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June 11, 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 105F
4300 Goodfellow Boulevard
St. Louis, Missouri 63120
OCCU-TEC Project No. 919083**

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 105F 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 May 29, 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 within tenant-occupied areas within the building. 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 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 within only within tenant-occupied areas.

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 by building occupants. 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 [REDACTED] hoisted and individually wrapped. Each sample was collected by [REDACTED] with "S" pattern over a measured sampling area. Then, the wipe [REDACTED] the area was wiped again in a direction perpendicular to the first wipe orientation. The wipe samples were then placed into labeled, clean laboratory-supplied plastic centrifuge tubes 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 seven (7) of the eight (8) 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 (µg/sq. ft.)	Highest Concentration (µg/sq. ft.)
Silver	<0.50	<0.50
Arsenic	<2.0	<2.0
Barium	<0.75	3.3
Cadmium	<0.050	0.10
Total Chromium	<0.50	0.58
Lead	<0.25	1.1
Selenium	<1.3	<1.3

The samples collected did not contain target metals above the Brookhaven recommended levels.

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)

Justin Arnold, CIEC
Environmental Scientist



(b) (6)

Kevin Heriford
Environmental Operations Manager (QA/QC)

Appendices:

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

(b) (7)(F)

Figure 1: Wipe Sample Location Maps—Bldg. 105F

Goodfellow Federal Center
4300 Goodfellow Boulevard
St. Louis, Missouri
Project Number: 919083

Appendix

A

Sample Summary Table

Goodfellow Federal Center - Building # 105F - Wipe Sample Data

Sample Number	Location	Area Description	Analyte	Result	Units	Recommended Limits
105F-W-01	Lower Level L36	Floor	Silver	< 0.50	µg/ft ²	* 139/9.3
			Arsenic	< 2.00	µg/ft ²	** 62
			Barium	0.81	µg/ft ²	
			Cadmium	< 0.05	µg/ft ²	** 31
			Chromium	< 0.50	µg/ft ²	
			Lead	0.39	µg/ft ²	** 200/40
			Selenium	< 1.30	µg/ft ²	
105F-W-02	Lower Level L34	Window Sill	Silver	< 0.50	µg/ft ²	* 139/9.3
			Arsenic	< 2.00	µg/ft ²	** 62
			Barium	< 0.75	µg/ft ²	
			Cadmium	< 0.05	µg/ft ²	** 31
			Chromium	< 0.50	µg/ft ²	
			Lead	0.40	µg/ft ²	** 200/40
			Selenium	< 1.30	µg/ft ²	
105F-W-03	Lower Level P32	Floor	Silver	< 0.50	µg/ft ²	* 139/9.3
			Arsenic	< 2.00	µg/ft ²	** 62
			Barium	3.30	µg/ft ²	
			Cadmium	0.06	µg/ft ²	** 31
			Chromium	0.58	µg/ft ²	
			Lead	1.10	µg/ft ²	** 200/40
			Selenium	< 1.30	µg/ft ²	
105F-W-04	Lower Level L30	Window Sill	Silver	< 0.50	µg/ft ²	* 139/9.3
			Arsenic	< 2.00	µg/ft ²	** 62
			Barium	0.85	µg/ft ²	
			Cadmium	0.098	µg/ft ²	** 31
			Chromium	< 0.50	µg/ft ²	
			Lead	< 0.25	µg/ft ²	** 200/40
			Selenium	< 1.30	µg/ft ²	
105F-W-05	Upper Level P27	Floor	Silver	< 0.50	µg/ft ²	* 139/9.3
			Arsenic	< 2.00	µg/ft ²	** 62
			Barium	< 0.75	µg/ft ²	
			Cadmium	< 0.05	µg/ft ²	** 31
			Chromium	< 0.50	µg/ft ²	
			Lead	< 0.25	µg/ft ²	** 200/40
			Selenium	< 1.30	µg/ft ²	
105F-W-06	Upper Level P30	Window Sill	Silver	< 0.50	µg/ft ²	* 139/9.3
			Arsenic	< 2.00	µg/ft ²	** 62
			Barium	1.10	µg/ft ²	
			Cadmium	0.10	µg/ft ²	** 31
			Chromium	< 0.50	µg/ft ²	
			Lead	0.28	µg/ft ²	** 200/40
			Selenium	< 1.30	µg/ft ²	

Sample Number	Location	Area Description	Analyte	Result	Units	Recommended Limits
105F-W-07	Upper Level D31	Floor	Silver	< 0.50	µg/ft ²	* 139/9.3
			Arsenic	< 2.00	µg/ft ²	** 62
			Barium	< 0.75	µg/ft ²	
			Cadmium	< 0.05	µg/ft ²	** 31
			Chromium	< 0.50	µg/ft ²	
			Lead	0.43	µg/ft ²	** 200/40
			Selenium	< 1.30	µg/ft ²	
105F-W-08	Upper Level M35	Floor	Silver	< 0.50	µg/ft ²	* 139/9.3
			Arsenic	< 2.00	µg/ft ²	** 62
			Barium	< 0.75	µg/ft ²	
			Cadmium	< 0.05	µg/ft ²	** 31
			Chromium	< 0.50	µg/ft ²	
			Lead	0.28	µg/ft ²	** 200/40
			Selenium	< 1.30	µg/ft ²	
105F-W-09	FB		Silver	< 0.50	µg	* 139/9.3
			Arsenic	< 2.00	µg	** 62
			Barium	< 0.75	µg	
			Cadmium	< 0.05	µg	** 31
			Chromium	< 0.50	µg	
			Lead	< 0.25	µg	** 200/40
			Selenium	< 1.30	µg	

* 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



Dust Wipe Metals Concentration by Inductively-Coupled Plasma Analysis (ICP)

NIOSH 7300/EPA SW-846 3050B



Client:	Occu-Tec, Inc. 2604 NE Industrial Dr., Ste 230 North Kansas City, MO 64117	Attn: Justin Arnold	Lab Order ID: 71914389
			Date Received: 05/30/2019
Project:	919083.001 GFC		Date Reported: 06/06/2019
			Page: 1 of 3

Sample ID	Description	Area (ft ²)	*Element	Reporting Limit (µg)	Concentration (µg)	Concentration (µg/ft ²)
Lab Sample ID	Lab Notes					
105F-W-01	1 st floor L36 - floor	1	Ag	0.50	< 0.50	< 0.50
			As	2.0	< 2.0	< 2.0
			Ba	0.75	0.81	0.81
			Cd	0.050	< 0.050	< 0.050
			Cr	0.50	< 0.50	< 0.50
71914389IPW_1			Pb	0.25	0.39	0.39
			Se	1.3	< 1.3	< 1.3
105F-W-02	1 st floor L34 – window sill	1	Ag	0.50	< 0.50	< 0.50
			As	2.0	< 2.0	< 2.0
			Ba	0.75	< 0.75	< 0.75
			Cd	0.050	< 0.050	< 0.050
			Cr	0.50	< 0.50	< 0.50
71914389IPW_2			Pb	0.25	0.40	0.40
			Se	1.3	< 1.3	< 1.3
105F-W-03	1 st floor P32 - floor	1	Ag	0.50	< 0.50	< 0.50
			As	2.0	< 2.0	< 2.0
			Ba	0.75	3.3	3.3
			Cd	0.050	0.060	0.060
			Cr	0.50	0.58	0.58
71914389IPW_3			Pb	0.25	1.1	1.1
			Se	1.3	< 1.3	< 1.3

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.



Dust Wipe Metals Concentration by Inductively-Coupled Plasma Analysis (ICP)

NIOSH 7300/EPA SW-846 3050B



Client:	Occu-Tec, Inc. 2604 NE Industrial Dr., Ste 230 North Kansas City, MO 64117	Attn: Justin Arnold	Lab Order ID: 71914389
			Date Received: 05/30/2019
Project:	919083.001 GFC		Date Reported: 06/06/2019
			Page: 2 of 3

Sample ID	Description	Area (ft ²)	*Element	Reporting Limit (µg)	Concentration (µg)	Concentration (µg/ft ²)
Lab Sample ID	Lab Notes					
105F-W-04	1 st floor L30 – window sill	1	Ag	0.50	< 0.50	< 0.50
			As	2.0	< 2.0	< 2.0
			Ba	0.75	0.85	0.85
			Cd	0.050	0.098	0.098
			Cr	0.50	< 0.50	< 0.50
71914389IPW_4			Pb	0.25	< 0.25	< 0.25
			Se	1.3	< 1.3	< 1.3
105F-W-05	2 nd floor P27 – floor	1	Ag	0.50	< 0.50	< 0.50
			As	2.0	< 2.0	< 2.0
			Ba	0.75	< 0.75	< 0.75
			Cd	0.050	< 0.050	< 0.050
			Cr	0.50	< 0.50	< 0.50
71914389IPW_5			Pb	0.25	< 0.25	< 0.25
			Se	1.3	< 1.3	< 1.3
105F-W-06	2 nd floor P30 – window sill	1	Ag	0.50	< 0.50	< 0.50
			As	2.0	< 2.0	< 2.0
			Ba	0.75	1.1	1.1
			Cd	0.050	0.10	0.10
			Cr	0.50	< 0.50	< 0.50
71914389IPW_6			Pb	0.25	0.28	0.28
			Se	1.3	< 1.3	< 1.3

Melissa Ferrell

Analyst

(b) (6)

Lab Director

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Dust Wipe Metals Concentration by Inductively-Coupled Plasma Analysis (ICP)

NIOSH 7300/EPA SW-846 3050B



Client: Occu-Tec, Inc. 2604 NE Industrial Dr., Ste 230 North Kansas City, MO 64117	Attn: Justin Arnold	Lab Order ID: 71914389
Project: 919083.001 GFC		Date Received: 05/30/2019
		Date Reported: 06/06/2019
		Page: 3 of 3

Sample ID	Description	Area (ft ²)	*Element	Reporting Limit (µg)	Concentration (µg)	Concentration (µg/ft ²)
Lab Sample ID	Lab Notes					
105F-W-07	2 nd floor D31 - floor	1	Ag	0.50	< 0.50	< 0.50
			As	2.0	< 2.0	< 2.0
			Ba	0.75	< 0.75	< 0.75
			Cd	0.050	< 0.050	< 0.050
			Cr	0.50	< 0.50	< 0.50
71914389IPW_7			Pb	0.25	0.43	0.43
			Se	1.3	< 1.3	< 1.3
105F-W-08	2 nd floor M35 - floor	1	Ag	0.50	< 0.50	< 0.50
			As	2.0	< 2.0	< 2.0
			Ba	0.75	< 0.75	< 0.75
			Cd	0.050	< 0.050	< 0.050
			Cr	0.50	< 0.50	< 0.50
71914389IPW_8			Pb	0.25	0.28	0.28
			Se	1.3	< 1.3	< 1.3
105F-W-09	Field Blank	-	Ag	0.50	< 0.50	--
			As	2.0	< 2.0	--
			Ba	0.75	< 0.75	--
			Cd	0.050	< 0.050	--
			Cr	0.50	< 0.50	--
71914389IPW_9			Pb	0.25	< 0.25	--
			Se	1.3	< 1.3	--

Melissa Ferrell

Analyst

(b) (6)

Lab Director

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Lab Use Only
 Lab Order ID: 71914389
 Client Code: _____

Company Contact Information	
Company: OCCU-TEC Inc.	Contact: Justin Arnold
Address: 2604 NE Industrial Drive, Suite 230	Phone <input type="checkbox"/> : 816-810-3276
North Kansas City, MO 64117	Fax <input type="checkbox"/> : 816-994-3478
	Email :jarnold@occutec.com

Industrial Hygiene Test Types	
Silica as Alpha Quartz (XSZ)* <input type="checkbox"/>	With Respirable Dust (XDZ) <input type="checkbox"/>
Silica as Cristobalite (XSC)* <input type="checkbox"/>	With Respirable Dust (XDC) <input type="checkbox"/>
Silica as Tridymite (XST)* <input type="checkbox"/>	With Respirable Dust (XDT) <input type="checkbox"/>
Silica as Alpha Quartz, Cristobalite, Tridymite (XSA)* <input type="checkbox"/>	With Respirable Dust (XDA) <input type="checkbox"/>
Silica Bulk (XSI)*	<input type="checkbox"/>
Bulk Phase ID/Whole Rock (XUK)	<input type="checkbox"/>
Total Dust NIOSH Method 0500 (GTD)	<input type="checkbox"/>
Respirable Dust NIOSH Method 0600 (GRD)	<input type="checkbox"/>
PCM NIOSH 7400-A Rules (PCM)	<input type="checkbox"/>
B Rules (PCB) <input type="checkbox"/>	TWA (PTA) <input type="checkbox"/>
TEM NIOSH 7402 (Asbestos) (TNI)	<input type="checkbox"/>
Hexavalent Chromium (OSHA ID-215) (Note if from spray paint operations)	<input type="checkbox"/>
Metals (NIOSH 7300) (Specify Metals Under Comments)	<input type="checkbox"/>
Other 6010 C _____	<input checked="" type="checkbox"/>

* Modified NIOSH 7500/OSHA ID 142

Billing/Invoice Information	Turn Around Times [^]	
SAME <input checked="" type="checkbox"/>	90 Min. <input type="checkbox"/>	48 Hours <input type="checkbox"/>
Company:	3 Hours <input type="checkbox"/>	72 Hours <input type="checkbox"/>
Contact:	6 Hours <input type="checkbox"/>	96 Hours <input type="checkbox"/>
Address:	12 Hours <input type="checkbox"/>	120 Hours <input checked="" type="checkbox"/>
	24 Hours <input type="checkbox"/>	144 ⁺ Hours <input type="checkbox"/>
	[^] TATs not available for certain test types	
PO Number:		
Project Name/Number: 919083.001 GFC		

Sample ID #	Description/Location	Volume/Area	Comments
			Ag, As, Ba, Cd, Cr, Pb, Se
105F-W-01	1 st floor L36 - floor	1 SF	Ag, As, Ba, Cd, Cr, Pb, Se
105F-W-02	1 st floor L34 - Window Sill	1 SF	Ag, As, Ba, Cd, Cr, Pb, Se
105F-W-03	1 st floor P32 - floor	1 SF	Ag, As, Ba, Cd, Cr, Pb, Se
105F-W-04	1 st floor L30 - Window Sill	1 SF	Ag, As, Ba, Cd, Cr, Pb, Se
105F-W-05	2 nd floor P27 - floor	1 SF	Ag, As, Ba, Cd, Cr, Pb, Se
105F-W-06	2 nd floor P30 - Window Sill	1 SF	Ag, As, Ba, Cd, Cr, Pb, Se
105F-W-07	2 nd floor O31 - floor	1 SF	Ag, As, Ba, Cd, Cr, Pb, Se
105F-W-08	2 nd floor M35 - floor	1 SF	Ag, As, Ba, Cd, Cr, Pb, Se
105F-W-09	FIELD BLANK	-	Ag, As, Ba, Cd, Cr, Pb, Se
			Ag, As, Ba, Cd, Cr, Pb, Se
			Ag, As, Ba, Cd, Cr, Pb, Se
			Ag, As, Ba, Cd, Cr, Pb, Se

Accepted
 Rejected

Total # of Samples _____

Relinquished by	Date/Time	Received by	Date/Time
(b) (6)	5-29-17	(b) (6)	5/30 10:30a

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

(b) (6)



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