National Guard Bureau Mid-West Regional Industrial Hygiene Office 301-IH Old Bay Lane Havre de Grace, MD 21078

ARNG-CSG-P February 6, 2015

MEMORANDUM FOR: The Adjutant General for Michigan

SUBJECT: Surface Wipe Testing for Lead at the Armory in Adrian, Michigan

National Guard Bureau (NGB) Mid-West Regional Industrial Hygiene (IH) Office field personnel conducted a survey on September 24, 2014 at the Michigan Army National Guard Armory, located in Adrian, Michigan. This survey included a walkthrough of the facility and surface wipe sampling for lead contamination. The armory has an indoor firing range that is now closed. The Drill Room and the Kitchen are not open to the public for rental, but families of Guard employees do use the Drill Room for events.

Occupational health risk assessment codes (RACs) are assigned to quantify health risks to personnel IAW DOD Letter of Instruction 6055.1, *DOD Safety and Occupational Health Program.* Risk assessment is an expression of health hazard severity and mishap probability, described in terms of route of exposure, actual exposure, exposure limit standards, potential health effects, duration of exposure, and number of exposed personnel. Guidance for RAC determination is attached to this memorandum.

Surface Wipe Sampling: Eleven wipe samples were collected on representative surfaces in the facility and analyzed for lead. For purposes of this report, any results that exceed the guidelines adopted by the NGB Mid-West Regional IH Office are considered significant.

Six of the eleven wipe samples had high level of lead ranging from 122 to 1560 ug/ft2. Areas with elevated lead include the drill room on the basket ball support, in the locker room/former firing range, and above a serving counter in the club room.

Recommendations

1. Clean all surfaces with elevated lead levels using high-efficiency particulate air (HEPA) filter vacuums or wet methods to avoid the spread of lead dust to other areas of the armory. (RAC 2)

The NGB conducted this survey in the interest of preventing employee illness and to meet legal obligations where applicable. Results and recommendations are based on information provided by site personnel, field measurements, and conditions observed during the survey. For any

further questions, please contact Non-Responsive

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Non-Responsive

Non-Responsive

Regional Industrial Hygienist

Appendix Title Status
A. Lead Attached

Surface Sample Lead Testing Survey Date: September 24, 2014

Appendix A Lead

Surface Wipe Sampling

Eleven wipe samples were collected from representative areas of the facility using Environmental Express GhostTM Wipes and templates IAW the OSHA wipe sampling method (OSHA Technical Manual, Appendix II, 2-1). The samples were analyzed for lead by OSHA Method ID-121. The results and photos are contained in Table A-1.

Although OSHA does not have published exposure standards for metal surface contamination, 29 CFR 1910 requires that all surfaces must be kept as free as practicable of accumulations of toxic metal dusts. In addition, DOD has instituted a policy to minimize surface contamination levels of heavy metals (*Control and Management of Surface Accumulations from Lead, Hexavalent Chromium, and Cadmium Operations*, DTM 12-003, 18 April 2012).

The NGB Mid-West Regional IH Office has adopted the guidelines for metal dust published in NG Pam 420-15, *Guidelines and Procedures for Rehabilitation and Conversion of Indoor Firing Ranges* and the Department of Energy (DOE)/Brookhaven National Laboratory *Surface Wipe Sampling Procedure* (IH75190). Any results that exceed these guidelines shown in Table A-1 are considered significant.

Six of the eleven wipe samples had high level of lead ranging from 122 to 1560 ug/ft2. Areas with elevated lead include the drill room on the basket ball support, in the locker room/former firing range, and above a serving counter in the club room.

Recommendations

 Clean all surfaces with elevated lead levels using high-efficiency particulate air (HEPA) filter vacuums or wet methods to avoid the spread of lead dust to other areas of the armory. (RAC 2)

Table A-1
Surface Wipe Sampling Results for Lead
Michigan Army National Guard
Adrian Armory

	Adrian Armory	
Sample No. Location	Photo	Lead (µg/ft²)
Surface For areas op Break room	40	
	Guidelines as of the building	200
W-1 Drill room on floor	09/24/2014	<10
W-2 Drill room on basket ball support	09/24/2014	396
W-3 Locker room/former firing range on window sill	01/24/2014	1055
W-4 Locker room/former firing range on floor at target end	509/24/2004	1560

Sample No. Location	Photo	Lead (µg/ft²)
Surface For areas op Break room	40	
	Guidelines as of the building	200
W-5 Outside vault on pipe	09/24/2014	1203
W-6 Kitchen on ice machine	09/24/2014	<91
W-7 Basement room on locker	09/24/2014	<91
W-8 Basement storage cases retrains on locker	09/24/2014	<91

Sample No. Location	Photo	Lead (µg/ft²)
For areas op	Guidelines en to the public, s, and kitchens	40
	Guidelines as of the building	200
W-9 Basement storage cages SM-CMD on locker	03/24/2014	286
W-10 Club room on top of serving counter overhang	09/24/2014	122
W-11 Office 1SG Vandenberghe on desk	09/24/2014	<91
W-12 blank		ND

Notes: 1) μ g / ft² = micrograms per square foot of surface area. 2) ND = none detected. 3) "<" means less than the reporting limit for the analytical method.

Surface Sample Lead Testing Survey Date: September 24, 2014

Laboratory Result Reports and Chain of Custody Sheets



ANALYTICAL REPORT

Submitted To:

USPHS / Federal Occupational Health

Denver Federal Center Denver, CO 80225

Attention:

Non-Responsive

Lead

Submitted By:

Reference Data:

NGB: Adrian, MI (Armory)

Sampling Site: Sample Media:

Ghost Wipe(s)®

Method Reference: Project ID: OSHA ID-121 Project 12161

DFOH Lab Nos.:

Project 12161 TM-14-73546 through TM-14-73557

Date Received: 09/26/14

Data Analyzed:

10/10/14 - 10/14/14

Date Issued:

10/16/14

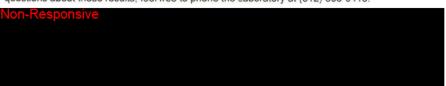
The wipe samples were hot plate digested. The samples were run on a Perkin Elmer 200 flame atomic absorption spectrophotometer (AA).

General Lab Comments:

All quality control criteria have been met.

- * All samples received in condition acceptable for analysis unless otherwise noted.
- ** Sample results have not been corrected for contamination based on the field blank or other analytical blank unless otherwise noted.

Analytical results are given on the enclosed tables. Results relate only to items tested. If you have any questions about these results, feel free to phone the Laboratory at (312) 886-0413.





Project 12161 Page 1 of 2



LEAD on WIPE RESULTS

SAMPLE NUMBER*	LABORATORY NUMBER	CONCENTRATION (µg)	CONCENTRATION (μg/ft²)
W-1	TM-14-73546	<10	<10
W-2	TM-14-73547	44	396
W-3	TM-14-73548	116	1055
W-4	TM-14-73549	172	1560
: W-5	TM-14-73550	132	1203
W-6	TM-14-73551	<10	<91
W-7	TM-14-73552	<10	<91
W-8	TM-14-73553	<10	<91
W-9	TM-14-73554	31	286
W-10	TM-14-73555	13	122
W-11	TM-14-73556	<10	<91
W-12**	TM-14-73557	<10	

AGENCY	FLOORS	INTERIOR WINDOW SILLS	WINDOW TROUGHS
EPA	40 μg/ft²	250 μg/ft ²	400 μg/ft²

Metals in Wipe Limits (based on one ft² sampled area)

Analyte	Analytical Method	Method Detection Limit	Minimum Reporting Limit
Lead - Flame AA	OSHA ID-121	5.0 μg/ft ²	10 μg/ft ²





Project 12161 Page 2 of 2 COMMENTS:

Environmental Laboratory PROJECT REFERENCE For Lab Use Only 536 S. Clark Street South, Suite 714 Chicago, IL 60605-1521 Tel: (312)-886-0413 Fax: (312)-886-0434 oject /Report #: e Date:

mples Received Chilled? YES NO (circle one) Due Date: Statement 180648 Water Sample Codes Turn Around Time Codes Analysis Requested of Work No.: STD- Standard 3D- Three Day Rush[®] Project ontainer Types: P-Plastic, G-Glass, V-VOC No: Agency eservatives: WH Weekend/Holiday* A-None, B-H₂SO₄, Proj. Manager C-HNO₃, D-NaOH Location adrean (City, State): Sample Location / Description Area Volume Code Flow Time Volume (LPM) (Min.) (Liters) ID# Around Time⁴ W-1 STD 74-14-73546 144 W-2 16 73547 73548 W-3 16 73549 W-5 16 73550 7355/ W. -7 73552 W-8 73553 16 W-9 16 73554 W-10 73'555 16 W-11 73554 16 73557 W-12 Date & Time rocal 2-Matched Weight, 0.8um filter 4-M CE 0.8 um , 37 mm ost Wipes 1 6. Passive badge

US PUBLIC HEALTH SERVICE, FEDERAL OCCUPATIONAL HEALTH CHAIN-OF-CUSTODY / FIELD DATA SHEET

Applied to organic and inorganic analysis in cases of an emergency only.

Applied to inorganic and organic samples, SD: Applied to organic and inorganic samples 7-10 business days.

National Guard Bureau Mid-West Regional Industrial Hygiene Office 301-IH Old Bay Lane Havre de Grace, MD 21078

ARNG-CSG-P February 6, 2015

MEMORANDUM FOR: The Adjutant General for Michigan

SUBJECT: Surface Wipe Testing for Lead at the Armory in Greenville, Michigan

National Guard Bureau (NGB) Mid-West Regional Industrial Hygiene (IH) Office field personnel conducted a survey on September 25, 2014 at the Michigan Army National Guard Armory, located in Greenville, Michigan. This survey included a walkthrough of the facility and surface wipe sampling for lead contamination. The armory has an indoor firing range that is now closed. The Drill Room and the Kitchen are open to the public for events.

Occupational health risk assessment codes (RACs) are assigned to quantify health risks to personnel IAW DOD Letter of Instruction 6055.1, *DOD Safety and Occupational Health Program*. Risk assessment is an expression of health hazard severity and mishap probability, described in terms of route of exposure, actual exposure, exposure limit standards, potential health effects, duration of exposure, and number of exposed personnel. Guidance for RAC determination is attached to this memorandum.

Surface Wipe Sampling: Ten wipe samples were collected on representative surfaces in the facility and analyzed for lead. For purposes of this report, any results that exceed the guidelines adopted by the NGB Mid-West Regional IH Office are considered significant.

Three of the ten wipe samples had high levels of lead. Two samples collected in the garage/former firing range had lead levels of 289 and 544 ug/ft2. A sample collected in the Drill Room on a window ledge above an exit door had 2,209 ug lead/ft2.

Recommendations

 Clean all surfaces with elevated lead levels using high-efficiency particulate air (HEPA) filter vacuums or wet methods to avoid the spread of lead dust to other areas of the armory. (RAC 2)

The NGB conducted this survey in the interest of preventing employee illness and to meet legal obligations where applicable. Results and recommendations are based on information provided by site personnel, field measurements, and conditions observed during the survey. For any further questions, please contact Non-Responsive

Non-Responsive

Non-Responsive

Regional Industrial Hygienist

Appendix Title Status
A. Lead Attached

Surface Sample Lead Testing Survey Date: September 25, 2014

Appendix A Lead

Surface Wipe Sampling

Ten wipe samples were collected from representative areas of the facility using Environmental Express GhostTM Wipes and templates IAW the OSHA wipe sampling method (OSHA Technical Manual, Appendix II, 2-1). The samples were analyzed for lead by OSHA Method ID-121. The results and photos are contained in Table A-1.

Although OSHA does not have published exposure standards for metal surface contamination, 29 CFR 1910 requires that all surfaces must be kept as free as practicable of accumulations of toxic metal dusts. In addition, DOD has instituted a policy to minimize surface contamination levels of heavy metals (*Control and Management of Surface Accumulations from Lead, Hexavalent Chromium, and Cadmium Operations*, DTM 12-003, 18 April 2012).

The NGB Mid-West Regional IH Office has adopted the guidelines for metal dust published in NG Pam 420-15, *Guidelines and Procedures for Rehabilitation and Conversion of Indoor Firing Ranges* and the Department of Energy (DOE)/Brookhaven National Laboratory *Surface Wipe Sampling Procedure* (IH75190). Any results that exceed these guidelines shown in Table A-1 are considered significant.

Three of the ten wipe samples had a high level of lead. Two samples collected in the garage/former firing range had lead levels of 289 and 544 ug/ft2. A sample collected in the Drill Room on a window ledge above an exit door had 2,209 ug lead/ft2.

Recommendations

 Clean all surfaces with elevated lead levels using high-efficiency particulate air (HEPA) filter vacuums or wet methods to avoid the spread of lead dust to other areas of the armory. (RAC 2)

Table A-1
Surface Wipe Sampling Results for Lead
Michigan Army National Guard
Greenville Armory

Greenville Armory			
Sample No. Location	Photo	Lead (µg/ft²)	
Surface For areas op Break room	40		
	Guidelines as of the building	200	
W-1 Drill room on floor	09/25/2014	<10	
W-2 Kitchen on ice machine	69/25/2014	<91	
W-3 Office supply room on mouse pad	99/2572914	<91	
W-4 Outside vault on locker	09/25/2014	<91	

Sample No. Location	Photo	Lead (µg/ft²)
Surface For areas op Break room	40	
	Guidelines as of the building	200
W-5 Supply cage on metal cabinet	09/25/2014	<91
W-6 Garage/former firing range on exhaust vent on wall	09/25/2014	135
W-7 Garage/former firing range, office, on wall ledge	09/25/2014	<91
W-8 Garage/former firing range, office on floor	09/25/2014	289

Sample No. Location	Photo	Lead (µg/ft²)
Surface For areas op Break room	40	
	Guidelines as of the building	200
W-9 Garage/former firing range, upper level on floor	09/25/2014	544
W-10 Drill room on window ledge above exit	09/25/2014	2,209
W-11 blank		ND

Notes: 1) μ g / ft² = micrograms per square foot of surface area. 2) ND = none detected. 3) "<" means less than the reporting limit for the analytical method.

Laboratory Result Reports and Chain of Custody Sheets



ANALYTICAL REPORT

Submitted To:

USPHS / Federal Occupational Health

Denver Federal Center Denver, CO 80225

Attention:

Non-Responsive

Submitted By:

Reference Data:

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Sampling Site: Sample Media: NGB: Greenville, MI (Armory) Ghost Wipe(s)®

Method Reference:

OSHA ID-121

Project ID:

Project 12155

DFOH Lab Nos.:

TM-14-73493 through TM-14-73503

Date Received:

09/26/14

Data Analyzed:

10/10/14 - 10/14/14

Date Issued:

10/16/14

The wipe samples were hot plate digested. The samples were run on a Perkin Elmer 200 flame and/or Perkin Elmer 600 furnace atomic absorption spectrophotometer (AA).

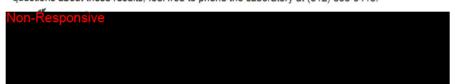
General Lab Comments:

All quality control criteria have been met.

* All samples received in condition acceptable for analysis unless otherwise noted.

** Sample results have not been corrected for contamination based on the field blank or other analytical blank unless otherwise noted.

Analytical results are given on the enclosed tables. Results relate only to items tested. If you have any questions about these results, feel free to phone the Laboratory at (312) 886-0413.





Project 12155 Page 1 of 2



LEAD on WIPE RESULTS

SAMPLE NUMBER*	LABORATORY NUMBER	CONCENTRATION (µg)	CONCENTRATION (μg/ft²)
W-1	TM-14-73493	<10	<10
W-2	TM-14-73494	<10	<91
W-3	TM-14-73495	<10	<91
W-4	TM-14-73496	<10	<91
: W-5	TM-14-73497	<10	<91
W-6	TM-14-73498	15	135
W-7	TM-14-73499	<10	<91
W-8	TM-14-73500	32	289
W-9	TM-14-73501	60	544
W-10	TM-14-73502	243	2209
W-11**	TM-14-73503	<10	

AGENCY	FLOORS	INTERIOR WINDOW SILLS	WINDOW TROUGHS
EPA	40 μg/ft ²	250 μg/ft ²	400 μg/ft ²

Metals in Wipe Limits (based on one ft² sampled area)

Analyte	Analytical Method	Method Detection Limit	Minimum Reporting Limit
Lead - Flame AA	OSHA ID-121	5.0 μg/ft ²	10 μg/ft ²





Project 12155 Page 2 of 2

US PUBLIC HEALTH SERVICE, FEDERAL OCCUPATIONAL HEALTH CHAIN-OF-CUSTODY / FIELD DATA SHEET

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^{*} Applied to organic and inorganic analysis in cases of an emergency only. * Applied to inorganic and organic samples, SD: Applied to organic and inorganic samples 7-10 business days.

National Guard Bureau Mid-West Regional Industrial Hygiene Office 301-IH Old Bay Lane Havre de Grace, MD 21078

ARNG-CSG-P February 6, 2015

MEMORANDUM FOR: The Adjutant General for Michigan

SUBJECT: Surface Wipe Testing for Lead at the Armory in Howell, Michigan

National Guard Bureau (NGB) Mid-West Regional Industrial Hygiene (IH) Office field personnel conducted a survey on September 25, 2014 at the Michigan Army National Guard Armory, located in Howell, Michigan. This survey included a walkthrough of the facility and surface wipe sampling for lead contamination. The armory has an indoor firing range that is now closed. The Drill Room and the Kitchen are open to the public.

Occupational health risk assessment codes (RACs) are assigned to quantify health risks to personnel IAW DOD Letter of Instruction 6055.1, *DOD Safety and Occupational Health Program*. Risk assessment is an expression of health hazard severity and mishap probability, described in terms of route of exposure, actual exposure, exposure limit standards, potential health effects, duration of exposure, and number of exposed personnel. Guidance for RAC determination is attached to this memorandum.

Surface Wipe Sampling: Fifteen wipe samples were collected on representative surfaces in the facility and analyzed for lead. For purposes of this report, any results that exceed the guidelines adopted by the NGB Mid-West Regional IH Office are considered significant.

Five of the fifteen wipe samples had high levels of lead. Two samples collected on surfaces above the Drill Room floor had lead levels of 236 and 1422 ug/ft2. Three samples collected in the former firing range were as high as 2071 ug/ft2.

Recommendations

Clean all surfaces with elevated lead levels using high-efficiency particulate air (HEPA)
filter vacuums or wet methods to avoid the spread of lead dust to other areas of the
armory. (RAC 2)

The NGB conducted this survey in the interest of preventing employee illness and to meet legal obligations where applicable. Results and recommendations are based on information provided by site personnel, field measurements, and conditions observed during the survey. For any

further questions, please contact Non-Responsive

-

Non-Responsive

Non-Responsive

Regional Industrial Hygienist

AppendixTitleStatusA.LeadAttached

Surface Sample Lead Testing Survey Date: September 25, 2014

Appendix A Lead

Surface Wipe Sampling

Fifteen wipe samples were collected from representative areas of the facility using Environmental Express GhostTM Wipes and templates IAW the OSHA wipe sampling method (OSHA Technical Manual, Appendix II, 2-1). The samples were analyzed for lead by OSHA Method ID-121. The results and photos are contained in Table A-1.

Although OSHA does not have published exposure standards for metal surface contamination, 29 CFR 1910 requires that all surfaces must be kept as free as practicable of accumulations of toxic metal dusts. In addition, DOD has instituted a policy to minimize surface contamination levels of heavy metals (*Control and Management of Surface Accumulations from Lead, Hexavalent Chromium, and Cadmium Operations*, DTM 12-003, 18 April 2012).

The NGB Mid-West Regional IH Office has adopted the guidelines for metal dust published in NG Pam 420-15, *Guidelines and Procedures for Rehabilitation and Conversion of Indoor Firing Ranges* and the Department of Energy (DOE)/Brookhaven National Laboratory *Surface Wipe Sampling Procedure* (IH75190). Any results that exceed these guidelines shown in Table A-1 are considered significant.

Five of the fifteen wipe samples had high levels of lead. Two samples collected on surfaces above the Drill Room floor had lead levels of 236 and 1,422 ug/ft2. Three samples collected in the former firing range were as high as 2,071 ug/ft2.

Recommendations

 Clean all surfaces with elevated lead levels using high-efficiency particulate air (HEPA) filter vacuums or wet methods to avoid the spread of lead dust to other areas of the armory. (RAC 2)

Table A-1
Surface Wipe Sampling Results for Lead
Michigan Army National Guard
Howell Armory

	Howell Armory	
Sample No. Location	Photo	Lead (µg/ft²)
For areas op	Guidelines en to the public, s, and kitchens	40
	Guidelines as of the building	200
W-1 Drill room on floor	09/25/2014	<10
W-2 Drill room on exit sign	09/25/2014	1,422
W-3 Kitchen on ice machine	09/25/2014	<91
W-4 Room 11 adjacent to Drill room on locker	E HOME THE CONTROL OF	<91

Sample No. Location	Photo	Lead (µg/ft²)							
For areas op	Guidelines en to the public, is, and kitchens	40							
	Surface Guidelines All other areas of the building								
W-5 Fitness room on pipe	09/25/2014	<91							
W-6 Drill room on basket ball support	09/25/2014	236							
W-7 Former firing range on floor	09/25/2014	<91							
W-8 Former firing range on wall near target	09/25/2014	214							

Sample No. Location	Photo	Lead (µg/ft²)
For areas op	Guidelines en to the public, s, and kitchens	40
Surface	Guidelines as of the building	200
W-9 Former firing range on floor	09/25/2014	2,071
W-10 Former firing range on wall/ceiling	09/25/2014	737
W-11 Former firing range, office 2 nd PLT on shelf	SEABE: EQUIPMENT AND 19/25/2014	<91
W-12 Locker room on pipe	03) 25y/2014	<91

Sample No. Location	Photo	Lead (µg/ft²)								
For areas op	Guidelines en to the public, s, and kitchens	40								
	Surface Guidelines All other areas of the building									
W-13 Boiler room on metal cabinet		<91								
W-14 Hallway/stairs outside drill room kitchen on floor	09/25/2014	<91								
W-15 Front office on mouse pad	09/25/2014	<91								
W-16 blank		ND								

Notes: 1) μ g / ft² = micrograms per square foot of surface area. 2) ND = none detected. 3) "<" means less than the reporting limit for the analytical method.

Surface Sample Lead Testing Survey Date: September 25, 2014

Laboratory Result Reports and Chain of Custody Sheets



ANALYTICAL REPORT

Submitted To:

USPHS / Federal Occupational Health

Denver Federal Center Denver, CO 80225

Attention:

Submitted By:

Reference Data: Lead Sampling Site:

NGB: Howell, MI (Armory)

Sample Media: Method Reference: Ghost Wipe(s)® OSHA ID-121

Project ID:

Project 12154

DFOH Lab Nos.: Date Received:

TM-14-73477 through TM-14-73492

Data Analyzed:

09/26/14 10/10/14 - 10/14/14

Date Issued:

10/16/14

The wipe samples were hot plate digested. The samples were run on a Perkin Elmer 200 flame and/or Perkin Elmer 600 furnace atomic absorption spectrophotometer (AA).

General Lab Comments:

All quality control criteria have been met.

* All samples received in condition acceptable for analysis unless otherwise noted.

** Sample results have not been corrected for contamination based on the field blank or other analytical blank unless otherwise noted.

Analytical results are given on the enclosed tables. Results relate only to items tested. If you have any questions about these results, feel free to phone the Laboratory at (312) 886-0413.





Project 12154 Page 1 of 2



LEAD on WIPE RESULTS

SAMPLE NUMBER*	LABORATORY NUMBER	CONCENTRATION (µg)	CONCENTRATION (μg/ft²)		
W-1	TM-14-73477	<10	<10		
W-2	TM-14-73478	156	1422		
W-3	TM-14-73479	<10	<91		
W-4	TM-14-73480	<10	<91		
· W-5	TM-14-73481	<10	<91		
W-6	TM-14-73482	26	236		
W-7	TM-14-73483	<10	<91		
W-8	TM-14-73484	24	214		
W-9	TM-14-73485	228	2071		
W-10	TM-14-73486	81	737		
W-11	TM-14-73487	<10	<91		
W-12	TM-14-73488	<10	<91		
W-13	TM-14-73489	<10	<91		
W-14	TM-14-73490	<10	<91		
W-15	TM-14-73491	<10	<91		
W-16**	TM-14-73492	<10			

AGENCY	FLOORS	INTERIOR WINDOW SILLS	WINDOW TROUGHS
EPA	40 μg/ft ²	250 µg/ft ²	400 µg/ft ²

Metals in Wipe Limits (based on one ft² sampled area)

Analyte	Analytical Method	Method Detection Limit	Minimum Reporting Limit
Lead - Flame AA	OSHA ID-121	5.0 μg/ft ²	10 µg/ft²





Project 12154 Page 2 of 2

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W-5										14			73481		11	
W-6										16			73482			
W.7										16			73483			
W-8										16			73484			
W-9										16			73485		1	
W-10										16			73486		111	
W-11										16			73487	1		
W-12										16			73488		V	-
W-13										16			13489			
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W-14	7	5	Sept	25				and the state of t	and a property of	16			STO	TM-14-13490		11	1	
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National Guard Bureau Mid-West Regional Industrial Hygiene Office 301-IH Old Bay Lane Havre de Grace, MD 21078

ARNG-CSG-P February 6, 2015

MEMORANDUM FOR: The Adjutant General for Michigan

SUBJECT: Surface Wipe Testing for Lead at the Light Guard Armory in Detroit, Michigan

National Guard Bureau (NGB) Mid-West Regional Industrial Hygiene (IH) Office field personnel conducted a survey on September 23, 2014 at the Michigan Army National Guard, Light Guard Armory, located in Detroit, Michigan. This survey included a walkthrough of the facility and surface wipe sampling for lead contamination. The armory did have an indoor firing range but is now closed. The drill room and kitchen are not open to the public.

Occupational health risk assessment codes (RACs) are assigned to quantify health risks to personnel IAW DOD Letter of Instruction 6055.1, *DOD Safety and Occupational Health Program*. Risk assessment is an expression of health hazard severity and mishap probability, described in terms of route of exposure, actual exposure, exposure limit standards, potential health effects, duration of exposure, and number of exposed personnel. Guidance for RAC determination is attached to this memorandum.

Surface Wipe Sampling: Nine wipe samples were collected on representative surfaces in the facility and analyzed for lead. For purposes of this report, any results that exceed the guidelines adopted by the NGB Mid-West Regional IH Office are considered significant.

All nine surface wipe samples were below the limit of detection for lead.

Recommendations

None

The NGB conducted this survey in the interest of preventing employee illness and to meet legal obligations where applicable. Results and recommendations are based on information provided by site personnel, field measurements, and conditions observed during the survey. For any further questions, please contact Non-Responsive

Non-Responsive

Non-Responsive

Regional Industrial Hygienist

Appendix Title Status
A. Lead Attached

Surface Sample Lead Testing Survey Date: September 23, 2014

Appendix A Lead

Surface Wipe Sampling

Nine wipe samples were collected from representative areas of the facility using Environmental Express GhostTM Wipes and templates IAW the OSHA wipe sampling method (OSHA Technical Manual, Appendix II, 2-1). The samples were analyzed for lead by OSHA Method ID-121. The results and photos are contained in Table A-1.

Although OSHA does not have published exposure standards for metal surface contamination, 29 CFR 1910 requires that all surfaces must be kept as free as practicable of accumulations of toxic metal dusts. In addition, DOD has instituted a policy to minimize surface contamination levels of heavy metals (*Control and Management of Surface Accumulations from Lead, Hexavalent Chromium, and Cadmium Operations*, DTM 12-003, 18 April 2012).

The NGB Mid-West Regional IH Office has adopted the guidelines for metal dust published in NG Pam 420-15, *Guidelines and Procedures for Rehabilitation and Conversion of Indoor Firing Ranges* and the Department of Energy (DOE)/Brookhaven National Laboratory *Surface Wipe Sampling Procedure* (IH75190). Any results that exceed these guidelines shown in Table A-1 are considered significant.

All nine surface wipe samples were below the limit of detection for lead.

Recommendations

None

Surface Sample Lead Testing Survey Date: September 23, 2014

Table A-1
Surface Wipe Sampling Results for Lead
Michigan Army National Guard
Light Guard Armory

Sample No. Location	Photo	Lead (μg/ft²)
Surface For areas op Break room	40	
	Guidelines as of the building	200
W-1 Drill room on the floor	09/23/2014	<10
W-2 Drill room on AED box	09/23/2014	<91
W-3 Drill room on upper heater	05/23/2014	<91
W-4 Drill room on basket ball support	09 23 2014	<91

Sample No. Location	Photo	Lead (µg/ft²)
Surface For areas op Break room	40	
	Guidelines as of the building	200
W-5 Kitchen on ice machine	15-24/2014	<91
W-6 Locker room/former firing range on locker	02:733	<91
W-7 Locker room/former firing range on floor	09/23/2014	<91
W-8 Room 43 on desk	09/23/2014	<91

Sample No. Location	Photo	Lead (µg/ft²)
Surface Guidelines For areas open to the public, Break rooms, and kitchens		40
Surface Guidelines All other areas of the building		200
W-9 Recruiting Office on mouse pad	09/23/2014	<91
W-10 blank		ND

Notes: 1) μ g / ft² = micrograms per square foot of surface area. 2) ND = none detected. 3) "<" means less than the reporting limit for the analytical method.

Surface Sample Lead Testing Survey Date: September 23, 2014

Laboratory Result Reports and Chain of Custody Sheets



ANALYTICAL REPORT

Submitted To:

USPHS / Federal Occupational Health

Denver Federal Center Denver, CO 80225

Attention:

Non-Responsive

Submitted By:

Reference Data:

Lead

Sampling Site:

NGB: Detroit, MI (Light Guard Armory)

Sample Media: Method Reference: Ghost Wipe(s)® OSHA ID-121

Method Reference Project ID: Project 12152

DFOH Lab Nos.:

TM-14-73459 through TM-14-73468

Date Received:

09/26/14

Data Analyzed:

10/10/14 - 10/14/14

Date Issued:

10/16/14

The wipe samples were hot plate digested. The samples were run on a Perkin Elmer 200 flame and/or Perkin Elmer 600 furnace atomic absorption spectrophotometer (AA).

General Lab Comments:

All quality control criteria have been met.

* All samples received in condition acceptable for analysis unless otherwise noted.

** Sample results have not been corrected for contamination based on the field blank or other analytical blank unless otherwise noted.

Analytical results are given on the enclosed tables. Results relate only to items tested. If you have any questions about these results, feel free to phone the Laboratory at (312) 886-0413.





Project 12152 Page 1 of 2



LEAD on WIPE RESULTS

SAMPLE NUMBER*	LABORATORY NUMBER	CONCENTRATION (µg)	CONCENTRATION (μg/ft²)
W-1	TM-14-73459	<10	<10
W-2	TM-14-73460	<10	<91
W-3	TM-14-73461	<10	<91
W-4	TM-14-73462	<10	<91
: W-5	TM-14-73463	<10	<91
W-6	TM-14-73464	<10	<91
W-7	TM-14-73465	<10	<91
W-8	TM-14-73466	<10	<91
W-9	TM-14-73467	<10	<91
W-10**	TM-14-73468	<10	

AGENCY	FLOORS	INTERIOR WINDOW SILLS	WINDOW TROUGHS
EPA	40 μg/ft ²	250 μg/ft²	400 μg/ft ²

Metals in Wipe Limits (based on one ft² sampled area)

Analyte	Analytical Method	Method Detection Limit	Minimum Reporting Limit
Lead - Flame AA	OSHA ID-121	5.0 μg/ft ²	10 μg/ft²





Project 12152 Page 2 of 2

Environmental Laboratory PROJECT REFERENCE For Lab Use Only 536 S. Clark Street South, Suite 714 Chicago, IL 60605-1521 oject /Report #: 106644 ue Date: O (O / O (circle one) No.: Due Date: Tel: (312)-886-0413 Fax: (312)-886-0434 Statement Water Sample Codes' Turn Around Time Codes' Analysis Requested 180648 of Work No.: STD- Standard 3D- Three Day Rush[®] Project Container Types: P-Plastic, G-Glass, V-VOC Agency eservatives: WH Weekend/Holiday* ARMONY A-None, B-H₂SO₄, Proj. Manager Detroit M C-HNO₃, D-NaOH Location (City, State): Sample Location / Description Flow Time Volume Area Volume (LPM) (Min.) (Liters) (ft²) (Liters) ID# Around Time⁴ STD TH-14-73459 W-1 9/23/4 W-2 73460 16 73461 W-4 16 734602 73463 16 73464 16 73465 16 73466 73467 16 173468

US PUBLIC HEALTH SERVICE, FEDERAL OCCUPATIONAL HEALTH CHAIN-OF-CUSTODY / FIELD DATA SHEET

1-Charcoal 2-Matched Weight, 0.8um 3-PVC filter 4-M CE 0.8 um , 37 mm 5-Ghost Wipes ** 6. Passive badge

Relinquished By Date & Time

^{*} Applied to organic and inorganic analysis in cases of an emergency only.

Applied to inorganic and organic samples, SD: Applied to organic and inorganic samples, SD: Applied to organic and inorganic samples 7-10 business days.

National Guard Bureau Mid-West Regional Industrial Hygiene Office 301-IH Old Bay Lane Havre de Grace, MD 21078

ARNG-CSG-P February 6, 2015

MEMORANDUM FOR: The Adjutant General for Michigan

SUBJECT: Surface Wipe Testing for Lead at the armory in Manistee, Michigan

National Guard Bureau (NGB) Mid-West Regional Industrial Hygiene (IH) Office field personnel conducted a survey on September 17, 2014 at the Michigan Army National Guard Armory, located in Manistee, Michigan. This survey included a walkthrough of the facility and surface wipe sampling for lead contamination.

Occupational health risk assessment codes (RACs) are assigned to quantify health risks to personnel IAW DOD Letter of Instruction 6055.1, *DOD Safety and Occupational Health Program*. Risk assessment is an expression of health hazard severity and mishap probability, described in terms of route of exposure, actual exposure, exposure limit standards, potential health effects, duration of exposure, and number of exposed personnel. Guidance for RAC determination is attached to this memorandum.

Surface Wipe Sampling: Nine wipe samples were collected on representative surfaces in the facility and analyzed for lead. For purposes of this report, any results that exceed the guidelines adopted by the NGB Mid-West Regional IH Office are considered significant.

Two of the nine wipe samples had detectable levels of lead. The sample collected on the floor of the former firing range near the target end had a lead level of 1,780 ug/ft2. A sample collected in the former firing range on a storage box had a lead level of 290 ug/ft2.

Recommendations

Clean the surfaces in the former firing range using high-efficiency particulate air (HEPA)
filter vacuums or wet methods to avoid the spread of lead dust to other areas of the
armory. (RAC 2)

The NGB conducted this survey in the interest of preventing employee illness and to meet legal obligations where applicable. Results and recommendations are based on information provided by site personnel, field measurements, and conditions observed during the survey. For any

further questions, please contact Non-Responsive

-

Non-Responsive

Non-Responsive

Regional Industrial Hygienist

Appendix Title Status
A. Lead Attached

Surface Sample Lead Testing Survey Date: September 17, 2014

Appendix A Lead

Surface Wipe Sampling

Nine wipe samples were collected from representative areas of the facility using Environmental Express GhostTM Wipes and templates IAW the OSHA wipe sampling method (OSHA Technical Manual, Appendix II, 2-1). The samples were analyzed for lead by OSHA Method ID-121. The results and photos are contained in Table A-1.

Although OSHA does not have published exposure standards for metal surface contamination, 29 CFR 1910 requires that all surfaces must be kept as free as practicable of accumulations of toxic metal dusts. In addition, DOD has instituted a policy to minimize surface contamination levels of heavy metals (*Control and Management of Surface Accumulations from Lead, Hexavalent Chromium, and Cadmium Operations*, DTM 12-003, 18 April 2012).

The NGB Mid-West Regional IH Office has adopted the guidelines for metal dust published in NG Pam 420-15, *Guidelines and Procedures for Rehabilitation and Conversion of Indoor Firing Ranges* and the Department of Energy (DOE)/Brookhaven National Laboratory *Surface Wipe Sampling Procedure* (IH75190). Any results that exceed these guidelines shown in Table A-1 are considered significant.

Two of the nine wipe samples had detectable levels of lead. The sample collected on the floor of the former firing range near the target end had a lead level of 1,780 ug/ft2. A sample collected in the former firing range on a storage box had a lead level of 290 ug/ft2.

Recommendations

 Clean the surfaces in the former firing range using high-efficiency particulate air (HEPA) filter vacuums or wet methods to avoid the spread of lead dust to other areas of the armory. (RAC 2)

Table A-1
Surface Wipe Sampling Results for Lead
Michigan Army National Guard
Manistee Armory

Sample No. Location	Lead (µg/ft²)		
For areas op	Surface Guidelines For areas open to the public, Break rooms, and kitchens		
	Guidelines as of the building	200	
W-1 Former firing range on floor at target end		1,780	
W-2 Former firing range in crawl space on storage box	59/7/2014	290	
W-3 Former firing range on stereo speaker	99/17/2014	<91	
W-4 Drill room on soda machine	09/17/2014	<91	

Sample No. Location	Photo	Lead (µg/ft²)
Surface For areas op Break room	40	
Surface	Guidelines as of the building	200
W-5 Drill room on basket ball support pipe		<91
W-6 Drill room on floor	09/17/2014	<91
W-7 Bunk room on window sill	09/17/2014	<91
W-8 Kitchen on ice machine	09/17/6014	<91

Sample No. Location	Photo	Lead (µg/ft²)
For areas op	Guidelines en to the public, s, and kitchens	40
	Surface Guidelines All other areas of the building	
W-9 Drill room on ledge	09/17/2014	<91
W-10 blank		ND

Notes: 1) μ g / ft² = micrograms per square foot of surface area. 2) ND = none detected. 3) "<" means less than the reporting limit for the analytical method.

Laboratory Result Reports and Chain of Custody Sheets



ANALYTICAL REPORT

Submitted To:

USPHS / Federal Occupational Health

Denver Federal Center Denver, CO 80225

Attention:

Non-Responsive

Submitted By:

Reference Data:

Lead

Sampling Site:

NGB: Manistee, MI (Armory)

Sample Media: Method Reference: Ghost Wipe(s)® OSHA ID-121

Project ID:

Project 12118

DFOH Lab Nos.:

TM-14-73022 through TM-14-73031

Date Received: 09/22/14

Data Analyzed:

10/01/14 - 10/02/14

Date Issued: 10/03/14

The wipe samples were hot plate digested. The samples were run on a Perkin Elmer 200/400 flame atomic absorption spectrophotometer (AA).

General Lab Comments:

All quality control criteria have been met.

* All samples received in condition acceptable for analysis unless otherwise noted.

** Sample results have not been corrected for contamination based on the field blank or other analytical blank unless otherwise noted.

Analytical results are given on the enclosed tables. Results relate only to items tested. If you have any questions about these results, feel free to phone the Laboratory at (312) 886-0413.





Project 12118 Page 1 of 2



LEAD on WIPE RESULTS

SAMPLE NUMBER*	LABORATORY NUMBER	CONCENTRATION (µg)	CONCENTRATION (μg/ft²)
W-1	TM-14-73022	196	1780
W-2	TM-14-73023	32	290
W-3	TM-14-73024	<10	<91
W-4	TM-14-73025	<10	<91
· W-5	TM-14-73026	<10	<91
W-6	TM-14-73027	<10	<91
W-7	TM-14-73028	<10	<91
W-8	TM-14-73029	<10	<91
W-9	TM-14-73030	<10	<91
W-10**	TM-14-73031	<10	

AGENCY	FLOORS	INTERIOR WINDOW SILLS	WINDOW TROUGHS
EPA	40 μg/ft ²	250 μg/ft ²	400 μg/ft ²

Metals in Wipe Limits (based on one ft² sampled area)

Analyte	Analytical Method	Method Detection Limit	Minimum Reporting Limit
Lead - Flame AA	OSHA ID-121	5.0 μg/ft ²	10 μg/ft²





Project 12118 Page 2 of 2

Vironmental Labo 8 S. Clark Street Sou Icago, IL 60605-1521 I: (312)-886-0413 Fa	th, Sulte				Agreement No.:	1066	44		For Lab Project /F Due Date Samples	Report #	#: /	2/	18	Canditions on Rece	eipt with N	lame		. 07/2i
lon-Respo					of Work No.:	1800 P1800	-		Containe	Sampler Type:	le Codes' s:		STD-	Standard Three Day Rush	Analys	S Ro	THE REAL PROPERTY.	TOTAL
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					(City, State):	16/16/10		NI	CHIN	03, 10-1	NaOH							
ID#	Type¹	Sample Media ²	Collec	ted	Sample Location / D	escription	Flow (LPM)	Air Time (Min.)	Volume (Liters)		Volume (Litters)	er Code ³	Turn Around Time*	Lab ID#				
W-1	7	5	9/17	14						16			STO	D4-14-73022				1
W-2			, ,							16				73023				
W-3										16				73024				
W-4						-				16				73025				
W-5										16				73026			1	
W-6										144				73027				
W-7										16				73028				
W-8										16				73029				
W-9										16				73030		N	1	
W-10	-			-			-			*		-	-	473031		7	+	-
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Sample Type Code 2-Water 3-Paint 4-So k 7-Wipe 8 - Other	5-Dust		1-Charco 3-PVC fill 5 -Ghost 7. Other	al 2-l er d Wipes™	Media Chocs Astrhad Welght, 0.8um I-M CE 0.8 um , 37 mm 6. Passive badge	Non-Re				6 Tim		SYS	Hacan	of BAN PARKET SEE	Bak	tabl	To Die	
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National Guard Bureau Mid-West Regional Industrial Hygiene Office 301-IH Old Bay Lane Havre de Grace, MD 21078

ARNG-CSG-P February 6, 2015

MEMORANDUM FOR: The Adjutant General for Michigan

SUBJECT: Surface Wipe Testing for Lead at the Olympia Armory in Detroit, Michigan

National Guard Bureau (NGB) Mid-West Regional Industrial Hygiene (IH) Office field personnel conducted a survey on September 23, 2014 at the Michigan Army National Guard Olympia Armory, located in Detroit, Michigan. This survey included a walkthrough of the facility and surface wipe sampling for lead contamination. The armory has an indoor firing range but it has never been used. The drill room and kitchen are open to the public for events.

Occupational health risk assessment codes (RACs) are assigned to quantify health risks to personnel IAW DOD Letter of Instruction 6055.1, *DOD Safety and Occupational Health Program*. Risk assessment is an expression of health hazard severity and mishap probability, described in terms of route of exposure, actual exposure, exposure limit standards, potential health effects, duration of exposure, and number of exposed personnel. Guidance for RAC determination is attached to this memorandum.

Surface Wipe Sampling: Nine wipe samples were collected on representative surfaces in the facility and analyzed for lead. For purposes of this report, any results that exceed the guidelines adopted by the NGB Mid-West Regional IH Office are considered significant.

All nine surface wipe samples were below the limit of detection for lead.

Recommendations

None

The NGB conducted this survey in the interest of preventing employee illness and to meet legal obligations where applicable. Results and recommendations are based on information provided by site personnel, field measurements, and conditions observed during the survey. For any further questions, please contact Non-Responsive

Non-Responsive

Non-Responsive

Regional Industrial Hygienist

Appendix Title Status
A. Lead Attached

Surface Sample Lead Testing Survey Date: September 23, 2014

Appendix A Lead

Surface Wipe Sampling

Nine wipe samples were collected from representative areas of the facility using Environmental Express GhostTM Wipes and templates IAW the OSHA wipe sampling method (OSHA Technical Manual, Appendix II, 2-1). The samples were analyzed for lead by OSHA Method ID-121. The results and photos are contained in Table A-1.

Although OSHA does not have published exposure standards for metal surface contamination, 29 CFR 1910 requires that all surfaces must be kept as free as practicable of accumulations of toxic metal dusts. In addition, DOD has instituted a policy to minimize surface contamination levels of heavy metals (*Control and Management of Surface Accumulations from Lead, Hexavalent Chromium, and Cadmium Operations*, DTM 12-003, 18 April 2012).

The NGB Mid-West Regional IH Office has adopted the guidelines for metal dust published in NG Pam 420-15, *Guidelines and Procedures for Rehabilitation and Conversion of Indoor Firing Ranges* and the Department of Energy (DOE)/Brookhaven National Laboratory *Surface Wipe Sampling Procedure* (IH75190). Any results that exceed these guidelines shown in Table A-1 are considered significant.

All nine surface wipe samples were below the limit of detection for lead.

Recommendations

None

Surface Sample Lead Testing Survey Date: September 23, 2014

Table A-1 Surface Wipe Sampling Results for Lead Michigan Army National Guard Olympia Armory

Sample No. Location	Photo	Lead (µg/ft²)
Surface For areas op Break room	40	
Surface All other area	200	
W-1 Drill room on floor	09/23/2014	<10
W-2 Drill room on locker	09/23/2014	<91
W-3 Kitchen on ice machine	09/23/2014	<91
W-4 Storage on electrical box	09/23/2014	<91

Sample No. Location	Photo	Lead (µg/ft²)
Surface For areas op Break room	40	
Surface All other area	200	
W-5 Classroom on TV projector	09/23/2014	<91
W-6 Office – SGT Jones on mouse pad	109/23/2014	<91
W-7 Locker room on locker	09/23/2014	<91
W-8 Fitness room/Former firing range on floor	09/23/2014	<91

Sample No. Location	Photo	Lead (µg/ft²)
Surface For areas op Break room	40	
	Guidelines as of the building	200
W-9 Fitness room/Former firing range on equipment	09/23/2014	<i>!</i> <91
W-10 blank		ND

Notes: 1) μ g / ft² = micrograms per square foot of surface area. 2) ND = none detected. 3) "<" means less than the reporting limit for the analytical method.

Laboratory Result Reports and Chain of Custody Sheets



ANALYTICAL REPORT

Submitted To:

USPHS / Federal Occupational Health

Denver Federal Center Denver, CO 80225

Attention:

Non-Responsive

Submitted By:

Reference Data: Lead

Sampling Site: NGB: Olympia, MI (Armory)

Sample Media: Ghost Wipe(s)®
Method Reference: OSHA ID-121
Project ID: Project 12158

DFOH Lab Nos.: TM-14-73522 through TM-14-73531

Date Received: 09/26/14

Data Analyzed: 10/10/14 - 10/14/14

Date Issued: 10/16/14

The wipe samples were hot plate digested. The samples were run on a Perkin Elmer 200 flame atomic absorption spectrophotometer (AA).

General Lab Comments:

All quality control criteria have been met.

* All samples received in condition acceptable for analysis unless otherwise noted.

** Sample results have not been corrected for contamination based on the field blank or other analytical blank unless otherwise noted.

Analytical results are given on the enclosed tables. Results relate only to items tested. If you have any questions about these results, feel free to phone the Laboratory at (312) 886-0413.





Project 12158 Page 1 of 2



FOH ENVIRONMENTAL LABORATORY

536 S. CLARK STREET CHICAGO, IL 60605 PHONE: (312) 886-0413 FAX: (312) 886-0434

LEAD on WIPE RESULTS

SAMPLE NUMBER*	LABORATORY NUMBER	CONCENTRATION (µg)	CONCENTRATION (μg/ft²)
W-1	TM-14-73522	<10	<10
W-2	TM-14-73523	<10	<91
W-3	TM-14-73524	<10	<91
W-4	TM-14-73525	<10	<91
: W-5	TM-14-73526	<10	<91
W-6	TM-14-73527	<10	<91
W-7	TM-14-73528	<10	<91
W-8	TM-14-73529	<10	<91
W-9	TM-14-73530	<10	<91
W-10**	TM-14-73531	<10	

AGENCY	FLOORS	INTERIOR WINDOW SILLS	WINDOW TROUGHS
EPA	40 μg/ft ²	250 μg/ft ²	400 μg/ft ²

Metals in Wipe Limits (based on one ft² sampled area)

Analyte	Analytical Method	Method Detection Limit	Minimum Reporting Limit
Lead - Flame AA	OSHA ID-121	5.0 μg/ft ²	10 μg/ft ²





Project 12158 Page 2 of 2

536 S. Clark Street South, Suite 714 A/06644 Chicago, IL 60605-1521 Tel: (312)-886-0413 Fax: (312)-886-0434 Statement 180648 of Work No.: STD- Standard 3D- Three Day Rush® Project 180649 Container Types: No: P-Plastic, G-Glass, V-VOC ARNE WH Weekend/Holiday Armory Proj. Manager A-None, B-H₂SO₄ Lei C-HNO₃, D-NaOH Olympia (City, State): Wipe Water Volume Area Volume Code³ (Liters) (tt²) (Liters) nple Location / Description ID# Lab ID# Collected Date Time 5 STO 774-14-73522 W-1 144 W-2 16 73523 W-3 73524 14 16 W-4 73525 16 W-5 73526 16 W-6 73527 16 73528 W-7 14 73529 W-f 73530 W-9 blank W-10 V13531

US PUBLIC HEALTH SERVICE, FEDERAL OCCUPATIONAL HEALTH CHAIN-OF-CUSTODY / FIELD DATA SHEET

Applied to organic and inorganic analysis in cases of an emergency only.

Applied to inorganic and organic samples, SD: Applied to organic and inorganic samples 7-10 business days,

National Guard Bureau Mid-West Regional Industrial Hygiene Office 301-IH Old Bay Lane Havre de Grace, MD 21078

ARNG-CSG-P February 6, 2015

MEMORANDUM FOR: The Adjutant General for Michigan

SUBJECT: Surface Wipe Testing for Lead at the Armory in Pontiac, Michigan

National Guard Bureau (NGB) Mid-West Regional Industrial Hygiene (IH) Office field personnel conducted a survey on September 22, 2014 at the Michigan Army National Guard Armory, located in Pontiac, Michigan. This survey included a walkthrough of the facility and surface wipe sampling for lead contamination.

Occupational health risk assessment codes (RACs) are assigned to quantify health risks to personnel IAW DOD Letter of Instruction 6055.1, *DOD Safety and Occupational Health Program*. Risk assessment is an expression of health hazard severity and mishap probability, described in terms of route of exposure, actual exposure, exposure limit standards, potential health effects, duration of exposure, and number of exposed personnel. Guidance for RAC determination is attached to this memorandum.

Surface Wipe Sampling: Nine wipe samples were collected on representative surfaces in the facility and analyzed for lead. For purposes of this report, any results that exceed the guidelines adopted by the NGB Mid-West Regional IH Office are considered significant.

One of the nine wipe samples had a high level of lead. The sample collected on a metal cabinet in Room 152 had a lead level of 476 ug/ft2.

Recommendations

 Clean the surfaces in Room 152 using high-efficiency particulate air (HEPA) filter vacuums or wet methods. (RAC 2)

The NGB conducted this survey in the interest of preventing employee illness and to meet legal obligations where applicable. Results and recommendations are based on information provided by site personnel, field measurements, and conditions observed during the survey. For any further questions, please contact Non-Responsive

Non-Responsive



Appendix Title Status
A. Lead Attached

Surface Sample Lead Testing Survey Date: September 22, 2014

Appendix A Lead

Surface Wipe Sampling

Nine wipe samples were collected from representative areas of the facility using Environmental Express GhostTM Wipes and templates IAW the OSHA wipe sampling method (OSHA Technical Manual, Appendix II, 2-1). The samples were analyzed for lead by OSHA Method ID-121. The results and photos are contained in Table A-1.

Although OSHA does not have published exposure standards for metal surface contamination, 29 CFR 1910 requires that all surfaces must be kept as free as practicable of accumulations of toxic metal dusts. In addition, DOD has instituted a policy to minimize surface contamination levels of heavy metals (*Control and Management of Surface Accumulations from Lead, Hexavalent Chromium, and Cadmium Operations*, DTM 12-003, 18 April 2012).

The NGB Mid-West Regional IH Office has adopted the guidelines for metal dust published in NG Pam 420-15, *Guidelines and Procedures for Rehabilitation and Conversion of Indoor Firing Ranges* and the Department of Energy (DOE)/Brookhaven National Laboratory *Surface Wipe Sampling Procedure* (IH75190). Any results that exceed these guidelines shown in Table A-1 are considered significant.

One of the nine wipe samples had a high level of lead. The sample collected on a metal cabinet in Room 152 had a lead level of 476 ug/ft2.

Recommendations

1. Clean the surfaces in Room 152 using high-efficiency particulate air (HEPA) filter vacuums or wet methods. (RAC 2)

Table A-1
Surface Wipe Sampling Results for Lead
Michigan Army National Guard
Pontiac Armory

Sample No. Location						
Surface For areas op Break room	40					
	Guidelines as of the building	200				
W-1 Drill room floor	09/22/2014	<10				
W-2 Room 152 on metal cabinet	09/22/2014	476				
W-3 Unit Storage 1 on table		<91				
W-4 Locker room 106 on locker	09/22/2014	<91				

Sample No. Location	Photo	Lead (µg/ft²)
Surface For areas op Break room	40	
Surface	Guidelines as of the building	200
W-5 Locker room 114 on locker	09/22/2014	<91
W-6 Kitchen on ice machine	09/22/2014	<91
W-7 Room 134 on bench	09/22/2014	<91
W-8 Classroom on desk	09/22/2014	<91

Sample No. Location	Photo	Lead (µg/ft²)
Surface For areas op Break room	40	
	Guidelines as of the building	200
W-9 Office on mouse pad	08/2/2014	<91
W-10 blank		ND

Notes: 1) μ g / ft² = micrograms per square foot of surface area. 2) ND = none detected. 3) "<" means less than the reporting limit for the analytical method.

Laboratory Result Reports and Chain of Custody Sheets



ANALYTICAL REPORT

Submitted To:

USPHS / Federal Occupational Health

Denver Federal Center Denver, CO 80225

Attention:

Non-Responsive

Submitted By:

Reference Data: Lead

Sampling Site: NGB: Pontiac, MI (Armory)

Sample Media: Method Reference:

Ghost Wipe(s)®

Method Reference: Project ID: OSHA ID-121 Project 12151

DFOH Lab Nos.: Date Received: TM-14-73449 through TM-14-73458

d: 09/26/14

Data Analyzed:

10/10/14 - 10/14/14

Date Issued:

10/16/14

The wipe samples were hot plate digested. The samples were run on a Perkin Elmer 200 flame and/or Perkin Elmer 600 furnace atomic absorption spectrophotometer (AA).

General Lab Comments:

All quality control criteria have been met.

- * All samples received in condition acceptable for analysis unless otherwise noted.
- ** Sample results have not been corrected for contamination based on the field blank or other analytical blank unless otherwise noted.

Analytical results are given on the enclosed tables. Results relate only to items tested. If you have any questions about these results, feel free to phone the Laboratory at Non-Responsive





Project 12151 Page 1 of 2



LEAD on WIPE RESULTS

SAMPLE NUMBER*	LABORATORY NUMBER	CONCENTRATION (µg)	CONCENTRATION (μg/ft²)
W-1	TM-14-73449	<10	<10
W-2	TM-14-73450	52	476
W-3	TM-14-73451	<10	<91
W-4	TM-14-73452	<10	<91
: W-5	TM-14-73453	<10	<91
W-6	TM-14-73454	<10	<91
W-7	TM-14-73455	<10	<91
W-8	TM-14-73456	<10	<91
W-9	TM-14-73457	<10	<91
W-10**	TM-14-73458	<10	

AGENCY	FLOORS	INTERIOR WINDOW SILLS	WINDOW TROUGHS
EPA	40 μg/ft ²	250 μg/ft ²	400 μg/ft ²

Metals in Wipe Limits (based on one ft² sampled area)

Analyte	Analytical Method	Method Detection Limit	Minimum Reporting Limit
Lead - Flame AA	OSHA ID-121	5.0 μg/ft ²	10 μg/ft²





Project 12151 Page 2 of 2

		C HE	ALTH S	SERV								F-CU	STOD	Y / FIELD DATA	SHEET		
Environmental Labor i36 S. Clark Street Sout Chicago, IL 60605-1521	h, Suite		1.0000	1488	The Street Land of the Street La	A 1066	THE RESIDENCE OF THE PARTY OF		Project /F Due Date	Report #	V:	10	151	Conditions on Reco	sipt with Na	me & Da	te
el: (312)-886-0413 Fa:			4		Statement	S			_				5 1 (19	(circle one)		A	ev. 07/20
Non-Respo	nsiv	/e			of Work No.:	1806	48		Water	Samp	le Code		Turn A	round Time Codes	Analysis	Reque	sted
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					Agency	1			Preserva	tives:			WH	Weekend/Holiday*		.	
					Proj. Manager	mu	344		A-No	ne, B-H	SO4.						/
					Location	Post			C-HN	O ₃ , D-	NaOH				14	94	0
					(City, State):	Pontio	41										
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W-5	-	-	_				_			16				73453			
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ir 2-Water 3-Paint 4-Soil 3uk 7-Wipa 8 - Other	5-Dust		1-Charcos 3-PVC filte 5 -Ghost V 7. Other	F 4	Matched Weight, 0.8um I-M CE 0.8 um , 37 mm 6. Passive badge	Non-F	Kesp	on	sive								
COMMENTS:			3-PVC filte 5 -Ghost V	F 4	-M CE 0.8 um . 37 mm	INOTI-I	165		SIVE								

^{*} Applied to organic and inorganic analysis in cases of an emergency only.

Applied to inorganic and organic samples, SD: Applied to organic and inorganic samples 7-10 business days.

National Guard Bureau Mid-West Regional Industrial Hygiene Office 301-IH Old Bay Lane Havre de Grace, MD 21078

ARNG-CSG-P February 6, 2015

MEMORANDUM FOR: The Adjutant General for Michigan

SUBJECT: Surface Wipe Testing for Lead at the Armory in Taylor, Michigan

National Guard Bureau (NGB) Mid-West Regional Industrial Hygiene (IH) Office field personnel conducted a survey on September 23, 2014 at the Michigan Army National Guard Armory, located in Taylor, Michigan. This survey included a walkthrough of the facility and surface wipe sampling for lead contamination. The armory did have a firing range that is now closed. The Drill Room and Kitchen are not open to the public.

Occupational health risk assessment codes (RACs) are assigned to quantify health risks to personnel IAW DOD Letter of Instruction 6055.1, *DOD Safety and Occupational Health Program*. Risk assessment is an expression of health hazard severity and mishap probability, described in terms of route of exposure, actual exposure, exposure limit standards, potential health effects, duration of exposure, and number of exposed personnel. Guidance for RAC determination is attached to this memorandum.

Surface Wipe Sampling: Ten wipe samples were collected on representative surfaces in the facility and analyzed for lead. For purposes of this report, any results that exceed the guidelines adopted by the NGB Mid-West Regional IH Office are considered significant.

Two of the ten wipe samples had high levels of lead. The sample collected on a file cabinet in the Mechanical Room had a lead level of 463 ug/ft2. A sample collected on top of a garage door in the Drill Room had a lead level of 389 ug/ft2.

Recommendations

• Clean the surfaces in the Mechanical Room and Drill Room using high-efficiency particulate air (HEPA) filter vacuums or wet methods. (RAC 2)

The NGB conducted this survey in the interest of preventing employee illness and to meet legal obligations where applicable. Results and recommendations are based on information provided by site personnel, field measurements, and conditions observed during the survey. For any further questions, please contact Non-Responsive

Non-Responsive

Non-Responsive

Regional Industrial Hygienist

AppendixTitleStatusA.LeadAttached

Surface Sample Lead Testing Survey Date: September 23, 2014

Appendix A Lead

Surface Wipe Sampling

Ten wipe samples were collected from representative areas of the facility using Environmental Express GhostTM Wipes and templates IAW the OSHA wipe sampling method (OSHA Technical Manual, Appendix II, 2-1). The samples were analyzed for lead by OSHA Method ID-121. The results and photos are contained in Table A-1.

Although OSHA does not have published exposure standards for metal surface contamination, 29 CFR 1910 requires that all surfaces must be kept as free as practicable of accumulations of toxic metal dusts. In addition, DOD has instituted a policy to minimize surface contamination levels of heavy metals (*Control and Management of Surface Accumulations from Lead, Hexavalent Chromium, and Cadmium Operations*, DTM 12-003, 18 April 2012).

The NGB Mid-West Regional IH Office has adopted the guidelines for metal dust published in NG Pam 420-15, *Guidelines and Procedures for Rehabilitation and Conversion of Indoor Firing Ranges* and the Department of Energy (DOE)/Brookhaven National Laboratory *Surface Wipe Sampling Procedure* (IH75190). Any results that exceed these guidelines shown in Table A-1 are considered significant.

Two of the ten wipe samples had high levels of lead. The sample collected on a file cabinet in the Mechanical Room had a lead level of 463 ug/ft2. A sample collected on top of a garage door in the Drill Room had a lead level of 389 ug/ft2.

Recommendations

1. Clean the surfaces in the Mechanical Room and Drill Room using high-efficiency particulate air (HEPA) filter vacuums or wet methods. (RAC 2)

Table A-1
Surface Wipe Sampling Results for Lead
Michigan Army National Guard
Taylor Armory

Sample No. Location	Location						
Surface For areas op Break room	40						
	Guidelines as of the building	200					
W-1 Drill room on the floor	09/23/2014	<91					
W-2 Mechanical room on file cabinet	09/23/2014	463					
W-3 Kitchen on ice machine	09/23/2014	<91					
W-4 Men's room on shelf	08/23/2014	<91					

Sample No. Location	Photo	Lead (µg/ft²)
Surface For areas op Break room	40	
Surface	Guidelines as of the building	200
W-5 Drill room on top of garage door	09/23/2014	389
W-6 Locker room on locker	09/23/2014	<91
W-7 Room 147 on mouse pad	nan.	<91
W-8 Former firing range	09/23/2014	<91

Sample No. Location	Photo	Lead (µg/ft²)
For areas op	Guidelines en to the public, s, and kitchens	40
	Guidelines as of the building	200
W-9 Fitness room/Former firing range on wooden shelf	09/23/2014	<91
W-10 Break room on vending machine	3/23/2014	<91
W-11 blank		ND

Notes: 1) μ g / ft² = micrograms per square foot of surface area. 2) ND = none detected. 3) "<" means less than the reporting limit for the analytical method.

Laboratory Result Reports and Chain of Custody Sheets



ANALYTICAL REPORT

Submitted To:

USPHS / Federal Occupational Health

Denver Federal Center Denver, CO 80225

Attention:

Non-Responsive

Submitted By:

Reference Data:

Lead

Sampling Site:

NGB: Taylor, MI (Armory)

Sample Media: Method Reference: Ghost Wipe(s)® OSHA ID-121

Method Reference Project ID: Project 12162

DFOH Lab Nos.: Date Received: TM-14-73558 through TM-14-73568 09/26/14

Data Analyzed:

10/10/14 - 10/14/14

Date Issued:

10/16/14

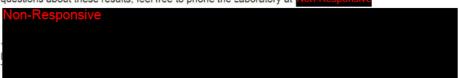
The wipe samples were hot plate digested. The samples were run on a Perkin Elmer 200 flame atomic absorption spectrophotometer (AA).

General Lab Comments:

All quality control criteria have been met.

- * All samples received in condition acceptable for analysis unless otherwise noted.
- ** Sample results have not been corrected for contamination based on the field blank or other analytical blank unless otherwise noted.

Analytical results are given on the enclosed tables. Results relate only to items tested. If you have any questions about these results, feel free to phone the Laboratory at Non-Responsive





Project 12162 Page 1 of 2



LEAD on WIPE RESULTS

SAMPLE NUMBER*	LABORATORY NUMBER	CONCENTRATION (µg)	CONCENTRATION (µg/ft²)
W-1	TM-14-73558	<10	<91
W-2	TM-14-73559	51	463
W-3	TM-14-73560	<10	<91
W-4	TM-14-73561	<10	<91
: W-5	TM-14-73562	43	389
W-6	TM-14-73563	<10	<91
W-7	TM-14-73564	<10	<91
W-8	TM-14-73565	<10	<91
W-9	TM-14-73566	<10	<91
W-10	TM-14-73567	<10	<91
W-11**	TM-14-73568	<10	

AGENCY	FLOORS	INTERIOR WINDOW SILLS	WINDOW TROUGHS
EPA	40 μg/ft ²	250 μg/ft ²	400 μg/ft ²

Metals in Wipe Limits (based on one ft² sampled area)

Analyte	Analytical Method	Method Detection Limit	Minimum Reporting Limit
Lead - Flame AA	OSHA ID-121	5.0 μg/ft ²	10 μg/ft ²





Project 12162 Page 2 of 2 COMMENTS:

PROJECT REFERENCE For Lab Use Only Environmental Laboratory 2/62 536 S. Clark Street South, Suite 714 Chicago, IL 60605-1521 roject /Report #: A 106644 mples Received Chilled? YES NO (circle one) Due Date Tel: (312)-886-0413 Fax: (312)-886-0434 Statement 180648 Water Sample Codes Turn Around Time Codes Analysis Requested of Work No.: STD- Standard 3D- Three Day Rush Project ontainer Types: 180649 P-Plastic, G-Glass, V-VOC No: WH Weekend/Holiday* A-mory Rad A-None, B-H₂SO₄, Proj. Manager Location C-HNO₃, D-NaOH AY/OR (City, State): Flow Time Volume Area Volume Code (LPM) (Min.) (Liters) (ft²) (Liters) Around Time* STD F4-14. 73558 W-1 9/23 16 16 W-2 7355 W-3 16 73560 W-4 7354/ 16 16 73562 73563 16 16 73564 W-8 16 73545 10-9 73566 16 W-10 73567 16 W-17 V73548 Charcoal 2-Matched Weight, 0.8um PVC filter 4-M CE 0.8 um , 37 mm -Ghost Wipes™ 6. Passive badge

US PUBLIC HEALTH SERVICE, FEDERAL OCCUPATIONAL HEALTH CHAIN-OF-CUSTODY / FIELD DATA SHEET

Applied to organic and inorganic analysis in cases of an emergency only.

Applied to inorganic samples, SD: Applied to organic and inorganic and inorganic samples 7-10 business days.

National Guard Bureau Mid-West Regional Industrial Hygiene Office 301-IH Old Bay Lane Havre de Grace, MD 21078

ARNG-CSG-P February 6, 2015

MEMORANDUM FOR: The Adjutant General for Michigan

SUBJECT: Surface Wipe Testing for Lead at the Grand Valley Armory in Wyoming, Michigan

National Guard Bureau (NGB) Mid-West Regional Industrial Hygiene (IH) Office field personnel conducted a survey on September 18, 2014 at the Michigan Army National Guard Armory, located in Wyoming, Michigan. This survey included a walkthrough of the facility and surface wipe sampling for lead contamination.

Occupational health risk assessment codes (RACs) are assigned to quantify health risks to personnel IAW DOD Letter of Instruction 6055.1, *DOD Safety and Occupational Health Program*. Risk assessment is an expression of health hazard severity and mishap probability, described in terms of route of exposure, actual exposure, exposure limit standards, potential health effects, duration of exposure, and number of exposed personnel. Guidance for RAC determination is attached to this memorandum.

Surface Wipe Sampling: Thirteen wipe samples were collected on representative surfaces in the facility and analyzed for lead. For purposes of this report, any results that exceed the guidelines adopted by the NGB Mid-West Regional IH Office are considered significant.

Four of the thirteen wipe samples had high levels of lead. The sample collected on the soda machine in the Drill Room had a lead level of 698 ug/ft2. Three samples collected in the former firing range had high lead levels. A sample collected on the metal backstop at the target end of the range had a lead level of 400,455 ug/ft2.

Recommendations

 Clean the surfaces in the former firing range and the Drill Room using high-efficiency particulate air (HEPA) filter vacuums or wet methods to avoid the spread of lead dust to other areas of the armory. (RAC 2)

The NGB conducted this survey in the interest of preventing employee illness and to meet legal obligations where applicable. Results and recommendations are based on information provided by site personnel, field measurements, and conditions observed during the survey. For any

further questions, please contact Non-Responsive

-

Non-Responsive

Non-Responsive

Regional Industrial Hygienist

Appendix Title Status
A. Lead Attached

Surface Sample Lead Testing Survey Date: September 18, 2014

Appendix A Lead

Surface Wipe Sampling

Thirteen wipe samples were collected from representative areas of the facility using Environmental Express GhostTM Wipes and templates IAW the OSHA wipe sampling method (OSHA Technical Manual, Appendix II, 2-1). The samples were analyzed for lead by OSHA Method ID-121. The results and photos are contained in Table A-1.

Although OSHA does not have published exposure standards for metal surface contamination, 29 CFR 1910 requires that all surfaces must be kept as free as practicable of accumulations of toxic metal dusts. In addition, DOD has instituted a policy to minimize surface contamination levels of heavy metals (*Control and Management of Surface Accumulations from Lead, Hexavalent Chromium, and Cadmium Operations*, DTM 12-003, 18 April 2012).

The NGB Mid-West Regional IH Office has adopted the guidelines for metal dust published in NG Pam 420-15, *Guidelines and Procedures for Rehabilitation and Conversion of Indoor Firing Ranges* and the Department of Energy (DOE)/Brookhaven National Laboratory *Surface Wipe Sampling Procedure* (IH75190). Any results that exceed these guidelines shown in Table A-1 are considered significant.

Four of the thirteen wipe samples had high levels of lead. The sample collected on the soda machine in the Drill Room had a lead level of 698 ug/ft2. Three samples collected in the former firing range had high lead levels. A sample collected on the metal backstop at the target end of the range had a lead level of 400,455 ug/ft2.

Recommendations

1. Clean the surfaces in the former firing range and Drill Room using high-efficiency particulate air (HEPA) filter vacuums or wet methods to avoid the spread of lead dust to other areas of the armory. (RAC 2)

Table A-1
Surface Wipe Sampling Results for Lead
Michigan Army National Guard
Wyoming Armory

Sample No. Location	Photo	Lead (μg/ft²)
Surface For areas op Break room	40	
	Guidelines as of the building	200
W-1 Drill room on floor	09/18/2014	<10
W-2 Drill room on floor by FMS door	09/18/2014	<10
W-3 Drill room on soda machine	09/18/2014	698
W-4 Former firing range on metal back stop	09/18/0016	400,455

A-2

Sample No. Location	Photo	Lead (µg/ft²)
Surface For areas op Break room	40	
	Guidelines as of the building	200
W-5 Former firing range in crawl space		1,445
W-6 Former firing range on floor near target	09/18/2014	1,062
W-7 Former firing range on locker	09/18/2014	<91
W-8 Former firing range on compressor	09/18/2014	<91

Sample No. Location	Photo	Lead (µg/ft²)
Surface For areas op Break room	40	
	Guidelines as of the building	200
W-9 Former firing range on floor at shooting position	V18/2014	<91
W-10 Blank		ND
W-11 Former firing range on wall	05/19/19/19	<91
W-12 Former firing range on floor at top of stairs	09/18/2014	<91
W-13 Kitchen on ice machine	09/18/2014	<91

Sample No. Location	Photo	Lead (µg/ft²)	
Surface For areas op Break room	40		
	Surface Guidelines All other areas of the building		
W-14 Family Assistance Center on mouse pad		<91	

Notes: 1) μ g / ft² = micrograms per square foot of surface area. 2) ND = none detected. 3) "<" means less than the reporting limit for the analytical method.

Surface Sample Lead Testing Survey Date: September 18, 2014

Laboratory Result Reports and Chain of Custody Sheets



ANALYTICAL REPORT

Submitted To:

USPHS / Federal Occupational Health

Denver Federal Center Denver, CO 80225

Attention:

Submitted By:

Reference Data: Lead

NGB: Wyoming, MI (Armory) Sampling Site:

Sample Media:

Ghost Wipe(s)®

Method Reference: Project ID:

OSHA ID-121 Project 12099

DFOH Lab Nos.:

TM-14-72861 through TM-14-72874

Date Received:

09/22/14 09/25/14 - 09/26/14

Data Analyzed:

09/29/14 Date Issued:

The wipe samples were hot plate digested. The samples were run on a Perkin Elmer 200 flame and/or Perkin Elmer 600 furnace atomic absorption spectrophotometer (AA).

General Lab Comments:

All quality control criteria have been met.

- * All samples received in condition acceptable for analysis unless otherwise noted.
- ** Sample results have not been corrected for contamination based on the field blank or other analytical blank unless otherwise noted.

Analytical results are given on the enclosed tables. Results relate only to items tested. If you have any questions about these results, feel free to phone the Laboratory at





Project 12099 Page 1 of 2



LEAD on WIPE RESULTS

SAMPLE NUMBER*	LABORATORY NUMBER	CONCENTRATION (μg)	CONCENTRATION (μg/ft²)
W-1	TM-14-72861	<10	<10
W-2	TM-14-72862	<10	<10
W-3	TM-14-72863	77	698
W-4	TM-14-72864	44050	400455
4 W-5	TM-14-72865	159	1445
W-6	TM-14-72866	117	1062
W-7	TM-14-72867	<10	<91
W-8	TM-14-72868	<10	<91
W-9	TM-14-72869 <10		<91
W-10**	TM-14-72870	<10	
W-11	TM-14-72871	<10	<91
W-12	TM-14-72872	<10	<91
W-13	TM-14-72873	<10	<91
W-14	TM-14-72874	<10	<91

AGENCY	FLOORS	INTERIOR WINDOW SILLS	WINDOW TROUGHS
EPA	40 μg/ft ²	250 μg/ft ²	400 μg/ft ²

Metals in Wipe Limits (based on one ft² sampled area)

Analyte	Analytical Method	Method Detection Limit	Minimum Reporting Limit
Lead - Flame AA	OSHA ID-121	5.0 μg/ft ²	10 μg/ft ²





Project 12099 Page 2 of 2

S. Clark Street Sout		714		M. Wa	Agreement	A PER			For Lab Project /F			12	09	9 Conditions on Rece	pt with Nan	ne & Da
icago, IL 60605-1521					No.:	1066	44		Due Date	E.	-	9	130/			-
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Non-Respo	nsi	/e				P1806			Containe		4 F 01 Ste		SYD	- Standard	NAME OF TAXABLE PARTY.	T. C.
					No: Agency	ARNE	7/		P-Pla:	-	Glass, V	-voc	-	Three Day Rush		
					_	Armory				ne, B-H	100		WH	Weekend/Hollday*		
						Wyomi	_				NaOH		-		44	aa
					(City, State):	vv 90 mi	7	NI								
ID#	Type'	Media	Collect	ad	Sample Location / D	escription	Flow	Air	Volume	Wipe	W. Volume	Code ³	Turn	Lab ID#		
	1.704	-	Date	Time	oumple Location? D	CONTRACTOR OF THE PARTY	(LPM)	(Mir.)	(Liters)	/(95)	(Liters)	Code	Time*			
W-1	7	5	Supt	18						144			570	M-4-72861		
W-2	-									144				11 72862		
W-3										144				2863		
W-4										16				72864		
W-5										16				72865		
W-6										16				72866		
W-7										14				72847		
W-8										16		1		72848		
W-9							-			16				72869		
W-10					blan	k								72870		
W-11										16				7287/		
W-12										16				172872		
W-13					Makes Test Cont					16		1		72873		
Sample Type Godes & 2-Water 3-Paint 4-Soil ulk 7-Wipe 8 - Other	5-Cust	100	1-Charcoa 3-PVC filte	2-N	Mecca Codes fatched Weight, 9.8um -M CE 9.8 um , 37 mm	Non-			sive			des /	Roce	end By you	0210-8	tamo
MMENTS:		-	5 -Ghost V 7. Other	vipes **	6. Passive badge							V-		16- 07//		
W-14										16				V72874	1	/

A-9

National Guard Bureau Mid-West Regional Industrial Hygiene Office 301-IH Old Bay Lane Havre de Grace, MD 21078

ARNG-CSG-P February 6, 2015

MEMORANDUM FOR: The Adjutant General for Michigan

SUBJECT: Surface Wipe Testing for Lead at the Armory in Ypsilanti, Michigan

National Guard Bureau (NGB) Mid-West Regional Industrial Hygiene (IH) Office field personnel conducted a survey on September 24, 2014 at the Michigan Army National Guard Armory, located in Ypsilanti, Michigan. This survey included a walkthrough of the facility and surface wipe sampling for lead contamination. The armory has an indoor firing range that is now closed. The Drill Room and the Kitchen are not open to the public. The armory is in the process of renovation.

Occupational health risk assessment codes (RACs) are assigned to quantify health risks to personnel IAW DOD Letter of Instruction 6055.1, *DOD Safety and Occupational Health Program.* Risk assessment is an expression of health hazard severity and mishap probability, described in terms of route of exposure, actual exposure, exposure limit standards, potential health effects, duration of exposure, and number of exposed personnel. Guidance for RAC determination is attached to this memorandum.

Surface Wipe Sampling: Nine wipe samples were collected on representative surfaces in the facility and analyzed for lead. For purposes of this report, any results that exceed the guidelines adopted by the NGB Mid-West Regional IH Office are considered significant.

One of the nine wipe samples had a high level of lead. The sample collected on a metal shelf in the storage room had a lead level of 1,033 ug/ft2.

Recommendations

 Clean all surfaces with elevated lead levels using high-efficiency particulate air (HEPA) filter vacuums or wet methods to avoid the spread of lead dust to other areas of the armory. (RAC 2)

The NGB conducted this survey in the interest of preventing employee illness and to meet legal obligations where applicable. Results and recommendations are based on information provided by site personnel, field measurements, and conditions observed during the survey. For any

further questions, please contact Non-Responsive

.

Non-Responsive

Non-Responsive

Regional Industrial Hygienist

Appendix Title Status
A. Lead Attached

Surface Sample Lead Testing Survey Date: September 24, 2014

Appendix A Lead

Surface Wipe Sampling

Nine wipe samples were collected from representative areas of the facility using Environmental Express GhostTM Wipes and templates IAW the OSHA wipe sampling method (OSHA Technical Manual, Appendix II, 2-1). The samples were analyzed for lead by OSHA Method ID-121. The results and photos are contained in Table A-1.

Although OSHA does not have published exposure standards for metal surface contamination, 29 CFR 1910 requires that all surfaces must be kept as free as practicable of accumulations of toxic metal dusts. In addition, DOD has instituted a policy to minimize surface contamination levels of heavy metals (*Control and Management of Surface Accumulations from Lead, Hexavalent Chromium, and Cadmium Operations*, DTM 12-003, 18 April 2012).

The NGB Mid-West Regional IH Office has adopted the guidelines for metal dust published in NG Pam 420-15, *Guidelines and Procedures for Rehabilitation and Conversion of Indoor Firing Ranges* and the Department of Energy (DOE)/Brookhaven National Laboratory *Surface Wipe Sampling Procedure* (IH75190). Any results that exceed these guidelines shown in Table A-1 are considered significant.

One of the nine wipe samples had a high level of lead. The sample collected on a metal shelf in the storage room had a lead level of 1,033 ug/ft2.

Recommendations

1. Clean all surfaces with elevated lead levels using high-efficiency particulate air (HEPA) filter vacuums or wet methods to avoid the spread of lead dust to other areas of the armory. (RAC 2)

Surface Sample Lead Testing Survey Date: September 24, 2014

Table A-1
Surface Wipe Sampling Results for Lead
Michigan Army National Guard
Ypsilanti Armory

Sample No. Location	Photo	Lead (µg/ft²)
Surface For areas op Break room	40	
	Guidelines as of the building	200
W-1 Drill room on floor	09/24/2014	<10
W-2 Drill room on soda machine	ASIPS 1 1 1 1 2 1 7 2 1 4	<91
W-3 Fitness room on pipe	09/24/2014	140
W-4 Storage room on metal shelf	55000 54000 6500 6500 6500 6500 6500 650	1,033

Sample No. Location	Photo	Lead (µg/ft²)	
Surface For areas op Break room	40		
	Surface Guidelines All other areas of the building		
W-5 Kitchen food storage shelf		<91	
W-6 Drill room upper rafters	09/24/2014	161	
W-7 Locker room/former firing range on the floor next to target end	09/24/2014	<91	
W-8 Locker room/former firing range on locker	09/2	<91	

Sample No. Location	Photo	Lead (µg/ft²)	
Surface For areas op Break room	40		
	Surface Guidelines All other areas of the building		
W-9 Locker room/former firing range on pipe insulation	38(24/2014	<91	
W-10 blank		ND	

Notes: 1) μ g / ft² = micrograms per square foot of surface area. 2) ND = none detected. 3) "<" means less than the reporting limit for the analytical method.

Laboratory Result Reports and Chain of Custody Sheets



ANALYTICAL REPORT

Submitted To:

USPHS / Federal Occupational Health

Denver Federal Center Denver, CO 80225

Attention:

Non-Responsive

Submitted By:

Reference Data:

rence Data:

Sampling Site:

NGB: Ypsilanti, MI (Armory)

Sample Media: Method Reference: Ghost Wipe(s)® OSHA ID-121

Project ID:

Project 12159

DFOH Lab Nos.:

TM-14-73532 through TM-14-73541

Date Received:

09/26/14

Data Analyzed:

10/10/14 - 10/14/14

Date Issued:

10/16/14

The wipe samples were hot plate digested. The samples were run on a Perkin Elmer 200 flame atomic absorption spectrophotometer (AA).

General Lab Comments:

All quality control criteria have been met.

- * All samples received in condition acceptable for analysis unless otherwise noted.
- ** Sample results have not been corrected for contamination based on the field blank or other analytical blank unless otherwise noted.

Analytical results are given on the enclosed tables. Results relate only to items tested. If you have any questions about these results, feel free to phone the Laboratory at (Non-Responsive





Project 12159 Page 1 of 2



FOH ENVIRONMENTAL LABORATORY

536 S. CLARK STREET CHICAGO, IL 60605 PHONE: (312) 886-0413 FAX: (312) 886-0434

LEAD on WIPE RESULTS

SAMPLE NUMBER*	LABORATORY NUMBER	CONCENTRATION (µg)	CONCENTRATION (µg/ft²) <10			
W-1	TM-14-73532	<10				
W-2	TM-14-73533	<10	<91			
W-3	TM-14-73534	15	140			
W-4	TM-14-73535	114	1033			
: W-5	TM-14-73536	<10	<91			
W-6	TM-14-73537	18	161			
W-7	TM-14-73538	<10	<91			
W-8 TM-14-73539		<10	<91			
W-9	TM-14-73540	<10	<91			
W-10**	TM-14-73541	<10				

AGENCY	FLOORS	INTERIOR WINDOW SILLS	WINDOW TROUGHS			
EPA	40 μg/ft ²	250 μg/ft ²	400 μg/ft ²			

Metals in Wipe Limits (based on one ft² sampled area)

Analyte	Analytical Method	Method Detection Limit	Minimum Reporting Limit				
Lead - Flame AA	OSHA ID-121	5.0 μg/ft ²	10 μg/ft²				





Project 12159 Page 2 of 2

US PUBLIC HEALTH SERVICE, FEDERAL OCCUPATIONAL HEALTH CHAIN-OF-CUSTODY / FIELD DATA SHEET

Environmental Labor 336 S. Clark Street Sout Chicago, IL 60605-1521	h, Suite 7	14		area nate	Agreement No.:	1000	THE OWNER OF	100,000	Project /F Due Date	Report :	#:		59		Conditions on Receipt	pt with P	lame		07/2
Tel: (312)-886-0413 Fax: (312)-886-0434		of Work No.:	ICA LUIC									d Time Codes	Analys	is Ro	disease from	_			
Non-Responsive		Project No:	Project P 1001-110				Container Types: P-Plastic, G-Glass, V-VOC			STD-			T						
		Agency				Preservatives:				WH	1	e	= 0	1					
					Proj. Manager	Armory		-		ne, B-H						1			
					(City, State):	Ypsilan	ti	II	C-HN	O ₃ , D-	NaOH								
ID#	Toront	Media ³	ia ¹ Collected Sar		Sample Location (C	ample Location / Description		Air Flow Time		Wipe Area Vo	Water Volume Co		Turn Around	Lab ID#					
10 +	Type	Media.	Date	Time	Sample Location / L	rescription	(LPM)	(Min.)		(ft²)	(Liters)	Cosa	Time ⁴	L			,		
W-/	7	5	Sopt	. 2	4					144			STD	7	4-14-73532				
W-2										16					73533				
W-3										16					73534				
W-4										16					73535				
W-5										16					73536				
W-6										16					73537				
47										16					73538				
W-8										16					73539		1		
wry										16					73540		1	,	
W-10			blank					-				0	173541		1				
-Air 2-Water 3-Paint 4-So -Bulk 7-Wipe 8 - Other		on or street	1-Charcoa 3-PVC filte	at 2-A	Media Codes 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Non-F				& Tim	ne T	/	Recei	ved	By ,	Da	e & T	Ime	4.0

^{*} Applied to organic and inorganic analysis in cases of an emergency only.

Applied to inorganic and organic samples, SD: Applied to organic and inorganic samples 7-10 business days.