Introduction of clearance wipe sampling on Building 110 basement project

The following reports analyze wipe samples for lead, which were collected during the demolition project in the basement of Building 110. GSA's industrial hygiene consultant took the samples to determine if the area met criteria for re-occupancy or for entry by unprotected workers, referred to as clearance sampling. Results from clearance sampling are also a way to determine if the work practices and engineering controls used in the project work were adequate to control lead dust and prevent further contamination.

GSA's requirement was that the sampling results be less than or equal to 200 micrograms per square foot, which was the background level. The report dated Dec. 13 represents initial clearance sampling. Out of six samples taken, two exceeded the background level. Although a work practice of using poly sheeting on the floor should have minimized the amount of dust reaching the bare floor, it is possible the sheeting moved while the contractor worked or that dragging the poly sheeting away to remove it resulted in dust from the sheeting settling on the floor. As per the contractor's Site Specific Safety Plan for working in the controlled space, their workers involved in demolition wore personal protective equipment.

GSA asked the contractor to reclean the areas with the elevated results. GSA's industrial hygiene consultant took subsequent wipe samples. The report dated Jan. 6 represents the final clearance sampling. Both samples resulted in levels well below the background level. The space has been released to the contractor to begin the next phase of the project.

OCCU-TEC

2604 NE Industrial Drive, Suite 230
North Kansas City, Missouri 64117
Telephone: 816.231.5580
Fax: 816.231.5641
www.occutec.com

December 13, 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
Lead in Settled Dust Clearance Sampling
Building 110 – Basement Negative Air Project
4300 Goodfellow Boulevard
St. Louis, Missouri 63120
OCCU-TEC Project No. 919103

Dear Ms. Czarnecki:

Thank you for the opportunity to assist the General Services Administration (GSA) with the lead in settled dust clearance 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 clearance sampling data after completion of duct demolition with the basement of Building 110. The following report summarizes the sample collection activities and the laboratory analytical results.

On December 11, 2019, OCCU-TEC conducted settled dust sampling for the presence of lead from within the basement of Building 110. The purpose of this testing was to provide clearance information and verify the effectiveness of best management practices utilized by the contractor completing duct removal activities associated with the current basement negative air project.

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.

Lead in Settled Dust Sampling

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 lead was conducted on a floor surfaces below locations were ducting has previously been removed. 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 dust wipe cloth was pre-moistened and individually wrapped. Each sample was collected by wiping in a back and forth "S" pattern over a measured sampling area. Then, the wipe was folded over itself and 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 lead analysis using Environmental Protection Agency (EPA) method SW846 350B/7420.

Results of the dust wipe samples collected from the building indicate that two (2) of six (6) samples contained concentrations of lead above the clearance criteria of 200 ug/ft^2 established by background concentrations previously measured in the space.

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) [redacted]

Kevin Heriford
Environmental Operations Manager

(b) (6) [redacted]

Jeff Smith
Senior Project Manager (QA/QC)

Appendices:

A - Laboratory Analysis Reports

Appendix A

Laboratory Analytical Reports

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

NIOSH 7300/EPA SW-846 3050B

Client:	**OCCU-TEC Inc.**	**Attn:**	**Kevin Heriford**	**Lab Order ID:**	**71931088**
	2604 NE Industrial Drive, Ste 230			**Date Received:**	**12/12/2019**
	North Kansas City, MO 64117			**Date Reported:**	**12/12/2019**
Project:	**110 Basement Clearance #919103**			**Page:**	**1 of 1**

Sample ID *Lab Sample ID*	Description *Lab Notes*	Area (ft^2)	*Element	Reporting Limit (µg)	Concentration (µg)	Concentration ($µg/ft^2$)
110-CLB-01	Floor by J3	1	Pb	2.5	37	37
71931088IPW_1						
110-CLB-02	Floor by J12	1	Pb	25	400	400
71931088IPW_2						
110-CLB-03	Floor by D16	1	Pb	2.5	180	180
71931088IPW_3						
110-CLB-04	Floor by E6	1	Pb	2.5	120	120
71931088IPW_4						
110-CLB-05	Floor by E13	1	Pb	2.5	160	160
71931088IPW_5						
110-CLB-06	Floor by L14	1	Pb	25	360	360
71931088IPW_6						
110-CLB-07	Blank	1	Pb	0.25	< 0.25	< 0.25
71931088IPW_7						

Melissa Ferrell

Analyst

(b) (6) [redacted]

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.

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

Lab Use Only
Lab Order ID: 11931088
Client Code: _____

Contact Information

Company Name:	OCCU-TEC, Inc
Address:	2604 NE Industrial Drive #230
	North Kansas City, MO 64117
Contact:	Kevin Herriford
Phone ☐:	816-825-0628
Fax ☐:	816-994-3466
Email ☐:	~~herriford1@gmail.com~~ / kherriford@occutec.com
PO Number:	919103
Project Name/Number:	110 Basement Clearance # 919103

Billing/Invoice Information

Company:	Same
Address:	
Contact:	Ap@occutec.com
Phone ☐:	
Fax ☐:	
Email ☐:	

Lead Test Types

Paint Chips by Flame AA ☐ (PBP)	Soil by Flame AA ☐ (PBS)	Other ☐
Wipe by Flame AA ☐ (PBW)	Air by Flame AA ☐ (PBA)	# NIOSH 7300/ EPA SW-846 3050B

Turn Around Times

3 Hours	☐	72 Hours	☐
6 Hours	☒	96 Hours	☐
12 Hours	☐	120 Hours	☐
24 Hours	☐	144+ Hours	☐
48 Hours	☐		

Sample ID #	Description/Location	Volume/Area	Comments
110-CLB-01	Floor by J3	1 SF	Pb only *
110-CLB-02	Floor by J12	1 SF	Pb only *
110-CLB-03	Floor by D16	1 SF	Pb only *
110-CLB-04	Floor by E6	1 SF	Pb only *
110-CLB-05	Floor by E13	1 SF	Pb only *
110-CLB-06	Floor by L14	1 SF	Pb only *
110-CLB-07	Blank	1 SF	Pb Only *

Accepted ☒

Rejected ☐

Total Number of Samples _____

Relinquished by	Date/Time	Received by	Date/Time
(b) (6) [redacted]	12/11/19 1600	(b) (6) [redacted]	12/12 10:30 AM

OCCU-TEC

2604 NE Industrial Drive, Suite 230
North Kansas City, Missouri 64117
Telephone: 816.231.5580
Fax: 816.231.5641
www.occutec.com

January 6, 2020

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
Lead in Settled Dust Clearance Sampling
Building 110 – Basement Negative Air Project
4300 Goodfellow Boulevard
St. Louis, Missouri 63120
OCCU-TEC Project No. 919103

Dear Ms. Czarnecki:

Thank you for the opportunity to assist the General Services Administration (GSA) with this lead in settled dust clearance 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 conduct clearance sampling after the completion of duct demolition activities within the basement of building 110. Samples collected during this event were in response to previous failures noted in two clearance samples that were collected on December 11, 2019 and the subsequent recleaning that was completed by the contractor. The following report summarizes the sample collection activities and the laboratory analytical results of samples submitted.

On December 30, 2019, OCCU-TEC conducted additional settled dust clearance sampling for the presence of lead from within the basement of building 110. The locations of samples were based on the initial location of the samples that did not meet the clearance criteria set forth by the GSA.

Lead in Settled Dust Sampling

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 lead was conducted on floor surfaces where previous samples had failed clearance criteria and additional cleaning was conducted. 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 dust wipe cloth was pre-moistened and individually wrapped. Each sample was collected by wiping in a back and forth "S" pattern over a measured sampling area. Then, the wipe was folded over itself and 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 lead analysis using Environmental Protection Agency (EPA) method SW846 350B/7420.

Results of the dust wipe samples indicated concentrations of lead below the established clearance criteria of 200 ug/ft^2.

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)

Attachments:
Laboratory Analytical Report and Chain-of-Custody Documentation
Inspector Qualifications

EMSL Analytical, Inc.
100 Green Park Industrial Court, Saint Louis, MO 63123
Phone/Fax: (314) 577-0150 / (314) 776-3313
http://www.EMSL.com saintlouislab@emsl.com

EMSL Order:	391913581
CustomerID:	OCCU21
CustomerPO:	
ProjectID:	

Attn: **Justin Arnold**
Occu-Tec, Inc.
2604 NE Industrial Drive
Suite 230
North Kansas City, MO 64117

Phone:	(816) 231-5580
Fax:	(816) 231-5641
Received:	12/30/19 10:20 AM
Collected:	

Project: **919103**

Test Report: Lead in Dust by Flame AAS (SW 846 3050B/7000B)*

Client SampleDescription	*Collected*	*Analyzed*	*Area Sampled*	*RDL*	*Lead Concentration*
110-CLB-08 *391913581-0001*		12/31/2019	144 in²	10 µg/ft²	20 µg/ft²
110-CLB-09 *391913581-0002*		12/31/2019	144 in²	10 µg/ft²	<10 µg/ft²
110-CLB-10 *391913581-0003*		12/31/2019	N/A	10 µg/wipe	<10 µg/wipe

(b) (6)

Jeff Siria, Laboratory Manager
or other approved signatory

*Analysis following Lead in Dust by EMSL SOP/ Determination of Environmental Lead by FLAA. Reporting limit is 10 µg/wipe. ug/wipe =µg/ft² x area sampled in ft². Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities (such as volume sampled) or analytical method limitations. Samples received in good condition unless otherwise noted. The lab is not responsible for data reported in µg/ft² which is dependent on the area provided by non-lab personnel. The test results contained within this report meet the requirements of NELAC unless otherwise noted. "<" (less than) results signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements unless specifically indicated otherwise. Definitions of modifications are available upon request.

Samples analyzed by EMSL Analytical, Inc. Saint Louis, MO AIHA-LAP, LLC--ELLAP Accredited #102636

Initial report from 12/31/2019 09:27:33

OrderID: 391913581

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Lead (Pb) Chain of Custody

EMSL Order ID *(Lab Use Only):*

391913581

EMSL ANALYTICAL, INC.
100 GREEN PARK IND. CT
ST. LOUIS, MO 63123
PHONE: 314-577-0150

Company: OCCU-TEC INC.	**EMSL-Bill to:** ☒ Same ☐ Different If Bill to is Different note instructions in Comments** *Third Party Billing requires written authorization from third party*
Street: 2604 NE Industrial Drive Suite 230	
City: North Kansas City **State/Province:** MO	**Zip/Postal Code:** **Country:**
Report To (Name): Justin Arnold	**Telephone #:**
Email Address: jarnold@occutec	**Fax #:** **Purchase Order:**
Project Name/Number: 919103	**Please Provide Results:** ☐ Fax ☐ Email
U.S. State Samples Taken: MO	**CT Samples:** ☐ Commercial/Taxable ☐ Residential/Tax Exempt

Turnaround Time (TAT) Options* - Please Check

☐ 3 Hour | ☐ 6 Hour | ☒ 24 Hour | ☐ 32 Hour[1] | ☐ 48 Hour | ☐ 72 Hour | ☐ 96 Hour | ☐ 1 Week | ☐ 2 Week

[1] *32 Hour TAT available for select tests only; samples must be submitted by 11:30 am.*

Matrix	Method	Instrument	Reporting Limit	Check
Chips* ☐ % by wt. ☐ ppm (mg/kg) ☐ mg/cm²	SW846-7000B	Flame Atomic Absorption	0.008% (80 ppm)	☐
*Reporting limit based upon minimum 0.25 g sample weight	SW846-6010B or C	ICP-OES	0.0004% (4 ppm)	☐
Air	NIOSH 7082	Flame Atomic Absorption	4 µg/filter	☐
	NIOSH 7105	Graphite Furnace AA	0.03 µg/filter	☐
	NIOSH 7300M/NIOSH 7303	ICP-OES	0.5 µg/filter	☐
Wipe* ASTM ☒ non ASTM ☐	SW846-7000B	Flame Atomic Absorption	10 µg/wipe	☒
*If no box is checked, non-ASTM Wipe is assumed	SW846-6010B or C	ICP-OES	1.0 µg/wipe	☐
TCLP	SW846-1311/7000B/SM 3111B	Flame Atomic Absorption	0.4 mg/L (ppm)	☐
	SW846-1311/SW846-6010B or C	ICP-OES	0.1 mg/L (ppm)	☐
SPLP	SW846-1312/7000B/SM 3111B	Flame Atomic Absorption	0.4 mg/L (ppm)	☐
	SW846-1312/SW846-6010B or C	ICP-OES	0.1 mg/L (ppm)	☐
TTLC	22 CCR App. II, 7000B/7420	Flame Atomic Absorption	40 mg/kg (ppm)	☐
	22 CCR App. II, SW846-6010B or C	ICP-OES	2 mg/kg (ppm)	☐
STLC	22 CCR App. II, 7000B/7420	Flame Atomic Absorption	0.4 mg/L (ppm)	☐
	22 CCR App. II, SW846-6010B or C	ICP-OES	0.1 mg/L (ppm)	☐
Soil	SW846-7000B	Flame Atomic Absorption	40 mg/kg (ppm)	☐
	SW846-6010B or C	ICP-OES	2 mg/kg (ppm)	☐
Wastewater Unpreserved ☐	SM3111B/SW846-7000B	Flame Atomic Absorption	0.4 mg/L (ppm)	☐
Preserved with HNO_3 ☐ pH <2	EPA 200.7	ICP-OES	0.020 mg/L (ppm)	☐
Drinking Water Unpreserved ☐	EPA 200.8	ICP-MS	0.001 mg/L (ppm)	☐
	EPA 200.9	Graphite Furnace AA	0.003 mg/L (ppm)	☐
Preserved with HNO_3 ☐ pH <2	EPA 200.5	ICP-OES	0.003 mg/L (ppm)	☐
TSP/SPM Filter	40 CFR Part 50	ICP-OES	12 µg/filter	☐
Other:				☐

Name of Sampler: **Signature of Sampler:**

Client Sample #s 110-CLB-08 - 110-CLB-10 **Total # of Samples:** 3

Sample #	Location	Volume/Area	Date/Time Shipped
110-CLB-08	110 Basement - Column J12+B - H12+13	1 SF	
110-CLB-09	110 Basement - Column K13H4 - L13H4	1 SF	

Relinquished (Client):	(b) (6)	**Date:**	12-30-2019	**Time:**	10:20
Received (Lab):	(b) (6)	**Date:**	12-30-19	**Time:**	10:20 ali

Comments:

OrderID: 391913581

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

LEAD (Pb) CHAIN OF CUSTODY

EMSL ORDER ID *(Lab Use Only):*

391913581

EMSL ANALYTICAL, INC.
100 GREEN PARK IND.
ST. LOUIS, MO 63123
PHONE: (314) 577-0150
FAX: (314) 776-3313

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	Location	Volume/Area	Date/Time Sampled
110-CLB-1D	BLANK	NA	

Comments/Special Instructions: