.62 | |
| 110-02 | | | Ba* | 0.50 | 17 | 17 | |
| | | | Cd | 0.050 | 0.31 | 0.31 | |
| | | | Cr | 0.50 | 3.1 | 3.1 | |
| 710059551011 2 | | | Pb | 0.25 | 22 | 22 | |
| /19038331PW_2 | | | Se | 0.50 | < 0.50 | < 0.50 | |
| | | | Ag | 0.50 | 2.5 | 2.5 | |
| | Col B-4 – | | As* | 0.25 | 9.0 | 9.0 | |
| 110-03 | stored | | Ba* | 5.0 | 330 | 330 | |
| | equipment | 1 | Cd | 0.050 | 11 | 11 | |
| | | | Cr | 5.0 | 48 | 48 | |
| 710058551DW 2 | | | Pb | 25 | 590 | 590 | |
| 719058551PW_3 | | | | Se | 0.50 | < 0.50 | < 0.50 |

*As – media matched matrix blank showed a media contribution of 1.5 μg

*Ba – media matched matrix blank showed a media contribution of 0.63 μg

Melissa Ferrell

Analyst

| (b) (6) | |
|--------------|--|
| | |
| Lab Director | |

* SAI is AIHA ELLAP accredited for Pb only for dust wipe metals.





| Client: | Occu-Tec, Inc. | Attn: | Jeff Smith | Lab Order ID: | 71905855 |
|----------|--------------------------|-------|------------|----------------|------------|
| | 100 NW Business Park Ln. | | | Date Received: | 03/04/2019 |
| | Riverside, MO 64150 | | | Date Reported: | 03/15/2019 |
| Project: | 918004.002 Bldg 110 | | | Page: | 2 of 5 |

| Sample ID | Description | Area | | Reporting | Concentration | Concentration |
|---------------|---------------------------|--------------------|----------|---------------|---------------|-----------------------|
| Lab Sample ID | Lab Notes | (ft ²) | *Element | Limit (µg) | (μg) | (µg/ft ²) |
| | | | Ag | 0.50 | 0.58 | 0.58 |
| | | | As* | 0.25 | 1.6 | 1.6 |
| 110-04 | Col D-4 – stored equip | | Ba* | 0.50 | 47 | 47 |
| | store of all | 1 | Cd | 0.050 | 1.7 | 1.7 |
| | | | Cr | 0.50 | 7.8 | 7.8 |
| 71905855IPW_4 | | | Pb | 2.5 | 180 | 180 |
| | | | Se | 0.50 | < 0.50 | < 0.50 |
| | | | Ag | 0.50 | 1.3 | 1.3 |
| | | | As* | 0.25 | 3.2 | 3.2 |
| 110-05 | Col E-6 – stored equip | 1 | Ba* | 5.0 | 110 | 110 |
| | - Jark | | Cd | 0.050 | 3.8 | 3.8 |
| | | | Cr | 0.50 | 20. | 20. |
| 710059551DW 5 | | | Pb | 25 | 450 | 450 |
| /19038331FW_3 | | | Se | 0.50 | < 0.50 | < 0.50 |
| | | | Ag | 0.50 | 0.92 | 0.92 |
| | | | As* | 0.25 | 4.8 | 4.8 |
| 110-06 | Col E-7 – stored equip | | Ba* | 5.0 | 120 | 120 |
| | 1 1 | 1 | Cd | 0.050 | 5.7 | 5.7 |
| | | | Cr | 0.50 | 24 | 24 |
| 710058551DW 6 | | | Pb | 25 | 290 | 290 |
| /19030331FW_0 | | | Se | 0.50 | < 0.50 | < 0.50 |

*As – media matched matrix blank showed a media contribution of 1.5 μg

*Ba – media matched matrix blank showed a media contribution of 0.63 μg

Melissa Ferrell

Analyst

| (b) (6) | |
|--------------|---|
| Lab Director | _ |

* SAI is AIHA ELLAP accredited for Pb only for dust wipe metals.

Unless otherwise noted blank sample correction was not performed on analytical results. This report relates only to the samples tested and may not be reproduced, except in full, without the written approval of SAI. MDLs are available upon request. Time-weighted average (TWA) calculations are based on customer supplied data and valid only for samples included in the specified TWA group. Scientific Analytical Institute participates in the AIHA ELPAT program. ELPAT Laboratory ID: 173190.





| Client: | Occu-Tec, Inc. | Attn: | Jeff Smith | Lab Order ID: | 71905855 |
|----------|--------------------------|-------|------------|----------------|------------|
| | 100 NW Business Park Ln. | | | Date Received: | 03/04/2019 |
| | Riverside, MO 64150 | | | Date Reported: | 03/15/2019 |
| Project: | 918004.002 Bldg 110 | | | Page: | 3 of 5 |

| Sample ID | Description | Area | | Reporting | Concentration | Concentration |
|------------------------|------------------------------|--------------------|----------|---------------|---------------|-----------------------|
| Lab Sample ID | Lab Notes | (ft ²) | *Element | Limit (µg) | (μg) | (µg/ft ²) |
| | | | Ag | 0.50 | 0.96 | 0.96 |
| | | | As* | 0.25 | 2.5 | 2.5 |
| 110-07 | Col B-9 – stored equip | | Ba* | 5.0 | 130 | 130 |
| | | 1 | Cd | 0.050 | 11 | 11 |
| | | | Cr | 0.50 | 19 | 19 |
| 710058551010 7 | | | Pb | 25 | 200 | 200 |
| /19038331FW_/ | | | Se | 0.50 | < 0.50 | < 0.50 |
| | | | Ag | 0.50 | < 0.50 | < 0.50 |
| | Col D-14 – stored equip | 1 | As* | 0.25 | 2.0 | 2.0 |
| 110-08 | | | Ba* | 0.50 | 55 | 55 |
| | | | Cd | 0.050 | 2.1 | 2.1 |
| | | | Cr | 0.50 | 21 | 21 |
| 710059551000 9 | | | Pb | 2.5 | 120 | 120 |
| /19038331FW_8 | | | Se | 0.50 | < 0.50 | < 0.50 |
| | | | Ag | 0.50 | 2.3 | 2.3 |
| | | | As* | 0.25 | 1.9 | 1.9 |
| 110-09 | Wire Closet shelf at F-12 | | Ba* | 0.50 | 47 | 47 |
| | | 1 | Cd | 0.050 | 2.3 | 2.3 |
| | | | Cr | 0.50 | 7.2 | 7.2 |
| 710058551 D W 0 | | | Pb | 2.5 | 200 | 200 |
| /19036331FW_9 | | | Se | 0.50 | < 0.50 | < 0.50 |

*As – media matched matrix blank showed a media contribution of 1.5 μg

*Ba – media matched matrix blank showed a media contribution of 0.63 μg

Melissa Ferrell

Analyst

| (b) (6) | |
|--------------|--|
| Lab Director | |

Lab Director

* SAI is AIHA ELLAP accredited for Pb only for dust wipe metals.





| Client: | Occu-Tec, Inc. | Attn: | Jeff Smith | Lab Order ID: | 71905855 |
|----------|--------------------------|-------|------------|----------------|------------|
| | 100 NW Business Park Ln. | | | Date Received: | 03/04/2019 |
| | Riverside, MO 64150 | | | Date Reported: | 03/15/2019 |
| Project: | 918004.002 Bldg 110 | | | Page: | 4 of 5 |

| Sample ID | Description | Area | | Reporting | Concentration | Concentration | |
|-----------------|--|--------------------|----------|---------------|---------------|-----------------------|--|
| Lab Sample ID | Lab Notes | (ft ²) | *Element | Limit (µg) | (μg) | (μg/ft ²) | |
| | | | Ag | 0.50 | 0.85 | 0.85 | |
| | | | As* | 0.25 | 1.3 | 1.3 | |
| 110-10 | Col F-13 – stored equip | | Ba* | 0.50 | 32 | 32 | |
| | | 1 | Cd | 0.050 | 1.6 | 1.6 | |
| | | | Cr | 0.50 | 4.4 | 4.4 | |
| 710058551DW 10 | | | Pb | 2.5 | 170 | 170 | |
| 719038331PW_10 | | | Se | 0.50 | < 0.50 | < 0.50 | |
| | | | Ag | 0.50 | 0.51 | 0.51 | |
| | S Stairwell – | 1 | As* | 0.25 | 0.51 | 0.51 | |
| 110-11 | | | Ba* | 0.50 | 15 | 15 | |
| | e e contra contr | | Cd | 0.050 | 0.55 | 0.55 | |
| | | | Cr | 0.50 | 1.1 | 1.1 | |
| 710059551000 11 | | | Pb | 2.5 | 33 | 33 | |
| 719038331PW_11 | | | Se | 0.50 | < 0.50 | < 0.50 | |
| | | | Ag | 0.50 | 0.55 | 0.55 | |
| | | | As* | 0.25 | 0.52 | 0.52 | |
| 110-12 | S Stairwell - middle landing | | Ba* | 0.50 | 12 | 12 | |
| | 6 | 1 | Cd | 0.050 | 0.49 | 0.49 | |
| | | | Cr | 0.50 | 1.1 | 1.1 | |
| 710058551DW 12 | | | Pb | 2.5 | 69 | 69 | |
| 719038331PW_12 | | | Se | 0.50 | < 0.50 | < 0.50 | |

*As – media matched matrix blank showed a media contribution of 1.5 μg

*Ba – media matched matrix blank showed a media contribution of 0.63 μg

Melissa Ferrell

Analyst

| (b) (6) | |
|--------------|--|
| Lab Director | |

* SAI is AIHA ELLAP accredited for Pb only for dust wipe metals.

Unless otherwise noted blank sample correction was not performed on analytical results. This report relates only to the samples tested and may not be reproduced, except in full, without the written approval of SAI. MDLs are available upon request. Time-weighted average (TWA) calculations are based on customer supplied data and valid only for samples included in the specified TWA group. Scientific Analytical Institute participates in the AIHA ELPAT program. ELPAT Laboratory ID: 173190.





| Client: | Occu-Tec, Inc. | Attn: | Jeff Smith | Lab Order ID: | 71905855 |
|----------|--------------------------|-------|------------|----------------|------------|
| | 100 NW Business Park Ln. | | | Date Received: | 03/04/2019 |
| | Riverside, MO 64150 | | | Date Reported: | 03/15/2019 |
| Project: | 918004.002 Bldg 110 | | | Page: | 5 of 5 |

| Sample ID | Description | Area | | Reporting | Concentration | Concentration |
|-----------------|-------------|--------------------|----------|---------------|---------------|-----------------------|
| Lab Sample ID | Lab Notes | (ft ²) | *Element | Limit (µg) | (µg) | (µg/ft ²) |
| 110-13 Blank | | - | Ag | 0.50 | 0.53 | - |
| | | | As* | 0.25 | < 0.25 | - |
| | Blank | | Ba* | 0.050 | 0.32 | - |
| | | | Cd | 0.050 | < 0.050 | - |
| | | | Cr | 0.50 | < 0.50 | - |
| 710050551011 12 | | | Pb | 0.25 | < 0.25 | - |
| 71903635IPW_13 | | | Se | 0.50 | < 0.50 | - |

*As – media matched matrix blank showed a media contribution of 1.5 μg

*Ba – media matched matrix blank showed a media contribution of 0.63 μg

| (b) (6) | |
|---------|--|
| | |

Melissa Ferrell

Analyst

Lab Director

* SAI is AIHA ELLAP accredited for Pb only for dust wipe metals.



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1

Scientific Analytical Institute, Inc. 4604 Dundas Drive Greensboro, NC 27407 Phone: 336.292.3888 Fax: 336.292.3313 www.sailab.com lab@sailab.com

Lab Use Only Lab Order ID: 71905855 Client Code:

| Company Con | ntact Information | iss diation applies | | men das | h | dustrial Hygiene To | est Types |
|--------------------|---|---|---|--|---|--|-------------|
| Company: Occu | Tec | Contact: Jeff Smith | | | Silic | Silica as Alpha Quartz* | |
| Address: 100 ML | U Business Park Lane | Phone : 8/6- | Phone : 8/6-994-3421 | | Silica as Cristobalite* | | C |
| Riverside | MO GUISD | Fax 🗌: | Fax : | | Silica as Tridymite* | | |
| | Chief & Tam | Email : 15mth | Email : 15 mith Doccutec | | Silica as Alpha Quartz, Cristobalite, Tridymite* | | », [|
| | , Magana Artikan gatan andifata | J | | , com | | Include Respirable Dust | |
| Billing/Invoic | e Information | Turn Aro | und T | l'imes | Silic | a Bulk* | |
| SAME | anderen i Callanda de Callanda - C | 90 Min. | 48 Ho | ours | Bulk | Phase ID/Whole Rock Method H-SOP-003 | |
| Company: | | 3 Hours | 72 Ho | ours | Total Dust NIOSH Method 0500 | | |
| Contact: | | 6 Hours | 96 Ho | Hours Respirable Dust NIOSH Method 0600 | | C | |
| Address: | | 12 Hours | 120 H | lours 🗌 | PCM NIOSH 7400 (Fibers) | | C |
| | • | 24 Hours | rs 144 ⁺ Hours TEM-NIOSH 7402 (Asbestos) | | 4-NIOSH 7402 (Asbestos) | . [| |
| | | TATs not available for certain test types | | Hexavalent Chromium (OSHA ID-215) (Note if from spray paint operations) | | -215) | |
| PO Number: | and the start start for | L | | | Meta | als (NIOSH 7300) (Specify Me er Comments) | etals |
| Project Name/N | umber: 918004.002 | 2 Bldg 1 | 10 | | Othe | 6010C | × |
| | | 9. | | | | *Modified NIOSH 7500 | VOSHA ID 14 |
| Sample ID # | Description/I | Description/Location Volume/A | | | Area | Comments (List N | Metals Here |
| 110 -01 | N Starwell- a | Featranie to b | KAt | 15 | F | As As, Ba Cd. | Co.Ph S |
| 110-02 | NStairwell - at a | uddle land | ng | | | 1 | pe |
| 110 -03 | Col B-4 - Store | d equi Dimen | 4 | | | | |
| 110-04 | Col D-4 - 40 | red equip | | | | | |

| 0-03 | Col B-4 - stored equipment | | | |
|---------|-----------------------------|-----|------------|--|
| 10-04 | Col D-4 - stored equip | | | |
| 0-05 | Col E-G - Stored Camp | | | |
| 10-06 | Col E-7 - Stored equip | | | |
| 10-07 | Col B-9 - Stored Caup | | | |
| 10-08 | Col D-14 - stored equip | | N | |
| 10-09 | Wire Closet shelf at F-12 | V | ~ | |
| 10-10 | Col F-13 - Stored Cau.P | | | |
| 10 - 11 | S Star-well-bottom landing | | ground and | |
| 0-12 | S Starwell - Middle landing | | X | |
| 10-13 | Blank | ACC | | |
| | | | | |
| | | E | octou L | |
| | | 8 6 | | |

Total # of Samples

| Relipquished by | Date/Time | Received by | Date/Time |
|-----------------|-------------|-------------|---------------|
| (b) (6) | 3-7-19 1500 | (b) (6) | 3/4/19 @ 1030 |
| | | | |

Page ____ of ____

A-F-018 -01 EXP 12-1-13

Appendix C

Qualifications and Licenses

STATE OF MISSOURI DEPARTMENT OF HEALTH AND SENIOR SERVICES

LEAD OCCUPATION LICENSE REGISTRATION

Issued to:

Austin G. O'Byrne

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: Expiration Date: License Number: 12/10/2018 12/10/2020 181210-300005671

(b) (6)

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

Lead Licensing Program, PO Box 570, Jefferson City, MO 65102