# Surface Lead Monitoring Survey Report

At

Nebraska Army National Guard Columbus Armed Forces Reserve Center Columbus, Nebraska

Survey date: February 7, 2011

For

Department of the Army National Guard Bureau Region West Industrial Hygiene Office

> Performed by U.S. Public Health Service Federal Occupational Health

> > May 3, 2011

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- V. Findings, Discussion, and Recommendations

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- B. Laboratory Result Reports and Chain of Custody Sheets.
- C. RAC codes

# I. Executive Summary

At the request of the National Guard Bureau Region West Industrial Hygiene Office, field personnel representing the U.S. Public Health Service, Federal Occupational Health (FOH) conducted surface lead monitoring at the Nebraska Army National Guard, Armed Forces Reserve Center located in Columbus, Nebraska. This survey was conducted as part of the ARNG occupational safety and health program to evaluate potential exposure to lead on facility surfaces. Surface wipe samples were collected for lead dust.

For purposes of this report any surface lead level that exceeds 40 ug/ft<sup>2</sup> in a child occupied area is considered significant. Any surface lead level that exceeds 200 ug/ft<sup>2</sup> in any other area of the armory is considered significant.

Three of the nine samples collected had elevated lead levels well above the 200  $ug/ft^2$  standard. On top of the heating, ventilation, air conditioning unit (HVAC), located at ceiling level in the Assembly room; the surface dust contained lead levels of 1,359  $ug/ft^2$ . If this dust is disturbed due to air movement or vibration, it can be deposited on the floor and other surfaces in the Assembly room creating a potential health hazard to room occupants. A second levated lead sample (800  $ug/ft^2$ ) was collected from a window sill on the second floor of the building in the library. A third elevated sample was collected on the floor of the former firing range (9,045  $ug/ft^2$ ).

Since the public has access to the Assembly room, the HVAC unit and other surfaces in the Assembly room should be cleaned so that lead levels are below 40 ug/ft<sup>2</sup>. Other parts of the building such as the former firing range and library should be cleaned so that lead levels are below 200 ug/ft<sup>2</sup>. A professional firm certified by the State of Nebraska for lead abatement should be contracted to abate lead levels. Trying to accomplish this task using NE ARNG employees may result in elevated lead exposures to those employees and may not meet the required standards when finished. (RAC 2)

When weapons are cleaned, special attention should be given to cleaning up the work area, by wet mopping surfaces, to prevent potential lead contamination from ammunition that may spread to other areas of the building. (RAC 2)

Management should continue to prohibit the presence of food and drink in work areas, stress the importance of hand washing prior to the consumption of food items and continue to clean the horizontal surfaces. (RAC 2)

### II. Introduction

A surface lead monitoring survey was conducted by the U.S. Public Health Service (USPHS) Federal Occupational Health (FOH) at the Nebraska Army National Guard, Armed Forces Reserve Center located in Columbus, Nebraska. This work was conducted under the Interagency Agreement between the USPHS, FOH and the West Region of the Army National Guard. This survey was conducted in order to identify lead levels on surfaces within the facility. Non-Responsive, Certified Industrial Hygienist (CIH) conducted this survey on February 7, 2011.

FOH conducted this survey in the interest of preventing employee illness and in meeting legal obligations where applicable. Based on information provided, every effort was made to conduct a comprehensive survey covering the parameters considered. Results and recommendations are based on information provided, field measurements, and conditions observed during the survey.

### III. Site Description

The building was constructed in 1955. A former firing range was located on the second floor. On the first floor is located an Assembly room that is available for public events.

### IV. Scope of Work

The purpose of the site visit was to collect up to nine surface wipe samples in the building to be analyzed for lead contamination.

# V. Findings, Discussion, and Recommendations

### **Assessment Criteria**

The NGB-ARS Memorandum for the Chiefs of Staff dated February 2, 2006 provides guidance for potential lead hazard exposure in Army National Guard child occupied facilities. The memorandum defines a child occupied facility as a building, or portion of a building, visited on a regular basis by the same child, six years of age or under. Child occupied facilities may include, but are not limited to, day-care centers, preschools, and kindergarten classrooms. The memorandum states that, "For all areas used/occupied on a regular basis by children ages six and under clean all floors accessible to said children to the EPA dust-lead standard of 40 ug/ft<sup>2</sup>. Clean all other surfaces in accordance with USACHPPM recommendations for lead in dust of 200 ug/ft<sup>2</sup> on frequent contact surfaces."

For purposes of this report any surface lead level that exceeds 40 ug/ft<sup>2</sup> in a child occupied area is considered significant. Any surface lead level that exceeds 200 ug/ft<sup>2</sup> in any other area of the facility is considered significant.

## Results

Nine surface wipe samples were collected on representative surfaces throughout the facility and analyzed for lead. The results are contained in Table 1.

### Table 1 Area Wipe Sampling Results for Lead Dust Nebraska Army National Guard AFRC Columbus Columbus, Nebraska February 7, 2011

Sample	Location	Lead
Number		Concentration
		ug/ft <sup>2</sup>
W-1	Drill room on HVAC	1359
W-2	Drill room floor	<10
W-3	2 <sup>nd</sup> floor locker room on locker	<91
W-4	2 <sup>nd</sup> floor library on window sill	800
W-5	2 <sup>nd</sup> floor end of firing range on floor	9045
W-6	Bay area on top of garage door	<91
W-7	Kitchen on cabinet	<91
W-8	Men's room on window ledge	<91
W-9	Office room 120 on desk-cabinet top	<91

Note:

1) ug/ft<sup>2</sup>= micrograms per square foot of surface area. 2) **Bold** indicates that concentration was "significant."

Three of the nine samples collected had elevated lead levels well above the 200  $ug/ft^2$  standard. On top of the heating, ventilation, air conditioning unit (HVAC), located at ceiling level in the Assembly room; the surface dust contained lead levels of 1,359  $ug/ft^2$ . If this dust is disturbed due to air movement or vibration, it can be deposited on the floor and other surfaces in the Assembly room creating a potential health hazard to room occupants. A second levated lead sample (800  $ug/ft^2$ ) was collected from a window sill on the second floor of the building in the library. A third elevated sample was collected on the floor of the former firing range (9,045  $ug/ft^2$ ).

### **Recommendations**

Since the public has access to the Assembly room, the HVAC unit and other surfaces in the Assembly room should be cleaned so that lead levels are below 40 ug/ft<sup>2</sup>. Other parts of the building such as the former firing range and library should be cleaned so that lead levels are below 200 ug/ft<sup>2</sup>. A professional firm certified by the State of Nebraska for lead abatement should be contracted to abate lead levels. Trying to accomplish this task using NE ARNG employees may result in elevated lead exposures to those employees and may not meet the required standards when finished. (RAC 2)

When weapons are cleaned, special attention should be given to cleaning up the work area, by wet mopping surfaces, to prevent potential lead contamination from ammunition that may spread to other areas of the building. (RAC 2)

Management should continue to prohibit the presence of food and drink in work areas, stress the importance of hand washing prior to the consumption of food items and continue to clean the horizontal surfaces. (RAC 2)



# Wipe sample locations

Figure 1 – Sample W-1









Figure 4 – Sample W-4



Figure 5 – Sample W-5



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Figure 6 – Sample W-6



Figure 7 – Sample W-7



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Figure 8 – Sample W-8





Technical Assistance: For technical assistance regarding information found in this report or the performed survey please contact the Regional Industrial Hygienist at the NGB ARNG Region West Industrial Hygiene Office.

This report written by Non-Responsive, CIH, as a representative of Federal Occupational Health, U. S. Public Health Service.

# Appendix A

Nebraska Army National Guard State Point of Contact

Non-Responsive Occupational Health Nurse

AFRC Points of Contact



Appendix B



## FOH ENVIRONMENTAL LABORATORY

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

Lead NGB: Columbus, NE (RC) Ghost Wipe(s)® e: OSHA ID-121 Project 9894 TM-11-48763 through TM-11-48771 02/16/11 02/18/11 - 02/25/11 02/25/11

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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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/ft <sup>2</sup> )
1	TM-11-48763	150	1359
2	TM-11-48764	<10	<10
3	TM-11-48765	<10	<91
4	TM-11-48766	88	800
5	TM-11-48767	995	9045
6	TM-11-48768	<10	<91
. 7	TM-11-48769	<10	<91
8	TM-11-48770	<10	<91
9	TM-11-48771	<10	<91

AGENCY	FLOORS	INTERIOR WINDOW SILLS	WINDOW TROUGHS
EPA	40 µg/ft <sup>2</sup>	250 ug/ft <sup>2</sup>	400 μα/ft <sup>2</sup>

### Metals in Wipe Limits (based on one ft<sup>2</sup> sampled area)

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





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Columbus AFRC Columbus, Nebraska

# Appendix C Occupational Health Risk Assessment Codes

(Reference: DOD Letter of Instructions 6055.1)

Occupational health risk assessment codes (RACs) are included in this report to quantify health risks to personnel. 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. The following procedure is used to determine the RACs:

**STEP 1:** This step assesses points to determine the health hazard severity category (HHSC). The HHSC reflects the magnitude of exposure to a physical, chemical, or biological agent and the medical effects of exposure.

### A. Exposure Points Assessed.

Alternate	Route		Exposure Condi	tions	
of Expo	sure	<action Level</action 	Occasionally >Action Level Always <oel< td=""><td>&gt;Action Level <oel< td=""><td>&gt;OEL</td></oel<></td></oel<>	>Action Level <oel< td=""><td>&gt;OEL</td></oel<>	>OEL
AER	NO	0	3	5	7
Possible	YES	1-2	4	6	8

Notes: 1) AER = Alternate exposure route, such as skin absorption or ingestion. 2) OEL = Occupational Exposure Limit, such as TLV or PEL. 3) > = Greater than. 4) < = Less than.

### B. Medical Effects Points Assessed

Condition	Points
No medical effects, such as nuisance noise and nuisance odor	0
Temporary reversible illness requiring supportive treatment, such as eye irritation and sore throat	1-2
Temporary reversible illness with a variable but limited period of disability, such as metal fume fever	3-4
Permanent, nonsevere illness or loss of capacity, such as permanent hearing loss	5-6
Permanent, severe, disabling, irreversible illness or death, such as asbestosis or lung cancer	<mark>7</mark> -8

C. The HHSC is determined by totaling the points assessed and using the following guide.

Total Points*	HHSC
13-16	l
9-12	Ш
5-8	III
0-4	IV

### \* Sum of A and B above.

**STEP 2:** This step uses the following guidelines to assess points to determine the mishap probability category (MPC) for health hazards. The probability of mishap reflects the duration of exposure and the number of exposed personnel.

### A. Duration of Exposure Points Assessed

Type of Exposure		Length of Exposure	
	1-8 hr/wk	>8 hr/wk/not continuous	Continuous
Irregular/Intermittent	1- <mark>2</mark>	4-6	NA
Regular/Periodic	2-3	5-7	8

### B. Number of Exposed personnel Points Assessed

Number of Exposed Personnel	Points
<5	1-2
5-9	3-4
10-49	5-6
>49	<mark>7</mark> -8

C. The MPC for health hazards is determined by totaling the points assessed and using the following guide:

Total Points*	MPC
14-16	A
10-13	В
5-9	C
<5	D

\* Sum of A and B above.

**STEP 3:** The RAC is determined using the following matrix:

HHSC		MI	PC	
	A	В	С	D
I	1	1	2	3
II	1	2	3	4
	2	3	4	5
IV	3	4	5	5

# Surface Lead Monitoring Survey Report

At

Nebraska Army National Guard Fremont Armed Forces Reserve Center Fremont, Nebraska

Survey date: February 7, 2011

For

Department of the Army National Guard Bureau Region West Industrial Hygiene Office

> Performed by U.S. Public Health Service Federal Occupational Health

> > May 3, 2011

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# Appendices

- A. Point of Contact (POC) List.
- B. Laboratory Result Reports and Chain of Custody Sheets.
- C. RAC codes

## I. Executive Summary

At the request of the National Guard Bureau Region West Industrial Hygiene Office, field personnel representing the U.S. Public Health Service, Federal Occupational Health (FOH) conducted surface lead monitoring at the Nebraska Army National Guard, Armed Forces Reserve Center located in Fremont, Nebraska. This survey was conducted as part of the ARNG occupational safety and health program to evaluate potential exposure to lead on facility surfaces. Surface wipe samples were collected for lead dust.

For purposes of this report any surface lead level that exceeds 40 ug/ft<sup>2</sup> in a child occupied area is considered significant. Any surface lead level that exceeds 200 ug/ft<sup>2</sup> in any other area of the armory is considered significant.

Three out nine samples collected had lead levels well above the 200  $ug/ft^2$  standard. The highest level was from the floor of the former firing range (129,545  $ug/ft^2$ ). Samples from the heating, ventilation, and air conditioning unit (HVAC) located in the Assembly room were also high for lead (1,040  $ug/ft^2$ ). In the Kitchen adjacent to the Assembly room, a wipe sample from the top of the ventilation hood above the grill contained a lead level of 1,355  $ug/ft^2$ . The source of the lead in the Assembly room and Kitchen is most likely from the former firing range.

Since the public has access to the Assembly room and the Kitchen, the HVAC unit and surfaces in these rooms should be cleaned so that lead levels are below 40 ug/ft<sup>2</sup>. Other parts of the building such as the former firing range should be cleaned so that lead levels are below 200 ug/ft<sup>2</sup>. A professional firm certified by the State of Nebraska for lead abatement should be contracted to abate lead levels. Trying to accomplish this task using NE ARNG employees may result in elevated lead exposures to those employees and may not meet the required standards when finished. (RAC 2)

When weapons are cleaned, special attention should be given to cleaning up the work area, by wet mopping surfaces, to prevent potential lead contamination from ammunition that may spread to other areas of the building. (RAC 2)

Management should continue to prohibit the presence of food and drink in work areas, stress the importance of hand washing prior to the consumption of food items and continue to clean the horizontal surfaces. (RAC 2)

#### П. Introduction

A surface lead monitoring survey was conducted by the U.S. Public Health Service (USPHS) Federal Occupational Health (FOH) at the Nebraska Army National Guard, Armed Forces Reserve Center located in Fremont, Nebraska. This work was conducted under the Interagency Agreement between the USPHS, FOH and the West Region of the Army National Guard. This survey was conducted in order to identify lead levels on surfaces within the facility. Non-Responsive, Certified Industrial Hygienist (CIH) conducted this survey on February 7, 2011.

FOH conducted this survey in the interest of preventing employee illness and in meeting legal obligations where applicable. Based on information provided, every effort was made to conduct a comprehensive survey covering the parameters considered. Results and recommendations are based on information provided, field measurements, and conditions observed during the survey.

#### III. Site Description

The building was constructed in 1955 and contains a firing range in the basement that is no longer used. The Assembly room is available to the public.



Figure 1

## IV. Scope of Work

The purpose of the site visit was to collect up to nine surface wipe samples in the building to be analyzed for lead contamination.

# V. Findings, Discussion, and Recommendations

# Assessment Criteria

The NGB-ARS Memorandum for the Chiefs of Staff dated February 2, 2006 provides guidance for potential lead hazard exposure in Army National Guard child occupied facilities. The memorandum defines a child occupied facility as a building, or portion of a building, visited on a regular basis by the same child, six years of age or under. Child occupied facilities may include, but are not limited to, day-care centers, preschools, and kindergarten classrooms. The memorandum states that, "For all areas used/occupied on a regular basis by children ages six and under clean all floors accessible to said children to the EPA dust-lead standard of 40 ug/ft<sup>2</sup>. Clean all other surfaces in accordance with USACHPPM recommendations for lead in dust of 200 ug/ft<sup>2</sup> on frequent contact surfaces."

For purposes of this report any surface lead level that exceeds 40 ug/ft<sup>2</sup> in a child occupied area is considered significant. Any surface lead level that exceeds 200 ug/ft<sup>2</sup> in any other area of the facility is considered significant.

# Results

Nine surface wipe samples were collected on representative surfaces throughout the facility and analyzed for lead. The results are contained in Table 1.

### Table 1 Area Wipe Sampling Results for Lead Dust Nebraska Army National Guard Fremont AFRC Fremont, Nebraska February 7, 2011

Sample	Location	Lead
Number		Concentration
		ug/ft²
W-1	Drill room floor	<10
W-2	Drill room ceiling HVAC	1040
W-3	Kitchen on grill hood	1355
W-4	Firing range floor	129545
W-5	Basement storage room on window sill	106
W-6	Classroom floor	<91
W-7	2 <sup>nd</sup> floor computer room floor	<91
W-8	Garage on cabinet	<91
W-9	Office room 203 on locker	<91

### Note:

1) ug/ft<sup>2</sup>= micrograms per square foot of surface area. 2) **Bold** indicates that concentration was "significant."

Three out nine samples collected had lead levels well above the 200 ug/ft<sup>2</sup> standard. The highest level was from the floor of the former firing range (129,545 ug/ft<sup>2</sup>). Samples from the heating, ventilation, and air conditioning unit (HVAC) located in the Assembly room were also high for lead (1,040 ug/ft<sup>2</sup>). In the Kitchen adjacent to the Assembly room, a wipe sample from the top of the ventilation hood above the grill contained a lead level of 1,355 ug/ft<sup>2</sup>. The source of the lead in the Assembly room and Kitchen is most likely from the former firing range.

# Recommendations

Since the public has access to the Assembly room and the Kitchen, the HVAC unit and surfaces in these rooms should be cleaned so that lead levels are below 40 ug/ft<sup>2</sup>. Other parts of the building such as the former firing range should be cleaned so that lead levels are below 200 ug/ft<sup>2</sup>. A professional firm certified by the State of Nebraska for lead abatement should be contracted to abate lead levels. Trying to accomplish this task using NE ARNG employees may result in elevated lead exposures to those employees and may not meet the required standards when finished. (RAC 2)

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Management should continue to prohibit the presence of food and drink in work areas, stress the importance of hand washing prior to the consumption of food items and continue to clean the horizontal surfaces. (RAC 2)

# Wipe sample locations



Figure 2 – Sample W-1



Figure 3 – Sample W-2

Figure 4 – Sample W-3



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Fremont AFRC Fremont, Nebraska

# Figure 5 – Sample W-4



Figure 6 – Sample W-5





Figure 8 – Sample W-7



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Fremont AFRC Fremont, Nebraska

Figure 9 – Sample W-8



Figure 10 – Sample W-9



Technical Assistance: For technical assistance regarding information found in this report or the performed survey please contact the Regional Industrial Hygienist at the NGB ARNG Region West Industrial Hygiene Office.

This report written by Non-Responsive, CIH, as a representative of Federal Occupational Health, U. S. Public Health Service.

# Appendix A

Nebraska Army National Guard State Point of Contact

Non-Responsive Occupational Health Nurse

AFRC Points of Contact

Non-Responsive

Appendix B



FOH ENVIRONMENTAL LABORATORY

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

Lead NGB: Fremont, NE (RC) Ghost Wipe(s)® e: OSHA ID-121 Project 9895 TM-11-48772 through TM-11-48780 02/16/11 02/18/11 – 02/25/11 02/25/11

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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# 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/ft <sup>2</sup> )
1	TM-11-48772	<10	<10
2	TM-11-48773	1040	1040
3	TM-11-48774	149	1355
4	TM-11-48775	14250	129545
5	TM-11-48776	12	106
6	TM-11-48777	<10	<91
7	TM-11-48778	<10	<91
8	TM-11-48779	<10	<91
9	TM-11-48780	<10	<91

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

### Metals in Wipe Limits (based on one ft<sup>2</sup> sampled area)

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





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Fremont AFRC Fremont, Nebraska

# Appendix C Occupational Health Risk Assessment Codes

(Reference: DOD Letter of Instructions 6055.1)

Occupational health risk assessment codes (RACs) are included in this report to quantify health risks to personnel. 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. The following procedure is used to determine the RACs:

**STEP 1:** This step assesses points to determine the health hazard severity category (HHSC). The HHSC reflects the magnitude of exposure to a physical, chemical, or biological agent and the medical effects of exposure.

### A. Exposure Points Assessed.

Alternate	Route		Exposure Condi	tions	
of Expo	sure	<action Level</action 	Occasionally >Action Level Always <oel< td=""><td>&gt;Action Level <oel< td=""><td>&gt;OEL</td></oel<></td></oel<>	>Action Level <oel< td=""><td>&gt;OEL</td></oel<>	>OEL
AER	NO	0	3	5	7
Possible	YES	1-2	4	<mark>6</mark>	8

Notes: 1) AER = Alternate exposure route, such as skin absorption or ingestion. 2) OEL = Occupational Exposure Limit, such as TLV or PEL. 3) > = Greater than. 4) < = Less than.

### B. Medical Effects Points Assessed

Condition	Points
No medical effects, such as nuisance noise and nuisance odor	0
Temporary reversible illness requiring supportive treatment, such as eye irritation and sore throat	1-2
Temporary reversible illness with a variable but limited period of disability, such as metal fume fever	3-4
Permanent, nonsevere illness or loss of capacity, such as permanent hearing loss	5-6
Permanent, severe, disabling, irreversible illness or death, such as asbestosis or lung cancer	<mark>7</mark> -8

C. The HHSC is determined by totaling the points assessed and using the following guide.

Total Points*	HHSC
13-16	l
9-12	Ш
5-8	III
0-4	IV

### \* Sum of A and B above.

**STEP 2:** This step uses the following guidelines to assess points to determine the mishap probability category (MPC) for health hazards. The probability of mishap reflects the duration of exposure and the number of exposed personnel.

### A. Duration of Exposure Points Assessed

Type of Exposure		Length of Exposure	
	1-8 hr/wk	>8 hr/wk/not continuous	Continuous
Irregular/Intermittent	1 <mark>-2</mark>	4-6	NA
Regular/Periodic	2-3	5-7	8

### B. Number of Exposed personnel Points Assessed

Number of Exposed Personnel	Points
<5	1-2
5-9	3-4
10-49	5-6
>49	<mark>7</mark> -8

C. The MPC for health hazards is determined by totaling the points assessed and using the following guide:

Total Points*	MPC
14-16	A
10-13	В
5-9	C
<5	D

\* Sum of A and B above.

STEP 3: The RAC is determined using the following matrix:

HHSC		MI	PC	
	А	В	С	D
I	1	1	2	3
II	1	2	3	4
111	2	3	4	5
IV	3	4	5	5

# Surface Lead Monitoring Survey Report

At

Nebraska Army National Guard Armed Forces Reserve Center Kearney, Nebraska

Survey date: March 25, 2010

For

Department of the Army National Guard Bureau Region West Industrial Hygiene Office

> Performed by U.S. Public Health Service Federal Occupational Health

> > February 13, 2011

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### Table of Contents

- I. Executive Summary
- II. Introduction
- III. Site Description
- IV. Scope of Work
- V. Findings, Discussion, and Recommendations

# Appendices

- A. Point of Contact (POC) List.
- B. Laboratory Result Reports and Chain of Custody Sheets.

### I. Executive Summary

At the request of the National Guard Bureau Region West Industrial Hygiene Office, field personnel representing the U.S. Public Health Service, Federal Occupational Health (FOH) conducted surface lead monitoring at the Nebraska Army National Guard Army, Armed Forces Reserve Center located in Kearney, Nebraska. This survey was conducted as part of the ARNG occupational safety and health program to evaluate potential exposure to lead on facility surfaces. Surface wipe samples were collected for lead dust.

The NGB-ARS Memorandum for the Chiefs of Staff dated February 2, 2006 provides guidance for potential lead hazard exposure in Army National Guard child occupied facilities. The memorandum defines a child occupied facility as a building, or portion of a building, visited on a regular basis by the same child, six years of age or under. Child occupied facilities may include, but are not limited to, day-care centers, preschools, and kindergarten classrooms. The memorandum states that, "For all areas used/occupied on a regular basis by children ages six and under clean all floors accessible to said children to the EPA dust-lead standard of 40 ug/ft<sup>2</sup>. Clean all other surfaces in accordance with USACHPPM recommendations for lead in dust of 200 ug/ft<sup>2</sup> on frequent contact surfaces."

For purposes of this report any surface lead level that exceeds 40 ug/ft<sup>2</sup> in a child occupied area is considered significant. Any surface lead level that exceeds 200 ug/ft<sup>2</sup> in any other area of the building is considered significant.

Nine surface wipe samples were collected on representative surfaces throughout the facility and analyzed for lead. Two samples had significant levels of lead. One sample from the floor of the former firing range contained lead levels of 15,000 ug/ft<sup>2</sup>. A second sample collected from the ceiling rafters in the assembly room contained lead levels of 740 ug/ft<sup>2</sup>. The concern with the lead levels on the rafters in the assembly room is the potential for the lead containing dust to fall to the floor below if disturbed by wind or vibration. Unlike the former firing range, the assembly room is used by the public and Guard employees. It is recommended that the ceiling rafters in the assembly room be cleaned. The lead contaminated surfaces in the former firing range should be cleaned by a licensed lead abatement company. This same company could also perform the cleaning in the assembly room and former firing range, and stress the importance of hand washing prior to the consumption of food items.

#### II. Introduction

A surface lead monitoring survey was conducted by the U.S. Public Health Service (USPHS) Federal Occupational Health (FOH) at the Nebraska Army National Guard Army, Armed Forces Reserve Center located in Kearney, Nebraska. This work was conducted under the Interagency Agreement between the USPHS, FOH and the West Region of the Army National Guard. This survey was conducted in order to identify lead levels on surfaces within the building. Non-Responsive, Certified Industrial Hygienist (CIH) conducted this survey on March 25, 2010.

FOH conducted this survey in the interest of preventing employee illness and in meeting legal obligations where applicable. Based on information provided, every effort was made to conduct a comprehensive survey covering the parameters considered. Results and recommendations are based on information provided, field measurements, and conditions observed during the survey.

#### III. Site Description

The Armed Forces Reserve Center was constructed in 1996. A firing range is attached to the building but has not been used since 2007. The range has been cleaned of lead dust but needs additional cleaning.

The ARNG policy is not to allow activities within the building for children. The Assembly room is available to the public for wedding receptions and job fairs.



### IV. Scope of Work

Lead dust from firing ranges and the cleaning of fire arms can contaminate surfaces within a building. Therefore, nine surface wipe samples were collected and analyzed for the presence of lead. A surface area of 16 square inches was wiped with a Ghost Wipe, place in a plastic coin tube and shipped to the FOH Analytical Laboratory in Chicago, Illinois. The sample was then analyzed by flame atomic absorption spectrophotometer (AA) according to OSHA Analytical Method ID-121.

### V. Assessment Criteria, Findings, Discussion, and Recommendations

# Assessment Criteria

The NGB-ARS Memorandum for the Chiefs of Staff dated February 2, 2006 provides guidance for potential lead hazard exposure in Army National Guard child occupied facilities. The memorandum defines a child occupied facility as a building, or portion of a building, visited on a regular basis by the same child, six years of age or under. Child occupied facilities may include, but are not limited to, day-care centers, preschools, and kindergarten classrooms. The memorandum states that, "For all areas used/occupied on a regular basis by children ages six and under clean all floors accessible to said children to the EPA dust-lead standard of 40 ug/ft<sup>2</sup>. Clean all other surfaces in accordance with USACHPPM recommendations for lead in dust of 200 ug/ft<sup>2</sup> on frequent contact surfaces."

For purposes of this report any surface lead level that exceeds 40 ug/ft<sup>2</sup> in a child occupied area is considered significant. Any surface lead level that exceeds 200 ug/ft<sup>2</sup> in any other area of the armory is considered significant.

# **Surface Samples**

Nine surface wipe samples were collected on representative surfaces throughout the facility and analyzed for lead. Two samples had significant levels of lead. One sample from the floor of the former firing range contained lead levels of 15,000 ug/ft<sup>2</sup>. A second sample collected from the ceiling rafters in the assembly room contained lead levels of 740 ug/ft<sup>2</sup>. The concern with the lead levels on the rafters in the assembly room is the potential for the lead containing dust to fall to the floor below if disturbed by wind or vibration. Unlike the former firing range, the assembly room is used by the public and Guard employees. The results are contained in Table 1.

#### Table 1 Area Wipe Sampling Results for Lead Dust Nebraska Army National Guard Armed Forces Reserve Center Kearney, Nebraska March 25, 2010

Sample	Location	Lead
Number		Concentration
		ug/ft <sup>2</sup>
W-1	Firing range on floor – Room 169	15000
W-2	Inside Vault on floor	<91
W-3	Supply/Unit Storage room on floor – Room 178	<91
W-4	Assembly room floor – center of room	<91
W-5	Assembly room – on ceiling rafter	740
W-6	Kitchen on floor	<91
W-7	Learning center on ledge – Room 144	<91
W-8	Assembly room on top of bulletin board	<91
W-9	Office window sill – Room 110	<91
Blank		<91

Note:

ug/ft<sup>2</sup> = micrograms per square foot of surface area.
 Bold indicates that concentration was "significant."

Armed Forces Reserve Center Kearney, Nebraska

# Wipe sample locations





Figure 3 – Sample W-2



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Figure 5 – Sample W-4



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Figure 7 – Sample W-6



Figure 8 – Sample W-7



Figure 9 – Sample W-8





#### **Recommendations:**

It is recommended that the ceiling rafters in the assembly room be cleaned. The lead contaminated surfaces in the former firing range should be cleaned by a licensed lead abatement company. This same company could also perform the cleaning in the assembly room. In addition, continue to prohibit the presence of food and drink in the assembly room and former firing range, and stress the importance of hand washing prior to the consumption of food items.

Technical Assistance: For technical assistance regarding information found in this report or the performed survey please contact the Regional Industrial Hygienist at the NGB ARNG Region West Industrial Hygiene Office.

This report written by **Non-Responsive**, CIH, as a representative of Federal Occupational Health, U. S. Public Health Service.

Appendix A

# Nebraska Army National Guard State Points of Contact

Non-Responsive Occupational Health Nurse Appendix B



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 9456 Page 1 of 2

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Surface Lead Monitoring Survey Survey Date: March 25, 2010 Armed Forces Reserve Center Kearney, Nebraska

#### 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/ft <sup>2</sup> )
W-1	TM-10-45202	1630	15000
W-2	TM-10-45203	<10	<91
W-3	TM-10-45204	<10	<91
W-4	TM-10-45205	<10	<91
W-5	TM-10-45206	81	740
W-6	TM-10-45207	<10	<91
W-7	TM-10-45208	<10	<91
W-8	TM-10-45209	<10	<91
VV-9	TM-10-45210	<10	<91
W10**	TM-10-45211	<10	None Detected

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

#### Metals in Wipe Limits (based on one ft<sup>2</sup> sampled area)

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





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N-8-	Assam by	Rm on top board						154209	-
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COMMENTS:											

FOIA Requested Record #J-15-0085 (NE) Released by National Guard Bureau Page 53 of 162

# Surface Lead Monitoring Survey Report

At

Nebraska Army National Guard Armed Forces Reserve Center Wayne, Nebraska

Survey date: February 7, 2011

For

Department of the Army National Guard Bureau Region West Industrial Hygiene Office

> Performed by U.S. Public Health Service Federal Occupational Health

> > May 2, 2011

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### Table of Contents

- I. Executive Summary
- II. Introduction
- III. Site Description
- IV. Scope of Work
- V. Findings, Discussion, and Recommendations

# Appendices

- A. Point of Contact (POC) List.
- B. Laboratory Result Reports and Chain of Custody Sheets.
- C. RAC Codes

### I. Executive Summary

At the request of the National Guard Bureau Region West Industrial Hygiene Office, field personnel representing the U.S. Public Health Service, Federal Occupational Health (FOH) conducted surface lead monitoring at the Nebraska Army National Guard, Armed Forces Reserve Center located in Wayne, Nebraska. This survey was conducted as part of the ARNG occupational safety and health program to evaluate potential exposure to lead on facility surfaces. Surface wipe samples were collected and analyzed for lead dust.

For purposes of this report any surface lead level that exceeds 40 ug/ft<sup>2</sup> in a child occupied area is considered significant. Any surface lead level that exceeds 200 ug/ft<sup>2</sup> in any other area of the facility is considered significant.

Two of the nine samples collected had detectable lead levels, both below the 200  $ug/ft^2$  standard. One sample on a pipe in the Assembly room was 37  $ug/ft^2$  for lead. A second sample collected on the top of the window door between the Kitchen and Assembly room contained lead levels of 126  $ug/ft^2$ .

Since the public has access to the Assembly room and Kitchen, the surfaces should be cleaned by wet wiping the horizontal surfaces so that lead levels are below 40  $ug/ft^2$ . (RAC 3)

When weapons are cleaned, special attention should be given to cleaning up the work area, by wet mopping surfaces, to prevent potential lead contamination from ammunition that may spread to other areas of the building. (RAC 3)

### II. Introduction

A surface lead monitoring survey was conducted by the U.S. Public Health Service (USPHS) Federal Occupational Health (FOH) at the Nebraska Army National Guard, Armed Forces Reserve Center located in Wayne, Nebraska. This work was conducted under the Interagency Agreement between the USPHS, FOH and the West Region of the Army National Guard. This survey was conducted in order to identify lead levels on surfaces within the building. Non-Responsive, Certified Industrial Hygienist (CIH) conducted this survey on February 7, 2011.

FOH conducted this survey in the interest of preventing employee illness and in meeting legal obligations where applicable. Based on information provided, every effort was made to conduct a comprehensive survey covering the parameters considered. Results and recommendations are based on information provided, field measurements, and conditions observed during the survey.

Surface Wipe Sampling for Lead Survey date: February 7, 2011

#### III. Site Description

Constructed in 1963, the AFRC consists of offices, assembly room, kitchen, class rooms, maintenance garage bay, and storage rooms. The public does have access to the assembly room and the adjacent kitchen.



### IV. Scope of Work

The purpose of the site visit was to collect up to nine surface wipe samples in the building to be analyzed for lead contamination.

### V. Findings, Discussion, and Recommendations

#### **Assessment Criteria**

The NGB-ARS Memorandum for the Chiefs of Staff dated February 2, 2006 provides guidance for potential lead hazard exposure in Army National Guard child occupied facilities. The memorandum defines a child occupied facility as a building, or portion of a building, visited on a regular basis by the same child, six years of age or under. Child occupied facilities may include, but are not limited to, day-care centers, preschools, and kindergarten classrooms. The memorandum states that, "For all areas used/occupied on a regular basis by children ages six and under clean all floors accessible to said

children to the EPA dust-lead standard of 40 ug/ft<sup>2</sup>. Clean all other surfaces in accordance with USACHPPM recommendations for lead in dust of 200 ug/ft<sup>2</sup> on frequent contact surfaces."

For purposes of this report any surface lead level that exceeds 40 ug/ft<sup>2</sup> in a child occupied area is considered significant. Any surface lead level that exceeds 200 ug/ft<sup>2</sup> in any other area of the facility is considered significant.

### Surface Samples

Nine surface wipe samples were collected on representative surfaces throughout the facility and analyzed for lead. The results are contained in Table 1.

#### Table 1 Area Wipe Sampling Results for Lead Dust Nebraska Army National Guard Armed Forces Reserve Center Wayne, Nebraska February 7, 2011

Sample	Location	Lead
Number		Concentration
		ug/ft <sup>2</sup>
W-1	Assembly room on pipe	37
W-2	Assembly room on floor	<10
W-3	Maintenance bay on metal file cabinet	<91
W-4	Maintenance bay on metal rack at North end	<91
W-5	Maintenance bay on floor	<91
W-6	Kitchen on top of window door	126
W-7	Storage room floor	<91
W-8	Office on file cabinet	<91
W-9	Class room on floor	<91
W-10	blank	ND

Note:

ug/ft<sup>2</sup> = micrograms per square foot of surface area.
 Bold indicates that concentration was "significant."

Two of the nine samples collected had detectable lead levels, both below the 200  $ug/ft^2$  standard. One sample on a pipe in the Assembly room was 37  $ug/ft^2$  for lead. A second sample collected on the top of the window door between the kitchen and Assembly room contained lead levels of 126  $ug/ft^2$ .

#### Recommendations

Since the public has access to the Assembly room and Kitchen, the surfaces should be cleaned by wet wiping the horizontal surfaces so that lead levels are below 40  $ug/ft^2$ . (RAC 3)

When weapons are cleaned, special attention should be given to cleaning up the work area, by wet mopping surfaces, to prevent potential lead contamination from ammunition that may spread to other areas of the building. (RAC 3)



Wipe sample locations

# Figure 3 – Sample W-2



Figure 4 – Sample W-3







Figure 6 – Sample W-5



# Figure 7 – Sample W-6



Figure 8 – Sample W-7





Figure 9 – Sample W-8

Figure 10 – Sample W-9



Technical Assistance: For technical assistance regarding information found in this report or the performed survey please contact the Regional Industrial Hygienist at the NGB ARNG Region West Industrial Hygiene Office.

This report written by Non-Responsive, CIH, as a representative of Federal Occupational Health, U. S. Public Health Service.

# Appendix A

Nebraska Army National Guard State Points of Contact

Non-Responsive Occupational Health Nurse

AFRC Point of Contact

Non-Responsive

Surface Wipe Sampling for Lead Survey date: February 7, 2011

Appendix B

Surface Wipe Sampling for Lead Survey date: February 7, 2011

Wayne AFRC Wayne, Nebraska



FOH ENVIRONMENTAL LABORATORY

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

Lead NGB: Wayne, NE (RC) Ghost Wipe(s)® e: OSHA ID-121 Project 9886 TM-11-48691 through TM-11-48700 02/16/11 02/18/11 – 02/22/11 02/22/11

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 9886 Page 1 of 2 Surface Wipe Sampling for Lead Survey date: February 7, 2011



# 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/ft <sup>2</sup> )
1	TM-11-48691	37	37
2	TM-11-48692	<10	<10
3	TM-11-48693	<10	<91
4	TM-11-48694	<10	<91
5	TM-11-48695	<10	<91
6	TM-11-48696	14	126
7	TM-11-48697	<10	<91
8	TM-11-48698	<10	<91
9	TM-11-48699	<10	<91
10**	TM-11-48700	<10	None Detected

AGENCY	FLOORS	INTERIOR WINDOW SILLS	WINDOW TROUGHS
EPA	40 µg/ft <sup>2</sup>	250 ug/ff <sup>2</sup>	400 ug/ft <sup>2</sup>

#### Metals in Wipe Limits (based on one ft<sup>2</sup> sampled area)

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





Project 9886 Page 2 of 2

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Surface Wipe Sampling for Lead Survey date: February 7, 2011

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# Wayne AFRC Wayne, Nebraska

### Appendix C Occupational Health Risk Assessment Codes

#### (Reference: DOD Letter of Instructions 6055.1)

Occupational health risk assessment codes (RACs) are included in this report to quantify health risks to personnel. 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. The following procedure is used to determine the RACs:

**STEP 1:** This step assesses points to determine the health hazard severity category (HHSC). The HHSC reflects the magnitude of exposure to a physical, chemical, or biological agent and the medical effects of exposure.

#### A. Exposure Points Assessed.

Alternate Route of Exposure		Exposure Conditions			
		<action Level</action 	Occasionally >Action Level Always <oel< td=""><td>&gt;Action Level <oel< td=""><td>&gt;OEL</td></oel<></td></oel<>	>Action Level <oel< td=""><td>&gt;OEL</td></oel<>	>OEL
AER	NO	0	3	5	7
Possible	YES	1-2	4	6	8

Notes: 1) AER = Alternate exposure route, such as skin absorption or ingestion. 2) OEL = Occupational Exposure Limit, such as TLV or PEL. 3) > = Greater than. 4) < = Less than.

#### B. Medical Effects Points Assessed

Condition	Points	
No medical effects, such as nuisance noise and nuisance odor	0	
Temporary reversible illness requiring supportive treatment, such as eye irritation and sore throat	1-2	
Temporary reversible illness with a variable but limited period of disability, such as metal fume fever	3-4	
Permanent, nonsevere illness or loss of capacity, such as permanent hearing loss	5- <mark>6</mark>	
Permanent, severe, disabling, irreversible illness or death, such as asbestosis or lung cancer	7-8	

C. The HHSC is determined by totaling the points assessed and using the following guide.

Total Points*	HHSC
13-16	I
9-12	Ш
5-8	111
0-4	IV

#### \* Sum of A and B above.

**STEP 2:** This step uses the following guidelines to assess points to determine the mishap probability category (MPC) for health hazards. The probability of mishap reflects the duration of exposure and the number of exposed personnel.

#### A. Duration of Exposure Points Assessed

Type of Exposure	Length of Exposure			
	1-8 hr/wk	>8 hr/wk/not continuous	Continuous	
Irregular/Intermittent	<mark>1</mark> -2	4-6	NA	
Regular/Periodic	2-3	5-7	8	

#### B. Number of Exposed personnel Points Assessed

Number of Exposed Personnel	Points	
<5	1-2	
5-9	3-4	
10-49	5-6	
>49	7- <mark>8</mark>	

C. The MPC for health hazards is determined by totaling the points assessed and using the following guide:

Total Points*	MPC
14-16	А
10-13	В
5- <mark>9</mark>	C
<5	D

\* Sum of A and B above.

STEP 3: The RAC is determined using the following matrix:

HHSC	MPC			
	А	В	С	D
I	1	1	2	3
II	1	2	3	4
Ш	2	3	4	5
IV	3	4	5	5

# Surface Lead Monitoring Survey Report

At

Nebraska Army National Guard Kearney Armory Kearney, Nebraska

Survey date: March 25, 2010

For

Department of the Army National Guard Bureau Region West Industrial Hygiene Office

> Performed by U.S. Public Health Service Federal Occupational Health

> > May 25, 2010

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### Table of Contents

- I. Executive Summary
- II. Introduction
- III. Site Description
- IV. Scope of Work
- V. Findings, Discussion, and Recommendations

# Appendices

- A. Point of Contact (POC) List.
- B. Laboratory Result Reports and Chain of Custody Sheets.
#### I. Executive Summary

At the request of the National Guard Bureau Region West Industrial Hygiene Office, field personnel representing the U.S. Public Health Service, Division of Federal Occupational Health (FOH) conducted surface lead monitoring at the Nebraska Army National Guard Army, Armory located in Kearney, Nebraska. This survey was conducted as part of the ARNG occupational safety and health program to evaluate potential exposure to lead on facility surfaces. Surface wipe samples were collected for lead dust.

The NGB-ARS Memorandum for the Chiefs of Staff dated February 2, 2006 provides guidance for potential lead hazard exposure in Army National Guard child occupied facilities. The memorandum defines a child occupied facility as a building, or portion of a building, visited on a regular basis by the same child, six years of age or under. Child occupied facilities may include, but are not limited to, day-care centers, preschools, and kindergarten classrooms. The memorandum states that, "For all areas used/occupied on a regular basis by children ages six and under clean all floors accessible to said children to the EPA dust-lead standard of 40 ug/ft<sup>2</sup>. Clean all other surfaces in accordance with USACHPPM recommendations for lead in dust of 200 ug/ft<sup>2</sup> on frequent contact surfaces."

For purposes of this report any surface lead level that exceeds 40 ug/ft<sup>2</sup> in a child occupied area is considered significant. Any surface lead level that exceeds 200 ug/ft<sup>2</sup> in any other area of the armory is considered significant.

Nine surface wipe samples were collected on representative surfaces throughout the facility and analyzed for lead. Two samples had significant levels of lead. One sample from the floor of the former firing range contained lead levels of 15,000 ug/ft<sup>2</sup>. A second sample collected from the ceiling rafters in the assembly room contained lead levels of 740 ug/ft<sup>2</sup>. The concern with the lead levels on the rafters in the assembly room is the potential for the lead containing dust to fall to the floor below if disturbed by wind or vibration. Unlike the former firing range, the assembly room is used by the public and Guard employees. It is recommended that the ceiling rafters in the assembly room be cleaned. The lead contaminated surfaces in the former firing range should be cleaned by a licensed lead abatement company. This same company could also perform the cleaning in the assembly room and former firing range, and stress the importance of hand washing prior to the consumption of food items.

#### II. Introduction

A surface lead monitoring survey was conducted by the U.S. Public Health Service (USPHS) Federal Occupational Health (FOH) at the Nebraska Army National Guard Army, Kearney Armory located in Kearney, Nebraska. This work was conducted under the Interagency Agreement between the USPHS, FOH and the West Region of the Army National Guard. This survey was conducted in order to identify lead levels on surfaces within the Armory. Non-Responsive, Certified Industrial Hygienist (CIH) conducted this survey on March 25, 2010.

FOH conducted this survey in the interest of preventing employee illness and in meeting legal obligations where applicable. Based on information provided, every effort was made to conduct a comprehensive survey covering the parameters considered. Results and recommendations are based on information provided, field measurements, and conditions observed during the survey.

#### III. Site Description

The Kearney Armory was constructed in 1996. A firing range is attached to the building but has not been used since 2007. The range has been cleaned of lead dust but needs additional cleaning.

The Armory policy is not to allow activities within the building for children. The Assembly room is available to the public for wedding receptions and job fairs.



#### IV. Scope of Work

Lead dust from firing ranges and the cleaning of fire arms can contaminate surfaces within a building. Therefore, nine surface wipe samples were collected and analyzed for the presence of lead. A surface area of 16 square inches was wiped with a Ghost Wipe, place in a plastic coin tube and shipped to the FOH Analytical Laboratory in Chicago, Illinois. The sample was then analyzed by flame atomic absorption spectrophotometer (AA) according to OSHA Analytical Method ID-121.

#### V. Assessment Criteria, Findings, Discussion, and Recommendations

#### Assessment Criteria

The NGB-ARS Memorandum for the Chiefs of Staff dated February 2, 2006 provides guidance for potential lead hazard exposure in Army National Guard child occupied facilities. The memorandum defines a child occupied facility as a building, or portion of a building, visited on a regular basis by the same child, six years of age or under. Child occupied facilities may include, but are not limited to, day-care centers, preschools, and kindergarten classrooms. The memorandum states that, "For all areas used/occupied on a regular basis by children ages six and under clean all floors accessible to said children to the EPA dust-lead standard of 40 ug/ft<sup>2</sup>. Clean all other surfaces in accordance with USACHPPM recommendations for lead in dust of 200 ug/ft<sup>2</sup> on frequent contact surfaces."

For purposes of this report any surface lead level that exceeds 40 ug/ft<sup>2</sup> in a child occupied area is considered significant. Any surface lead level that exceeds 200 ug/ft<sup>2</sup> in any other area of the armory is considered significant.

#### **Surface Samples**

Nine surface wipe samples were collected on representative surfaces throughout the facility and analyzed for lead. Two samples had significant levels of lead. One sample from the floor of the former firing range contained lead levels of 15,000 ug/ft<sup>2</sup>. A second sample collected from the ceiling rafters in the assembly room contained lead levels of 740 ug/ft<sup>2</sup>. The concern with the lead levels on the rafters in the assembly room is the potential for the lead containing dust to fall to the floor below if disturbed by wind or vibration. Unlike the former firing range, the assembly room is used by the public and Guard employees. The results are contained in Table 1.

#### Table 1 Area Wipe Sampling Results for Lead Dust Nebraska Army National Guard Kearney Armory Kearney, Nebraska March 25, 2010

Sample	Location	Lead
Number		Concentration
		ug/ft <sup>2</sup>
W-1	Firing range on floor – Room 169	15000
W-2	Inside Vault on floor	<91
W-3	Supply/Unit Storage room on floor – Room 178	<91
W-4	Assembly room floor – center of room	<91
W-5	Assembly room – on ceiling rafter	740
W-6	Kitchen on floor	<91
W-7	Learning center on ledge – Room 144	<91
W-8	Assembly room on top of bulletin board	<91
W-9	Office window sill – Room 110	<91
Blank		<91

Note:

ug/ft<sup>2</sup> = micrograms per square foot of surface area.
 Bold indicates that concentration was "significant."

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# Wipe sample locations





Figure 3 – Sample W-2



Kearney Armory Kearney, Nebraska

Figure 4 – Sample W-3



Figure 5 – Sample W-4







Figure 7 – Sample W-6



Figure 8 – Sample W-7



Figure 9 – Sample W-8







#### **Recommendations:**

It is recommended that the ceiling rafters in the assembly room be cleaned. The lead contaminated surfaces in the former firing range should be cleaned by a licensed lead abatement company. This same company could also perform the cleaning in the assembly room. In addition, continue to prohibit the presence of food and drink in the assembly room and former firing range, and stress the importance of hand washing prior to the consumption of food items.

Technical Assistance: For technical assistance regarding information found in this report or the performed survey please contact the Regional Industrial Hygienist at the NGB ARNG Region West Industrial Hygiene Office.

This report written by **Non-Responsive**, CIH, as a representative of Federal Occupational Health, U. S. Public Health Service.

Appendix A

# Nebraska Army National Guard State Points of Contact

Non-Responsive Occupational Health Nurse Appendix B



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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#### 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/ft <sup>2</sup> )
W-1	TM-10-45202	1630	15000
W-2	TM-10-45203	<10	<91
- W-3	TM-10-45204	<10	<91
W-4	TM-10-45205	<10	<91
W-5	TM-10-45206	81	740
W-6	TM-10-45207	<10	<91
VV-7	TM-10-45208	<10	<91
W-8	TM-10-45209	<10	<91
W-9	TM-10-45210	<10	<91
W10**	TM-10-45211	<10	None Detected

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

#### Metals in Wipe Limits (based on one ft<sup>2</sup> sampled area)

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





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10-2	Supply Ron /	Whith Storage			1			2002	
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w-5	Assambly .	Pean of lives						54206	
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COMMENTS:										

Surface Lead Monitoring Survey Survey Date: March 25, 2010 Kearney Armory Kearney, Nebraska

## Surface Lead Monitoring Survey Report

At

Nebraska Army National Guard Norfolk Armory Norfolk, Nebraska

Survey date: September 23, 2010

For

Department of the Army National Guard Bureau Region West Industrial Hygiene Office

> Performed by U.S. Public Health Service Federal Occupational Health

> > November 15, 2010

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#### Table of Contents

- I. Executive Summary
- II. Table of Findings and Recommendations
- III. Introduction
- IV. Site Description
- V. Scope of Work
- VI. Findings, Discussion, and Recommendations

### Appendices

- A. Point of Contact (POC) List.
- B. Laboratory Result Reports and Chain of Custody Sheets.
- C. Occupational Health Risk Assessment Codes (RACs).

#### I. Executive Summary

At the request of the National Guard Bureau Region West Industrial Hygiene Office, field personnel representing the U.S. Public Health Service, Federal Occupational Health (FOH) conducted surface lead monitoring at the Nebraska Army National Guard Armory located in Norfolk, Nebraska. This survey was conducted as part of the ARNG occupational safety and health program to evaluate potential exposure to lead on facility surfaces. Surface wipe samples were collected for lead dust.

The NGB-ARS Memorandum for the Chiefs of Staff dated February 2, 2006 provides guidance for potential lead hazard exposure in Army National Guard child occupied facilities. The memorandum defines a child occupied facility as a building, or portion of a building, visited on a regular basis by the same child, six years of age or under. Child occupied facilities may include, but are not limited to, day-care centers, preschools, and kindergarten classrooms. The memorandum states that, "For all areas used/occupied on a regular basis by children ages six and under clean all floors accessible to said children to the EPA dust-lead standard of 40 ug/ft<sup>2</sup>. Clean all other surfaces in accordance with USACHPPM recommendations for lead in dust of 200 ug/ft<sup>2</sup> on frequent contact surfaces."

For purposes of this report any surface lead level that exceeds 40 ug/ft<sup>2</sup> in a child occupied area is considered significant. Any surface lead level that exceeds 200 ug/ft<sup>2</sup> in any other area of the armory is considered significant.

Nine surface wipe samples were collected on representative surfaces in the facility and analyzed for lead dust. Six of the nine samples contained lead levels above 40 ug/ft<sup>2</sup>. Sample locations of greatest concern are on the heating unit in the Drill room with lead levels of 2,345 ug/ft<sup>2</sup>, Drill room window sill with 78 ug/ft<sup>2</sup>, and the Kitchen window sill with 718 ug/ft<sup>2</sup>. These areas are open to the public with the possibility of children being present. Therefore, the 40 ug/ft<sup>2</sup> standard applies. The former firing range in the basement had surface lead levels between 155 and 4,682 ug/ft<sup>2</sup>.

A licensed lead abatement contractor should be hired to clean all floors, walls, furniture, and equipment throughout the building using vacuum cleaners equipped with high efficiency particulate air-purifying (HEPA) filters followed by a wet surface wipe cleaning. Conduct post cleanup wipe sampling to verify adequacy of cleaning.

The water on the floor of Mechanical room should be dried and any visible mold removed.

## II. <u>Table of Findings and Recommendations</u>

Findings	Recommendations	RAC
Surface Sample	S	
Nine surface wipe samples were collected on representative surfaces in the facility and analyzed for lead dust. Six of the nine samples contained lead levels above 40 ug/ft <sup>2</sup> . Sample locations of greatest concern are on the heating unit in the Drill room with 2,345 ug/ft <sup>2</sup> , Drill room window sill with 78 ug/ft <sup>2</sup> , and the Kitchen window sill with 718 ug/ft <sup>2</sup> . These areas are open to the public and the 40 ug/ft <sup>2</sup> standard applies. The former firing range in the basement had surface lead levels between 155 and 4,682 ug/ft <sup>2</sup> .	A licensed lead abatement contractor should be hired to clean all floors, walls, furniture, and equipment throughout the building using vacuum cleaners equipped with high efficiency particulate air- purifying (HEPA) filters followed by a wet surface wipe cleaning. Conduct post cleanup wipe sampling to verify adequacy of cleaning.	2
Mold		
Water is present on the floor of the Mechanical room due to a leak. There is a musty odor and mold is visible.	The water on the floor of Mechanical room should be dried and any visible mold removed.	3

Norfolk Armory Norfolk, Nebraska

#### III. Introduction

A surface lead monitoring survey was conducted by the U.S. Public Health Service (USPHS) Federal Occupational Health (FOH) at the Nebraska Army National Guard, Norfolk Armory located in Norfolk, Nebraska. This work was conducted under the Interagency Agreement between the USPHS, FOH and the West Region of the Army National Guard. This survey was conducted in order to identify lead levels on surfaces within the Armory. Non-Responsive, Certified Industrial Hygienist (CIH) conducted this survey on September 23, 2010.

FOH conducted this survey in the interest of preventing employee illness and in meeting legal obligations where applicable. Based on information provided, every effort was made to conduct a comprehensive survey covering the parameters considered. Results and recommendations are based on information provided, field measurements, and conditions observed during the survey.

#### IV. Site Description

The Norfolk Armory is a brick building constructed in 1957. The building consists of a Drill room or Assembly room, Offices, Kitchen, Storage area. The Drill room is open to the public for wedding receptions and auctions. Approximately every other weekend an event is held in the Drill room that is open to the public. The basement contains a former firing range that is no longer in use. This area is now filled with metal lockers and the storage of equipment. A Janitor's room is in the basement as well as the Mechanical room. Because of a water leak, the floor of the Mechanical room is wet and mold is present.



#### V. Scope of Work

This survey was conducted to evaluate potential exposure to lead on facility surfaces. Surface wipe samples were collected in the building and shipped to the FOH laboratory in Chicago for analysis of lead content.

## VI. Findings, Discussion, and Recommendations

#### **Assessment Criteria**

The NGB-ARS Memorandum for the Chiefs of Staff dated February 2, 2006 provides guidance for potential lead hazard exposure in Army National Guard child occupied facilities. The memorandum defines a child occupied facility as a building, or portion of a building, visited on a regular basis by the same child, six years of age or under. Child occupied facilities may include, but are not limited to, day-care centers, preschools, and kindergarten classrooms. The memorandum states that, "For all areas used/occupied on a regular basis by children ages six and under clean all floors accessible to said children to the EPA dust-lead standard of 40 ug/ft<sup>2</sup>. Clean all other surfaces in accordance with USACHPPM recommendations for lead in dust of 200 ug/ft<sup>2</sup> on frequent contact surfaces."

For purposes of this report any surface lead level that exceeds 40 ug/ft<sup>2</sup> in a child occupied area is considered significant. Any surface lead level that exceeds 200 ug/ft<sup>2</sup> in any other area of the armory is considered significant.

## **Surface Samples**

Nine surface wipe samples were collected on representative surfaces in the facility and analyzed for lead dust. Six of the nine samples contained lead levels above 40 ug/ft<sup>2</sup>. Sample locations of greatest concern are on the heating unit in the Drill room with lead levels of 2,345 ug/ft<sup>2</sup>, Drill room window sill with 78 ug/ft<sup>2</sup>, and the Kitchen window sill with 718 ug/ft<sup>2</sup>. Although the floor of the Drill room was non-detectable for lead, these areas are open to the public with the possibility of children being present. Therefore, the 40 ug/ft<sup>2</sup> standard applies. The former firing range in the basement had surface lead levels between 155 and 4,682 ug/ft<sup>2</sup>. The results are contained in Table 1.

#### Table 1 Area Wipe Sampling Results for Lead Dust Nebraska Army National Guard Norfolk Armory Norfolk, Nebraska September 23, 2010

Somolo		Lood
Sample	Location	Leau
Number		Concentration
		ug/ft <sup>2</sup>
W-1	Drill room on heating unit	2,345
W-2	Drill room on north window sill	78
W-3	Drill room on floor	<10
W-4	Room 117 on office table	<91
W-5	Kitchen on window sill	718
W-6	Firing range on floor	4,682
W-7	Firing range on wooden book case	155
W-8	Firing range on locker 47	618
W-9	Basement supply room	<91
W-10	Blank	

Note:

ug/ft<sup>2</sup> = micrograms per square foot of surface area.
 Bold indicates that concentration was "significant."

#### Recommendation

A licensed lead abatement contractor should be hired to clean all floors, walls, furniture, and equipment throughout the building using vacuum cleaners equipped with high efficiency particulate air-purifying (HEPA) filters followed by a wet surface wipe cleaning. Conduct post cleanup wipe sampling to verify adequacy of cleaning.

# Wipe sample locations



Figure 2 – Sample W-1 – Drill room heating unit

Figure 3 – Sample W-2 – Drill room window sill



Norfolk Armory Norfolk, Nebraska



Figure 5 – Sample W-4 – Office table







Figure 7 – Sample W-6 – former firing range floor





Figure 8 – Sample W-7 former firing range wooden bookcase

Figure 9 – Sample W-8 – former firing range, top of locker # 47





Figure 10 – Sample W-9 – Janitor's room

Technical Assistance: For technical assistance regarding information found in this report or the performed survey please contact the Regional Industrial Hygienist at the NGB ARNG Region West Industrial Hygiene Office.

This report written by Non-Responsive, CIH, as a representative of Federal Occupational Health, U. S. Public Health Service.

Appendix A

Norfolk Armory Norfolk, Nebraska

#### Nebraska Army National Guard State Points of Contact

Non-Responsive Occupational Health Nurse

Non-Responsive State Safety Manager

**Armory Points of Contact** 

Non-Responsive

Appendix B

Norfolk Armory Norfolk, Nebraska







# 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/ft <sup>2</sup> )
W-1	TM-11-48045	2345	2345
W-2	TM-11-48046	78	78
W-3	TM-11-48047	<10	<10
W-4	TM-11-48048	<10	<91
W-5	TM-11-48049	79	718
W-6	TM-11-48050	515	4682
• W-7	TM-11-48051	17	155
W-8	TM-11-48052	68	618
W-9	TM-11-48053	<10	<91
W-10	TM-11-48054		None Detected

	AGENCY	FLOORS	INTERIOR WINDOW SILLS	WINDOW TROUGHS
5	EPA	40 μg/ft <sup>2</sup>	250 μg/ft <sup>2</sup>	400 μg/ft <sup>2</sup>

#### Metals in Wipe Limits (based on one ft<sup>2</sup> sampled area)

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

		EXPOSURE LIMITS - (mg/m <sup>3</sup> )	
ANALTIE	OSHA	NKOSH	ACGIH
Lead	0.05	< 0.1	0.05





Project 9786 Page 2 of 2

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FOIA Requested Record #J-15-0085 (NE) Released by National Guard Bureau Page 105 of 162

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Appendix C

Norfolk Armory Norfolk, Nebraska

Occupational Health Risk Assessment Codes (Reference: DOD Letter of Instructions 6055 1)

Occupational health risk assessment codes (RACs) are included in this report to quantify health risks to personnel 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 The following procedure is used to determine the RACs:

STEP 1: This step assesses points to determine the health hazard severity category (HHSC) The HHSC reflects the magnitude of exposure to a physical, chemical, or biological agent and the medical effects of exposure

A Exposure Points Assessed

Alternate F	Route		Exposure Condition	15	
of Expos	ure	<ct< td=""><td>Occasionally &gt;CT</td><td>&gt;CT</td><td>&gt;STD</td></ct<>	Occasionally >CT	>CT	>STD
AER	NO	0	3	5	7
Possible	YES	1-2	4	6	8

Notes: 1) AER = Alternate exposure route, such as skin absorption or ingestion 2) CT = DoD component threshold that triggers surveillance actions, such as action level 3) STD = DoD exposure limit, such as TLV or PEL 4) > = Greater than 5) < = Less than  $6 \le 10^{-10}$  = Less than or equal to

B Medical Effects Points Assessed

Condition	Points
No medical effects, such as nuisance noise and nuisance odor	0
Temporary reversible illness requiring supportive treatment, such as eye irritation and sore throat	1-2
Temporary reversible illness with a variable but limited period of disability, such as metal fume fever	3-4
Permanent, nonsevere illness or loss of capacity, such as permanent hearing loss	5-6
Permanent, severe, disabling, irreversible illness or death, such as asbestosis or lung cancer	7-8

C The HHSC is determined by totaling the points assessed and using the following guide

Total Points*	HHSC
13-16	I
9-12	П
5-8	ш
0-4	IV

\* Sum of A and B above
#### Surface Lead Monitoring Survey Survey Date: September 23, 2010

**STEP 2:** This step uses the following guidelines to assess points to determine the mishap probability category (MPC) for health hazards The probability of mishap reflects the duration of exposure and the number of exposed personnel

A Duration of Exposure Points Assessed

Type of Exposure	Length of Exposure		
	1-8 hr/wk >8 hr/wk/not continuous Continuous		
Irregular/Intermittent	1-2	4-6	NA
Regular/Periodic	2-3	5-7	8

B Number of Exposed personnel Points Assessed

Number of Exposed Personnel	Points
<5	1-2
5-9	3-4
10-49	5-6
>49	7-8

C The MPC for health hazards is determined by totaling the points assessed and using the following guide:

Total Points*	МРС
14-16	А
10-13	В
5-9	С
<5	D

\* Sum of A and B above

**STEP 3:** The RAC is determined using the following matrix:

HHSC	МРС			
	А	В	С	D
I	1	1	2	3
п	1	2	3	4
ш	2	3	4	5
IV	3	4	5	5

# Surface Lead Monitoring Survey Report

At

Nebraska Army National Guard North Platte Armory North Platte, Nebraska

Survey date: September 22, 2010

For

Department of the Army National Guard Bureau Region West Industrial Hygiene Office

> Performed by U.S. Public Health Service Federal Occupational Health

> > January 14, 2011

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## Table of Contents

- I. Executive Summary
- II. Introduction
- III. Site Description
- IV. Scope of Work
- V. Findings, Discussion, and Recommendations

## Appendices

- A. Point of Contact (POC) List
- B. Occupational Health Risk Assessment Codes
- C. Laboratory Result Reports and Chain of Custody Sheets

## I. Executive Summary

At the request of the National Guard Bureau Region West Industrial Hygiene Office, field personnel representing the U.S. Public Health Service, Division of Federal Occupational Health (FOH) conducted surface lead monitoring at the Nebraska Army National Guard Armory located in North Platte, Nebraska. This survey was conducted as part of the ARNG occupational safety and health program to evaluate potential exposure to lead on facility surfaces. Surface wipe samples were collected for lead dust.

The NGB-ARS Memorandum for the Chiefs of Staff dated February 2, 2006 provides guidance for potential lead hazard exposure in Army National Guard child occupied facilities. The memorandum defines a child occupied facility as a building, or portion of a building, visited on a regular basis by the same child, six years of age or under. Child occupied facilities may include, but are not limited to, day-care centers, preschools, and kindergarten classrooms. The memorandum states that, "For all areas used/occupied on a regular basis by children ages six and under clean all floors accessible to said children to the EPA dust-lead standard of 40 ug/ft<sup>2</sup>. Clean all other surfaces in accordance with USACHPPM recommendations for lead in dust of 200 ug/ft<sup>2</sup> on frequent contact surfaces."

For purposes of this report any surface lead level that exceeds 40 ug/ft<sup>2</sup> in a child occupied area is considered significant. Any surface lead level that exceeds 200 ug/ft<sup>2</sup> in any other area of the armory is considered significant.

Six surface wipe samples were collected on representative surfaces in the facility and analyzed for lead dust. Four of six samples (NPW-1, NPW-2, NPW-3 & NPW-6) resulted in significant levels of lead.

When weapons are cleaned, special attention should be given to cleaning up the work area to prevent potential lead contamination from the ammunition.

Surfaces identified as lead-contaminated should be properly cleaned.

## II. <u>Table of Findings and Recommendations</u>

Findings	Recommendations	RAC	
Surface Samples			
Six surface wipe samples were collected on representative surfaces in the facility and analyzed for lead dust. Four samples resulted in significant levels of lead.	When weapons are cleaned, special attention should be given to cleaning up the work area to prevent potential lead contamination from ammunition. Surfaces identified as lead- contaminated should be properly cleaned.	3	
	•		

## II. Introduction

A surface lead monitoring survey was conducted by the U.S. Public Health Service (USPHS) Federal Occupational Health (FOH) at the Nebraska Army National Guard North Platte Armory located in North Platte, Nebraska. This work was conducted under the Interagency Agreement between the USPHS, FOH and the West Region of the Army National Guard. This survey was conducted in order to identify lead levels on surfaces within the Armory. Non-Responsive, Industrial Hygienist (IH) conducted this survey on September 22, 2010.

FOH conducted this survey in the interest of preventing employee illness and in meeting legal obligations where applicable. Based on information provided, every effort was made to conduct a comprehensive survey covering the parameters considered. Results and recommendations are based on information provided, field measurements, and conditions observed during the survey.

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## III. Site Description

The North Platte Armory is the primary workplace for several full-time active-duty Guard personnel. The facility is accessed by the public as a rental hall available to members the local community. The Drill room or Assembly room is also a basketball court and is used by the local high school girl's volleyball team for practice during winter months. There is a firing range located upstairs in the facility. The firing range is no longer used for live-fire practice and is currently utilized as a locker and storage room.

## IV. Scope of Work

Lead dust from firing ranges and the cleaning of fire arms can contaminate surfaces within a building. Therefore, six (6) surface wipe samples were collected and analyzed for the presence of lead. A surface area of 16-144 square inches was wiped with a Ghost Wipe, place in a plastic coin tube and shipped to the FOH Analytical Laboratory in Chicago, Illinois. The sample was then analyzed by flame atomic absorption spectrophotometer (AA) according to OSHA Analytical Method ID-121.

## V. Findings, Discussion, and Recommendations

## Surface Samples

Results indicate four of six samples are "significant".

The results are contained in Table 1.

### Table 1 Area Wipe Sampling Results for Lead Dust Nebraska Army National Guard North Platte Armory North Platte, Nebraska September 22, 2010

	,	
Sample	Location	Lead
Number		Concentration
		ug/ft <sup>2</sup>
NPW-1	Shooting range, floor	2534
NPW-2	Shooting range, brick wall	155455
NPW-3	Mezzanine hall, top of wall box	500
NPW-4	Assembly room, floor	<10
NPW-5	Vault, floor	103
NPW-6	Assembly room, new light fixture shields	845

Note:

ug/ft<sup>2</sup> = micrograms per square foot of surface area.
Bold indicates that concentration was "significant."

## **Assessment Criteria**

The NGB-ARS Memorandum for the Chiefs of Staff dated February 2, 2006 provides guidance for potential lead hazard exposure in Army National Guard child occupied facilities. The memorandum defines a child occupied facility as a building, or portion of a building, visited on a regular basis by the same child, six years of age or under. Child occupied facilities may include, but are not limited to, day-care centers, preschools, and kindergarten classrooms. The memorandum states that, "For all areas used/occupied on a regular basis by children ages six and under clean all floors accessible to said children to the EPA dust-lead standard of 40 ug/ft<sup>2</sup>. Clean all other surfaces in accordance with USACHPPM recommendations for lead in dust of 200 ug/ft<sup>2</sup> on frequent contact surfaces."

For purposes of this report any surface lead level that exceeds 40 ug/ft<sup>2</sup> in a child occupied area is considered significant. Any surface lead level that exceeds 200 ug/ft<sup>2</sup> in any other area of the armory is considered significant.

## **Recommendations:**

When weapons are cleaned, special attention should be given to cleaning up the work area to prevent potential lead contamination from the ammunition.

Clean all surfaces identified as lead-contaminated that are regularly accessed by minors or members of the public. Use of the firing range as a locker room should be discontinued until the space can be properly abated for lead.

## Wipe sample locations



Figure 1– Sample NPW-1



Figure 2– Sample NPW-2

Figure 3– Sample NPW-3





Figure 4– Sample NPW-4

Figure 5– Sample NPW-5





Figure 6- Sample NPW-6

Technical Assistance: For technical assistance regarding information found in this report or the performed survey please contact the Regional Industrial Hygienist at the NGB ARNG Region West Industrial Hygiene Office.

This report was written by **Non-Responsive**, IH, as a representative of Federal Occupational Health, U. S. Public Health Service.

Appendix A

## Nebraska Army National Guard State Points of Contact

Non-Responsive State Safety Manager

**Armory Point of Contact** 

Non-Responsive

Appendix B

#### Occupational Health Risk Assessment Codes (Reference: DOD Letter of Instructions 6055 1)

Occupational health risk assessment codes (RACs) are included in this report to quantify health risks to personnel 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 The following procedure is used to determine the RACs:

**STEP 1:** This step assesses points to determine the health hazard severity category (HHSC) The HHSC reflects the magnitude of exposure to a physical, chemical, or biological agent and the medical effects of exposure

A Exposure Points Assessed

Alternate Route		Exposure Conditions			
of Expos	ure	<ct< td=""><td>Occasionally &gt;CT</td><td>&gt;CT</td><td>&gt;STD</td></ct<>	Occasionally >CT	>CT	>STD
AER	NO	0	3	5	7
Possible	YES	<u>1-2</u>	4	6	8

Notes: 1) AER = Alternate exposure route, such as skin absorption or ingestion 2) CT = DoD component threshold that triggers surveillance actions, such as action level 3) STD = DoD exposure limit, such as TLV or PEL 4) > = Greater than 5 = Less than 6 = Less than or equal to

B Medical Effects Points Assessed

Condition	Points
No medical effects, such as nuisance noise and nuisance odor	0
Temporary reversible illness requiring supportive treatment, such as eye irritation and sore throat	1-2
Temporary reversible illness with a variable but limited period of disability, such as metal fume fever	3-4
Permanent, nonsevere illness or loss of capacity, such as permanent hearing loss	<u>5-6</u>
Permanent, severe, disabling, irreversible illness or death, such as asbestosis or lung cancer	7-8

C The HHSC is determined by totaling the points assessed and using the following guide

Total Points*	HHSC
13-16	I
9-12	п
<u>5-8</u>	<u>m</u>
0-4	IV

\* Sum of A and B above

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**STEP 2:** This step uses the following guidelines to assess points to determine the mishap probability category (MPC) for health hazards The probability of mishap reflects the duration of exposure and the number of exposed personnel

A Duration of Exposure Points Assessed

Type of Exposure	Length of Exposure		
	1-8 hr/wk >8 hr/wk/not continuous Continuous		
Irregular/Intermittent	1-2	4-6	NA
Regular/Periodic	2-3	<u>5-7</u>	8

B Number of Exposed personnel Points Assessed

Number of Exposed Personnel	Points
<5	1-2
5-9	3-4
<u>10-49</u>	<u>5-6</u>
>49	7-8

C The MPC for health hazards is determined by totaling the points assessed and using the following guide:

Total Points*	MPC
14-16	А
<u>10-13</u>	B
5-9	С
<5	D

\* Sum of A and B above

**STEP 3:** The RAC is determined using the following matrix:

HHSC		М	PC	
	А	В	С	D
Ι	1	1	2	3
П	1	2	3	4
ш	2	<u>3</u>	4	5
IV	3	4	5	5

Appendix C



# FOH ENVIRONMENTAL LABORATORY

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:

espons

esponsi

Submitted By:

## Refe

ference Data:	Lead
Sampling Site:	NGB: North Platte, NE
Sample Type:	Ghost Wipe(s)®
Method Reference:	OSHA ID-121
Project ID:	Project 9752
DFOH Lab Nos.:	TM-10-47778 through TM-10-47783
Date Received:	09/30/10
Data Analyzed:	10/07/10 thru 10/08/10
Date Issued:	10/12/10

The wipe samples were microwave digested using a CEM MDS-2000. The samples were run on a Perkin Elmer AAnalyst 200 Flame Atomic Absorption Spectrophotometer.

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 in the enclosed table. If you have any questions about these results, feel free to phone the Laboratory at (312) 886-0413.





Project 9752 Page 1 of 2

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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/ft <sup>2</sup> )
NPW-1	TM-10-47778	279	2534
NPW-2	TM-10-47779	17100	155455
NPW-3	TM-10-47780	55	500
NPW-4	TM-10-47781	<10	<10
NPW-5	TM-10-47782	11	103
NPW-6	TM-10-47783	93	845

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

# Lead in Wipe Limits (based on one ft<sup>2</sup> sampled area)

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





Project 9752 Page 2 of 2

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Phor Addr Attn: Tel: (312)-886-0413 Fax: (312)-886-0434 Chicago, IL 60605-1521 536 S. Clark Street South, Suite 714 Environmental Laboratory \* Applied to organic and inorganic analysis in cases of an emergency only. <sup>(a)</sup> Applied to inorganic and organic samples, SD: Applied to organic and inorganic samples 7-10 business days. COMMENTS: BEST AVAILABLE COPY Ema 3-Bulk 7-Wipe 8 - Other -Air 2-Water 3-Paint 4-Soil 5-Dust Sample Type Codes on-Respons 10 # Z Z K-MN 2 P-NZN 585 Crw 4 NPW-3 Sal T not acros, ble Type<sup>1</sup> m Media  $\mathbb{T}$ 9/22/10 1600 3-PVC filter -Charcoal Date -Ghost Wipes<sup>TM</sup> Collected Other Sample Media Codes 610 200 620 Time 1650 8 8 2-Matched Weight, 0.8um 4-M CE 0.8 um , 37 mm Shering Brooting Long, Mezznine Hull, Topo Assently Rulent Pixture Assendly Km Sample Location / Description Passive badge Thorn KENT Floor BANK Proj. Manager of Work No .: (City, State): Agreement Statement Location Agency Project No: N 0:: Kangel PROJECT REFERENCE Sample t e Þ S υ Richard Hag North Platte, NE ARNG, NE 106644 4949 49 591 Relinquished By Ş + 50 Flow (LPM) ž (Min.) Time transit Air For Lab Use Only / Container Types: Samples Received Chilled? YES Project /Report #: Volume Preservatives: Due Date: (Liters) Water Sample Codes P-Plastic, G-Glass, V-VOC C-HNO3- D-NaOH A-None, B-H2SO4 Date & Time Wipe X F AreadNolume E 6 6 疌 Ċ, 5 5 (Liters) 1702 Water C Code<sup>3</sup> r 5 Around **Turn Around Time Codes** Time<sup>4</sup> **Received By** Turn STD- Standard WH Weekend/Holiday 3D- Three Day Rush® Co (circle one) 19-01-M Conditions on Receipt with Name & Date Lab ID # ) J 782 X 3 25  $\propto$  $\succ$ × Wipe  $\succeq$ ñ Analysis Requested Date & Time Rev. 07/20

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

FOIA Requested Record #J-15-0085 (NE) Released by National Guard Bureau Page 128 of 162

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# Surface Lead Monitoring Survey

At

Nebraska Army National Guard Armory North Platte, Nebraska

Survey date: October 16, 2012

For

Department of the Army National Guard Bureau Region West Industrial Hygiene Office NGB-AVN-S1

Performed by

U.S. Public Health Service Federal Occupational Health Denver, Colorado

January 24, 2013

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## **Table of Contents**

- I. Executive Summary
- II. Introduction
- III. Site Description
- IV. Assessment Criteria
- V. Findings, Discussion, and Recommendations

## Appendices

- A. Point of Contact (POC) List.
- B. Laboratory Result Reports and Chain of Custody Sheets.
- C. Occupational Health Risk Assessment Codes (RACs).

## I. <u>Executive Summary</u>

At the request of the National Guard Bureau Region West Industrial Hygiene Office, field personnel representing the U.S. Public Health Service, Federal Occupational Health (FOH) conducted surface lead monitoring at the Nebraska Army National Guard Army, North Platte Armory located in North Platte, Nebraska. This survey was conducted in order to identify lead levels on surfaces within the facility.

The armory consists of a drill room or assembly hall, offices, classrooms, locker room, kitchen, and break room. There is a firing range in the building but it is closed. Weapons are cleaned in the Training room. The Drill room is available to the public for special events. Children are present for some of the events.

Five surface wipe samples were collected and analyzed for lead contamination in the facility. Two of the samples collected on the Drill room floor were below the NGB Industrial Hygiene surface limit of 40 ug/ft<sup>2</sup> for child occupied areas. Three other wipe samples collected in an office, the Training room, and on brick on the second floor above the Drill room were below the NGB Industrial Hygiene surface limit of 200 ug/ft<sup>2</sup> in areas of the facility not open to the public.

Although the floor in the Drill room did not have elevated levels of lead, as a precaution, continue to clean horizontal surfaces where weapons are cleaned and stored. (RAC 3)

3

## II. Introduction

Monitoring of lead on workplace surfaces was conducted by the U.S. Public Health Service (USPHS) Federal Occupational Health (FOH) at the Nebraska Army National Guard Army, North Platte Armory located at 1700 North Jeffers in North Platte, Nebraska. This work was conducted under the Interagency Agreement between the USPHS, FOH and the West Region of the Army National Guard. Non-Responsive, Certified Industrial Hygienist (CIH) conducted this survey on October 16, 2012.

The purpose of the site visit was to collect surface wipe samples in the building for the evaluation of lead contamination. FOH conducted this survey in the interest of preventing employee illness and in meeting legal obligations where applicable. Based on information provided, every effort was made to conduct a comprehensive survey covering the parameters considered. Results and recommendations are based on information provided, field measurements, and conditions observed during the survey.

## III. Site Description

The armory consists of a drill room or assembly hall, offices, classrooms, locker room, kitchen, and break room. There is a firing range in the building but it is closed. Weapons are cleaned in the Training room. The Drill room is available to the public for special events. Children are present for some of the events.

## IV. Assessment Criteria

NBG Industrial Hygiene has adopted the sampling procedures and limits for lead dust published in NG Pam 420-15, *Guidelines and Procedures for Rehabilitation and Conversion on Indoor Firing Ranges*, November 3, 2006. For purposes of this report, any surface lead level that exceeds 200 micrograms per square foot (ug/ft<sup>2</sup>) in the facility is considered significant. NG Pam 420-15 may be found at: <u>http://www.ngbpdc.ngb.army.mil/pubs/420/ngpam420\_15.pdf</u>.

Also, the NGB-ARS Memorandum for the Chiefs of Staff dated February 2, 2006 provides guidance for potential lead hazard exposure in Army National Guard child occupied facilities. The memorandum defines a child occupied facility as a building, or portion of a building, visited on a regular basis by the same child, six years of age or under. Child occupied facilities may include, but are not limited to, day-care centers, preschools, and kindergarten classrooms. The memorandum states that, "For all areas used/occupied on a regular basis by children ages six and under clean all floors accessible to said children to the EPA dust-lead standard of 40 ug/ft<sup>2</sup>. For purposes of this report any surface lead level that exceeds 40 ug/ft<sup>2</sup> in a child occupied area is considered significant.

#### V. Findings, Discussion, and Recommendations

## **Wipe Sampling Method**

Surface samples were collected using Environmental Express Ghost Wipes. Surface wipe templates that encompassed either 1 square foot (child occupied areas) or 0.11 square foot (other work areas) of surface area were used to collect samples. For each surface sample collected, a new set of gloves and a new numbered template was used. The entire template area was wiped using an "S" configured motion. The wipe was then folded in half and the template area was wiped using an "S" motion in a direction perpendicular to the first. The wipe was folded again and the perimeter of the area was wiped. The wipe was placed into a plastic tube, capped, and the samples were sent to the FOH Laboratory in Chicago, Illinois. Samples were hot plate digested and analyzed for lead with a Perkin Elmer 200 fame atomic absorption spectrophotometer using the OSHA ID-121 Analytical Method.

## **Surface Wipe Samples**

Five surface wipe samples were collected and analyzed for lead contamination in the facility (Figures 1 - 5). All five samples were below the NGB Industrial Hygiene surface limit of 200 ug/ft<sup>2</sup>. Two samples collected in the Drill room on the floor were below the NGB Industrial Hygiene surface limit of 40 ug/ft<sup>2</sup>. The results are contained in Table 1.

	Nebraska Army National Guard North Platte Armory					
	October 16, 2012					
Sample	Location	Lead ug/ft <sup>2</sup>				
Number						
W-1	Office on file cabinet	<91				
W-2	Drill room floor on south-east end	22				
W-3	Drill room floor on north-west end	18				
W-4	2 <sup>nd</sup> floor above Drill room on brick	103				
W-5	Training room on table (weapons cleaned)	<91				
W-6	blank	ND				

# Table 1 Area Wine Sampling Results for Lead

Note: 1)  $ug/ft^2$  = micrograms per square foot of surface area. 2) **Bold** indicates that concentration was "significant."

## Recommendations

Although the floor in the Drill room did not have elevated levels of lead, as a precaution, continue to clean horizontal surfaces where weapons are cleaned and stored. (RAC 3)



Figure 1 – Wipe sample W-1

Figure 2 – Wipe sample W-2





Figure 3 – Wipe sample W-3

Figure 4 – Wipe sample W-4





Figure 5 – Wipe sample W-5

**Technical Assistance:** This report was written by **Non-Responsive** as a representative of FOH, USPHS. **Non-Responsive**, Regional Industrial Hygienist at the NGB Region West Industrial Hygiene Office, reviewed and approved this report. For technical assistance regarding information found in this report or the performed survey, please contact

Reviewed by:

Non-Responsive



8

Armory North Platte, NE

Appendix A

Nebraska Army National Guard State Points of Contact

Non-Responsive

North Platte Armory Point of Contact Non-Responsive Appendix B

10



## FOH ENVIRONMENTAL LABORATORY

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: North Platte, NE Ghost Wipe(s)® OSHA ID-121 Project 10760 TM-13-58086 through TM-13-58091 10/23/12 11/05/12 - 11/06/12 11/06/12

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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## 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/ft <sup>2</sup> )
W1	TM-13-58086	<10	<91
W2	TM-13-58087	22	22
W3	TM-13-58088	18	18
W4	TM-13-58089	11	103
W5	TM-13-58090	<10	<10
W6**	TM-13-58091	<10	None Detected

## Surface Wipe Sampling Criteria

Metal	Acceptable Surface Level	Basis for Criteria
Lead	250	EPA TSCA 40 CFR 745 and HUD Window Sills

#### Metals in Wipe Limits (based on one ft<sup>2</sup> sampled area)

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





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Armory North Platte, NE

## Appendix C

Occupational Health Risk Assessment Codes

(Reference: DOD Letter of Instructions 6055 1)

Occupational health risk assessment codes (RACs) are included in this report to quantify health risks to personnel 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 The following procedure is used to determine the RACs:

STEP 1: This step assesses points to determine the health hazard severity category (HHSC) The HHSC reflects the magnitude of exposure to a physical, chemical, or biological agent and the medical effects of exposure

A Exposure Points Assessed

Alternate F	Route		Exposure Condition	15	
of Expos	ure	<ct< td=""><td>Occasionally &gt;CT</td><td>&gt;CT</td><td>&gt;STD</td></ct<>	Occasionally >CT	>CT	>STD
AER	NO	0	3	5	7
Possible	YES	1-2	4	6	8

Notes: 1) AER = Alternate exposure route, such as skin absorption or ingestion 2) CT = DoD component threshold that triggers surveillance actions, such as action level 3) STD = DoD exposure limit, such as TLV or PEL 4) > = Greater than 5) < = Less than  $6) \leq$  = Less than or equal to

B Medical Effects Points Assessed

Condition	Points	
No medical effects, such as nuisance noise and nuisance odor	0	
Temporary reversible illness requiring supportive treatment, such as eye irritation and sore throat	1-2	
Temporary reversible illness with a variable but limited period of disability, such as metal fume fever	3-4	
Permanent, nonsevere illness or loss of capacity, such as permanent hearing loss	5-6	
Permanent, severe, disabling, irreversible illness or death, such as asbestosis or lung cancer	7-8	

C The HHSC is determined by totaling the points assessed and using the following guide

Total Points*	HHSC
13-16	I
9-12	п
5-8	ш
0-4	IV

\* Sum of A and B above

**STEP 2:** This step uses the following guidelines to assess points to determine the mishap probability category (MPC) for health hazards The probability of mishap reflects the duration of exposure and the number of exposed personnel

A Duration of Exposure Points Assessed

Type of Exposure	Length of Exposure			
	1-8 hr/wk	>8 hr/wk/not continuous	Continuous	
Irregular/Intermittent	1-2	4-6	NA	
Regular/Periodic	2-3	5-7	8	

B Number of Exposed personnel Points Assessed

Number of Exposed Personnel	Points
<5	1-2
5-9	3-4
10-49	5-6
>49	7-8

C The MPC for health hazards is determined by totaling the points assessed and using the following guide:

Total Points*	MPC
14-16	А
10-13	В
5-9	С
<5	D

 $\ast$  Sum of A and B above

**STEP 3:** The RAC is determined using the following matrix:

HHSC	МРС			
	А	В	С	D
Ι	1	1	2	3
П	1	2	3	4
ш	2	3	4	5
IV	3	4	5	5

# Surface Lead Monitoring Survey Report

At

Nebraska Army National Guard Scotts Bluff Armory Scotts Bluff, Nebraska

Survey date: September 23, 2010

For

Department of the Army National Guard Bureau Region West Industrial Hygiene Office

> Performed by U.S. Public Health Service Federal Occupational Health

> > January 14, 2011

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# Table of Contents

- I. Executive Summary
- II. Introduction
- III. Site Description
- IV. Scope of Work
- V. Findings, Discussion, and Recommendations

## Appendices

- A. Point of Contact (POC) List
- B. Occupational Health Risk Assessment Codes
- C. Laboratory Result Reports and Chain of Custody Sheets

# I. Executive Summary

At the request of the National Guard Bureau Region West Industrial Hygiene Office, field personnel representing the U.S. Public Health Service, Division of Federal Occupational Health (FOH) conducted surface lead monitoring at the Nebraska Army National Guard Armory located in Scotts Bluff, Nebraska. This survey was conducted as part of the ARNG occupational safety and health program to evaluate potential exposure to lead on facility surfaces. Surface wipe samples were collected for lead dust.

The NGB-ARS Memorandum for the Chiefs of Staff dated February 2, 2006 provides guidance for potential lead hazard exposure in Army National Guard child occupied facilities. The memorandum defines a child occupied facility as a building, or portion of a building, visited on a regular basis by the same child, six years of age or under. Child occupied facilities may include, but are not limited to, day-care centers, preschools, and kindergarten classrooms. The memorandum states that, "For all areas used/occupied on a regular basis by children ages six and under clean all floors accessible to said children to the EPA dust-lead standard of 40 ug/ft<sup>2</sup>. Clean all other surfaces in accordance with USACHPPM recommendations for lead in dust of 200 ug/ft<sup>2</sup> on frequent contact surfaces."

For purposes of this report any surface lead level that exceeds 40 ug/ft<sup>2</sup> in a child occupied area is considered significant. Any surface lead level that exceeds 200 ug/ft<sup>2</sup> in any other area of the armory is considered significant.

Eight (8) surface wipe samples were collected on representative surfaces in the facility and analyzed for lead dust. Three of eight samples (SBW-1, SBW-4 & SBW-6) resulted in significant levels of lead.

When weapons are cleaned, special attention should be given to cleaning up the work area to prevent potential lead contamination from the ammunition. Surfaces identified as lead-contaminated should be properly cleaned with priority given to those areas where minors and members of the public see regular access.

Findings	Recommendations	RAC
Surface Samples	5	
Eight (8) surface wipe samples were collected on representative surfaces in the facility and analyzed for lead dust. Three samples resulted in significant levels of lead.	When weapons are cleaned, special attention should be given to cleaning up the work area to prevent potential lead contamination from ammunition. Surfaces identified as lead- contaminated should be properly cleaned with priority given to those areas where minors and members of the public see regular access.	3

# II. Table of Findings and Recommendations

#### II. Introduction

A surface lead monitoring survey was conducted by the U.S. Public Health Service (USPHS) Federal Occupational Health (FOH) at the Nebraska Army National Guard Scotts Bluff Armory located in Scotts Bluff, Nebraska. This work was conducted under the Interagency Agreement between the USPHS, FOH and the West Region of the Army National Guard. This survey was conducted in order to identify lead levels on surfaces within the Armory. Non-Responsive, Industrial Hygienist (IH) conducted this survey on September 23, 2010.

FOH conducted this survey in the interest of preventing employee illness and in meeting legal obligations where applicable. Based on information provided, every effort was made to conduct a comprehensive survey covering the parameters considered. Results and recommendations are based on information provided, field measurements, and conditions observed during the survey.

#### III. Site Description

The Scotts Bluff Armory is the primary workplace for several full-time active-duty Guard personnel. The facility sees regular use by the local public for receptions and weekly indoor activity use during the winter. There is a firing range on located upstairs in the building. The firing range is no longer used for live-fire practice but is used as a locker room by Guard personnel.



#### IV. Scope of Work

Lead dust from firing ranges and the cleaning of fire arms can contaminate surfaces within a building. Therefore, eight (8) surface wipe samples were collected and analyzed for the presence of lead. A surface area of 16-144 square inches was wiped with a Ghost Wipe, place in a plastic coin tube and shipped to the FOH Analytical Laboratory in Chicago, Illinois. The sample was then analyzed by flame atomic absorption spectrophotometer (AA) according to OSHA Analytical Method ID-121.

# V. Findings, Discussion, and Recommendations

#### **Surface Samples**

Results indicate three of eight samples are "significant".

The results are contained in Table 1.

#### Table 1 Area Wipe Sampling Results for Lead Dust Nebraska Army National Guard Scotts Bluff Armory Scotts Bluff, Nebraska September 23, 2010

Sample Number	Location	Lead Concentration ug/ft <sup>2</sup>
SBW-1	Shooting range, storage cage floor	7591
SBW-2	Upstairs classroom, shelf top	<10
SBW-3	Stairwell, floor	107
SBW-4	Vault room, safe drawer, top	258
SBW-5	Storage room, shelf	<91
SBW-6	Assembly room, HVAC unit back/top	1915
SBW-7	Assembly room, floor	<10
SBW-8	Commander's office	<91
SBW-9	Field Blank	ND

Note:

1) ug/ft<sup>2</sup>= micrograms per square foot of surface area. 2) **Bold** indicates that concentration was "significant."

# **Assessment Criteria**

The NGB-ARS Memorandum for the Chiefs of Staff dated February 2, 2006 provides guidance for potential lead hazard exposure in Army National Guard child occupied facilities. The memorandum defines a child occupied facility as a building, or portion of a building, visited on a regular basis by the same child, six years of age or under. Child occupied facilities may include, but are not limited to, day-care centers, preschools, and kindergarten classrooms. The memorandum states that, "For all areas used/occupied on a regular basis by children ages six and under clean all floors accessible to said children to the EPA dust-lead standard of 40 ug/ft<sup>2</sup>. Clean all other surfaces in accordance with USACHPPM recommendations for lead in dust of 200 ug/ft<sup>2</sup> on frequent contact surfaces."

For purposes of this report any surface lead level that exceeds 40 ug/ft<sup>2</sup> in a child occupied area is considered significant. Any surface lead level that exceeds 200 ug/ft<sup>2</sup> in any other area of the armory is considered significant.

### **Recommendations:**

When weapons are cleaned, special attention should be given to cleaning up the work area to prevent potential lead contamination from the ammunition. Surfaces identified as lead-contaminated should be properly cleaned with priority given to those areas where minors and members of the public see regular access.

### Wipe sample locations



Figure 2 – Sample SBW-1

Figure 3 – Sample SBW-2





Figure 4 – Sample SBW-3

Figure 5 – Sample SBW-4



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Figure 6 – Sample SBW-5

Figure 7 – Sample SBW-6



Figure 8 – Sample SBW-7



Figure 9 – Sample SBW-8



Technical Assistance: For technical assistance regarding information found in this report or the performed survey please contact the Regional Industrial Hygienist at the NGB ARNG Region West Industrial Hygiene Office.

This report written by **Non-Responsive**, IH, as a representative of Federal Occupational Health, U. S. Public Health Service.

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Appendix A

# Nebraska Army National Guard State Points of Contact



**Armory Points of Contact** 



Appendix B

#### Occupational Health Risk Assessment Codes (Reference: DOD Letter of Instructions 6055 1)

Occupational health risk assessment codes (RACs) are included in this report to quantify health risks to personnel 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 The following procedure is used to determine the RACs:

STEP 1: This step assesses points to determine the health hazard severity category (HHSC) The HHSC reflects the magnitude of exposure to a physical, chemical, or biological agent and the medical effects of exposure

A Exposure Points Assessed

Alternate F	Route	Exposure Conditions			
of Expos	ure	<ct occasionally="">CT &gt;CT &gt;S</ct>		>STD	
AER	NO	0	3	5	7
Possible	YES	<u>1-2</u>	4	6	8

Notes: 1) AER = Alternate exposure route, such as skin absorption or ingestion 2) CT = DoD component threshold that triggers surveillance actions, such as action level 3) STD = DoD exposure limit, such as TLV or PEL 4) > = Greater than 5 = Less than 6 = Less than or equal to

B Medical Effects Points Assessed

Condition	Points
No medical effects, such as nuisance noise and nuisance odor	0
Temporary reversible illness requiring supportive treatment, such as eye irritation and sore throat	1-2
Temporary reversible illness with a variable but limited period of disability, such as metal fume fever	3-4
Permanent, nonsevere illness or loss of capacity, such as permanent hearing loss	<u>5-6</u>
Permanent, severe, disabling, irreversible illness or death, such as asbestosis or lung cancer	7-8

C The HHSC is determined by totaling the points assessed and using the following guide

Total Points*	HHSC
13-16	I
9-12	П
<u>5-8</u>	<u> </u>
0-4	IV

\* Sum of A and B above

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**STEP 2:** This step uses the following guidelines to assess points to determine the mishap probability category (MPC) for health hazards The probability of mishap reflects the duration of exposure and the number of exposed personnel

A Duration of Exposure Points Assessed

Type of Exposure	Length of Exposure			
	I-8 hr/wk >8 hr/wk/not continuous Continuous			
Irregular/Intermittent	1-2	4-6	NA	
Regular/Periodic	2-3	<u>5-7</u>	8	

B Number of Exposed personnel Points Assessed

Number of Exposed Personnel	Points
<5	1-2
<u>5-9</u>	<u>3-4</u>
10-49	5-6
>49	7-8

C The MPC for health hazards is determined by totaling the points assessed and using the following guide:

Total Points*	MPC
14-16	А
<u>10-13</u>	B
5-9	С
<5	D

\* Sum of A and B above

**STEP 3:** The RAC is determined using the following matrix:

HHSC	МРС			
	А	В	С	D
I	1	1	2	3
Ш	1	2	3	4
ш	2	<u>3</u>	4	5
IV	3	4	5	5

Appendix C



# FOH ENVIRONMENTAL LABORATORY

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

Jon-Responsiv

Attention:

on-Responsi\

Submitted By:

-	
Reference Data:	Lead
Sampling Site:	NGB: Scotts Bluff, NE
Sample Type:	Ghost Wipe(s)®
Method Reference:	OSHA ID-121
Project ID:	Project 9746
DFOH Lab Nos.:	TM-10-47733 through TM-10-47741
Date Received:	09/30/10
Data Analyzed:	10/07/10 thru 10/08/10
Date Issued:	10/12/10

The wipe samples were microwave digested using a CEM MDS-2000. The samples were run on a Perkin Elmer AAnalyst 200 Flame Atomic Absorption Spectrophotometer.

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 in the enclosed table. If you have any questions about these results, feel free to phone the Laboratory at (312) 886-0413.





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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/ft <sup>2</sup> )
SBW-1	TM-10-47733	835	7591
SBW-2	TM-10-47734	<10	<91
SBW-3	TM-10-47735	12	107
SBW-4	TM-10-47736	28	258
SBW-5	TM-10-47737	<10	<91
SBW-6	TM-10-47738	1915	1915
SBW-7	TM-10-47739	<10	<10
SBW-8	TM-10-47740	<10	<91
SBW-9**	TM-10-47741	<10	None Detected

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

#### Lead in Wipe Limits (based on one ft<sup>2</sup> sampled area)

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





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

					7. Other		COMMENTS:
0			E	Atched Weight, 0.8um -M CE 0.8 um , 37 mm 6. Passive badge	1-Charcoal 2-M 3-PVC filter 4- 5 -Ghost Wipes <sup>TM</sup>	Oust	-Air 2-Water 3-Paint 4-Soil 5- Bulk 7-Wipe 8 - Other
	Received By	Date & Time	Relinquished By	Media Codes <sup>2</sup>	Sample		Sample Type Codes
477	₩ ₩			BEAK	12 1535	N N	SBWG
477.		6		Commander OSA	580		5BW-8
(h)				Assembly Rm FIr	1530		BSBW-7
CLA		5	ACUNIT	Menby Reen, HV	15-23	**************************************	SBW-6
CLA		16	é tr	Statuyo Room, SI	1520		VAIL SBW-5
472		6	5 tot 2	Vault, Safe Lance	1513		ABLE SBW-4
477:		16		Stair well Ploor	500		COPY S&W-3
rrh		16	shell the	Uptris Class room	1500	95999999	EMBS
10.47	HH CTS	6	Start Confe	Shuting Kings Stor	9/23/16 1455	3 3	1-M35
Lab ID #	Around Time <sup>4</sup>	(Liters) (Liters) (Liters)	ription Flow Time (LPM) (Min.)	Sample Location / Desc	Collected Date Time	Type' Media*	10 #
	Turn	Wipe Water	Air			adurac	
		C-HNO3. D-NAOH	IT BLAG NE	Location (City, State):			Phon F
		A-None, B-H2SO4,	DN Comment	Proj. Manager			es
end/Holiday*	WH Week	reservatives:	ARNA NE	Agency			Addr
Day Rush <sup>@</sup>	3D- Three	P-Plastic, G-Glass, V-VOC	149591	No:			Namons
Fillie Coues	STD- Stand	ontainer Tynes:		Droject P			Attn:
e one)	NO (dirch	amples Received Chilled? YES	L 0 / 0 / 0	Statement S		312)-886-0434	Tel: (312)-886-0413 Fax: (
		ue Date: 10/12//	106644 0	No.:			Chicago, IL 60605-1521
Conditions c	2	or Lab Use Only Q74(	UI REFERENCE	Annament A		917 2ita 744	Environmental Laborate

\* Applied to organic and inorganic analysis in cases of an emergency only. <sup>@</sup> Applied to inorganic and organic samples, SD: Applied to organic and inorganic samples 7-10 business days.

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