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

ARNG-CSG-P

October 7, 2014

MEMORANDUM FOR: The Adjutant General for South Dakota

SUBJECT: Surface Wipe Testing for Lead at the Mitchell Armory in Mitchell, South Dakota

National Guard Bureau (NGB) Mid-West Regional Industrial Hygiene (IH) Office field personnel conducted a survey on June 26, 2014 at the South Dakota Army National Guard Armory, located in Mitchell, South Dakota. 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: Six 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 six wipe samples had detectable levels of lead. The sample collected on a soda machine in the Drill room had a lead level of 166 ug/ft2. A sample collected on an electrical box in the Drill room had a lead level of 465 ug/ft2. A sample collected on the ice machine in the Kitchen had a lead level of 42 ug/ft2. Also of concern, a wipe sample from the supply air vent in the Rehearsal Hall had a lead level of 110 ug/ft2.

Recommendations

• Clean the upper level surfaces in the drill room and kitchen using high-efficiency particulate air (HEPA) filter vacuums or wet methods to avoid the spread lead dust to the floor below. (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



Regional Industrial Hygienist

Appendix Title A. Lead Status Attached

Appendix A Lead

Surface Wipe Sampling

Six wipe samples were collected from representative areas of the facility using Environmental Express Ghost[™] 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 six wipe samples had detectable levels of lead. The sample collected on a soda machine in the Drill room had a lead level of 166 ug/ft2. A sample collected on an electrical box in the Drill room had a lead level of 465 ug/ft2. A sample collected on the ice machine in the Kitchen had a lead level of 42 ug/ft2. Also of concern, a wipe sample on the supply air vent in the Rehearsal Hall had a lead level of 110 ug/ft2.

Recommendations

 Clean the upper level surfaces in the drill room and kitchen using high-efficiency particulate air (HEPA) filter vacuums or wet methods to avoid the spread lead dust to the floor below. (RAC 2)

A-1

Table A-1 Surface Wipe Sampling Results for Lead South Dakota Army National Guard Mitchell Armory

Sample No. Location					
Surface For areas op Break room	40				
	e Guidelines as of the building	200			
W-1 Drill Room on top of soda machine		166			
W-2 Drill Room on white electrical box	06/26/2014	465			
W-3 Kitchen On ice machine		42			
W-4 Kitchen Serving window	06/26/2014	<10			

Sample No. Location	Photo	Lead (µg/ft ²)
Surface For areas op Break room	40	
	e Guidelines as of the building	200
W-5 Rehearsal Hall On supply air vent		110
W-6 DEERS Office On cabinet	06/26/2014	<10
W-7 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



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

ANALYTICAL REPORT

DON

Submitted To:

USPHS / Federal Occupational Health Denver Federal Center Denver, CO 80225



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Submitted By:

Reference Data: Sampling Site: Sample Media: Method Reference: Project ID: DFOH Lab Nos.: Date Received: Data Analyzed: Date Issued: Lead NGB: Mitchell, SD (Armory) Ghost Wipe(s)® OSHA ID-121 Project 11883 TM-14-68912 through TM-14-68918 07/08/14 07/08/14 - 07/09/14 07/10/14

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.





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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/ft ²)
W-1	TM-14-68912	166	166
W-2	TM-14-68913	465	465
W-3	TM-14-68914	42	42
W-4	TM-14-68915	<10	<10
• W-5	TM-14-68916	220	
W-6	TM-14-68917	<10	<10
W-7**	TM-14-68918	<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	OSHA ID-121	5.0 µg/ft ²	10 µg/ft ²





Project 11883 Page 2 of 2

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FOIA Requested Record #J-15-0085 (SD) Released by National Guard Bureau Page 9 of 24

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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

September 30, 2014

MEMORANDUM FOR: The Adjutant General for South Dakota

SUBJECT: Surface Wipe Testing for Lead at the Sioux Falls Armory in Sioux Falls, South Dakota

National Guard Bureau (NGB) Mid-West Regional Industrial Hygiene (IH) Office field personnel conducted a survey on May 16, 2014 at the South Dakota Army National Guard Armory, located in Sioux Falls, South Dakota. 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: Twenty 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.

Nine of the twenty wipe samples had detectable levels of lead. The sample collected on a speaker in the Drill room had a lead level of 170 ug/ft2. Four samples collected in the Food Storage had a lead levels ranging from 14 to 26 ug/ft2. A sample collected on a computer desk in the Starbase room 154 had a lead level of 11 ug/ft2. Three samples collected in the former firing range had lead levels ranging from 94 to 260 ug/ft2.

Recommendations

- Clean the upper level surfaces in the drill room using high-efficiency particulate air (HEPA) filter vacuums or wet methods to avoid the spread lead dust to the floor below. (RAC 2)
- 2. Clean surfaces and items in the Food Storage rooms and the former firing range. (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



Regional Industrial Hygienist

Appendix Title A. Lead

Status Attached

Appendix A Lead

Surface Wipe Sampling

Twenty wipe samples were collected from representative areas of the facility using Environmental Express Ghost[™] 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.

Nine of the twenty wipe samples had detectable levels of lead. The sample collected on a speaker in the Drill room had a lead level of 170 ug/ft2. Four samples collected in the Food Storage had a lead levels ranging from 14 to 26 ug/ft2. A sample collected on a computer desk in the Starbase room 154 had a lead level of 11 ug/ft2. Three samples collected in the former firing range had lead levels ranging from 94 to 260 ug/ft2.

Recommendations

- Clean the upper level surfaces in the drill room using high-efficiency particulate air (HEPA) filter vacuums or wet methods to avoid the spread lead dust to the floor below. (RAC 2)
- Clean surfaces and items in the Food Storage rooms and the former firing range. (RAC 2)

A-1

Table A-1
Surface Wipe Sampling Results for Lead
South Dakota Army National Guard
Sioux Falls Armory

Sample No. Location					
For areas op	Guidelines en to the public, s, and kitchens	40			
	Guidelines as of the building	200			
W-1 Drill Room on speaker	05/16/2014	170			
W-2 Dining Hall room 161 On soda machine		<91			
W-3 Kitchen on shelf		<91			

Sample No. Location	cation					
Surface For areas op Break room	40					
	e Guidelines as of the building	200				
W-4 Kitchen on oven		<10				
W-5 Kitchen on freezer	05/16/2014	<91				
W-6 Food Storage On floor	05/16/2014	26				
W-7 Food Storage On metal shelf		24				

Sample No. Location	Photo	Lead (µg/ft ²)
Surface For areas op Break room	40	
	Guidelines as of the building	200
W-8 Food Storage BDE On metal shelf		<10
W-9 Food Storage BDE On floor	05/16/2014	<10
W-10 Food Storage cage On metal shelf		17
W-11 Food Storage cage On floor		14

Sample No. Location	Location					
Surface For areas op Break room	40					
	e Guidelines as of the building	200				
W-12 Food Storage On floor		<10				
W-13 Starbase room 153 On desk		<10				
W-14 Starbase room 153 On screen TV		<10				
W-15 Starbase room 154 On projector	05/16/2014	<91				
W-16 Starbase room 154 On electrical box		<91				

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Sample No. Location	Photo	Lead (µg/ft ²)
Surface For areas op Break room	40	
	Guidelines as of the building	200
W-17 Starbase room 154 On computer desk	05/16/2014	11
W-18 Range On black case	05/16/2014	260
W-19 Range On green table	05/16/2014	120
W-20 Range On red pads		94
W-21 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



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

ANALYTICAL REPORT

Submitted To:

USPHS / Federal Occupational Health Denver Federal Center Denver, CO 80225

Attention: Submitted By:



Reference Data:

Sampling Site: Sample Media: Method Reference: Project ID: DFOH Lab Nos.: Date Received: Data Analyzed: Date Issued:

Lead NGB: Sioux Falls, SD (Armory) Ghost Wipe(s)® e: OSHA ID-121 Project 11801 TM-14-67921 through TM-14-67941 05/28/14 05/29/14 - 05/3014 05/30/14

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 11428 Page 1 of 2



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/ft ²)			
W - 1	TM-14-67921	60	170			
W-2	TM-14-67922	< 10	< 91			
W-3	TM-14-67923	< 10	< 91			
W-4	TM-14-67924	< 10	< 10			
. W-5	TM-14-67925	< 10	< 91			
W-6	TM-14-67926	26	26			
W – 7	TM-14-67927	24	24			
W-8	TM-14-67928	< 10	< 10			
W - 9	TM-14-67929	< 10	< 10			
W-10	TM-14-67930	17	17			
W-11	TM-14-67931	14	14			
W – 12	TM-14-67932	< 10	< 10			
W – 13	TM-14-67933	< 10	< 10			
W - 14	TM-14-67934	< 10	< 10			
W - 15	TM-14-67935	< 10	< 91			
W - 16	TM-14-67936	< 10	< 91			
W - 17	TM-14-67937	11	11			
W - 18	TM-14-67938	29	260			
W – 19	TM-14-67939	13	120			
W - 20	TM-14-67940	10	94			
W - 21	TM-14-67941	< 10				

Surface Wipe Sampling Criteria



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

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





Project 11428 Page 2 of 2

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FOIA Requested Record #J-15-0085 (SD) Released by National Guard Bureau Page 22 of 24

Chicago, IL 60005-1521 Tel: (312)-886-0413 Fax: (312)-886-0434 Non-Responsive N A P E				Statement of Work No.: Project No: Agency Proj. Manager Location	of Work No.: 180648 Project P 180649 Agency ARNG-SD Proj. Manager At ma #4					Turn A STD- 3D-	(circle one) rotind Time Codes ⁴ Standard Three Day Rush [®] Weekend/Holiday [*]	Π	Req P Q	,	
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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, SD: Applied to organic and inorganic samples 7-10 business days.

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* Applied to organic and inorganic analysis in cases of an emergency only. ⁴ Applied to inorganic and organic samples, SD. Applied to organic and inorganic samples 7-10 business days.

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