SUBJECT: All States (Log Number P01-0075) Army National Guard (ARNG) Safety and Occupational Health Program – POLICY AND RESPONSIBILITIES FOR INSPECTION, EVALUATION AND OPERATION OF ARMY NATIONAL GUARD INDOOR FIRING RANGES

ADDENDUM

GUIDELINES FOR IFR REHABILITATION, CONVERSION, AND CLEANING

CONTENTS (Listed by paragraph number)

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Appendices

Appendix A - General Procedures for Collecting Wipe Samples

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Appendix C - Interpretation of Sample Results (Prior to Cleaning)

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Appendix F - Examples of Computation of Lead Levels from Wipe Sample Results

Appendix G - Surface Wipe Sample Sheet

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Appendix 1 - Glossary

Purpose

1. This addendum establishes policy and procedures for rehabilitation, conversion, and cleaning of ARNG indoor firing ranges.

2. References

Related publications are listed below.

a. DODI 6055.1 (Department of Defense Instruction, Occupational Safety and Health (OSH) Program).

b. AR 11-34 (The Army Respiratory Protection Program).

c. AR 40-5 (Preventive Medicine).

d. NGR 385-15 Policy, Responsibilities, and Procedures for Inspection, Evaluation, and Operation of ARNG Indoor Firing Ranges).

e. 29 Code of Federal Regulations (CFR), Part 1910, Occupational Safety and Health Standards

f. OSHA Technical Manual, Edition VII.

g. DHEW NIOSH 76-130 (Lead Exposure and Design Considerations for Indoor Firing Ranges).

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3. Explanation of Abbreviations and Terms

Abbreviations and special terms used in this publication are listed in the glossary.

4. Policy and Procedures

Conversion of Ranges. Indoor firing ranges can be safely rehabilitated or converted for other uses, such as a storage area, kitchen, or office space, provided the following -

a. Previously active ranges must be thoroughly decontaminated and cleaned to acceptable levels.

b. The level of cleanliness is to be determined by sampling. The Occupational Safety and Health Administration's (OSHA) Technical Manual, ^{5th} Edition, provides guidance on the methods and techniques needed to collect wipe samples (Appendix A).

(1) Wipe samples must be collected and analyzed prior to and after cleaning.

(2) Post-cleaning surface wipe sample results must be less than or equal to 200 micrograms per square feet (ug/sq ft). The sampling strategy, which is the amount and location of wipe samples to be collected, is provided in Appendix B. Methods for interpreting the sample results are contained in Appendix C and D.

c. Equipment/Items previously stored in the range must be decontaminated and cleaned to acceptable levels.

(1) Samples must be collected from equipment/items stored in the range. Sample selection is critical, because the number of items stored and length of storage differs from range to range. The amount and location of the samples, should be representative of the areas where lead dust is most likely to accumulate. The more samples collected, the better the statistical comparison of the results.

(2) Samples must be collected from the smooth surfaces of the equipment/items, in so much as possible. Results of samples collected from a rough surface will be inaccurate due to the minimal surface contact of the media. Further, the likelihood of tearing the media filter is greater on rough surfaces.

(3) Samples should also be collected on items stored the longest period of time, and which have not been disturbed. Items stored closest to the bullet trap and firing line are likely to have higher concentrations of lead dust. Methods for interpreting the sample results are contained in Appendix C and D.

5. Goal

To ensure every indoor firing range is free of lead dust, and to reduce the number of unsafe ARNG indoor firing ranges.

6. Background

The Environmental Protection Agency (EPA) Identifies lead as a highly toxic metal. Elemental lead is Indestructible, and common in the environment. Lead can enter the body by inhalation (breathing) or ingestion (eating). In addition, lead is a cumulative poison. It accumulates in the blood, bones, and organs, including the kidneys, brain and liver. Effects include nervous and reproductive system disorders, delays in neurological and physical development, cognitive and behavioral changes, and hypertension. Symptoms include loss of appetite, difficulty sleeping, irritability, fatigue, headache, and inability to concentrate. It can stay in the bones for decades. Worker awareness and training are important to ensure that employees can recognize the symptoms of exposure and get prompt medical attention.

7. Wipe Sample Media

a. OSHA Technical Manual provides the necessary guidance on the technique needed to collect wipe samples (Appendix A). Only distilled or deionized water will be used to saturate dry sample media. At least one field blank filter must be submitted with each sample sheet. The field blank must be from the same tot, and labeled as a blank on the sample sheet. Appendix E identifies how and where to obtain sample media. Use the following guidance for determining media acceptability.

(1) Acceptable Media consists of -

(a) Ghost Wipes ™ (PREFERRED METHOD)- Pre moistened

(b) Thirty-seven (37) millimeters (mm) mixed cellulose ester (MCE) filters, with or without the cassettes.

(b) Eleven ((11)) centimater (cm) clemater (Athaiman, M#402 paper.

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(2) Unacceptable Media consists of but is not limited to-

(a) Cotion balls

(b) Baby wipes or wet wipes

b. Documentation of Sample Collection. A Surface Wipe Sample Sheet must be completed and submitted with samples to your supporting laboratory. A copy of this form is located in Appendix G. Refer to Appendix A on how to collect wipe samples.

8. Wipe Sampling Protocol

See Appendix A.

9. Ranges Cleaning Instructions

a. Written procedures, such as a scope of work, or Standing Operating Procedure (SOP) that complies with all federal, state and local regulations must be established prior to decontamination operations. The range ventilation system will be in operation during range cleaning to ensure that a negative pressure environment is maintained. In the absence of mechanical ventilation system, all doors and windows will be sealed to eliminate fugitive emissions. A High Efficiency Particulate Air (HEPA) filtered vacuum system is the preferred method of cleanup followed by wet wiping of the range. The HEPA vacuum is designed to collect loose surface lead dust particles.

b. Any general purpose cleaning solution can be used. However, Spic and Span[™] has been found to be an effective cleaning solution by other Army organizations. Mix new solutions of cleaning solution frequency. Wet wiping will require dual containers of water; one container for wetting the applicator (mops, rags, sponge, etc.) and the other container for rinsing the applicator after the dust has been wiped from the surfaces. When placed in containers, wastewater should be left to evaporate.

c. PROPERLY DISPOSE OF ALL HAZARDOUS WASTE. DO NOT PLACE LEAD CONTAMINATED WASTE INTO THE SEWER SYSTEM OR ONTO THE GROUND.

d. Mop-heads, sponges and rags will be discarded as hazardous waste following cleanup.

e. Wet cleaning by a high-pressure system is prohibited, as this method may embed the lead into the substratum and generate large quantities of unwanted hazardous waste.

f. Dry sweeping is not permitted.

g. All surface areas of the range must be cleaned. Do not remove the coating on smooth painted surfaces that are properly sealed.

h. Wood floors should receive a coat of deck enamel or urethane; concrete floors should be sealed with deck enamel and linoleum or tile floors should be waxed.

i. A progression of cleaning from top to bottom and from behind the steel backstop to the firing line should be used. After removing the sand, if applicable, and the steel backstop, areas in front of and behind the bullet trap along with the steel backstop plate(s) should be cleaned. Next, clean the celling, lights, baffles, retrieval system, heating system(s), and ventilation duct(s). Acoustical material should be vacuumed and removed rather than painted over.

j. A Toxic Characteristic Leaching Procedures (TCLP) lest for lead only may need to be performed on the acoustical material. A TCLP test will determine if the material is classified as "hazardous" and can be disposed of in a sanitary landfill. Contact your State Environmental Office for assistance before arranging for this laboratory testing. The floor should be the last surface cleaned, starting at the bullet trap and ending behind the firing line.

k. After wet wiping all surfaces, permit the area to dry. Vacuum all surface areas until no dust or residue can be seen using the HEPA.

I. A thorough visual inspection to detect dust should be made following cleanup and prior to collecting post surface wipe samples.

m. As a variety of conditions exist in ranges, unique situation may arise and specific written guidance from your Regional Industrial Hygiene Office may be required.

10. Cleaning Stored Contaminated Equipment

a. Equipment contaminated (sample result is higher than 200 micrograms/sq ft) with lead dust must be decontaminated before it is removed from the range.

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b. Equipment located near the bullet trap and firing line should be cleaned first and then removed. The cleaning method depends on the size of the equipment and the material it is comprised of, i.e. metal, wood, concrete, porus, non-porus, smooth or rough finish etc. However, either HEPA vacuum or the wet wipe method will be used. Refer to paragraph 9 for additional guidance.

c. Every attempt should be made to clean and reclaim items since disposing of equipment, as hazardous waste is costly and wasteful. Only as a last resort will the item be discarded as hazardous waste. Porous items, such as office partitions and carpet that were present during firing should be considered grossly contaminated and be discarded unless analysis proves otherwise. Consult your State Environmental Office for the proper hazardous waste disposal methods.

11. Contaminated Sand and Lead Waste

Consult your State Environmental Office for specific disposal guidance to ensure compliance with local laws and regulations.

12. Medical Surveillance

a. A pre-placement medical examination is required for all individuals involved with range cleanup operations. Consult 29 CFR 1910.1025 for additional information on medical surveillance requirements. A medical examination must include—

- (1) A detailed work and medical history
- (2) A thorough physical examination
- (3) A respirator use evaluation
- (4) A blood pressure measurement
- (5) Blood sample analysis to include:
 - (a) A baseline blood lead level
 - (b) A complete blood count (CBC)
 - (c) Blood urea nitrogen (BUN)
- (6) Serum creatinine
- (7) Zinc protoporphyrin
- (8) A routine urine analysis
- (9) Recordkeeping

b. Air Monitoring. Worker breathing zone (BZ) air samples must be collected to ensure personnel are not overexposed to airborne lead during the cleanup phase. Representative air samples will be collected on all personnel involved in the cleanup operation. These exposure levels will be used to evaluate work practices and personal protective equipment. Within five (5) working days after receipt of monitoring results, each employee will be notified in writing of the air sampling results. Contact your Regional Industrial Hygiene Office for additional information pertaining to air sampling.

13. Worker Education

OSHA 29 CFR 1910.1025 requires that workers who are potentially exposed to any lead level shall be informed of the content of Appendix A and B of this standard. A training program must be Instituted for all individuals who are subject to exposure to lead at or above the action level or for whom the possibility of skin or eye irritations exists. The training program shall be repeated for personnel currently involved in range cleanup operations, at least annually, this training must be documented on DD Form 1556 or DD Form 1556-1 and filed permanently in the employee's Official Personnel File (OPF) or the soldier's Official Military Personnel File (OMPF). As a minimum, complete blocks 1, 2, 3, 7, 8, 11, 12, 13, 17, 18, 24, 33 and 36 of DD Form 1556. Place the following statement in block 18, "Do not destroy, retain this record for the duration of employment/service plus 30 years." The employer will assure that each employee is informed of the following:

- a. The content of the standard and its appendices.
- b. The specific nature of operations that could result in exposure to lead above the action level.
- c. The purpose, proper selection, fitting, use and limitations of respirators.
- d. The purpose and a description of medical surveillance program.
- e. Ealing and drinking are prohibited in lead contaminated areas.
- f. Smoking and smoking materials will not be permitted in contaminated areas.

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g. Employees must wash their hands and other exposed skin whenever they leave the work area.

h. The engineering controls and work practices associated with the individual's job assignment.

i. The contents of any compliance plan in effect.

14. Personal Protective Equipment

For housekeeping and rehabilitation the employer shall select respirators from among those approved for protection against lead dust, fume, and mist by the National Institute for Occupational Safety and Health (NIOSH). The employer shall institute a respiratory protection program in accordance with 29 CFR 1910.134. As a minimum, personnel conducting the decontamination of the range will be provided with the following personal protective equipment.

a. Employees engaged in range rehabilitation and/or range conversion, the employer shall provide at no cost to the employee, and assure that the employee uses appropriate protective work clothing and equipment such as, but not limited to:

(1) Protective coveralls with hood and shoe covers or disposable Tyvek ™ full body suit.

(2) Disposable rubber gloves; and disposable shoe coverlets (If necessary).

(3) Full-face air purifying respirator with P-100 cartridges.

b. The employer shall provide the clothing required in a clean and dry condition at least daily to employees engaged in the conversion of indoor firing ranges.

c. The employer shall provide for the cleaning, laundering, or disposal of used or contaminated protective clothing and equipment.

d. The employer shall assure that all protective clothing is removed at the completion of a work shift only in areas designated for that purpose (Change Areas or Change Rooms).

e. The employer will ensure that contaminated protective clothing that is to be cleaned, laundered, or disposed of, is placed in a closed container in the change area that seals sufficiently enough to prevent dispersion of lead dust.

f. The employer will further inform in writing any person who cleans or launders protective clothing or equipment of the potentially harmful effects of exposure to lead.

15. Housekeeping

This chapter applies to all active indoor ranges classified as "safe" for use. To keep the range operating properly and to keep possible hazards to a minimum, a routine housekeeping/ maintenance program is essential.

a. The employer must establish a housekeeping program sufficient to maintain all surfaces as free as practicable of accumulations of lead dust. To this end the range will be clean at the conclusion of each firing day.

b. The range ventilation system will be in operation during all cleaning operations, to ensure a negative pressure environment is maintained.

c. Ranges will be cleaned by using the wet method or vacuuming. A HEPA (High Efficiency Particulate Air) filtered vacuum system is the preferred method of meeting this requirement. The use of compressed air to clean floors is absolutely prohibited. If the wet method is utilized the floor should be equipped with a floor drain, and collection system. When there is no collection system, the water can be allowed to slowly evaporate leaving lead deposits/sludge. The deposits/sludge can then be collected, placed in metal drums, and stored for future delivery to an authorized hazardous waste disposal site. Drums must be labeled to identify contents, in accordance with the hazardous waste program.

d. A NIOSH approved respirator (P-100) for protection against lead dust, fume, and mist will be worn at all times while cleaning.

e. When cleaning start behind the firing line forward, cleaning the floor and horizontal surfaces.

16. Maintenance

The following are the minimum maintenance requirements, which must be performed quarterly by the range custodian, or by a person designated by the facility commander.

 a. Inspect the ventilation system fan for condition of belts to ensure that they are not frayed or slipping.

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b. Evaluate static pressure and compare to the baseline static pressure reading. Any changes will be reported through the safety manager to the Regional Industrial Hygienist.

c. Inspect Louvers, if applicable, to ensure they are opening fully.

d. Inspect the bullet trap for pitting or other damage and for sharp edges on venetian blind type bullet traps.

e. Bullet Trap. The bullet trap will be cleaned every 480 hours of operation at a minimum, or when the trap is three quarters full.

f. The range ventilation system will be operational during all bullet trap cleaning procedures.

g. All personnel involved in cleaning of the bullet trap will wear a NIOSH approved respirator, and proper personal protective equipment.

h. All debris from the bullet trap will be collected, package and turned in, in accordance with guidance . from the environmental office.

17. Range Rehabilitation.

This chapter applies to all indoor firing ranges that have been identified as candidates for rehabilitation. This chapter further provides guidance for cleaning and/or sampling that might be required prior to the start of rehabilitation.

a. The portion(s) of the range to under go rehabilitation must be sampled to determine the level of lead contamination. Wipe samples will be taken per the established sampling protocol. See Appendix A.

b. All personnel involved in range rehabilitation will wear a NIOSH approved respirator (P-100), and proper personal protective equipment as prescribed in paragraph 14 above.

c. Prior to start of rehabilitation the environmental office must be notified to determine the disposition of lead containing debris.

18. Conversion of Indoor Ranges

Prior to the start of decontamination, employers must ensure that all procedures to be used comply with Federal, State, and local regulations. To ensure that all lead contamination is removed the following procedure is established.

a. All ranges slated for conversion will be inspected and evaluated.

b. All equipment stored in the range, if applicable, prior to the start of decontamination must be sampled, decontaminated, re-sampled and removed or turned in as lead contaminated material. See paragraph 10 above.

c. All acoustical tiles and/or sound proofing material (if applicable) must be removed and turned in as lead contaminated material through the environmental office.

d. The backstop, bullet trap, target retrieval system and firing line stations must be removed and turned in as lead containing material through the environmental office.

e. Light fixtures and ventilation system grills must be removed and decontaminated.

f. Ventilation system ducts need to be decontaminated or removed and replaced.

g. The exhaust fans and/or the complete ventilation air-handling unit (if applicable) must be decontaminated or removed.

h. Cover all openings of any component previously decontaminated prior to start of interior decontamination of the firing range.

19. Deviation

Deviations from this guidance will require a written exception to policy from your Regional Industrial Hygiene Office. Questions and/or comments regarding this subject should be directed to your Regional Industrial Hygiene Office or Chief, National Guard Bureau, Attn: NGB-AVS-S, 111 South George Mason Drive, Arlington, VA 22204-1382.

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APPENDIX A GENERAL PROCEDURES FOR COLLECTING WIPE SAMPLES

A-1 If multiple samples are to be collected at the work site, prepare a rough sketch of the area(s) or room(s), which are to be wipe sampled.

A-2 A new set of clean, impervious gloves should be used for each sample to avoid contamination of the media by previous samples and to prevent contact with the substance.

A-3 (1) If using Ghost Wipes[™], tear open the individually sealed package. Remove the moistened wipe. Unfold the wipe.

(2) If using a dry media such as MCE or Whatman[™] filter, moisten the filter with distilled or deionized water prior to sampling.

A-4 Place a 10 cm by 10 cm lemplate on the area to be wiped.

A-5 Apply uniform firm pressure while wiping the area inside the template.

A-6 To insure that all portions of the partitioned area are wiped, start at the outside edge and progress toward the center making concentric squares decreasing in size.

A-7 After collecting a sample, fold the filter or wipe inward and place into a container and number it. Note the number at the sample location on the sketch.

A-8 At least one blank filter treated in the same fashion but without wiping, should be submitted to the laboratory.

APPENDIX B

SAMPLING STRATEGY FOR COLLECTION OF WIPE SAMPLES

B-1 Prior to cleaning the ranges, the three samples must be collected and analyzed for total lead dust on each surface, i.e., floor, ceiling, backstop, and wall to include the plenum wall, if applicable. In addition, a total of 3 samples should be collected from areas which have been least disturbed by airflow. Established walkways should be avoided.

B-2 Samples should be staggered to different areas of the range. A grid system should be utilized. Each range surface areas should be divided evenly into 3 by 3 sections. Samples should not be collected on all one section of a wall or end of the building.

APPENDIX C

INTERPRETATION OF SAMPLE RESULTS (PRIOR TO CLEANING)

C-1 200 micrograms/sq fl or LESS

If all sample results are 200-micrograms/sq ft or less, the range can be converted and/or used for any purpose.

C-2 BETWEEN 201 and 200,000 micrograms/sq ft

Range must be decontaminated. Continued with cleaning instructions listed in paragraph 9 Sample results will be used to establish a baseline.

C-3 Over 200,000 micrograms/sq ft

Your sample media may not be capable of collecting additional lead dust and results that are above 200,000 micrograms/sq fl, and should be considered suspect.

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APPENDIX C (Continued)

C-4 High sample results may exist due to personnel walking or moving equipment/vehicles over the range surface causing the lead dust to be "ground" into the substratum. For examples, a maintenance activity may have oversprayed paint or spilled solvents onto the surface Regional Industrial Hygiene Office for specific guidance.

APPENDIX D

INTERPRETATION OF SAMPLE RESULTS (AFTER CLEANING)

D-1 200 micrograms/sq. ft or less

If all sample results are less than 200 micrograms/sq ft, the range can be converted and/or used for any purpose after a coat of lead-free latex paint is applied.

APPENDIX E

RECOMMENDED SAMPLE MEDIA AND CONTAINERS

E-1 The following is a list of vendors, which supply the media and containers necessary to collect air and lead surface wipe samples. The information is provided to assist in obtaining the proper media and containers. Alternative vendors are available and may be utilized, if known. Contact your Regional Industrial Hygiene Office for additional assistance or clarification.

E-2 Pre-loaded 3 piece cassette with mixed cellulose ester (MCE) filter and pad, 37 millimeter (mm), pore size 0.8 microns, breathing zone (BZ) and general area (GA) air samples.

Order From Catalog Number

- a. Millipore Corp. MAWP-037-A0 Ashdy Road Bedford, MA 01730 617-275-9200 800-225-1380
- b. Gelman Sciences 64678 (GN-4) 600 South Wagner Rd Ann Arbor, MI 48106 313-665-0651 800-521-1520
- c. Supelco. Inc. 2-3368M Supelco Park Bellefonte, PA 16823 800-247-6628 800-359-3041

E-3 37 mm MCE Filter with pad, no cassette included, for lead surface wipe samples.

Order From Catalog Number

a. Supelco Inc. 2-3381IM Supelco Park Betlefonte, PA 16823

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APPENDIX E (Continued)

800-247-6628 800-359-3041

b. Millipore Corp. AAWP-037-00 Ashdy Road Bedford, MA 01730 617-275-9200 800-225-1380

c. SKC, Inc. 225-5 334 Valley View Rd. Eighty Four, PA 15330 412-941-9701 800-752-8472

Example and the second se



E-5. Glass container (25 milliliter) for collection and shipment of media.

Order From Catalog Number

a. Pierce Chemical Co. 13219 (screw cap) P.O. Box 117 Rockford, IL 61105 815-968-0747 800-874-3723

 Alltech Associates, Inc. 95321 (screw cap) Applied Science Labs 2051 Waukegan Rd. Deerfield, IL 60015 312-948-8600

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APPENDIX E (Continued)

800-255-8324

E-6. Ghost Wipes™.

Order From Catalog Number

Environmental Express SC4200 490 Wando Park Blvd. Mt. Pleasant, SC 29464 1-800-343-5319

E-7. Ghost Wipe™ Containers

Order From Catalog Number

Environmental Express SC499 490 Wando Park Blvd. Mt. Pleasant, SC 29464 1-800-343-5319

E-8. Plastic ziplock bags can be obtained through the Army logistics system. Many sizes are available. Contact your supporting logistics branch for assistance.

E-9. Distilled water can be purchased at larger grocery stores, usually by the gallon, at a cost of approximately \$1.25. Deionized water can be obtained at local and state water labs or a hospital.

APPENDIX F

EXAMPLES OF COMPUTATION OF LEAD LEVELS FROM WIPE SAMPLE RESULTS

Sample results will be returned in the form of micrograms. The results must be converted to micrograms per square foot. This can be accomplished by following the examples listed below:

75 ug	92	29 cm^2		
100 cm ²		1 sq ft		
75 x 929	a	69675	=	696.75ug/sq ft
100		100		

ug - Microgram

Cm2 - CentImeters squared

Sq ft - Square foot

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APPENDIX G SURFACE WIPE SAMPLING SHEET

5	Industrial	Hygiene Sur	face	Wipe San	nple Sheet
Return Address			Po	oint of Conta	ct (name & phone #)
			Sa	mples Colle	cted By
Sampled Facility City		<u> </u>	State	Location (bldg/area)	
Description of Op	Description of Operation		Da	te Collected	Date Shipped
Analysis Desired			I		
Sampling Data					
Lab Use Only	Sample #	Results	3		Remarks
				,	
	- Free Contractor				
comments to Lab					

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APPENDIX H AIR SAMPLING SHEET

		Inc	dustrial H	ygiene	Air S	ample Sh	eet			
Return Add	ress	A 22 - 22 - 20 - 20		Point	of Cont	act (name/ph	one #)			
				Sampl	Samples Collected By					
Sampled F	acility	City		State	State Location (bldg/area) Hrs/Day Method of Collection					
Description	of Operation	P	arsons Exposed	Hrs/						
Analysis D	esired									
Sampling D	lata									
Sample No.		•								
Pump No.								B		
Time On								L		
Time Off								A		
Total Time (min)								N		
Flow Rate (LPM)								ĸ		
Volume (litors)										
GA/BZ										
Employee Name/ID										
aboratory No.										
alibration	ntormation									
Pump No.	Calit Pre-Use	oration (L	Post-Use	Rotame	ter Settin	g	Date			
		_								
ame of Collins	lor	1 Callb	ration Date	Pumo Ma	nufacture	or				
arne or Cambra		Carlo	railon Date	Furth Ma	indiación					

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> APPENDIX I ABBREVIATIONS AND TERMS

Section I Abbreviations

ARNG Army National Guard

BUN Blood urea nitrogen

BZ Breathing zone

CBC Complete blood count

CFR Code of Federal Regulations

cm Centimeter

DHEW Department of Health, Education and Welfare

EPA Environmental Protection Agency

GA General area

OMPF Official Military Personnel File

OPF Official Personnel File

OSHA Occupational Safety and Health Administration

TCLP Toxic Characteristic Leaching Procedures

ug/sq ft Micrograms per square foot

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APPENDIX I (Continued)

Section II Terms

HEPA

Refers to high efficiency particulate air filter systems capable of capturing up to 99.97 percent of particles 0.3 microns in size or larger.

Lead-Contaminated Range

It is assumed that all indoor ranges, which have been fired in, are lead-contaminated.

Wipe Sample

The terms wipe, swipe, or smear samples are use synonymously to describe the techniques utilized for assessing lead surface contamination.

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Prepared For:

National Guard Bureau Army National Guard Region North Industrial Hygiene Office 301 – IH Old Bay Lane Havre De Grace, Maryland 21078

Prepared By:

URS Corporation 5 Industrial Way Salem, New Hampshire 03079

INDUSTRIAL HYGIENE SURVEY REPORT MASSACHUSETTS NATIONAL GUARD READINESS CENTER 57 LOW STREET NEWBURYPORT, MA 01950

July 15, 2013 PN: 39743799



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FINDINGS AND RECOMMENDATIONS MASSACHUSETTS NATIONAL GUARD READINESS CENTER 57 LOW ST., NEWBURYPORT, MA

Findings	Recommendations	Risk Assessment Code (RAC)
Lighting		
On the day of the survey, the illuminance was inadequate in several locations tested.	Increase lighting in the work areas. While work is in progress, these areas must be lighted by at least the minimum lighting intensities (ANSI / IESNA RP-1-04).	RAC 4
Ergonomics		
Computer workstations in the Administrative Areas were observed with un-adjustable chairs, arm rests and keyboards. Several wheeled chairs with four casters were identified.	Ergonomic issues with regard to the desks and chairs should be corrected by fitting the workplace to the worker (Department of the Army Pamphlet 40-21, Chapter 4, Page 7, Section 4-3).	RAC 3
Lead		
Six of the 10 lead wipe samples indicated elevated lead levels.	Personnel trained in accordance with the OSHA Lead Standard should clean the areas where elevated lead dust levels were identified (OSHA 29 CFR 1910.1025(h)(1)).	RAC 3
Former Indoor Firing Range	-	
Since the former indoor firing range is contaminated with lead and several wipe samples were found to contain elevated lead levels, an assessment should be made as to whether respiratory protection and other personal protective equipment (PPE) should be worn when entering this area. Access should be restricted.	A respirator shall be provided for each employee when such equipment is necessary to protect the health of the employee (29 CFR 1910.134 (a)(2)).	RAC 3
Emergency Exits		
Emergency exit signs were not visible from all areas of the facility or illuminated.	Emergency exits should be properly illuminated (29 CFR 1910.37 (q)(6)).	RAC 3

		Risk
Findings	Recommendations	Assessment Code (RAC)
Personal Protective Equipment		
Hazard assessments have not	Conduct a hazard assessment of	
been conducted to determine	site operations to determine what	
whether personal protective	types of PPE are required for each	RAC 4
equipment is required.	type of work (29 CFR	
	1910.132(d)(1)).	
Water Intrusion		
Water staining was observed on ceiling tiles in Offices 101, 102 and Hall 103.	The source of the water intrusion should be identified and repaired. The water-stained materials should be repaired or replaced (ACGIH – Guidelines for the Assessment of Bio-aerosols in the Indoor Environment).	RAC 4
Fire Extinguishers		
Fire extinguishers in the Supply Office were not mounted to the wall.	Portable fire extinguishers shall be provided, mounted and located so that they are readily available (29 FR 1910.157 (c)(1) and 29 CFR 1910.38 (c)(2)).	RAC 4
Walking Surfaces		
Cords were extended across walkways in the administrative areas.	Flooring should be maintained in good repair to minimize uneven and slippery surfaces and tripping hazards (29 CFR 1910.22(b)(1)).	RAC 3
Emergency Action Plans		
Emergency evacuation plans were not posted throughout the RC.	Facilities must have emergency action plans including emergency escape procedures and route assignments (29 CFR 1910.38 (a)(2)(i)).	RAC 3
Hazard Communication		
No written hazard communication program was identified at the site.	A written hazard communication program shall be developed, implemented and maintained at each workplace (29 CFR 1910.1200 (e()1)).	RAC 3

1.0 SUMMARY

At the request of the National Guard Bureau (NGB) Region North Industrial Hygiene Office, URS Corporation (URS) conducted an industrial hygiene survey at the Readiness Center in Newburyport, Massachusetts.

URS representative, Ms. Non-Responsive, conducted the Industrial Hygiene Survey on May 7, 2013. The scope of work included an overall assessment of the facility as it relates to industrial hygiene and included a walkthrough of the facility, collection of photographs, and when required, measurements for illumination (light), area and personal air sampling, and noise mapping.

The Newburyport Readiness Center is a one-story brick building, consisting of offices, a classroom, supply areas, gender separate bathrooms, storage rooms, a kitchen, Mess Hall, an Assembly Hall and a former Indoor Firing Range. A layout of the Readiness Center is provided in Appendix A.

<u>GENERAL</u>: Emergency exit signs were not posted and illuminated throughout the facility. Emergency escape plans were not posted throughout the facility. Fire extinguishers in the Supply Office were not mounted to the wall. Cords were extended across walkways. Extension cords were being used as permanent wiring. Water staining was observed on ceiling tiles in Office 101, 102 and Hall 103. Water staining was observed on ceiling tiles in Offices 101, 102 and Hall 103.

<u>LIGHTING</u>: Lighting in the Readiness Center was found to be inadequate in several of the areas measured. Areas noted within the report as having inadequate lighting require upgrading by either increasing the general lighting or through the use of task lighting. While work is in progress work areas must be lighted by at least the minimum light intensities.

<u>LEAD</u>: Six of ten wipe samples collected in the Readiness Center were found to contain lead in a concentration above the recommended limit set by the NGB, Region North IH Office.

On the day of the survey, the paint chip sample collected from peeling paint was found to contain a level of lead below the HUD criteria for determination of paint as leadbased.

<u>ASBESTOS</u>: No damaged, friable materials were identified for sample collection during this survey.

<u>ERGONOMICS</u>: Many of the work stations had ergonomic issues which require attention. Computer workstations were assessed during the walkthrough for ergonomic issues. The computer workstations in the facility did not meet the current Occupational Safety and Health Administration (OSHA) ergonomic recommendations. The chair armrests, keyboards, and monitors were not adjustable. All workstations in the facility should be adjusted and monitored. The ergonomic issues with regard to the workstations and chairs need to be corrected by fitting the workplace to the worker. Several wheeled chairs with four casters were identified throughout the administrative areas.

<u>NOISE</u>: Noise monitoring levels in the Readiness Center determined that noise levels were below the OSHA permissible exposure limit (PEL) and Department of Defense Instruction (DoDI) Hearing Conservation Standard (6055.12 3 December 2010) on the day of URS' site visit.

2.0 SUPPLY / TRAINING AREA

2.1 Operation Description

This Readiness Center is primarily used for weekend training drills and conducting administrative functions. The building includes offices, a classroom, supply areas, gender separate bathrooms, storage rooms, kitchen, Mess Hall, an Assembly Hall, and a former Indoor Firing Range.

The Readiness Center was found to be neat and organized at the time of URS' site visit.

2.2 Chemical and Physical Agents Sampled

2.2.1 Carbon Dioxide

On the day of the survey, carbon dioxide measurements were made in the Readiness Center. Interior carbon dioxide concentrations were found to be between 428 and 579 parts per million (ppm). Carbon dioxide levels were measured using a direct-reading TSI Q-Trak (Model 8551).

Carbon dioxide is a normal constituent of the atmosphere and ranges from about 250 to 450 ppm. The major source of excess carbon dioxide in the indoor environment is human respiration. Other sources can include open-flame heaters, fermentation processes, and motor vehicles. Carbon dioxide itself is not normally a cause of indoor air quality problems but is typically used as an indicator of the adequacy of fresh air intake. As the concentration of carbon dioxide increases, so do the background levels of other air contaminants.

To minimize air quality complaints, the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) has proposed that the carbon dioxide concentration within an occupied workspace be maintained below 700 ppm above ambient outside levels. For example, on the day of the survey, the outside carbon dioxide level was measured at 387 ppm. Therefore ASHRAE (Standard 62.1-2010) would recommend that interior carbon dioxide concentrations be maintained at or below 1,087 ppm. Using the ASHRAE guideline, the readings at the subject site were found to be below the suggested indoor to outdoor differential concentration.

2.2.2 Carbon Monoxide

The carbon monoxide concentration in the Readiness Center was measured between 0.0 ppm and 0.9 ppm on the day of the survey. ASHRAE recommends that average carbon monoxide concentrations not exceed 9 ppm. Typical average concentrations found in commercial buildings range from 0 to 6 ppm. The measured levels were below the ASHRAE guideline for indoor environments. Carbon monoxide was measured using a TSI Q-Trak Plus (Model 8554).

Key sources of carbon monoxide within indoor environments include internal combustion engines, motor vehicle and forklift exhaust, tobacco smoke, space heaters, and improperly adjusted oil or gas burners.

2.2.3 Relative Humidity

The average relative humidity within the Readiness Center measured with the Q-Trak Plus was 42.8%, which was within the guideline of less than 65% recommended by ASHRAE.

2.2.4 Temperature

Temperature should be maintained within the thermal comfort envelope suggested in ASHRAE Standard 55-2010. This standard on thermal environments specifies conditions in which 80% or more of building occupants should find the thermal environment acceptable. ASHRAE 55-2010 suggests temperatures of 68 to 75 degrees Fahrenheit (°F), during winter months, for people in typical seasonal clothing during light sedentary activity. For summer, the temperature should be in the range of 73 to 79 °F.

The average temperature inside the Readiness Center was, 69.7 °F, which was within the guideline of 68 to 75 °F recommended by ASHRAE for thermal comfort. URS received several complaints regarding temperature in the Supply Office, which has no HVAC into the area, during this survey.

2.2.5 Lighting

Lighting in the Readiness Center was measured using a cal-Light 400 Light Meter. Table 2-1 below shows lighting measurements in foot candles (FC) and the recommended lighting requirements (Illuminating Engineering Society of North America (IESNA) RP-7-01).

Location	Function	Measured Illuminance in Foot Candles (FC)	Recommended Minimum Illuminance in Foot Candles (FC)
Supply Office, desk-	Admin	18.3	50
Supply Office, desk	Admin	23.3	50
Mess Hall, table	Break Room	67.9	10
Mess Hall, counter	Break Room	89.6	10
Office 120, desk	Admin	52.3	50
Office 120A, desk	Admin	61.8	50
Office 101, desk-	Admin	59.2	50
Office 101, desk-	Admin	96.6	50
Room 105A, desk	Admin	23.5	50
Hallway 103	Hall	43.0	5
Classroom/ Office 102, table	Admin	84.7	50
Classroom/ Office 102, desk	Admin	67.6	50
Office 104, Commander's desk	Admin	57.5	50

Table 2-1Lighting Measurements and Recommended Lighting Requirements

On the day of the survey, the illuminance in the Readiness Center was determined to be inadequate in three of the administrative locations measured.

2.2.6 Lead

Wipe testing for lead dust was conducted in the Readiness Center using ghost wipes, which meet ASTM E 1792 standards. The analytical report from AMA Analytical Services, Inc. (AMA) is contained in Appendix C. Table 2-2 below shows the results of the lead wipe testing.

Sample Location	URS Sample Number	Area Wiped in Square Feet (ft ²)	Result in Micrograms/ Square Foot (µg/ft ²)	Maximum Surface Contamination Level in Micrograms/ Square Foot (μg/ft ²)
Supply Office 107, floor at doorway, by storage shelves	Newburyport RC Wipe-01	0.108	1,000	200
Classroom/ Office 102, top of shelves, along wall to Office 101	Newburyport RC Wipe-02	0.108	<110	200
Office 101, floor behind door to hall 103	Newburyport RC Wipe-03	0.108	<110	200
Office 120, floor, between bookshelf and door to locker room	Newburyport RC Wipe-04	0.108	<110	200
Mess Hall/ Kitchen, floor behind kitchen door	Newburyport RC Wipe-05	0.108	<110	200
Former Indoor Firing Range, floor at doorway, under knob	Newburyport RC Wipe-06	0.108	900	200
Former Indoor Firing Range, floor at doorway, under hinges	Newburyport RC Wipe-07	0.108	2,000	200
Room 105A, floor, under heater behind door	Newburyport RC Wipe-08	0.108	900	200
Drill Hall, floor, corner by Room 105A	Newburyport RC Wipe-09	0.108	470	200
Mechanical Room 110, floor at base of stairs	Newburyport RC Wipe-10	0.108	6,300	200

Table 2-2 Levels of Lead Dust Found in the Readiness Center

Six of the ten surface dust level measurements were found to contain lead at a level above the NGB recommended level, based on the OSHA clarification letter which states "as free as practicable" of lead contamination as specified under OSHA 29 CFR 1926.62.

One paint chip sample was collected from an area of peeling paint in the storage area and was analyzed for lead content. The analytical report from AMA is contained in Appendix C.

According to the U.S. Department of Housing and Urban Development (HUD), paint is considered to be lead-based if the quantity of lead is greater than 0.5% by weight. OSHA has not established a minimum percentage of lead to be defined as lead-based paint, therefore paint with lead in any amount above the analytical detection limit is considered to be lead-based under these regulations. The results of URS' lead paint testing are contained in Table 2-3.

Lead Content in Painted Surfaces

Table 2-3

Paint Location	Lead Concentration (Percent Weight)	HUD Lead-Based Quantity (Percent Weight)
Dull white paint, Mechanical Room, pipes	0.26	0.5

On the day of the survey, the paint chip sample was not found to have a lead content above the HUD criteria for determination of paint as lead-based.

2.2.7 Asbestos

No damaged, friable materials were identified during this survey for sample collection.

Presumed asbestos-containing floor tiles and associated mastic were identified during this survey. Until suspect materials have been sampled and determined not to contain asbestos, they must be presumed to be asbestos-containing and managed accordingly.

2.3 Ventilation System Evaluation

The facility, not designed for vehicle maintenance, contains a ventilation system that is limited to localized personal ventilation (i.e. room fans, window air conditioning units) within the majority of rooms, and main negative draw fans in the Assembly Hall.

2.4 Noise Measurements

Personal noise dosimetry was conducted within the administrative office area. Noise exposures were measured using a data-logging Spark 703+ Noise Dosimeter. Personal noise dosimetry results indicated that, on the day of the survey, workers were not exposed to noise levels above the DoDI Hearing Conservation Standard (6055.12 3 December 2010) of 85 decibels, A scale (dBA)/8-hour day. Table 2-4 indicates the individual monitored, the tasks performed and noise exposures.

Table 2-4 Noise Dosimetry Data

Location	Task	Sample Duration in Minutes	Monitoring Result TWA (dBA)*	Hearing Protection
Non-Responsive	Administrative	404	61.1	N/A

* The calculated 8-hour, time-weighted average (TWA) noise exposure in dBA. The OSHA PEL for noise exposure is 90 dBA. DoDI has established an employee exposure level of 85 dBA for requirement of a hearing conservation program.

2.5 Personal Protective Equipment

Personal protective equipment was orderly and readily available to employees in the Readiness Center. Personal protective equipment included safety glasses, ear plugs and nitrile gloves. No operations were observed during URS' site visit where personal protective equipment was in use.

3.0 SAFETY AND INDUSTRIAL HYGIENE PROGRAMS

3.1 Confined Spaces

A written confined spaces program is not applicable to this facility.

3.2 Hearing Conservation

A site-specific written hearing conservation program was not identified on site. A review of normal site activities determined that no operations were identified that would warrant hearing protection. Based on area noise dosimetry results and a review of normal site operations, a hearing conservation program is not required for this site.

3.3 Respiratory Protection

A site-specific written program regarding Respiratory Protection was not identified on site. No operations were observed by URS that would require the use of respiratory protection. If workers are allowed access to the former firing range, a hazard assessment should be conducted to determine whether respiratory protection and other forms of PPE should be required in this area.

3.4 Hazard Communication

A site-specific hazard communication program was not identified on site.

Material safety data sheets, a site map, and list of full time personnel were readily available on the day of the survey.

3.5 Personal Protective Equipment

A written personal protective equipment program was not identified on site. A hazard assessment should be conducted to determine whether personal protective equipment is required for activities typically undertaken at the Readiness Center.

3.6 Asbestos Operations and Maintenance Program

A written asbestos operations and maintenance program was not identified on site.

3.7 Safety

Emergency exit signs were not posted and illuminated throughout the facility. Emergency escape plans were not posted throughout the facility. Fire extinguishers in the Supply Office were not mounted to the wall. Cords were extended across walkways. Extension cords were being used as permanent wiring.

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4.0 REFERENCES

American Conference of Governmental Industrial Hygienists

Industrial Ventilation: A Manual of Recommended Practice, 27th Edition, 2010

Guidelines for the Assessment of Bio-aerosols in the Indoor Environment, 1989

American National Standards Institute

ANSI/IESNA RP-1-04: American National Standard Practice for Office Lighting

ANSI/IESNA RP-7-01: Recommended Practice for Lighting Industrial Facilities

American Society of Heating, Refrigerating and Air-Conditioning Engineers

ANSI/ASHRAE Standard 62.1-2010: Ventilation for Acceptable Indoor Air Quality

ANSI/ASHRAE Standard 55-2010: Thermal Environmental Conditions for Human Occupancy.

Department of the Army

DA PAM 40-21, Ergonomics Program, 15 August 2003

Unified Facilities Criteria, Heating, Ventilating and Air Conditioning, 3-520-05, 14 April 2008

DA PAM 40-501, Hearing Conservation Program, 10 December 1998.

AR 385-10, The Army Safety Program, 23 August 2007; RAR Issue Date: 4 October 2011

National Guard Pamphlet 420-15, Guidelines and Procedures for Rehabilitation and Conversion of Indoor Firing Ranges, 3 November 2006

Department of Defense

DoDI 6055.12, Hearing Conservation, 3 December 2010

Creating the Ideal Computer Workstation: A Step-by-Step Guide, June 2000

National Institute for Occupational Safety and Health

Current Intelligence Bulletin 50: Carcinogenic Effects of Exposure to Diesel Exhaust, August 1988

U. S. Environmental Protection Agency

Asbestos Hazard Emergency Response Act (40 CFR Part 763)

National Emissions Standards for Hazardous Pollutants (40 CFR Part 61)

U. S. Department of Housing and Urban Development

Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (1995, 1997, 2012)

U. S. Occupational Safety and Health Administration

Standard for General Industry: 29 CFR 1910

OSHA Clarification Letter – Clarification of "as free as practicable" of lead contamination under 29 CFR 1926.62, 13 January 2003.

APPENDIX A

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SHOP DRAWING



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APPENDIX B

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PERSONNEL LIST

Full Time Staff IN Newbury Port 1 Ion-Responsiv **/e**

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APPENDIX C

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ANALYTICAL RESULTS

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CERTIFICATE OF ANALYSIS



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ISONEC 17025-2005 www.aihasccreditediabs.org LAB #100470 MA ARNG Job Name: Chain Of Custody: 515898 Client: National Guard Bureau 301-IH Old Bay Lane, Attn: ARNG-CJG-P, 57 Low Street, Newburyport, MA Address: Job Location: Date Submitted: 5/15/2013 State Military Reservation Havre de Grace, Maryland 21078 Newburyport RC Job Number: **Person Submitting:** P.O. Number: W912K6-09-A-0003 Date Analyzed: 5/22/2013 **Report Date:** 5/22/2013





Summary of Atomic Absorption Analysis for Lead

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AIHA LAP, LLC ACCREDITED LABORATORY

NOUSTRIAL HYGIENE, ENVIRONMENTAL LEAD **& ENVIRONMENTAL MICROBIOLOGY**

AMA Sample Number 13062550	Client Sample Number NewburyportRC Wipe-01	Analysis Type Flame	Sample Type Wipe	Air Volume (L) ****	Area Wiped (ft²) 0.108	Reporting Limit		Total ug	Final Result		Comments
						110	ug/ft²	110	1000	ug/ft²	
13062551	NewburyportRC Wipe-02	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/ft²	
13062552	NewburyportRC Wipe-03	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/ft²	
13062553	NewburyportRC Wipe-04	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/ft²	
13062554	NewburyportRC Wipe-05	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/ft²	
13062555	NewburyportRC Wipe-06	Flame	Wipe	****	0.108	110	ug/ft²	97	900	ug/ft²	
13062556	NewburyportRC Wipe-07	Flame	Wipe	****	0.108	110	ug/ft²	210	2000	ug/ft²	
13062557	NewburyportRC Wipe-08	Flame	Wipe	****	0.108	110	ug/ft ²	97	900	ug/ft²	
13062558	NewburyportRC Wipe-09	Flame	Wipe	****	0.108	110	ug/ft²	51	470	ug/ft²	
13062559	NewburyportRC Wipe-10	Flame	Wipe	****	0.108	110	ug/ft ²	680	6300	ug/ft²	
13062560	NewburyportRC Wipe-FB	Flame	Wipe Blank	****	N/A	12	ug		<12	ug	

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these Laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from us. Sample types, locations, and collection protocols are based upon the information provided by the persons submitting them and, unless collected by personnel of these Laboratories, we expressly disclaim any knowledge and liability for the accuracy and completeness of this information. Residual sample material will be discarded in accordance with the appropriate regulatory guidelines, unless otherwise requested by the client. This report must not be used to claim, and does not imply product certification, approval, or endorsement by NY ELAP, AIHA, or any agency of the Federal Government. All rights reserved. AMA Analytical Services, Inc.

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CERTIFICATE OF ANALYSIS

Job Name: MA ARNG **Chain Of Custody:** 515898 Client: National Guard Bureau Address: 301-IH Old Bay Lane, Attn: ARNG-CJG-P, Job Location: 57 Low Street, Newburyport, MA Date Submitted: 5/15/2013 State Military Reservation Havre de Grace, Maryland 21078 Job Number: Newburyport RC **Person Submitting:** P.O. Number: W912K6-09-A-0003 Date Analyzed: 5/22/2013 **Report Date:**

Summary of Atomic Absorption Analysis for Lead

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5/22/2013

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INDUSTRIAL HYGIENE, ENVIRONMENTAL LEAD **8 ENVIRONMENTAL MICROBIOLOGY** ISONEC 17025-2005 www.aihaaccreditedlabs.org LAB #100476

AMA Sample Number 13062561	Client Sample Number	Analysis Type	Sample Type	Air Volume (L)	Area Wiped (ft²)	Rep L	orting imit	Total ug	Final Res	ult	Comments
	NewburyportRC	NewburyportRC Flame Paint Chip	****	N/A	0.0068	%Pb		0.26	%Pb		

Analysis Method for Flame: Air, Wipes, Paints, and Soil/Solids: EPA 600/R-93/200(M)-7000B; Water: SM-3111B Analysis Method For Furnace: Air, Wipes, Paints, and Soil/Solids : EPA 600/R-93/200(M)-7010; Water: SM-3113B mg/Kg = parts per million (ppm) on a dry weight basis mg/L = parts per million (ppm) N/A = Not Applicable %Pb = percent lead on a dry weight basis ug = micrograms ug/L = parts per billion (ppb)

See QC Summary for analytical results of quality control samples associated with these samples.

Note: All samples were received in good condition unless otherwise noted. Note: All results have two significant digits. Any additional digits shown should not be considered when interpreting the result.

Dons

Air and Wipe results are not corrected for any blank results Final results for air and wipe samples are based on client supplied information nor verified by this laboratory.

All results are to be considered preliminary and subject to change unless signed by the Technical Director or Deputy.



This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these Laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from us. Sample types, locations, and collection protocols are based upon the information provided by the persons submitting them and, unless collected by personnel of these Laboratories, we expressly disclaim any knowledge and liability for the accuracy and completeness of this information. Residual sample material will be discarded in accordance with the appropriate regulatory guidelines, unless otherwise requested by the client. This report must not be used to claim, and does not imply product certification, approval, or endorsement by NY ELAP, AIHA, or any agency of the Federal Government. All rights reserved. AMA Analytical Services, Inc.

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APPENDIX D

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PHOTOGRAPHIC LOG

URS	Pł	IOTOGRAPHIC LOG
Client Name: MA ARNG- Newburyport RC	Site Location: 57 Low St., Newburyport, MA	Project No. 39743799
Photo No. Date: 1 5/7/13 Description: Water staining on the ceiling above the ceiling grid in Hallway 103.		



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UR	5	РНОТО	GRAPHIC LOG
Client Name:	:	Site Location:	Project No.
MA ARNG- N RC	ewburyport	57 Low St., Newburyport, MA	39743799
Photo No. 3	Date: 5/7/13		
Description: Extension cor used as perm and wheeled four casters in	rd being lanent wiring chair with n Office 104.		
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APPENDIX E

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RECOMMENDATIONS FOR SURFACE LEAD DUST IN ARMORIES

Subject: Recommendations for Surface Lead Dust in Armories

- 1. In armories that do not contain childcare facilities, the National Guard Bureau (NGB) Region North Industrial Hygiene Office recommends cleaning the areas in which sample results are greater than 200 micrograms per square foot (µg/ft²). If a special function will be held in which children will be present in this facility, consider thoroughly cleaning the areas that will be accessible to children prior to the function. This guidance is based on professional judgment, risk assessments, adaptation of Occupational Safety and Health Administration (OSHA) guidance, and feasibility of cleaning to a certain level.
 - a. Environmental Protection Agency (EPA) standards (40 Code of Federal Regulations (CFR) 745.227(h)(3)) are not directly applicable because they are criteria for dust-lead hazards developed for floors (40 μ g/ft²) and windowsills (250 μ g/ft²) in residential dwellings and child occupied facilities. A child occupied facility is defined as a building, or portion of a building, constructed prior to 1978, visited regularly by the same child, 6 years of age or under, on at least two different days within any week (Sunday through Saturday period), provided that each day's visit lasts at least 3 hours and the combined weekly visit lasts at least 6 hours, and the combined annual visits last at least 60 hours. Most of the wipe samples in armories were collected in undisturbed areas and therefore, results are worst case scenarios and do not correlate to these standards.
 - b. OSHA has no specific requirement for work area surfaces. The lead standard (29 CFR 1910.1025(h)) states that all surfaces shall be maintained as free as practicable of accumulations of lead dust. In workplaces where lead dust is generated, surface levels may be much higher, but personnel exposures can be controlled by limiting airborne lead levels and following good cleanup and hygienic practices.
 - c. OSHA used to cite a level of 200 μ g/ft² in their Technical Manual and 29 CFR 1926.62 as guidance to its own inspectors for evaluating the cleanliness of lunchroom and locker room surfaces that are supposed to be kept as clean as possible.
 - d. In a report titled Derivation of Wipe Surface Screening Levels for Environmental Chemicals, the US Army Center for Health Promotion and Preventive Medicine (USACHPPM) has determined that 200 μ g/ft² is a safe surface contamination level. They have also applied these standards as the decontamination levels for surfaces in administrative offices.
 - e. It should be noted that levels above these recommendations do not necessarily mean there is a significant hazard to workers who are following good cleaning and hygienic practices since there is no

correlation between wipe and air samples. Rather, we recommend these levels as a precautionary measure.

- 2. The NGB Occupational Health Branch is developing guidance for armories that are used as childcare facilities. All states will receive this guidance when it is completed. In the interim, we recommend the following actions:
 - a. Clean all areas that will be accessible to children to the EPA dust-lead standard for children 6 years of age or under (40 μ g/ft² on floors and 250 μ g/ft² on windowsills).
 - b. Refer to the local authorities' regulations since they can be more stringent than federal regulations.
 - c. Post signs in the area to inform people of the presence of lead dust and its effects.
 - d. If soldiers clean weapons in the facility change the policy so that they cannot clean their weapons in the facility, or if they are allowed to clean their weapons indoors, they must clean the area by wet wiping and mopping the area when they are done.
 - e. If the paint is peeling, contact the state Environmental Office to test for lead content and provide recommendations.
- 3. Air samples collected on individuals in the armory were well below OSHA's permissible exposure limit for lead (29 CFR 1910.1025(c)) of 0.05 milligrams per cubic meter (mg/m³) averaged over an 8-hour day. Therefore, based on these conditions there is currently no overexposure to personnel from lead dust in this building.

Industrial Hygiene Survey

Massachusetts Army National Guard (MA ARNG)

Prepared For: NGB ARNG- Region North IH Office

Survey Location:

Northampton Readiness Center 1 Col LaValley Lane Northampton, MA 01062-0363

Prepared By: Aria Environmental, Inc. (AEI) PO Box 286 Woodbine, MD 21797

Survey Date: July 28, 2010 Report Date: September 21, 2010

AEI Project #: J10-513 3a MA Northampton RC

Non-Responsive

Industrial Hygienist



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- Table 4 Acceptable Ranges of Temperature and Relative Humidity in Summer and Winter
- Appendix A Building Layout
- Appendix B Certificates of Analysis for Air, Dust Wipe and Bulk Samples
- Appendix C Photo Documentation
- Appendix D IAQ and Lighting Survey Log Sheets

Executive Summary

Aria Environmental, Inc. (AEI) was contracted to perform an industrial hygiene evaluation for the Readiness Center located at 1 Col LeValley, Northampton, MA 01062-0363. Non-Responsive performed the evaluation on July 28, 2010. The point of contact for the facility was Sergeant . The purpose of the evaluation was to identify and measure the existence and extent of potentially hazardous operations or conditions at Army National Guard (ARNG) facilities. The survey included: (1) evaluations of operations including operation description, ventilation system evaluations, noise dosimetry if appropriate, lighting surveys, hazard control evaluations and any additional information pertinent to the operations; (2) an evaluation of the physical condition of the facility and personnel concerns including visual inspections for peeling potentially lead-based paint, damaged suspect asbestos-containing materials, water damage or mold problems; indoor air quality concerns; and housekeeping practices; and (3) photographs of the exterior and interior of the readiness center. The results of the evaluation indicated the following:

Noise Hazards: No noise-generating activities were taking place on the day of the survey. Due to the nature of the tasks performed onsite, no activities requiring noise monitoring are anticipated to occur at the RC.

Lead in Air Samples: Results of collected air samples were below regulatory limits for lead. (50 μ g/m³).

Paint Chip and Wipe Samples for Lead Contamination: Three wipe samples collected in the former firing range were above the National Guard criteria for lead contamination (200 μ g/ft²). Samples collected from the middle of the floor, a grill stored in the area, and the top of a light fixture were reported to have lead concentrations of 360 μ g/ft², 250 μ g/ft², and 500 μ g/ft² respectively.

Peeling paint was observed on the ceilings of three rooms: the locker room, the supply room and the storage room (room 17 on the drawing). One paint chip of the ceiling paint was collected and found to be below regulatory limits of 0.5% lead by weight.

Visual Inspection for Damaged Asbestos-Containing Materials: No damaged suspect asbestoscontaining materials was observed at the Northampton Readiness Center.

Visual Inspection for Water Damage and Mold Growth: No visual evidence of water damage or mold growth was observed in the facility.

Visual Inspection for Housekeeping Concerns: A visual inspection was performed to assess the state of housekeeping in the facility. The housekeeping was good. All areas were clean and tidy.

Lighting: The evaluation indicated that there are some illumination deficiencies in the storage room (room 6 on the drawing), the mechanical room, the entry and one office (room 18 on the drawing). The illumination measurements indoors ranged from a low of 5.1 foot candles (fc) to a high of 316.1 fc.

Indoor Air Quality: Temperatures and relative humidity measurements were outside the acceptable range in most of the facility. These results are not unexpected due to outdoor conditions on the day of the survey and the lack of air conditioning in most of the facility. Indoor levels of CO₂ ranged from 413 to 545 parts per million (ppm) and outdoor CO₂ levels were approximately 420 ppm during the monitored period. CO₂ measurements were below the guideline in all areas, indicating adequate fresh air exchange. Indoor levels of CO ranged from 0

to 0.2 ppm; therefore, concentrations are below occupational exposure limits, ASHRAE and the NAAQS-recommended CO concentrations.

1 Introduction

Aria Environmental, Inc. (AEI) was contracted to perform an industrial hygiene evaluation for the Massachusetts Army National Guard (MA ARNG) Readiness Center located at 1 Col LeValley, Northampton, MA 01062. Non-Responsive performed the evaluation on July 28, 2010. The point of contact for the facility was Sergeant and the purpose of the evaluation was to identify and measure the existence and extent of potentially hazardous operations or conditions at Army National Guard (ARNG) facilities.

The operations conducted at the facility include supply and administrative duties. A diagram of the building layout is provided in Appendix A. All sampling sheets and laboratory certificates of analysis are provided in Appendix B. Selected photographs taken during the evaluation are provided in Appendix C. Indoor air quality and lighting survey measurement log sheets are provided in Appendix D. Lists of all references used during the evaluation are included in the main body of the report.

2 Evaluation Methods

The industrial hygiene survey of the Northampton Readiness Center consisted of visual inspections, interviews with employees and sampling plan development in order to achieve the following: (1) evaluations of operations including operation description, sampling for lead in air or on surfaces if appropriate, ventilation system evaluations, noise measurements if appropriate, lighting surveys, hazard control evaluations and any additional information pertinent to the operations; (2) an evaluation of the physical condition of the facility and personnel concerns including visual inspections for peeling potentially lead-based paint, damaged suspect asbestos-containing materials, water damage or mold problems; indoor air quality concerns; and housekeeping practices; and (3) a building layout and photographic documentation of the interior of the facility.

The National Guard Bureau (NGB) Region North IH Office provided all industrial hygiene equipment for air sampling (equipment and media), ventilation, lighting, noise and IAQ survey instruments and paid for laboratory analytical fees. Laboratories were chosen or approved by the NGB IH office.

3 Operations

Operations conducted at the Northampton facility consists exclusively of supply and administrative duties. No maintenance of vehicles, painting of equipment or other physical tasks are performed at the facility. Ground maintenance and upkeep of the building are the responsibility of the state employed Armorer and not part of the duties of National Guard personnel.

4 Noise Hazards

No noise-generating activities were taking place on the day of the survey. Due to the nature of the tasks performed onsite, no activities requiring noise monitoring are anticipated to occur at the RC.

5 Hazard Controls

Ventilation Systems

Heat is supplied to the facility through a boiler located in the boiler room and overhead heaters in the drill hall. The boiler certificate for the Northampton facility expired in 2007 and is not up to date. Any air conditioning provided to the building is through window air conditioning units. No local ventilation systems were present at the facility.

6 Physical Condition of the Facility and Personnel Concerns

An evaluation of the physical condition of the facility and personnel concerns was performed including visual inspections for peeling potentially lead-based paint, damaged suspect asbestos-containing materials, water damage or mold problems; indoor air quality concerns; and housekeeping practices. Lighting and indoor air quality measurements were taken in all areas of the facility as well.

Lead in Air Samples

To determine if any airborne contamination of lead existed in the facility, air sampling for lead was conducted in the Orderly's Room and the Supply Room and analyzed by AMA for atomic absorption spectrophotometry (AAS) following the analytical method ASTM D3335-85A. Results are given in Table 1 and certificates of analysis are included in Appendix B.

Air Sample #	Sample Location	Result (µg/m³)*
NOR-01	Orderly Room (Room 1), On Sergeant Desk	<5.9
NOR-02	Supply Room (Room 19), On Desk	< 5.8

Table 1 – Results of Lead in Air Sampling for the MA ARNG

*The OSHA PEL for Lead in Air is 50 µg/m³.

Paint Chip and Dust Wipe Samples for Lead Contamination

To determine if any cross contamination of lead from any source into areas of the facility existed, wipe samples were collected using ghost wipes and 10cm x 10cm templates. Wipe samples for surface dust were collected in 15 locations. The Environmental Protection Agency (EPA) and the Commonwealth of Massachusetts limits for lead in dust are 40 micrograms per square foot $(\mu g/ft^2)$ on floors, 250 $\mu g/ft^2$ on window sills, and 400 $\mu g/ft^2$ in window troughs. These limits apply to pre-1978 Army facilities only if children under 6 years of age occupy them for 60 or more hours per year. The NGB Region North Industrial Hygiene Office concurs with the US Army Center for Health Promotion and Preventive Medicine (USACHPPM) recommended maximum level for adult exposures of 200 µg/ft² on floors and frequently contacted surfaces, which is more stringent for window sills than the EPA/State standards. Dust wipe samples were submitted to Aerosol Monitoring and Analysis Analytical Services, Inc. (AMA) for atomic absorption spectrophotometry (AAS) following the analytical method ASTM D3335-85A. Three wipe samples collected in the former firing range were above the National Guard criteria for lead contamination (200 µg/ft²). Samples were collected from the middle of the floor; a grill stored in the area; and the top of a light fixture and were reported to have lead concentrations of 360 µg/ft², 250 µg/ft², and 500 µg/ft² respectively. Results are given in Table 2 and certificates of analysis are included in Appendix B.

Wipe Sample #	Sample Location	Result (µg/ft²)*
NOR-PB-01	Room 1, Radiator Vent	<110
NOR-PB-02	Kitchen, Serving Counter	<110
NOR-PB-03	Assembly Hall, Table Adjacent to Room 10	<110
NOR-PB-04	Assembly Hall, Middle of Floor	<110
NOR-PB-05	Assembly Hall, Top of File Cabinet	190
NOR-PB-06	Room 17, Former Indoor Firing Range, Bullet Trap	<110
NOR-PB-07	Room 17, Former Indoor Firing Range, Light Fixture	500
NOR-PB-08	Room 17, Former Indoor Firing Range, Stored Grill	250
NOR-PB-09	Room 17, Former Indoor Firing Range, Middle of Floor	360
NOR-PB-10	Immediately Outside Door of Room 17 of Floor	<110
NOR-PB-11	Entryway, Middle of Floor, Room 6	<110
NOR-PB-12	Room 8, Top of Television	<110
NOR-PB-13	Room 13, Top of Locker	<110
NOR-PB-14	Room 14, Desktop	<110
NOR-PB-15	Room 19, Top of Supply Cabinet	<110

Table 2 – Results of Dust Wipe Sampling for MA ARNG Northampton Readiness Center on July 28, 2010.

*The US Army CHPPM recommends a maximum level for adult exposures of 200 µg/ft² lead on floors

A visual inspection was performed to determine if there were any areas of peeling paint at the facility that could pose a lead exposure hazard. Peeling paint was observed on the ceilings of three rooms: the locker room, the supply room and the storage room (room 17 on the drawing). All peeling paint appeared homogenous in nature and to be of the same paint history. One paint chip of the ceiling paint was collected. The paint chip sample was collected following operational protocols set forth in HUD's *Guidelines for the Evaluation and Control of Lead-Based Paint Hazard in Housing (1995)*. The paint chip sample was submitted to Aerosol Monitoring and Analysis Analytical Services, Inc. (AMA) of Lanham, MD for analysis. The analyses were performed using Flame Atomic Absorption Spectrophotometry (AAS) following the analytical method SW 846 7420. AMA is accredited for the analysis of paint chip samples through the AIHA Proficiency Testing Program (#100470). In the Commonwealth of Massachusetts, paint is considered to be lead-based if it contains more than 0.5% lead by weight. All paint chip samples were below regulatory limits of 0.5% lead by weight. Results are given in Table 3 and certificates of analysis are included in Appendix B.

Paint Chip Sample #	Sample Location	Result (% by wt)*
NOR-LBP-01	Peeling Paint in Men's Room, On Ceiling	0.033

Table 3 – Results of Paint Chip Sampling for MA ARNG Northampton Readiness Center on July 28, 2010.

*Paint is considered lead-based if it is > 0.5% by weight.

Visual Inspection for Water Damage and Mold Growth

A visual inspection was performed to determine if there was any water damage or visible mold growth at the facility. There was no evidence of water damage or mold growth at the facility.

Visual Inspection for Housekeeping Concerns

A visual inspection was performed to assess the state of housekeeping in the facility. The housekeeping was good. All areas were clean and tidy.

Lighting

Illumination levels were measured using a Cal-Light 400L, calibrated on July 30, 2009, and compared to minimum lighting requirements for various facilities and functions based on the following references: American National Standards Institute/Illumination Engineering Society of North America (ANSI/IESNA) Standard RP-1-04 (Office Lighting) and ANSI/IESNA Standard RP-7-01 (Lighting Industrial Facilities).

A lighting survey was performed in all areas within the facility. The evaluation indicated that there are some illumination deficiencies in the storage room (room 6 on the drawing), the mechanical room, the entry and one office (room 18 on the drawing). The illumination measurements indoors ranged from a low of 5.1 foot candles (fc) to a high of 316.1 fc. The complete results of the evaluation are presented in Appendix D, including whether the results met minimum requirements for illumination. Additional illumination can be achieved by replacing burned-out lamps, cleaning fixtures, relocating detailed work to more illuminated areas, using supplemental task lighting, and opening doors or windows to provide more natural lighting.

Indoor Air Quality (IAQ)

Indoor air quality measurements (i.e., temperature, relative humidity, carbon dioxide and carbon monoxide) were taken using factory a calibrated TSI Q-Trak Plus Model 7565X. Temperature, relative humidity and carbon dioxide (CO₂) measurements were compared to the recommended levels established by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE). Carbon monoxide (CO) concentrations were compared to the ACGIH Threshold Limit Value (TLV) for CO and the Environmental Protection Agency's (EPA's) National Ambient Air Quality Standard (NAAQS) for CO.

Industry guidelines or standards for seasonal temperature and humidity ranges for thermal comfort are established by ASHRAE standard 55-2004. These ranges are presented in Table 4. The U.S. EPA also recommends maintaining relative humidity below 60% and ideally between 30 and 50% to prevent mold growth. Complete results are provided in Appendix G with the lighting survey measurements.

Relative Humidity	Winter Temperature	Summer Temperature
30%	68.5°F - 76.0°F	74.0°F – 80°F
40%	68.5°F – 75.5°F	73.5ºF – 79.5ºF
50%	68.5°F - 74.5°F	73.0°F - 79.0°F
60%	68.0°F - 74.0°F	72.5°F - 78.0°F

Table 4 - Acceptable Ranges of Temperature and Relative Humidity in Summer and Winter^a

adapted from ASHRAE Standard 55-2004

Temperature and Relative Humidity

Indoor temperature and relative humidity (Rh) measurements in the facility ranged from 78.8 to 82.9° F and 51.2 to 60.8% Rh. Outdoor temperature and humidity measurements were 80.7° F and 53.1% on the day of monitoring. Temperatures and relative humidity measurements were outside the acceptable range in most of the facility. These results are not unexpected due to outdoor conditions on the day of the survey and the lack of air conditioning in most of the facility.

Carbon Dioxide (CO2) and Carbon Monoxide (CO)

Carbon dioxide and carbon monoxide measurements are used to assess ventilation system performance. The exhaled breath of building occupants is the main indoor source of carbon dioxide; therefore, the build up of CO_2 indicates inadequate ventilation. The concentration of concern for carbon dioxide is set by ASHRAE standard 62.1 - 2007 as 700 ppm above outdoor concentrations. Indoor levels of CO_2 ranged from 413 to 545 parts per million (ppm) and outdoor CO_2 levels were approximately 420 ppm during the monitored period. CO_2 measurements were below the guideline in all areas, indicating adequate fresh air exchange.

Carbon monoxide is a byproduct of incomplete combustion. Indoor concentrations indicate contamination caused by improperly vented or malfunctioning boilers, furnaces or stoves or from vehicle exhaust entering the building from garages, loading docks, nearby roads or parking lots. The concentration of interest set by ASHRAE standard 62.1-2007 and the National Ambient Air Quality Standards (NAAQS) for carbon monoxide is an 8 hour average of 9 ppm. The ACGIH TLV for CO is 25 ppm. Indoor levels of CO ranged from 0 to 0.2 ppm; therefore, concentrations are below occupational exposure limits, ASHRAE and the NAAQS-recommended CO concentrations.

7 Conclusions

The results of the evaluation indicated no concerns with the following at the facility: contamination of clean air sources, peeling lead-based paints, the presence of damaged suspect asbestos-containing materials, indoor air quality, noise hazards, visible mold and housekeeping. The results of the evaluation indicated industrial hygiene concerns in the following areas: cross contamination from the former firing range and lighting. Overall, Northampton Readiness Center has few industrial hygiene issues, and programs are in place to protect, inform and train employees.

8 Limitations

This report has been prepared for the exclusive use of the U.S. Army National Guard (USARNG) and/or their agents. This service has been performed in accordance with generally accepted industrial hygiene and environmental practices. No other warranty, expressed or implied, is

made. Our conclusions and recommendations are based, in part, upon information provided to us by others and our site observations. We have not verified the completeness or accuracy of the information provided to us by others, unless otherwise noted. Our observations and recommendations are based upon conditions readily visible at the site at the time of our site visit, and upon current industry standards.

By virtue of providing the services described in this report, the preparer does not assume the responsibility of the person(s) in charge of the site, or otherwise undertake responsibility for reporting to any local, state, or federal public agencies any conditions at the site that my present a potential danger to public health, safety, or the environment. It is the Client's responsibility to notify the appropriate local, state, or federal public agencies as required by law, or otherwise to disclose, in a timely manner, any information that may be necessary to prevent any danger to public health, safety, or the environment. Under this scope of services, the preparer assumes no responsibility regarding response actions initiated as a result of these findings. Response actions are the sole responsibility of the Client and should be conducted in accordance with local, sate, and/or federal requirements, and should be performed by appropriately licensed personnel as warranted.

9 References

- 1. Title 29, Code of Federal Regulations (CFR), Part 1910, Occupational Safety and Health Administration, current edition.
- 2. Title 24, Code of Federal Regulations (CFR), Part 35, Subpart B, Sections 35.110, Definitions of Lead-Based Paint, Housing and Urban Development, U.S. Department of Housing.
- 3. Department of Defense Instruction (DODI) 6055.1, Department of Defense Occupational Safety and Health (OSH) Program, August 19, 1998.
- 4. Army Regulation (AR) 40-5, Medical Service, Preventive Medicine, May 25, 2007.
- 5. Army Regulation (AR) 385-10, The Army Safety Program, August 23, 2007.
- 6. Department of the Army Pamphlet (DA PAM) 40-501, Medical Service, Hearing Conservation Program, December 15, 1998.
- 7. Department of the Army Pamphlet (DA PAM) 40-503, Medical Service, Industrial Hygiene Program, October 30, 2000.
- 8. Technical Manual (TM) 5-810-1, Mechanical Design, Heating, Ventilation, and Air Conditioning, June 1991.
- 9. Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs), American Conference of Governmental Industrial Hygienists (ACGIH), current edition.
- 10. RP-1-2004 (Office Lighting) and RP-7-2001 (Industrial Lighting), Illuminating Engineering Society of North America (IESNA)/ANSI.
- 11. The American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE), Standard 62.1-2007, "Ventilation for Acceptable Indoor Air Quality" and Standard 55-2004, "Thermal Environmental Conditions for Human Occupancy".
- 12. NIOSH website: http://www.cdc.gov/niosh/
- 13. OSHA website: <u>http://www.osha.gov/</u>.

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Industrial Hygiene Survey Report Massachusetts Army National Guard (MA ARNG) Northampton Readiness Center

- 14. Army CHPPM website: http://chppm-www.apgea.army.mil/.
- 15. EPA website: <u>http://www.epa.gov</u>.

Appendix A Building Layout



Appendix B Certificates of Analysis for Air, Dust Wipe and Bulk Samples

AMA Analytical Services, Inc.

Attention:

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CEDTIFICATE OF ANALVOIC

HA LAP, LLC

Page 1 of 2

S A Spo	ecialized Environmental Laboratory	CI	EKTIFICATE OF AN	VALYSIS		ACCREDITED LABORATORY INDUSTRIAL HYDEINE, ENVIRONMENTAL LEAD & ENVIRONMENTAL MCROBOLOGY ISONEG 17025.2005 WWW ishaaccreditediation org
Client:	National Guard Bureau	Job Name:	Northampton Armorty	Chain Of Custody:	508466	
Address:	301-IH Old Bay Lane, Attn: NGB-AVN-SI, State Military Reservation	Job Location:	Northampton, MA	Date Submitted:	8/2/2010	10920
	Havre de Grace, Maryland 21078	Job Number:	Not Provided	Person Submitting:	No-Reponde	
		P.O. Number:	W912K6-09-A-0003	Date Analyzed:	8/6/2010	Report Date: 8/9/2010

Summary of Atomic Absorption Analysis for Lead

AMA Sample Number 1066359	Client Sample Number	Analysis Type	Sample Type	Air Volume (L)	Area Wiped (ft²)	Rej	porting Limit	Total ug	Final Res	sult	Comments
	NOR-01	Flame	Air	512	N/A	5.9	ug/m³	<3	<5.9	ug/m³	
1066360	NOR-02	Flame	Air	515	N/A	5.8	ug/m³	<3	<5.8	ug/m²	
1066361	NOR-Pb-01	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/ft²	
1066362	NOR-Pb-02	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/ft²	
1066363	NOR-Pb-03	Flame	Wipe	****	0.108	110	ug/fl²	<12	<110	ug/ft²	
1066364	NOR-Pb-04	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/ft²	
1066365	NOR-Pb-05	Flame	Wipe	****	0.108	110	ug/ft²	20	190	ug/fl²	
1066366	NOR-Pb-06	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/ft²	
1066367	NOR-Pb-07	Flame	Wipe	****	0.108	110	ug/ft²	54	500	ug/ft²	
1066368	NOR-Pb-08	Flame	Wipe	****	0.108	110	ug/ft²	26	250	ug/ft²	
1066369	NOR-Pb-09	Flame	Wipe	****	0.108	110	ug/ft²	39	360	ug/ft²	
1066370	NOR-Pb-10	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/ft²	
1066371	NOR-Pb-11	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/ft²	
1066372	NOR-Pb-12	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/ft²	
1066373	NOR-Pb-13	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/ft²	
1066374	NOR-Pb-14	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/ft²	
1066375	NOR-Pb-15	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/ft²	
1066376	NOR-LBP-01	Flame	Paint Chip	****	N/A	0.01	%Pb		0.033	%Pb	

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these Laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from us. Sample types, locations, and collection protocols are based upon the information provided by the persons submitting them and, unless collected by personnel of these Laboratories, we expressly disclaim any knowledge and liability for the accuracy and completeness of this information. Residual sample material will be discarded in accordance with the appropriate regulatory guidelines, unless otherwise requested by the client. NVLAP accreditation applies only to polarized light microscopy of bulk samples and transmission electron microscopy of AHERA air samples. This report must not be used to claim, and does not imply product certification, approval, or endorsement by NY ELAP, AIHA, NYLAP, NIST, or any agency of the Federal Government. All rights reserved. AMA Analytical Services, Inc.

An ATHA (#100470), NVLAP (10 BESTOAVAIUABLE:COPY(#10920) Accredited Laboratory FOIA Requested Record #J-15-0085 (MA) Posted to NGB FOIA Reading Room May, 2018 4475 Forbes Blvd. · Lanham, MD, 20706 · (301) 459-2640 · Toll Free (800) 346-0961 · Fax (301) 459-2643 Released by National Guard Bureau Page 2664 of 3473

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			P.O. Nu	mber:	W912K6-09-A-0003		Date Analyzed:	8/6/2010	Report Date:	8/9/2010
Attention:	Non-Respo	onsive	Summa	ary of A	tomic Absor	ption Ar	alysis for Lead			Page 2 of 2
AMA Sample Number	Client Sample Number	Analysis Type	Sample Type	Air Volun (L)	ne Area Wiped (ft²)	Reportin Limit	g Total ug	Final Result	Com	ments
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Note: All results have two significant digits. Any additional digits shown should not be considered when interpreting the result.

Air and Wipe results are not corrected for any blank results

Final results for air and wipe samples are based on client supplied information nor verified by this laboratory.

All results are to be considered preliminary and subject to change unless signed by the Technical Director or Deputy. **Technical Manager:**

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This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these Laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from us. Sample types, locations, and collection protocols are based upon the information provided by the persons submitting them and, unless collected by personnel of these Laboratories, we expressly disclaim any knowledge and liability for the accuracy and completeness of this information. Residual sample material will be discarded in accordance with the appropriate regulatory guidelines, unless otherwise requested by the client. NVLAP accreditation applies only to polarized light microscopy of bulk samples and transmission electron microscopy of AHERA air samples. This report must not be used to claim, and does not imply product certification, approval, or endorsement by NY ELAP, AIHA, NVLAP, NIST, or any agency of the Federal Government. All rights reserved. AMA Analytical Services, Inc.

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Appendix C Photo Documentation BEST AVAILABLE COPY

Northampton RC



Drill Hall



Posted to NGB FOIA Reading Room May, 2018



Front Entry

Kitchen



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FOIA Requested Record #J-15-0085 (MA) Released by National Guard Bureau Page 2669 of 3473 BEST AVAILABLE COPY

Northampton RC



Storage Area



Boiler Room Posted to NGB FOIA Reading Room May, 2018



Locker Room



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Former Firing Range Released by National Guard Bureau Page 2670 of 3473 Appendix D IAQ and Lighting Survey Log Sheets

National Guard Industrial Hygiene Survey For Indoor Air Quality and Light Level

State	MA	City	Northampton	AQ						Light				
Date	7/28/2010	Inspector	Non-Responsive	Instrument				Q-TRAK 7	565-	Х		Instrument		CAL-LIGHT 400
Facility Description	Readiness Ctr			Serial Numbe	ər			7565X083	901	7		Serial Numbe	ər	K070277
Weather Conditions				Last Calibration				Sep-0	8			Last Calibration		30-Jul-09
Location	Function	No. Occupants	Time	Temp. (°F)	Exceeded	RH (%)	Exceeded	CO ₂ (ppm)	Exceeded	CO (ppm)	Exceeded	Illuminance (fc)	Insufficient	Illuminance Reference Value (fc)
1	Office	1	08:47AM	78.9	x	60.8	х	502		0.1		85.6		50
2	Office	0	08:48 AM	78.8		59.2		413		0.0		177.1		50
3	Office	0	08:49 AM	81.1	x	57.4	х	437		0.0		185.6		50
4	Office	1	08:50 AM	82.7	x	51.8	х	436		0.0		58.3		50
5	Storage	0	08:51 AM	82.9	x	51.2	х	545		0.0		66.0		5-30
6	Entry	0	08:52 AM	82.6	х	51.6	х	426		0.0		27.0		10
7	Office	0	08:53 AM	81.8	x	54.9	х	474		0.0		134.2		50
8	Classroom/Mess Hall	0	08:54 AM	80.9	x	53.2	х	476		0.0		113.9		50
9	Kitchen	0	09:00 AM	81.2	x	52.6	х	471		0.0		55.7		50
10	Storage	0	09:00 AM	81.2	x	59.6	х	443		0.2		5.9	х	30
11	Ladie's Room	0	09:04 AM	80.5	x	53.0	х	436		0.0		31.7		5
12	Men's Room	0	09:05 AM	80.5	x	55.0	х	445		0.0		33.0		5
13	Locker Room	0	09:06 AM	80.4	х	53.7	х	442		0.0		16.8		7
14	Mechanical Room	0	09:14 AM	80.1	х	54.3	х	448		0.1		24.8	х	30
15	Entry	0	09:17 AM	80.6	х	56.6	х	438		0.0		5.1	х	10
16	Entry	0	09:18 AM	80.7	Х	58.2	Х	427		0.1		6.2	х	10
17	Storage	0	09:20 AM	80.5	Х	55.0	Х	530		0.1		20.9		5-30
18	Office	0	09:22 AM	80.4	x	53.4	х	486		0.0		29.0	х	50
				Relative Humidity 30% 40%				nter Temp. .5°F-76.0°F .5°F-75.5°F .5°F-74.5°F	Summer Temp. 74.0°F-80.0°F 73.5°F-79.5°F 73.0°F-79.0°F					
				60	%		68.	.0°F-74.0°F	7	2.5°F-78.0°	F	1		

State	МА	City	Northampton	IAQ								Light			
Date	7/28/2010 Inspector			Instrument				Q-TRAK 7	565-	Instrument		CAL-LIGHT 400			
Facility Description	Readiness Ct	Serial Numb	7565X0839017						Serial Number		K070277				
Weather Conditions		Last Calibra			Sep-0	8			Last Calibration		30-Jul-09				
Location	Function	No. Occupant s	Time	Temp. (°F)	Exceeded	RH (%)	Exceeded	CO ₂ (ppm)	Exceeded	CO (ppm)	Exceeded	Illuminance (fc)	Insufficient	Illuminance Reference Value (fc)	
19	Supply Room	0	09:25AM	80.3	х	53.2	Х	494		0.0		80.9		5-30	
20	Assembly Hall	0	09:26 AM	80.7	х	53.1	Х	420		0.0		316.1		30-50	
				Relative	Hur	nidity	Wi	inter Temp.	S	ummer Terr	ip.				
				30	,	68	.5°F-76.0 [°] F	74.0°F-80.0°F			1				
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				60)%		68	.0°F-74.0°F	72.5°F-78.0°F		1				

URS

Prepared For:

National Guard Bureau Army National Guard Region North Industrial Hygiene Office 301 – IH Old Bay Lane Havre De Grace, Maryland 21078

Prepared By:

URS Corporation 5 Industrial Way Salem, New Hampshire 03079

INDUSTRIAL HYGIENE SURVEY REPORT NORTHAMPTON ARMORY COLONEL LAVALEE LANE NORTHAMPTON, MASSACHUSETTS



Office Manager

July 2005 PN: 39741509



Project Manager

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- Appendix C Hazardous Materials List
- Appendix D Analytical Results
- Appendix E Training Certificates
- Appendix F Photographs
- Appendix G Recommendations for Surface Lead Dust in Armories
- Appendix H Policy and Responsibilities for Inspection, Evaluation, and Operation of ARNG Indoor Firing Ranges (IFR) and Guidelines for Rehabilitation, Conversion, and Cleaning

FINDINGS AND RECOMMENDATIONS

Findings	Recommendation	Risk Assessment Code
Lead was detected in a wipe sample collected from the former firing range in amounts greater than 500 µg/ft ²	Personnel trained in accordance with the OSHA Lead Standard should clean the drill hall where lead was detected in quantities of greater than 200 micrograms per square foot (OSHA 29 CFR 1910.1025(h)(1))	RAC 4
Asbestos Damaged boiler header and breeching insulation containing greater than 1% asbestos is present in the boiler room.	Remove and replace damaged asbestos-containing floor tile and window glazing. Work should be completed by personnel trained in accordance with federal regulations (OSHA 29 CFR 1910 1001(k)(1))	RAC 3
No site specific asbestos operations and maintenance program available.	Develop a site specific asbestos operations and maintenance program to manage asbestos- containing materials (OSHA 29 CFR 1910.1001(j))	RAC 3
Hazard Communication No site-specific hazard communication plan available.	Develop a site specific hazard communication plan to manage hazardous materials (OSHA 29 CFR 1910.1200(e))	RAC 4
Secondary containers in the janitors closet were not labeled	Label all secondary containers unless intended for immediate use (OSHA 1910.1200(f)(5))	RAC 4

This is
1.0 SUMMARY

At the request of the National Guard Bureau Region North Industrial Hygiene Office (NGB), URS Corporation (URS) conducted an industrial hygiene survey at the Armory located at Colonel Lavalee Lane in Northampton, Massachusetts. This report includes an executive summary, a description of the survey protocol, a discussion of the survey evaluation and findings and a list of conclusions and recommendations.

On February 4, 2004, Mr. Non-Responsive an industrial hygienist with URS, conducted a site visit to the Armory in Hillsborough, New Hampshire. The purpose of this site visit was to conduct an industrial hygiene survey, which included the collection of air samples, bulk samples, lighting measurements, and a review of site health and safety procedures. SGT of the Commonwealth of Massachusetts Army National Guard was Mr Non-Responsive site contact for this survey.

A shop layout drawing of the facility, which shows the locations where measurements were made during this survey, is contained in Appendix A.

2.0 ADMINISTRATIVE AREA

2.1 Operation Description

This building area includes multiple offices located throughout the building with desks and computer workstations. The floors in this area were covered by 9" x 9" vinyl tiles presumed to be asbestos containing. Floor tiles were in good condition throughout the administrative areas.

2.2 Chemical and Physical Agents Sampled

2.2.1 Relative Humidity

Relative humidity levels were measured using a TSI Q-Track (Model 8551). Relative humidity on the day of the survey averaged 29.5%. The American Society of Heating Refrigerating and Air Conditioning Engineers (ASHRAE). in its standard 55-2004, recommends that relative humidity levels be maintained between 30 to 60% for worker comfort and to reduce the potential for mold growth.

2.2.2 Carbon Dioxide

On the day of the survey, carbon dioxide measurements were made at various locations throughout the Readiness Center. Carbon dioxide concentrations ranged from 429 to 579 parts per million (ppm), with an average of 450 ppm. Carbon dioxide levels were measured using a direct reading TSI Q-Track (Model 8551).

Carbon dioxide is a normal constituent of the atmosphere and ranges from about 250 to 450 ppm. The major source of excess carbon dioxide in the indoor environment is people. Other sources can include open-flame heaters, fermentation processes, and motor vehicles. Carbon dioxide itself is not normally a cause of indoor air quality problems because concentrations must exceed 5,000 to 10,000 ppm before health effects such as headache, drowsiness, and increased respiration are noted. Typically, carbon dioxide is used as an indicator of the adequacy of fresh air intake. As the concentration of carbon dioxide increases, so do the background levels of other air contaminants. ASHRAE recommends that levels of carbon dioxide be maintained below 700 ppm above background level. Given a background level of 350 ppm on the day of the survey, the ASHRAE limit would be 1050 ppm.

2.2.3 Lighting

Lighting in the administrative area was measured using a Sper Scientific Ltd. Light Meter (Model 840020C). Table 2-1 below shows lighting measurements and the recommended lighting requirement ANSI / IESNA RP –1-04 American National Standard Practice for Office Lighting).

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BEST AVAILABLE COPY Table 2-1 Lighting Measurements and Recommended Lighting Requirements

Location	Function	Measured Illuminance (lux)	Recommended Minimum Illuminance (lux)
Admin # 1	Administrative Duties	761	500
Admin # 4	Administrative Duties	630	500j

On the day of the survey the illuminance in the administrative area was adequate.

2.2.4 Lead

Wipe testing for lead was conducted at three Administrative Areas using ghost wipes, which meet ASTM E 1792 standards. The analytical report from AMA Analytical Services, Inc, (AMA) is contained in Appendix D. Table 3-1 below shows the results of the lead sampling.

Table 2-2 Levels of Lead Dust Found in the Administrative Area

Sample Location	URS Sample Number	Area Wiped (ft ²)	Result (µg/ft ²)	Maximum Safe Surface Contamination Level (µg/ft ²)
Admin Room #1 – Near	0204-04	1.000	. <12	200
Entry (Floor) Foyer – Near Door (Floor) Mess Hall (Window Sill)	0204-05 0204-06	1.000	14 17	200

One paint chip was collected in the locker room (Photo # 0016) where paint was peeling and sent to AMA for analysis. The sample was found to contain lead in a concentration within the allowable limits of the U.S. Housing and Urban Development (HUD) Lead-Based Paint Guidelines. Levels of lead greater than 0.5% by weight are referred to as "lead-containing" (Section 1017 of the Residential Lead-Based Paint Hazard Reduction Act of 1992 (also referred to as Title X)). Table 2-3 below shows the results of the lead paint testing.

Table 2-3 Level of Lead in Paint Found in the Administrative Area

Sample Location	URS Sample Number	Reporting Limit Final Result (% by Weight) (% by Weight)	:
Locker Room	0204-16	0.01 0.021	

The analytical report from AMA is contained in Appendix D.

2.3 Ventilation System Evaluation

Not applicable to this operation.

2.4 Noise Measurements

Not applicable to this operation.

2.5 Personal Protective Equipment

Not applicable to this operation.

2.6 Interpretation of Results

<u>GENERAL</u>: In general, the administrative area was neat and orderly. The fire exits and extinguishers were marked and easily accessible.

<u>LIGHTING</u>: On the day of the survey the illuminance in the administrative area was adequate.

<u>LEAD</u>: Wipe samples were collected for analysis of lead content in three locations and were determined to be below the limits set by the National Guard Bureau (See Appendix G). A paint chip was collected from peeling paint in the locker room and was determined to contain less than 0.5% lead by weight and therefore not "lead containing"

3.0 FORMER FIRING RANGE

3.1 Operation Description

The former firing range has been dismantled and this building area located in the basement is now primarily used for storage.

3.2 Chemical and Physical Hazards Sampled

3.2.1 Lead

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Wipe testing for lead was conducted in the former firing range using ghost wipes, which meet **A**STM E 1792 standards. The analytical report from AMA is contained in Appendix D. Table 3-1 below shows the results of the lead sampling.

Sample Location	URS Sample Number	Area Wiped (ft ²)	Result (µg/ft²)	Maximum Safe Surface Contamination Level (µg/ft ²)
Former Firing Range-Near Bay Door (Floor)	0204-10	1.000	140	200
Former Firing Range-Near Bay Door (Shelf)	0204-11	1.000	82	200
Former Firing Range- Impact Area (Storage Box)	0204-12	1.000 I	76	200
Former Firing Range- Impact Area (Floor)	0204-13	1.000	580	200

Table 3-1 Levels of Lead Dust Found in the Former Firing Range

One air sample for lead dust was also collected in the former firing range. Table 3-2 below shows the result of this air sample.

Table 3-2 Level of Lead Found in the Air

Sample Location	URS Sample	Air Volume	Result	OSHA's PEL	
Former Firing Range	0204-01	289	<10	50.0	•

On the day of the survey, the airborne lead dust level in the former firing range was found to be acceptable, below OSHA's permissible exposure limit (PEL) for lead (29 CFR 1910.1025(c)) of 50.0 μ g/m³ averaged over an 8-hour day. The analytical report from AMA is contained in Appendix D.

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URS 5

3.3 Ventilation System Evaluation

Not applicable to this operation.

3.4 Noise Measurements

Not applicable to this operation.

3.5 Personal Protective Equipment

Not applicable to this operation.

3.6 Interpretation of Results

<u>LEAD</u>: One of the five surface wipe samples collected in the former firing range was found to contain lead dust levels which exceeded the maximum limit set by the National Guard Bureau (See Appendix G). URS recommends that an appropriately licensed lead contractor clean the former firing range. Guidelines for the rehabilitation conversion and cleaning of indoor firing ranges are provided in Appendix H.

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4.0 DRILL HALL

4.1 Operation Description

The drill hall is currently used for assembling personnel, storing vehicles and a locker area. The walls are constructed of cinder blocks with a concrete floor.

4.2 Chemical and Physical Agents Sampled

4.2.1 Lead

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Wipe testing for lead dust was conducted in the drill hall using ghost wipes, which meet ASTM E 1792 standards. The analytical report from AMA is contained in Appendix D. Table 4-1 below shows the results of the lead sampling.

Sample Location	URS Sample Number	Area Wiped (ft ²)	Result (μg/ft ²)	Maximum Safe Surface Contamination Level (μg/ft ²)
Drill Hall – Near Foyer (Floor)	0204-07	1.000	17	200
Drill Hall – Center (Floor)	0204-08	1.000	19	200
Drill Hall – Rear (Floor)	0204-09	1.000	52	200

Table 4-1 Levels of Lead Dust Found in the Drill Hall

One air sample for lead dust was collected in the drill hall. Table 4-2 below shows the result of this air sample.

Table 4-2 Level of Lead Found in the Air

Sample Location	URS Sample Numbe	ег Эг	Äir Vo (L)	lume	Resul (µg/m	t OSHA 3) PEL(L	√s ιg/m³) ⊨
Drill Hall # 14	0204-02		236		<13	50.0	

On the day of the survey, the airborne lead dust level in the drill hall was found to be acceptable, below OSHA's PEL for lead (29 CFR 1910.1025(c)) of 50.0 μ g/m³ averaged over an 8-hour day.

4.2.2 Asbestos

No suspect materials were sampled in this area.

4.3 Ventilation System Evaluation

Not applicable to this operation.

4.4 Noise Measurements

Not applicable to this operation.

4.5 Personal Protective Equipment

Not applicable to this operation.

4.6 Interpretation of Results

<u>LEAD</u>: Wipe samples collected in the drill hall for lead were found to be within allowable limits.

5.0 BOILER ROOM

5.1 Operation Description

The boiler room is a mechanical space constructed of cinder block walls with a concrete floor, containing a furnace and associated piping.

5.2 Chemical and Physical Agents Sampled

5.2.1 Asbestos

Bulk samples were collected from damaged suspect asbestos-containing materials (ACM) in this area for a determination of asbestos content. Analytical procedures were performed in accordance with the U.S. Environmental Protection Agency (EPA) Recommended Method for the Determination of Asbestos in Bulk Samples by Polarized Light Microscopy and Dispersion Staining (PLM/DS) (EPA-600/M4-82-020. EPA-600/R-93-116). Table 5-1 below presents the results of the sample analysis.

Table 5-1 Sample Results of Suspect ACM

Sample Location	Material Sampled	URS Sample Number	Total Asbestos (%)
Boiler Room	Boiler Header Insulation	0204-17	60
Boiler Room	Boiler Breeching Insulation	0204-18	60

The U. S. Environmental Protection Agency (EPA) states that any material with greater than 1% asbestos must be treated as ACM (U.S. EPA, Title 40 CFR Part 763.87 (c) (2)). The analytical report from AMA Analytical Services, Inc. is contained in Appendix D. Mr. Non-Responsive asbestos inspector training certificate is provided in Appendix E.

5.3 Ventilation System Evaluation

Not applicable to this operation.

5.4 Noise Measurements

Not applicable to this operation.

5.5 Personal Protective Equipment

Not applicable to this operation.

5.6 Interpretation of Results

<u>ASBESTOS:</u> Damaged asbestos-containing boiler breeching, header insulation and debris should be cleaned and repaired by properly trained and licensed contractors.

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6.0 SAFETY AND INDUSTRIAL HYGIENE PROGRAMS

6.1 Confined Spaces

No safety program was found regarding confined spaces. No training records were found on site. A confined spaces program is not required for this site.

6.2 Hearing Conservation

No safety program was found regarding hearing conservation. No training records were found on site. A hearing conservation program is not required for this site.

6.3 Respiratory Protection

No safety program was found regarding respiratory protection. No training records were found on site. A respiratory protection program is not required for this site.

6.4 Hazard Communication

No program was found regarding hazard communication. No training records were found on site. A site-specific hazard communication program is required for this site and should include communication of hazards to employees, management of material safety data sheets, chemical labeling and spill protection.

6.5 Personal Protective Equipment

No safety program was found regarding personal protective equipment. No training records were found on site. A personal protective equipment program is not required for this site.

7.0 REFERENCES

American National Standards Institute

ANSI/ESNA RP-1-04: American National Standard Practice for Office Lighting

American Society of Heating Refrigerating and Air-Conditioning Engineers

ANSI/ASHRAE Standard 62-2001: Ventilation for Acceptable Indoor Air Quality

Army Corps of Engineers

Safety and Health Requirements Manual EM 385-1-1 November 2003.

Department of the Army

Ergonomics Program Pamphlet 40-21 (15 August 2003)

Policy and Responsibilities For Inspection, Evaluation and Operation of Army National Guard Indoor Firing Ranges (National Guard Regulation 385-15 30 December 2002)

Department of Defense

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DoD Hearing Conservation Program Standard 6055.12 April 1996

Creating an Ideal Workstation: A Step-by-Step Guide

U. S. Environmental Protection Agency

Asbestos Hazard Emergency Response Act (40 CFR Part 763)

National Emissions Standards for Hazardous Pollutants (40 CFR Part 61)

U. S. Housing and Urban Development

Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (1995, 1997)

U. S. Occupational Safety and Health Administration

Standard for General Industry: 29 CFR 1910

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APPENDIX A

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SHOP DRAWING



 APPENDIX B

PERSONNEL LIST

NO STAFF ON SITE

APPENDIX C

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HAZARDOUS MATERIALS LIST

Hazardous Material Data Sheets

Shelf FL-0101 FL-0102 FL-0103 FL-0104 FL-0105 FL-0106 FL-0107 FL-0108 FL-0109 FL-0110 FL-0111 FL-01112 FL-0113 FL-0114	Item 3M Super 77 Spray Adhesive So-Sure Flat White 37875 So-Sure Flat Red 11134 So-Sure Flat Orange A-A-173 So-Sure Flat Orange 12197 Rifle Bore Cleaner CLP LAW Weapons Oil Artic Adhesive Tent Patching WD-40 Methanol Thinner Aircraft Diesel Starting Fluid Propane	NSN 8010-00-584-3150 8010-00-141-2952 8010-00-958-8148 8010-00-584-3148 6850-00-224-6657 9150-01-053-6688 9150-00-292-9689 8040-00-264-3848 8030-01-439-0681 6810-00-597-3608 8010-01-200-2637 2910-00-646-9727 6830-00-584-3041	UJ 16 oz Cans 10.25 oz Cans 10.25 oz Cans 10.25 oz Cans 10.25 oz Cans 10.25 oz Cans 10.25 oz Cans 1 Gal 1 Qt 1/2 pm1 16 oz Cans 1 Gal 1 Gal 22 oz 14.1 oz	Amount 4 5 1 2 8 11 2 1 5 11 5 1 3 3	Data Sheet On Har Yes Yes Awaiting Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes
FL-0106 FL-0107 FL-0108 FL-0109 FL-0110 FL-0111 FL-0112 FL-0113 FL-0114	Rifle Bore Cleaner CLP LAW Weapons Oil Artic Adhesive Tent Patching WD-40 Methanol Thinner Aircraft Diesel Starting Fluid Propane	6850-00-224-6657 9150-01-053-6688 9150-00-292-9689 8040-00-264-3848 8030-01-439-0681 6810-00-597-3608 8010-01-200-2637 2910-00-646-9727 6830-00-584-3041	8 oz 8 oz 1 Gal 1 Qt 1/2 pm1 16 oz Cans 1 Gal 1 Gal 22 oz 14.1 oz	8 11 2 1 5 11 5 1 3 3	Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes

APPENDIX D

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ANALYTICAL RESULTS



Page 1 of 2

Summary of Atomic Absorption Analysis for Lead

AMA Sample Number	Client Sample Number	Analysis Type	Sample Type	Air Volume (L)	Arca Wiped (ft ²)	Rep Li	orting imit	1	inal Res	ult	Comments
0448628	0204-04	Flame	Wipe	****	1.000	12.00	ug/ft²		12	ug/ft²	
0448629	0204-05	Flame	Wipe	****	1.000	12.00	ug/ft²		14	ug/ft²	
0448630	0204-06	Flame	Wipe	****	1.000	12.00	ug/ft2		17	ug/fi²	
0448631	0204-07	Flame	Wipe	****	1.000	12.00	ug/ft ²		17	ug/ft²	
0448632	0204-08	Flame	Wipc	****	1.000	12.00	ug/ft ²		19	ug/ft²	
0448633	0204-09	Flame	Wipc	****	1.000	12.00	ug/ft ²		52	ug/ft²	
04486.34	0204-10	Flame	Wipe	****	1.000	12.00	ug/ft²		140	ug/ft ²	
0448635	0204-11	Flame	Wipe	****	1.000	12.00	ug/ft ²		82	ug/ft²	
0448636	0204-12	Flame	Wipe	****	1.000	12.00	ug/ft²		76	ug/th2	
0448637	0204-13	Flame	Wipc	****	1.000	12.00	ug/ft ²		580	ug/ft²	
0448638	0204-14	Flame	Wipe Blank	****	1.000	12.00	ug/ft²	<	12	ug/fl ²	
0448639	0204-15	Flame	Wipc Blank	****	N/A	12.00	ug	<	12	ug	
0448640	0204-16	Flame	Paint Chip	****	N/A	0.01	%Pb		0.021	%РЬ	
0448641	0204-01	Flame	Air	289	N/A	10.38	ug/m ³	<	10	ug/m'	
0448642	0204-02	Flame	Air	236	N/A	12.71	ug/m²	<	13	ug/m³	

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APPENDIX E

TRAINING CERTIFICATES





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PHOTOGRAPHS

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FOIA Requested Record #J-15-0085 (MA) Released by National Guard Bureau Page 2706 of 3473



APPENDIX G

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RECOMMENDATIONS FOR SUFACE LEAD DUST IN ARMORIES

Subject: Recommendations for Surface Lead Dust in Armories

1. In armories that do not contain childcare facilities, the National Guard Bureau (NGB) Region North Industrial Hygiene Office recommends cleaning the areas in which sample results are greater than 200 micrograms per square foot ($\mu g/\hbar^2$). If a special function will be held in which children will be present in this facility, consider thoroughly cleaning the areas that will be accessible to children prior to the function. This guidance is based on professional judgment, risk assessments, adaptation of Occupational Safety and Health Administration (OSHA) guidance, and feasibility of cleaning to a certain level.

a. Environmental Protection Agency (EPA) standards (40 Code of Federal Regulations (CFR) 745.227(h)(3)) are not directly applicable because they are criteria for dust-lead hazards developed for floors (40 μ g/ft²) and windowsills (250 μ g/ft²) in residential dwellings and child occupied facilities. A child occupied facility is defined as a building, or portion of a building, constructed prior to 1978, visited regularly by the same child, 6 years of age or under, on at least two different days within any week (Sunday through Saturday period), provided that each day's visit lasts at least 3 hours and the combined weekly visit lasts at least 6 hours, and the combined annual visits last at least 60 hours. Most of the wipe samples in armories were collected in undisturbed areas and therefore, results are worst case scenarios and do not correlate to these standards.

b. OSHA has no specific requirement for work area surfaces. The lead standard (29 CFR 1910.1025(h)) states that all surfaces shall be maintained as free as practicable of accumulations of lead dust. In workplaces where lead dust is generated, surface levels may be much higher, but personnel exposures can be controlled by limiting airborne lead levels and following good cleanup and hygienic practices.

c. OSHA used to cite a level of 200 μ g/ft² in their Technical Manual and 29 CFR 1926.62 as guidance to its own inspectors for evaluating the cleanliness of lunchroom and locker room surfaces that are supposed to be kept as clean as possible.

d. In a report titled Derivation of Wipe Surtace Screening Levels for Environmental Chemicals, the US Army Center for Health Promotion and Preventive Medicine (USACHPPM) has determined that 200 µg/ft² is a safe surface contamination level. They have also applied these standards as the decontamination levels for surfaces in administrative offices.

e. It should be noted that levels above these recommendations do not necessarily mean there is a significant hazard to workers who are following good cleaning and hygienic practices since there is no correlation between wipe and air samples. Rather, we recommend these levels as a precautionary measure.

2. The NGB Occupational Health Branch is developing guidance for armories that are used as childcare facilities. All states will receive this guidance when it is completed. In the interim, we recommend the following actions:

a . Clean all areas that will be accessible to children to the EPA dust-lead standard for children 6 years of age or under (40 μ g/ft² on floors and 250 μ g/ft² on windowsills)

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b. Refer to the local authorities' regulations since they can be more stringent than federal regulations.

c. Post signs in the area to inform people of the presence of lead dust and its effects.

d. If soldiers clean weapons in the facility change the policy so that they cannot clean their weapons in the facility, or if they are allowed to clean their weapons indoors, they must clean the area by wet wiping and mopping the area when they are done.

e. If the paint is peeling, contact the state Environmental Office to test for lead content and provide recommendations.

3. Air samples collected on individuals in the armory were well below OSHA's permissible exposure limit for lead (29 CFR 1910.1025(c)) of 0.05 mg/m³ averaged over an 8-hour day. Therefore, based on these conditions there is currently no overexposure to personnel from lead dust in this building,

APPENDIX H

POLICY AND RESPONSIBILITIES FOR INSPECTION, EVALUATION AND OPERATION OF ARNG INDOOR FIRING RANGES (IFR) AND GUIDELINES FOR REHABILITATION, CONVERSION, AND CLEANING



DEPARTMENTS OF THE ARMY AND THE AIR FORCE NATIONAL GUARD BUREAU 1411 JEFFERSON DAVIS HIGHWAY ARLINGTON, VA 22202-3231

NGB-AVS

5 December 2001

MEMORANDUM FOR THE ADJUTANTS GENERAL OF ALL STATES, PUERTO RICO, THE US VIRGIN ISLANDS, GUAM, AND THE COMMANDING GENERAL OF THE DISTRICT OF COLUMBIA

SUBJECT: (All States Log Number P01-0075) Army National Guard (ARNG) - Policy and Responsibilities for Inspection, Evaluation, and Operation of ARNG Indoor Firing Ranges (IFR) and Guidelines for IFR Rehabilitation, Conversion and Cleaning

1. References:

a. AR 385-63, Policy and Procedures, 15 November 1983.

b. DODI 6055.9-STD, DOD Ammunition and Explosive Safety Standards, August 1997.

c. DODIG Report #98-170, subject: ARNG and U.S. Army Reserve Command Small Arms IFR, 30 June 1998.

d. AR 385-10, The Army Safety Program, 29 February 2000.

e. All States Memorandum, NGB-AVS, 18 September 2000, subject: (All States Log Number P00-0059) Army National Guard (ARNG) - Policy and Responsibilities for Inspection, Evaluation, and Operation of ARNG Indoor Firing Ranges.

2. The policy and procedures for Inspection, Evaluation, and Operation of ARNG Indoor Firing Ranges are enclosed. Guidelines for Rehabilitation, Conversion, and Cleaning of IFRs are provided in the Addendum. These policies apply to all persons responsible for the operation, rehabilitation, conversion, and cleaning of ARNG IFR and satisfy the requirements of the references listed above.

3. The enclosed document contains sample formats of the forms necessary for the routine operation of IFRs. Additionally, an IFR Standing Operating Procedure is provided to assist each State/Territory in developing local guidance consistent with the needs of the individuals that use their range(s).

4. The contents of this memorandum will be incorporated into the revision of NGR 385-15, Policy and Responsibilities for Evaluation, and Operation of ARNG Indoor Firing Ranges, and National Guard Pamphlet 385-15, Guidance and Procedures for IFR Rehabilitation, Conversion, and Cleaning. NGB-AVS

SUBJECT: (All States Log Number P01-0075) Army National Guard (ARNG) - Policy and Responsibilities for Inspection, Evaluation, and Operation of ARNG Indoor Firing Ranges (IFR) and Guidelines for IFR Rehabilitation, Conversion and Cleaning Inspection

5. This memorandum expires 30 November 2002, unless sooner rescinded or superseded.

6. Point of contact is Colonel NON-Responsive Chief, Aviation and Safety Division, at DSN 327-7700 of 703-607-7700.

FOR THE CHIEF, NATIONAL GUARD BUREAU:

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Encl as

CF:

Lieutenant General, GS Director, Army National Guard

NGB-IG NGB-ART NGB-ARO NGB-ARE NGB-ARI NGB-ARS NGB-PL NGB-ARZ-PC Each State IG Each State Safety Office Each State Occupational Health Nurse Each State Training Site Commander Each State USPFO Each Regional Industrial Hygienist
NGB-AVS-SG

SUBJECT: All States (Log Number P01-0075) Army National Guard (ARNG) Safety and Occupational Health Program – POLICY AND RESPONSIBILITIES FOR INSPECTION, EVALUATION AND OPERATION OF ARMY NATIONAL GUARD INDOOR FIRING RANGES

Safety POLICY AND RESPONSIBILITIES FOR INSPECTION, EVALUATION AND OPERATION OF ARMY NATIONAL GUARD INDOOR FIRING RANGES

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Addendum

Guidelines and Procedures for IFR Rehabilitation, Conversion, and Cleaning

1-1. General

This policy prescribes Army National Guard (ARNG) policy and responsibilities for inspection, evaluation and operation of ARNG indoor firing ranges. It applies to all training, maintenance, and firing activities conducted on indoor firing ranges. This policy supplements AR 385-10, AR 385-63, and AR 385-64.

1-2. Explanation of abbreviations and terms

Abbreviations used in this publication are listed in Appendix A. Terms that apply specifically to IFRs can be found in paragraph 1-37 of this regulation.

1-3. Policy

a. Ammunition shall only be fired in properly classified indoor firing ranges.

b. Detailed initial and periodic inspections of all indoor firing ranges shall be conducted as prescribed to ensure compliance with current safety and health standards.

c. ARNG or civilian personnel shall not use any indoor firing range, which has been classified as unsafe.

d. A DA Form 4753, Notice of Unsafe or Unhealthy Working Condition, shall be posted on the entrance to all ranges classified as unsafe.

e. Ranges classified as unsafe shall be secured, sufficiently to preclude entry.

f. New ranges shall be designed using the latest standards provided by NGB-ARI.

g. The use of indoor firing ranges for purposes other than small arms weapons training and target practice is strictly prohibited.

Responsibilities

1-4. Director, Army National Guard (DARNG)

The Director, Army National Guard establishes policy and provides resources necessary to implement the ARNG Range Safety program per AR 385-63.

1-5. Chief, Aviation and Safety (NGB-AVS)

The Chief, NGB-AVS, has staff responsibility for supervising the ARNG Range Safety Program and to: a. Identify the resources necessary to effect policy and standards throughout the ARNG in

accordance with (IAW) AR 385-63.

b. Coordinate with other HQDA staff agencies and the Adjutants General on matters pertaining to the ARNG Range Safety Program.

1-6. Chief, Safety and Occupational Health Branch (NGB-AVS-S)

The Chief, NGB-AVS-S shall- -

a. Develop, implement, and manage the ARNG Range Safety Program.

b. Review the design of all ranges to be constructed or remodeled for compliance with safety and occupational health standards and make recommendations to appropriate approval authority.

c. Determine the classification of indoor firing ranges based upon input from the state safety manager, the ventilation measurements, and the air monitoring results (breathing zone and general area).

d. Conduct an initial evaluation of new IFRs and reevaluate every two years thereafter. An IFR will be reevaluated if modifications to the range structure or ventilation system are made. Approval from the State Safety Office and Regional Industrial Hygienist must be obtained before the range is returned to

f. Determine and publish the training requirements for the persons who will conduct range service. evaluations.

1-7. Chief, Training Division (NGB-ART)

The Chief, NGB-ART shall provide weapons training strategies consistent with AR 350-41 and the Standard and Training Commission.

1-8. Chief, Installations Division (NGB-ARI)

The Chief, NGB-ARI shall- -

a. Provide the design standards for the construction of indoor firing ranges. b. Ensure that the designs for new and remodeled indoor firing ranges meet approved standards and

are reviewed and approved by the Safety and Occupational Health Branch.

1-9. The State Adjutant General

The State Adjutant General shall- a. Establish, supervise, and direct a safety and occupational health program for users of indoor firing

b. Ensure all ranges being used are classified as "safe" or "limited use", those ranges classified as rances. "Ilmited use" under the criteria of this regulation are used on a limited basis, and all ranges classified as

"unsate" under the criteria of this regulation are not used. c. Determine and identify funding requirements to ensure development of a comprehensive safety and occupational health program for the users of indoor firing ranges.

1-10. State Safety Manager

State Safety Managers shalla. Perform or coordinate performance of all inspections and evaluations of indoor firing ranges.

b. Determine whether the range is "safe" or "unsafe" based on the physical safety inspection. c. Review and approve all indoor firing range SOPs to ensure all requirements are met. An

example SOP can be found at Figure 1-3 of this regulation. d. Perform design review of IFRs to ensure current safety and occupational health related compliance

e. Make recommendations to the Adjutant General regarding the disposition of "unsafe" and "limited requirements are met.

use ranges.

 Approve the use of the range by non-military organizations. g. Maintain copies of all range inspections, ventilation measurements and visitors log.

1-11. State Occupational Health Nurse

The Occupational Health Nurse shall- -

a. Schedule medical surveillance examinations for individuals who are or may be exposed to Lead above the action level for more than 30 days per year.

b. Maintain exposure monitoring (air sampling results) and medical surveillance records for 40 years or the duration of employment plus 20 years, whichever is longer, as prescribed in 29 CFR 1910.1025,

c. Record the worker's exposure data on DA Form 4700 (Medical Record-Supplemental Medical Appendix C, Section I. Data) overprints, IAW TB MED 503 peragraph 3-2 f (1)(a), and DODI 6055.5-M Occupational Health

d. Institute a training program that identifies the bazards and preventive measures for all personnel Surveillance Manual. with a potential for exposure to Lead.

1-12. State Environmental Office

The State Environmental Office shall coordinate disposal of all hazardous waste generated from range operation, cleaning, and maintenance.

1-13. Facility Commanders

Commanders of facilities with indoor firing ranges shall maintain and be familiar with AR 385-63, and the provisions of this regulation, to ensure that --

a. A Safety and Occupational Health Compliance Program is developed as specified in this regulation.

b. Indoor firing ranges are secured when not in use.

c. A custodian is appointed for all indoor firing ranges under his/her area of command.

d. The custodians of the indoor firing ranges maintain the visitors log and follow procedures IAW

paragraph 1-14 of this regulation. e. All non-military organizations using indoor firing ranges under their area of command have signed a contract/agreement delineating the conditions of range use and llability. The contract/agreement should also include provisions for hazardous waste disposal expenses.

f. A SOP for each range is established, enforced and approved by the State Safety and Occupational Health Office.

g. All required signs are posted IAW Section 1-22 of this regulation.

h. All individuals using indoor firing ranges under the facility commander's area of command have been provided with a copy of the range SOP or been briefed on the requirements of the SOP, and that these individuals have signed an agreement to follow the rules stated therein. See paragraph 1-29 for record maintenance requirements.

i. Range custodians are enrolled in respiratory protection and medical surveillance programs as required by paragraph 1-37 of this regulation (if applicable).

j. Range custodians have documentation to show that they have been educated about the health effects of exposure to Lead dust IAW 29 CFR 1910.1200 and 29 CFR 1910.1025. This is an annual requirement IAW this standard.

k. No equipment or furniture, such as tables, chairs or storage cabinets, is stored or maintained in the

. All range safety officers and maintenance personnel have a copy of this regulation, AR 385-63, and range. the range SOP and are famillar with and in compliance with all indoor firing range policies and procedures.

m. The range ventilation system is checked every 480 hours of operation IAW paragraph 1-27 of this regulation.

n. Personnel do not fire ammunition in excess of the allowable time as dictated by established exposure limits. (See Figure 1-1).

o. Exposure records shall be maintained IAW paragraph 1-34 when personnel are exposed to airborne Lead concentrations in excess of 0.03 milligrams per cubic meter (mg/m³).

p. Lead fragments are not removed from the bullet trap or surrounding areas except as coordinated

through the State Environmental Office. q. The use of M16 rifles using 5.56 mm ammunition in the indoor firing range is prohibited, except on ranges where the bullet trap is rated for 5 56 mm ammunition. Otherwise, the M16 shall be used with .22 caliber adapter and ammunition.

r. The ventilation system is in operation at all times during firing or cleaning.

1-14. Range Custodians.

Custodians shall- -

a. Ensure that all individuals using the indoor firing range understand the range safety regulations, rules, and SOP.

b. Ensure that all cleaning procedures are performed IAW the requirements of this regulation and the procedures prescribed in the Addendum. This includes documentation of dates, names of personnel and time on the range for all cleaning procedures. See paragraph 1-29 for record maintenance requirements.

c. Maintain the visitor log IAW the range SOP. As a minimum the log should include the names of the shooters, the amount of time spent in the range by each individual, the date of firing, the type(s) of ammunition fired, and the number of rounds fired. See paragraph 1-29 for record maintenance requirements.

d. Forward a copy of the visitor log to the State Safety and Occupational Health Managers on a quarterly basis

1-15. Unit Commanders

Unit Commanders shall- -

a. Enforce all range safety and occupational health procedures.

b. Maintain a record of time spent on the range for all personnel using "timited use" firing ranges as recorded by the range custodian.

c. Provide the State Occupational Health Nurse with a list of personnel firing in ranges classified as "Simited use" ranges for more than the prescribed times listed in Figure 1-1. See paragraph 1-29 for record maintenance requirements.

d. Designate range safety officers in writing.

e. Provide the State Occupational Health Nurse with a list of range safety officers and custodians.

f. Ensure all range safety officers and range custodians are enrolled in the Medical Surveillance and

Respiratory Protection Programs, as required.

1-16. Procedures, classification and use

Indoor firing ranges have been built in armories for many years. Each range design reflects the current emphasis and technology on protecting the health and safety of the shooter. Older ranges may not meet the current standards deemed necessary to accomplish this. However, under controlled conditions, many older ranges will not expose users to hazardous conditions.

1-17. Classification of ranges

Based on inspection data collected on the range inspection checklist (Figure 1-2), ranges shall be classified as "safe", "limited use" or "unsafe". Safe ranges permit authorized firing for military and civilian use. Limited use ranges permit use only under controlled conditions based on the personnel exposure limits for intermittent Lead exposure. (Figure 1-1). Unsafe ranges are not authorized for use under any conditions.

a. Building envelope. (Design standards may be found in DG 415-1, Appendix A or CEHND 1110-1-18).

(1) Safe ranges.

(a) Each firing lane is at least 4 feet wide.

(b) Pipes, conduits, lights, lighting fixtures and other projecting surfaces are baffled or covered by a material that will protect these items and prevent ricochets.

(c) Baffles do not disrupt the uniform airflow in the range.

(d) in older ranges, sidewall windows in front of the firing line have been removed and the openings sealed flush to the wall with materials compatible with the adjacent walls. New ranges are not built with windows in front of the firing line.

(2) Unsafe ranges.

(a) All firing lanes are less than 4 feet wide. If any one firing lane is less than 4 feet wide, that lane shall not be used for firing.

(b) Pipes, conduits or walls are not sealed to prevent migration of Lead dust to other areas of the range. (See the Addendum for wipe sample procedures used to determine if Lead dust is leaking from the range).

(c) There are open floor drains in the range.

(d) Carpet is located in any part of the range. (Contact the State Environmental Offices for hazardous waste disposal procedures.)

(e) Doors or windows located downrange of the firing line.

(f) Range buildings do not meet the other requirements of safe ranges as prescribed in the checklist in Figure 1-2 of this document.

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b. Ventilation

(1) Safe ranges.

(a) The range has an operational mechanical ventilation system.

(b) The average airflow at the firing line in each firing lane is at least 50 feet per minute (fpm).

(c) Air is exhausted at or behind the bullet trap.

(d) Supplied air is introduced into the range behind the shooters.

(e) The ventilation system is so constructed that air exhausted from the indoor firing range does not enter into another part of the building or any other air supply system.

(f) The exhaust exceeds the make-up air by approximately 10% to form a negative air pressure in the range in relation to adjoining areas.

(g) Air is not recirculated in the firing range unless equipped with monitoring equipment as specified in section 1-26 of this regulation.

(h) The static pressure, as measured from 6 inches inside the range entrance to 6 inches outside the range, is at least -. 05 inches of water gauge (wg) but does not exceed - 20 wg.

(i) A smoke test of the range shows laminar airflow in the range and no turbulence at the firing line. (See the Addendum, for troubleshooting guidance)

(j) In passive make-up air systems, the supply air louvers and exhaust fan shall be electrically Interlocked.

(k) In systems with active make-up air, the supply and exhaust fans shall be electrically interlocked. The make-up air fan should start after the exhaust fan to ensure the range maintains a negative pressure.

(I) Range air temperature should be between 65 degrees and 80 degrees Fahrenheit.

(2) Unsafe ranges.

(a) The airflow at the firing line on any lane is less than 50 fpm at any level and air sampling results suggest possible overexposure as determined by a competent person.

(b) The range has no mechanical ventilation.

(c) The ventilation system is constructed in a manner that allows exhaust air to enter into other parts of the building or another building air supply system.

(d) The make-up air exceeds the exhaust, which forms a positive air pressure in the range in relation to adjoining areas.

(e) Air is exhausted anywhere other than at the builet trap.

(f) Make-up air is supplied only from adjacent areas of the building with no provision for inclusion of

outside air. (g) The static pressure, as measured from 6 inches inside the range entrance to 6 inches outside the range, is measured less than -. 05 wg or in excess of -. 2 wg.

(h) The range is under positive pressure.

(i) The supply and exhaust air systems are not electrically interlocked.

c. Range lighting.

(1) Safe ranges.

(a) Lighting is uniform, non-glaring and does not cause shadows.

(b) Illumination is at least 100 foot candles on the targets and 30 foot- candles in all other areas.

(c) All lighting is protected by baffles and placed so that the shooler has an unobstructed view

down range. (d) Downrange lighting begins approximately 18 feet from the firing line and ends approximately 8 feet from the target line.

(e) Emergency lights are provided behind the firing line and are in working condition.

(f) Exit lights are provided as required.

(g) Lighting of at least 30-foot candles is provided behind the bullet trap for maintenance.

(2) Unsafe ranges.

(a) Illumination is below 100 foot-candles on targets or 30 foot-candles in other areas.

(b) Portions of the lighting fixtures are not protected by baffles.

- (c) Electrical hazard exists in the range.
- d. Bullet traps.

(1) Safe ranges.

(a) A bullet trap is permanently installed in the range.

(b) Bullet traps are of a commercial design that complies with the requirements of CEHND 1110-1-18, DG 415-1 App. A, and this regulation.

(c) The thickness of inclined plate/sand trap type builet trap shall be adequate to attenuate the maximum caliber of ammunition authorized to be fired on the range. See CEHND 1110-1-18, for thickness requirements for the bullet trap.

(d) All plate/sand trap type bullet traps shall be designed to prevent ricochets by directing the projectiles in the same direction they are traveling.

(e) Sandpits in plate/sand trap type backstops shall extend to a point directly below the leading edge of the sloped plate.

(f) Forward edges in a escalator or venetian blind type bullet trap are maintained in a knife edge condition to prevent ricochets.

(2) Unsafe ranges.

(a) Steel bullet traps are bowed, punctured or severely pitted.

(b) Plates in the bullet trap are flush with the other plates. Mold seams are ground smooth.

(c) Any type of portable bullet stop is used.

(d) Forward edges in a escalator or venetian blind type bullet trap are maintained in less than a knife edge condition

e. Targets and target carriers.

(1) Safe ranges.

(a) A target retrieval system is operable in all lanes and is constructed in such a manner as to minimize flat surfaces exposed to the firing line. (Firing lanes without a target retrieval system shall not be used).

(b) Only paper targets are used.

(2) Unsafe ranges. Target retrieval system is inoperable or not installed in the entire range, or target retrieval system exposes flat surfaces to the firing line.

f. Lead levels.

(1) Safe ranges.

(a) For personnel exposed less than 30 days per year, Lead levels do not exceed 0.05 mg/m³. (b) For personnel exposed more than 30 days per year and for all non-Department of Defense

(DoD) personnel, Lead levels do not exceed 0.03 mg/m3

(c) For personnel under the age of 18, see Figure 1-1.

(2) Limited use ranges.

(a) For personnel exposed less than 30 days per year, Lead levels exceed 0.05 mg/m³ but do not exceed 0.4 mg/m³ in any breathing zone or general area sample. Personnel exposures shall be controlled by limiting the shooters to the Ilmes described in Figure 1-1.

(b) For personnel exposed more than 30 days per year and for all non-DoD personnel, Lead levels exceed 0.03 mg/m³ but do not exceed 0.4 mg/m³ In any breathing zone or general area sample.

(3) Unsale ranges.

Lead levels in air sample results exceed 0.4 mg/m³ in any breathing zone or general area sample.

1-18. Range use

a. Indoor firing ranges shall not be used for any purpose other than firing. (i.e., they shall not be used for classrooms, exercise rooms, storage, etc.).

b. Ranges classified as unsafe may be used for other purposes only after proper decontamination IAW the guidance provided in the Addendum, Guidelines and Procedures for IFR Rehabilitation, Conversion, and Cleaning.

c. The ventilation system is in operation at all times during firing or cleaning.

d. Equipment or furniture shall not be stored or maintained in the range, plenum area or behind the

bullet trap. (For removal of equipment or furniture, use cleaning instructions provided in the Addendum). e. A hand-heid ABC-type fire extinguisher is located near the entrance door, inside the firing range.

1-19, Prohibitions

a. Personnel shall not be permitted in the plenum area during firing even if designed for observation.

b. Plenum area and area behind the bullet trap shall not be used for storage of any equipment.

c. An area directly in front of the plenum wall shall be kept clear at all times to preclude obstruction of

airflow.

d. Variable speed fans are not permitted.

e. Dry sweeping of indoors firing ranges is prohibited. Brooms shall not be stored in the range.

f. Walking downrange is prohibited for individuals other than maintenance and inspection personnel.

g. Pellets, BBs, magnum and armor piercing rounds are prohibited in all indoor firing ranges.

b. To prevent contamination with Lead dust, clothing or equipment that is not required for firing shall not be permitted into the range.

i. Storage of ammunition and explosives in indoor firing ranges is prohibited, except in approved and licensed facilities.

j. There are no open floor drains in the range.

k. Carpet will not be located in any part of the range (Contact the State Environmental Office for hazardous waste disposal procedures).

1-20. Personal protective equipment

a. Eye protection. All personnel in an indoor firing range during firing shall wear eye protection that meets the requirements of ANSI 287.1-1999, Practice for Occupational and Educational Eye and Face Protection.

b. Hearing protection. All personnel in an indoor firing range during firing shall wear Army approved hearing protection listed in DA Pam 40-501. When noise levels exceed 165 dBP, personnel must wear earplugs in combination with noise mufflers.

c. Respiratory protection. For respiratory protection requirements during indoor firing range conversion cleanup operations, see the Addendum.

1-21. Posting warning signs

a. The following signs shall be posted in or in the vicinity of indoor firing ranges IAW AR 385-63:

(1) Eating, Drinking and Smoking are prohibited

(2) Dry Sweeping is prohibited

(3) Wash Hands and Face Immediately Following Firing

(4) Only the Following Ammunition is authorized for use on this Range:

(5) Hearing Protection shall be properly worn during firing

(6) Proper Safety Glasses/Goggles shall be worn during firing

(7) Furniture or storage of other items of equipment is not permitted in the range

b. The following signs shall be posted on the entrance door to the range:

- (1) Noise Hazardous Area
- (2) Danger Lead Hazard Area
- (3) Pregnant women are not permitted in this area.

c. An Illuminated warning sign, which is interlocked with the range ventilation switch, shall be located outside of the firing range to alert individuals that the range is in use.

d. Each firing fane shall be numbered at the firing line and at the bullet trap visible to all shooters. This is to ensure shooters use the correct larget.

e. A warning sign shall be posted outside of the access door to the bullet trap, which warns personnel not to enter during range operation.

Note: All signs shall meet the requirements of DA Part 385-64.

1-22. Range Standing Operating Procedures.

a. Each indoor firing range shall have a written SOP, which is approved by the State Safety and Occupational Health Office, see figure 1-3.

b. Range SOPs shall include, as a minimum, the following:

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(1) The requirement for establishment and maintenance of a log of visitors for the indoor firing range. The log shall include the following information for all visitors:

(a) Name and age of shooter.

(b) Organizations (if civillan, include address and phone number).

(c) Sign-in and sign-out times and date.

(d) Type of ammunition used and number of rounds fired.

(2) The requirement for and contents of a mandatory safety briefing for all individuals prior to entering the range to be given by a designated competent range safety officer.

(3) Work practices including permissible and banned practices as specified by this regulation.

(4) Instructive guidance for all range procedures.

(5) Personnel responsibilities for performing the procedures, for supervising them, and reviewing and

updating the SOP.

(6) Authorized ammunition for the range. (7) The requirement for posting of signs IAW section 1-21 of this regulation.

(8) Cleaning and maintenance requirements.

(9) Personal protective equipment requirements for maintenance, firing and cleaning.

c. Refer to TG 208 for more general guidance on SOPs.

The first part of each inspection shall be the physical safety inspection conducted by the State Safety Manager. Once the firing range has passed this portion of the inspection, a competent person shall complete the ventilation survey and air sampling requirements.

1-24. Initial inspections

a. An initial inspection of all new and renovated indoor firing ranges shall be completed before the facility is accepted. The inspection report shall be kept on file with the State Safety and Occupational Health Office. The checklist in Figure 1-2 shall be used for this purpose. See paragraph 1-29 for record maintenance requirements.

b. Findings on the initial firing range inspection, ventilation measurements, and air sampling results shall determine the range classification.

1-25. Annual Inspections

a. A safety inspection of each active range shall be made annually to ensure safety standards, procedures and records are maintained in the operation of the range. These inspections shall be completed by State Safety personnel IAW AR 385-10. The checklist in Figure 1-2 shall be used for this purpose.

b. In accordance with AR 385-63, the annual inspection shall be performed within 45 days of the anniversary date of the initial inspection or the last annual inspection.

c. Verify that ventilation measurements have been recorded ever 480 hours of operation. d. Ensure that air sampling has been conducted after changes or additions have been made to the

range.

1-26. Ventilation requirements

a. Procedures for evaluating supply and exhaust ventilation systems, firing line velocities and static pressure readings are identified in the Addendum.

b. If air from the indoor firing range exhaust ventilation system is recirculated into the supply system of

the range, the system shall have a high efficiency particulate air (HEPA) filter with reliable back-up filter. In addition, controls to monitor the concentration of Lead and Carbon Monoxide in the return air shall be installed and programmed to bypass the recirculation system automatically if the filter system fails. This system shall be operating and maintained IAW 29 CFR 1910.1025(e)(4)(ii).

1-27. Air sampling requirements

a. Initial air sampling to determine airborne Lead dust levels during prescribed firing procedures shall be conducted for all IFRs prior to routine use. If initial determination reveals employee exposure to be at or above .003 ug/m³ sampling shall be repeated IAW 29 CFR 1910.1025(d)(8)(ii).

b. Air sampling shall be accomplished for each type of ammunition to be used in the range. (For air sampling procedures, see the Addendum).

c. After the Initial air sampling, air sampling is required only if changes or additions have been made to the range, there are changes in ammunition or weapons used in the range, or if changes have occurred in ventilation measurements. Once changes occur, air sampling shall be completed every twoyears and prior to range use.

d. ARNG Regional Industrial Hygienists are responsible for air sampling of Indoor firing ranges to determine airborne Lead concentrations. A competent person as designated by a Regional Industrial Hygienist may conduct the air sampling.

e. The State Occupational Health Nurse shall maintain copies of all air sampling results when required as part of personnel exposure records. See paragraph 1-11 for specific requirements.

1-28. Inspection reports

A completed inspection report shall be provided to the state Adjutant General for Information or action as appropriate. An information copy shall also be provided to the Commander of the facility and to the state safety manager. A complete inspection report shall consist of the completed safety inspection checklist, ventilation data, and air sample results (initial inspection and as required by paragraph 1-24 above). Subsequent inspections shall be made as a follow-up check against results of previous inspections to assure required corrective actions have been accomplished, and there are no adverse changes to the buildings' integrity, safety equipment, environment or safe operating procedures.

1-29. Record maintenance

a. All exposure monitoring and medical surveillance records shall be maintained for 40 years or the duration of employment plus 20 years, whichever is longer, as prescribed in 29 CFR 1910.1025, Appendix C.

b. The State Salety Manager shall maintain a record of all inspections for each indoor firing range in the state. All inspections after the initial one shall be used as follow-up checks against previous inspection reports. This is to ensure that required corrective actions have been accomplished and that there have been no structural changes to the building, environmental conditions or safe operating procedures. These records shall be checked during program evaluations and industrial hygiene surveys.

1-30. Control of potential Lead Intoxication

Occupational Safety and Health Administration (OSHA) Lead standard

a. The requirements of the OSHA Lead standard (29 CFR 1910.1025) shall be followed. The requirements include development of a written compliance program for the protection of workers from Lead exposures (29 CFR 1910.1025(e)(3)). The program shall include at a minimum the following:

(1) A description of each operation where Lead Is emitted;

(2) Methods used to achieve compliance;

(3) Methods used to meet the permissible exposure level;

(4) Air monitoring data, which documents the source of air emissions;

(5) A detailed schedule for Implementation of the program;

(6) Work practices including PPE (Personal Protective Clothing and Equipment), housekeeping,

hygiene facilities and practices;

(7) Administrative control schedule;

(8) Personnel enrollment in medical surveillance;

(9) Other relevant information.

b. Refer to TG 206 for specific guidance on developing the compliance program.

1-31. Alternative ammunition

a. Reduced-Lead and Lead-free ammunition (non-Lead containing bullets) has become commercially available. These alternatives to conventional animunition should be considered for training use if command policy allows.

b. Lead-free ammunition is being developed which shall have the same ballistic properties as the Lead counterparts. The potential exists for some Lead containing ammunition to be completely replaced by Lead-free ammunition for training and operational uses.

c. Until Lead-free ammunition is available, Lead exposure can be significantly reduced by the use of jacketed rounds. Most bullet traps are rated for the use of jacketed ammunition, but this should be verified with the bullet trap manufacturer.

1-32. Maintenance requirements

a. The following are minimum maintenance requirements, which shall be performed every three months by the range custodian or by a person designated by the facility commander:

(1) inspect the ventilation system fan for condition of belts to ensure that the belts are not torn or frayed and that they are not slipping.

(2) Evaluate static pressure and compare to the baseline static pressure reading. Any changes shall be reported to the State Safety and Occupational Health Office for further evaluation.

(3) Inspect louvers, if applicable, to ensure they are opening fully.

(4) Lubricate the bullet trap (if applicable).

(5) Inspect the bullet trap for pitting or other damage and for sharp edges on venetian blind type bullet traps.

b. See the Addendum for a complete list of maintenance requirements for the bullet trap.

1-33. Housekeeping

a. The ventilation system shall be in operation during all cleanup operations.

b. An approved National Institute for Occupational Safety and Health (NIOSH) respirator (P-100) for Lead exposure shall be used during cleanup operations.

c. During range cleaning operations, workers shall wear coveralls or similar full-body clothing, gloves, hat and change of shoes or disposable booties, face shields and goggles, or other equipment to protect the workers skin and eyes.

d. Blowing, shaking or any other means, which disperses Lead into the air, shall not be used to remove Lead dust accumulated on worker's clothing or equipment. A designated area shall be used for changing clothes to prohibit the spread of contamination. Workers shall shower and change clothes before release from work.

e. Wet cleaning methods or vacuum cleaning with HEPA filtration shall be utilized during normal cleaning operations. Dry sweeping, dusting, wiping or blowing with compressed air shall not be permitted.

f. The range shall be cleaned at the end of each firing day with a HEPA vacuum or wet mop method.

g. When performing the cleaning, clean the floor and all horizontal surfaces fifteen teet in front of and behind the firing line, or when there is a visible accumulation of lead dust. h. Wash water contaminated with Lead can be collected and allowed to slowly evaporate leaving

Lead deposits/studge that may be collected in plastic containers, placed in metal drums, and stored for future delivery to an authorized hazardous waste disposal site. Drums shall be properly labeled to identify contents. Disposal of containerized waste shall be coordinated IAW state hazardous waste program requirements.

I. The State Environmental Office shall coordinate removal and disposal of all containerized hazardous waste derived from routine use, cleaning, and maintenance of IFRs. Contact your State Environmental Office for proper disposal instructions when builet trap catch trays are ½ full. Spent cartridge cases shall be collected and processed in accordance with local ammunition inventory and accountability procedures, AR 710-2, and DA PAM 710-2-1.

j. Prior to converting an indoor firing range to other uses, the entire range area shall be properly decontaminated of any Lead residue. For cleaning and decontamination instructions, see the Addendum.

1-34. Maximum exposure hours

Personnel exposure limits for intermittent atmospheric Lead contamination has been developed by the U.S. Army Medical Command (MEDCOM) in the form of a table of Lead exposure limits (Figure 1-1). This table was developed to control intermittent Lead exposure and to establish maximum allowable hours of exposure based on the airborne Lead concentration and the number of days firing per year. Intermittent exposures to Lead in indoor firing ranges shall be controlled according to the criteria provided in the table of Lead exposure limits as an interim control measure only. Maximum effort shall be made to introduce permanent control measures to reduce the airborne Lead levels to 0.03 mg/m³ or less. Exposure records shall be maintained by the commander of the facility on all personnel who use the firing range when the airborne Lead levels exceed 0.03 mg/m3. These records shall contain the airborne Lead concentrations and the amount of time spent on the range for each individual. Other potential Lead exposure, including off duty firing, may contribute to an individuals overall exposure and should be considered in establishing maximum allowable exposure time.

1-35. Extent of use

a. The extent of use for any indoor firing range shall be based on permissible exposure of all using personnel to concentrations of alrborne Lead dust.

b. Under no circumstances shall pregnant women be permitted in an indoor firing range, IAW 29 CFR 1910.1025, Appendix C, Section II (5).

c. Personnel under 17 years of age are prohibited from entering any range area with a Lead concentration greater than 0.100 mg/m³. For ranges with Lead concentrations less than 0.100 mg/m³, follow the guidelines in Figure 1-1.

d. Use of the indoor firing range by non-military organizations shall be approved and documented in writing by the State Safety Manager.

1-36. Medical surveillance

a. Personnel who are or may be exposed to Lead above the action level (0.03 mg/m³) for more than 30 days per year shall be enrolled in the Medical Surveillance Program.

b. Medical surveillance is not required for intermittent users of Indoor firing ranges if the maximum allowable exposure hours shown in Figure 1-1 is not exceeded.

1-37. Terms

a. Backsplatter-This refers to the small particles, which break off of a bullet as it impacts the bullet trap. Variables such as the bullet composition, angle of the bullet trap, and the velocity of the impact dictate the amount and pattern of the backsplatter. A ricochet occurs when the main body of the bullet is deflected off the surface of the bullet trap.

b. Competent person-An individual who has been specifically trained to identify safety and occupational health hazards associated with Lead dust and indoor firing ranges. The individual is aware of current regulations governing indoor firing ranges and of ventilation principles and terminology, air sampling media and collection requirements and can interpret air sample results. He can provide appropriate guidance in the abatement of known hazards and has the authority to do so. He can correctly use diagnostic ventilation evaluation equipment and interpret results. He has received written authorization from the regional industrial hygiene office to property evaluate indoor firing ranges.

c. Plenum-This term refers to a chamber used to build static pressure before the air enters the firing range. Air is introduced into the plenum from the side, top, or back and is forced through a perforated wall (called the plenum wall) behind the firing line.

d. Smoke Testing-To conduct a smoke lest, a smoke candle is ignited behind the firing line. The smoke is used to check the airflow at and in front of the firing line. There should be laminar flow down the range to the bullet trap and no turbulence at the firing line. It is also important to ensure the smoke does not circle back behind the firing line.

FIGURE 1-1

HERE AND A CONTRACT			
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	B	4	2
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0.060-0.079		2.25	
0,080 - 0,089		1.5	0
4 100 · 0.149		<u>+ </u>	0
0.100 - 0.109	125	0.75	0
0.200 - 0.299	+	0.5	0
0.300 - 0.393	0.75	0.5	0
0.400 - 0.409		0.25	
0.000 - 0.745	0.25	0.25	0
1 000 or above		<u>_</u>	0

 <u>These values are the actual concentrations measured over the sampling period and are not 8-hour</u> time-weighted averages.

Adherence to these guidelines shall prevent overexposure to Lead in indoor firing ranges.

 Recommend that an Occupational Realth Physician make the determination on length of firing time for individuals 17 years of age and younger.

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FIGURE 1-2

INDOOR FIRING RANGE INSPECTION CHECKLIST

See paragraphs 1-23 through 1-25 of this regulation for inspection requirements. For the range to be considered safe each of the following statements shall be true and air-sampling results shall be below the standard for Lead. The information in parentheses after each statement denotes the location of the requirement in this or other regulations.

Location of the Range	Date	ı
-----------------------	------	---

Range Custodian

Part 1, Physical Safety Inspection

A. Building Envelope

Each firing lane is at least 4 feet wide. [1-17a(1)(a)]

2. Pipes, conduits, and other projecting surfaces are baffled or covered by a material that shall protect these items and prevent ricochets. [1-17a(1)(b)]

3. No windows or doors are located in front of the firing line. (Except access door to the back of the bullet trap) [1-17a(1)(d)]

4. There are no open floor drains in the range. [1-17a(2)(c)]

5. There is no carpet, drapes or other fiber-like material in the range. (1-17a(2)(d))

6. Pipes, conduits and walls are sealed to prevent leakage of Lead dust from the range into other areas. [1-17a(2)(b)]

7. The interior surfaces or the range floor, walls, and calling have no protructing edges or devices. [DG 415-1, App.A, 3-1d]

The root provides ballistic security. [DG 415-1, App. A, 3-1e(1)]

9. The walls provide ballistic security. (DG 415-1, App. A, 3-1f(1))

10. Interior mortar joints are flush with the Interior surface. (DG 415-1, App. A, 3-1f(2))

11. The plenum wall is adequately supported and thick enough to avoid flexing. (DG 415-1, App. A, 3-1(4))

12. The entrance door to the range is weather-stripped unless the door acts as passive make-up air intake. (DG 415-1, App. A, 3-1h)

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B. Range Lighting

Lighting is uniform, non-glaring and does not cause shadows. [1-17c(1)(a)]

2. Illumination is at least 100 foot candles on the largets and 30 foot candles in all other areas. (1-17c(1)(b)]

3. All lighting is protected by baffles and placed so that the shooter has an unobstructed view down range. [1-17c(1)(c)]

4. Downrange lighting begins approximately 18 feet from the firing line and ends approximately 8 feet from the target line. [1-17c(1)(d)]

5. Emergency lights are provided behind the firing line and are in working condition. (1-17c(1)(e)]

Exit lights are provided and working as required. (1-17c(1)(f))

7. Lighting of at least 30 foot-candles is provided behind the bullet trap for maintenance (if applicable). (1-17c(1)(9))

8. No known electrical hazards exist in the range. [1-17c(2)(c)]

C. Bullet traps

A bullet trap is permanently installed in the range. [1-17d(1)(a)]

2. Builet traps are of a commercial design, which is in compliance with the requirements of CEHND 1110-1-18, NGB-ARI, the Addendum, and this regulation. [1-17d(1)(b)]

3. The thickness of inclined plate/sand trap type bullet trap shall be adequate to attenuate the maximum caliber of ammunition authorized to be fired on the range. [1-17d(1)(c)]

4. All plate/sand trap type bullet traps are designed to prevent ricochets by directing the projectiles in the same direction they are traveling. [1-17d(1)(d)]

5. Sandpits in plate/sand trap type backstops extend to a point directly below the leading edge of the sloped plata. [1-17d(1)(e)]

6. Forward edges in a louver or venetian blind type bullet trap are maintained in a knife edge condition to prevent ricochets. (1-17d(1)(f))

7. Steel bullet traps are not bowed, punctured or severely pitted. [1-17d(2)(a)]

8. Plates in the bullet trap are flush with the other plates. Mold seams are ground smooth. [1-17d(2)(b)]

D. Targets and target carriers

1. A larget retrieval system is operable in all lanes. [1-17e(1)(a)] (Any one firing lane without a retrieval system shall not be used for firing)

2. The target retrieval system is constructed in such a manner as to minimize flat surfaces exposed to the firing line. [1-17e(1)(a)]

3. Only paper targets are used in the range. [1-17e(1)(b)]

E. Range use

1. The range is not used for any purpose other than firing. [1-18a]

2. No equipment or furniture is stored or maintained in the range, plenum area or behind the builet trap.

(1-17d]

3. No additional clothing or equipment is brought into the range. [1-19b]

Personnel are not permitted in the plenum area during firing even if designed for observation. [1-19a]

5. Individuals other than maintenance and inspection personnel are not allowed to walk downrange. (Except in regularly cleaned area as needed to pick up brass) [1-19f]

6. All areas directly in front of the pienum walls are kept clear at all times. [1-19c]

7. Pellets, B8s, magnum and armor piercing rounds are not used in the range. [1-19g]

8. The ventilation system is in operation at all times during firing or cleaning. [1-18c]

9. A hand-held ABC-type fire extinguisher is located in a recessed cabinet near the entrance door, inside of the firing range. [DG 415-1, App. A, 4-5]

F, Range maintenance

1. Dry sweeping does not occur in the range. [1-19e]

2. No brooms are located in the range. [1-19e]

3. A range custodian is appointed for the range who is fully trained and aware of his/her responsibilities. [1-13c]

G. Personnel protective equipment

1. All personnel in the range during firing wear ANSI approved eye protection. [1-20a]

All personnel in the range during firing wear ANSI approved hearing protection. [1-20b]

H. Posting of signs

1. The following signs are posted in or in the vicinity of the range: [1-21a]

- a. Eating, Drinking and Smoking are Prohibited
 - b. Dry Sweeping is Prohibited
 - c. Wash Hands and Face Immediately Following Firing
 - d. The Following Ammunition is authorized for use on this Range:
- e. Hearing Protection shall be Properly worn during firing
- f. Proper Safety Glasses/Goggles shall be worn during firing g. No Furniture or Storage of Kems Permitted in the Range

_, _ 2. The following signs are posted on the entrance door to the range: {1-21b}

- a. Noise Hazardous Area
- b. Danger Lead Hazard Area
- ______ c. Pregnant women are not permitted in this Area

3. An illuminated warning sign, which is interlocked with the range ventilation switch, is located outside of the firing range to alert individuals that the range is in use. [1-21c]

Each firing lane is numbered at the firing line and at the bullet trap visible to all shooters. [1-21c]

5. A warning sign is posted outside of the access door to the bullet trap, which warns personnel not to enter. [1-21e]

I. Range SOP

1. The indoor firing range has a written SOP, which is approved by the State Safety and Occupational Health Office. [1-10e]

2. The range SOP includes as a minimum the following: [1-22b]

a. The requirement for establishment and maintenance of a log of visitors for the indoor

firing range.

b. The requirement for and contents of a mandatory safety briefing for all individuals prior to entering the range to be given by a designated competent range safety officer. c. Work practices including required, recommended, permissible and banned practices

as specified by this regulation.

d. Instructive guidance for all range procedures.

e. Personnel responsibilities for performing the procedures, for supervising them, and

- reviewing and updating the SOP.
 - _____ f. Authorized ammunition for the range. g. The requirement for posting of signs IAW section 1-21 of this regulation.
 - h. Cleaning and maintenance requirements.
 - i. Personal protective equipment requirements for maintenance, firing and cleaning.

J. Recordkeeping

1. A visitors log is maintained which includes the following information for all visitors/shooters:

- [1-14c]
 - _____ a. Name and age of shooter. b. Organization (if civillan, include address and phone number).

 - c. Sign in and sign out times.
 - d. Type of ammunition used and number of rounds fired.
 - Copies of initial and other previous inspections are available. (1-24a)

The initial Inspection report includes air-sampling data. [1-24b]

4. An OSHA compliance program is in place, which covers the required aspects. [1-30a]

5. All individuals using the indoor firing range have been provided with a copy of the range SOP or been briefed on the requirements of the SOP, and have signed an agreement to follow the rules stated therein. [1-13h]

6. State maintenance officers/custodians have documentation to show that they have been educated to the health effects from exposure to Lead dust. [29 CFR 1910.1200 and 29 CFR 1910.1025]

7. Range safety officer(s) is/are designated. [1-13c]

K. New and Renovated Ranges

- 1. No doors are installed in the plenum wall.
- 2. Plenum area is at least 4 feet deep.
- 3. An access door is installed behind the bullet trap.

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INDOOR FIRING RANGE INSPECTION CHECKLIST

Part 2, Ventilation Inspection

A. Existing Ranges

The range has an operational mechanical ventilation system. [1-17b(1)(a)]

2. The minimum ventilation rate at the firing line in each firing lane is 50 (pm at all levels. [1-17b(1)(b)]

100% of air is exhausted at or behind the bullet trap. [1-17b(1)(c)]

4. Make-up air is introduced into the range behind the shooters. [1-17b(1)(d)]

5. Air that is introduced through vents into the plenum does not exceed a velocity of 600 fpm. [1-17b(1)(e)]

6. Air exiting through holes in the plenum wall has a velocity between 400 and 600 fpm. [1-17b(1)(0)]

7. The ventilation system is so constructed that air exhausted from the indoor firing range does not enter into another part of the building or any other air supply system. [1-17b(1)(g)]

8. The exhaust exceeds the make-up air by approximately 10% to form a negative air pressure in the range in relation to adjoining areas. [1-17b(1)(h)]

9. If air is recirculated in the range, it is installed with a HEPA filter with a reliable back-up filter. [29 CFR 1910.1025(e)(4)(ii)]

10. If air is recirculated in the range, controls to monitor the concentration of Lead and Carbon Monoxide levels are installed and programmed to bypass the recirculation system automatically if the filter system fails.

[29 CFR 1910.1025(e)(4)(ii)]

11. The fan(s) in the ventilation system is a single speed fan only. [DG 415-1, App. A. 3-2a]

12. A smoke tast of the range shows laminar air flow and no turbulence in the range. (See the Addendum for troubleshooting guidance) [1-18b(1)(k)]

13. In non-powered systems, the supply air louvers and exhaust fan are electrically interlocked. [1-17b(1)(I)]

14. In power systems, the supply and exhaust fans are electrically interlocked. The make-up air fan should start slightly after the exhaust fan. [1-17b(1)(m)]

15. Range air temperature is between 65 degrees and 80 degrees Fahrenheit. [1-17b(1)(n)]

B. New and Renovated Ranges

1. A manometer is installed leading into the exhaust fan, which is capable of measuring at least 20 inches of static pressure.

_____ 2. Supply and exhaust fans are electrically interlocked with the downrange lighting.

_____ 3. The face velocity on supplied make-up and exhaust ducts does not exceed 2000 cfm per square foot of duct space.

4. Passive supply systems have opposing blade louvers.

5. Turning vanes are installed in all duct elbows, which have between 60° and 90° angles.

INDOOR FIRING RANGE INSPECTION CHECKLIST

Part 3, Air Sampling

1. The physical safety inspection, Part 1 of the range inspection checklist, was completed and all requirements met on:

2. The ventilation inspection, Part 2 of the range inspection checklist, was completed and all requirements met on: _____

Air sampling has been scheduled for: ______

Print and sign:

Position: _____ Date: _____ Date: _____

Air sampling was completed on: ______ for the following types of ammunition:

5. Air sample results do not exceed: _____mg/m³ (results are attached)

7. For military personnel exposed more than 30 days per year and for all non-DoD personnel, this range is classified as: ______ (SAFE, LIMITED USE, UNSAFE)

Print and sign: _______ Date: _____ Date: _____

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FIGURE 1-3 EXAMPLE OF INDOOR FIRING RANGE SOP STATE OF ______, DEPARTMENT OF MILITARY AFFAIRS XXXX SOUTH MAIN STREET SOMEWHERE, _____XXXX-XXXX _____ARMORY INDOOR FIRING RANGE STANDING OPERATING PROCEDURE (SOP)

1. References:

- a. AR 385-10
- b. AR 385-63
- c. NGR 385-10
- d, NG PAM 385-XX
- e. 29 CFR 1910.1025
- f. 29 CFR 1920.1200
- g. 29 CFR 1926
- h. 29 CFR 1960
- I. USACHPPM, TG 141

2. **Purpose.** The ______ Armory indoor firing range SOP is published to establish procedures to minimize the exposure of Lead (Pb) to personnel and provide uniform safe range operations and maintenance procedures. The provisions set forth herein shall govern all actions and personnel associated with range operations.

3. **Review and Update.** This SOP should be reviewed yearly by the Commander of the facility and the State Safety and Occupational Health Office. A cover sheet, which documents the signature and dates of personnel involved with the review of the SOP, should be attached.

4. General.

 a. Each Officer or Non-Commissioned Officer In-Charge (OIC/NCOIC) of range operations shall maintain a current copy, and be familiar with the provisions of this SOP, and NGR 385-10.

b. These directive and military regulations are applicable to all active duty military, military technicians, federal and state civilian employees and civilian personnel, to include local or state police authorities.

5. Range Control.

a. The _______Armory Commander shall appoint, in writing, a Commissioned Officer, Warrant Officer, or a Senior NCO to the position of Range Control Officer (RCO).

b. The RCO is responsible to perform the following:

- (1) Enforce the facility range safety program and SOP
- (2) Notify Armory personnel of times when the range shall be in use.
- (3) Coordinate and schedule all activity on the firing range.
- (4) Ensure that the range is secured when not in use.
- (5) Ensure that nothing is stored at the range.

(6) Investigate and report all accidents and incidents involving weapons and ammunition in accordance with NGR 385-10.

(7) Determine which weapons and ammunition are authorized for the range. This should be coordinated through the Sate Safety and Occupational Health Office and in accordance with manufacturers' specifications.

(8) Ensure that all OIC/NCIOCs are thoroughly familiar with the weapons in use, and that the appropriate operators' manuals for the weapons are on hand.

(9) Prepare a range OIC/NCOIC briefing packet for all using units. The packet should contain, as a minimum; a copy of this SOP, emergency telephone numbers of local rescue authorities, and a current copy of the Accident Prevention Plan (Appendix C of this SOP).

(10) Ensure that mandatory signs listed in NGR 385-10, paragraph 1-21 are posted as required.

6. Range OIC/NCIOC. The Commander or supervisor of all using units or groups shall designate an OIC/NCOIC in the grade of E-6 or above to be the responsible for the safe conduct of firing and proper use of the facilities. The commander/supervisor shall ensure that all appointed individuals are qualified to perform their assigned duties. The duties of the range OIC/NCOIC shall include but are not limited to the following:

a. Prior to fining.

(1) Receive a thorough briefing from the RCO, and conduct an inspection of the range with the RCO, or his/her designated representative. If the condition of the range is acceptable, assume control and request clearance from the RCO to fire.

(2) Ensure the overall safe conduct of training and the proper use of the facility.

(3) Ensure that all participants are familiar with the verbal commands, hand signals, range procedures and safety requirements.

(4) Be present when the range is in use and determine when it is safe to fire.

(5) Be knowledgeable of the weapons to be used and ensure that only authorized weapons and ammunition are used. Ensure that the proper operators' manuals are available for each individual using the range.

(6) Be familiar with the Accident Prevention Plan and have a current copy on hand prior lo commencement of firing.

(7) Ensure that at least three individuals are present on the range when the range is in use.

(8) Ensure that all personnel wear the proper hearing and eye protection as required.

(9) Ensure that all individuals using the range have singed-in on the roster maintained by the facility Commander.

(10) Ensure that the range has a working telephone, or that other means of emergency communication is available.

(11) Ensure that appropriate emergency medical personnel have been notified that the range is in use, and that the projected hours of operation are from ______ to ____ hours.

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b. During Firing.

(1) Ensure that personnel do not leave the firing line without the permission of the OIC/NCOIC.

(2) Ensure that the muzzle of each weapon is pointed downrange at all times. Personnel may holster their handguns after being cleared by the OIC/NCOIC to do so.

(3) When not in use, revolvers shall have cylinders open and automatic weapons shall have magazines removed and the slide/receiver locked to the rear. Rifles shall also have the magazine removed, if applicable, bolts and/or slides open or locked to the rear when not in use. Weapons shall be carried to and from the firing line in the configuration described above, with the muzzle pointed downtange.

(4) Ensure that weapons maifunctions/jams are cleared only at the direction of the OIC/NCOIC in accordance with the procedures established in the operators' manual for the weapon.

(5) Ensure that weapons are cleared and checked during temporary suspension of firing.

(6) Ensure that firing is stopped promptly when an unsafe act is observed or reported.

(7) Do not permit persons to walk in front of the firing line during firing. Lanes with inoperable target retrieval systems shall not be used.

(8) Limit firing time, if applicable. This limitation shall be based on alr-sampling results for individuals using the range and ventilation measurements. Contact the State Safety Manager to determine if the range has time limitations placed upon it.

c. After Firing.

(1) Ensure that all weapons are cleared prior to being removed from the firing line.

(2) Ensure that all individuals on the range thoroughly wash their hands and face immediately after leaving the range.

(3) Ensure that all bullet casings are removed from in front of and behind the firing line and that the range is restored to a serviceable condition. Dry sweeping of the range is prohibited.

(4) Conduct a final inspection of the range. Secure the range, and turn the keys and shooters log into the RCO or his/her designated representative.

7. Range Control Officer Qualifications. His or her commander may appoint any individual in the rank of E-6 and above to the Rang Control Officer. Appointment orders for all RCOs shall be maintained onfile at the facility. Commanders of each facility shall ensure that all RCOs have been properly instructed and are competent in performance of their duties. Law enforcement and civilians requesting appointment to perform RCO duties, shall show evidence that they have completed an Army and/or National Rifle Association approved firearms instructor's course or equivalent prior to appointment.

8. Range Restrictions.

a. The _______ Armory is restricted to firing the following ammunition based upon manufacturer specifications:

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EXAMPLE

- (1) .22 caliber including the M-16 with adapter
- (2) .36 callber
- (3) .45 caliber
- (4) 9 mm pistols

Note: No other weapons can be fired without the approval of the State Safety Manager.

- b. Pellets, 8Bs, magnum and armor piercing rounds are prohibited.
- Dry sweeping of the range is prohibited.
- d. Trick shooting including, quick draw and hip shooting is prohibited.
- Storage of any item in the range is prohibited.
- f. Smoking and consumption of food or beverages is prohibited.
- g. Proper hearing and eye protection shall be worn during firing.

 h. Civic groups with individuals under 18 years of age are required to have written permission from the ARNG State Safety Manager prior to firing.

i. Personnel shall not be allowed in the observation/plenum area during firing.

9. Mandatory Signs. As a minimum the following signs shall be posted on the door/entrance to the range or inside as appropriate:

- a. Inside the Range.
 - (1) Eating, drinking and/or smoking are prohibited.
 - (2) Dry sweeping is prohibited.
 - (3) Wash hands and face immediately after firing.
 - (4) Hearing protection shall be worn during firing.
 - (5) Safety glasses/goggles shall be worn during firing.
 - (6) Storage of furniture and other items is prohibited.

(7) The following ammunition is authorized for this range: ______, ____, ____, and

b. On the Door to the Range.

(1) Noise Hazardous Area.

(2) Danger Lead Hazard Area.

(3) Pregnant women are not permitted in this area.

10. Authorized Use of the Range. Utilization of the ______ Armory range is authorized for organizations of the ______ Army National Guard conducting unit training and for the marksmanship team conducting competition or in preparation for competition. Non-Military personnel are subject to the same requirements and regulations as National Guard personnel and shall be in strict compliance with this SOP, Army Regulations, ARNG regulations and applicable subject letters and directives from the Adjutant General, State of ______.

11. Release of Liability.

a. The military Range Control Officer shall obtain a signed Release of Liability (Appendix D of this SOP) form from each civilian user of the range. Signed agreements shall be kept on file with the Commander of the facility.

b. Organizations with members who are minors shall obtain Permission and Release of Liability (Appendix D of this SOP) form signed by a perent or guardian. The ARNG State Safety Manager shall be notified prior to minors firing on ARNG ranges.

12. Denial of Range Access. The Commander of the facility may withdraw range privileges from any person or organization that willfully disobeys rules and regulations partaining to range operations. In addition, range privileges may be denied to an individual whose knowledge of the principles of marksmanship is deficient to the degree of posing a safety hazard.

FOR THE COMMANDER:

John Doe CPT, IN, ____ARNG OIC/Armory Commander

APPENDIX A ABBREVIATIONS

ANSI American National Standards Institute

AR Army Regulation

ARNG Army National Guard

CFM Cubic feet per minute

CFR Code of Federal Regulations

CNGB Chief, National Guard Bureau

DA Department of the Army

FPM Feet Per Minute

HEPA High Efficiency Particulate Air

IAW In Accordance With

IFR

Indoor Firing Range mg/m^a

Milligrams per cubic meter

NIOSH National Institute for Occupational Safety and Health

NGB National Guard Bureau

OSHA Occupational Safety and Health Administration

SOP Standing Operating Procedure

SP Static pressure

USACHPPM U.S. Army Center for Heatth Promotion and Preventive Medicine

wg Inches of water gauge

APPENDIX B REFERENCES

ACGIH 22nd Ed, Industrial Ventilation A Manual of Recommended Practice

Army Regulation (AR) 11-34 The Army Respiratory Protection Program

AR 40-5 Preventive Medicine

AR 350-41 Army Forces Training

AR 385-63 Policies and Procedures for Firing Ammunition for Training, Target Practice, and Combat

AR 385-64 U.S. Army Explosives Safety Program

Army National Guard (ARNG) Design Guide (DG) 415-1 Design Guide for Armories

American National Standards Institute (ANSI) Z87.1-1999 Practice for Occupational and Educational Eye and Face Protection

CEHND 1110-1-18 USACE (U.S. Army Corp of Engineers) Design Manual for Indoor Firing Range

Department of the Army Pamphlet (DA PAM) 385-64 U.S. Army Explosives Safety Program

DA PAM 40-501 Hearing Conservation

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DA PAM 710-2-1 Using Unit Supply System (Manual Procedures)

Department of Defense Instruction (DODI) 6055.1 Department of Defense Occupational Safety and Health (OSH) Program

DHEW NIOSH 76-130

Lead Exposure and Design Considerations for Indoor Firing Ranges

FM 25-7 Training Ranges

National Guard Regulation (NGR) 385-10 Army National Guard Safety and Occupational Health Program

NGR 415-5

Military Construction Army National Guard (MCARNG) Project Development

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APPENDIX B (Continued)

GR 420-10

Operations/Maintenance and Minor Construction, Army National Guard

Technical Bulietin Medical (TB MED) 502 Occupational and Environmental Health, Respiratory Protection Program

TB MED 508

Occupational and Environmental Health, Occupational Vision

TG 208 USACHPPM Technical Guide for Indoor Firing Ranges

Title 29, Code of Federal Regulations (CFR) Revision, Part 1910 Occupational Safety and health Standards

APPENDIX C INDOOR FIRING RANGE ACCIDENT RESPONSE PLAN

1. If a mishap or injury occurs at any time during the conduct of range operations, the following procedures shall be followed:

a. The OIC/NCOIC or person in charge of the range shall order a cease-fire immediately. All weapons shall be cleared and muzzles pointed downrange.

b. Render first aid to the injured as appropriate.

c. The O)C/NCOIC or person in charge of the range shall direct an individual to telephone and/or radio for medical assistance. The primary telephone to be used in case of an emergency is located

d. A person shall be stationed at the main entrance of the range to provide direction to emergency medical personnel.

e. After all injured personnel have been removed or attended to:

(1) The OIC/NCOIC shall notify the RCO of the mishap.

(2) The RCO shall in-turn notify the office of the Adjutant General at DSN _____, or the duty officer, and the State Safety and Occupational Health Office at DSN _____.

f. The RCO, with the assistance of the State Safety Manager, shall investigate the mishap and file a DA Form 285 "Accident Investigation" as appropriate.

All injuries or mishaps shall be reported to the RCO as soon as possible. The OIC/NCOIC shall be responsible to obtain witness statements and assist in making reports as may be required.

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APPENOIX D PERMISSION AND RELEASE OF LIABILITY CERTIFICATE

	ARNG Somewhere, USA Date:
BE IT KNOWN TO ALL: WHEREBY I,	
Have been granted permission to use firearms on the indoor firing range located at the Army National Guard Armory; and whereas I am doing so entirely	upon my own
Initiative, risk, and responsibility; now therefore, in consideration of the permission exter United States Government and/or State of through their officers and agents do her heirs, executors and administrators, remiss, release and forever discharge the Governm States and the State of, the Army National Guard, their officers, agents, emp including the Adjutant General of the State of, acting officially or otherwise, from al demands, action, or causes of action on account of my death, or account of injury to me which may occur from any cause during the period of the above granted permission. I fi acknowledge and certify by my signature below that I have read and understand the applicable sa	ided to me by the reby for myself, ment of the United loyees expressly my and all claims, or my property urther blicable range afety regulations.
Signature:	
Witness to Signature:	

In case of emergency, please contact:

Name Address	
Telephone Number	

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TO BE SIGNED BY THE PARENT OR GUARDIAN OF INDIVIDUALS UNDER 18 YEARS OF AGE. NO MINOR SHALL BE ALLOWED TO UTILIZE AN ARNG FIRING RANGE WITHOUT PARENT OR GUARDIAN SIGNATURE.

I, said parent, and/or legal guardian of the above-named minor, hereby give my consent to said minor executing this release, and do hereby also release and agree to save harmless the parties above-named as to said minor and as to myself as an individual, and for our heirs, executors, administrators and assigns.

Signature of Parent or Guardian:

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ADDENDUM

GUIDELINES FOR IFR REHABILITATION, CONVERSION, AND CLEANING

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Appendices

Appendix A - General Procedures for Collecting Wipe Samples

- Appandix B Sampling Strategy for Collection of Wipe Samples
- Appendix C Interpretation of Sample Results (Prior to Cleaning)
- Appendix D Interpretation of Sample Results (After Cleaning)
- Appendix E Recommended Sample Media and Containers
- Appendix F Examples of Computation of Lead Levels from Wipe Sample Results
- Appendix G Surface Wipe Sample Sheet
- Appendix H Air Sampling Sheet
- Appendix I Glossary

Purpose

1. This addendum establishes policy and procedures for rehabilitation, conversion, and cleaning of ARNG indoor firing ranges.

2. References

Related publications are listed below.

- a. DODI 6055.1 (Department of Defense Instruction, Occupational Safety and Health (OSH) Program).
- b. AR 11-34 (The Army Respiratory Protection Program).
- c. AR 40-5 (Preventive Medicine).

d. NGR 385-15 Policy, Responsibilities, and Procedures for Inspection, Evaluation, and Operation of ARNG Indoor Firing Ranges).

- e. 29 Code of Federal Regulations (CFR). Part 1910, Occupational Safety and Health Standards.
- f. OSHA Technical Manual, Edition VII.
- g. DHEW NIOSH 76-130 (Lead Exposure and Design Considerations for Indoor Firing Ranges).

3. Explanation of Abbreviations and Terms

Abbreviations and special terms used in this publication are listed in the glossary.

4. Policy and Procedures

Conversion of Ranges. Indoor firing ranges can be safely rehabilitated or converted for other uses, such as a storage area, kitchen, or office space, provided the following –

a. Previously active ranges must be thoroughly decontaminated and cleaned to acceptable levels.

b. The level of cleantiness is to be determined by sampling. The Occupational Safety and Health Administration's (OSHA) Technical Manual, ^{sh} Edition, provides guidance on the methods and techniques needed to collect wipe samples (Appendix A).

(1) Wipe samples must be collected and analyzed prior to and after cleaning.

(2) Post-cleaning surface wipe sample results must be less than or equal to 200 micrograms per square feet (ug/sq ft). The sampling strategy, which is the amount and location of wipe samples to be collected, is provided in Appendix B. Methods for interpreting the sample results are contained in Appendix C and D.

c. Equipment/Items previously stored in the range must be decontaminated and cleaned to acceptable levels.

(1) Samples must be collected from equipment/items stored in the range. Sample selection is critical, because the number of items stored and length of storage differs from range to range. The amount and location of the samples, should be representative of the areas where lead dust is most likely to accumulate. The more samples collected, the better the statistical comparison of the results.

(2) Samples must be collected from the smooth surfaces of the equipment/items, in so much as possible. Results of samples collected from a rough surface will be inaccurate due to the minimal surface contact of the media. Further, the likelihood of tearing the media filter is greater on rough surfaces.

(3) Samples should also be collected on items stored the longest period of time, and which have not been disturbed. Items stored closest to the bullet trap and firing line are likely to have higher concentrations of lead dust. Methods for interpreting the sample results are contained in Appendix C and D.

5. Goal

To ensure every indoor firing range is free of lead dust, and to reduce the number of unsafe ARNG indoor firing ranges.

6. Background

The Environmental Protection Agency (EPA) identifies lead as a highly toxic metal. Elemental fead is indestructible, and common in the environment. Lead can enter the body by inhalation (breathing) or ingestion (eating). In addition, lead is a cumulative poison. It accumulates in the blood, bones, and organs, including the kidneys, brain and liver. Effects include nervous and reproductive system disorders, delays in neurological and physical development, cognitive and behavioral changes, and hypertension. Symptoms include loss of appetite, difficulty sleeping, irritability, fatigue, headache, and inability to concentrate. It can stay in the bones for decades. Worker awareness and training are important to ensure that employees can recognize the symptoms of exposure and get prompt medicat attention.

7. Wipe Sample Media

a. OSHA Technical Manual provides the necessary guidance on the technique needed to collect wipa samples (Appendix A). Only distilled or deionized water will be used to saturate dry sample media. At least one field blank filter must be submitted with each sample sheet. The field blank must be from the same iol, and labeled as a blank on the sample sheet. Appendix E identifies how and where to obtain sample media. Use the following guidance for determining media acceptability.

(1) Acceptable Media consists of ~

(a) Ghost Wipes™ (PREFERRED METHOD)- Pre moistened

(b) Thirty-seven (37) millimeters (mm) mixed cellulose ester (MCE) filters, with or without the cassettes.

(c)(Beven (11) centimeter (chr) diameter (Vinatman 74 940 paper;

(2) Unacceptable Media consists of but is not limited to-

(a) Cotton balls

(b) Baby wipes or wet wipes

b. Documentation of Sample Collection. A Surface Wipe Sample Sheet must be completed and submitted with samples to your supporting laboratory. A copy of this form is located in Appendix G. Refer to Appendix A on how to collect wipe samples.

8. Wipe Sampling Protocol

See Appendix A.

9. Ranges Cleaning Instructions

a. Written procedures, such as a scope of work, or Standing Operating Procedure (SOP) that complies with all federal, state and local regulations must be established prior to decontamination operations. The range ventilation system will be in operation during range cleaning to ensure that a negative pressure environment is maintained. In the absence of mechanical ventilation system, all doors and windows will be sealed to eliminate fugitive emissions. A High Efficiency Particulate Air (HEPA) filtered vacuum system is the preferred method of cleanup followed by wet wiping of the range. The HEPA vacuum is designed to collect loose surface lead dust particles.

b. Any general purpose cleaning solution can be used. However, Spic and SpanTM has been found to be an effective cleaning solution by other Army organizations. Mix new solutions of cleaning solution frequency. Wet wiping will require dual containers of water; one container for wetting the applicator (mops, rags, sponge, etc.) and the other container for rinsing the applicator after the dust has been wiped from the surfaces. When placed in containers, wastewater should be left to evaporate.

C. PROPERLY DISPOSE OF ALL HAZARDOUS WASTE. DO NOT PLACE LEAD CONTAMINATED WASTE INTO THE SEWER SYSTEM OR ONTO THE GROUND.

d. Mop-heads, sponges and rags will be discarded as hazardous waste following cleanup.

e. Wet cleaning by a high-pressure system is prohibited, as this method may embed the lead into the substratum and generate large quantities of unwanted hazardous waste.

f. Dry sweeping is not permitted.

g. All surface areas of the range must be cleaned. Do not remove the coaling on smooth painted surfaces that are properly sealed.

h. Wood floors should receive a coat of deck enamel or urethane; concrete floors should be sealed with deck enamel and linoleum or tile floors should be waxed.

i. A progression of cleaning from top to bottom and from behind the steel backstop to the firing line should be used. After removing the sand, if applicable, and the steel backstop, areas in front of and behind the builet trap along with the steel backstop plate(s) should be cleaned. Next, clean the ceiling, lights, baffles, retrieval system, heating system(s), and ventilation duct(s). Acoustical material should be vacuumed and removed rather than painted over.

J. A Toxic Characteristic Leaching Procedures (TCLP) test for lead only may need to be performed on the acoustical material. A TCLP test will determine if the material is classified as "hazardous" and can be disposed of In a sanitary landfill. Contact your State Environmental Office for assistance before arranging for this laboratory testing. The floor should be the last surface cleaned, starting at the bullet trap and ending behind the firing line.

k. After wet wiping all surfaces, permit the area to dry. Vacuum all surface areas until no dust or residue can be seen using the HEPA.

I. A thorough visual inspection to detect dust should be made following cleanup and prior to collecting post surface wipe samples.

m. As a variety of conditions exist in ranges, unique situation may arise and specific written guidance from your Regional Industrial Hygiene Office may be required.

10. Cleaning Stored Contaminated Equipment

a. Equipment contaminated (sample result is higher than 200 micrograms/sq ft) with lead dust must be decontaminated before it is removed from the range.

b. Equipment located near the bullet trap and firing line should be cleaned first and then removed. The cleaning method depends on the size of the equipment and the material it is comprised of, i.e. metal, wood, concrete, porus, non-porus, smooth or rough finish etc. However, either HEPA vacuum or the wet wipe method will be used. Refer to paragraph 9 for additional guidance.

c. Every attempt should be made to clean and reclaim items since disposing of equipment, as hazardous waste is costly and wasteful. Only as a last resort will the item be discarded as hazardous waste. Porous items, such as office partitions and carpet that were present during firing should be considered grossly contaminated and be discarded unless analysis proves otherwise. Consult your State Environmental Office for the proper hazardous waste disposal methods.

11. Contaminated Sand and Lead Waste

Consult your State Environmental Office for specific disposal guidance to ensure compliance with local laws and regulations.

12. Medical Surveillance

a. A pre-placement medical examination is required for all individuals involved with range cleanup operations. Consult 29 CFR 1910.1025 for additional information on medical surveillance requirements. A medical examination must include—

- (1) A detailed work and medical history
- (2) A thorough physical examination
- (3) A respirator use evaluation
- (4) A blood pressure measurement
- (5) Blood sample analysis to include:
 - (a) A baseline blood lead level
 - (b) A complete blood count (CBC)
 - (c) Blood urea nitrogen (BUN)
- (6) Serum creatinine
- (7) Zinc protoporphyrin
- (8) A routine urine analysis
- (9) Recordkeeping

b. Air Monitoring. Worker breathing zone (BZ) air samples must be collected to ensure personnel are not overexposed to airborne lead during the cleanup phase. Representative air samples will be collected on all personnel involved in the cleanup operation. These exposure levels will be used to evaluate work practices and personal protective equipment. Within five (5) working days after receipt of monitoring results, each employee will be notified in writing of the air sampling results. Contact your Regional Industrial Hygiene Office for additional information pertaining to air sampling.

13. Worker Education

OSHA 29 CFR 1910.1025 requires that workers who are potentially exposed to any lead level shall be informed of the content of Appendix A and 8 of this standard. A training program must be Instituted for all individuals who are subject to exposure to lead at or above the action level or for whom the possibility of skin or eye irritations exists. The training program shall be repeated for personnel currently involved in range cleanup operations, at least annually, this training must be documented on DD Form 1556 or DD Form 1556-1 and filed permanently in the employee's Official Personnel File (OPF) or the soldier's Official Military Personnel File (OMPF). As a minimum, complete blocks 1, 2, 3, 7, 8, 11, 12, 13, 17, 18, 24, 33 and 36 of DD Form 1556. Place the following statement in block 18, "Do not destroy, retain this record for the duration of employment/service plus 30 years." The employer will assure that each employee is informed of the following:

- a. The content of the standard and its appendices.
- b. The specific nature of operations that could result in exposure to lead above the action level,
- c. The purpose, proper selection, fitting, use and limitations of respirators.
- d. The purpose and a description of medical surveillance program.
- Eating and drinking are prohibited in lead contaminated areas.
- Smoking and smoking materials will not be permitted in contaminated areas.

- g. Employees must wash their hands and other exposed skin whenever they leave the work area.
- h. The engineering controls and work practices associated with the individual's job assignment.
- i. The contents of any compliance plan in effect.

14. Personal Protective Equipment

For housekeeping and rehabilitation the employer shall select respirators from among those approved for protection against lead dust, fume, and mist by the National Institute for Occupational Safety and Health (NIOSH). The employer shall institute a respiratory protection program in accordance with 29 CFR 1910,134. As a minimum, personnel conducting the decontamination of the range will be provided with the following personal protective equipment.

a. Employees engaged in range rehabilitation and/or range conversion, the employer shall provide at no cost to the employee, and assure that the employee uses appropriate protective work clothing and equipment such as, but not limited to:

(1) Protective coveraits with hood and shoe covers or disposable Tyvek ™ full body suit.

(2) Disposable rubber gloves; and disposable shoe coveriets (If necessary).

(3) Full-face air purifying respirator with P-100 cartridges.

b. The employer shall provide the clothing required in a clean and dry condition at least daily to employees engaged in the conversion of indoor firing ranges.

c. The employer shall provide for the cleaning, laundering, or disposal of used or contaminated protective clothing and equipment.

d. The employer shall assure that all protective clothing is removed at the completion of a work shift only in areas designated for that purpose (Change Areas or Change Rooms).

e. The employer will ensure that contaminated protective clothing that is to be cleaned, laundered, or disposed of, is placed in a closed container in the change area that seals sufficiently enough to prevent dispersion of lead dust.

f. The employer will further inform in writing any person who cleans or launders protective clothing or equipment of the potentially harmful effects of exposure to lead.

15. Housekeeping

This chapter applies to all active indoor ranges classified as "safe" for use. To keep the range operating property and to keep possible hazards to a minimum, a routine housekeeping/ maintenance program is essential.

a. The employer must establish a housekeeping program sufficient to maintain all surfaces as free as practicable of accumulations of lead dust. To this end the range will be clean at the conclusion of each firing day.

b. The range ventilation system will be in operation during all cleaning operations, to ensure a negative pressure environment is maintained.

c. Ranges will be cleaned by using the wet method or vacuuming. A HEPA (High Efficiency Particulate Air) filtered vacuum system is the preferred method of meeting this requirement. The use of compressed air to clean floors is absolutely prohibited. If the wet method is utilized the floor should be equipped with a floor drain, and collection system. When there is no collection system, the water can be allowed to slowly evaporate leaving lead deposits/sludge. The deposits/sludge can then be collected, placed in metal drums, and stored for future delivery to an authorized hazardous waste disposal site. Drums must be labeled to identify contents, in accordance with the hazardous waste program.

d. A NIOSH approved respirator (P-100) for protection against lead dust, fume, and mist will be worn at all times while cleaning.

e. When cleaning start behind the firing line forward, cleaning the floor and horizontal surfaces.

16. Maintenance

The fottowing are the minimum maintenance requirements, which must be performed quarterly by the range custodian, or by a person designated by the facility commander.

 a. Inspect the ventilation system fan for condition of belts to ensure that they are not frayed or slipping.

b. Evaluate static pressure and compare to the baseline static pressure reading. Any changes will be reported through the safety manager to the Regional Industrial Hygienist.

Inspect Louvers, if applicable, to ensure they are opening fully.

d. Inspect the bullet trap for pitting or other damage and for sharp edges on venetian blind type bullet traps.

e. Bullet Trap. The bullet trap will be cleaned every 480 hours of operation at a minimum, or when the trap is three quarters full.

f. The range ventilation system will be operational during all bullet trap cleaning procedures.

 All personnel involved in cleaning of the bullet trap will wear a NIOSH approved respirator, and proper personal protective equipment.

h. All debris from the bullet trap will be collected, package and turned in, in accordance with guidance from the environmental office.

17. Range Rehabilitation.

This chapter applies to all indoor firing ranges that have been identified as candidates for rehabilitation. This chapter further provides guidance for cleaning and/or sampling that might be required prior to the start of rehabilitation.

a. The portion(s) of the range to under go rehabilitation must be sampled to determine the level of lead contamination. Wipe samples will be taken per the established sampling protocol. See Appendix A.

b. All personnel involved in range rehabilitation will wear a NIOSH approved respirator (P-100), and proper personal protective equipment as prescribed in paragraph 14 above.

c. Prior to start of rehabilitation the environmental office must be notified to determine the disposition of lead containing debris.

18. Conversion of Indoor Ranges

Prior to the start of decontamination, employers must ensure that all procedures to be used comply with Federal, State, and local regulations. To ensure that all lead contamination is removed the following procedure is established.

a. All ranges stated for conversion will be inspected and evaluated.

b. All equipment stored in the range, if applicable, prior to the start of decontamination must be sampled, decontaminated, re-sampled and removed or turned in as lead contaminated material. See paragraph 10 above.

c. All acoustical tiles and/or sound proofing material (if applicable) must be removed and turned in as lead contaminated material through the environmental office.

d. The backstop, bullet trap, target retrieval system and firing line stations must be removed and turned in as lead containing material through the environmental office.

e. Light fixtures and ventilation system grills must be removed and decontaminated.

f. Ventilation system ducts need to be decontaminated or removed and replaced.

g. The exhaust fans and/or the complete ventilation air-handling unit (if applicable) must be decontaminated or removed.

h. Cover all openings of any component previously decontaminated prior to start of interior decontamination of the firing range.

19. Deviation

Deviations from this guidance will require a written exception to policy from your Regional Industriat Hygiene Office. Questions and/or comments regarding this subject should be directed to your Regional Industrial Hygiene Office or Chief, National Guard Sureau, Atto: NGB-AVS-S, 111 South George Mason Drive, Arlington, VA 22204-1382.

APPENDIX A GENERAL PROCEDURES FOR COLLECTING WIPE SAMPLES

A-1 If multiple samples are to be collected at the work site, prepare a rough sketch of the area(s) or room(s), which are to be wipe sampled.

A-2 A new set of clean, impervious gloves should be used for each sample to avoid contamination of the media by previous samples and to prevent contact with the substance.

A-3 (1) If using Ghost Wipes™, tear open the individually sealed package. Remove the moistened wipe. Unfold the wipe.

(2) If using a dry media such as MCE or Whatman[™] filter, moisten the filter with distilled or deionized water prior to sampling.

A-4 Place a 10 cm by 10 cm template on the area to be wiped.

A-5 Apply uniform firm pressure while wiping the area inside the template.

A-6 To insure that all portions of the partitioned area are wiped, start at the outside edge and progress toward the center making progress toward the center making concentric squares decreasing in size.

A-7 After collecting a sample, fold the filter or wipe inward and place into a container and number it. Note the number at the sample location on the sketch.

A-8 At least one blank filter treated in the same fashion but without wiping, should be submitted to the laboratory.

APPENDIX B SAMPLING STRATEGY FOR COLLECTION OF WIPE SAMPLES

B-1 Prior to cleaning the ranges, the three samples must be collected and analyzed for total lead dust on each surface, i.e., floor, ceiling, backstop, and wall to include the plenum wall, if applicable. In addition, a total of 3 samples should be collected from areas which have been least disturbed by airflow. Established walkways should be avoided.

B-2 Samples should be staggered to different areas of the range. A grid system should be utilized. Each range surface areas should be divided evenly into 3 by 3 sections. Samples should not be collected on all one section of a wall or end of the building.

APPENDIX G INTERPRETATION OF SAMPLE RESULTS (PRIOR TO GLEANING)

C-1 200 micrograms/sq ft or LESS

If all sample results are 200-micrograms/sq ft or less, the range can be converted and/or used for any purpose.

C-2 SETWEEN 201 and 200,000 micrograms/sq ft

Range must be decontaminated. Continued with cleaning instructions listed in paragraph 9 Sample results will be used to establish a baseline.

C-3 Over 200,000 micrograms/sq ft

Your sample media may not be capable of collecting additional lead dust and results that are above 200,000 micrograms/sq ft, and should be considered suspect.
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APPENDIX C (Continued)

C-4 High sample results may exist due to personnel walking or moving equipment/vehicles over the range surface causing the lead dust to be "ground" into the substratum. For examples, a maintenance activity may have oversprayed paint or spilled solvents onto the surface Regional Industrial Hygiene Office for specific guidance.

APPENDIX D

INTERPRETATION OF SAMPLE RESULTS (AFTER CLEANING)

D-1 200 micrograms/sq. ft or less

If all sample results are less than 200 micrograms/sq ft, the range can be converted and/or used for any purpose after a coat of lead-free latex paint is applied.

APPENDIX E

RECOMMENDED SAMPLE MEDIA AND CONTAINERS

E-1 The following is a list of vendors, which supply the media and containers necessary to collect air and lead surface wipe samples. The information is provided to assist in obtaining the proper media and containers. Alternative vendors are available and may be utilized, if known. Contact your Regional Industrial Hyglene Office for additional assistance or clarification.

E-2 Pre-loaded 3 piece cassette with mixed cellulose ester (MCE) filter and pad, 37 millimeter (mm), pore size 0.8 microns, breathing zone (8Z) and general area (GA) air samptes.

Order From Catalog Number

- a. Millipore Corp. MAWP-037-A0 Ashdy Road Bedford, MA 01730 617-275-9200 800-225-1380
- b. Gelman Sciences 64678 (GN-4)
 600 South Wagner Rd
 Ann Arbor, Mi 48106
 313-665-0651
 800-521-1520
- c. Supelco. Inc. 2-3368M Supelco Park
 Bellefonte, PA 16823
 800-247-6628
 800-359-3041

E-3 37 mm MCE Filter with pad, no cassetta included, for lead surface wipe samples.

Order From Catalog Number

a. Supelco Inc. 2-33811M Supelco Park Bellefonte, PA 16823

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APPENDIX E (Continued)

800-247-0628 800-359-3041

- b. Millipore Corp. AAWP-037-00 Ashdy Road Bedford, MA 01730 617-275-9200 800-225-1380
- c. SKC, Inc. 225-5 334 Valley View Rd. Eighty Four, PA 15330 412-841-9701 800-752-8472

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E-5. Glass container (25 milliliter) for collection and shipment of media.

Order From Catalog Number

- a. Pierce Chemical Co. 13219 (screw cap) P.O. Box 117 Rockford, IL 61105 815-966-0747 800-874-3723
- Altech Associates, Inc. 95321 (screw cap) Applied Science Labs 2051 Waukegan Rd. Deerfield, IL 60015 312-948-8600

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APPENDIX E (Continued)

800-255-8324

E-6. Ghost Wipes™.

Order From Catalog Number

Environmental Express SC4200 490 Wando Park Blvd. Mt. Pleasant, SC 29484 1-800-343-5319

E-7. Ghost Wipe™ Containers

Order From Catalog Number

Environmental Express SC499 490 Wando Park Blvd. Mt. Pleasant, SC 29464 1-800-343-5319

E-8. Plastic ziplock bags can be obtained through the Army logistics system. Many sizes are available. Contact your supporting logistics branch for assistance.

E-9. Distilled water can be purchased at larger grocery stores, usually by the gallon, at a cost of approximately \$1.25. Deionized water can be obtained at local and state water labs or a hospital.

APPENDIX F EXAMPLES OF COMPUTATION OF LEAD LEVELS FROM WIPE SAMPLE RESULTS

Sample results will be returned in the form of micrograms. The results must be converted to micrograms per square foot. This can be accomplished by following the examples listed below:

$$\frac{75 \text{ ug}}{100 \text{ cm}^2} = \frac{929 \text{ cm}^2}{1 \text{ sq ft}}$$

$$\frac{75 \times 929}{100} = \frac{69675}{100} = 698.75 \text{ ug/sq ft}$$

ug - Microgram

Cm2 - Centimeters squared

Sq ft – Square foot

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APPENDIX G SURFACE WIPE SAMPLING SHEET

	Industrial	Hygiene Sur	face Wipe Sar	nple Sheet		
Return Address			Point of Conta	ct (name & phone #)		
			Samples Collected By			
Sampled Facility		City	State	Location (bidg/area)		
escription of Op	eration		Date Collected	Date Shipped		
nalysis Desired		· · · · · ·				
empling Data	- -					
ab Use Only	Sample #	Results		Remarks		
		1				
			·	<u></u> ,		
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				. <u></u> .		
		p				
<u> </u>		l				
omments to Lab:						

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APPENDIX H AIR SAMPLING SHEET

		Industrial H	ygiene Ai	r Samp	e Sheet	
Return Ad	dress		Point of	Contact (n	ame/phone #)	
			Samples	Collected	By	
Sampled F	acility	City	State	Location	(bldg/aree)	
Description	of Operation	Persons Exposed	H_rs/Day	Meth	od of Collection	
Analysis D	esired			, <u></u> , ,		
Sampling [)ata					
Sample No.						
Pump No.						B
Time On						Ĺ
Time Off						A
Total Time (min)						N
Flow Rale (LPM)						к
Volume (ilters)	 					
GANBZ						
Employee Name/ID						
Laboratory No.	Information					
Vanoration	Call	vation (I Dist	i			· · · · ·
Pump No.	Pre-Use	Post-Use	Rotamele	Setting	1	Date
		·				
				· • · · · · · · · · · · · · · · · · · ·		
			·			<u></u>
	·				<u> </u>	
Name of Calibr	ator	Callbration Date	Pumo Man	ulaciorer		·····
Comments to L	.ab :					···

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APPENDIX I ABBREVIATIONS AND TERMS

Section I Abbreviations

ARNG Army National Guard

BUN Blood urea nitrogen

82 Breathing zone

CBC Complete blood count

CFR Code of Federal Regulations

om Centimeter

DHEW Department of Health, Education and Weifare

EPA Environmental Protection Agency

GA General area

÷.

OMPF Official Military Personnel File

OPF Official Personnel File

OSHA Occupational Safety and Health Administration

TCLP Toxic Characteristic Leaching Procedures

ug/sq ft Micrograms per square foot

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NGB-AVS-SG SUBJECT: All States (Log Number P01-0075) Army National Guard (ARNG) Safety and Occupational Health Program – POLICY AND RESPONSIBILITIES FOR INSPECTION, EVALUATION AND OPERATION OF ARMY NATIONAL GUARD INDOOR FIRING RANGES

APPENDIX I (Continued)

Section il Terms

HEPA

Refers to high efficiency particulate air filter systems capable of capturing up to 99.97 percent of particles 0.3 microns in size or larger.

Lead-Contaminated Range

It is assumed that all indoor ranges, which have been fired in, are lead-contaminated.

Wipe Sample

The terms wipe, swipe, or smear samples are use synonymously to describe the techniques utilized for assessing lead surface contamination.

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FOIA Requested Record #J-15-0085 (MA) Released by National Guard Bureau Page 2757 of 3473



Prepared For:

National Guard Bureau Army National Guard Region North Industrial Hygiene Office 301 – IH Old Bay Lane Havre De Grace, Maryland 21078

Prepared By:

URS Corporation 5 Industrial Way Salem, New Hampshire 03079

INDUSTRIAL HYGIENE SURVEY REPORT MASSACHUSETTS NATIONAL GUARD READINESS CENTER 1 COL. LAVALLEY LANE NORTHAMPTON, MA 01062

July 15, 2013 PN: 39743799



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	ARMORIES

FINDINGS AND RECOMMENDATIONS MASSACHUSETTS NATIONAL GUARD READINESS CENTER 1 COL. LAVALLEY LN, NORTHAMPTON, MA

Findings	Recommendations	Risk Assessment Code (RAC)
Lighting	tu at	
On the day of the survey, the illuminance was inadequate in several locations tested.	Increase lighting in the work areas. While work is in progress, these areas must be lighted by at least the minimum lighting intensities (ANSI / IESNA RP-1-04).	RAC 4
Ergonomics		
Computer workstations in the Administrative Areas were observed with un-adjustable chairs, arm rests and keyboards.	Ergonomic issues with regard to the desks and chairs should be corrected by fitting the workplace to the worker (Department of the Army Pamphlet 40-21, Chapter 4, Page 7, Section 4-3).	RAC 3
Lead	L	
Four of the 9 lead wipe samples indicated elevated lead levels.	Personnel trained in accordance with the OSHA Lead Standard should clean the areas where elevated lead dust levels were identified (OSHA 29 CFR 1910.1025(h)(1)).	RAC 3
Emergency Exits	r	
Emergency exit signs were not visible from all areas of the facility or illuminated.	Emergency exits should be properly illuminated (29 CFR 1910.37 (q)(6)).	RAC 3
Asbestos		
Presumed asbestos-containing floor tile and mastic were damaged throughout the facility; an Asbestos Operation and Maintenance Program was not available on-Site.	Develop a site-specific asbestos operations and maintenance program for management of asbestos-containing materials in place as required by OSHA 29 CFR 1910.1001(j)(2).	RAC 3
PPE		
Hazard assessments have not been conducted to determine whether personal protective equipment is required.	Conduct a hazard assessment of site operations to determine what types of PPE are required for each type of work (29 CFR 1910.132(d)(1)).	RAC 4

Findings	Recommendations	Risk Assessment Code (RAC)
Ladders		
Ladders were improperly stored.	Ladders not in use shall be properly stored in a vertical position fastened to walls (29 CFR 1910.25 (c)(2)(i)).	RAC 4
Fire Extinguishers		
A fire extinguisher was not properly mounted to the wall.	Portable fire extinguishers shall be mounted, located and identified so that they are readily accessible (29 CFR 1910.157 (c)(1))	RAC 3
Former Indoor Firing Range	-	
The former Indoor Firing Range has been posted as unsafe due to lead contaminated; however the area is still regularly used for storage.	Personnel trained in accordance with the OSHA Lead Standard should clean the areas where elevated lead dust levels were identified (OSHA 29 CFR 1910.1025(h)(1)).	RAC 3
Elevated lead dust levels were identified in building areas outside of the former Indoor Firing Range. Good hygiene practices should be used when entering the Firing Range to avoid carrying dust to other parts of the building.	Good hygiene practices shall be followed in areas where airborne lead dust may be generated (29 CFR 1910.1025 (i)(1)).	RAC 3

1.0 SUMMARY

At the request of the National Guard Bureau (NGB) Region North Industrial Hygiene Office, URS Corporation (URS) conducted an industrial hygiene survey at the Readiness Center in Northampton, Massachusetts.

URS representative, Ms. **Non-Responsive**, conducted the Industrial Hygiene Survey on May 21, 2013. The scope of work included an overall assessment of the facility as it relates to industrial hygiene and included a walkthrough of the facility, collection of photographs, and when required, measurements for illumination (light), area and personal air sampling, and noise mapping.

The Northampton Readiness Center is a one-story brick building, consisting of offices, a classroom, a supply area, gender separate bathrooms, storage rooms, a kitchen, an Assembly Hall and a former Indoor Firing Range. A layout of the Readiness Center is provided in Appendix A.

<u>GENERAL</u>: The former Indoor Firing Range was taken out of service and is actively being used for storage. Presumed asbestos-containing floor tiles were noted to be damaged throughout the facility. Emergency exit signs were not posted and illuminated throughout the facility. Emergency escape plans were not posted throughout the facility. A fire extinguisher was not properly mounted to the wall. Ladders were not properly secured and stored.

<u>LIGHTING</u>: Lighting in the Readiness Center was found to be inadequate in several of the areas measured. Areas noted within the report as having inadequate lighting require upgrading by either increasing the general lighting or through the use of task lighting. While work is in progress work areas must be lighted by at least the minimum light intensities.

<u>LEAD</u>: Four of the nine wipe samples collected in the Readiness Center were found to contain lead in a concentration above the recommended limit set by the NGB, Region North IH Office.

On the day of the survey, the paint chip samples were not found to contain a level of lead above the HUD criteria for determination of paint as lead-based.

<u>ASBESTOS</u>: Presumed asbestos-containing floor tiles were noted to be damaged throughout the facility. No Asbestos Operations and Maintenance Program was found on site. Until suspect materials have been sampled and determined not to contain asbestos, they must be presumed to be asbestos-containing and managed accordingly.

<u>ERGONOMICS</u>: Many of the work stations had ergonomic issues which require attention. Computer workstations were assessed during the walkthrough for ergonomic issues. The computer workstations in the facility did not meet the current Occupational Safety and Health Administration (OSHA) ergonomic recommendations. The chair armrests, keyboards, and monitors were not adjustable. All workstations in the facility should be adjusted and monitored. The ergonomic issues with regard to the workstations and chairs need to be corrected by fitting the workplace to the worker.

<u>NOISE</u>: Noise mapping in the Readiness Center determined that noise levels were below the OSHA permissible exposure limit (PEL) and Department of Defense Instruction (DoDI) Hearing Conservation Standard (6055.12 3 December 2010) on the day of URS' site visit.

2.0 SUPPLY / TRAINING AREA

2.1 Operation Description

This Readiness Center is primarily used for weekend training drills and conducting administrative functions. The building includes offices, a classroom, a supply area, gender separate bathrooms, storage rooms, a kitchen, an Assembly Hall, and a former Indoor Firing Range.

The Readiness Center was found to be neat and organized at the time of URS' site visit.

2.2 Chemical and Physical Agents Sampled

2.2.1 Carbon Dioxide

On the day of the survey, carbon dioxide measurements were made in the Readiness Center. Interior carbon dioxide concentrations were found to be between 491 and 598 parts per million (ppm). Carbon dioxide levels were measured using a direct-reading TSI Q-Trak (Model 8551).

Carbon dioxide is a normal constituent of the atmosphere and ranges from about 250 to 450 ppm. The major source of excess carbon dioxide in the indoor environment is human respiration. Other sources can include open-flame heaters, fermentation processes, and motor vehicles. Carbon dioxide itself is not normally a cause of indoor air quality problems but is typically used as an indicator of the adequacy of fresh air intake. As the concentration of carbon dioxide increases, so do the background levels of other air contaminants.

To minimize air quality complaints, the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) has proposed that the carbon dioxide concentration within an occupied workspace be maintained below 700 ppm above ambient outside levels. For example, on the day of the survey, the outside carbon dioxide level was measured at 471 ppm. Therefore ASHRAE (Standard 62.1-2010) would recommend that interior carbon dioxide concentrations be maintained at or below 1,171 ppm. Using the ASHRAE guideline, the readings at the subject site were found to be below the suggested indoor to outdoor differential concentration.

2.2.2 Carbon Monoxide

The carbon monoxide concentration in the Readiness Center was measured between 0.1 ppm and 0.8 ppm on the day of the survey. ASHRAE recommends that average carbon monoxide concentrations not exceed 9 ppm. Typical average concentrations found in commercial buildings range from 0 to 6 ppm. The measured levels were below the ASHRAE guideline for indoor environments. Carbon monoxide was measured using a TSI Q-Trak Plus (Model 8554).

Key sources of carbon monoxide within indoor environments include internal combustion engines, motor vehicle and forklift exhaust, tobacco smoke, space heaters, and improperly adjusted oil or gas burners.

2.2.3 Relative Humidity

The average relative humidity within the Readiness Center measured with the Q-Trak Plus was 64.3%, which was within the guideline of less than 65% recommended by ASHRAE.

2.2.4 Temperature

Temperature should be maintained within the thermal comfort envelope suggested in ASHRAE Standard 55-2010. This standard on thermal environments specifies conditions in which 80% or more of building occupants should find the thermal environment acceptable. ASHRAE 55-2010 suggests temperatures of 68 to 75 degrees Fahrenheit (°F), during winter months, for people in typical seasonal clothing during light sedentary activity. For summer, the temperature should be in the range of 73 to 79 °F.

The average temperature inside the Readiness Center was, 71.9 °F, which was within the guideline of 68 to 75 °F recommended by ASHRAE for thermal comfort.

2.2.5 Lighting

Lighting in the Readiness Center was measured using a cal-Light 400 Light Meter. Table 2-1 below shows lighting measurements in foot candles (FC) and the recommended lighting requirements (Illuminating Engineering Society of North America (IESNA) RP-7-01).

Location	Function	Measured Illuminance in Foot Candles (FC)	Recommended Minimum Illuminance in Foot Candles (FC)
Classroom, table	Admin	158.7	50
Distance Learning Room, desk	Admin	158.9	50
Distance Learning Room, desk	Admin	167.8	50
Kitchen, counter	Admin	30.5	50
Pantry, storage shelf	Storage	5.2	30
Assembly Hall, entry way	Hall	41.2	5
Locker Room	Storage	22.7	30
Locker Room	Storage	1.5	30
Assembly Hall, loading dock	Hall	22.9	5
NBC Room, storage	Storage	11.5	30
Storage area, shelves	Storage	42.8	30
Sgt. Office, desk-	Admin	83.2	50
Computer training workstation	Admin	91.2	50
Admin, desk	Admin	81.2	50
Admin, desk-	Admin	81.4	50
Recruiting Office	Admin	35.8	50

 Table 2-1

 Lighting Measurements and Recommended Lighting Requirements

On the day of the survey, the illuminance in the Readiness Center was determined to be inadequate in six of the locations tested throughout the facility.

2.2.6 Lead

Wipe testing for lead dust was conducted in the Readiness Center using ghost wipes, which meet ASTM E 1792 standards. The analytical report from AMA Analytical Services, Inc. (AMA) is contained in Appendix C. Table 2-2 below shows the results of the lead wipe testing.

Sample Location	URS Sample Number	Area Wiped in Square Feet (ft ²)	Result in Micrograms/ Square Foot (µg/ft ²)	Maximum Surface Contamination Level in Micrograms/ Square Foot (μg/ft ²)
Sgt. Office, desk, window sill	Northampton RC Wipe-012	0.108	<110	200
Locker Room, window sill, towards restroom	Northampton RC Wipe-02	0.108	<110	200
Classroom, behind door	Northampton RC Wipe-03	0.108	<110	200
Supply Room, by loading area	Northampton RC Wipe-04	0.108	550	200
Assembly Hall, rear loading area, behind soda machine	Northampton RC Wipe-05	0.108	500	200
Northeast admin, window sill adjacent to desk	Northampton RC Wipe-011	0.108	<110	200
Former Indoor Firing Range, door at entryway	Northampton RC Wipe-07	0.108	<110	200
Recruiting Office, rear corner by heater	Northampton RC Wipe-08	0.108	650	200
Southwest admin, top of cabinet	Northampton RC Wipe-09	0.108	220	200
Southeast admin, office-	Northampton RC Wipe-10	0.108	<110	200
Vault, behind doorway	Northampton RC Wipe-01	0.108	450	200

Table 2-2 Levels of Lead Dust Found in the Readiness Center

Five of the eleven surface dust level measurements were found to contain lead at a level above the NGB recommended level, based on the OSHA clarification letter which states "as free as practicable" of lead contamination as specified under OSHA 29 CFR 1926.62.

Four paint chip samples were collected from areas of peeling paint in the facility and were analyzed for lead content. The analytical report from AMA is contained in Appendix C.

According to the U.S. Department of Housing and Urban Development (HUD), paint is considered to be lead-based if the quantity of lead is greater than 0.5% by weight. OSHA has not established a minimum percentage of lead to be defined as lead-based paint, therefore paint with lead in any amount above the analytical detection limit is considered to be lead-based under these regulations. The results of URS' lead paint testing are contained in Table 2-3.

HUD Lead-Based Lead **Paint Location** Concentration Quantity (Percent Weight) (Percent Weight) Supply room, ceiling 0.051 0.5 Supply room, ceiling 0.045 0.5 Locker Room, ceiling 0.039 0.5 0.033 Men's Bathroom, ceiling 0.5

Table 2-3 Lead Content in Painted Surfaces

On the day of the survey, none the paint chip samples were found to have a lead content above the HUD criteria for determination of paint as lead-based.

2.2.7 Asbestos

No damaged, friable suspect materials were identified for sample collection.

Presumed asbestos-containing floor tiles and associated mastic were also identified during this survey. Until suspect materials have been sampled and determined not to contain asbestos, they must be presumed to be asbestos-containing and managed accordingly.

2.3 Ventilation System Evaluation

The facility, not designed for vehicle maintenance, contains a ventilation system that is limited to localized personal ventilation (i.e. room fans, window air conditioning units) within the majority of rooms, and main negative draw fans in the Assembly Hall.

2.4 Noise Measurements

Noise mapping was conducted throughout the Readiness Center. Area noise mapping results indicated that, on the day of the survey, noise levels throughout the Readiness Center ranged from 52.8 decibels to 60.2 decibels. All noise mapping results were below the DoDI Hearing Conservation Standard (6055.12 3 December 2010) of 85 decibels, A scale (dBA)/8-hour day.

2.5 Personal Protective Equipment

Personal protective equipment was orderly and readily available to employees in the Readiness Center. Personal protective equipment included safety glasses, ear plugs and nitrile gloves. No personal protective equipment was observed in use during URS' site visit.

3.0 SAFETY AND INDUSTRIAL HYGIENE PROGRAMS

3.1 Confined Spaces

A written confined spaces program is not applicable to this facility.

3.2 Hearing Conservation

A written hearing conservation program was identified on site. A review of normal site activities determined that no operations were identified that would warrant hearing protection. Based on noise mapping results and a review of normal site operations, a hearing conservation program is not required for this site.

3.3 Respiratory Protection

A site-specific written program regarding Respiratory Protection was identified on site. No operations were observed by URS that would require the use of respiratory protection. If workers are allowed access to the former firing range, a hazard assessment should be conducted to determine whether respiratory protection and other forms of PPE should be required in this area.

3.4 Hazard Communication

A site-specific hazard communication program was identified on site.

Material safety data sheets, a site map, and list of full time personnel were readily available on the day of the survey.

3.5 Personal Protective Equipment

A written personal protective equipment program was identified on site. A hazard assessment should be conducted to determine whether personal protective equipment is required for activities typically undertaken at the Readiness Center.

3.6 Asbestos Operations and Maintenance Program

A written asbestos operations and maintenance program was not identified on site.

3.7 Safety

The former Indoor Firing Range was taken out of service and is actively being used for storage. Presumed asbestos-containing floor tiles were noted to be damaged throughout the facility. Emergency exit signs were not posted and illuminated throughout the facility. Emergency escape plans were not posted throughout the facility. A fire extinguisher was not properly mounted to the wall.

FOIA Requested Record #J-15-0085 (MA) Released by National Guard Bureau Page 2771 of 3473

4.0 REFERENCES

American Conference of Governmental Industrial Hygienists

Industrial Ventilation: A Manual of Recommended Practice, 27th Edition, 2010

Guidelines for the Assessment of Bio-aerosols in the Indoor Environment, 1989

American National Standards Institute

ANSI/IESNA RP-1-04: American National Standard Practice for Office Lighting

ANSI/IESNA RP-7-01: Recommended Practice for Lighting Industrial Facilities

American Society of Heating, Refrigerating and Air-Conditioning Engineers

ANSI/ASHRAE Standard 62.1-2010: Ventilation for Acceptable Indoor Air Quality

ANSI/ASHRAE Standard 55-2010: Thermal Environmental Conditions for Human Occupancy.

Department of the Army

DA PAM 40-21, Ergonomics Program, 15 August 2003

Unified Facilities Criteria, Heating, Ventilating and Air Conditioning, 3-520-05, 14 April 2008

DA PAM 40-501, Hearing Conservation Program, 10 December 1998.

AR 385-10, The Army Safety Program, 23 August 2007; RAR Issue Date: 4 October 2011

National Guard Pamphlet 420-15, Guidelines and Procedures for Rehabilitation and Conversion of Indoor Firing Ranges, 3 November 2006

Department of Defense

DoDI 6055.12, Hearing Conservation, 3 December 2010

Creating the Ideal Computer Workstation: A Step-by-Step Guide, June 2000

National Institute for Occupational Safety and Health

Current Intelligence Bulletin 50: Carcinogenic Effects of Exposure to Diesel Exhaust, August 1988

U. S. Environmental Protection Agency

Asbestos Hazard Emergency Response Act (40 CFR Part 763)

National Emissions Standards for Hazardous Pollutants (40 CFR Part 61)

U. S. Department of Housing and Urban Development

Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (1995, 1997, 2012)

U. S. Occupational Safety and Health Administration

Standard for General Industry: 29 CFR 1910

OSHA Clarification Letter – Clarification of "as free as practicable" of lead contamination under 29 CFR 1926.62, 13 January 2003.

APPENDIX A

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SHOP DRAWING



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APPENDIX B

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PERSONNEL LIST

List of Full-Time Personnel was not available at the time of the survey.

APPENDIX C

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ANALYTICAL RESULTS

AMA Analytical Services, Inc.

Attention:

A Specialized Environmental Laboratory

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CERTIFICATE OF ANALYSIS

AIHA LAP, LLC ACCREDITED LABORATORY INDUSTRIAL HYGIENE, ENVIRONMENTAL LEAD & ENVIRONMENTAL MICROBIOLOGY ISONEC 17025-2005 www.aihaaccreditedlabs.org LAB #100470

Client:	National Guard Bureau	Job Name:	MA ARNG	Chain Of Custody:	515975			
Address:	301-IH Old Bay Lane, Attn: ARNG-CJG-P, State Military Reservation	Job Location:	Northampton RC	Date Submitted:	5/28/2013			
	Havre de Grace, Maryland 21078	Job Number:	39743799.00030	Person Submitting:	Non-Respo	nsive		
		P.O. Number:	W912K6-09-A-0003	Date Analyzed:	6/4/2013	Report Date:	6/4/2013	
	Man Daamanajiya							

Summary of Atomic Absorption Analysis for Lead

Page 1 of 3

AMA Sample Number	Client Sample Number	Analysis Type	Sample Type	Air Volume (L)	Area Wiped (ft²)	Rej	porting Limit	Total ug	Final Res	ult	Comments
13065684	ANG Northampton RC W-012	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/ft²	
13065685	ANG Northampton RC W-02	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/ft²	
13065686	ANG Northampton RC W-03	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/fl²	
13065687	ANG Northampton RC W-04	Flame	Wipe	****	0.108	110	ug/ft²	60	550	ug/ft²	
13065688	ANG Northampton RC W-05	Flame	Wipe	****	0.108	110	ug/ft²	54	500	ug/ft²	
13065689	ANG Northampton RC W-11	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/ft²	
13065690	ANG Northampton RC W-07	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/ft²	
13065691	ANG Northampton RC W-08	Flame	Wipe	****	0.108	110	ug/ft²	70	650	ug/ft²	
13065692	ANG Northampton RC W-09	Flame	Wipe	****	0.108	110	ug/ft²	23	220	ug/ft²	
13065693	ANG Northampton RC W-10	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/fl²	
13065694	ANG Northampton RC TB-W	Flame	Wipe Blank	****	N/A	12	ug		<12	ug	

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CERTIFICATE OF ANALYSIS



A Specialized Environmental Laboratory

MA ARNG Job Name: Chain Of Custody: 515975 National Guard Bureau Client: Address: 301-IH Old Bay Lane, Attn: ARNG-CJG-P, Job Location: Northampton RC Date Submitted: 5/28/2013 State Military Reservation Havre de Grace, Maryland 21078 39743799.00030 Job Number: **Person Submitting:** P.O. Number: W912K6-09-A-0003 6/4/2013 Date Analyzed: Report Date: 6/4/2013

Attention:

Summary of Atomic Absorption Analysis for Lead

Page 2 of 3

AIHA LAP, LLC ACCREDITED LABORATORY

NOUSTRIAL HYGIENE, ENVIRONMENTAL LEAD **& ENVIRONMENTAL MICROBIOLOGY** ISONEC 17025 2005 LAB #100470

AMA Sample Number	Client Sample Number	Analysis Type	Sample Type	Air Volume (L)	Area Wiped (ft²)	Rep L	orting imit	Total ug	Final Res	ult	Comments
13065695	ANG Northampton RC W-01	Flame	Wipc	****	0.108	110	ug/ft²	49	450	ug/fl²	
13065696	ANG Northampton RC LBP-02	Flame	Paint Chip	****	N/A	0.0077	%Pb		0.051	%Pb	
13065697	ANG Northampton RC LBP-03	Flame	Paint Chip	****	N/A	0.0081	%Pb		0.045	%Pb	
13065698	ANG Northampton RC LBP-04	Flame	Paint Chip	****	N/A	0.0086	%Pb		0.039	%Pb	
13065699	ANG Northampton RC LBP-05	Flame	Paint Chip	****	N/A	0.0077	%Pb		0.033	%Pb	

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CERTIFICATE OF ANALYSIS

AIHA LAP, LLC ACCREDITED LABORATORY

NOUSTRIAL HYGIENE, ENVIRONMENTAL LEAD **8 ENVIRONMENTAL MICROBIOLOG** ISONEC 17025-2005

LAS #100470 Chain Of Custody: 515975 National Guard Bureau Job Name: MA ARNG Client: 301-IH Old Bay Lane, Attn: ARNG-CJG-P, Northampton RC Address: Job Location: Date Submitted: 5/28/2013 State Military Reservation Havre de Grace, Maryland 21078 Job Number: 39743799.00030 **Person Submitting:** P.O. Number: W912K6-09-A-0003 6/4/2013 Date Analyzed: 6/4/2013 Report Date: Attention: Page 3 of 3

Summary of Atomic Absorption Analysis for Lead

Air Volume Area Wiped AMA Sample **Client Sample** Analysis Type Sample Type Reporting Total ug **Final Result** Comments Limit Number Number (L) (ft2) See QC Summary for analytical results of quality control samples Analysis Method for Flame: Air, Wipes, Paints, and Soil/Solids: EPA 600/R-93/200(M)-7000B; Water: SM-3111B associated with these Analysis Method For Furnace: Air, Wipes, Paints, and Soil/Solids: EPA 600/R-93/200(M)-7010; Water: SM-3113B samples. mg/Kg = parts per million (ppm) on a dry weight basis mg/L = parts per million (ppm) N/A = Not Applicable ug/L = parts per billion (ppb) %Pb = percent lead on a dry weight basis ug = micrograms Note: All samples were received in good condition unless otherwise noted. Note: All results have two significant digits. Any additional digits shown should not be considered when interpreting the result. Air and Wipe results are not corrected for any blank results Final results for air and wipe samples are based on client supplied information nor verified by this laboratory. All results are to be considered preliminary and subject to change unless signed by the Technical Director or Deputy. Analy **Technical Manager**

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APPENDIX D

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APPENDIX E

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RECOMMENDATIONS FOR SURFACE LEAD DUST IN ARMORIES

Subject: Recommendations for Surface Lead Dust in Armories

- 1. In armories that do not contain childcare facilities, the National Guard Bureau (NGB) Region North Industrial Hygiene Office recommends cleaning the areas in which sample results are greater than 200 micrograms per square foot (µg/ft²). If a special function will be held in which children will be present in this facility, consider thoroughly cleaning the areas that will be accessible to children prior to the function. This guidance is based on professional judgment, risk assessments, adaptation of Occupational Safety and Health Administration (OSHA) guidance, and feasibility of cleaning to a certain level.
 - a. Environmental Protection Agency (EPA) standards (40 Code of Federal Regulations (CFR) 745.227(h)(3)) are not directly applicable because they are criteria for dust-lead hazards developed for floors (40 μ g/ft²) and windowsills (250 μ g/ft²) in residential dwellings and child occupied facilities. A child occupied facility is defined as a building, or portion of a building, constructed prior to 1978, visited regularly by the same child, 6 years of age or under, on at least two different days within any week (Sunday through Saturday period), provided that each day's visit lasts at least 3 hours and the combined weekly visit lasts at least 6 hours, and the combined annual visits last at least 60 hours. Most of the wipe samples in armories were collected in undisturbed areas and therefore, results are worst case scenarios and do not correlate to these standards.
 - b. OSHA has no specific requirement for work area surfaces. The lead standard (29 CFR 1910.1025(h)) states that all surfaces shall be maintained as free as practicable of accumulations of lead dust. In workplaces where lead dust is generated, surface levels may be much higher, but personnel exposures can be controlled by limiting airborne lead levels and following good cleanup and hygienic practices.
 - c. OSHA used to cite a level of 200 μ g/ft² in their Technical Manual and 29 CFR 1926.62 as guidance to its own inspectors for evaluating the cleanliness of lunchroom and locker room surfaces that are supposed to be kept as clean as possible.
 - d. In a report titled Derivation of Wipe Surface Screening Levels for Environmental Chemicals, the US Army Center for Health Promotion and Preventive Medicine (USACHPPM) has determined that 200 μ g/ft² is a safe surface contamination level. They have also applied these standards as the decontamination levels for surfaces in administrative offices.
 - e. It should be noted that levels above these recommendations do not necessarily mean there is a significant hazard to workers who are following good cleaning and hygienic practices since there is no

correlation between wipe and air samples. Rather, we recommend these levels as a precautionary measure.

- 2. The NGB Occupational Health Branch is developing guidance for armories that are used as childcare facilities. All states will receive this guidance when it is completed. In the interim, we recommend the following actions:
 - a. Clean all areas that will be accessible to children to the EPA dust-lead standard for children 6 years of age or under (40 μ g/ft² on floors and 250 μ g/ft² on windowsills).
 - b. Refer to the local authorities' regulations since they can be more stringent than federal regulations.
 - c. Post signs in the area to inform people of the presence of lead dust and its effects.
 - d. If soldiers clean weapons in the facility change the policy so that they cannot clean their weapons in the facility, or if they are allowed to clean their weapons indoors, they must clean the area by wet wiping and mopping the area when they are done.
 - e. If the paint is peeling, contact the state Environmental Office to test for lead content and provide recommendations.
- 3. Air samples collected on individuals in the armory were well below OSHA's permissible exposure limit for lead (29 CFR 1910.1025(c)) of 0.05 milligrams per cubic meter (mg/m³) averaged over an 8-hour day. Therefore, based on these conditions there is currently no overexposure to personnel from lead dust in this building.

Prepared For:

National Guard Bureau Army National Guard Region North Industrial Hygiene Office 301 – IH Old Bay Lane Havre De Grace, Maryland 21078

Prepared By:

URS Corporation 5 Industrial Way Salem, New Hampshire 03079

INDUSTRIAL HYGIENE SURVEY REPORT PITTSFIELD ARMORY 160 VIN HEBERT ROAD PITTSFIELD, MASSACHUSETTS

September 2006 PN: 39741508

Non-Responsive

Office Manager



Project Manager

Posted to NGB FOIA Reading Room May, 2018

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- Appendix H Policy and Responsibilities For Inspection, Evaluation And Operation Of Army National Guard Indoor Firing Ranges (National Guard Regulation 385-15, 30 December 2002)

FINDINGS AND RECOMMENDATIONS

Findings Lead Lead was detected in wipe samples in amounts greater than 200 µg/ft ²	Recommendation Personnel trained in accordance with the OSHA Lead Standard should clean the areas where lead was detected in quantities of greater than 200 micrograms per square foot (OSHA 29 CFR 1910.1025(h)(1))	Risk Assessment Code RAC 3
Mold		
Water damaged was observed throughout. Mold growth could become an issue if left unattended.	Determine and repair source of water. Replace water damaged building materials and implement a moisture management program to provide direction for future water incursions (Best management practice)	RAC 4
Asbestos		
Damaged floor tile, window glazing, pipe insulation and pipe fitting insulation containing greater than 1% asbestos was present in this facility.	Remove and replace damaged asbestos-containing materials. Work should be completed by personnel trained in accordance with federal regulations (OSHA 29 CFR 1910.1001(k)(1))	RAC 3
A site specific asbestos operations and maintenance plan available, however there were no training records available and labeling of installed asbestos-containing materials has not been completed.	Implement the site specific asbestos operations and maintenance plan to manage asbestos-containing materials (OSHA 29 CFR 1910.1001(j)	RAC 3
Hazard Communication		
A site specific hazard communication plan was not available.	Implement the site specific hazard communication plan to manage hazardous materials (OSHA 29 CFR 1910.1200(e))	RAC 4

1.0 SUMMARY

At the request of the National Guard Bureau (NGB) Region North Industrial Hygiene Office, URS Corporation (URS) conducted an industrial hygiene survey at the Pittsfield Armory located at 160 Vin Hebert Road in Pittsfield, Massachusetts 01201. This report includes an executive summary, a description of the survey protocol, a discussion of the survey evaluation and findings and a list of conclusions and recommendations.

On January 30, 2004, Mr Non-Responsive an industrial hygienist with URS, conducted a site visit to the Pittsfield Armory in Pittsfield, Massachusetts. The purpose of this site visit was to conduct an industrial hygiene survey, which included the collection of air samples, bulk samples, lighting measurements, and a review of site health and safety procedures.

A drawing of the facility, which shows the locations where measurements were made during this survey, is contained in Appendix A.

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2.0 ADMINISTRATIVE AREA

2.1 Operation Description

This building area contains multiple offices located throughout the building with desks and computer workstations. Computer workstations were assessed during the walkthrough for ergonomic issues. Computer workstation chairs and armrests were in a fixed position and keyboards could not be adjusted. If more than one person is using that station, then proper adjustments need to be made to accommodate each person.

Water damage from a roof leak was observed in the janitor's closet.

2.2 Chemical and Physical Agents Sampled

2.2.1 Relative Humidity

Relative humidity levels were measured using a TSI Q-Track (Model 8551). Relative humidity on the day of the survey averaged 17%. These readings were below the recommended maximum level of 65% set by the American Society of Heating, Refrigerating and Air-Conditioning Engineers Inc. (ANSI / ASHRAE Standard 62.1-2004).

2.2.2 Carbon Dioxide

On the day of the survey, carbon dioxide measurements were made at various locations throughout the Readiness Center. The carbon dioxide concentration ranged from 524 to 563 parts per million (ppm), with an average of 544 ppm. Carbon dioxide levels were measured using a direct-reading TSI Q-Track (Model 8551).

Carbon dioxide is a normal constituent of the atmosphere and ranges from about 250 to 450 ppm. The major source of excess carbon dioxide in the indoor environment is people. Other sources can include open-flame heaters, fermentation processes, and motor vehicles. Carbon dioxide itself is not normally a cause of indoor air quality problems because concentrations must exceed 5,000 to 10,000 ppm before health effects such as headache, drowsiness, and increased respiration are noted. Typically,

carbon dioxide is used as an indicator of the adequacy of fresh air intake. As the concentration of carbon dioxide increases, so do the background levels of other air contaminants.

ASHRAE (62.1-2004) recommends that levels of carbon dioxide be maintained below 700 ppm above the outside level. Since interior levels of carbon dioxide remained below 700 ppm an outside reading was not made.

2.2.3 Carbon Monoxide

Carbon monoxide was also measured in the armory. Carbon monoxide concentrations remained below detectable limits throughout the survey period. The measured levels were below the ASHRAE guideline for indoor environments. Carbon monoxide was measured using a TSI Q-Track (Model 8551).

Key sources of carbon monoxide within indoor environments include internal combustion engines, motor vehicle and forklift exhaust, tobacco smoke, space heaters, and improperly adjusted oil or gas burners. Health effects from exposure to elevated concentrations of carbon monoxide may include fatigue, impairment of visual acuity, irregular heartbeat, headache, nausea, and confusion. ASHRAE recommends that average carbon monoxide concentrations not exceed 9 ppm. Typical average concentrations found in commercial buildings range from 0 to 6 ppm.

2.2.4 Lighting

Lighting in the administrative area was measured using a Sper Scientific Ltd. Light Meter (Model 840020C). Table 2-1 below shows lighting measurements and the recommended lighting requirement ANSI / IESNA RP –1-04 American National Standard Practice for Office Lighting).

Location	Function	Measured Illuminance (foot candles)	Recommended Minimum Illuminance (foot candles)
Classroom	Administrative Duties	64	50
Recruiter's Office	Administrative Duties	79	50

Table 2-1 Lighting Measurements and Recommended Lighting Requirements

On the day of the survey the illuminance in the administrative area was adequate.

2.2.5 Lead

Wipe testing for lead was conducted in the administrative area using ghost wipes, which meet ASTM E 1792 standards. The analytical report from AMA Analytical Services, Inc. (AMA) is contained in Appendix D. Table 2-2 below shows the results of the lead sampling.

Table 2-2 Levels of Lead Dust Found in the Administrative Area

Sample Location	URS Sample Number	Area Wiped (ft2)	Result (µg/ft2)	Maximum Surface Contamination Level (µg/ft2)	
Foyer East	130B-13	1.000	<12	200	
Locker Room Floor	130B-14	1.000	800	200	
Blank	130B-15	NA	<12 μg	NA	

2.3 Ventilation System Evaluation

Not applicable to this operation.

2.4 **Noise Measurements**

Not applicable to this operation.

2.5 Personal Protective Equipment

Not applicable to this operation.

2.6 Interpretation of Results

GENERAL: In general, the administrative area was neat and orderly.

<u>LIGHTING</u>: On the day of the survey, the illuminance in the administrative area was adequate.

<u>LEAD</u>: A wipe sample from the floor of the locker room contained lead in a concentration greater than the 200 microgram per square foot limit set by the NGB Region North Industrial Hygiene Office (Appendix G). This area should be cleaned by personnel trained in accordance with the OSHA lead standard (29 CFR 1910.1025 and 29 CFR 1926.62).

MOLD: The water damage to the ceiling of the janitor's closet could lead to mold problems if not addressed.

3.0 FORMER FIRING RANGE

3.1 Operation Description

The firing range has been dismantled and is now used for storage.

3.2 Chemical and Physical Agents Sampled

3.2.1 Lead

Wipe testing for lead was conducted in the former firing range using ghost wipes, which meet ASTM E 1792 standards. The analytical report from AMA is contained in Appendix D. Table 3-1 below shows the results of the lead sampling.

Sample Location	URS Sample Number	Area Wiped (ft2)	Result (µg/ft2)	Maximum Surface Contamination Level (μg/ft2)
Former Indoor Firing				
Range – South Locker	130B-08	1.000	100	200
Тор				
Former Indoor Firing	130B-09	1 000	120	200
Range – Center Shelf Top	1000-03	1.000	120	200
Former Indoor Firing	130B-10	1.000	62	200
Range – South Floor	1000-10	1.000	02	200
Former Indoor Firing	130B-11	1 000	410	200
Range – North Floor	1000-11	1.000	410	200
Blank	130B-15	NA	<12 μg	NA

Table 3-1Levels of Lead Dust Found in the Former Firing Range

One air sample for lead dust was also collected in the former firing range. Table 3-2 below shows the result of this air sample.

Table 3-2 Level of Lead Found in the Air

Sample Location	URS Sample Number	Air Volume (L)	Result (µg/m3)	OSHA's PEL (µg/m3)	
Former Firing Range	130-02	234	<13	50.0	
Blank	130-03	NA	<3 μg	NA	

On the day of the survey, the airborne lead dust level in the former firing range was found to be acceptable, below OSHA's permissible exposure limit (PEL) for lead (29 CFR 1910.1025(c)) of 50.0 μ g/m³ averaged over an 8-hour day. The analytical report from AMA is contained in Appendix D.

3.3 Ventilation System Evaluation

Not applicable to this operation.

3.4 Noise Measurements

Not applicable to this operation.

3.5 Personal Protective Equipment

Not applicable to this operation.

3.6 Interpretation of Results

<u>LEAD</u>: One of the four surface wipe samples collected in the former firing range was found to contain a lead dust level which exceeded the maximum limit set by the NGB Region North Industrial hygiene Office (See Appendix G). Guidelines for the cleanup and rehabilitation of indoor firing ranges are provided in Appendix H.

4.0 DRILL HALL

4.1 Operation Description

The drill hall is used for unit formations and activities as well as for storing equipment. There is a concrete floor and the walls are constructed of cinder-block.

4.2 Chemical and Physical Agents Sampled

4.2.1 Lead

Wipe testing for lead dust was conducted in the drill hall using ghost wipes, which meet ASTM E 1792 standards. The analytical report from AMA is contained in Appendix D. Table 4-1 below shows the results of the lead sampling.

Sample Location	URS Sample Number	Area Wiped (ft2)	Result (μg/ft2)	Maximum Surface Contamination Level (μg/ft2)
Drill Hall – Northeast	130B-04	1.000	<12	200
Drill Hall – Northwest	130B-05	1.000	70	200
Drill Hall – Southwest	130B-07	1.000	88	200
Blank	130B-15	NA	<12 μg	NA

Table 4-1 Levels of Lead Dust Found in the Drill Hall

One air sample for lead dust was collected in the drill hall. Table 4-2 below shows the result of this air sample.

Table 4-2 Level of Lead Found in the Air

Sample Location	URS Sample Number	Air Volume (L)	Result (µg/m3)	OSHA's PEL (µg/m3)
Drill Hall	130B-01	234	<13	50.0
Blank	130-03	NA	<3 µg	NA

On the day of the survey, the airborne lead dust level in the drill hall was found to be acceptable, below OSHA's permissible exposure limit (PEL) for lead (29 CFR 1910.1025(c)) of 50.0 μ g/m³ averaged over an 8-hour day.

4.3 Ventilation System Evaluation

Not applicable to this operation.

4.4 Noise Measurements

Not applicable to this operation.

4.5 Personal Protective Equipment

Not applicable to this operation.

4.6 Interpretation of Results

<u>LEAD</u>: The surface wipe sample collected in this area for lead was found to be within the allowable limits and requires no further action at this time.

5.0 BOILER ROOM / BASEMENT AREA

5.1 Operation Description

The boiler room is a mechanical space which contains a furnace and associated piping. There is a concrete floor and the walls are constructed of cinder blocks.

5.2 Chemical and Physical Agents Sampled

5.2.1 Asbestos

The boiler insulation jacket had multiple punctures. A bulk sample was collected from damaged suspect asbestos-containing boiler insulation for a determination of asbestos content. Analytical procedures were performed in accordance with the U.S. Environmental Protection Agency (EPA) Recommended Method for the Determination of Asbestos in Bulk Samples by Polarized Light Microscopy and Dispersion Staining (PLM/DS)(EPA-600/M4-82-020. EPA-600/R-93-116). Table 5-1 below presents the results of the sample analysis.

Table 5-1 Sample Result of Suspect ACM

Sample Location	Material Sampled	URS Sample Number	Total Asbestos (%)
Boiler Room	Boiler Insulation	0130B-16	65% Chrysotile

The U. S. Environmental Protection Agency (EPA) states that any material with greater than 1% asbestos must be treated as ACM (U.S. EPA, Title 40 CFR Part 763.87 (c)(2)). The analytical report from AMA is contained in Appendix D. Mr. Non-Responsive asbestos inspector training certificate is provided in Appendix E.

5.3 Ventilation System Evaluation

Not applicable to this operation.

5.4 Noise Measurements

Not applicable to this operation.

5.5 Personal Protective Equipment

Not applicable to this operation.

5.6 Interpretation of Results

<u>ASBESTOS:</u> The boiler room contains damaged asbestos-containing boiler insulation. This material should be repaired by a licensed Commonwealth of Massachusetts Asbestos Abatement Contractor. Asbestos-containing materials should also be labeled per OSHA regulations and managed in place in accordance with a site-specific asbestos operations and management program.

URS 11

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6.0 SAFETY AND INDUSTRIAL HYGIENE PROGRAMS

6.1 Confined Spaces

No safety program was found regarding confined spaces. No training records were found on site. A confined spaces program is not required for this site.

6.2 Hearing Conservation

No safety program was found regarding hearing conservation. No training records were found on site. A hearing conservation program is not required for this site.

6.3 Respiratory Protection

No safety program was found regarding respiratory protection. No training records were found on site. A respiratory protection program is not required for this site.

6.4 Hazard Communication

No program was found regarding hazard communication. No training records were found on site. A site-specific hazard communication program is required for this site and should include communication of hazards to employees, management of material safety data sheets, chemical labeling and spill protection.

6.5 Personal Protective Equipment

No safety program was found regarding personal protective equipment. No training records were found on site. A written personal protection equipment program is not required for this site.

7.0 REFERENCES

American National Standards Institute

ANSI/ESNA RP-1-04: American National Standard Practice for Office Lighting

American Society of Heating Refrigerating and Air-Conditioning Engineers

ANSI/ASHRAE Standard 62.1-2004: Ventilation for Acceptable Indoor Air Quality

Department of the Army

Ergonomics Program Pamphlet 40-21 (15 August 2003)

Policy and Responsibilities For Inspection, Evaluation and Operation of Army National Guard Indoor Firing Ranges (National Guard Regulation 385-15, 30 December 2002)

Department of Defense

DoD Hearing Conservation Program Standard 6055.12 April 1996

Creating an Ideal Workstation: A Step-by-Step Guide

U. S. Environmental Protection Agency

Asbestos Hazard Emergency Response Act (40 CFR Part 763)

National Emissions Standards for Hazardous Pollutants (40 CFR Part 61)

U.S. Housing and Urban Development

Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (1995, 1997)

U. S. Occupational Safety and Health Administration

Standard for General Industry: 29 CFR 1910

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APPENDIX A

ARMORY DRAWING









APPENDIX B

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PERSONNEL LIST

NOT PROVIDED

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APPENDIX C

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HAZARDOUS MATERIALS LIST

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APPENDIX D

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ANALYTICAL RESULTS

M	A Specialized Environmental Laboratory		CERT	IFICATE OF ANALYSIS			NVLAP NY ELAP AIHA
	Client:	National Guard Bureau	Job Name:	Pittsfield Armory	Chain Of Custody;	122803	
	Address:	301-IH (Id Bay Lane, Attn: NGB-AVN-SI, State Military Reservation	Job Location:	Pittsfield, MA	Date Analyzed:	02/12/2004	
		Havre de Grace, Maryland 21078	Job Number:	39741509.00301	Person Submitting:		

Not Provided

P.O. Number:



Page 1 of 2

Summary of Atomic Absorption Analysis for Lead

Report Date:

17-Feb-04

0423829 0423830 0423831 0423832 0423833 0423833 0423834	130B-04 130B-05 130B-07 130B-13 130B-14	Flame Flame Flame Flame	Wipc Wipe Wine	****	1.000	12.00			12		·		
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)423833)423834	130B-14	Fullic	Wipe	****	1.000	12.00	ug/ft²	<	12	ug/A²			
423834		Flame	Wipe	****	1.000	12.00	ug/ft ²		800	ug/ft²			
	130B-08	Flame	Wipe	****	1.000	12.00	ug/fl²		100	ug/ft²			
423835	130B-09	Flame	Wipe	****	1.000	12.00	ug/ft²		120	ug/ft²			
423836	130B-10	Flame	Wipe	****	1.000	12.00	ug/ft²		62	ug/ft ^a			
423837	130B-11	Flame	Wipe	****	1.000	12.00	ug/ft2		410	ug/ft ¹			
423838	130B-15	Flame	Wipe Blank	****	N/A	12.00	ug	×	12	ug			
423839	130-01	Flame	Air	213	N/A	14.08	ug/m³	<	14	ug/m*			
423840	130-02	Flame	Air	234	N/A	12.82	ug/m³	<	13	ug/m*			
423841	130-03	Flame	Air Blank	0	N/A	3.00	ug/m'	<	3	ug			
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APPENDIX E

TRAINING CERTIFICATES

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APPENDIX F

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PHOTOGRAPHS

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APPENDIX G

RECOMMENDATIONS FOR SURFACE LEAD DUST IN ARMORIES

Subject: Recommendations for Surface Lead Dust in Armories

1. In armories that do not contain childcare facilities, the National Guard Bureau (NGB) Region North Industrial Hygiene Office recommends cleaning the areas in which sample results are greater than 200 micrograms per square foot (μ g/ft²). If a special function will be held in which children will be present in this facility, consider thoroughly cleaning the areas that will be accessible to children prior to the function. This guidance is based on professional judgment, risk assessments, adaptation of Occupational Safety and Health Administration (OSHA) guidance, and feasibility of cleaning to a certain level.

a. Environmental Protection Agency (EPA) standards (40 Code of Federal Regulations (CFR) 745.227(h)(3)) are not directly applicable because they are criteria for dust-lead hazards developed for floors (40 μ g/ft²) and windowsills (250 μ g/ft²) in residential dwellings and child occupied facilities. A child occupied facility is defined as a building, or portion of a building, constructed prior to 1978, visited regularly by the same child, 6 years of age or under, on at least two different days within any week (Sunday through Saturday period), provided that each day's visit lasts at least 3 hours and the combined weekly visit lasts at least 6 hours, and the combined annual visits last at least 60 hours. Most of the wipe samples in armories were collected in undisturbed areas and therefore, results are worst case scenarios and do not correlate to these standards.

b. OSHA has no specific requirement for work area surfaces. The lead standard (29 CFR 1910.1025(h)) states that all surfaces shall be maintained as free as practicable of accumulations of lead dust. In workplaces where lead dust is generated, surface levels may be much higher, but personnel exposures can be controlled by limiting airborne lead levels and following good cleanup and hygienic practices.

c. OSHA used to cite a level of 200 μ g/ft² in their Technical Manual and 29 CFR 1926.62 as guidance to its own inspectors for evaluating the cleanliness of lunchroom and locker room surfaces that are supposed to be kept as clean as possible.

d. In a report titled Derivation of Wipe Surface Screening Levels for Environmental Chemicals, the US Army Center for Health Promotion and Preventive Medicine (USACHPPM) has determined that 200 μ g/ft² is a safe surface contamination level. They have also applied these standards as the decontamination levels for surfaces in administrative offices.

e. It should be noted that levels above these recommendations do not necessarily mean there is a significant hazard to workers who are following good cleaning and hygienic practices since there is no correlation between wipe and air samples. Rather, we recommend these levels as a precautionary measure.

2. The NGB Occupational Health Branch is developing guidance for armories that are used as childcare facilities. All states will receive this guidance when it is completed. In the interim, we recommend the following actions:

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a. Clean all areas that will be accessible to children to the EPA dust-lead standard for children 6 years of age or under (40 μ g/ft² on floors and 250 μ g/ft² on windowsills).

b. Refer to the local authorities' regulations since they can be more stringent than federal regulations.

c. Post signs in the area to inform people of the presence of lead dust and its effects.

d. If soldiers clean weapons in the facility change the policy so that they cannot clean their weapons in the facility, or if they are allowed to clean their weapons indoors, they must clean the area by wet wiping and mopping the area when they are done.

e. If the paint is peeling, contact the state Environmental Office to test for lead content and provide recommendations.

3. Air samples collected on individuals in the armory were well below OSHA's permissible exposure limit for lead (29 CFR 1910.1025(c)) of 0.05 mg/m³ averaged over an 8-hour day. Therefore, based on these conditions there is currently no overexposure to personnel from lead dust in this building.

APPENDIX H

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POLICY AND RESPONSIBILITIES FOR INSPECTION, EVALUATION AND OPERATION OF ARMY NATIONAL GUARD INDOOR FIRING RANGES (NATIONAL GUARD REGULATION 385-15, 30 DECEMBER 2002)

NGB-AVS-SG SUBJECT: All States (Log Number P01-0075) Army National Guard (ARNG) Safety and Occupational Health Program -- POLICY AND RESPONSIBILITIES FOR INSPECTION, EVALUATION AND OPERATION OF ARMY NATIONAL GUARD INDOOR FIRING RANGES

ADDENDUM

GUIDELINES FOR IFR REHABILITATION, CONVERSION, AND CLEANING

CONTENTS (Listed by paragraph number)

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Background	6
Wipe Sample Media	7
Wipe Sampling Protocol	8
Range Cleaning Instructions	9
Cleaning Stored Contaminated Equipment	10
Contaminated Sand and Lead Waste	11
Medical Surveillance	12
Worker Education	13
Personal Protection Equipment	14
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Maintenance	16
Range Rehabilitation	17
Conversion of Indoor Firing Ranges	18 -
Deviation	19

Appendices

Appendix A - General Procedures for Collecting Wipe Samples

Appendix B - Sampling Strategy for Collection of Wipe Samples

Appendix C - Interpretation of Sample Results (Prior to Cleaning)

Appendix D - Interpretation of Sample Results (After Cleaning)

Appendix E - Recommended Sample Media and Containers

Appendix F - Examples of Computation of Lead Levels from Wipe Sample Results

Appendix G - Surface Wipe Sample Sheet

Appendix H - Air Sampling Sheet

Appendix 1 - Glossary

Purpose

1. This addendum establishes policy and procedures for rehabilitation, conversion, and cleaning of ARNG indoor firing ranges.

2. References

Related publications are listed below.

a. DODI 6055.1 (Department of Defense Instruction, Occupational Safety and Health (OSH) Program).

b. AR 11-34 (The Army Respiratory Protection Program).

c. AR 40-5 (Preventive Medicine).

d. NGR 385-15 Policy, Responsibilities, and Procedures for Inspection, Evaluation, and Operation of ARNG Indoor Firing Ranges).

e. 29 Code of Federal Regulations (CFR), Part 1910, Occupational Safely and Health Standards

f. OSHA Technical Manual, Edition VII.

g. DHEW NIOSH 76-130 (Lead Exposure and Design Considerations for Indoor Firing Ranges).

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SUBJECT: All States (Log Number P01-0075) Army National Guard (ARNG) Safety and Occupational Health Program – POLICY AND RESPONSIBILITIES FOR INSPECTION, EVALUATION AND OPERATION OF ARMY NATIONAL GUARD INDOOR FIRING RANGES

3. Explanation of Abbreviations and Terms

Abbreviations and special terms used in this publication are listed in the glossary.

4. Policy and Procedures

Conversion of Ranges. Indoor firing ranges can be safely rehabilitated or converted for other uses, such as a storage area, kitchen, or office space, provided the following -

a. Previously active ranges must be thoroughly decontaminated and cleaned to acceptable levels.

b. The level of cleanliness is to be determined by sampling. The Occupational Safety and Health Administration's (OSHA) Technical Manual, ^{5th} Edition, provides guidance on the methods and techniques needed to collect wipe samples (Appendix A).

(1) Wipe samples must be collected and analyzed prior to and after cleaning.

(2) Post-cleaning surface wipe sample results must be less than or equal to 200 micrograms per square feet (ug/sq ft). The sampling strategy, which is the amount and location of wipe samples to be collected, is provided in Appendix B. Methods for interpreting the sample results are contained in Appendix C and D.

c. Equipment/Items previously stored in the range must be decontaminated and cleaned to acceptable levels.

(1) Samples must be collected from equipment/items stored in the range. Sample selection is critical, because the number of items stored and length of storage differs from range to range. The amount and location of the samples, should be representative of the areas where lead dust is most likely to accumulate. The more samples collected, the better the statistical comparison of the results.

(2) Samples must be collected from the smooth surfaces of the equipment/llems, in so much as possible. Results of samples collected from a rough surface will be inaccurate due to the minimal surface contact of the media. Further, the likelihood of tearing the media filter is greater on rough surfaces.

(3) Samples should also be collected on items stored the longest period of time, and which have not been disturbed. Items stored closest to the bullet trap and firing line are likely to have higher concentrations of lead dust. Methods for interpreting the sample results are contained in Appendix C and D.

5. Goal

To ensure every indoor firing range is free of lead dust, and to reduce the number of unsafe ARNG indoor firing ranges.

6. Background

The Environmental Protection Agency (EPA) identifies lead as a highly toxic metal. Elemental lead is indestructible, and common in the environment. Lead can enter the body by inhalation (breathing) or ingestion (eating). In addition, lead is a cumulative poison. It accumulates in the blood, bones, and organs, including the kidneys, brain and liver. Effects include nervous and reproductive system disorders, delays in neurological and physical development, cognitive and behavioral changes, and hypertension. Symptoms include loss of appetite, difficulty sleeping, irritability, fatigue, headache, and inability to concentrate. It can stay in the bones for decades. Worker awareness and training are important to ensure that employees can recognize the symptoms of exposure and get prompt medical attention.

7. Wipe Sample Media

a. OSHA Technical Manual provides the necessary guidance on the technique needed to collect wipe samples (Appendix A). Only distilled or deionized water will be used to saturate dry sample media. At least one field blank filter must be submitted with each sample sheet. The field blank must be from the same lot, and labeled as a blank on the sample sheet. Appendix E identifies how and where to obtain sample media. Use the following guidance for determining media acceptability.

(1) Acceptable Media consists of -

(a) Ghost Wipes™ (PREFERRED METHOD)- Pre moistened

(b) Thirty-seven (37) millimeters (mm) mixed cellulose ester (MCE) filters, with or without the cassettes.

(Creeven/11) cent meter/cin)/clameter/whatman .M/#40:paper.

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(2) Unacceptable Media consists of but is not limited to-

(a) Cotton balls

(b) Baby wipes or wet wipes

b. Documentation of Sample Collection. A Surface Wipe Sample Sheet must be completed and submitted with samples to your supporting laboratory. A copy of this form is located in Appendix G. Refer to Appendix A on how to collect wipe samples.

8. Wipe Sampling Protocol See Appendix A.

9. Ranges Cleaning Instructions

a. Written procedures, such as a scope of work, or Standing Operating Procedure (SOP) that complies with all federal, state and local regulations must be established prior to decontamination operations. The range ventilation system will be in operation during range cleaning to ensure that a negative pressure environment is maintained. In the absence of mechanical ventilation system, all doors and windows will be sealed to eliminate fugitive emissions. A High Efficiency Particulate Air (HEPA) filtered vacuum system is the preferred method of cleanup followed by wet wiping of the range. The HEPA vacuum is designed to collect loose surface lead dust particles.

b. Any general purpose cleaning solution can be used. However, Spic and Span[™] has been found to be an effective cleaning solution by other Army organizations. Mix new solutions of cleaning solution frequency. Wet wiping will require dual containers of water; one container for wetting the applicator (mops, rags, sponge, etc.) and the other container for rinsing the applicator after the dust has been wiped from the surfaces. When placed in containers, wastewater should be left to evaporate.

C. PROPERLY DISPOSE OF ALL HAZARDOUS WASTE. DO NOT PLACE LEAD CONTAMINATED WASTE INTO THE SEWER SYSTEM OR ONTO THE GROUND.

d. Mop-heads, sponges and rags will be discarded as hazardous waste following cleanup.

e. Wet cleaning by a high-pressure system is prohibited, as this method may embed the lead into the substratum and generate large quantities of unwanted hazardous waste.

f. Dry sweeping is not permitted.

g. All surface areas of the range must be cleaned. Do not remove the coating on smooth painted surfaces that are properly sealed.

h. Wood floors should receive a coat of deck enamel or urethane; concrete floors should be sealed with deck enamel and linoleum or tile floors should be waxed.

I. A progression of cleaning from top to bottom and from behind the steel backstop to the firing line should be used. After removing the sand, if applicable, and the steel backstop, areas in front of and behind the bullet trap along with the steel backstop plate(s) should be cleaned. Next, clean the celling, lights, baffles, retrieval system, heating system(s), and ventilation duct(s). Acoustical material should be vacuumed and removed rather than painted over.

J. A Toxic Characteristic Leaching Procedures (TCLP) lest for lead only may need to be performed on the acoustical material. A TCLP lest will determine if the material is classified as "hazardous" and can be disposed of in a sanitary landfill. Contact your State Environmental Office for assistance before arranging for this laboratory testing. The floor should be the last surface cleaned, starting at the bullet trap and ending behind the firing line.

k. After wet wiping all surfaces, permit the area to dry. Vacuum all surface areas until no dust or residue can be seen using the HEPA.

I. A thorough visual inspection to detect dust should be made following cleanup and prior to collecting post surface wipe samples.

m. As a variety of conditions exist in ranges, unique situation may arise and specific written guidance from your Regional Industrial Hygiene Office may be required.

10. Cleaning Stored Contaminated Equipment

a. Equipment contaminated (sample result is higher than 200 micrograms/sq ft) with lead dust must be decontaminated before it is removed from the range.

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b. Equipment located near the bullet trap and firing line should be cleaned first and then removed. The cleaning method depends on the size of the equipment and the material it is comprised of, i.e. metal, wood, concrete, porus, non-porus, smooth or rough finish etc. However, either HEPA vacuum or the wet wipe method will be used. Refer to paragraph 9 for additional guidance.

c. Every attempt should be made to clean and reclaim items since disposing of equipment, as hazardous waste is costly and wasteful. Only as a last resort will the item be discarded as hazardous waste. Porous items, such as office partitions and carpet that were present during firing should be considered grossly contaminated and be discarded unless analysis proves otherwise. Consult your State Environmental Office for the proper hazardous waste disposal methods.

11. Contaminated Sand and Lead Waste

Consult your State Environmental Office for specific disposal guidance to ensure compliance with local laws and regulations.

12. Medical Surveillance

a. A pre-placement medical examination is required for all individuals involved with range cleanup operations.⁵ Consult 29 CFR 1910.1025 for additional information on medical surveillance requirements. A medical examination must include—

- (1) A detailed work and medical history
- (2) A thorough physical examination
- (3) A respirator use evaluation
- (4) A blood pressure measurement
- (5) Blood sample analysis to include:
 - (a) A baseline blood lead level
 - (b) A complete blood count (CBC)
 - (c) Blood urea nitrogen (BUN)
- (6) Serum creatinine
- (7) Zinc protoporphyrin
- (8) A routine urine analysis
- (9) Recordkeeping

b. Air Monitoring. Worker breathing zone (BZ) air samples must be collected to ensure personnel are not overexposed to airborne lead during the cleanup phase. Representative air samples will be collected on all personnel involved in the cleanup operation. These exposure levels will be used to evaluate work practices and personal protective equipment. Within five (5) working days after receipt of monitoring results, each employee will be notified in writing of the air sampling results. Contact your Regional Industrial Hygiene Office for additional information pertaining to air sampling.

13. Worker Education

OSHA 29 CFR 1910.1025 requires that workers who are potentially exposed to any lead level shall be informed of the content of Appendix A and B of this standard. A training program must be Instituted for all individuals who are subject to exposure to lead at or above the action level or for whom the possibility of skin or eye irritations exists. The training program shall be repeated for personnel currently involved in range cleanup operations, at least annually, this training must be documented on DD Form 1556 or DD Form 1556-1 and filed permanently in the employee's Official Personnel File (OPF) or the soldier's Official Military Personnel File (OMPF). As a minimum, complete blocks 1, 2, 3, 7, 8, 11, 12, 13, 17, 18, 24, 33 and 36 of DD Form 1556. Place the following statement in block 18, "Do not destroy, retain this record for the duration of employment/service plus 30 years." The employer will assure that each employee is informed of the following:

- a. The content of the standard and its appendices.
- b. The specific nature of operations that could result in exposure to lead above the action level.
- c. The purpose, proper selection, fitting, use and limitations of respirators.
- d. The purpose and a description of medical surveillance program.
- e. Ealing and drinking are prohibited in lead contaminated areas.
- f. Smoking and smoking materials will not be permitted in contaminated areas.

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g. Employees must wash their hands and other exposed skin whenever they leave the work area.

h. The engineering controls and work practices associated with the individual's job assignment.

i. The contents of any compliance plan in effect.

14. Personal Protective Equipment

For housekeeping and rehabilitation the employer shall select respirators from among those approved for protection against lead dust, fume, and mist by the National Institute for Occupational Safety and Health (NIOSH). The employer shall institute a respiratory protection program in accordance with 29 CFR 1910.134. As a minimum, personnel conducting the decontamination of the range will be provided with the following personal protective equipment.

a. Employees engaged in range rehabilitation and/or range conversion, the employer shall provide at no cost to the employee, and assure that the employee uses appropriate protective work clothing and equipment such as, but not limited to:

(1) Protective coveralls with hood and shoe covers or disposable Tyvek ™ full body suit.

(2) Disposable rubber gloves; and disposable shoe coverlets (If necessary).

(3) Full-face air purifying respirator with P-100 cartridges.

b. The employer shall provide the clothing required in a clean and dry condition at least daily to employees engaged in the conversion of indoor firing ranges.

c. The employer shall provide for the cleaning, laundering, or disposal of used or contaminated protective clothing and equipment.

d. The employer shall assure that all protective clothing is removed at the completion of a work shift only in areas designated for that purpose (Change Areas or Change Rooms).

e. The employer will ensure that contaminated protective clothing that is to be cleaned, laundered, or disposed of, is placed in a closed container in the change area that seals sufficiently enough to prevent dispersion of lead dust.

f. The employer will further inform in writing any person who cleans or launders protective clothing or equipment of the potentially harmful effects of exposure to lead.

15. Housekeeping

This chapter applies to all active indoor ranges classified as "safe" for use. To keep the range operating properly and to keep possible hazards to a minimum, a routine housekeeping/ maintenance program is essential.

a. The employer must establish a housekeeping program sufficient to maintain all surfaces as free as practicable of accumulations of lead dust. To this end the range will be clean at the conclusion of each firing day.

b. The range ventilation system will be in operation during all cleaning operations, to ensure a negative pressure environment is maintained.

c. Ranges will be cleaned by using the wet method or vacuuming. A HEPA (High Efficiency Particulate Air) filtered vacuum system is the preferred method of meeting this requirement. The use of compressed air to clean floors is absolutely prohibited. If the wet method is utilized the floor should be equipped with a floor drain, and collection system. When there is no collection system, the water can be allowed to slowly evaporate leaving lead deposits/sludge. The deposits/sludge can then be collected, placed in metal drums, and stored for future delivery to an authorized hazardous waste disposal site. Drums must be labeled to identify contents, in accordance with the hazardous waste program.

d. A NIOSH approved respirator (P-100) for protection against lead dust, fume, and mist will be worn at all times while cleaning.

e. When cleaning start behind the firing line forward, cleaning the floor and horizontal surfaces.

16. Maintenance

The following are the minimum maintenance requirements, which must be performed quarterly by the range custodian, or by a person designated by the facility commander.

a. Inspect the ventilation system fan for condition of belts to ensure that they are not frayed or slipping.

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b. Evaluate static pressure and compare to the baseline static pressure reading. Any changes will be reported through the safety manager to the Regional Industrial Hygienist.

c. Inspect Louvers, if applicable, to ensure they are opening fully.

d. Inspect the bullet trap for pitting or other damage and for sharp edges on venetian blind type bullet traps.

e. Bullet Trap. The bullet trap will be cleaned every 480 hours of operation at a minimum, or when the trap is three guarters full.

f. The range ventilation system will be operational during all bullet trap cleaning procedures.

g. All personnel involved in cleaning of the bullet trap will wear a NIOSH approved respirator, and proper personal protective equipment.

h. All debris from the bullet trap will be collected, package and turned in, in accordance with guidance , from the environmental office.

17. Range Rehabilitation.

This chapter applies to all indoor firing ranges that have been identified as candidates for rehabilitation. This chapter further provides guidance for cleaning and/or sampling that might be required prior to the start of rehabilitation.

a. The portion(s) of the range to under go rehabilitation must be sampled to determine the level of lead contamination. Wipe samples will be taken per the established sampling protocol. See Appendix A.

b. All personnel involved in range rehabilitation will wear a NIOSH approved respirator (P-100), and proper personal protective equipment as prescribed in paragraph 14 above.

c. Prior to start of rehabilitation the environmental office must be notified to determine the disposition of lead containing debris.

18. Conversion of Indoor Ranges

Prior to the start of decontamination, employers must ensure that all procedures to be used comply with Federal, State, and local regulations. To ensure that all lead contamination is removed the following procedure is established.

a. All ranges stated for conversion will be inspected and evaluated.

b. All equipment stored in the range, if applicable, prior to the start of decontamination must be sampled, decontaminated, re-sampled and removed or turned in as lead contaminated material. See paragraph 10 above.

c. All acoustical tiles and/or sound proofing material (if applicable) must be removed and turned in as lead contaminated material through the environmental office.

d. The backstop, bullet trap, target retrieval system and firing line stations must be removed and turned in as lead containing material through the environmental office.

e. Light fixtures and ventilation system grills must be removed and decontaminated.

f. Ventilation system ducts need to be decontaminated or removed and replaced.

g. The exhaust fans and/or the complete ventilation air-handling unit (if applicable) must be decontaminated or removed.

h. Cover all openings of any component previously decontaminated prior to start of interior decontamination of the firing range.

19. Devlation

Deviations from this guidance will require a written exception to policy from your Regional Industrial Hygiene Office. Questions and/or comments regarding this subject should be directed to your Regional Industrial Hygiene Office or Chief, National Guard Bureau, Attn: NGB-AVS-S, 111 South George Mason Drive, Artington, VA 22204-1382.

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APPENDIX A GENERAL PROCEDURES FOR COLLECTING WIPE SAMPLES

A-1 If multiple samples are to be collected at the work site, prepare a rough sketch of the area(s) or room(s), which are to be wipe sampled.

A-2 A new set of clean, impervious gloves should be used for each sample to avoid contamination of the media by previous samples and to prevent contact with the substance.

A-3 (1) If using Ghost Wipes[™], tear open the individually sealed package. Remove the moistened wipe. Unfold the wipe.

(2) If using a dry media such as MCE or Whatman™ filter, moisten the filter with distilled or deionized water prior to sampling.

A-4 Place a 10 cm by 10 cm template on the area to be wiped.

A-5 Apply uniform firm pressure while wiping the area inside the template.

A-6 To insure that all portions of the partitioned area are wiped, start at the outside edge and progress toward the center making concentric squares decreasing in size.

A-7 After collecting a sample, fold the filter or wipe inward and place into a container and number it. Note the number at the sample location on the sketch.

A-8 At least one blank filler treated in the same fashion but without wiping, should be submitted to the laboratory.

APPENDIX B

SAMPLING STRATEGY FOR COLLECTION OF WIPE SAMPLES

B-1 Prior to cleaning the ranges, the three samples must be collected and analyzed for total lead dust on each surface, i.e., floor, ceiling, backstop, and wall to include the plenum wall, if applicable. In addition, a total of 3 samples should be collected from areas which have been least disturbed by airflow. Established walkways should be avoided.

B-2 Samples should be staggered to different areas of the range. A grid system should be utilized. Each range surface areas should be divided eventy into 3 by 3 sections. Samples should not be collected on all one section of a wall or end of the building.

APPENDIX C

INTERPRETATION OF SAMPLE RESULTS (PRIOR TO CLEANING)

C-1 200 micrograms/sq ft or LESS

If all sample results are 200-micrograms/sq ft or less, the range can be converted and/or used for any purpose.

C-2 BETWEEN 201 and 200,000 micrograms/sq ft

Range must be decontaminated. Continued with cleaning instructions listed in paragraph 9 Sample results will be used to establish a baseline.

C-3 Over 200,000 micrograms/sq ft

Your sample media may not be capable of collecting additional lead dust and results that are above 200,000 micrograms/sq ft, and should be considered suspect.

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APPENDIX C (Continued)

C-4 High sample results may exist due to personnel walking or moving equipment/vehicles over the range surface causing the lead dust to be "ground" into the substratum. For examples, a maintenance activity may have oversprayed paint or splited solvents onto the surface Regional Industrial Hygiene Office for specific guidance.

APPENDIX D

INTERPRETATION OF SAMPLE RESULTS (AFTER CLEANING)

D-1 200 micrograms/sq. ft or less If all sample results are less than 200 micrograms/sq ft, the range can be converted and/or used for any purpose after a coat of lead-free latex paint is applied.

APPENDIX E

RECOMMENDED SAMPLE MEDIA AND CONTAINERS

E-1 The following is a list of vendors, which supply the media and containers necessary to collect air and lead surface wipe samples. The information is provided to assist in obtaining the proper media and containers. Alternative vendors are available and may be utilized, if known. Contact your Regional Industrial Hyglene Office for additional assistance or clarification.

E-2 Pre-loaded 3 piece cassette with mixed cellulose ester (MCE) filter and pad, 37 millimeter (mm), pore size 0.8 microns, breathing zone (BZ) and general area (GA) air samples.

Order From Catalog Number

MAWP-037-A0

a. Millipore Corp. Ashdy Road Bedford, MA 01730 617-275-9200 800-225-1380

b. Gelman Sciences 64678 (GN-4) 600 South Wagner Rd Ann Arbor, MI 48106 313-665-0651 800-521-1520

c. Supelco. Inc. 2-3368M Supelco Park Bellefonte, PA 16823 800-247-6628 800-359-3041

E-3 37 mm MCE Filler with pad, no cassette included, for lead surface wipe samples.

Order From Catalog Number

a. Supelco Inc. 2-3381IM Supelco Park Bellefonte, PA 16823

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APPENDIX E (Continued)

800-247-6628 800-359-3041

b. Millipore Corp. AAWP-037-00 Ashdy Road Bedford, MA 01730 617-275-9200 800-225-1380

c. SKC, Inc. 225-5 334 Valley View Rd. Eighty Four, PA 15330 412-941-9701 800-752-8472



E-5. Glass container (25 milliliter) for collection and shipment of media.

Order From Catalog Number

- a. Pierce Chemical Co. 13219 (screw cap) P.O. Box 117 Rockford, IL 61105 815-968-0747 800-874-3723
- Alltech Associates, Inc. 95321 (screw cap) App lied Science Labs 2051 Waukegan Rd. Deerfield, IL 60015 312–948-8600

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APPENDIX E (Continued)

800-255-8324

E-6. Ghost Wipes™.

Order From Catalog Number

Environmental Express SC4200 490 Wando Park Blvd, Mt. Pleasant, SC 29464 1-800-343-5319

E-7. Ghost Wipe™ Containers

Order From Catalog Number

Environmental Express SC499 490 Wando Park Blvd. Mt. Pleasant, SC 29464 1-800-343-5319

E-8. Plastic ziplock bags can be obtained through the Army logistics system. Many sizes are available. Contact your supporting logistics branch for assistance.

E-9. Distilled water can be purchased at larger grocery stores, usually by the gallon, at a cost of approximately \$1.25. Defonized water can be obtained at local and state water labs or a hospital.

APPENDIX F

EXAMPLES OF COMPUTATION OF LEAD LEVELS FROM WIPE SAMPLE RESULTS

Sample results will be returned in the form of micrograms. The results must be converted to micrograms per square foot. This can be accomplished by following the examples listed below:

75 ug	9:	29 cm^2		
100 cm ²		1 sq ft		
75 x 929	¤	69675	#	696.75ug/sq ft
100		100		

ug - Microgram

Cm2 - Centimeters squared

Sq ft - Square fool

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APPENDIX G SURFACE WIPE SAMPLING SHEET

	Industrial	Hygiene Surf	ace Wipe Sa	mple Sheet							
Return Address			Point of Contact (name & phone #)								
			Samples Colle	ected By							
Sampled Facility		City	State	Location (bldg/area)							
Description of O	peration	1	Date Collected	Date Shipped							
Analysis Desired			1								
Sampling Data											
Lab Use Only	Sample #	Results		Remarks							
		-									
-											
comments to Lab											
999,297,577,577,577,577,577,577,577,577,577,5											

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APPENDIX H AIR SAMPLING SHEET

Return Ada			the second state of the se								
	ress			Point	of Cont	act (name/pho	one #)				
				Sampl	es Coll	ected By					
Sampled Fa	icility	City		State	State Location (bldg/area)						
Description	of Operation	Po	arsons Exposed	Hrs/	Day	Method of Collection					
Analysis Do	sired										
Sampling D	ata										
Sample No.											
Pump No.								B			
Time On								L			
Time Off								A			
Total Time (min)								N			
Flow Rate (LPM)								К			
Volume (liters)											
GA/BZ											
Employee Name/ID											
Laboratory No.											
Calibration I	nformation										
Pump No.	Call Pre-Use	bration (L	PM) Post-Use	Rotame	ter Settin	ð	Date				
lame of Calibra	lor	Callb	ration Date	Pump Ma	nulactur	er					

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APPENDIX I ABBREVIATIONS AND TERMS

Section I Abbreviations

ARNG

Army National Guard

BUN Blood urea nitrogen

BZ Breathing zone

CBC Complete blood count

CFR Code of Federal Regulations

cm Centimeter

DHEVV Department of Health, Education and Welfare

EPA Environmental Protection Agency

GA . General area

OMPF Official Military Personnel File

OFF Official Personnel File

OSHA Occupational Safety and Health Administration

TCLP Toxic Characteristic Leaching Procedures

ug/sq ft Micrograms per square foot

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APPENDIX I (Continued)

Section II Terms

HEPA

Refers to high efficiency particulate air filter systems capable of capturing up to 99.97 percent of particles 0.3 microns in size or larger.

Lead-Contaminated Range

It is assumed that all indoor ranges, which have been fired in, are lead-contaminated.

Wipe Sample

The terms wipe, swipe, or smear samples are use synonymously to describe the techniques utilized for assessing lead surface contamination.

Industrial Hygiene Survey

Massachusetts Army National Guard (MA ARNG)

Prepared For: NGB ARNG- Region North IH Office

Survey Location: **Pittsfield Readiness Center** 161 Vin Herbert Road Pittsfield, MA 01201-9998

Prepared By: Aria Environmental, Inc. (AEI) PO Box 286 Woodbine, MD 21797

Survey Date: July 27, 2010 Report Date: September 22, 2010

AEI Project #: J10-513 3a MA Pittsfield RC

Non-Responsiv

Industrial Hygienist



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- Appendix D IAQ and Lighting Survey Log Sheets

Executive Summary

Aria Environmental, Inc. (AEI) was contracted to perform an industrial hygiene evaluation for the Readiness Center located at 161 Vin Herbert Road, Pittsfield, MA, 01201-9998. performed the evaluation on July 27, 2010. The point of contact for the facility was Sergeant The purpose of the evaluation was to identify and measure the existence and extent of potentially hazardous operations or conditions at Army National Guard (ARNG) facilities. The survey included: (1) evaluations of operations including operation description, ventilation system evaluations, noise dosimetry if appropriate, lighting surveys, hazard control evaluations and any additional information pertinent to the operations; (2) an evaluation of the physical condition of the facility and personnel concerns including visual inspections for peeling potentially lead-based paint, damaged suspect asbestos-containing materials, water damage or mold problems; indoor air quality concerns; and housekeeping practices; and (3) photographs of the exterior and interior of the readiness center. The results of the evaluation indicated the following:

Noise Hazards: No noise-generating activities were taking place on the day of the survey. Due to the nature of the tasks performed onsite, no activities requiring noise monitoring are anticipated to occur at the RC.

Lead in Air Samples: Results of collected air samples were below regulatory limits for lead (50 μ g/m³).

Paint Chip and Wipe Samples for Lead Contamination: Two wipe samples collected from the former firing range; one sample from the radiator in the Administrator's office; and one sample collected from the top of the file cabinet in one office (Room 3 on the drawing) were above the National Guard criteria for lead contamination ($200 \mu g/ft^2$). Lead was identified on top of a light fixture and on a storage shelf in the former firing range. Samples ranged from 1.05 to 6.5 times the National Guard criteria.

Visual Inspection for Damaged Asbestos-Containing Materials: No damaged suspect asbestoscontaining materials were identified at the Pittsfield Readiness Center.

Visual Inspection for Water Damage and Mold Growth: No visual evidence of water damage or mold growth was observed in the facility.

Visual Inspection for Housekeeping Concerns: A visual inspection was performed to assess the state of housekeeping in the facility. The housekeeping was good. All areas were clean and tidy.

Lighting: The evaluation indicated that there are some illumination deficiencies in two offices (rooms 2 and 8 on the drawing). The illumination measurements indoors ranged from a low of 20.8 foot candles (fc) to a high of 152.2 fc.

Indoor Air Quality: Temperatures and relative humidity measurements were outside the acceptable range in most of the facility. These results are not unexpected due to outdoor conditions on the day of the survey and the lack of air conditioning in most of the facility. Indoor levels of CO₂ ranged from 353 to 678 parts per million (ppm) and outdoor CO₂ levels were approximately 354 ppm during the monitored period. CO₂ measurements were below the guideline in all areas, indicating adequate fresh air exchange. Indoor levels of CO ranged from 0 to 0.1 ppm; therefore, concentrations are below occupational exposure limits, ASHRAE and the NAAQS-recommended CO concentrations.

1 Introduction

Aria Environmental, Inc. (AEI) was contracted to perform an industrial hygiene evaluation for the Massachusetts Army National Guard (MA ARNG) Readiness Center located at 161 Vin Herbert Road, Pittsfield, MA, 01201-9998. Non-Responsive performed the evaluation on July 27, 2010. The point of contact for the facility was Sergeant . The purpose of the evaluation was to identify and measure the existence and extent of potentially hazardous operations or conditions at Army National Guard (ARNG) facilities.

The Pittsfield Readiness Center is staffed with 1 fulltime National Guard administrative personnel. The operations conducted at the facility include supply and administrative duties. A diagram of the building layout is provided in Appendix A. All sampling sheets and laboratory certificates of analysis are provided in Appendix B. Selected photographs taken during the evaluation are provided in Appendix C. Indoor air quality and lighting survey measurement log sheets are provided in Appendix D. Lists of all references used during the evaluation are included in the main body of the report.

2 Evaluation Methods

The industrial hygiene survey of the Pittsfield Readiness Center consisted of visual inspections, interviews with employees and sampling plan development in order to achieve the following: (1) evaluations of operations including operation description, sampling for lead in air or on surfaces if appropriate, ventilation system evaluations, noise measurements if appropriate, lighting surveys, hazard control evaluations and any additional information pertinent to the operations; (2) an evaluation of the physical condition of the facility and personnel concerns including visual inspections for peeling potentially lead-based paint, damaged suspect asbestos-containing materials, water damage or mold problems; indoor air quality concerns; and housekeeping practices; and (3) a building layout and photographic documentation of the interior of the facility.

The National Guard Bureau (NGB) Region North IH Office provided all industrial hygiene equipment for air sampling (equipment and media), ventilation, lighting, noise and IAQ survey instruments and paid for laboratory analytical fees. Laboratories were chosen or approved by the NGB IH office.

3 Operations

Operations conducted at the Pittsfield facility consists exclusively of supply and administrative duties. No maintenance of vehicles, painting of equipment or other physical tasks are performed at the facility. Ground maintenance and upkeep of the building are the responsibility of the state employed Armorer and not part of the duties of National Guard personnel.

4 Noise Hazards

No noise-generating activities were taking place on the day of the survey. Due to the nature of the tasks performed onsite, no activities requiring noise monitoring are anticipated to occur at the RC.

5 Hazard Controls

Ventilation Systems

Heat is supplied to the facility through a boiler located in the boiler room and overhead heaters in the drill hall. The boiler certificate for the Pittsfield facility indicated a vessel pressure test was conducted and passed in 2008. Any air conditioning provided to the building is through window air conditioning units. No local ventilation systems were present at the facility.

6 Physical Condition of the Facility and Personnel Concerns

An evaluation of the physical condition of the facility and personnel concerns was performed including visual inspections for peeling potentially lead-based paint, damaged suspect asbestos-containing materials, water damage or mold problems; indoor air quality concerns; and housekeeping practices. Lighting and indoor air quality measurements were taken in all areas of the facility as well.

Lead in Air Samples

To determine if any airborne contamination of lead existed in the facility, air sampling for lead was conducted in the Administrator's Office and the Supply Office and analyzed by AMA for atomic absorption spectrophotometry (AAS) following the analytical method ASTM D3335-85A. Results are given in Table 1 and certificates of analysis are included in Appendix B.

Air Sample #	Sample Location	Result (µg/m³)*				
PIT-01	Administrator's Office, On Desk	<5.3				
PIT-02	Supply Office, On Desk	<5.4				

Table 1 – Results of Lead in Air Sampling for the MA ARNG Pittsfield Readiness Center on July 27, 2010.

*The OSHA PEL for Lead in Air is 50 µg/m³.

Paint Chip and Dust Wipe Samples for Lead Contamination

A visual inspection was performed to determine if there were any areas of peeling paint at the facility that could pose a lead exposure hazard. No areas of peeling or flaking paint were observed.

To determine if any cross contamination of lead from any source into areas of the facility existed, wipe samples were collected using ghost wipes and 10cm x 10cm templates. Wipe samples for surface dust were collected in 17 locations. The Environmental Protection Agency (EPA) and the Commonwealth of Massachusetts limits for lead in dust are 40 micrograms per square foot (µg/ft²) on floors, 250 µg/ft² on window sills, and 400 µg/ft² in window troughs. These limits apply to pre-1978 Army facilities only if children under 6 years of age occupy them for 60 or more hours per year. The NGB Region North Industrial Hygiene Office concurs with the US Army Center for Health Promotion and Preventive Medicine (USACHPPM) recommended maximum level for adult exposures of 200 µg/ft² on floors and frequently contacted surfaces, which is more stringent for window sills than the EPA/State standards. Dust wipe samples were submitted to Aerosol Monitoring and Analysis Analytical Services, Inc. (AMA) for atomic absorption spectrophotometry (AAS) following the analytical method ASTM D3335-85A. Two samples collected from the former firing range; one sample from the radiator in the Administrator's office; and one sample collected from on top of the file cabinet in one office (Room 3 on the drawing) were above the National Guard criteria for lead contamination (200 µg/ft²). Lead was identified

on top of a light fixture and on a storage shelf in the former firing range. Samples ranged from 1.05 to 6.5 times the National Guard criteria. Results are given in Table 2 and certificates of analysis are included in Appendix B.

Wipe Sample #	Sample Location	Result (µg/ft²)*
PIT-PB-01	Administrative Office, From Supply Vent (Radiator)	210
PIT-PB-02	Kitchen From Prep Table	<110
PIT-PB-03	Assembly Hall, Table by Overhead Door	<110
PIT-PB-04	Assembly Hall, Middle of Floor	<110
PIT-PB-05	Assembly Hall, Top of Mailboxes	<110
PIT-PB-06	Room 24/25, Former Indoor Firing Range, Bullet Trap	<110
PIT-PB-07	Room 24/25, Former Indoor Firing Range, Light Fixture	1300
PIT-PB-08	Room 24/25, Former Indoor Firing Range, Storage Shelf	440
PIT-PB-09	Room 24/25, Former Indoor Firing Range, Middle of Floor in Room 24	160
PIT-PB-10	Immediately Outside Door of Room 25 in SE Entrance on Floor	<110
PIT-PB-11	Classroom (Room 29), Window Sill	<110
PIT-PB-12	Room 3, Top of File Cabinet	320
PIT-PB-13	Entry Room 6, Top of Desk	<110
PIT-PB-14	Room 11, Middle of Floor	<110
PIT-PB-15	Men's Room, Top of Paper Towel Dispenser	<110
PIT-PB-16	Locker Room (Room 19), On Top of Lockers	<110
PIT-PB-17	SW Entry, Top of Stairs	<110

Table 2 – Results of Dust Wipe Sampling for MA ARNG Pittsfield Readiness Center on July 27, 2010.

*The US Army CHPPM recommends a maximum level for adult exposures of 200 µg/ft² lead on floors

Visual Inspection for Water Damage and Mold Growth

A visual inspection was performed to determine if there was any water damage or visible mold growth at the facility. There was no evidence of water damage or mold growth at the facility.

Visual Inspection for Housekeeping Concerns

A visual inspection was performed to assess the state of housekeeping in the facility. The housekeeping was good. All areas were clean and tidy.

Lighting

Illumination levels were measured using a Cal-Light 400L, calibrated on July 30, 2009, and compared to minimum lighting requirements for various facilities and functions based on the following references: American National Standards Institute/Illumination Engineering Society of North America (ANSI/IESNA) Standard RP-1-04 (Office Lighting) and ANSI/IESNA Standard RP-7-01 (Lighting Industrial Facilities).

A lighting survey was performed in all areas within the readiness center. The evaluation indicated that there are some illumination deficiencies in two offices (rooms 2 and 8 on the drawing). The illumination measurements indoors ranged from a low of 20.8 foot candles (fc) to a high of 152.2 fc. The complete results of the evaluation are presented in Appendix D, including whether the results met minimum requirements for illumination. Additional illumination can be achieved by replacing burned-out lamps, cleaning fixtures, relocating detailed work to more illuminated areas, using supplemental task lighting, and opening doors or windows to provide more natural lighting.

Indoor Air Quality (IAQ)

Indoor air quality measurements (i.e., temperature, relative humidity, carbon dioxide and carbon monoxide) were taken using a factory calibrated TSI Q-Trak Plus Model 7565X. Temperature, relative humidity and carbon dioxide (CO₂) measurements were compared to the recommended levels established by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE). Carbon monoxide (CO) concentrations were compared to the ACGIH Threshold Limit Value (TLV) for CO and the Environmental Protection Agency's (EPA's) National Ambient Air Quality Standard (NAAQS) for CO.

Industry guidelines or standards for seasonal temperature and humidity ranges for thermal comfort are established by ASHRAE standard 55-2004. These ranges are presented in Table 3. The U.S. EPA also recommends maintaining relative humidity below 60% and ideally between 30 and 50% to prevent mold growth. Complete results are provided in Appendix G with the lighting survey measurements.

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Relative Humidity	Winter Temperature	Summer Temperature
30%	68.5°F – 76.0°F	74.0°F – 80°F
40%	68.5°F – 75.5°F	73.5°F – 79.5°F
50%	68.5°F – 74.5°F	73.0°F – 79.0°F
60%	68.0°F - 74.0°F	72.5°F - 78.0°F

Table 3 - Acceptable Ranges of Temperature and Relative Humidity in Summer and Winter^a

adapted from ASHRAE Standard 55-2004

Temperature and Relative Humidity

Indoor temperature and relative humidity (Rh) measurements in the facility ranged from 78.3 to 81.9° F and 52.9 to 63.8% Rh. Outdoor temperature and humidity measurements were 81.5° F and 52.9% on the day of monitoring. Temperatures and relative humidity measurements were outside the acceptable range in most of the facility. These results are not unexpected due to outdoor conditions on the day of the survey and the lack of air conditioning in most of the facility.

Carbon Dioxide (CO₂) and Carbon Monoxide (CO)

Carbon dioxide and carbon monoxide measurements are used to assess ventilation system performance. The exhaled breath of building occupants is the main indoor source of carbon dioxide; therefore, the build up of CO_2 indicates inadequate ventilation. The concentration of concern for carbon dioxide is set by ASHRAE standard 62.1 – 2007 as 700 ppm above outdoor concentrations. Indoor levels of CO_2 ranged from 353 to 678 parts per million (ppm) and outdoor CO_2 levels were approximately 354 ppm during the monitored period. CO_2 measurements were below the guideline in all areas, indicating adequate fresh air exchange.

Carbon monoxide is a byproduct of incomplete combustion. Indoor concentrations indicate contamination caused by improperly vented or malfunctioning boilers, furnaces or stoves or from vehicle exhaust entering the building from garages, loading docks, nearby roads or parking lots. The concentration of interest set by ASHRAE standard 62.1-2007 and the National Ambient Air Quality Standards (NAAQS) for carbon monoxide is an 8 hour average of 9 ppm. The ACGIH TLV for CO is 25 ppm. Indoor levels of CO ranged from 0 to 0.1 ppm; therefore, concentrations are below occupational exposure limits, ASHRAE and the NAAQS-recommended CO concentrations.

7 Conclusions

The results of the evaluation indicated no concerns with the following at the facility: contamination of clean air sources, peeling lead-based paints, the presence of damaged suspect asbestos-containing materials, indoor air quality, noise hazards, visible mold and housekeeping. The results of the evaluation indicated industrial hygiene concerns in the following areas: potential cross contamination from the former firing range and lighting. Overall, Pittsfield Readiness Center has few industrial hygiene issues, and programs are in place to protect, inform and train employees.

8 Limitations

This report has been prepared for the exclusive use of the U.S. Army National Guard (USARNG) and/or their agents. This service has been performed in accordance with generally accepted industrial hygiene and environmental practices. No other warranty, expressed or implied, is made. Our conclusions and recommendations are based, in part, upon information provided to us by others and our site observations. We have not verified the completeness or accuracy of the information provided to us by others, unless otherwise noted. Our observations and recommendations readily visible at the site at the time of our site visit, and upon current industry standards.

By virtue of providing the services described in this report, the preparer does not assume the responsibility of the person(s) in charge of the site, or otherwise undertake responsibility for reporting to any local, state, or federal public agencies any conditions at the site that my present a potential danger to public health, safety, or the environment. It is the Client's responsibility to notify the appropriate local, state, or federal public agencies as required by law, or otherwise to disclose, in a timely manner, any information that may be necessary to prevent any danger to public health, safety, or the environment. Under this scope of services, the preparer assumes no responsibility regarding response actions initiated as a result of these findings. Response actions are the sole responsibility of the Client and should be conducted in accordance with local, sate, and/or federal requirements, and should be performed by appropriately licensed personnel as warranted.

9 References

- 1. Title 29, Code of Federal Regulations (CFR), Part 1910, Occupational Safety and Health Administration, current edition.
- 2. Title 24, Code of Federal Regulations (CFR), Part 35, Subpart B, Sections 35.110, Definitions of Lead-Based Paint, Housing and Urban Development, U.S. Department of Housing.
- 3. Department of Defense Instruction (DODI) 6055.1, Department of Defense Occupational Safety and Health (OSH) Program, August 19, 1998.
- 4. Army Regulation (AR) 40-5, Medical Service, Preventive Medicine, May 25, 2007.
- 5. Army Regulation (AR) 385-10, The Army Safety Program, August 23, 2007.
- 6. Department of the Army Pamphlet (DA PAM) 40-501, Medical Service, Hearing Conservation Program, December 15, 1998.
- 7. Department of the Army Pamphlet (DA PAM) 40-503, Medical Service, Industrial Hygiene Program, October 30, 2000.
- 8. Technical Manual (TM) 5-810-1, Mechanical Design, Heating, Ventilation, and Air Conditioning, June 1991.
- 9. Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs), American Conference of Governmental Industrial Hygienists (ACGIH), current edition.
- 10. RP-1-2004 (Office Lighting) and RP-7-2001 (Industrial Lighting), Illuminating Engineering Society of North America (IESNA)/ANSI.
- 11. The American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE), Standard 62.1-2007, "Ventilation for Acceptable Indoor Air Quality" and Standard 55-2004, "Thermal Environmental Conditions for Human Occupancy".
- 12. NIOSH website: <u>http://www.cdc.gov/niosh/</u>
- 13. OSHA website: <u>http://www.osha.gov/</u>.
- 14. Army CHPPM website: http://chppm-www.apgea.army.mil/.
- 15. EPA website: <u>http://www.epa.gov</u>.

Appendix A Building Layout



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Appendix B Certificates of Analysis for Air, Dust Wipe and Bulk Samples

AMA Analytical Services, Inc.

Client:

Address:

Attention:

BEST AVAILABLE COPY

CERTIFICATE OF ANALYSIS



AIHA LAP, LLC

Page 1 of 2

Summary of Atomic Absorption Analysis for Lead

AMA Sample Number	Client Sample Number	Analysis Type	Sample Type	Air Volume (L)	Area Wiped (ft²)	Rej I	porting Limit	orting Total ug imit		ult	Comments
1066247	PIT-Pb-01	Flame	Wipe	****	0.108	110	ug/ft²	23	210	ug/ft²	
1066248	PIT-Pb-02	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/ft²	
1066249	PIT-Pb-03	Flame	Wipe	****	0.108	110	ug/fl ²	<12	<110	ug/ft²	
1066250	PIT-Pb-04	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/ft²	
1066251	PIT-Pb-05	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/ft²	
1066252	PIT-Pb-06	Flame	Wipe	****	0.108	110	ug/fl ²	<12	<110	ug/ft²	
1066253	PIT-Pb-07	Flame	Wipe	****	0.108	110	ug/fl ²	140	1300	ug/ft²	
1066254	PIT-Pb-08	Flame	Wipe	****	0.108	110	ug/ft²	48	440	ug/ft²	
1066255	PIT-Pb-09	Flame	Wipe	****	0.108	110	ug/ft²	18	160	ug/ft²	
1066256	PIT-Pb-10	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/ft²	
1066257	PIT-Pb-11	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/ft²	
1066258	PIT-Pb-12	Flame	Wipe	****	0.108	110	ug/ft²	34	320	ug/ft²	
1066259	PIT-Pb-13	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/ft²	
1066260	PIT-Pb-14	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/ft²	
1066261	PIT-Pb-15	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/ft²	
1066262	PIT-Pb-16	Flame	Wipe	****	0.108	110	ug/fl²	<12	<110	ug/ft²	
1066263	PIT-Pb-17	Flame	Wipe	****	0.108	110	ug/fl²	<12	<110	ug/ft²	
1066264	PIT-01	Flame	Air	561	N/A	5.3	ug/m³	<3	<5.3	ug/m³	
1066265	PIT-02	Flame	Air	560	N/A	5.4	ug/m ³	<3	<5.4	ug/m ³	

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these Laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from us. Sample types, locations, and collection protocols are based upon the information provided by the persons submitting them and, unless collected by personnel of these Laboratories, we expressly disclaim any knowledge and liability for the accuracy and completeness of this information. Residual sample material will be discarded in accordance with the appropriate regulatory guidelines, unless otherwise requested by the client. NVLAP accreditation applies only to polarized light microscopy of bulk samples and transmission electron microscopy of AHERA air samples. This report must not be used to claim, and does not imply product certification, approval, or endorsement by NY ELAP, AIHA, NVLAP, NIST, or any agency of the Federal Government. All rights reserved. AMA Analytical Services, Inc.

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AMA Analytical Services, Inc. A Specialized Environmental Laboratory BEST AVAILABLE COPY CERTIFICATE OF ANALYSIS

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			P.O. Nu	mber: W9	12K6-09-A-0003		Date Analyzed:	8/9/2010	Report Date:	8/9/2010			
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,			Summ	ary of Ato	omic Absor _l	otion Anal	ysis for Lead			Page 2 of 2			
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AIHA LAP, LLC

ACCREDITED LABORATORY INCUSTRIAL HYGIENE, ENVIRONMENTAL LEAD & ENVIRONMENTAL MICROBIOLOGY

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Appendix C Photo Documentation BEST AVAILABLE COPY

Pittsfield RC



Drill Hall



Storage Area, Former Firing Range May, 2018

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Mess Hall


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Pittsfield RC



Boiler Room



Back Entry Electrical Wire through May, 200301

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Kitchen



Boiler Room, Electrical Wire FOIA Requested Record #J-15-0085 (MA) through Door Released by National Guard Bureau Page 2858 of 3473 BEST AVAILABLE COPY

Pittsfield RC



Locker Room



Workout Area

Appendix D IAQ and Lighting Survey Log Sheets

National Guard Industrial Hygiene Survey For Indoor Air Quality and Light Level

State	MA	City	Pittsfield	IAQ Light										
Date	7/27/2010	Inspector	Non-Responsive	Instrument				Q-TRAK 7	565-	Х		Instrument		CAL-LIGHT 400
Facility Description	Readiness Ctr			Serial Numb	Serial Number 7565X0839017 Se			Serial Numbe	er	K070277				
Weather Conditions				Last Calibrat	ion		 Sep-08				Last Calibration		30-Jul-09	
Location	Function	No. Occupants	Time	Temp. (°F)	Exceeded	RH (%)	Exceeded	CO ₂ (ppm)	Exceeded	CO (ppm)	Exceeded	Illuminance (fc)	Insufficient	Illuminance Reference Value (fc)
1	Storage	0	13:12 PM	78.4	х	60.8	х	567		0.1		62.9		30
2	Office	0	13:13 PM	78.3	х	63.8	х	518		0.0		48.4	х	50
3	Office	0	13:14 PM	78.6	х	62.6	х	678		0.0		79.3		50
4	Office	1	13:16 PM	79.2	х	59.1	х	402		0.0		86.9		50
5	Office/Storage	0	13:17 PM	81.1	х	57.4	х	394		0.0		43.8		30
6	Entry	0	13:18 PM	80.1	х	56.5	х	420		0.1		80.3		10
7	Office	0	13:20 PM	80.0	х	60.6	х	414		0.0		89.0		50
8	Office	0	13:21 PM	80.0	х	60.2	х	485		0.0		39.7	x	50
9	Storage	0	13:25 PM	80.8	х	54.3	х	384		0.0		152.2		30
10	Office	0	13:26 PM	80.0	х	61.7	х	399		0.0		50.6		50
11	Office	0	13:28 PM	79.7	х	55.2	х	420		0.0		81.1		50
12	Storage	0	13:31 PM	79.7	х	59.5	х	477		0.0		53.8		30
13	Storage	0	13:33 PM	79.7	х	58.5	х	360		0.0		76.3		30
14	Hall	0	13:35 PM	79.6	х	61.6	х	468		0.0		123.4		5
15	Weight Room	0	13:37 PM	79.8	х	60.8	х	416		0.0		32.8		30
16	Break Room	0	13:39 PM	79.4	х	58.0	х	123		0.1		31.9		10
17	Women's Room	0	13:40 PM	79.0	х	63.2	х	408		0.0		39.2		5
18	Men's Room	0	13:41 PM	79.0	х	59.0	х	409		0.0				5
				Relative 30 40	Hun)%)%	nidity	Wi 68. 68.	nter Temp. .5°F-76.0°F .5°F-75.5°F	S 7 7	ummer Terr 4.0°F-80.0° 3.5°F-79.5°	np. F F			
				50)%		68	.5°F-74.5°F	7	3.0°F-79.0°	F			
				60)%		68.	.0°F-74.0°F	7	2.5°F-78.0°	Έ			

State	MA	City	Pittsfield	IAQ					Light					
Date	7/27/2010	Inspector	Non-Responsive	Instrument	Instrument Q-TRAK 7565-X Ir				Instrument		CAL-LIGHT 400			
Facility Description	Readiness Ct	r		Serial Numb	Serial Number 7565X0839017			Serial Numb	er	K070277				
Weather Conditions				Last Calibra	ition			Sep-0	8			Last Calibration		30-Jul-09
Location	Function	No. Occupant s	Time	Temp. (°F)	Exceeded	RH (%)	Exceeded	CO ₂ (ppm)	Exceeded	CO (ppm)	Exceeded	Illuminance (fc)	Insufficient	Illuminance Reference Value (fc)
19	Locker Room	0	13:45 PM	78.9		57.5		390		0.0		76.7		7
20	Kitchen	0	13:45 PM	79.0		57.9		396		0.1		70.6		50
21	Storage	0	13:46 PM	79.4		57.2		372		0.0		42.8		30
22	Supply Room	0	13:47 PM	79.8		63.0		512		0.0		20.8		5-30
23	Boiler Room	0	13:48 PM	81.2	Х	57.1	Х	504		0.0		48.8		30
24	Vault	0	13:50 PM	79.6	Х	56.2	х	427		0.1		70.2		10
25	Storage	0	13:55 PM	79.7	Х	53.0	х	353		0.0		27.3		5-30
26	Assembly Hall	0	13:58 PM	81.5	Х	52.9	х	388		0.1		49.6		30-50
27	Library	0	14:00 PM	81.7	Х	55.2	х	406		0.0		127.0		30-50
28	Storage	0	14:04 PM	81.9	Х	53.9	х	501		0.0		24.8		5-30
29	Classroom	0	14:06 PM	81.2	Х	55.6	Х	533		0.1		57.3		50
		Relative	Hur	nidity	Wi	nter Temp.	S		р. ⊏	•				
				4)%		68	.5°F-75.5°F	7	3.5°F-79.5°	F			
				50)%		68	.5°F-74.5°F	7	3.0°F-79.0°	F]		
				60)%		68	.0°F-74.0°F	7	2.5°F-78.0°	F			



Prepared For:

National Guard Bureau Army National Guard Region North Industrial Hygiene Office 301 – IH Old Bay Lane Havre De Grace, Maryland 21078

Prepared By:

URS Corporation 5 Industrial Way Salem, New Hampshire 03079

INDUSTRIAL HYGIENE SURVEY REPORT MASSACHUSETTS NATIONAL GUARD READINESS CENTER 161 VIN HERBERT BOULEVARD PITTSFIELD, MA 01201

July 15, 2013 PN: 39743799



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- APPENDIX D PHOTOGRAPHIC LOG
- APPENDIX E RECOMMENDATIONS FOR SURFACE LEAD DUST IN ARMORIES

FINDINGS AND RECOMMENDATIONS MASSACHUSETTS NATIONAL GUARD READINESS CENTER 161 VIN HERBERT BLVD., PITTSFIELD, MA

Findings	Recommendations	Risk Assessment Code (RAC)
Lighting		
On the day of the survey, the illuminance was inadequate in several locations tested.	Increase lighting in the work areas. While work is in progress, these areas must be lighted by at least the minimum lighting intensities (ANSI / IESNA RP-1- 04).	RAC 4
Ergonomics		
Computer workstations in the Administrative Areas were observed with un-adjustable chairs, arm rests and keyboards.	Ergonomic issues with regard to the desks and chairs should be corrected by fitting the workplace to the worker (Department of the Army Pamphlet 40- 21, Chapter 4, Page 7, Section 4-3).	RAC 3
Water Intrusion		
Evidence of water intrusion and staining was noted on ceiling tiles, including an active roof leak.	The source of the water intrusion should be identified and repaired. The water- stained materials should be repaired or replaced (ACGIH – Guidelines for the Assessment of Bio-aerosols in the Indoor Environment).	RAC 3
Lead		
Two of the 10 lead wipe samples indicated elevated lead levels.	Personnel trained in accordance with the OSHA Lead Standard should clean the areas where elevated lead dust levels were identified (OSHA 29 CFR 1910.1025(h)(1)).	RAC 3
Emergency Exits		
Emergency exit signs and escape plans were not visible from all areas of the facility or illuminated.	Emergency exits should be properly illuminated (29 CFR 1910.37 (q)(6)).	RAC 3
Asbestos	r	
Damaged presumed asbestos-containing floor tiles and associated mastic were observed; an Asbestos Operation and Maintenance Program was not available on-Site.	Develop a site-specific asbestos operations and maintenance program for management of asbestos-containing materials in place as required by OSHA 29 CFR 1910.1001(j)(2).	RAC 4

Findings	Recommendations	Risk Assessment Code (RAC)				
Personal Protective Equipm	ent					
Hazard assessments have not been conducted to determine whether personal protective equipment is required.	Conduct a hazard assessment of site operations to determine what types of PPE are required for each type of work (29 CFR 1910.132(d)(1)).	RAC 4				
Former Indoor Firing Range						
Since the former indoor firing range is contaminated with lead and several wipe samples were found to contain elevated lead levels, good hygiene practices should be used when entering this building area.	Good hygiene practices shall be employed when entering building areas where lead dust may become airborne (29 CFR 1910.1025 (i)(1)).	RAC 3				
Housekeeping						
Storage areas and passageways were found to be somewhat cluttered at the time of URS' site visit. Cords were extended across walkways.	All places of employment, passageways, storerooms and service rooms shall be kept clean and orderly and in a sanitary condition (29 CFR 1910.22 (a)(1)).	RAC 4				
Ladders						
Ladders were observed not properly stored.	Ladders not in use shall be properly stored in a vertical position fastened to walls (29 CFR 1910.25 (c)(2)(i)).	RAC 4				

1.0 SUMMARY

At the request of the National Guard Bureau (NGB) Region North Industrial Hygiene Office, URS Corporation (URS) conducted an industrial hygiene survey at the Readiness Center in Pittsfield, Massachusetts.

URS representative, Ms. **Non-Responsive**, conducted the Industrial Hygiene Survey on May 28, 2013. The scope of work included an overall assessment of the facility as it relates to industrial hygiene and included a walkthrough of the facility, collection of photographs, and when required, measurements for illumination (light), area and personal air sampling, and noise monitoring.

The Pittsfield Readiness Center is a one-story brick building, consisting of offices, a classroom, a supply area, kitchen, classroom, PT room, gender separate bathrooms, an Assembly Hall and a former Indoor Firing Range. A layout of the Readiness Center is provided in Appendix A. The former Indoor Firing Range is currently used for storage and is accessed by staff on a regular basis.

<u>GENERAL</u>: Illuminated emergency exit signs were not observed throughout the facility. Emergency escape plans were not posted throughout the facility. Ladders were not properly secured and stored. Evidence of water intrusion and water staining was observed throughout ceiling tiles in the facility, including evidence of an active roof leak. Cords were extended across walkways. Storage areas and passageways were somewhat cluttered.

<u>LIGHTING</u>: Lighting in the Readiness Center was found to be inadequate in several of the areas measured. Areas noted within the report as having inadequate lighting require upgrading by either increasing the general lighting or through the use of task lighting. While work is in progress work areas must be lighted by at least the minimum light intensities. <u>LEAD</u>: Two of the ten wipe samples collected in the Readiness Center were found to contain lead in a concentration above the recommended limit set by the NGB, Region North IH Office.

<u>ASBESTOS</u>: Damaged presumed asbestos-containing floor tiles and associated mastic were identified during this survey. Until suspect materials have been sampled and determined not to contain asbestos, they must be presumed to be asbestos-containing and managed accordingly.

<u>ERGONOMICS</u>: Many of the work stations had ergonomic issues which require attention. Computer workstations were assessed during the walkthrough for ergonomic issues. The computer workstations in the facility did not meet the current Occupational Safety and Health Administration (OSHA) ergonomic recommendations. The chair armrests, keyboards, and monitors were not adjustable. All workstations in the facility should be adjusted and monitored. The ergonomic issues with regard to the workstations and chairs need to be corrected by fitting the workplace to the worker.

<u>NOISE</u>: Noise monitoring in the Readiness Center determined that noise levels were below the OSHA permissible exposure limit (PEL) and Department of Defense Instruction (DoDI) Hearing Conservation Standard (6055.12 3 December 2010) on the day of URS' site visit.

2.0 SUPPLY / TRAINING AREA

2.1 Operation Description

This Readiness Center is primarily used for weekend training drills and conducting administrative functions. The building includes offices, a classroom, a supply area, kitchen, classroom, PT room, gender separate bathrooms, an Assembly Hall and a former Indoor Firing Range which is currently used for storage.

The Readiness Center was found to be cluttered and unorganized at the time of URS' site visit.

2.2 Chemical and Physical Agents Sampled

2.2.1 Carbon Dioxide

On the day of the survey, carbon dioxide measurements were made in the Readiness Center. Interior carbon dioxide concentrations were found to be between 492 and 591 parts per million (ppm). Carbon dioxide levels were measured using a direct-reading TSI Q-Trak (Model 8551).

Carbon dioxide is a normal constituent of the atmosphere and ranges from about 250 to 450 ppm. The major source of excess carbon dioxide in the indoor environment is human respiration. Other sources can include open-flame heaters, fermentation processes, and motor vehicles. Carbon dioxide itself is not normally a cause of indoor air quality problems but is typically used as an indicator of the adequacy of fresh air intake. As the concentration of carbon dioxide increases, so do the background levels of other air contaminants.

To minimize air quality complaints, the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) has proposed that the carbon dioxide concentration within an occupied workspace be maintained below 700 ppm above ambient outside levels. For example, on the day of the survey, the outside carbon dioxide level was measured at 428 ppm. Therefore ASHRAE (Standard 62.1-2010) would recommend that interior carbon dioxide concentrations be maintained at or below

1,128 ppm. Using the ASHRAE guideline, the readings at the subject site were found to be below the suggested indoor to outdoor differential concentration.

2.2.2 Carbon Monoxide

The carbon monoxide concentrations in the Readiness Center were measured between 0.3 ppm and 0.8 ppm on the day of the survey. ASHRAE recommends that average carbon monoxide concentrations not exceed 9 ppm. Typical average concentrations found in commercial buildings range from 0 to 6 ppm. The measured levels were below the ASHRAE guideline for indoor environments. Carbon monoxide was measured using a TSI Q-Trak Plus (Model 8554).

Key sources of carbon monoxide within indoor environments include internal combustion engines, motor vehicle and forklift exhaust, tobacco smoke, space heaters, and improperly adjusted oil or gas burners.

2.2.3 Relative Humidity

The average relative humidity within the Readiness Center measured with the Q-Trak Plus was 46.9%, which was within the guideline of less than 65% recommended by ASHRAE.

2.2.4 Temperature

Temperature should be maintained within the thermal comfort envelope suggested in ASHRAE Standard 55-2010. This standard on thermal environments specifies conditions in which 80% or more of building occupants should find the thermal environment acceptable. ASHRAE 55-2010 suggests temperatures of 68 to 75 degrees Fahrenheit (°F), during winter months, for people in typical seasonal clothing during light sedentary activity. For summer, the temperature should be in the range of 73 to 79 °F.

The average temperature inside the Readiness Center was, 66.2 °F, which was below the summer guideline of 73 to 79 °F recommended by ASHRAE for thermal comfort. Complaints regarding elevated indoor temperature during summer months were received by URS during this survey.

2.2.5 Lighting

Lighting in the Readiness Center was measured using a cal-Light 400 Light Meter. Table 2-1 below shows lighting measurements in foot candles (FC) and the recommended lighting requirements (Illuminating Engineering Society of North America (IESNA) RP-7-01).

Location	Function	Measured Illuminance in Foot Candles (FC)	Recommended Minimum Illuminance in Foot Candles (FC)
Classroom, table, adjacent to white board	Admin	84.9	50
Library, shelving unit adjacent to doorway	Storage	60.8	30
East Wing, office, desk-	Admin	57.8	50
East Wing, office, desk-	Admin	41.2	50
East Wing, office, desk-	Admin	38.2	50
East Wing, office, desk	Admin	107.9	50
East Wing, office, desk, adjacent to copier and window	Admin	62.4	50
East Wing, office, desk-	Admin	62.5	50
West Wing, office, desk adjacent to window and lobby	Admin	35.3	50
West Wing, office, desk-	Admin	123.7	50
NBC Room, desk	Admin	26.6	50
NBC Storage Room	Storage	139.3	30
West Wing, office, desk-	Admin	61.2	50
West Wing, desk adjacent to doorway	Admin	45.9	50
Sea Cadets Room, shelving unit adjacent to window	Storage	45.3	30
Sea Cadets Room, storage box adjacent to doorway	Storage	57.7	30
Kitchen storage, shelving unit	Storage	66.4	30
Supply Room, workbench	Admin	28.4	50
Assembly Hall, south side, adjacent to loading area	Hall	21.4	5
Assembly Hall, north side, adjacent to main entrance	Hall	65.5	5

Table 2-1Lighting Measurements and Recommended Lighting Requirements

Location	Function	Measured Illuminance in Foot Candles (FC)	Recommended Minimum Illuminance in Foot Candles (FC)
Hallway, east wing	Hall	32.6	5
Hallway, west wing	Hall	8.2	5
Hallway, Kitchen/ Supply area	Hall	31.2	5
Male Locker Room, adjacent to doorway, south side	Break Room	3.5	10

On the day of the survey, the illuminance in the Readiness Center was determined to be inadequate in five of the locations surveyed.

2.2.6 Lead

Wipe testing for lead dust was conducted in the Readiness Center using ghost wipes, which meet ASTM E 1792 standards. The analytical report from AMA Analytical Services, Inc. (AMA) is contained in Appendix C. Table 2-2 below shows the results of the lead wipe testing.

Sample Location	URS Sample Number	Area Wiped in Square Feet (ft ²)	Result in Micrograms/ Square Foot (µg/ft ²)	Maximum Surface Contamination Level in Micrograms/ Square Foot (μg/ft ²)
West Wing, Office- under heater adjacent to window and TV	Pittsfield RC W-01	<mark>0.10</mark> 8	<110	200
West Wing, behind door, adjacent to office	Pittsfield RC W-02	0.108	<110	200
East Wing, Office- Hughes, window sill adjacent to copier	Pittsfield RC W-03	0.108	130	200
East Wing, office, adjacent to white board and window, east corner	Pittsfield RC W-04	0.108	<110	200

Table 2-2 Levels of Lead Dust Found in the Readiness Center

Sample Location	URS Sample Number	Area Wiped in Square Feet (ft ²)	Result in Micrograms/ Square Foot (µg/ft ²)	Maximum Surface Contamination Level in Micrograms/ Square Foot (μg/ft ²)
East Wing, corridor, adjacent to side entrance	Pittsfield RC W-05	0.108	<110	200
Former Indoor Firing Range, doorway	Pittsfield RC W-06	0.108	140	200
Assembly Hall, east side, under locker adjacent to basketball hoop	Pittsfield RC W-07	0. <mark>10</mark> 8	<110	200
Supply Room, floor under crate, adjacent to loading area	Pittsfield RC W-08	0.108	440	200
PT Room, floor adjacent to window and file cabinet	Pittsfield RC W-09	0.108	3,500	200
Classroom, floor, adjacent to white board and flags	Pittsfield RC W-10	0.108	<110	200

Two of the ten surface dust level measurements were found to contain lead at a level above the NGB recommended level, based on the OSHA clarification letter which states "as free as practicable" of lead contamination as specified under OSHA 29 CFR 1926.62.

No areas of peeling paint were identified for sample collection during this survey.

2.2.7 Asbestos

No damaged, friable suspect materials were identified for sample collection during this survey.

Presumed asbestos-containing floor tiles and associated mastic were identified during this survey. Until suspect materials have been sampled and determined not to contain asbestos, they must be presumed to be asbestos-containing and managed accordingly.

2.3 Ventilation System Evaluation

The facility, not designed for vehicle maintenance, contains a ventilation system that is limited to localized personal ventilation (i.e. room fans, window air conditioning units) within the majority of rooms, and main negative draw fans in the Assembly Hall.

2.4 Noise Measurements

Area noise dosimetry was conducted within the administrative office area. Noise exposures were measured using a data-logging Spark 703+ Noise Dosimeter. Area noise dosimetry results indicated that, on the day of the survey, workers were not exposed to noise levels above the DoDI Hearing Conservation Standard (6055.12 3 December 2010) of 85 decibels, A scale (dBA)/8-hour day. Table 2-5 indicates the individual monitored, the tasks performed and noise exposures.

Table 2-5 Noise Dosimetry Data

Location	Task	Sample Duration in Minutes	Monitoring Result TWA (dBA)*	Hearing Protection
Office-	Administrative	375	65.6	N/A

* The calculated 8-hour, time-weighted average (TWA) noise exposure in dBA. The OSHA PEL for noise exposure is 90 dBA. DoDI has established an employee exposure level of 85 dBA for requirement of a hearing conservation program.

2.5 Personal Protective Equipment

Personal protective equipment was orderly and readily available to employees in the Readiness Center. Personal protective equipment included safety glasses, ear plugs and nitrile gloves. No personal protective equipment was observed in use during URS' site visit.

3.0 SAFETY AND INDUSTRIAL HYGIENE PROGRAMS

3.1 Confined Spaces

A written confined spaces program is not required for this site.

3.2 Hearing Conservation

A written hearing conservation program was identified on site. A review of normal site activities determined that no operations were identified that would warrant hearing protection. Based on area noise dosimetry results, a hearing conservation program is not required for this site.

3.3 Respiratory Protection

A site-specific written program regarding Respiratory Protection was not identified on site. A hazard assessment should be conducted to determine whether respiratory protection and other forms of personal protective equipment should be required for the former Indoor Firing Range.

3.4 Hazard Communication

A site-specific hazard communication program was identified on site.

Material safety data sheets, a site map, and list of full time personnel were readily available on the day of the survey.

3.5 Personal Protective Equipment

A written personal protective equipment program was identified on site. A hazard assessment should be conducted to determine whether personal protective equipment is required for activities typically undertaken at the Readiness Center.

3.6 Asbestos Operations and Maintenance Program

A written asbestos operations and maintenance program was not identified on site.

3.7 Safety

Ladders were not properly secured and stored. Illuminated emergency exit signs and emergency escape plans were not properly posted throughout the facility. Evidence of water intrusion and water staining was observed throughout ceiling tiles in the facility, including evidence of an active roof leak. Cords were extended across walkways.

URS

4.0 REFERENCES

American Conference of Governmental Industrial Hygienists

Industrial Ventilation: A Manual of Recommended Practice, 27th Edition, 2010

Guidelines for the Assessment of Bio-aerosols in the Indoor Environment, 1989

American National Standards Institute

ANSI/IESNA RP-1-04: American National Standard Practice for Office Lighting

ANSI/IESNA RP-7-01: Recommended Practice for Lighting Industrial Facilities

American Society of Heating, Refrigerating and Air-Conditioning Engineers

ANSI/ASHRAE Standard 62.1-2010: Ventilation for Acceptable Indoor Air Quality

ANSI/ASHRAE Standard 55-2010: Thermal Environmental Conditions for Human Occupancy.

Department of the Army

DA PAM 40-21, Ergonomics Program, 15 August 2003

Unified Facilities Criteria, Heating, Ventilating and Air Conditioning, 3-520-05, 14 April 2008

DA PAM 40-501, Hearing Conservation Program, 10 December 1998.

AR 385-10, The Army Safety Program, 23 August 2007; RAR Issue Date: 4 October 2011

National Guard Pamphlet 420-15, Guidelines and Procedures for Rehabilitation and Conversion of Indoor Firing Ranges, 3 November 2006

Department of Defense

DoDI 6055.12, Hearing Conservation, 3 December 2010

Creating the Ideal Computer Workstation: A Step-by-Step Guide, June 2000

National Institute for Occupational Safety and Health

Current Intelligence Bulletin 50: Carcinogenic Effects of Exposure to Diesel Exhaust, August 1988

U. S. Environmental Protection Agency

Asbestos Hazard Emergency Response Act (40 CFR Part 763)

National Emissions Standards for Hazardous Pollutants (40 CFR Part 61)

U. S. Department of Housing and Urban Development

Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (1995, 1997, 2012)

U. S. Occupational Safety and Health Administration

Standard for General Industry: 29 CFR 1910

OSHA Clarification Letter – Clarification of "as free as practicable" of lead contamination under 29 CFR 1926.62, 13 January 2003.

APPENDIX A

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SHOP DRAWING



APPENDIX B

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PERSONNEL LIST

Non-Responsive

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APPENDIX C

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ANALYTICAL RESULTS

AMA Analytical Services, Inc.



A Specialized Environmental Laboratory

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CERTIFICATE OF ANALYSIS

AIHA LAP, LLC ACCREDITED LABORATORY NDUSTRIAL HYGIENE, ENVIRONMENTAL LEAD & ENVIRONMENTAL MICROBIOLOGY ISONEC 17025:2005 www.aihaacoreditedlaba.ce

LAB #100470

Client:	National Guard Bureau	Job Name:	MA ARNG	Chain Of Custody:	516022
Address:	301-IH Old Bay Lane, Attn: ARNG-CJG-P, State Military Reservation	Job Location:	Pittsfield RC	Date Submitted:	6/3/2013
	Havre de Grace, Maryland 21078	Job Number:	39743799.00031	Person Submitting:	Non-Responsive
		P.O. Number:	W912K6-09-A-0003	Date Analyzed:	6/7/2013 Report Date: 6/7/2013

Attention:

Summary of Atomic Absorption Analysis for Lead

Page 1 of 2

AMA Sample Number	Client Sample Number	Analysis Type	Sample Type	Air Volume (L)	Area Wiped (ft²)	Rel	oorting Limit	Total ug	Final Res	ult	Comments
13067116	RC Pittsfield W-01	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/fl²	
13067117	RC Pittsfield W-02	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/ft²	
13067118	RC Pittsfield W-03	Flame	Wipe	****	0.108	110	ug/ft²	14	130	ug/ft²	
13067119	RC Pittsfield W-04	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/fl²	
13067120	RC Pittsfield W-05	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/ft²	
13067121	RC Pittsfield W-06	Flame	Wipe	****	0.108	110	ug/ft²	15	140	ug/ft²	
13067122	RC Pittsfield W-07	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/ft²	
13067123	RC Pittsfield W-08	Flame	Wipe	****	0.108	110	ug/ft²	47	440	ug/fl²	
13067124	RC Pittsfield W-09	Flame	Wipe	****	0.108	110	ug/ft²	380	3500	ug/fl²	
13067125	RC Pittsfield W-10	Flame	Wipe	****	0,108	110	ug/ft²	<12	<110	ug/fl²	
13067126	RC Pittsfield W-TB	Flame	Wipe Blank	****	N/A	12	ug		<12	ug	

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these Laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from us. Sample types, locations, and collection protocols are based upon the information provided by the persons submitting them and, unless collected by personnel of these Laboratories, we expressly disclaim any knowledge and liability for the accuracy and completeness of this information. Residual sample material will be discarded in accordance with the appropriate regulatory guidelines, unless otherwise requested by the client. This report must not be used to claim, and does not imply product certification, approval. or endorsement by NY ELAP, AIHA, or any agency of the Federal Government, All rights reserved. AMA Analytical Services, Inc.

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AMA Anaiytical Services, Inc. **BEST AVAILABLE COPY CERTIFICATE OF ANALYSIS** A Specialized Environmental Laboratory

Client:	National Guard Bureau	Job Name:	MA ARNG	Chain Of Custody:	516022		
Address:	301-IH Old Bay Lane, Attn: ARNG-CJG-P, State Military Reservation	Job Location:	Pittsfield RC	Date Submitted:	6/3/2013		
	Havre de Grace, Maryland 21078	Job Number:	39743799.00031	Person Submitting:	Non-Responsive		
		P.O. Number:	W912K6-09-A-0003	Date Analyzed:	6/7/2013 Report Date:	6/7/2013	
Attention:	Non-Responsive						

Summary of Atomic Absorption Analysis for Lead

Page 2 of 2

AIHA LAP, LLC ACCREDITED LABORATOR)

NOUSTRIAL HYGIENE, ENVIRONMENTAL LEA & ENVIRONMENTAL MICROBIOLOG ISONEC 17025-2005 LAB #100470

AMA Sample Number	Client Sample Number	Analysis Type	Sample Type	Air Volume (L)	Area Wiped (ft²)	Reporting Limit	Total ug	Final Result	Comments
Analysis Method fo Analysis Method F N/A = Not Applical %Pb = percent lea Note: All samples Note: All results has should not be cons	or Flame: Air, Wipes, for Furnace: Air, Wipe ole mg/Kg = part d on a dry weight bas were received in good ave two significant dig sidered when interpret	Paints, and Soil/S es, Paints, and So ts per million (ppm is ug = microg I condition unless its. Any additional ing the result	olids: EPA 600/F il/Solids : EPA 6) on a dry weight rams ug/L otherwise noted. I digits shown	2-93/200(M)-7000 00/R-93/200(M)-7 basis mg/L = ∣ = parts per billion	B; Water: SM-311 010; Water: SM- oarts per million (p (ppb)	1B See Q6 3113B associa 9m) sample	C Summary for ar ated with these s.	nalytical results of quality	control samples
Air and Wipe resul Final results for air supplied information	ts are not corrected for and wipe samples ar on nor verified by this	or any blank result e based on client laboratory.	5		Non-	Responsi	Ve	Non	-Responsi
All results are to b change unless sig	e considered prelimina ned by the Technical I	ary and subject to Director or Deputy			Analys		Tec	chnical Mauage	

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these Laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from us. Sample types, locations, and collection protocols are based upon the information provided by the persons submitting them and, unless collected by personnel of these Laboratories, we expressly disclaim any knowledge and liability for the accuracy and completeness of this information. Residual sample material will be discarded in accordance with the appropriate regulatory guidelines, unless otherwise requested by the client. This report must not be used to claim, and does not imply product certification, approval, or endorsement by NY ELAP, AIHA, or any agency of the Federal Government. All rights reserved. AMA Analytical Services, Inc.

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- 8

APPENDIX D

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PHOTOGRAPHIC LOG



Photo No. Date: 2 5/28/13 Description: Image: Comparison of the section of the sectio

Storage areas were somewhat cluttered and disorganized, including passageways, during this survey.



P:\Project\National Guard Bureau\39743798 IH Services ME & MA\39743799 - MA Sites\Reports\Pittsfield RC\Pittsfield RC Photo Log docx oom BEST AVAILABLE COPY FOIA Requested Record #J-15-0085 (MA) Released by National Guard Bureau Page 2888 of 3473

URS	PHOTOGRA	PHIC LOG
Client Name:	Site Location:	Project No.
MA ARNG- Pittsfield RC	161 Vin Herbert Blvd., Pittsfield, MA	39743799
Photo No. Date: 3 5/28/13 Description: Damaged presumed asbestos-containing floor tiles and associated mastic in storage and office areas.		



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APPENDIX E

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RECOMMENDATIONS FOR SURFACE LEAD DUST IN ARMORIES

Subject: Recommendations for Surface Lead Dust in Armories

- 1. In armories that do not contain childcare facilities, the National Guard Bureau (NGB) Region North Industrial Hygiene Office recommends cleaning the areas in which sample results are greater than 200 micrograms per square foot (µg/ft²). If a special function will be held in which children will be present in this facility, consider thoroughly cleaning the areas that will be accessible to children prior to the function. This guidance is based on professional judgment, risk assessments, adaptation of Occupational Safety and Health Administration (OSHA) guidance, and feasibility of cleaning to a certain level.
 - a. Environmental Protection Agency (EPA) standards (40 Code of Federal Regulations (CFR) 745.227(h)(3)) are not directly applicable because they are criteria for dust-lead hazards developed for floors (40 μ g/ft²) and windowsills (250 μ g/ft²) in residential dwellings and child occupied facilities. A child occupied facility is defined as a building, or portion of a building, constructed prior to 1978, visited regularly by the same child, 6 years of age or under, on at least two different days within any week (Sunday through Saturday period), provided that each day's visit lasts at least 3 hours and the combined weekly visit lasts at least 6 hours, and the combined annual visits last at least 60 hours. Most of the wipe samples in armories were collected in undisturbed areas and therefore, results are worst case scenarios and do not correlate to these standards.
 - b. OSHA has no specific requirement for work area surfaces. The lead standard (29 CFR 1910.1025(h)) states that all surfaces shall be maintained as free as practicable of accumulations of lead dust. In workplaces where lead dust is generated, surface levels may be much higher, but personnel exposures can be controlled by limiting airborne lead levels and following good cleanup and hygienic practices.
 - c. OSHA used to cite a level of 200 μ g/ft² in their Technical Manual and 29 CFR 1926.62 as guidance to its own inspectors for evaluating the cleanliness of lunchroom and locker room surfaces that are supposed to be kept as clean as possible.
 - d. In a report titled Derivation of Wipe Surface Screening Levels for Environmental Chemicals, the US Army Center for Health Promotion and Preventive Medicine (USACHPPM) has determined that 200 μ g/ft² is a safe surface contamination level. They have also applied these standards as the decontamination levels for surfaces in administrative offices.
 - e. It should be noted that levels above these recommendations do not necessarily mean there is a significant hazard to workers who are following good cleaning and hygienic practices since there is no

correlation between wipe and air samples. Rather, we recommend these levels as a precautionary measure.

- 2. The NGB Occupational Health Branch is developing guidance for armories that are used as childcare facilities. All states will receive this guidance when it is completed. In the interim, we recommend the following actions:
 - a. Clean all areas that will be accessible to children to the EPA dust-lead standard for children 6 years of age or under (40 μ g/ft² on floors and 250 μ g/ft² on windowsills).
 - b. Refer to the local authorities' regulations since they can be more stringent than federal regulations.
 - c. Post signs in the area to inform people of the presence of lead dust and its effects.
 - d. If soldiers clean weapons in the facility change the policy so that they cannot clean their weapons in the facility, or if they are allowed to clean their weapons indoors, they must clean the area by wet wiping and mopping the area when they are done.
 - e. If the paint is peeling, contact the state Environmental Office to test for lead content and provide recommendations.
- 3. Air samples collected on individuals in the armory were well below OSHA's permissible exposure limit for lead (29 CFR 1910.1025(c)) of 0.05 milligrams per cubic meter (mg/m³) averaged over an 8-hour day. Therefore, based on these conditions there is currently no overexposure to personnel from lead dust in this building.

Prepared For:

National Guard Bureau Army National Guard Region North Industrial Hygiene Office 301 – IH Old Bay Lane Havre De Grace, Maryland 21078

Prepared By:

URS Corporation 5 Industrial Way Salem, New Hampshire 03079

INDUSTRIAL HYGIENE SURVEY REPORT PLYMOUTH READINESS CENTER 76 COURT STREET PLYMOUTH, MASSACHUSETTS



Office Manager

Non-Responsive
Project Manager

October 2005 PN: 39741508

URS Corporation 5 Industrial Way Salem, NH 03079-2830 Tel: 603.893.0616 Fax: 603.893.6240 Posted to NGB FOIA Reading Room May, 2018

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FOIA Requested Record #J-15-0085 (MA) Released by National Guard Bureau Page 2893 of 3473
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- Appendix F Recommendations for Surface Lead Dust in Armories
- Appendix G Photographs

FINDINGS AND RECOMMENDATIONS

Findings	Recommendation	Risk
-		Assessment
		Code
	Lighting	A REAL PROPERTY AND A
On the day of the survey, the	Increase lighting in the administrative	
illuminance in the administrative	areas. While work is in progress, the	
area was inadequate in most of	administrative area shall be lighted	RAC 4
the offices.	by at least the minimum lighting	
	intensities (ANSI / IESNA RP-1-04)	
	Lead	
Lead was detected in wipe	Personnel trained in accordance with	
samples collected from the	the OSHA Lead Standard should	
former firing range and drill hall	clean the former firing range where	
in amounts greater than 200	lead was detected in quantities of	RAC 4
$\mu g/ft^2$	greater than 200 micrograms per	
	square foot (OSHA 29 CFR	
	1910.1025(h)(1))	
	Asbestos	Carlos and Carlos
A site-specific asbestos	Develop a site specific asbestos	
operations and maintenance	operations and maintenance plan to	
plan was not available.	manage asbestos-containing	RAC 3
	materials (OSHA 29 CFR	
	1910.1001(j))	
	Hazard Communication	58月1日新日 第 18月8日
The hazard communication plan	Develop a site specific hazard	
available was not site specific.	communication plan to manage	BACA
	hazardous materials (OSHA 29 CFR	INCO 4
	1910. 1200(e))	
和 这样的。在1995年,1996年,1996年,1997年,199	Electrical Safety	
Electrical panels obstructed by a	Remove all obstructions in front of	
lawn mower in the drill hall.	electrical panels in the drill hall for a	RAC 2
Electrical panels must be kept	minimum of 3 feet (OSHA 29 CFR	10502
clear of obstruction	1910.303(g)(1)(i)).	
影響·1997年2月1日 - 新聞語 - 新聞』 -	Fire Saféty	
Missing fire extinguisher in Drill	Fire extinguishers should be made	
hali	readily accessible to employees	RAC 2
	(OSHA 29 CFR 1910.157(c)(1)).	
	Mold	
Water damage was observed	Determine and repair source of	
throughout. Mold growth could	water, Replace water damaged	
become an issue if left	building materials and implement a	
unattended.	moisture management program to	RAC 4
	provide direction for future water	
	incursions (Best management	
	practice)	

1.0 SUMMARY

At the request of the National Guard Bureau (NGB) Region North Industrial Hygiene Office, URS Corporation (URS) conducted an industrial hygiene survey at the Readiness Center located at 76 Court Street in Plymouth, Massachusetts 02360. This report includes an executive summary, a description of the survey protocol, a discussion of the survey evaluation and findings and a list of conclusions and recommendations.

On February 13, 2004, Mr^{Non-Responsive} an industrial hygienist with URS, conducted a site visit to the Readiness Center in Plymouth, Massachusetts. The purpose of this site visit was to conduct an industrial hygiene survey, which included the collection of air samples, bulk samples, lighting measurements, and a review of site health and safety procedures. Mr Non-Responsive f the Commonwealth of Massachusetts was Mr.

A shop layout drawing of the facility, which shows the locations where measurements were made during this survey, is contained in Appendix A.

2.0 ADMINISTRATIVE AREA

2.1 Operation Description

This building area contains multiple offices located throughout the building with desks and computer workstations. Computer workstations were assessed during the walkthrough for ergonomic issues. There was only one workstation to assess because the remainder of the building had been leased to the local court system. No issues were found with this workstation at the time of the walkthrough.

Water stains were found on the ceiling of room # 11 (Photo # 3787) and room # 2. There were water stains on the ceiling tiles with visible mold growth in storage room # 6 (Photo # 3781).

2.2 Chemical and Physical Agents Sampled

2.2.1 Relative Humidity

Relative humidity levels were measured using a TSI Q-Track (Model 8551). Relative humidity on the day of the survey ranged from 13.4 – 38.4% with an average of 17.2%. This reading was below the recommended range of 30.0% to 60.0% set by the American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. (ANSL/ASHRAE Standard 62.1-2004).

2.2.2 Carbon Dioxide

On the day of the survey, carbon dioxide measurements were made at various locations throughout the Readiness Center. Carbon dioxide concentrations ranged from 395 to 485 parts per million (ppm), with an average of 428 ppm. Carbon dioxide levels were measured using a direct reading TSI Q-Track (Model 8551).

Carbon dioxide is a normal constituent of the atmosphere and ranges from about 250 to 450 ppm. The major source of excess carbon dioxide in the indoor environment is people. Other sources can include open-flame heaters, fermentation processes, and motor vehicles. Carbon dioxide itself is not normally a cause of indoor air quality problems because concentrations must exceed 5,000 to 10,000 ppm before health effects such as headache, drowsiness, and increased respiration are noted. Typically, carbon dioxide is used as an indicator of the adequacy of fresh air intake. As the concentration of carbon dioxide increases, so do the background levels of other air contaminants. ASHRAE (62.1-2004) recommends that levels of carbon dioxide be maintained below 700 ppm above background level. Since the interior average carbon dioxide level of 428 ppm is below 700 ppm an exterior reading was not collected.

2.2.3 Carbon Monoxide

Carbon monoxide was also measured in the Readiness Center. Carbon monoxide concentrations ranged from 0 to 2 ppm throughout the survey period. The measured levels were below the ASHRAE guideline for indoor environments (62,1-2004). Carbon monoxide was measured using a TSI Q-Track (Model 8551).

Key sources of carbon monoxide within indoor environments include internal combustion engines, motor vehicle and forklift exhaust, tobacco smoke, space heaters, and improperly adjusted oil or gas burners. Health effects from exposure to elevated concentrations of carbon monoxide may include fatigue, impairment of visual acuity, irregular heartbeat, headache, nausea, and confusion. ASHRAE (62.1-2004) recommends that average carbon monoxide concentrations not exceed 9 ppm. Typical average concentrations found in commercial buildings range from 0 to 6 ppm.

2.2.4 Lighting

Lighting in the administrative area was measured using a Sper Scientific Ltd. Light Meter (Model 840020C). Table 2-1 below shows lighting measurements and the recommended lighting requirement (ANSt / IESNA RP –1-04 American National Standard Practice for Office Lighting).

Location	Function	Measured Illuminance (lux / foot candles)	Recommended Minimum Illuminance (lux / foot candles)
Office # 1 ~ Desk by Hall	Administrative Duties	94 / 8.7	500 / 50
Office # 1 – Main Desk	Administrative Duties	474 / 44.6	500 / 50
Office # 2	Administrative Duties	220/20.4	500 / 50
Classroom # 5	Administrative Duties	232/21.6	500 / 50
Office # 11	Administrative Duties	325 / 30.2	500 / 50
Office # 11	Administrative Duties	490 / 45.5	500 / 50
Hallway # 8	Accessway	255/23.7	30/3
Hallway #19	Accessway	149 / 13.8	30/3

 Table 2-1

 Lighting Measurements and Recommended Lighting Requirements

On the day of the survey the illuminance in the administrative area was inadequate in all offices.

2.2.5 Lead

Paint chips were collected where paint was peeling and sent to AMA Analytical Services, Inc. (AMA) for analysis. Two of the samples were found to contain lead in a concentration above the allowable limits of the U.S. Housing and Urban Development (HUD) Lead-Based Paint Guidelines. Levels of lead greater than 0.5% by weight are referred to as "lead-containing" (Section 1017 of the Residential Lead-Based Paint Hazard Reduction Act of 1992 (also referred to as Title X)). Table 2-2 below shows the results of the lead paint testing.

Table 2-2 Levels of Lead in Paint Found in the Administrative Area

SAMPLE LOCATION	URS Sample Number	Reporting Limit (% by Weight)	Final Result (% by Weight)
Hallway # 19	0213-LPC03	0.01	0.58
Hallway # 19	0213-LPC04	0.01	9.5
Basement Area # 14	0213-LPC06	0.01	0.14

The analytical report from AMA is contained in Appendix D.

Wipe testing for lead dust was conducted in the administrative area using ghost wipes, which meet ASTM E 1792 standards. The analytical report from AMA is contained in Appendix D. Table 2-3 below shows the results of the lead sampling.

 Table 2-3

 Levels of Lead Dust Found in the Administrative Area

Sample Location	URS Sample Number	Area Wiped (ft ²)	Result (µg/ft ^z)	Maximum Recommended Surface Contamination Level (µg/ft ²)
Classroom # 5 – Floor – Center	0213-LW04	1.000	160	200
Room # 11 – Top of a File Cabinet	0213-LW05	1.000	79	200
Blank	0213-LWBlank	N/A	<12	200

2.2.6 Asbestos

Bulk samples were collected from damaged suspect asbestos-containing materials (ACM) in this area for a determination of asbestos content. Analytical procedures were performed in accordance with the U.S. Environmental Protection Agency (EPA) Recommended Method for the Determination of Asbestos in Bulk Samples by Polarized Light Microscopy and Dispersion Staining (PLM/DS)(EPA-600/M4-82-020. EPA-600/R-93-116). Table 2-4 below presents the results of the sample analysis.

Table 2-4 Sample Results of Suspect ACM

Sample Location	Material Sampled	URS Sample Number	Total Asbestos (%)
Classroom # 5	12"x12" White Floor Tile	0213-AB01A	NAD
Office # 1	12"x12" White Floor Tile	0213-AB01B	NAD
Classroom # 5	Chalk Board	0213-AB02A	NAD
Classroom # 5	Chalk Board	0213-AB02B	NAD

NAD = "No Asbestos Detected"

The U. S. Environmental Protection Agency (EPA) states that any material with greater than 1% asbestos must be treated as ACM (U.S. EPA, Title 40 CFR Part 763.87 (c)(2)). The analytical report from AMA Analytical Services, Inc. is contained in Appendix D. Mr. Non-Responsive asbestos inspector training certificate is provided in Appendix E.

2.3 Ventilation System Evaluation

Not applicable to this operation.

2.4 Noise Measurements

Not applicable to this operation.

2.5 Personal Protective Equipment

Not applicable to this operation.

2.6 Interpretation of Results

GENERAL: In general, the administrative area was neat and orderly.

<u>LIGHTING</u>: On the day of the survey, the illuminance in the administrative area was inadequate in all offices. URS recommends increasing lighting in the administrative

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areas. While work is in progress the administrative area must be lighted by at least the minimum light intensities.

<u>LEAD:</u> The surface wipe samples collected in the administrative area were found to contain lead dust levels below the maximum limit set by the National Guard Bureau (See Appendix F). The peeling lead paint on the walls, ceiling and floor should be stabilized (Photos # 3788-89) by properly trained personnel.

3.0 FORMER FIRING RANGE

3.1 Operation Description

The firing range has been dismantled and this building area is now primarily used for storage.

3.2 Chemical and Physical Agents Sampled

3.2.1 Lead

Wipe testing for lead was conducted in the former firing range using ghost wipes, which meet ASTM E 1792 standards. The analytical report from AMA is contained in Appendix D. Table 3-1 below shows the results of the lead sampling.

Sample Location	URS Sample Number	Area Wiped (ft ²)	Result: (µg/ft²)	Maximum Recommended Surface Contamination Level (μg/ft ²)
Firing Range-Top of a Light	0213-LW06	1.042	34,000	200
Firing Range-Top of the	0213-LW07	0.583	130,000	200
Heater Unit				
Firing Range-Floor - Front	0213-LW08	1.000	9,000	200
Firing Range-Floor	0213-LW09	1.000	330	200
Center				
Firing Range-Floor – Rear	0213-LW10	1.000	6,500	200
Blank	0213-	N/A	<12	200
	LWBlank			

 Table 3-1

 Levels of Lead Dust Found in the Former Firing Range

One air sample for lead dust was also collected in the former firing range. Table 3-2 below shows the result of this air sample.

Table 3-2 Level of Lead Found in the Air

Sample Location	URS Sample Number	Air Volume (L)	Result (µg/m³)	OSHA's PEL(μg/m³)
Former Firing Range	0213-LA02	616	<4.9	50.0
Blank	0213-LA03	0	<3.0	50.0

On the day of the survey, the airborne lead dust level in the former firing range was found to be acceptable, below OSHA's permissible exposure limit (PEL) for lead (29 CFR 1910.1025(c)) of 50.0 μ g/m³ averaged over an 8-hour day. The analytical report from AMA is contained in Appendix D.

3.3 Ventilation System Evaluation

Not applicable to this operation.

3.4 Noise Measurements

Not applicable to this operation.

3.5 Personal Protective Equipment

Not applicable to this operation.

3.6 Interpretation of Results

<u>LEAD</u>: All five surface wipe samples collected within the former firing range were found to contain lead dust levels which exceed the maximum limit set by the National Guard Bureau. URS recommends that an appropriately licensed lead contractor clean the former firing range. The NGB has prepared a memorandum titled "Recommendations for Surface Lead Dust in Armories" which is provided in Appendix F.

4.0 DRILL HALL

4.1 Operation Description

The drill hall is a 6,000 square foot area used for assembling personnel and storing equipment. The walls are constructed of cinder block with a concrete floor.

4.2 Chemical and Physical Agents Sampled

4.2.1 Lead

Wipe testing for lead dust was conducted in the drill hall using ghost wipes, which meet ASTM E 1792 standards. The analytical report from AMA is contained in Appendix D. Table 4-1 below shows the results of the lead sampling.

Sample Location	URS Sample Number	Area Wiped (ft ²)	Result (µg/ft²)	Maximum Safe Surface Contamination Level (µg/ft ²)
Drill Hall – Floor – Rear	0213-LW01	1.000	37	200
Drill Hall – Floor – Center Left	0213-LW02	1.000	23	200
Drill Hall – Top of the Coca-Cola Machine	0213-LW03	1.000	200	200
Blank	0213-LWBlank	N/A	<12	200

Table 4-1Levels of Lead Dust Found in the Drill Hall

One air sample for lead dust was collected in the drill hall. Table 4-2 below shows the result of this air sample.

Table 4-2 Level of Lead Found in the Air

Sample Location	URS Sample Number	Air Volume (L)	Result (µg/m³)	OSHA's PEL(µg/m³)
Drill Hall	0213-LA01	616	<4.9	50.0
Blank	0213-LA03	0	<3.0	50.0

On the day of the survey, the airborne lead dust level in the drill half was found to be acceptable, below OSHA's permissible exposure limit (PEL) for lead (29 CFR 1910.1025(c)) of 50.0 μ g/m³ averaged over an 8-hour day.

Paint chips were collected where paint was peeling and sent to AMA for analysis. One of the two samples was found to contain lead in a concentration above the U.S. Housing and Urban Development (HUD) Lead-Based Paint Guidelines. Levels of lead greater than 0.5% by weight are referred to as "lead-containing" (Section 1017 of the Residential Lead-Based Paint Hazard Reduction Act of 1992 (also referred to as Title X)). Table 4-3 below shows the results of the lead paint testing.

Table 4-3 Levels of Lead in Paint Found in the Drill Hall

Sample Location	URS Sample Number	Reporting Limit (% by Weight)	Final Result (% by Weight)
Drill Hall	0213-LPC01	0.1	9.4
Drill Hall	0213-LPC02	0.1	0.16

The analytical report from AMA is contained in Appendix D.

4.3 Ventilation System Evaluation

Not applicable to this operation.

4.4 Noise Measurements

Not applicable to this operation.

4.5 Personal Protective Equipment

Not applicable to this operation.

4.6 Interpretation of Results

<u>LEAD:</u> One of the surface wipe samples collected in the drill hall was found to contain a lead dust level at the maximum limit set by the National Guard Bureau. The peeling black lead paint on the drill hall windows should be stabilized (Photo 3782). URS recommends that an appropriately licensed lead contractor cleans the drill hall of lead dust and stabilize the peeling paint. The NGB has prepared a memorandum titled "Recommendations for Surface Lead Dust in Armories" which is provided in Appendix G.

<u>FIRE SAFETY:</u> There was a sign indicating the location of a fire extinguisher, however, the fire extinguisher was missing at the time of this survey (Photo # 3784).

<u>HOUSEKEEPING:</u> The electrical panels in the drill half where obstructed at the time of this survey (Photo # 3785).

<u>MOLD</u>: Water stains were discovered on the ceiling of the drill hall in various places (Photo # 3802). The water stains on the ceilings could lead to mold problems if not addressed.

5.0 BOILER ROOM

5.1 Operation Description

The boiler room is a mechanical space constructed of cinder block walls with a concrete floor, containing a furnace and associated piping.

5.2 Chemical and Physical Agents Sampled

5.2.1 Lead

One paint chip was collected where paint was peeling and sent to AMA for analysis. The sample was found to contain lead in a concentration within the allowable limits of the U.S. Housing and Urban Development (HUD) Lead-Based Paint Guidelines. Levels of lead greater than 0.5% by weight are referred to as "lead-containing" (Section 1017 of the Residential Lead-Based Paint Hazard Reduction Act of 1992 (also referred to as Title X)). Table 5-1 below shows the results of the lead paint testing.

Table 5-1 Level of Lead in Paint Found in the Boiler Room

Sample Location	URS Sample	Reporting Limit	Final Result
	Number	(% by Weight)	(% by Weight)
Boiler Room # 12	0213-LPC05	0.01	0.084

The analytical report from AMA is centained in Appendix D.

5.3 Ventilation System Evaluation

Not applicable to this operation.

5.4 Noise Measurements

Not applicable to this operation.

5.5 Personal Protective Equipment

Not applicable to this operation.

5.6 Interpretation of Results

<u>LEAD:</u> The paint chip sample collected in the boiler room was determined to contain a level of lead within the acceptable range of the U.S. Housing and Urban Development (HUD) Lead-Based Paint Guidelines.

6.0 SAFETY AND INDUSTRIAL HYGIENE PROGRAMS

6.1 Confined Spaces

No safety program was found regarding confined spaces. No training records were found on site. A confined spaces program is not required for this site.

6.2 Hearing Conservation

No safety program was found regarding hearing conservation. No training records were found on site. A hearing conservation program is not required for this site.

6.3 Respiratory Protection

No safety program was found regarding respiratory protection. No training records were found on site. A respiratory protection program is not required for this site.

6.4 Hazard Communication

No program was found regarding hazard communication. No training records were found on site. A site-specific hazard communication program is required for this site and should include communication of hazards to employees, management of material safety data sheets, chemical labeling and spill protection.

6.5 Personal Protective Equipment

No safety program was found regarding personal protective equipment. No training records were found on site. A personal protective equipment program is not required for this site.

7.0 REFERENCES

American National Standards Institute

ANSI/ESNA RP-1-04: American National Standard Practice for Office Lighting

American Society of Heating Refrigerating and Air-Conditioning Engineers

ANSI/ASHRAE Standard 55-2005: Thermal Environmental Conditions for Human Occupancy

ANSI/ASHRAE Standard 62.1-2004: Ventilation for Acceptable Indoor Air Quality

Army Corps of Engineers

Safety and Health Requirements Manual EM 385-1-1 November 2003

Department of the Army

Ergonomics Program Pamphlet 40-21 (15 August 2003)

Policy and Responsibilities For Inspection, Evaluation and Operation of Army National Guard Indoor Firing Ranges (National Guard Regulation 385-15 30 December 2002)

Department of Defense

DoD Hearing Conservation Program Standard 6055.12 April 1996

Creating an Ideal Workstation: A Step-by-Step Guide

U.S. Environmental Protection Agency

Asbestos Hazard Emergency Response Act (40 CFR Part 763)

National Emissions Standards for Hazardous Pollutants (40 CFR Part 61)

U.S. Housing and Urban Development

Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (1995, 1997)

U. S. Occupational Safety and Health Administration

Standard for General Industry: 29 CFR 1910

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SHOP DRAWING

APPENDIX A





APPENDIX B

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PERSONNEL LIST

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PERSONEL LIST PLYMOUTH ARMORY

Non Persencive	Rank
Non-Responsive	SGT

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HAZARDOUS MATERIALS LIST

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APPENDIX D

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ANALYTICAL RESULTS

AMI	A Ano A Spec	lytical Services, Inc. ialized Environmental Laboratory	CERT	IFICATE OF ANALYSIS			NV(AQ NY ELAP <i>A</i> IHA	
	Client:	National Guard Bureau	Job Name:	Army National Guard	Chain Of Custody:	122961		
	Address:	301-III Old Bay Lane, Attn: NGB-AVN-SI, State Military Reservation	Job Location:	76 Court St. Plymouth, MA	Date Analyzed:	02/24/2004		
		Havre de Grace, Maryland 21078	Job Number:	42056	Person Submitting:			
			P.O. Number:	Not Provided	Report Date:	24-Feb-04		
	Attention:						Page 1 of 2	

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Page 1 of 2

Summary of Atomic Absorption Analysis for Lead

	AMA Sample Number	Client Sample Number	Analysis Type	Sample Type	Air Volume (L)	Area Wiped (ft ²)	Rep L	orting imit	F	inal Rest	It Comments
BE	0426172	0213-LPC 01	Flame	Paint Chip	****	N/A	0.01	%Pb	. <u></u>	9.4	%Pb
ST	0426173	0213-LPC 02	Flame	Paint Chip	****	N/A	0.01	%Pb		0.16	%РЪ
AV	0426174	0213-LPC 03	Flame	Paint Chip	****	N/A	0.01	%Pb		0.58	%Pb
AIL	0426175	0213-LPC 04	Flame	Paint Chip	****	N/A	0.01	%Pb		9.5	%РЪ
ABL	0426176	0213-LPC 05	Flame	Paint Chip	****	N/A	0.01	%Pb		0.084	%Pb
E	0426177	0213-I.PC 06	Flame	Paint Chip	****	N/A	0.01	%РЬ		0.14	%РЪ
Ŷ,	0426178	0213-LA 01	Flame	Air	616	N/A	4.87	ug/m³	<	4.9	ug/m³
Ye	0426179	0213-LA 02	1-lame	Air	616	N/A	4.87	ug/m³	<	4.9	ug/m'
	0426180	0213-LA 03	Flame	Air Blank	0	N/A	3.00	ug/m³	<	3	ug
	0426181	0213-LW 01	Flame	Wipe	****	1.000	12.00	ug/tit?		37	ug/ft²
-	0426182	0213-LW 02	Flame	Wipe	****	1.000	12.00	ug/fl²		23	ug/ft²
0	0426183	0213-LW 03	Flame	Wipe	****	1.000	12.00	ug/ft²		200	ug/ft²
AR	0426184	0213-LW 04	Flame	Wipe	****	1.000	12.00	ug/ft²		160	ug/ft²
equ	0426185	0213-LW 05	Flame	Wipe	****	1.000	12.00	ug/ft ²		79	ug/ft²
lest	0426186	0213-I.W 06	Flame	Wipe	****	1.042	11.52	ug/ft²		34000	ug/ft²
ed	0426187	0213-LW 07	Flame	Wipe	****	0.583	20.57	ug/ft*		130000	ug/N²
Rec	0426188	0213-LW 08	Flame	Wipc	****	1.000	12.00	ug/ft*		9000	ug/ſt²
ord	0426189	0213-LW 09	Flame	Wipe	****	1.000	12.00	ug/ft²		330	ug/ft*
き	0426190	0213-LW 10	Flame	Wipe	****	1.000	12.00	ug/ft²		6500	ug/ft ^z
	0426191	0213-LW BLANK	Flame	Wipc Blank	****	N/A	12.00	ug	<	12	ug

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ດ. ອ	AMA Anal A Specie	utical Ser	vices, inc.	CER	FIFICATE	OF ANALY	YSIS		NVLAQ NY ELAP AIHA
	Client:	National Guard Bureau	i i	Job Name:	Army National	Guard	Chain Of Custod	y: 122961	
643	Address:	301-IH Old Bay Lane, State Military Reservat	Attn: NGB-AVN-SI, lion	Job Location:	76 Court St. P	ymouth, MA	Date Analyzed:	02/24/2004	
N		Havre de Grace, Maryl	land 21078	Job Numher:	42056		Person Submittin	ng:	
, I	(c)			P.O. Number:	Not Provided		Report Date:	24-Feb-04	
45	Attention:								Page 2 of 2
3				Summary o	of Atomic A	bsorption A	Analysis for Lead	l.	1 180 5 49 2
(30	AMA Sample Number	Client Sample Number	Analysis Type	Sample Type	Air Volume (L)	Area Wiped (ft ²)	Reporting Limit	Final Result	Comments
Foil Requested Record #J-15-0085 (MA) FOIA Requested Record #J-15-0085 (MA) FOIA Requested Record #J-15-0085 (MA) 800 2921 of 3473	Analysis Method f Analysis Method f N/A = Not Applica %Pb = percent fea Note: All results h considered when This report applies only t	for Flame: Air, Wipes, F For Furnace: Air, Wipe able mg/Kg = parts ad by weight ug = r rave two significant digit interpreting the result.	investigated and is not sive use of the client to riturals are based unco	t nccessarily indicative whom it is addressed as	of the quality or con id upon the condition	SM-3111B ater: SM-3113B m) tition of upparently id that it is not to be use	Technical Ma Technical Ma	anager: a mutual protection to clicni ivertising or publicity matte	ts, the public and these Laboratorics, r without prior written authorization
ep	from us. Sample types, lo liability for the accuracy applies only to polarized	and completeness of this light microscopy of bulk s	olocals are based upor s information. Residua samples and transmissi	n the information prov al sample material will on electron microscopy	ided by the persons be discarded in acco of AHERA air samp	submitting them and, ordence with the appr les.	unless collected by personnel opriate regulatory guidelines,	of these Laboratories, we ex unless otherwise requested All rights re	pressly disclaim any knowledge and by the client, NYLAP Accreditation served, AMA Analytical Services, Inc.

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May, 2018

AMA Anol A Specia	vtical Services, Inc.	CERTIFICATE OF ANALYSIS							
Cliest:	National Guard Burcau	Job Name:	Army National Guard	Chain Of Custody:	122961	AIHA			
Address:	301-1H Old Bay Lanc, Attr: NGB-AVN-SI, State Military Reservation	Job Location:	76 Court St. Plymouth, MA	Date Analyzed:	02/24/2004				
	Havre de Grace, Maryland 21078	Job Number:	42056	Person Submitting:					
		P.O. Number:	Not Provided						
Attention:		Summary of	Polarized Light Microscopy			Page I of I			

AMA Sample Number	Client Sample #	Total Asbestos	Chrysotile Percent	Amosite Percent	Crucidolite Percent	Other Asbestos Percent	Mineral Wool Percent	Fiberglass Percent	s Organic Percent	Synthetic Percent	Other Percent	Particulate Percent	Sample Color	Analyst ID	Comments	
		-		-												
0426192	0213-AB 01 A	NAD	(s. /	•••		-			3 97	100	Off-White	CK		
0426193	0213-AB 01 B	NAD			0220	110		7,222	1421		-	100	Off-White	CK		
0426194	0213-AB 02 A	NAD	en),	2.45	S. ()		-					100	Black	CK		
0426195	0213-AB 02 B	NAD		1220	1.225	225	122			<i></i>	N <u>45</u> 70	100	Black	CK		

The following footnotes only apply to those samples which the total asbestos result is flagged with a note number.

- 1 TEM RECOMMENDATION Please note, due to resolution limitations with optical microscopy and/or interference from matrix components of this sample, results which are reported via PLM as negative or trace (<1%) for asbestos may contain a significant quantity of asbestos. It is recommended that the additional analytical technique of TEM be used to check for asbestos fibers below the resolution limits of optical microscopy.
- 2 MATRIX REDUCTION RECOMMENDATION Please note, due to interference from the matrix components of this sample, results which are reported via PLM as negative or trace (<1%) for asbestos may contain a significant quantity of asbestos which is obscured from view. It is recommended that the additional preparation technique of gravimetric reduction be performed on this sample to minimize the obscuring effects of matrix components, followed by reanalysis by PLM and/or TEM.</p>

Analysis Method - EPA/600/R-93/116 dated July 1993

NAD = "Nu Asbestos Detected"

Detected" TR = "Trace equals less than 1% of this component"



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This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public and these Laboratorics, this report is submitted and accepted for the exclosive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from us. Sample types, locations and collection protocols are based upon the information provided by the persons submitting them and, unless collected by personnel of these Laboratories, we expressly disclaim any knowledge and liability for the accuracy and completeness of this information. Residual sample material will be discarded in accordance with the appropriate regulatory guidelines, unless otherwise requested by the client. NVLAP Accreditation applies only to polarized light microscopy of bulk samples and transmission electron microscopy of AHERA air samples.

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APPENDIX E

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TRAINING CERTIFICATES

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	INSTITUTE FOR	
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	Asbestos Inspector Refresher	
pursu	ant to Title II of the Toxic Substance Control Act, 15 U.	S.C. 2646
62	April 11, 2003 Course Dates	
	Course Location	A
April 11, 2003 Examination Date	Institute for Environmental Education 16 Upton Drive Wilmington, MA 01887	April 10, 2004 Expiration Date
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FOIA Requested Record #J-15-0085 (MA) Released by National Guard Bureau Page 2925 of 3473 APPENDIX F

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RECOMMENDATIONS FOR SURFACE LEAD DUST IN ARMORIES

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Subject: Recommendations for Surface Lead Dust in Armories

1. In armories that do not contain childcare facilities, the National Guard Bureau (NGB) Region North Industrial Hygiene Office recommends cleaning the areas in which sample results are greater than 200 micrograms per square foot (Eg/ft²). If a special function will be held in which children will be present in this facility, consider thoroughly cleaning the areas that will be accessible to children prior to the function. This guidance is based on professional judgment, risk assessments, adaptation of Occupational Safety and Health Administration (OSHA) guidance, and feasibility of cleaning to a certain level.

a. Environmental Protection Agency (EPA) standards (40 Code of Federal Regulations (CFR) 745.227(h)(3)) are not directly applicable because they are criteria for dust-lead hazards developed for floors (40 µg/ft²) and windowsills (250 µg/ft³) in residential dwellings and child occupied facilities. A child occupied facility is defined as a building, or portion of a building, constructed prior to 1978, visited regularly by the same child, 6 years of age or under, on at least two different days within any week (Sunday through Saturday period), provided that each day's visit lasts at least 3 hours and the combined weekly visit lasts at least 6 hours, and the combined annual visits last at least 60 hours. Most of the wipe samples in armories were collected in undisturbed areas and therefore, results are worst case scenarios and do not correlate to these standards.

b. OSHA has no specific requirement for work area surfaces. The lead standard (29 CFR 1910.1025(h)) states that all surfaces shall be maintained as free as practicable of accumulations of lead dust. In workplaces where lead dust is generated, surface levels may be much higher, but personnel exposures can be controlled by limiting airborne lead levels and following good cleanup and hygienic practices.

c. OSHA used to cite a level of 200 \odot g/ft² in their Technical Manual and 29 CFR 1926.62 as guidance to its own inspectors for evaluating the cleanliness of lunchroom and locker room surfaces that are supposed to be kept as clean as possible.

d. In a report titled Derivation of Wipe Surface Screening Levels for Environmental Chemicals, the US Army Center for Health Promotion and Preventive Medicine (USACHPPM) has determined that 200 $\square g/ft^2$ is a safe surface contamination level. They have also applied these standards as the decontamination levels for surfaces in administrative offices.

e. It should be noted that levels above these recommendations do not necessarily mean there is a significant hazard to workers who are following good cleaning and hygienic practices since there is no correlation between wipe and air samples. Rather, we recommend these levels as a precautionary measure.

2. The NGB Occupational Health Branch is developing guidance for armories that are used as childcare facilities. All states will receive this guidance when it is completed. In the interim, we recommend the following actions:

a. Clean all areas that will be accessible to children to the EPA dust-lead standard for children 6 years of age or under (40 μ g/ft² on floors and 250 μ g/ft² on windowsills).

b. Refer to the local authorities' regulations since they can be more stringent than federal regulations.

c. Post signs in the area to inform people of the presence of lead dust and its effects.

d. If soldiers clean weapons in the facility change the policy so that they cannot clean their weapons in the facility, or if they are allowed to clean their weapons indoors, they must clean the area by wet wiping and mopping the area when they are done.

e. If the paint is peeling, contact the state Environmental Office to test for lead content and provide recommendations.

3. Air samples collected on individuals in the armory were well below OSHA's permissible exposure limit for lead (29 CFR 1910.1025(c)) of 0.05 mg/m³ averaged over an 8-hour day. Therefore, based on these conditions there is currently no overexposure to personnel from lead dust in this building.

APPENDIX G

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PHOTOGRAPHS

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Prepared For:

National Guard Bureau Army National Guard Region North Industrial Hygiene Office 301 – IH Old Bay Lane Havre De Grace, Maryland 21078

Prepared By:

URS Corporation 5 Industrial Way Salem, New Hampshire 03079

INDUSTRIAL HYGIENE SURVEY REPORT QUINCY READINESS CENTER 1000 HANCOCK STREET QUINCY, MASSACHUSETTS 02169



September 2005

PN: 39741508

Non-Responsive

Project Manager

Posted to NGB FOIA Reading Room May, 2018

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FINDINGS AND RECOMMENDATIONS

Findings	Recommendation	
		Assessment
		Code
Ergonomics	The second s	
Computer work stations	Ergonomic issues with the desks and chairs	RAC 3
were observed with fixed	should be corrected by fitling the workplace to	
chairs, armrests,	the worker (DoD, OSHA General Duty)	
keyboards and monitors.		
Lighting		
On the day of the survey,	Increase lighting in the administrative areas.	
the illuminance in the	While work is in progress, the administrative	
administretive area was	aree shall be lighted by at least the minimum	RAC 4
inadequate in most of the	lighting intensities (ANSI / IESNA RP-1-04)	
offices.		
Lead		
Lead was detected in wipe	Personnel trained in accordance with the	
samples in amounts	OSHA Lead Standard should clean the former	
greater than 200 µg/fl ² .	firing range and drill hall where lead was	RAC 4
•	detected in quantities of greater than 200	
	micrograms per square foot (OSHA 29 CFR	
	1910.1025(h)(1))	
Peeling lead-based paint	Personnel trained in accordance with the	
was present in bathroom #	OSHA Lead Standard should stabilize peeling	RAC 4
52 and room #54.	lead paint (OSHA 29 CFR 1910.1025(h)(1))	
Asbestos		
Damaged floor tile, pipe	Remove and replace damaged asbestos-	
insulation and pipe fitting	containing materials. Work should be	D AGA
insulation containing	completed by personnel trained in accordance	RAC 3
greater than 1% asbestos	with federal regulations (OSHA 29 CFR	
was present in this facility.	1910.1001(k)(1))	
A site-specific asbestos	Implement the site specific aspestos	
operations and	operations and maintenance plan to manage	RAC 3
maintenance plan has not	aspestos-containing materials (USHA 29 UFK	
been implemented.	1910.1001()))	an dense stan som hand som
Hazard Communication		
A site specific hazard	Implement the site specific hazard	0404
communication plan was	communication plan to manage hazardous	RAC 4
available.	materials (OSHA 29 CFR 1910.1200(e))	N 1920-2010-2010-2010-2010-2010-2010-2010-
Mold		
Water damage was	Determine and repair source of water, Replace	
observed throughout.	water damaged building materials and	DAG 4
Mold growth could	implement a moisture management program to	RAU 4
become an issue if left	provide direction for future water incursions	
unattended.	(Best management practice)	

Fire Safety See		
An obstructed fire	Fire extinguishers must be made available	
extinguisher was found in	when needed and that employees are not	
the administrative area.	subjected to injury hazards when they try to	RAC 2
	obtain an extinguisher (OSHA 29 CFR	
	1910.157(c)(1))	

1.0 SUMMARY

At the request of the National Guard Bureau (NGB) Region North Industrial Hygiene Office, URS Corporation (URS) conducted an industrial hygiene survey at the Readiness Center located at 1000 Hancock Street in Quincy, Massachusetts 02169. This report includes an executive summary, a description of the survey protocol, a discussion of the survey evaluation and findings and a list of conclusions and recommendations.

On February 20, 2004, Mr Non-Responsive an industrial hygienist with URS, conducted a site visit to the Readiness Center in Quincy, Massachusetts. The purpose of this site visit was to conduct an industrial hygiene survey, which included the collection of air samples, bulk samples, lighting measurements, and a review of site health and safety procedures. Mr. Non-Responsive of the State of Massachusetts was Mr. Non-Responsive of the State of Massachusetts was Mr. Non-Responsive site contact for this survey.

A shop layout drawing of the facility, which shows the locations where measurements were made during this survey, is contained in Appendix A.

2.0 ADMINISTRATIVE AREA

2.1 OPERATION DESCRIPTION

This building area contains multiple offices located throughout the building with desks and computer workstations. Computer workstations were assessed during the walkthrough for ergonomic issues. Computer workstation chair armrests were in a fixed position and keyboards could not be adjusted in office #46 (Photo # 3903). If more than one person is using that station, then proper adjustments need to be made to accommodate each person.

Water marks were observed on the ceilings in mess hall #2 (Photo # 3885), room #36 (Photo # 3895), room #37 (Photo # 3900), office #45 (Photo # 3904), office #51 (Photo # 3922) and in the stairwell leading to the 2nd floor (Photo # 3906). Some of these areas have visible mold growth.

A fire extinguisher in hall # 29 was blocked by a safe at the time of this survey (Photo # 3890).

2.2 CHEMICAL AND PHYSICAL AGENTS SAMPLED

2.2.1 Relative Humidity

Relative humidity levels were measured using a TSI Q-Track (Model 8551). Relative humidity on the day of the survey ranged from 17.5 - 23.1% with an average of 18.6% on the 1st floor. The 2nd floor ranged from 18.1 - 24.2% with an average of 19.8%. The basement level ranged from 17.2 - 19.9% with an average of 18.5%. These readings were below the recommended range of 30.0% to 60.0% set by the American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. (ANSI / ASHRAE Standard 55-2004).

2.2.2 Carbon Dioxide

On the day of the survey, carbon dioxide measurements were made at various locations throughout the Readiness Center. Carbon dioxide concentrations on the 1st floor ranged from 401 to 509 parts per million (ppm), with an average of 411 ppm. The 2nd floor ranged from 426 to 435 ppm, with an average of 429 ppm. The basement level ranged from 374 to 432 ppm, with an average of 381 ppm. Carbon dioxide levels were measured using a direct reading TSI Q-Track (Model 8551).

Carbon dioxide is a normal constituent of the atmosphere and ranges from about 250 to 450 ppm. The major source of excess carbon dioxide in the indoor environment is people. Other sources can include open-flame heaters, fermentation processes, and motor vehicles. Carbon dioxide itself is not normally a cause of indoor air quality problems because concentrations must exceed 5,000 to 10,000 ppm before health

effects such as headache, drowsiness, and increased respiration are noted. Typically, carbon dioxide is used as an indicator of the adequacy of fresh air intake. As the concentration of carbon dioxide increases, so do the background levels of other air contaminants. ASHRAE (ANSI/ASHRAE 62.1-2004) recommends that levels of carbon dioxide be maintained below 700 ppm above background level. Since the average interior carbon dioxide were below 700 ppm an outside reading was not collected.

2.2.3 Carbon Monoxide

Carbon monoxide was also measured in the Readiness Center. The carbon monoxide concentration remained at 0 parts per million (ppm) throughout the survey period. This measured level was below the ASHRAE guideline for indoor environments (ANSI ASHRAE 62.1-2004). Carbon monoxide was measured using a TSI Q-Track (Model 8551).

Key sources of carbon monoxide within indoor environments include internal combustion engines, motor vehicle and forklift exhaust, tobacco smoke, space heaters, and improperly adjusted oil or gas burners. Health effects from exposure to elevated concentrations of carbon monoxide may include fatigue, impairment of visual acuity, irregular heartbeat, headache, nausea, and confusion. ASHRAE recommends that average carbon monoxide concentrations not exceed 9 ppm. Typical average concentrations found in commercial buildings range from 0 to 6 ppm.

2.2.4 Lighting

Lighting in the administrative area was measured using a Sper Scientific Ltd. Light Meter (Model 840020C). Table 2-1 below shows lighting measurements and the recommended lighting requirement (ANSI / IESNA RP –1-04 American National Standard Practice for Office Lighting).

Location	Function	Measured Illuminance Iux / foot candles	Recommended Illuminance lux / foot candles
Office # 33	Administrative Duties	244 / 22.7	500 / 50
Office # 36	Administrative Duties	380/35.3	500 / 50
Office # 37	Administrative Duties	296 / 27.5	500 / 50
Office # 38	Administrative Duties	459 / 42.6	500 / 50
Office # 39	Administrative Duties	244 / 22.7	500 / 50

Table 2-1 Lighting Measurements and Recommended Lighting Requirements

Location	Function.	Measured Hiuminance Iux (foot	Récommended Illuminance lux/- foot candles
Office # 40	Administrative Duties	445/41.3	500 / 50
Office # 41	Administrative Duties	678/63.0	500 / 50
Office # 42	Administrative Duties	217 / 20.2	500 / 50
Office # 45	Administrative Duties	405/37.6	500 / 50
Office # 46	Administrative Duties	306 / 28.4	500 / 50
Office # 47	Administrative Duties	188 / 17.5	500 / 50
Office # 48	Administrative Duties	172 / 16.0	500 / 50
Office # 49	Administrative Duties	1244 / 115.6	500 / 50
Office # 50	Administrative Duties	385 / 35.8	500 / 50
Office # 51	Administrative Duties	910 / 84.5	500 / 50
Hallway # 43	Accessway	101 / 9.4	30/3
Hallway # 55	Accessway	296 / 27.5	30/3

Table 2-1 (Continued) Lighting Measurements and Recommended Lighting Requirements

On the day of the survey the illuminance in the administrative area was inadequate in most of the offices.

2.2.5 Lead

Paint chips were collected where paint was peeling and sent to AMA Analytical Services, Inc. (AMA) for analysis. Two samples were found to contain lead in a concentration above the allowable limits of the U.S. Housing and Urban Development (HUD) Lead-Based Paint Guidelines. Levels of lead greater than 0.5% by weight are referred to as "lead-containing" (Section 1017 of the Residential Lead-Based Paint Hazard Reduction Act of 1992 (also referred to as Title X)). Table 2-2 below shows the results of the lead paint testing.

Sample Location	URS Sample Number	Reporting Limit (% by Weight)	Final Result (% by Weight)
Mess Hall # 2	0220-LPC01	0.01	0.021
Kitchen # 1	0220-LPC02	0.01	0.078
Hall # 29	0220-LPC03	0.01	0.2
Bathroom # 52	0220-LPC05	0.01	1.6
Room # 54	0220-LPC05	0.01	0.82

Table 2-2 Levels of Lead in Paint Found in the Administrative Area

The analytical report from AMA is contained in Appendix D.

Wipe testing for lead was conducted in the administrative areas using ghost wipes, which meet ASTM E 1792 standards. The analytical report from AMA is contained in Appendix D. Table 2-3 below shows the results of the lead sampling.

	LIRS Sample	Area 🕼	Result	Maximum Safe
Sample Location	Number	Wiped	'(µg/ff²)	Contamination
			和在内部公司公	Level (µg/ft*)
Bathroom #52 (Top of	0220-LW11	0.11	180	200
Cabinet)				
Room #50 (Top of File	0220-LW12	0.11	54	200
Cabinet)				
Room #45 (Top of Table)	0220-LW13	0.11	12	200
Room #47 (Window Sill)	0220-LW14	0.11	130	200
Room #36 (Floor)	0220-LW15	0.11	76	200
Room #31 (Window Sill)	0220-LW16	0.11	360	200
Room #41 (Floor)	0220-LW17	0.11	130	200
Room #3 (Top of File	0220-LW18	0.11	120	200
Cabinet)				
Room #29 (Top of	0220-LW19	0.11	37	200
Flammable Cabinet)				
Room #29 (Top of Safe)	0220-LW20	0.11	510	200
Blank	0220-	N/A	0.41µg	N/A
	LWBlank			

 Table 2-3

 Levels of Lead Dust Found in the Administrative Areas

2.2.6 Asbestos

The pipe insulation, pipe fitting insulation, 9"x9" green floor tile, 9"x9" brown floor tile and 12"x12" green floor tile mastic were all determined to contain asbestos during a previous survey conducted by ATC Associates of Woburn, Massachusetts in June of 1999.

Broken 9"x9" brown floor tile was found in the stairweil from the basement to the 1st floor (Photo # 3893), hallway #43 (Photo # 3894) and in office #45 (Photo # 3905). Broken 9"x9" green floor tile was found in room #33 (Photo # 3896). Broken 12"x12" green floor tile was found in room #39 (Photo # 3898). Damaged pipe fitting and pipe insulation was found in mess hall #2 (Photo # 3886).

2.3 VENTILATION SYSTEM EVALUATION

Not applicable to this operation.

2.4 NOISE MEASUREMENTS

Not applicable to this operation.

2.5 PERSONAL PROTECTIVE EQUIPMENT

Not applicable to this operation.

2.6 INTERPRETATION OF RESULTS

<u>LIGHTING</u>: On the day of the survey, the illuminance in the administrative area was inadequate in approximately half the offices.

<u>LEAD:</u> The cream paint chip sample from bathroom # 52 (Photo # 3902) and the mint green paint chip sample from room #54 (Photo # 3923) were found to contain lead levels that classify them as lead-based paint. URS recommends that an appropriately trained personnel stabilize the lead paint to prevent further spread of lead dust.

Dust wipe samples collected from the administrative areas show that a window sill in room #31 and the safe in area #29 have lead levels that exceed the 200 micrograms per square foot threshold established by the National Guard Bureau (See Appendix F). These areas should be cleaned by appropriately trained personnel. Furthermore either additional wipe samples should be collected from the remaining window sills or all window sill should be cleaned by appropriately trained personnel.

<u>ASBESTOS</u>: Broken 9"x9" brown floor tile was found in the stairwell from the basement to the 1st floor (Photo # 3893), hallway #43 (Photo # 3894) and in office #45 (Photo # 3905). Broken 9"x9" green floor tile was found in room #33 (Photo # 3896). Broken 12"x12" green floor tile was found in room #38 and #39 (Photo # 3898). Damaged pipe fitting and pipe insulation was found in mess hall #2 (Photo # 3886). The damaged floor tile, pipe insulation and pipe fitting insulation should be removed by an appropriately trained licensed technician.

<u>FIRE SAFETY</u>: A fire extinguisher in hall **#2**9 was blocked by a safe at the time of the survey (Photo **#3890**). Fire extinguishers should be free from obstructions.

3.0 FORMER FIRING RANGE

3.1 OPERATION DESCRIPTION

The firing range has been dismantled and this building area is now primarily used for storage and a locker room.

3.2 CHEMICAL AND PHYSICAL AGENTS SAMPLED

3.2.1 Lead

Wipe testing for lead was conducted in the former firing range using ghost wipes, which meet ASTM E 1792 standards. The analytical report from AMA is contained in Appendix D. Table 3-1 below shows the results of the lead sampling.

Sample Location	URS Sample Number	Aréa Wiped (ft ²)	Result (µg/ft²)	Maximum Safe Surface Contamination Level (µg/ft ²)
Former Firing Range-Top of a Light	0220-LW06	0.111	23,000	200
Former Firing Range-Top of a Locker	0220-LW07	0.111	1,600	200
Former Firing Range-Floor- Rear	0220-LW08	0.111	930	200
Former Firing Range-Floor- Center	0220-LW09	0.111	160	200
Former Firing Range-Floor- Front	0220-LW10	0.111	360	200
Blank	0220- LWBlank	N/A	0.41	200

 Table 3-1

 Levels of Lead Dust Found in the Former Firing Range

One air sample for lead dust was also collected in the former firing range. Table 3-2 below shows the result of this air sample.

Table 3-2					
Level of Lead Found in the Air					

Sample Location	URS Sample Number	Air Volume (L)	Result (µg/m³)	OSHA's PEL(µg/m³)
Former Firing Range	0220-LA02	1024	<2.9	50.0
Blank	0220-LA03	0	<3.0	50.0

On the day of the survey, the airborne lead dust level in the former firing range was found to be acceptable, below OSHA's permissible exposure limit (PEL) for lead (29 CFR 1910.1025(c)) of 50.0 μ g/m³ averaged over an 8-hour day. The analytical report from AMA is contained in Appendix D.

3.3 VENTILATION SYSTEM EVALUATION

Not applicable to this operation.

3.4 NOISE MEASUREMENTS

Not applicable to this operation.

3.5 PERSONAL PROTECTIVE EQUIPMENT

Not applicable to this operation.

3.6 INTERPRETATION OF RESULTS

<u>LEAD</u>: Four of the five surface wipe samples collected in the former firing range were found to contain lead dust levels above the maximum limit set by the National Guard Bureau (NGB). URS recommends that appropriately trained personnel clean the former firing range. The NGB has prepared a memorandum titled "Recommendations for Surface Lead Dust in Armories" which is provided in Appendix F.

4.0 DRILL HALL

4.1 OPERATION DESCRIPTION

The drill hall is a 9,600 square foot area with about a 30-foot high ceiling, used for assembling personnel and storing equipment. The walls are constructed of brick with a wood floor.

4.2 CHEMICAL AND PHYSICAL AGENTS SAMPLED

4.2.1 Lead

Wipe testing for lead dust was conducted in the drill hall using ghost wipes, which meet ASTM E 1792 standards. The analytical report from AMA is contained in Appendix D. Table 4-1 below shows the results of the lead sampling.

Sample Location	URS Sample Number	Area Wiped (ft ²)	Result (µg/ft²)	Maximum Safe Surface Contamination Level (µg/ft ²)
Drill Hall # 30 - Floor - Rear	0220-LW01	0.111	73	200
Drill Hall # 30 - Floor - Center	0219-LW02	0.111	150	200
Drill Hall # 30 - Floor - Front	0220-LW03	0.111	87	200
Drill Hall # 30 – Top of a	0220-LW04	0.111	800	200
Locker				
Drill Hall # 30 – Bench Seat	0220-LW05	0.111	32	200
Blank	0220-	N/A	0.41	200
	LWBlank		•	

 Table 4-1

 Levels of Lead Dust Found in the Former Firing Range

One air sample for lead dust was collected in the drill hall. Table 4-2 below shows the result of this air sample.

Table 4-2 Level of Lead Found in the Air

Sample Location	URS Sample Number	Air Volume (L)	Result (µg/m³)	OSHA's PEL(µg/m ³)
Drill Hall	0220-LA01	1024	<2.9	50.0
Blank	0220-LA03	0	<3.0	50.0

On the day of the survey, the airborne lead dust level in the drill hall was found to be acceptable, below OSHA's permissible exposure limit (PEL) for lead (29 CFR 1910.1025(c)) of 50.0 μ g/m³ averaged over an 8-hour day.

4.3 VENTILATION SYSTEM EVALUATION

Not applicable to this operation.

4.4 NOISE MEASUREMENTS

Not applicable to this operation.

4.5 PERSONAL PROTECTIVE EQUIPMENT

Not applicable to this operation.

4.6 INTERPRETATION OF RESULTS

<u>LEAD</u>: One of the five surface wipe samples collected in the former firing range was found to contain a lead dust level above the maximum limit set by the National Guard Bureau. URS recommends that appropriately trained personnel clean the drill hall. The NGB has prepared a memorandum titled "Recommendations for Surface Lead Dust in Armories" which is provided in Appendix F.

Guidelines for the conversion and rehabilitation of the firmer indoor firing range are provided in Appendix H.

5.0 BOILER ROOM

5.1 OPERATION DESCRIPTION

The boiler room is a mechanical space constructed of cinder block walls with a concrete floor, containing a furnace and associated piping.

5.2 CHEMICAL AND PHYSICAL AGENTS SAMPLED

5.2.1 Lead

One Paint chip was collected where paint was peeling and sent to AMA for analysis. The sample was found to contain lead in a concentration within the allowable limits of the U.S. Housing and Urban Development (HUD) Lead-Based Paint Guidelines. Levels of lead greater than 0.5% by weight are referred to as "lead-containing" (Section 1017 of the Residential Lead-Based Paint Hazard Reduction Act of 1992 (also referred to as Title X)). Table 5-1 below shows the results of the lead paint testing.

Table 5-1 Level of Lead in Paint Found in the Boiler Room

Sample Location	URS Sample	Reporting Limit (% by Weight)	Final Result (% by Weight)
Boiler Room #3	0220-LPC04	0.01	0.28

The analytical report from AMA is contained in Appendix D.

5.3 VENTILATION SYSTEM EVALUATION

Not applicable to this operation.

5.4 NOISE MEASUREMENTS

Not applicable to this operation.

5.5 PERSONAL PROTECTIVE EQUIPMENT

Not applicable to this operation.

5.6 INTERPRETATION OF RESULTS

<u>LEAD:</u> The paint chip sample collected in the boiler room for lead was found to be within the allowable limits and requires no further action.

6.0 SAFETY AND INDUSTRIAL HYGIENE PROGRAMS

6.1 CONFINED SPACES

No safety program was found regarding confined spaces. No training records were found on site. A confined spaces program is likely required for this site.

6.2 HEARING CONSERVATION

The hearing conservation program was found in the safety book, under tab M, chapter 3. No training records were found on site. A hearing conservation program is not required for this site.

6.3 RESPIRATORY PROTECTION

The respiratory protection program was found in the safety book, under tab M, chapter 3. No training records were found on site. A respiratory protection is not required for this site.

6.4 HAZARD COMMUNICATION

The hazard communication program was found in the safety book, under tab L. An Operations and Maintenance Plan (O & M) was provided to URS before the inspection with regard to the asbestos on site. The main issues concerning this program were that the asbestos has not been labeled as containing asbestos and no training records were available.

6.5 PERSONAL PROTECTIVE EQUIPMENT

The personal protective equipment program was found in the safety book, under tab N, chapter 10. No training records were found on site. A personal protective equipment program is not required for this site.

7.0 REFERENCES

American National Standards Institute

ANSI/ESNA RP-1-04: American National Standard Practice for Office Lighting

American Society of Heating Refrigerating and Air-Conditioning Engineers

ANSI/ASHRAE Standard 55-2004: Thermal Environmental Conditions for Human Occupancy

ANSI/ASHRAE Standard 62.1-2004: Ventilation for Acceptable Indoor Air Quality

Army Corps of Engineers

Safety and Health Requirements Manual EM 385-1-1 November 2003

Department of the Army

Ergonomics Program Pamphiet 40-21 (15 August 2003)

Policy and Responsibilities For Inspection, Evaluation and Operation of Army National Guard Indoor Firing Ranges (National Guard Regulation 385-15 30 December 2002)

Department of Defense

DoD Hearing Conservation Program Standard 6055.12 April 1996

Creating an Ideal Workstation: A Step-by-Step Guide

U. S. Environmental Protection Agency

Asbestos Hazard Emergency Response Act (40 CFR Part 763)

National Emissions Standards for Hazardous Pollutants (40 CFR Part 61)

U.S. Housing and Urban Development

Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (1995, 1997)

U. S. Occupational Safety and Health Administration

Standard for General Industry: 29 CFR 1910

FOIA Requested Record #J-15-0085 (MA) Released by National Guard Bureau Page 2949 of 3473 APPENDIX A

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BASEMENT

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FOIA Requested Record #J-15-0085 (MA) Released by National Guard Bureau Page 2951 of 3473



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May, 2018

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APPENDIX B

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PERSONNEL LIST

PERSONEL LIST QUINCY ARMORY

Non-Responsive	Rank
Norricoporisive	CPT
	MSG
	SFC
	SFC
	SSG
	SFC
	SSG
	SSG
	SGT
	SGT
	CIV – Armorer

FOIA Requested Record #J-15-0085 (MA) Released by National Guard Bureau Page 2955 of 3473 APPENDIX C

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HAZARDOUS MATERIALS LIST

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HAZARDOUS MATERIALS INVENTORY

Material	Quantity
Paint Thinner	2 Cans
Spray Paint	1 Can
Paint	12 Gallons
Paint	3 Quarts

APPENDIX D

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ANALYTICAL RESULTS

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E	Elect	ron & Optical Microscopy Services	CER	TIFICATE OF ANALYS	SIS		NY
(<u> </u>							All
Cli	ent:	National Guard Bureau	Job Name:	Army National Guard	Chain Of Custody:	123114	
Ado	dress:	301-IH Old Bay Lane, Attn: NGB-AVN-SI, State Military Reservation	Job Location:	1000 Hancock St. Quincy, MA	Date Analyzed:	3/4/2004	
		Havre de Grace, Maryland 21078	Job Number:	42056-012-211	Person Submitting:		
			P.O. Number:	Not Provided	Report Date:	04-Mar-04	

Attention:

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Page I of 2

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Summary of Atomic Absorption Analysis for Lead

AMA Sample Number	Client Sample Number	Analysis Type	Sample Type	Air Volume (L)	Area Wiped (ft ²)	Rep	orting Imit	1	Final Res	ult	Comments
0427600	0220-LA 01	Flame	Air	1024	N/A	2.93	ug/m ³	<	2.9	ug/m³	
0427601	0220-LA 02	Flame	Air	1024	N/A	2.93	ug/m ³	<	2.9	ug/m ²	
0427602	0220-LA 03	Flame	Air Blank	0	N/A	3.00	ug/m ³	<	3	ug	
0427603	0220-LPC 01	Flame	Paint Chip	****	N/A	0.01	%Ph		0.021	%Pb	
0427604	0220-LPC 02	Flame	Paint Chip		N/A	0.01	%РЬ		0.078	%Pb	
0427605	0220-LPC 03	Flame	Paint Chip	****	N/A	0.01	%РЬ		6.2	%РЬ	
0427606	0220-LPC 04	Flame	Paint Chip		N/A	0.01	%РЪ		0.28	%Pb	
0427607	0220-LPC 05	Flame	Paint Chip	****	N/A	0.01	%РЬ		1.6	%Рь	
0427608	0220-LPC 06	Flame	Paint Chip	****	N/A	0.01	%РЪ		0.82	%Pb	
0427609	0220-LW 01	Furnace	Wipe	****	0.111	33.75	ug/fl ¹		73	ug/ft ^a	
0427610	0220-LW 02	Furnace	Wipe	****	0.111	33.75	ug/ft ^z		150	ug/ft ²	
0427611	0220-LW 03	Furnace	Wipe	****	0.111	33.75	ug/ft²		87	ug/ft²	
0427612	0220-LW 04	Flame	Wipe	****	0.111	108.01	ug/ft2		800	ug/ft²	
0427613	0220-LW 05	Furnace	Wipe	****	0.111	13.50	ug/ft ²		32	ug/ft²	
0427614	0220-LW 06	Flame	Wipe	****	0.111	108.01	ug/N²		23000	ug/ft²	
0427615	0220-LW 07	Flame	Wipe	****	0.111	108.01	ug/fl²		1600	ug/ft²	
0427616	0220-LW 08	Flame	Wipe	****	0.111	108.01	ug/fl ²		930	ug/fl²	
0427617	0220-LW 09	Furnace	Wipe	****	0.111	67.51	ug/fl ²		160	ug/fl²	
0427618	0220-LW 10	Flame	Wipe	****	0.111	108.01	ug/fl²		360	ug/ft²	
0427619	0220-LW BLANK	Furnace	Wipe Blank	****	N/A	0.30	ug		0.41	ug	

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition apparently identical or similar products. As a mutual protection to clients, the public and these Laboratories. this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from us. Sample types, locations and collection protocols are based upon the information provided by the persons submitting them and, unless collected by personnel of these Laboratorics, we expressly disclaim any knowledge and liability for the accuracy and completeness of this information. Residual sample material will be discarded in accordance with the appropriate regulatory guidelines, unless otherwise requested by the client. NVLAP Accreditation S All rights reserved, AMA Analytical Services, Inc. applies only to polarized light microscopy of bulk samples and transmission electron microscopy of AHERA air samples.

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May, 2018

Electr	on & Optical Micro	rvices, Inc oscopy Services	CEF	RTIFICAT	'E OF ANAL'	YSIS		RIVUAU NY ELAI AIHA	ן ס
Client:	National Guard Burea	u	Job Name:	Army Nation	nal Guard	Chain Of Custody:	123114		
Address:	301-III Old Bay Lanc, State Military Reserva	Attn: NGB-AVN-SI, ition	Job Location:	1000 Hanco	ck St. Quincy, MA	Date Analyzed:	3/4/2004		
	Havre de Grace, Mary	rland 21078	Job Number:	42056-012-2	211	Person Submitting:			
			P.O. Number:	Not Provided	d	Report Date:	04-Mar-04		
Attention:	Non-Real							Page 2 of 2	
	•		Summary of	of Atomic	Absorption A	nalysis for Lead			
MA Sample	Client Sample	Analysis Type	Sample Type	Air Volume	Area Wiped	Reporting	Final Result	Comments	
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This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition apparently identical or similar products. As a mutual protection to clients, the public and these Laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from us. Sample types, locations and collection protocols are based upon the information provided by the persons submitting them and, unless collected by personnel of these Laboratories, we expressly disclaim any knowledge and liability for the accuracy and completeness of this information. Residual sample material will be discarded in accordance with the appropriate regulatory guidelines, unless otherwise requested by the client. NVI.AP Accreditation applies only to polarized light microscopy of bulk samples and transmission electron microscopy of AHERA air samples. All rights reserved. AMA Analytical Services, Inc.

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AMA Analytical Services, Inc.



Attention:

A Specialized Environmental Laboratory

CERTIFICATE OF ANALYSIS



۵.	Client:	National Guard Bureau	Job Name:	ARMORY	Chain Of Custody:	140923	100470
487	Address:	301-IH Old Bay Lane, Attn: NGB-AVN-SI, State Military Reservation	Job Location:	Not Provided	Date Submitted:	6/15/2005	
0.5		Havre de Grace, Maryland 21078	Job Number:	Not Provided	Person Submitting:		
Z			P.O. Number:	Not Provided	Date Analyzed:	6/20/2005 Report /	Date: 20-Jun-05

Summary of Atomic Absorption Analysis for Lead

Page 1 of 1

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AMA Sample Number	Client Sample Number	Analysis Type	Sample Type	Air Volume (L)	Area Wiped (१²)	Rep L	orting imit	Final Res	iult	Comments
0545803	0220-LW11	Furnace	Wipe	****	0.111	33.75	ug/ft²	L80	ug/ft³	
0545804	0220-LW12	Fornace	Wipe	****	0.111	13.50	ug/ff²	54	ug/ft²	
0545805	0220-LW13	Fornace	Wipe	****	0.111	2.70	ug/ff²	12	ug/fi²	
0545806	0220-LW14	Furnace	Wipe	****	0.111	33.75	og/ff²	130	ug/fi ²	
0545807	0220-LW15	Furnace	Wipe	****	0.111	13.50	ug/fP	76	ug/ft²	
0545808	0220-LW16	Furnace	Wipe	+***	0.111	67.51	ug/ft²	360	28/ft ²	
0545809	0220-LW17	Furnace	Wipe	****	0.111	33.75	ug/fl²	130	ng/ft²	
0545810	0220-LW18	Furnace	Wipe	****	0.111	33.75	ug/ft²	120	ng/ft ²	
0545811	0220-LW19	Furnace	Wipe	****	0.111	13.50	ug/ft²	37	ug/ft²	
0545812	0220-LW20	Furnace	Wipe	****	0.111	67.51	ug/ft ²	510	ug/ft²	

Analysis Method for Flame: Air, Wipes, Paints, and Soil/Solids: EPA 600/R-93/200(M)-7420; Water: SM-3111B Tanalysis Method For Furnace: Air, Wipes, Paints, and Soil/Solids: EPA 600/R-93/200(M)-7421; Water SM-31138 See QC Summary for analytical results of quality control samples associated with these samples



%Pb = percent lead by weight ug/L = parts per billion (ppb) ug = micrograms

Released Note: All samples were received in good condition unless otherwise noted.



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his report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written anthorization rom us. Sample types, locations and collection protocols are based upon the information provided by the persons submitting them and, unless collected by personnel of these Laboratories, we expressly disclaim any knowledge and instillity for the accuracy and completeness of this information. Residual sample material will be discarded in accordance with the appropriate regulatory guidelines, unless otherwise requested by the elient. NVLAP Accreditation applies only to polarized light microscopy of hulk samples and transmission electron microscopy of AHERA air samples. This report must not be used to claim, and does not imply product cartification, approval, or endorsement by NVLAP, NEST, OTHING APPENDING BY BRATE SOMETROOM All rights reserved. AMA Analytical Services, Etc.

May, 2018

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APPENDIX E

TRAINING CERTIFICATES

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ENUTDO	NMENTAL EDUCATIO	N INC
ENVIRO	MMENIAL EDUCATIO	N , M C.
1	6 Upton Drive, Wilmington, MA 01887	
	(978) 658-5272	
	This is to certify that	
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has complete	ed the requisite training and has passed an error	mination
has complete	for reaccreditation as:	intration .
	Asbestos Inspector Refresher	
pursuant t	to Title II of the Toxic Substance Control Act, 15 U.S.	C. 2646
	April 11, 2003	
	Course Dates	
	Course Location	
<u>April 11, 2003</u>	Institute for Environmental Education	<u>April 10, 2004</u>
Examination Date	Wilmington, MA 01887	Expiration Date
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Certificate Number		- roomone on outor or and ming
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APPENDIX F

RECOMMENDATIONS FOR SURFACE LEAD DUST IN ARMORIES
Subject: Recommendations for Surface Lead Dust in Armories

1. In armories that do not contain childcare facilities, the National Guard Bureau (NGB) Region North Industrial Hygiene Office recommends cleaning the areas in which sample results are greater than 200 micrograms per square foot (μ g/ft²). If a special function will be held in which children will be present in this facility, consider thoroughly cleaning the areas that will be accessible to children prior to the function. This guidance is based on professional judgment, risk assessments, adaptation of Occupational Safety and Health Administration (OSHA) guidance, and feasibility of cleaning to a certain level.

a. Environmental Protection Agency (EPA) standards (40 Code of Federal Regulations (CFR) 745.227(h)(3)) are not directly applicable because they are criteria for dust-lead hazards developed for floors (40 µg/ft²) and windowsills (250 µg/ft²) in residential dwellings and child occupied facilities. A child occupied facility is defined as a building, or portion of a building, constructed prior to 1978, visited regularly by the same child, 6 years of age or under, on at least two different days within any week (Sunday through Saturday period), provided that each day's visit lasts at least 3 hours and the combined weekly visit lasts at least 6 hours, and the combined annual visits last at least 60 hours. Most of the wipe samples in armories were collected in undisturbed areas and therefore, results are worst case scenarios and do not correlate to these standards.

b. OSHA has no specific requirement for work area surfaces. The lead standard (29 CFR 1910.1025(h)) states that all surfaces shall be maintained as free as practicable of accumulations of lead dust. In workplaces where lead dust is generated, surface levels may be much higher, but personnel exposures can be controlled by limiting eirborne lead levels and following good cleanup and hygienic practices.

c. OSHA used to cite a level of 200 μ g/ft² in their Technical Manual and 29 CFR 1926.62 as guidance to its own inspectors for evaluating the cleanliness of lunchroom and locker room surfaces that are supposed to be kept as clean as possible.

d. In a report titled Derivation of Wipe Surface Screening Levels for Environmental Chemicals, the US Army Center for Health Promotion and Preventive Medicine (USACHPPM) has determined that 200 μ g/ft² is a safe surface contamination level. They have also applied these standards as the decontamination levels for surfaces in administrative offices.

e. It should be noted that levels above these recommendations do not necessarily mean there is a significant hazard to workers who are following good cleaning and hygienic practices since there is no correlation between wipe and air samples. Rather, we recommend these levels as a precautionary measure.

2. The NGB Occupational Health Branch is developing guidance for armories that are used as childcare facilities. All states will receive this guidance when it is completed. In the interim, we recommend the following actions:

a. Clean all areas that will be accessible to children to the EPA dust-lead standard for children 6 years of age or under (40 μ g/ft² on floors and 250 μ g/ft² on windowsills).

b. Refer to the local authorities' regulations since they can be more stringent than federal regulations.

c. Post signs in the area to inform people of the presence of lead dust and its effects.

d. If soldiers clean weapons in the facility change the policy so that they cannot clean their weapons in the facility, or if they are allowed to clean their weapons indoors, they must clean the area by wet wiping and mopping the area when they are done.

e. If the paint is peeling, contact the state Environmental Office to test for lead content and provide recommendations.

3. Air samples collected on individuals in the armory were well below OSHA's permissible exposure limit for lead (29 CFR 1910.1025(c)) of 0.05 mg/m³ averaged over an 8-hour day. Therefore, based on these conditions there is currently no overexposure to personnel from lead dust in this building.

APPENDIX G

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PHOTOGRAPHS

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APPENDIX H

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POLICY AND RESPONSIBILITIES FOR INSPECTION, EVALUATION AND OPERATION OF ARNG OF INDOOR FIRING RANGES (IFR) AND GUIDELINES FOR IFR REHABILITATION, CONVERSION AND CLEANING



DEPARTMENTS OF THE ARMY AND THE AIR FORCE NATIONAL GUARD BUREAU 1411 JEFFERSON DAVIS INGHWAY ARLUNGTON, VA 22202-3231

NGB-AVS

5 December 2001

MEMORANDUM FOR THE ADJUTANTS GENERAL OF ALL STATES, FUERTO RICO, THE US VIRGIN ISLANDS, GUAM, AND THE COMMANDING GENERAL OF THE DISTRICT OF COLUMBIA

SUBJECT: (All States Log Number P01-0075) Army National Guard (ARNG) - Policy and Responsibilities for Inspection, Evaluation, and Operation of ARNG Indoor Firing Ranges (IFR) and Guidelines for IFR Rehabilitation, Conversion and Cleaning

1. References:

a. AR 385-63, Policy and Procedures, 15 November 1983.

b. DODI 6055.9-STD, DOD Ammunition and Explosive Safety Standards, August 1997.

c. DODIG Report #98-170, subject: ARNG and U.S. Army Reserve Command Small Arms IFR, 30 June 1998.

d. AR 385-10, The Army Safety Program, 29 February 2000.

e. All States Memorandum, NGB-AVS, 18 September 2000, subject: (All States Log Number P00-0059) Army National Guard (ARNG) - Policy and Responsibilities for Inspection, Evaluation, and Operation of ARNG Indoor Firing Ranges.

2. The policy and procedures for Inspection, Evaluation, and Operation of ARNG Indoor Firing Ranges are enclosed. Guidelines for Rehabilitation, Conversion, and Cleaning of IFRs are provided in the Addendum. These policies apply to all persons responsible for the operation, rehabilitation, conversion, and cleaning of ARNG IFR and satisfy the requirements of the references listed above.

3. The enclosed document contains sample formats of the forms necessary for the routine operation of IFRs. Additionally, an IFR Standing Operating Procedure is provided to assist each State/Territory in developing local guidance consistent with the needs of the individuals that use their range(s).

4. The contents of this memorandum will be incorporated into the revision of NGR 385-15, Policy and Responsibilities for Evaluation, and Operation of ARNG Indoor Firing Ranges, and National Guard Pamphlet 385-15, Guidance and Procedures for IFR Rehabilitation, Conversion, and Cleaning.

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FOIA Requested Record #J-15-0085 (MA) Released by National Guard Bureau Page 2973 of 3473 NGB-AVS

SUBJECT: (All States Log Number P01-0075) Army National Guard (ARNG) - Policy and Responsibilities for Inspection, Evaluation, and Operation of ARNG Indoor Firing Ranges (IFR) and Guidelines for IFR Rehabilitation, Conversion and Cleaning Inspection

5. This memorandum expires 30 November 2002, unless sooner rescinded or superseded.

6. Point of contact is Colonel NON-Responsive Chief, Aviation and Safety Division, at DSN 327-7700 or 703-607-7700.

FOR THE CHIEF, NATIONAL GUARD BUREAU:



Encl as

Lieutenant General, GS Director, Army National Guard

CF: NGB-IG NGB-ART NGB-ARO NGB-ARE NGB-ARI NGB-ARS NGB-PL NGB-ARZ-PC Each State IG Each State Safety Office Each State Occupational Health Nurse Each State Training Site Commander Each State USPFO Each Regional Industrial Hygienist

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FOIA Requested Record #J-15-0085 (MA) Released by National Guard Bureau Page 2974 of 3473

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SUBJECT: All States (Log Number P01-0075) Army National Guard (ARNG) Safety and Occupational Health Program – POLICY AND RESPONSIBILITIES FOR INSPECTION, EVALUATION AND OPERATION OF ARMY NATIONAL GUARD INDOOR FIRING RANGES

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Safety

POLICY AND RESPONSIBILITIES FOR INSPECTION, EVALUATION AND OPERATION OF ARMY NATIONAL GUARD INDOOR FIRING RANGES

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Appendices

Appendix A - Abbreviations

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Addendum

Guidelines and Procedures for JFR Rehabilitation, Conversion, and Cleaning

1-1. Generet

This policy prescribes Army National Guard (ARNG) policy and responsibilities for inspection, evaluation and operation of ARNG indoor firing ranges. It applies to all training, maintenance, and firing activities conducted on Indoor firing ranges. This policy supplements AR 385-10, AR 385-63, and AR 385-64.

1-2. Explanation of abbreviations and terms

Abbreviations used in this publication are listed in Appendix A. Terms that apply specifically to iFRs can be found in paragraph 1-37 of this regulation.

1-3. Policy

a. Ammunition shall only be fired in properly classified indoor firing ranges.

b. Detailed initial and periodic inspections of all indoor firing ranges shall be conducted as prescribed to ensure compliance with current safety and health standards.

 c. ARNG or civilian personnel shall not use any indoor firing range, which has been classified as unsafe.

d. A DA Form 4753, Notice of Unsafe or Unhealthy Working Condition, shall be posted on the entrance to all ranges classified as unsafe.

e. Ranges classified as unsafe shall be secured, sufficiently to preclude entry.

f. New ranges shall be designed using the latest standards provided by NGB-ARI.

g. The use of indoor firing ranges for purposes other than small arms weapons training and target practice is strictly prohibited.

Responsibilities

1-4. Director, Army National Guard (DARNG)

The Director, Army National Guard establishes policy and provides resources necessary to implement the ARNG Range Safety program per AR 385-63.

1-5. Chief, Aviation and Safety (NGB-AVS)

The Chief, NGB-AVS, has staff responsibility for supervising the ARNG Range Safety Program and to: a. Identify the resources necessary to effect policy and standards throughout the ARNG in

accordance with (IAW) AR 385-63.

b. Coordinate with other HODA staff agencies and the Adjutants General on matters pertaining to the ARNG Range Safety Program.

1-6. Chief, Safety and Occupational Health Branch (NGB-AVS-S)

The Chief, NGB-AVS-S shall- -

a. Develop, implement, and manage the ARNG Range Safety Program.

b. Review the design of all ranges to be constructed or remodeled for compliance with safety and occupational health standards and make recommendations to appropriate approval authority.

c. Determine the classification of indoor firing ranges based upon input from the state safety manager, the ventilation measurements, and the air monitoring results (breathing zone and general area).

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d. Conduct an initial evaluation of new IFRs and reevaluate every two years thereafter. An IFR will be reevaluated if modifications to the range structure or ventilation system are made. Approval from the State Safety Office and Regional Industrial Hyglenist must be obtained before the range is returned to service.

 Determine and publish the training requirements for the persons who will conduct range evaluations.

1-7. Chief, Training Division (NGB-ART)

The Chief, NGB-ART shall provide weapons training strategies consistent with AR 350-41 and the Stendard and Training Commission.

1-8. Chief, Installations Division (NGB-ARI)

The Chief, NGB-ARI shall- -

Provide the design standards for the construction of indoor firing ranges.

b. Ensure that the designs for new and remodeled indoor firing ranges meet approved standards and are reviewed and approved by the Safety and Occupational Health Branch.

1-9. The State Adjutant General

The State Adjutant General shall- -

a. Establish, supervise, and direct a safety and occupational health program for users of indoor firing ranges.

b. Ensure all ranges being used are classified as "safe" or "limited use", those ranges classified as "limited use" under the criteria of this regulation are used on a limited basis, and all ranges classified as "unsafe" under the criteria of this regulation are not used.

c. Determine and identify funding requirements to ensure development of a comprehensive safety and occupational health program for the users of indoor firing ranges.

1-10. State Safety Manager

State Safety Managers shell-

a. Perform or coordinate performance of all inspections and evaluations of indoor firing ranges.

b. Determine whether the range is "safe" or "unsafe" based on the physical safety inspection.

c. Review and approve all indoor (iring range SOPs to ensure all requirements are met. An

example SOP can be found at Figure 1-3 of this regulation.

d. Perform design review of LFRs to ensure current safety and occupational health related compliance requirements are met.

e. Make recommendations to the Adjutant General regarding the disposition of "unsafe" and "limited use" ranges.

f. Approve the use of the range by non-military organizations.

g. Maintain copies of all range inspections, ventilation measurements and visitors log.

1-11. State Occupational Health Nurse

The Occupational Health Nurse shall--

a. Schedule medical surveillance examinations for individuals who are or may be exposed to Lead above the action level for more than 30 days per year.

b. Maintain exposure monitoring (air sampling results) and medical surveillance records for 40 years or the duration of employment plus 20 years, whichever is longer, as prescribed in 29 CFR 1910.1025, Appendix C, Section I.

c. Record the worker's exposure data on DA Form 4700 (Medical Record-Supplemental Medical Data) overprints, IAW TB MED 503 paragraph 3-2 f (1)(a), and DODI 6055.5-M Occupational Health Surveillance Manual.

d. Institute a training program that identifies the hazards and preventive measures for all personnel with a potential for exposure to Lead.

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1-12. State Environmental Office

The State Environmental Office shall coordinate disposal of all hazardous waste generated from range operation, cleaning, and maintenance.

1-13. Facility Commanders

Commanders of facilities with indoor firing ranges shall maintain and be familiar with AR 385-63, and the provisions of this regulation, to ensure that- -

a. A Safety and Occupational Health Compliance Program is developed as specified in this regulation.

Indoor firing ranges are secured when not in use.

c. A custodian is appointed for all indoor firing ranges under his/her area of command.

d. The custodians of the indoor firing ranges maintain the visitors log and follow procedures IAW paragraph 1-14 of this regulation.

e. All non-military organizations using indoor firing ranges under their area of command have signed a contract/agreement delineating the conditions of range use and liability. The contract/agreement should also include provisions for hazardous waste disposal expenses.

f. A SOP for each range is established, enforced and approved by the State Safety and Occupational Health Office.

g. All required signs are posted JAW Section 1-22 of this regulation.

h. All individuals using indoor firing ranges under the facility commander's area of command have been provided with a copy of the range SOP or been briefed on the requirements of the SOP, and that these individuals have signed an agreement to follow the rules stated therein. See paragraph 1-29 for record maintenance requirements.

I. Range custodians are enrolled in respiratory protection and medical surveillance programs as regulated by paragraph 1-37 of this regulation (if applicable).

]. Range custodians have documentation to show that they have been educated about the health effects of exposure to Lead dust IAW 29 CFR 1910.1200 and 29 CFR 1910.1025. This is an annual regularment IAW this standard.

k. No equipment or furniture, such as tables, chairs or storage cabinets, is stored or maintained in the range.

I. All range safety officers and maintenance personnel have a copy of this regulation, AR 385-63, and the range SOP and are familiar with and in compliance with all indoor firing range policies and procedures.

m. The range ventilation system is checked every 480 hours of operation IAW paragraph 1-27 of this regulation.

 n. Personnel do not fire ammunition in excess of the allowable time as dictated by established exposure limits. (See Figure 1-1).

 Exposure records shall be maintained IAW paragraph 1-34 when personnel are exposed to airborne Lead concentrations in excess of 0.03 milligrams per cubic meter (mg/m³).

p. Lead fragments are not removed from the bullet trap or surrounding areas except as coordinated through the State Environmental Office.

q. The use of M16 rifles using 5.56 mm ammunition in the indoor firing range is prohibited, except on ranges where the bullet trap is rated for 5.56 mm ammunition. Otherwise, the M16 shall be used with .22 callber adapter and ammunition.

r. The ventilation system is in operation at all times during firing or cleaning.

1-14. Range Custodians

Custodians shall -

a. Ensure that all individuals using the indoor firing range understand the range safety regulations, rules, and SOP.

b. Ensure that all cleaning procedures are performed IAW the requirements of this regulation and the procedures prescribed in the Addendum. This includes documentation of dates, names of personnel and time on the range for all cleaning procedures. See paragraph 1-29 for record maintenance requirements.

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c. Maintain the visitor log LAW the range SOP. As a minimum the log should include the names of the shooters, the amount of time spent in the range by each individual, the date of firing, the type(s) of ammunition fired, and the number of rounds fired. See paragraph 1-29 for record maintenance requirements.

d. Forward a copy of the visitor log to the State Safety and Occupational Health Managers on a quarterly basis

1-15. Unit Commanders

Unit Commanders shall- -

a. Enforce all range safety and occupational health procedures.

b. Maintain a record of time spent on the range for all personnel using "limited use" firing ranges as recorded by the range custodian.

c. Provide the State Occupational Health Nurse with a list of personnel firing in ranges classified as "limited use" ranges for more than the prescribed times listed in Figure 1-1. See paragraph 1-29 for record maintenance requirements.

d. Designate range safety officers in writing.

e. Provide the State Occupational Health Nurse with a list of range safety officers and custodians.

f. Ensure all range safety officers and range custodians are enrolled in the Medical Surveillance and Respiratory Protection Programs, as required.

1-16. Procedures, classification and use

Indoor firing ranges have been built in armorles for many years. Each range design reflects the current emphasis and technology on protecting the health and safety of the shooter. Older ranges may not meet the current standards deemed necessary to accomplish this. However, under controlled conditions, many older ranges will not expose users to hazardous conditions.

1-17. Classification of ranges

Based on inspection data collected on the range inspection checklist (Figure 1-2), ranges shall be classified as **"safe"**, **"limited use"** or **"unsafe"**. **Safe** ranges permit authorized firing for military and civilian use. Limited use ranges permit use only under controlled conditions based on the personnel exposure limits for Intermittent Lead exposure. (Figure 1-1). **Unsafe** ranges are not authorized for use under any conditions.

a. Building envelope. (Design standards may be found in DG 415-1, Appendix A or CEHND 1110-1-18).

(1) Safe ranges.

(a) Each firing lane is at least 4 feet wide.

(b) Pipes, conduits, lights, lighting fixtures and other projecting surfaces are baffled or covered by a material that will protect these items and prevent ricochets.

(c) Baffles do not disrupt the uniform airflow in the range.

(d) in older ranges, sidewall windows in front of the firing line have been removed and the

openings sealed flush to the wall with materials compatible with the adjacent walls. New ranges are not built with windows in front of the firing line.

(2) Unsafe ranges.

(a) All firing lanes are less than 4 feet wide. If any one firing lane is less than 4 feet wide, that lane shall not be used for firing.

(b) Pipes, conduits or walls are not sealed to prevent migration of Lead dust to other areas of the range. (See the Addendum for wipe sample procedures used to determine if Lead dust is leaking from the range).

(c) There are open floor drains in the range.

(d) Carpet is located in any part of the range. (Contact the State Environmental Offices for hazardous waste disposal procedures.)

(e) Doors or windows located downrange of the firing line.

(t) Range buildings do not meet the other requirements of safe ranges as prescribed in the checklist in Figure 1-2 of this document.

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b. Ventilation

(1) \$afe ranges.

(a) The range has an operational mechanical ventilation system.

(b) The average airflow at the firing line in each firing lane is at least 50 feet per minute (fpm).

(c) Air is exhausted at or behind the bullet trap.

(d) Supplied air is introduced into the range behind the shooters.

(e) The ventilation system is so constructed that air exhausted from the indoor firing range does not enter into another part of the building or any other air supply system.

(f) The exhaust exceeds the make-up air by approximately 10% to form a negative air pressure in the range in relation to adjoining areas.

(g) Air is not recirculated in the firing range unless equipped with monitoring equipment as specified in section 1-26 of this regulation.

(h) The static pressure, as measured from 6 inches inside the range entrance to 6 inches outside the range, is at least -. 05 inches of water gauge (wg) but does not exceed -.20 wg.

(I) A smoke test of the range shows laminar airflow in the range and no turbulence at the firing line. (See the Addendum, for broubleshooting guidance)

(j) In passive make-up air systems, the supply air louvers and exhaust fan shall be electrically interlocked.

(k) In systems with active make-up air, the supply and exhaust fans shall be electrically interlocked. The make-up air fan should start after the exhaust fan to ensure the range maintains a negative pressure.

(I) Range air temperature should be between 65 degrees and 60 degrees Fahrenheit.

(2) Unsafe ranges.

(a) The almow at the firing line on any lane is less than 50 fpm at any level and air sampling results suggest possible overexposure as determined by a competent person.

(b) The range has no mechanical ventilation.

(c) The ventilation system is constructed in a manner that allows exhaust air to enter into other parts of the building or another building air supply system.

(d) The make-up air exceeds the exhaust, which forms a positive air pressure in the range in relation to adjoining areas.

(e) Air is exhausted anywhere other than at the builet trap.

(f) Make-up air is supplied only from adjacent areas of the building with no provision for inclusion of oviside air.

(g) The static pressure, as measured from 6 inches inside the range entrance to 6 inches outside the range, is measured less than -, 05 wg or in excess of -, 2 wg.

(h) The range is under positive pressure.

(i) The supply and exhaust air systems are not electrically interlocked.

c. Range lighting.

(1) Safe ranges.

(a) Lighting is uniform, non-glaring and does not cause shadows.

(b) Illumination is at least 100 foot candles on the largets and 30 foot- candles in all other areas.

(c) All lighting is protected by balfles and placed so that the shooter has an unobstructed view down range.

(d) Downrange lighting begins approximately 18 feet from the firing line and ends approximately 8 feet from the target line.

(e) Emergency lights are provided behind the firing line and are in working condition.

(f) Exit lights are provided as required.

(g) Lighting of at least 30-foot candles is provided behind the bullet trap for maintenance.

(2) Unsafe ranges.

(a) Illumination is below 100 foot-candles on targets or 30 foot-candles in other areas.

(b) Portions of the lighting fixtures are not protected by baffles.

- (c) Electrical hazard exists in the range.
- d. Bullet traps.

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(1) Safe ranges.

(a) A builet trap is permanently installed in the range.

(b) Bullet traps are of a commercial design that complies with the requirements of CEHND 1110-1-18, DG 415-1 App. A, and this regulation.

(c) The thickness of inclined plate/sand trap type bullet trap shall be adequate to attenuate the maximum celliber of ammunition authorized to be fired on the range. See CEHND 1110-1-18, for thickness requirements for the bullet trap.

(d) All plate/sand trap type bullet traps shall be designed to prevent ricochets by directing the projectiles in the same direction they are traveling.

(e) Sandoits in plate/sand trap type backstops shall extend to a point directly below the leading edge of the sloped plate.

(f) Forward edges in a escalator or venetian blind type bullet trep are maintained in a knife edge condition to prevent ricochets.

(2) Unsafe ranges.

(a) Steel builet traps are bowed, punctured or severely pitted.

(b) Plates in the bullet trap are flush with the other plates. Mold seams are ground smooth.

(c) Any type of portable bullet stop is used.

(d) Forward edges in a escalator or venetian blind type bullet trap are maintained in less than a knife edge condition

e. Targets and target carriers.

(1) Safe ranges.

(a) A target retrieval system is operable in all lanes and is constructed in such a manner as to minimize flat surfaces exposed to the firing line. (Firing lanes without a target retrieval system shall not be used).

(b) Only paper targets are used.

(2) Unsafe ranges. Target retrieval system is inoperable or not installed in the entire range, or target retrieval system exposes flat surfaces to the firing line.

f. Lead levels.

(1) Safe ranges.

(a) For personnel exposed less than 30 days per year, Lead levels do not exceed 0.05 mg/m³.
 (b) For personnel exposed more than 30 days per year and for all non-Department of Defense

(DoD) personnel, Lead levels do not exceed 0.03 mg/m³.

(c) For personnel under the age of 18, see Figure 1-1.

(2) Limited use ranges.

(a) For personnel exposed less than 30 days per year, Lead levels exceed 0.05 mg/m³ but do not exceed 0.4 mg/m³ in any breathing zone or general area sample. Personnel exposures shall be controlled by limiting the shooters to the times described in Figure 1-1.

(b) For personnel exposed more than 30 days per year and for all non-DoD personnel, Lead levels exceed 0.03 mg/m³ but do not exceed 0.4 mg/m³ in any breathing zone or general area sample.

(3) Unsafe ranges.

Lead levels in air sample results exceed 0.4 mg/m³ in any breathing zone or general area sample.

1-18. Range use

a. Indoor firing ranges shall not be used for any purpose other than firing. (I.e., they shall not be used for classrooms, exercise rooms, storage, etc.).

 B. Ranges classified as unsafe may be used for other purposes only after proper decontamination IAW the guidance provided in the Addendum, Guidelines and Procedures for IFR Rehabilitation, Conversion, and Cleaning.

c. The ventilation system is in operation at all times during firing or cleaning.

d. Equipment or furniture shall not be stored or maintained in the range, plenum area or behind the

builet trap. (For removal of equipment or furniture, use cleaning instructions provided in the Addendum).

e. A hand-heid ABC-type fire extinguisher is located near the entrance door, inside the firing range.

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1-19. Prohibitions

a. Personnel shall not be permitted in the plenum area during firing even if designed for observation.

b. Plenum area and area behind the bullet trap shall not be used for storage of any equipment.

c. An area directly in front of the plenum wall shall be kept clear at all times to preclude obstruction of

airflow.

d. Variable speed fans are not permitted.

e. Dry sweeping of indoors firing ranges is prohibited. Brooms shall not be stored in the range.

f. Walking downrange is prohibited for individuals other than maintenance and inspection personnel.

g. Pellets, BBs, magnum and armor piercing rounds are prohibited in all indoor firing ranges.

h. To prevent contamination with Lead dust, clothing or equipment that is not required for firing shall not be permitted into the range.

 Storage of ammunition and explosives in indoor firing ranges is prohibited, except in approved and licensed facilities.

j. There are no open floor drains in the range.

k. Carpet will not be located in any part of the range (Contact the State Environmental Office for hazardous waste disposal procedures).

1-20. Personal protective equipment

a. Eye protection. All personnel in an indoor firing range during firing shall wear eye protection that meets the requirements of ANSI Z87.1-1999, Practice for Occupational and Educational Eye and Face Protection.

b. Hearing protection. All personnel in an indoor firing range during firing shall wear Army approved hearing protection listed in DA Pam 40-501. When noise levels exceed 165 dBP, personnel must wear earplugs in combination with noise mufflers.

c. Respiratory protection. For respiratory protection requirements during indoor firing range conversion cleanup operations, see the Addendum.

1-21. Posting warning signs

a. The following signs shall be posted in or in the vicinity of indoor fixing ranges IAW AR 385-63:

- (1) Eating, Drinking and Smoking are prohibited
- (2) Dry Sweeping is prohibited
- (3) Wash Hands and Face Immediately Following Firing
- (4) Only the Following Ammunition is authorized for use on this Range: _____
- (5) Hearing Protection shall be properly worn during firing
- (6) Proper Safety Glasses/Goggles shall be worn during firing
- (7) Furniture or storage of other items of equipment is not permitted in the range

b. The following signs shall be posted on the entrance door to the range:

- (1) Noise Hazardous Area
- (2) Danger Lead Hazard Area
- (3) Pregnant women are not permitted in this area.

c. An illuminated warning sign, which is interlocked with the range ventilation switch, shall be located outside of the firing range to atert individuals that the range is in use.

d. Each firing lane shall be numbered at the firing line and at the bullet trap visible to all shooters. This is to ensure shooters use the correct target.

e. A warning sign shall be posted outside of the access door to the bullet trap, which warns personnel not to enter during range operation.

Note: All signs shall meet the requirements of DA Pam 385-64.

1-22. Range Standing Operating Procedures.

 Each indoor firing range shall have a written SOP, which is approved by the State Safety and Occupational Health Office, see figure 1-3.

b. Range SOPs shall include, as a minimum, the following:

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(1) The requirement for establishment and maintenance of a log of visitors for the indoor firing range. The log shall include the following information for all visitors:

(a) Name and age of shooter.

(b) Organizations (if civilian, include address and phone number).

(c) Sign-In and sign-out times and date.

(d) Type of ammunition used and number of rounds fired.

(2) The requirement for and contents of a mandatory safety briefing for all individuals prior to entering the range to be given by a designated competent range safety officer.

(3) Work practices including permissible and banned practices as specified by this regulation.

(4) Instructive guidance for all range procedures.

(5) Personnel responsibilities for performing the procedures, for supervising them, and reviewing and updating the SOP.

(6) Authorized ammunition for the range.

(7) The requirement for posting of signs IAW section 1-21 of this regulation.

- (8) Cleaning and maintenance requirements.
- (9) Personal protective equipment requirements for maintenance, firing and cleaning.

c. Refer to TG 206 for more general guidance on SOPs.

1-23. Inspection requirements.

The first part of each inepection shall be the physical safety inspection conducted by the State Safety Manager. Once the firing range has passed this portion of the inspection, a competent person shall complete the ventilation survey and air sampling requirements.

1-24. Initial Inspections

a. An Initial inspection of all new and renovated indoor firing ranges shall be completed before the facility is accepted. The inspection report shall be kept on file with the State Safety and Occupational Health Office. The checklist in Figure 1-2 shall be used for this purpose. See paragraph 1-29 for record maintenance requirements.

b. Findings on the initial firing range inspection, ventilation measurements, and air sampling results shall determine the range classification.

1-25. Annual inspections

a. A safety inspection of each active range shall be made annually to ensure safety standards, procedures and records are maintained in the operation of the range. These inspections shall be completed by State Safety personnel IAW AR 385-10. The checklist in Figure 1-2 shall be used for this purpose.

b. In accordance with AR 385-63, the annual inspection shall be performed within 45 days of the anniversary date of the initial inspection or the last annual inspection.

c. Verify that vantilation measurements have been recorded ever 480 hours of operation.

d. Ensure that air sempling has been conducted after changes or additions have been made to the range.

1-26. Ventilation requirements

a. Procedures for evaluating supply and exhaust ventitation systems, firing line velocities and static pressure readings are identified in the Addendum.

b. If air from the indoor firing range exhaust ventilation system is recirculated into the supply system of the range, the system shall have a high efficiency particulate air (HEPA) filter with reliable back-up filter. In addition, controls to monitor the concentration of Lead and Carbon Monoxide in the return air *shall be* installed and programmed to bypass the recirculation system automatically if the filter system fails. This system shall be operating and maintained IAW 29 CFR 1910.1025(e)(4)(ii).

1-27. Air sampling requirements

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a. Initial air sampling to determine airborne Lead dust levels during prescribed firing procedures shall be conducted for all IFRs prior to routine use. If initial determination reveals employee exposure to be at or above .003 µg/m³ sampling shall be repeated IAW 29 CFR 1910.1025(d)(6)(ii).

b. Air sampling shall be accomplished for each type of ammunition to be used in the range. (For air sampling procedures, see the Addendum).

c. After the Initial air sampling, air sampling is required only if changes or additions have been made to the range, there are changes in ammunition or weapons used in the range, or if changes have occurred in ventilation measurements. Once changes occur, air sampling shall be completed every two-years and prior to range use.

d. ARNG Regional Industrial Hygianists are responsible for air sampling of indoor firing ranges to determine airborne Lead concentrations. A competent person as designated by a Regional Industrial Hygienist may conduct the air sampling.

e. The Stale Occupational Health Nurse shall maintain copies of all air sampling results when required as part of personnel exposure records. See paragraph 1-11 for specific requirements.

1-28. Inspection reports

A completed inspection report shall be provided to the state Adjutant General for information or action as appropriate. An information copy shall also be provided to the Commander of the facility and to the state safety manager. A complete inspection report shall consist of the completed safety inspection checklist, ventilation data, and air sample results (initial inspection and as required by paragraph 1-24 above). Subsequent inspections shall be made as a follow-up check against results of previous inspections to assure required corrective actions have been accomplished, and there are no adverse changes to the buildings' integrity, safety equipment, environment or safe operating procedures.

1-29, Record maintenance

 a. All exposure monitoring and medical surveillance records shall be maintained for 40 years or the duration of employment plus 20 years, whichever is longer, as prescribed in 29 CFR 1910.1025, Appendix C.

b. The State Safety Manager shall maintain a record of all inspections for each indoor firing range in the state. All inspections after the initial one shall be used as follow-up checks against previous inspection reports. This is to ensure that required corrective actions have been accomplished and that there have been no structural changes to the building, environmental conditions or safe operating procedures. These records shall be checked during program evaluations and industrial byglene surveys.

1-30. Control of potential Lead intoxication

Occupational Safety and Health Administration (OSHA) Lead standard

a. The requirements of the OSHA Lead standard (29 CFR 1910.1025) shall be followed. The requirements include development of a written compliance program for the protection of workers from Lead exposures (29 CFR 1910.1025(e)(3)). The program shall include at a minimum the following:

 (1) A description of each operation where Lead is emitted;

(2) Methods used to achieve compliance;

(3) Methods used to meet the permissible exposure level;

(4) Air monitoring data, which documents the source of air emissions:

(5) A detailed schedule for implementation of the program;

(6) Work practices including PPE (Personal Protective Clothing and Equipment), housekeeping,

hygiene facilities and practices;

(7) Administrative control schedule;

(8) Personnel enrollment in medical surveillance;

(9) Other relevant information.

b. Refer to TG 206 for specific guidance on developing the compliance program.

1-31. Alternative ammunition

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 a. Reduced-Lead and Lead-free ammunition (non-Lead containing builts) has become commercially available. These alternatives to conventional ammunition should be considered for training use if command policy allows.

b. Lead-free ammunition is being developed which shall have the same ballietic properties as the Lead counterparts. The potential exists for some Lead containing ammunition to be completely replaced by Lead-free ammunition for training and operational uses.

c. Until Lead-free ammunition is available, Lead exposure can be significantly reduced by the use of jacketed rounds. Most built traps are rated for the use of jacketed ammunition, but this should be verified with the builtet trap manufacturer.

1-32. Maintenance requirements

a. The following are minimum maintenance requirements, which shall be performed every three months by the range custodian or by a person designated by the facility commander:

(1) Inspect the ventilation system fan for condition of beits to ensure that the belts are not torn or fraved and that they are not slipping.

(2) Evaluate stallc pressure and compare to the baseline static pressure reading. Any changes shall be reported to the State Safety and Occupational Health Office for further evaluation.

(3) Inspect louvers, if applicable, to ensure they are opening fully.

(4) Lubricate the bullet trap (if applicable).

(5) inspect the bullet trap for pitting or other damage and for sharp edges on venetian blind type bullet traps.

See the Addendum for a complete list of maintenance requirements for the bullet trap.

1-33. Housekeeping

a. The ventilation system shall be in operation during all cleanup operations.

 b. An approved National Institute for Occupational Safety and Health (NIOSH) respirator (P-100) for Lead exposure shall be used during cleanup operations.

c. During range cleaning operations, workers shall wear coveraits or similar full-body clothing, gloves, hat and change of shoes or disposable booties, face shields and goggles, or other equipment to protect the workers skin and eyes.

d. Blowing, shaking or any other means, which disperses Lead into the air, *shall not* be used to remove Lead dust accumulated on worker's clothing or equipment. A designated area shall be used for changing clothes to prohibit the spread of contamination. Workers shall shower and change clothes before release from work.

 Wet cleaning methods or vacuum cleaning with HEPA filtration shall be utilized during normal cleaning operations. Dry sweeping, dusting, wiping or blowing with compressed air shall not be permitted.

The range shall be cleaned at the end of each firing day with a HEPA vacuum or wet mop method.

g. When performing the cleaning, clean the floor and all horizontal surfaces lifteen feet in front of and behind the firing line, or when there is a visible accumulation of lead dust.

h. Wash water contaminated with Lead can be collected and allowed to slowly evaporate feaving Lead deposits/sludge that may be collected in plastic containers, placed in metal drums, and stored for future delivery to an authorized hazardous waste disposal site. Drums *shall be* properly labeled to identify contents. Disposal of containerized waste *shall be* coordinated IAW state hazardous waste program requirements.

i. The State Environmental Office shall coordinate removal and disposal of all containerized nazardous waste derived from routine use, cleaning, and maintenance of IFRs. Contact your State Environmental Office for proper disposal instructions when bullet trap catch trays are 34 full. Spent cartridge cases shall be collected and processed in accordance with local ammunition inventory and accountability procedures, AR 710-2, and DA PAM 710-2-1.

j. Prior to converting an indoor firing range to other uses, the entire range area shall be properly decontaminated of any Lead residue. For cleaning and decontamination instructions, see the Addendum.

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1-34. Maximum exposure hours

Personnel exposure limits for intermittent atmospheric Lead contamination has been developed by the U.S. Army Medical Command (MEDCOM) in the form of a table of Lead exposure limits (Figure 1-1). This table was developed to control intermittent Lead exposure and to establish maximum allowable hours of exposure based on the airborne Lead concentration and the number of days firing per year. Intermittent exposures to Lead in indoor firing ranges shall be controlled according to the criteria provided in the table of Lead exposure limits as an Interim control measure only. Maximum effort shall be made to introduce permanent control measures to reduce the airborne Lead levels to 0.03 mg/m³ or iess. Exposure records shall be maintained by the commander of the facility on all personnel who use the firing range when the airborne Lead levels exceed 0.03 mg/m^3 . These records shall contain the airborne Lead concentrations and the amount of time spent on the range for each individual. Other potential Lead exposure, including off duty firing, may contribute to an individuals overall exposure and should be considered in establishing maximum allowable exposure time.

1-35. Extent of use

a. The extent of use for any indoor firing range shall be based on permissible exposure of all using personnel to concentrations of airbome Lead dust.

b. Under no circumstances shall pregnant women be permitted in an indoor firing range, IAW 29 CFR 1910.1025, Appendix C, Section II (5).

c. Personnel under 17 years of age are prohibited from entering any range area with a Lead concentration greater than 0.100 mg/m³. For ranges with Lead concentrations less than 0.100 mg/m³, follow the guidelines in Figure 1-1.

d. Use of the indoor firing range by non-military organizations shall be approved and documented in writing by the State Safety Manager.

1-36. Medical surveillance

a. Personnel who are or may be exposed to Lead above the action level (0.03 mg/m³) for more than 30 days per year shall be envolled in the Medical Surveillance Program.

b. Medical surveillance is not required for intermittent users of indoor firing ranges if the maximum allowable exposure hours shown in Figure 1-1 is not exceeded.

1-37. Terms

a. Backsplatter-This refers to the small particles, which break off of a bullet as it impacts the bullet trap. Variables such as the bullet composition, angle of the bullet trap, and the velocity of the impact dictate the amount and pattern of the backsplatter. A ricochet occurs when the main body of the bullet is deflected off the surface of the bullet trap.

b. **Competent person-**An Individual who has been specifically trained to identify safety and occupational health hazards associated with Lead dust and indoor firing ranges. The individual is aware of current regulations governing indoor firing ranges and of ventilation principles and terminology, air sampling media and collection requirements and can interpret air sample results. He can provide appropriate guidance in the abatement of known hazards and has the authority to do so. He can correctly use diagnostic ventilation evaluation equipment and interpret results. He has received written authorization from the regional industrial hygiene office to properly evaluate indoor firing ranges.

c. Plenum-This term refers to a chamber used to build static pressure before the air enters the firing range. Air is introduced into the plenum from the side, top, or back and is forced through a perforated wall (called the plenum wall) behind the firing line.

d. Smoke Testing-To conduct a smoke test, a smoke candle is ignited behind the firing line. The smoke is used to check the airflow at and in front of the firing line. There should be laminar flow down the range to the bullet trap and no turbulence at the firing line. It is also important to ensure the smoke does not circle back behind the firing line.

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FIGURE	1-1
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0.000 - 0.029	8	<u>ــــــــــــــــــــــــــــــــــــ</u>	8	4
0.030 - 0.039	8	<u>، </u>	6	3
0.040 - 0.049	8	4	4.5	2
	LIMITED USE	RANGES	LIMITED USE RANGES	LIMITED USE RANGES
0.050 - 0.059		£	4	2
0.060 - 0.079		<u>، الم</u>	3	1
0.080 - 0.099		,	2.25	1 1
0.100 - 0.149	2.	.5	1.5	0
0.150 - 0.199	2		1	0
0.200 - 0.299	1.7	/5	0.75	0
0.300 - 0.399		i	0.5	0
0.400 - 0.499		/5	0.5	0
0.500 - 0.749	0./	5	0.25	i 0
0.750 - 0.999	0.2	25	0.25	0
1.000 or above	0	, -	0	0
			- · · - · · · · · · · · · · · · · · · ·	
 These values at 	re the actual concr	<u>entrations m</u>	easured over the sampling p	eriod and are not 8-hour
				· · · · · · · · · · · · · · · · · · ·

time-weighted averages.

Adherence to these guidelines shall prevent overexposure to Lead in indoor firing ranges.

* Recommend that an Occupational Health Physician make the determination on length of firing time for individuals 17 years of age and younger.

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FIGURE 1-2

INDOOR FIRING RANGE INSPECTION CHECKLIST

See paragraphe 1-23 through 1-25 of this regulation for inspection requirements. For the range to be considered safe each of the following statements shall be true and eir-sampling results shall be below the standard for Lead. The information in parentheses after each statement denotes the location of the requirement in this or other regulations.

Location of the Range _____ Date _____

Range Custodian _____ Telephone _____

Part 1, Physical Safety Inspection

A. Building Envelope

Each firing lane is at least 4 feet wide. [1-17a(1)(a)]

2. Pipes, conduits, and other projecting surfaces are baffied or covered by a material that shall protect these items and prevent ricochets. [1-17a(1)(b)]

3. No windows or doors are located in front of the firing line. (Except access door to the back of the bullet trap) (1-17a(1)(d)]

4. There are no open floor drains in the range. [1-17a(2)(c)]

There is no carpet, drapes or other fiber-like material in the range. (1-17a(2)(d))

6. Pipes, conduits and walls are sealed to prevent leakage of Lead dust from the range into other areas. [1-17a(2)(b)]

_____7. The interior surfaces or the range floor, walls, and ceiling have no protruding adges or devices. [DG 415-1, App.A, 3-1d]

8. The roof provides ballistic security. [DG 415-1, App. A, 3-1e(1)]

The walls provide ballistic security. (DG 415-1, App. A, 3-1f(1))

10. Interior mortar joints are flush with the interior surface. (DG 415-1, App. A, 3-1f(2))

11. The plenum wall is adequately supported and thick enough to avoid flexing. (DG 415-1, App. A, 3-1f(4))

_____ 12. The entrance door to the range is weather-stripped unless the door acts as passive make-up air intake. (DG 415-1, App. A, 3-1h)

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B. Range Lighting

Lighting is uniform, non-glaring and does not cause shadows. [1-17c(1)(a)]

2. Illumination is at least 100 foot candles on the targets and 30 foot candles in all other areas. [1-17c(1)(b)]

3. All lighting is protected by befiles and placed so that the shooter has an unobstructed view down range. [1-17c(1)(c)]

4. Downrange lighting begins approximately 18 feet from the firing line and ends approximately 8 feet from the target line. [1-17c(1)(d)]

5. Emergency lights are provided behind the firing line and are in working condition. [1-17c(1)(e)]

Exit lights are provided and working as required. [1-17c(1)(I)]

_____ 7. Lighting of at least 30 foot-candles is provided behind the bullet trap for maintenance (if applicable). [1-17c(1)(g)]

No known electrical hazards exist in the range. [1-17c(2)(c)]

C. Bullet traps

A builtet trap is permanently installed in the range. [1-17d(1)(a)]

2. Buillet traps are of a commercial design, which is in compliance with the requirements of CEHND 1110-1-18, NGB-ARI, the Addendum, and this regulation. [1-17d(1)(b)]

3. The thickness of inclined plate/sand trap type bullet trap shall be adequate to attenuate the maximum caliber of ammunition authorized to be fired on the range. [1-17d(1)(c)]

4. All plate/sand trap type bullet traps are designed to prevent ricochets by directing the projectiles in the same direction they are traveling. [1-17d(1)(d)]

5. Sandpits in plata/sand trap type backstops extend to a point directly below the leading edge of the sloped plate. [1-17d(1)(e)]

6. Forward edges in a louver or venetian blind type bullet trap are maintained in a knife edge condition to prevent ricochets. [1-17d(1)(f)]

Steel bullet traps are not bowed, punctured or severely pitted. [1-17d(2)(a)]

8. Plates in the bullet trap are flush with the other plates. Mold seams are ground smooth. [1-17d(2)(b)]

D. Targets and target carriers

1. A target retrieval system is operable in all lanes. [1-17e(1)(a)] (Any one firing lane without a retrieval system shall not be used for firing)

2. The target retrieval system is constructed in such a manner as to minimize flat surfaces exposed to the firing line. [1-17e(1)(a)]

Only paper targets are used in the range. [1-17e(1)(b)]

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E. Range use

1. The range is not used for any purpose other than firing. [1-18a]

2. No equipment or furniture is stored or maintained in the range, plenum area or behind the built thep.

[1-17**0**]

No additional clothing or equipment is brought into the range. [1-19h]

4. Personnel are not permitted in the plenum area during firing even if designed for observation. [1-19a]

5. Individuals other than maintenance and inspection personnel are not allowed to walk downrange. (Except in regularly cleaned area as needed to pick up brass) [1-19/]

6. All areas directly in front of the plenum walls are kept clear at all times. [1-19c]

Pellets, BBs, magnum and armor piercing rounds are not used in the range. [1-f9g]

8. The ventilation system is in operation at all times during firing or cleaning. [1-18c]

9. A hand-held ABC-type fire extinguisher is located in a recessed cabinet near the entrance door, inside of the firing range. [DG 415-1, App. A, 4-5]

F. Range maintenance

_____1. Dry sweeping does not occur in the range. [1-19e]

No brooms are located in the range. [1-19e]

_____ 3. A range custodian is appointed for the range who is fully trained and aware of his/her responsibilities. [1-13c]

G. Personnel protective equipment

1. All personnel in the range during firing wear ANSI approved eye protection. [1-20a]

All personnel in the range during firing wear ANSI approved hearing protection. [1-20b]

H. Posting of signs

1. The following signs are posted in or in the vicinity of the range: [1-21a]

- a. Eating, Drinking and Smoking are Prohibited
- b. Dry Sweeping is Prohibited
- c. Wash Hands and Face Immediately Following Firing
- d. The Following Ammunition is authorized for use on this Range: _____
- e. Hearing Protection shall be Properly worn during firing
- f. Proper Safety Glasses/Goggles shall be worn during firing
- g. No Furniture or Storage of Items Permitted in the Range

2. The following signs are posted on the entrance door to the range: [1-21b]

- a. Noise Hazardous Area
- b. Danger Lead Hazard Area
- c. Pregnant women are not permitted in this Area

3. An Illuminated warning sign, which is interlocked with the range ventilation switch, is located outside of the firing range to alert individuals that the range is in use. [1-21c]

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4. Each firing lane is numbered at the firing line and at the bullet trap visible to all shooters. [1-21c]

5. A warning sign is posted outside of the access door to the bullet trap, which warns personnel not to enter. [1-21e]

I. Range SOP

_____1. The indoor firing range has a written SOP, which is approved by the State Safely and Occupational Realth Office. [1-10e]

2. The range SOP includes as a minimum the following: [1-22b]

a. The requirement for establishment and maintenance of a log of visitors for the indoor firing range.

b. The requirement for and contents of a mandatory safety briefing for all individuals prior to entering the range to be given by a designated competent range safety officer.

c. Work practices including required, recommended, permissible and banned practices as specified by this regulation.

d. Instructive guidance for all range procedures.

e. Personnel responsibilities for performing the procedures, for supervising them, and reviewing and updating the SOP.

- f. Authorized ammunition for the range.
 - g. The requirement for posting of signs IAW section 1-21 of this regulation.
 - h. Cleaning and maintenance requirements.
 - i. Personal protective equipment requirements for maintenance, firing and cleaning.

J. Recordkeeping

1. A visitors log is maintained which includes the following information for all visitors/shooters: [1-14c]

- a. Name and ege of shooter.
- b. Organization (if civilian, include address and phone number).
- c. Sign in and sign out times.
- d. Type of ammunition used and number of rounds fired.

2. Copies of initial and other previous inspections are available. [1-24a]

3. The Initial inspection report includes air-sampling data, {1-24b}

4. An OSHA compliance program is in place, which covers the required aspects. [1-30a]

5. All individuals using the indoor firing range have been provided with a copy of the range SOP or been briefed on the requirements of the SOP, and have signed an agreement to follow the rules stated therein. (1-13h)

6. State maintenance officers/custodians have documentation to show that they have been educated to the health effects from exposure to Lead dust. [29 CFR 1910.1200 and 29 CFR 1910.1025]

Range safety officer(s) is/are designated. [1-13c]

K. New and Renovated Ranges

- No doors are installed in the plenum walk.
- Plenum area is at least 4 feet deep.
- An access door is installed behind the bullet trap.
- Only escalator or rubber bullet traps are installed.

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INDOOR FIRING RANGE INSPECTION CHECKLIST

Part 2, Ventilation Inspection

A. Existing Ranges

The range has an operational mechanical ventilation system. [1-17b(1)(a)]

2. The minimum ventilation rate at the firing line in each firing lane is 50 fpm at all levels. [1-17b(1)(b)]

3. 100% of air is exhausted at or behind the bullat trap. [1-17b(1)(c)]

Make-up air is introduced into the range behind the shooters. [1-17b(1)(d)]

5. Air that is introduced through vents into the plenum does not exceed a velocity of 600 fpm. [1-17b(1)(e)]

6. Air exiting through holes in the plenum wall has a velocity between 400 and 600 fpm, [1-17b(1)(f)]

7. The ventilation system is so constructed that air exhausted from the indoor firing range does not enter into another part of the building or any other air supply system. [1-17b(1)(g)]

8. The exhaust exceeds the make-up air by approximately 10% to form a negative air pressure $|\alpha|$ the range in relation to adjoining areas. (1-17b(1)(h)]

9. If air is recirculated in the range, it is installed with a HEPA filter with a reliable back-up filter. [29 CFR 1910.1025(e)(4)(il)]

10. If air is recirculated in the range, controls to monitor the concentration of Lead and Carbon Monoxide levels are installed and programmed to bypass the recirculation system automatically if the filter system fails.

[29 CFR 1910.1025(e)(4)(ii)]

11. The fan(s) in the ventiletion system is a single speed fan only. [DG 415-1, App. A, 3-2a]

_____ 12. A smoke test of the range shows laminar air flow and no turbulence in the range. (See the Addendum for troubleshooting guidance) [1-18b(1)(k)]

13. In non-powered systems, the supply air louvers and exhaust fan are electrically interlocked. [1-17b(1)]

14. In power systems, the supply and exhaust fans are electrically interlocked. The make-up air fan should start slightly after the exhaust fan. [1-17b(1)(m)]

15. Range air temperature is between 65 degrees and 80 degrees Fahrenheit. [1-17b(1)(n)]

B. New and Renovated Ranges

1. A manometer is installed leading into the exhaust fan, which is capable of measuring at least 20 inches of static pressure.

Supply and exhaust fans are electrically interlocked with the downrange lighting.

_____ 3. The face velocity on supplied make-up and exhaust ducts does not exceed 2000 cfm per square foot of duct space.

4. Paselve supply systems have opposing blade louvers.

Turning vanes are installed in all duct elbows, which have between 60° and 90° angles.

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INDOOR FIRING RANGE INSPECTION CHECKLIST

Part 3, Air Sampling

1. The physical safety inspection, Part 1 of the range inspection checklist, was completed and all requirements met on:

2. The ventilation inspection, Part 2 of the range inspection checklist, was completed and all requirements met on: ____

Air sampling has been scheduled for: ______

Print and sign: _____

Position: _____ Date: _____

4. Air sampling was completed on: ______ for the following types of ammunition:

Air sample results do not exceed: _____mg/m³ (results are attached).

For military personnel exposed less than 30 days per year, this range is classified as: ______ (SAFE, LIMITED USE, UNSAFE)

7. For military personnel exposed more than 30 days per year and for all non-DoD personnel, this range is classified as: _____ (SAFE, LIMITED USE, UNSAFE)

Print and sign: _____

Position: ______Date: _____

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> FIGURE 1-3 EXAMPLE OF INDOOR FIRING RANGE SOP STATE OF ______, DEPARTMENT OF MILITARY AFFAIRS XXXX SOUTH MAIN STREET SOMEWHERE, _____XXXXX-XXXXX ______ARMORY INDOOR FIRING RANGE STANDING OPERATING PROCEDURE (SOP)

1. References:

- a. AR 385-10
- b. AR 385-63
- c. NGR 385-10
 d. NG PAM 385-XX
- 0, NG PAM 300-AA - - 00 CED 4040 4024
- e. 29 CFR 1910.1025
 f. 29 CFR 1920.1200
- 29 CFR 1920.12
 20 CFR 1920.12
- g. 29 CFR 1928 h, 29 CFR 1980
- I. USACHPPM, TG 141

2. **Purpose.** The ______ Armory indoor firing range SOP is published to establish procedures to minimize the exposure of Leed (Pb) to personnel and provide uniform safe range operations and maintenance procedures. The provisions set forth herein shall govern all actions and personnel associated with range operations.

3. Review and Update. This SOP should be reviewed yearly by the Commander of the facility and the State Safety and Occupational Health Office. A cover sheet, which documents the signature and dates of personnel involved with the review of the SOP, should be attached.

4. General.

a. Each Officer or Non-Commissioned Officer In-Charge (OIC/NCOIC) of range operations shall maintain a current copy, and be familiar with the provisions of this SOP, and NGR 385-10.

b. These directive and military regulations are applicable to all active duty military, military technicians, federal and state civilian employees and civilian personnal, to include local or state police authorities.

5. Range Control.

a. The ______ Armory Commander shall appoint, in writing, a Commissioned Officer, Warrant Officer, or a Senior NCO to the position of Range Control Officer (RCO).

- b. The RCO is responsible to perform the following:
 - (1) Enforce the facility range safety program and SOP.
 - (2) Notify Armory personnel of times when the range shall be in use.
 - (3) Coordinate and schedule all activity on the firing range.
 - (4) Ensure that the range is secured when not in use.
 - (5) Ensure that nothing is stored at the range.

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(6) Investigate and report all accidents and incidents involving weapons and ammunition in accordance with NGR 385-10.

(7) Determine which weapons and ammunilion are authorized for the range. This should be coordinated through the Sale Safety and Occupational Health Office and in accordance with manufacturers' specifications.

(8) Ensure that all OiC/NCIOCs are thoroughly familiar with the weapons in use, and that the appropriate operators' manuals for the weapons are on hand.

(9) Prepare a range OIC/NCOIC briefing packet for all using units. The packet should contain, as a minimum; a copy of this SOP, emergency telephone numbers of local rescue authorities, and a current copy of the Accident Prevention Plan (Appendix C of this SOP).

(10) Ensure that mandatory signs listed in NGR 385-10, paragraph 1-21 are posted as required.

6. Range OIC/NCIOC. The Commander or supervisor of all using units or groups shall designate an OIC/NCOIC in the grade of E-8 or above to be the responsible for the safe conduct of firing and proper use of the facilities. The commander/supervisor shall ensure that all appointed individuals are qualified to perform their assigned duties. The duties of the range OIC/NCOIC shall include but are not limited to the following:

Prior to firing.

(1) Receive a thorough briefing from the RCO, and conduct an inspection of the range with the RCO, or his/her designated representative. If the condition of the range is acceptable, assume control and roquest clearance from the RCO to fire.

(2) Ensure the overall safe conduct of training and the proper use of the facility.

(3) Ensure that all participants are familiar with the verbal commands, hand signals, range procedures and safety requirements.

(4) Be present when the range is in use and determine when it is safe to fire.

(5) Be knowledgeable of the weapons to be used and ensure that only authorized weapons and ammunition are used. Ensure that the proper operators' manuals are available for each individual using the range.

(6) Be familiar with the Accident Prevention Plan and have a current copy on hand prior to commencement of firing.

(7) Ensure that at least three individuals are present on the range when the range is in use.

(8) Ensure that all personnel wear the proper hearing and eye protection as required.

(9) Ensure that all individuals using the range have singed-in on the roster maintained by the facility. Commander.

(10) Ensure that the range has a working telephone, or that other means of emergency communication is available.

(11) Ensure that appropriate emergency medical personnel have been notified that the range is in use, and that the projected hours of operation are from ______ to _____ hours.

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b. During Firding.

(1) Ensure that personnel do not leave the firing line without the permission of the OIC/NCOIC.

(2) Ensure that the muzzle of each weapon is pointed downrange at all times. Personnel may holster their handguns after being cleared by the OIC/NCOIC to do so.

(3) When not in use, revolvers shall have cylinders open and automatic weapons shall have magazines removed and the slide/receiver locked to the rear. Rifles shall also have the megazine removed, if applicable, bolts and/or slides open or locked to the rear when not in use. Weapons shall be carried to and from the firing line in the configuration described above, with the muzzle pointed downrange.

(4) Ensure that weapons malfunctions/jams are cleared only at the direction of the OIC/NCO/C in accordance with the procedures established in the operators' manual for the weapon.

(5) Ensure that weapons are cleared and checked during temporary suspension of firing.

(6) Ensure that firing is stopped promptly when an unsafe act is observed or reported.

(7) Do not permit persons to walk in front of the firing line during firing. Lanes with inoperable target retrieval systems shall not be used.

(8) Limit firing time, if applicable. This limitation shall be based on air-sampling results for individuals using the range and ventilation measurements. Contact the State Safety Manager to determine if the range has time limitations placed upon it.

c. After Firing.

(1) Ensure that all weapons are cleared prior to being removed from the firing line.

(2) Ensure that all individuals on the range thoroughly wash their hands and face immediately after leaving the range.

(3) Ensure that all bullet casings are removed from in front of and behind the firing line and that the range is restored to a serviceable condition. Dry eweeping of the range is prohibited.

(4) Conduct a final inspection of the range. Secure the range, and turn the keys and shooters log. Into the RCO or his/her designated representative.

7. Range Control Officer Qualifications. His or her commander may appoint any individual in the rank of E-6 and above to the Rang Control Officer. Appointment orders for all RCOs shall be maintained onfile at the facility. Commanders of each facility shall ensure that all RCOs have been properly instructed and are competent in performance of lheir duties. Law enforcement and civilians requesting appointment to perform RCO duties, shall show evidence that they have completed an Army and/or National Rifle Association approved firearms instructor's course or equivalent prior to appointment.

8. Range Restrictions.

a. The ______ Armory is restricted to firing the following ammunition based upon manufacturer specifications:

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EXAMPLE

- (1) .22 caliber including the M-16 with adapter
- (2) .38 caliber
- (3).45 callber
- (4) 9 mm pistols

Note: No other weapons can be fired without the approval of the State Safety Manager.

- b. Pellets, BBs, magnum and armor piercing rounds are prohibited.
- c. Dry sweeping of the range is prohibited.
- d. Trick shooting including, quick draw and hip shooting is prohibited.
- e. Storage of any item in the range is prohibited.
- f. Smoking and consumption of food or beverages is prohibited.
- Proper hearing and eye protection shall be worn during firing.

 h. Civic groups with Individuals under 18 years of age are required to have written permission from the ARNG State Safety Manager prior to firing.

i. Personnel shall not be allowed in the observation/plenum area during firing.

9. Mandatory Signs. As a minimum the following signs shall be posted on the door/entrance to the range or inside as appropriate:

- a. Inside the Range.
 - (1) Eating, drinking and/or smoking are prohibited.
 - (2) Dry sweeping is prohibited.
 - (3) Wash hands and face immediately after firing.
 - (4) Hearing protection shall be worn during firing.
 - (5) Safety glasses/goggles shall be worn during firing.
 - (6) Storage of furniture and other items is prohibited.
 - (7) The following ammunition is authorized for this range: ______, ____, ____, ____, and
- b. On the Door to the Range.
 - (1) Noise Hazardous Area.

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- (2) Danger Lead Hezard Area.
- (3) Pregnant women are not permitted in this area.

10. Authorized Use of the Range. Utilization of the ______ Armory range is authorized for organizations of the ______ Army National Guard conducting unit training and for the marksmanship team conducting competition or in preparation for competition. Non-Military personnel are subject to the same requirements and regulations as National Guard personnel and shall be in strict compliance with this SOP, Army Regulations, ARNG regulations and applicable subject letters and directives from the Adjutant General, State of ______.

11. Release of Liabliky.

a. The military Range Control Officer shall obtain a signed Release of Liability (Appendix D of this SOP) form from each civilian user of the range. Signed agreements shall be kept on file with the Commander of the facility.

b. Organizations with members who are minors shall obtain Permission and Release of Liability (Appendix O of this SOP) form signed by a parent or guardian. The ARNG State Safety Manager shall be notified prior to minors firing on ARNG ranges.

12. **Denial of Range Access.** The Commander of the facility may withdraw range privileges from any person or organization that willfully disobeys rules and regulations pertaining to range operations. In addition, range privileges may be denied to an individual whose knowledge of the principles of marksmanship is deficient to the degree of posing a safety hazard.

FOR THE COMMANDER:

John Doe CPT, IN, ____ARNG OIC/Armory Commander

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APPENDIX A ABBREVIATIONS

ANSI American Netional Standards Institute

AR Army Regulation

ARNG Army National Guard

CFM Cubic feet per minute

CFR Code of Federal Regulations

CNGB Chief, National Guard Bureau

DA Department of the Army

FPM Feet Per Minute

HEPA High Efficiency Particulate Air

IAW In Accordance With

IFR Indoor Firing Range

mg/m³ Milligrams per cubic meter

National Institute for Occupational Safety and Health

NGB National Guard Bureau

OSHA Occupational Safety and Health Administration

SOP Standing Operating Procedure

SP Static pressure

USACHPPN U.S. Army Center for Health Promotion and Preventive Medicine

wg

NIOSH

inches of water gauge

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APPENDIX B REFERENCES

ACGIH 22nd Ed, Industrial Ventilation A Manual of Recommended Practice

Army Regulation (AR) 11-34 The Army Respiratory Protection Program

AR 40-5 Preventive Medicine

AR 350-41 Army Forces Training

AR 385-63 Policies and Procedures for Firing Ammunition for Training, Target Practice, and Combat

AR 385-64 U.S. Army Explosives Safety Program

Army National Guard (ARNG) Design Guide (DG) 415-1 Design Guide for Armories

American National Standards Institute (ANSI) Z67.1-1999 Practice for Occupational and Educational Eye and Face Protection

CEHND 1110-1-18 USACE (U.S. Army Corp of Engineers) Design Manual for Indoor Firing Range

Department of the Army Pamphlet (DA PAM) 385-64 U.S. Army Explosives Safety Program

DA PAM 40-501 Hearing Conservation

DA PAM 710-2-1 Using Unit Supply System (Manual Procedures)

Department of Defense Instruction (DODI) 6055.1 Department of Defense Occupational Safety and Health (OSH) Program

DHEW NIOSH 76-130

Lead Exposure and Design Considerations for Indoor Firing Ranges

FM 25-7 Training Ranges

National Guard Regulation (NGR) 385-10 Amy National Guard Safety and Occupational Health Program

NGR 415-5

Military Construction Army National Guard (MCARNG) Project Development

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APPENDIX B (Continued)

GR 420-10

Operations/Maintenance and Minor Construction, Army National Guard

Technical Bulletin Medical (TB MED) 502

Occupational and Environmental Health, Respiratory Protection Program

TB MED 506

Occupational and Environmental Health, Occupational Vision

TG 206

USACHPPM Technical Guide for Indoor Firing Ranges

Title 29, Code of Federal Regulations (CFR) Revision, Part 1910 Occupational Safety and health Standards
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APPENDIX C INDOOR FIRING RANGE ACCIDENT RESPONSE PLAN

 If a mishap or injury occurs at any time during the conduct of range operations, the following procedures shall be followed:

a. The OIC/NCOIC or person in charge of the range shall order a cease-fire immediately. All weapons shall be cleared and muzzles pointed downrange.

b, Render first aid to the injured as appropriate.

d. A person shall be stationed at the main entrance of the range to provide direction to emergency medical personnel.

e. After all injured personnel have been removed or attended to:

(1) The OIC/NCOIC shall notify the RCO of the mishap.

(2) The RCO shall in-turn notify the office of the Adjutant General at DSN ______, or the duty officer, and the State Safety and Occupational Health Office at DSN ______.

f. The RCO, with the assistance of the State Safety Manager, shall investigate the mishap and file a DA Form 285 "Accident Investigation" as appropriate.

All injuries or mishaps shall be reported to the RCO as soon as possible. The OIC/NCOIC shall be responsible to obtain witness statements and assist in making reports as may be required.

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APPENDIX D PERMISSION AND RELEASE OF LIABILITY CERTIFICATE

	AR	NG
Somewho	ere,	USA
Date:		

BE IT KNOWN TO ALL: WHEREBY I,

Have been granted permission to use firearms on the indoor firing range located at the

Army National Guard Armory; and whereas I am doing so entitely upon my own Initiative, risk, and responsibility; now therefore, in consideration of the permission extended to me by the United States Government and/or State of _____ through their officers and agents do hereby for myself, heirs, executors and administrators, remiss, release and forever discharge the Government of the United States and the State of _____, the _____ Army National Guard, their officers, agents, employees expressly including the Adjutant General of the State of _____, acting officially or otherwise, from any and all claims, demands, action, or causes of action on account of my death, or account of injury to me or my property which may occur from any cause during the period of the above granted permission. I further acknowledge and certify by my signature below that I have read and understand the applicable range facility standing operating procedure (SOP) and shall compty with it and all applicable safety regulations.

Signature:

Witness to Signature: _____

In case of emergency, please contact:

Name _____ Address

Telephone Number

TO BE SIGNED BY THE PARENT OR GUARDIAN OF INDIVIDUALS UNDER 18 YEARS OF AGE. NO MINOR SHALL BE ALLOWED TO UTILIZE AN ARNG FIRING RANGE WITHOUT PARENT OR GUARDIAN SIGNATURE.

I, said parent, and/or legal guardian of the above-named minor, hereby give my consent to said minor executing this release, and do hereby also release and agree to save harmless the parties above-named as to said minor and as to myself as an individual, and for our heirs, executors, administrators and assigns.

Signature of Parent or Guardien:

BEST AVAILABLE COPY

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ADDENDUM

GUIDELINES FOR IFR REHABILITATION, CONVERSION, AND CLEANING

CONTENTS (Listed by paragraph number)

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Appendices

Appendix A - General Procedures for Collecting Wipe Samples

Appendix B - Sampling Strategy for Collection of Wipe Samples

Appendix C - Interpretation of Sample Results (Prior to Cleaning)

Appendix D - Interpretation of Sample Results (After Cleaning)

Appendix E - Recommended Sample Media and Containers

Appendix F - Examples of Computation of Lead Levels from Wipe Sample Results

Appendix G - Surface Wipe Sample Sheet

Appendix H - Air Sampling Sheet

Appendix I - Glossary

Purpose

1. This addendum establishes policy and procedures for rehabilitation, conversion, and cleaning of ARNG indoor firing ranges.

2. References

Related publications are listed below.

a. DODI 6055.1 (Department of Defense Instruction, Occupational Safety and Health (OSH) Program).

- b. AR 11-34 (The Army Respiratory Protection Program).
- c. AR 40-5 (Preventive Medicine).

d. NGR 385-15 Policy, Responsibilities, and Procedures for Inspection, Evaluation, and Operation of ARNG Indoor Firing Ranges).

e. 29 Code of Federal Regulations (CFR), Part 1910, Occupational Safety and Health Standards

- f. OSHA Technical Manual, Edition VII.
- g. DHEW NIOSH 76-130 (Lead Exposure and Design Considerations for Indoor Firing Ranges).

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Explanation of Abbreviations and Terms

Abbreviations and special terms used in this publication are listed in the glossary.

4. Policy and Procedures

Conversion of Ranges. Indoor firing ranges can be safely rehabilitated or converted for other uses, such as a storage area, kitchen, or office space, provided the following --

a. Previously active ranges must be thoroughly decontaminated and cleaned to acceptable levels.

b. The level of cleanliness is to be determined by sampling. The Occupational Safety and Health Administration's (OSHA) Technical Manual, ⁵⁶ Edition, provides guidance on the methods and techniques needed to collect wipe samples (Appendix A).

(1) Wipe samples must be collected and analyzed prior to and after cleaning.

(2) Post-cleaning surface wipe sample results must be less than or equal to 200 micrograms per square feet (ug/sq ft). The sampling strategy, which is the amount and location of wipe samples to be collected, is provided in Appendix B. Methods for interpreting the sample results are contained in Appendix C and D.

c. Equipment/Items previously stored in the range must be decontaminated and cleaned to ecceptable tevels.

(1) Samples must be collected from equipment/items stored in the range. Sample selection is critical, because the number of items stored and length of storage differs from range to range. The amount and location of the samples, should be representative of the areas where lead dust is most likely to accumulate. The more samples collected, the better the statistical comparison of the results.

(2) Samples must be collected from the smooth surfaces of the equipment/items, in so much as possible. Results of samples collected from a rough surface will be inaccurate due to the minimal surface contact of the media. Further, the likelihood of tearing the media filter is greater on rough surfaces.

(3) Samples should also be collected on items stored the longest period of time, and which have not been disturbed. Items stored closest to the bullet trap and firing line are likely to have higher concentrations of lead dust. Methods for interpreting the sample results are contained in Appendix C and D.

5. Goal

To ensure every indoor firing range is free of lead dust, and to reduce the number of unsate ARNG indoor firing ranges.

6. Background

The Environmental Protection Agency (EPA) identifies lead as a highly toxic metal. Elemental lead is indestructible, and common in the environment. Lead can enter the body by inhalation (breathing) or ingestion (eating). In addition, lead is a cumulative poison. It accumulates in the blood, bones, and organs, including the kidneys, brain and liver. Effects include nervous and reproductive system disorders, delays in neurological and physical development, cognitive and behavioral changes, and hypertension. Symptoms include loss of appetite, difficulty sleeping, Irritability, fatigue, headache, and Inability to concentrate. It can stay in the bones for decades. Worker awareness and training are important to ensure that employees can recognize the symptoms of exposure and get prompt medical attention.

7. Wipe Sample Media

a. OSHA Technical Manual provides the necessary guidance on the technique needed to collect wipe samples (Appendix A). Only distilled or deionized water will be used to saturate dry sample media. Al least one field blank filter must be submitted with each sample sheet. The field blank must be from the same lot, and labeled as a blank on the sample sheet. Appendix E identifies how and where to obtain sample media. Use the following guidance for determining media acceptability.

(1) Acceptable Media consists of -

(a) Ghost Wipes™ (PREFERRED METHOD)- Pre moistened

(b) Thirty-seven (37) millimeters (mm) mixed cellulose ester (MCE) filters, with or without the cassettes.

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(2) Unacceptable Media consists of but is not limited to-

- (a) Cotton balls
- (b) Baby wipes or wet wipes

b. Documentation of Sample Collection. A Surface Wipe Sample Sheet must be completed and submitted with samples to your supporting laboratory. A copy of this form is located in Appendix G. Refer to Appendix A on how to collect wipe samples.

8. Wipe Sampling Protocol See Appendix A.

9. Ranges Cleaning Instructions

a. Written procedures, such as a scope of work, or Standing Operating Procedure (SOP) that complies with all federal, state and local regulations must be established prior to decontamination operations. The range ventilation system will be in operation during range cleaning to ensure that a negative pressure environment is maintained. In the absence of mechanical ventilation system, all doors and windows will be sealed to eliminate fugitive emissions. A High Efficiency Particulate Air (HEPA) filtered vacuum system is the preferred method of cleanup followed by wet wiping of the range. The HEPA vacuum is designed to collect loose surface lead dust particles.

b. Any general purpose cleaning solution can be used. However, Spic and Span[™] has been found to be an effective cleaning solution by other Army organizations. Mix new solutions of cleaning solution frequency. Wet wiping will require dual containers of water, one container for wetting the applicator (mops, rags, sponge, etc.) and the other container for rinsing the applicator after the dust has been wiped from the surfaces. When placed in containers, wastewater should be left to evaporate.

C. PROPERLY DISPOSE OF ALL HAZARDOUS WASTE. DO NOT PLACE LEAD CONTAMINATED WASTE INTO THE SEWER SYSTEM OR ONTO THE GROUND.

d. Mop-heads, sponges and rags will be discarded as hazardous waste following cleanup.

e. Wet cleaning by a high-pressure system is prohibited, as this method may embed the lead into the substratum and generate large quantities of unwanted hazardous waste.

f. Dry sweeping is not permitted.

g. All surface areas of the range must be cleaned. Oo not remove the coating on smooth painted surfaces that are property sealed.

h. Wood floors should receive a coat of deck enamel or urethane; concrete floors should be sealed with deck enamel and lineleum or tile floors should be waxed.

i. A progression of cleaning from top to bottom and from behind the steel backstop to the firing line should be used. After removing the sand, if applicable, and the steel backstop, areas in front of and behind the bullet trap along with the steel backstop plate(s) should be cleaned. Next, clean the ceiling, lights, baffles, retrieval system, heating system(s), and ventilation duct(s). Acoustical material should be vacuumed and removed rather than painted over.

J. A Toxic Characteristic Leaching Procedures (TCLP) test for lead only may need to be performed on the acoustical material. A TCLP test will determine if the material is classified as "hazardous" and can be disposed of in a sanitary landfill. Contact your State Environmental Office for assistance before arranging for this laboratory lesting. The floor should be the last surface cleaned, starting at the bullet trap and ending behind the firing line.

k. After wet wiping all surfaces, permit the area to dry. Vacuum all surface areas until no dust or residue can be seen using the HEPA.

I. A thorough visual inspection to detect dust should be made following cleanup and prior to collecting post surface wipe samples.

m. As a variety of conditions exist in ranges, unique situation may arise and specific written guidance from your Regional Industrial Hygiene Office may be required.

10. Cleaning Stored Contaminated Equipment

a. Equipment contaminated (sample result is higher than 200 micrograms/sq ft) with lead dust must be decontaminated before it is removed from the range.

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b. Equipment located near the bullet trap and firing line should be cleaned first and then removed. The cleaning method depends on the size of the equipment and the material it is comprised of, i.e. metal, wood, concrete, porus, non-porus, smooth or rough finish etc. However, either HEPA vacuum or the wet wipe method will be used. Refer to paragraph 9 for additional guidance.

c. Every attempt should be made to clean and reclaim items since disposing of equipment, as hazardous waste is costly and wasteful. Only as a last resort will the item be discarded as hazardous waste. Porous items, such as office partitions and carpet that were present during firing should be considered grossly contaminated and be discarded unless analysis proves otherwise. Consult your State Environmental Office for the proper hazardous waste disposal methods.

11, Contaminated Sand and Lead Waster

Consult your State Environmental Office for specific disposal guidance to ensure compliance with local laws and regulations.

12. Medical Surveillance

a. A pre-placement medical examination is required for all individuals involved with range cleanup operations. Consult 29 CFR 1910.1025 for additional information on medical surveillance requirements. A medical examination must include—

- (1) A detailed work and medical history
- (2) A thorough physical examination
- (3) A respirator use evaluation
- (4) A blood pressure measurement
- (5) Blood sample analysis to include:
 - (a) A baseline blood lead level
 - (b) A complete blood count (CBC)
 - (c) Blood urea nitrogen (BUN)
- (6) Serum creatinine
- (7) Zinc protoporphyrin
- (8) A routine urine analysis
- (9) Recordkeeping

b. Air Monitoring. Worker breathing zone (8Z) air samples must be collected to ensure personnel are not overexposed to airborne lead during the cleanup phase. Representative air samples will be collected on all personnel involved in the cleanup operation. These exposure levels will be used to evaluate work practices and personal protective equipment. Within five (5) working days after receipt of monitoring results, each employee will be notified in writing of the air sampling results. Contact your Regional Industrial Hygiene Office for additional information pertaining to air sampling.

13. Worker Education

OSHA 29 CFR 1910.1025 requires that workers who are potentially exposed to any lead level shall be informed of the content of Appendix A and B of this standard. A training program must be instituted for all individuals who are subject to exposure to lead at or above the action level or for whom the possibility of skin or eye irritations exists. The training program shall be repeated for personnel currently involved in range cleanup operations, at least annually, this training must be documented on DD Form 1556 or DD Form 1556-1 and filed permanently in the employee's Official Personnel File (OPF) or the soldier's Official Military Personnel File (OMPF). As a minimum, complete blocks 1, 2, 3, 7, 8, 11, 12, 13, 17, 18, 24, 33 and 36 of DD Form 1556. Place the following statement in block 18, "Do not destroy, retain this record for the duration of employment/service plus 30 years." The employer will assure that each employee is informed of the following:

- a. The content of the standard and its appendices.
- b. The specific nature of operations that could result in exposure to lead above the action level.
- c. The purpose, proper selection, fitting, use and limitations of respirators.
- d. The purpose and a description of medical surveillance program.
- e. Eating and drinking are prohibited in lead contaminated areas.
- f. Smoking and smoking materials will not be permitted in contaminated areas.

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g. Employees must wash their hands and other exposed skin whenever they leave the work area.

h. The engineering controls and work practices associated with the individual's job assignment.

). The contents of any compliance plan in effect.

14. Personal Protective Equipment

For housekeeping and rehabilitation the employer shall select respirators from among those approved for protection against lead dust, fume, and mist by the National Institute for Occupational Safety and Health (NIOSH). The employer shall institute a respiratory protection program in accordance with 29 CFR 1910.134. As a minimum, personnel conducting the decontamination of the range will be provided with the following personal protective equipment.

a. Employees engaged in range rehabilitation and/or range conversion, the employer shall provide at no cost to the employee, and assure that the employee uses appropriate protective work clothing and equipment such as, but not limited to:

Protective coverails with hood and shoe covers or disposable Tyvek [™] full body suit.

(2) Disposable rubber gloves; and disposable shoe coverlets (if necessary).

(3) Full-face air purifying respirator with P-100 cartridges.

b. The employer shall provide the clothing required in a clean and dry condition at least daily to employees engaged in the conversion of indoor firing ranges.

c. The employer shall provide for the cleaning, laundering, or disposal of used or contaminated protective clothing and equipment.

d. The employer shall assure that all protective clothing is removed at the completion of a work shift only in areas designated for that purpose (Change Areas or Change Rooms).

e. The employer will ensure that contaminated protective clothing that is to be cleaned, laundered, or disposed of, is placed in a closed container in the change area that seals sufficiently enough to prevent dispersion of lead dust.

f. The employer will further inform in writing any person who cleans or launders protective clothing or equipment of the potentially harmful effects of exposure to lead.

15. Housekeeping

This chapter applies to all active indoor ranges classified as "safe" for use. To keep the range operating property and to keep possible hazards to a minimum, a routine housekeeping/ maintenance program is essential.

a. The employer must establish a housekeeping program sufficient to maintain all surfaces as free as practicable of accumulations of lead dust. To this end the range will be clean at the conclusion of each firing day.

b. The range ventilation system will be in operation during all cleaning operations, to ensure a negative pressure environment is maintained.

c. Ranges will be cleaned by using the wet method or vacuuming. A HEPA (High Efficiency Particulate Air) filtered vacuum system is the preferred method of meeting this requirement. The use of compressed air to clean floors is absolutely prohibited. If the wet method is utilized the floor should be equipped with a floor drain, and collection system. When there is no collection system, the water can be allowed to slowly evaporate leaving lead deposits/sludge. The deposits/sludge can then be collected, placed in metal drums, and stored for future delivery to an authorized hazardous waste disposal site. Drums must be labeled to identify contents, in accordance with the hazardous waste program.

d. A NIOSH approved respirator (P-100) for protection against lead dust, fume, and mist will be worn at all times while cleaning.

e. When cleaning start behind the firing line forward, cleaning the floor and horizontal surfaces.

16. Maintenance

The following are the minimum maintenance requirements, which must be performed quarterly by the range custodian, or by a person designated by the facility commander.

a. Inspect the ventilation system fan for condition of belts to ensure that they are not frayed or slipping.

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b. Evaluate static pressure and compare to the baseline static pressure reading. Any changes will be reported through the sefety manager to the Regional Industrial Hygienist.

c. Inspect Louvers, if applicable, to ensure they are opening fully.

 Inspect the bullet trap for pitting or other damage and for sharp edges on venetian blind type bullet traps.

e. Butlet Trap. The bullet trap will be cleaned every 480 hours of operation at a minimum, or when the trap is three querters full.

f. The range ventilation system will be operational during all bullet trap cleaning procedures.

g. All personnel involved in cleaning of the bullet trap will wear a NIOSH approved respirator, and proper personal protective equipment.

 All debris from the bullet trap will be collected, package and turned in, in accordance with guidance from the environmental office.

17. Range Rehabilitation.

This chapter applies to all indoor firing ranges that have been identified as candidates for rehabilitation. This chapter further provides guidance for cleaning and/or sampling that might be required prior to the start of rehabilitation.

a. The portion(s) of the range to under go rehabilitation must be sampled to determine the level of lead contamination. Wipe samples will be taken per the established sampling protocol. See Appendix A.

b. All personnel involved in range rehabilitation will wear a NIOSH approved respirator (P-100), and proper personal protective equipment as prescribed in paragraph 14 above.

c. Prior to start of rehabilitation the environmental office must be notified to determine the disposition of lead containing debris.

18. Conversion of Indoor Ranges

Prior to the start of decontamination, employers must ensure that all procedures to be uned comply with Federat, State, and local regulations. To ensure that all lead contamination is removed the following procedure is established.

a. All ranges slated for conversion will be inspected and evaluated.

b. All equipment stored in the range, if applicable, prior to the start of decontamination must be sampled, decontaminated, re-sampled and removed or turned in as lead contaminated material. See paragraph 10 above.

c. All acoustical tites and/or sound proofing material (if applicable) must be removed and turned in as lead contaminated material through the environmental office.

d. The backstop, bullet trap, target retrieval system and firing line stations must be removed and turned in as lead containing material through the environmental office.

e. Light fixtures and ventilation system grills must be removed and decontaminated.

f. Ventilation system ducts need to be decontaminated or removed and replaced.

g. The exhaust fans and/or the complete ventilation air-handling unit (if applicable) must be decontaminated or removed.

h. Cover all openings of any component previously decontaminated prior to start of interior decontamination of the firing range.

19. Deviation

Deviations from this guidance will require a written exception to policy from your Regional Industrial Hygiene Office. Questions and/or comments regarding this subject should be directed to your Regional Industrial Hygiene Office or Chief, National Guard Bureau, Attn: NGB-AVS-S, 111 South George Mason Drive, Arlington, VA 22204-1382.

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APPENDIX A GENERAL PROCEDURES FOR COLLECTING WIPE SAMPLES

A-1 If multiple samples are to be collected at the work site, prepare a rough sketch of the area(s) or room(s), which are to be wipe sampled.

A-2 A new set of clean, impervious gloves should be used for each sample to avoid contamination of the media by previous samples and to prevent contact with the substance.

A-3 (1) If using Ghost Wipes™, tear open the individually sealed package. Remove the moistened wipe. Unfold the wipe.

(2) If using a dry media such as MCE or Whatman[™] filter, moisten the filter with distilled or deionized water prior to sampling.

A-4 Place a 10 cm by 10 cm template on the area to be wiped.

A-5 Apply uniform firm pressure while wiping the area inside the template.

A-8 To insure that all portions of the partitioned area are wiped, start at the outside edge and progress toward the center making progress toward the center making concentric squares decreasing in size.

A-7 After collecting a sample, fold the filter or wipe inward and place into a container and number it. Note the number at the sample location on the sketch.

A-8 At least one blank filter treated in the same fashion but without wiping, should be submitted to the laboratory.

APPENDIX B

SAMPLING STRATEGY FOR COLLECTION OF WIPE SAMPLES

B-1 Prior to cleaning the ranges, the three samples must be collected and analyzed for total lead dust on each surface, i.e., floor, ceiling, backstop, and wall to include the plenum wall, if applicable. In addition, a total of 3 samples should be collected from areas which have been least disturbed by airflow. Established walkways should be avoided.

B-2 Samples should be staggered to different areas of the range. A grid system should be utilized. Each range surface areas should be divided evenly into 3 by 3 sections. Samples should not be collected on all one section of a wall or end of the building.

APPENDIX C

INTERPRETATION OF SAMPLE RESULTS (PRIOR TO CLEANING)

C-1 200 micrograms/sq ft or LESS

If all sample results are 200-micrograms/sq ft or less, the range can be converted and/or used for any purpose.

C-2 BETWEEN 201 and 200,000 micrograms/sq ft

Range must be decontaminated. Continued with cleaning instructions listed in paragraph 9 Sample results will be used to establish a baseline.

C-3 Over 200,000 micrograma/sq ft

Your sample media may not be capable of collecting additional lead dust and results that are above 200,000 micrograms/sq ft, and should be considered suspect.

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APPENDIX C (Continued)

C-4 High sample results may exist due to personnel walking or moving equipment/vehicles over the range surface causing the lead dust to be "ground" into the substratum. For examples, a maintenance activity may have oversprayed paint or spliled solvents onto the surface Regional Industrial Hygiene Office for specific guidance.

APPENDIX D

INTERPRETATION OF SAMPLE RESULTS (AFTER CLEANING)

D-1 200 micrograms/sq. ft or less

If all sample results are less than 200 micrograms/sq ft, the range can be converted and/or used for any ourpose after a coat of lead-free latex paint is applied.

APPENDIX E

RECOMMENDED SAMPLE NEDIA AND CONTAINERS

E-1 The following is a list of vendors, which supply the media and containers necessary to collect air and lead surface wipe samples. The information is provided to assist in obtaining the proper media and containers. Alternative vendors are available and may be utilized, if known. Contact your Regional Industriel Hyglene Office for additional assistance or clarification.

E-2 Pre-loaded 3 piece cassette with mixed cellulose ester (MCE) filler and pad, 37 millimeter (mm), pore size 0.8 microns, breathing zone (BZ) and general area (GA) air samples.

- Order From Catalog Number
- a. Millipore Corp. MAWP-037-A0 Ashdy Roed Bedford, MA 01730 617-275-9200 600-225-1380
- b. Gelman Sciences 64878 (GN-4) 600 South Wagner Rd Ann Arbor, MI 48106 313-665-0651 800-521-1520
- c. Supeko, Inc. 2-3368M Supeko Park Bellefonte, PA 16823 800-247-6628 800-359-3041

E-3 37 mm MCE Filter with pad, no cassette included, for lead surface wipe samples.

Order From Catalog Number

a. Supelco Inc. 2-3381IM Supelco Park Bellefonte, PA 16823

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APPENDIX E (Continued)

800-247-6628 800-359-3041

- b. Millipore Corp. AAWP-037-00 Ashdy Road Bedford, MA 01730 617-275-9200 800-225-1380
- c. SKC, Inc. 225-5
 334 Valley View Rd.
 Eighty Four, PA 15330
 412-941-9701
 800-752-8472

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E-5. Glass container (25 milliliter) for collection and shipment of media.

Order From Catalog Number

- a. Pierce Chemical Co. 13219 (screw cap) P.O. Box 117 Rockford, IL 61105 815-968-0747 800-874-3723
- b. Alitech Associates, Inc. 95321 (screw cap) Applied Science Labs 2051 Waukegan Rd. Deerfield, IL 60015 312-948-8600

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APPENDIX E (Continued)

800-255-8324

E-8. Ghost Wipes™.

Order From Catalog Number

Environmental Express SC4200 490 Wando Park Blvd. Mt. Pleasant, SC 29484 1-800-343-5319

E-7. Ghost Wipe™ Containers

Order From Catalog Number

Environmental Express SC499 490 Wando Park Blvd. Mt. Pleasant, SC 29464 1-600-343-5319

E-8. Plastic ziplock bags can be obtained through the Army logistics system. Many sizes are evailable. Contact your supporting logistics branch for assistance.

E-9. Distilled water can be purchased at larger grocery stores, usually by the gallon, at a cost of approximately \$1.25. Deionized water can be obtained at local and state water labs or a hospital.

APPENDIX F EXAMPLES OF COMPUTATION OF LEAD LEVELS FROM WIPE SAMPLE RESULTS

Sample results will be returned in the form of micrograms. The results must be converted to micrograms per square foot. This can be accomplished by following the examples listed below:

75 ug	<u>92</u>	<u>29 cm*</u>		
100 cm ²		1 sq ft		
→ 6 000	_	0007E	_	
<u>75 x 929</u> 100	=	100	-	080.700g/sq ii

ug – Microgram

Cm2 - Certimeters squared

Sq ft - Square foot

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APPENDIX G SURFACE WIPE SAMPLING SHEET

Industrial Hygiene Surface Wipe Sample Sheet					
Return Address			Point of Contac	ct (name & phone #)	
			Samples Collec	cled By	
Sampled Facility		City	State	Location (bldg/aree)	
Description of Op	eration		Date Collected	Date Shipped	
Analysis Desired			·		
Sampling Data					
Lab Use Only	Sample #	Results		Remarks	
			-		
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 +		1			
Comments to La	Ь:				

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APPENDIX H AIR SAMPLING SHEET

		Inau	strial my	gleue w	IL 29	aubia	Slifer		
eturn Addre	38			Point of	Cont	act (nem	e/phone t	9	
				Sample	s Coll	ected By			
ampled Faci	ility	City		State	100	cation (5	ldg/area)		
escription of	Operation	 Para	ions Exposed	Method of Collection					
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3A/BZ								<u> </u>	
Employee NomeAD									
Laboratory									
Calibration I	nformation	<u> </u>							
Burryn Ma	Ça	libration (LPM)	Rotar	neter S	etling	Ì	Date	
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> APPENDIX I ABBREVIATIONS AND TERMS

Section 1 Abbreviations

ARNG Army National Guard

BUN Blood urea nitrogen

BZ Breathing zone

CBC Complete blood count

CFR Code of Federal Regulations

em Centimeter

DHEW Department of Health, Education and Welfare

EPA Environmental Protection Agency

GA General area

OMPF Official Military Personnel File

OPF Official Personnet File

OSHA Occupational Safety and Health Administration

TOLP Toxic Characteristic Leaching Procedures

ug/sq ft Micrograms per square foot

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APPENDIX I (Continued)

Section II Terms

HEPA

Refers to high efficiency particulate air filter systems capable of capturing up to 99.97 percent of particles 0.3 microna in size or larger.

Lead-Contaminated Range

it is assumed that all indoor ranges, which have been fired in, are lead-contaminated.

Wipe Sample

The terms wipe, swipe, or smear samples are use synonymously to describe the techniques utilized for assessing lead surface contamination.

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Prepared For:

National Guard Bureau Army National Guard Region North Industrial Hygiene Office 301 – IH Old Bay Lane Havre De Grace, Maryland 21078

Prepared By:

URS Corporation 5 Industrial Way Salem, New Hampshire 03079

INDUSTRIAL HYGIENE SURVEY REPORT MASSACHUSETTS NATIONAL GUARD READINESS CENTER 1000 HANCOCK STREET QUINCY, MA 02169

June 25, 2013 PN: 39743799



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	ARMORIES

FINDINGS AND RECOMMENDATIONS MASSACHUSETTS NATIONAL GUARD READINESS CENTER 1000 HANCOCK ST., QUINCY, MA

Findings	Recommendations	Risk Assessment Code (RAC)
Lighting	Ar a	
On the day of the survey, the illuminance was inadequate in several locations tested.	Increase lighting in the work areas. While work is in progress, these areas must be lighted by at least the minimum lighting intensities (ANSI / IESNA RP-1-04).	RAC 4
Ergonomics		
Computer workstations in the Administrative Areas were observed with un-adjustable chairs, arm rests and keyboards	Ergonomic issues with regard to the desks and chairs should be corrected by fitting the workplace to the worker (Department of the Army Pamphlet 40-21, Chapter 4, Page 7, Section 4- 3).	RAC 3
Water Intrusion		
Water staining was observed on ceiling tiles throughout the facility.	The source of the water intrusion should be identified and repaired. The water-stained materials should be repaired or replaced (ACGIH – Guidelines for the Assessment of Bio-aerosols in the Indoor Environment).	RAC 3
Lead		
Eight of the 10 lead wipe samples indicated elevated lead levels.	Personnel trained in accordance with the OSHA Lead Standard should clean the areas where elevated lead dust levels were identified, especially the kitchen where peeling paint should be made intact. (OSHA 29 CFR 1910.1025(h)(1)).	RAC 3
Emergency Exits		
Emergency exit signs and escape plans were not visible from all areas of the facility or illuminated.	Emergency exits should be properly illuminated (29 CFR 1910.37 (q)(6)).	RAC 3
Outlet Covers		
1 st SSG office.	covers approved for the purpose. (29 CFR 1910.305 (b)(2)).	RAC 4

		Risk
Findings	Recommendations	Assessment
Achectes		Code (RAC)
Aspestos	Develop e site energific schester	
fleer tiles and especiated	Develop a site-specific aspestos	
mostic were cheened	for management of ashestes	
throughout the facility: an	containing materials in place as	RAC 1
Ashestos Operation and	required by OSHA 29 CER	INAC 4
Maintenance Program was not	1910 1001(i)(2)	
available onsite.	1910.1001()(2).	
PPE	27) A	
Hazard assessments have not	Conduct a hazard assessment of site	
been conducted to determine	operations to determine what types of	PAC 4
whether personal protective	PPE are required for each type of	RAC 4
equipment is required	work (29 CFR 1910.132(d)(1)).	
Housekeeping		
Storage areas were found to be	All places of employment,	
somewhat unorganized at the	passageways, storerooms and	
time of URS' site visit.	service rooms shall be kept clean	RAC 3
	and orderly and in a sanitary	
	condition. (29 CFR 1910.22 (a)(1))	
Fire Extinguishers		
No evidence was found that all	All fire extinguishers must be	
fire extinguishers were being	inspected on a monthly basis to	_
inspected on a monthly basis.	determine that they are full and	RAC 3
	readily accessible. (OSHA 29 CFR	
	1910.157(e)(2))	
Flammable Storage		
Chemicals/ flammable	Each container of hazardous	
materials were observed	chemicals in the work place must be	DAC 2
improperty stored.	abeled with the identity of the	RAC 3
	chemical and appropriate nazard	
	warnings (29 CFR 1910.1200).	

1.0 SUMMARY

At the request of the National Guard Bureau (NGB) Region North Industrial Hygiene Office, URS Corporation (URS) conducted an industrial hygiene survey at the Readiness Center in Quincy, Massachusetts.

URS representative, Mr. Non-Responsive, conducted the Industrial Hygiene Survey on March 26, 2013. The scope of work included an overall assessment of the facility as it relates to industrial hygiene and included a walkthrough of the facility, collection of photographs, and when required, measurements for illumination (light), area and personal air sampling, and noise mapping.

The Quincy Readiness Center is a two-story brick building, consisting of offices, classrooms, a supply area, a mess hall, gender separate bathrooms, locker storage rooms, storage rooms, a kitchen, an Assembly Hall and a former Indoor Firing Range. A layout of the Readiness Center is provided in Appendix A.

<u>GENERAL</u>: Moderate water staining was observed on ceiling tiles throughout the facility, including the conference room, corridor between the kitchen/cafeteria, the cafeteria and food storage. The basement former Indoor Firing Range is no longer in use and is posted as unsafe to enter due to lead contamination. No evidence was found that all fire extinguishers were being inspected on a monthly basis. Outlets without covers were observed in 1st SSG Office. Illuminated emergency exit signs were not observed throughout the facility. Emergency escape plans were not posted throughout the facility. Walk ways in storage areas were cluttered at the time of this survey. Chemicals/flammable materials were observed not properly stored.

<u>LIGHTING</u>: Lighting in the Readiness Center was found to be inadequate in several of the areas measured. Areas noted within the report as having inadequate lighting require upgrading by either increasing the general lighting or through the use of task lighting. While work is in progress work areas must be lighted by at least the minimum light intensities. <u>LEAD</u>: Eight of ten wipe samples collected in the Readiness Center were found to contain lead in a concentration above the recommended limit set by the NGB, Region North IH Office. Peeling paint in the kitchen is likely contributing to the elevated lead dust levels and should be made intact.

On the day of the survey, none of the paint chip samples was found to contain a level of lead above the HUD criteria for determination of paint as lead-based.

<u>ASBESTOS</u>: Presumed asbestos-containing floor tiles and associated mastic were identified during this survey, however no Asbestos Operations and Maintenance Program was found on site. Until suspect materials have been sampled and determined not to contain asbestos, they must be presumed to be asbestos-containing and managed accordingly.

<u>ERGONOMICS</u>: Many of the work stations had ergonomic issues which require attention. Computer workstations were assessed during the walkthrough for ergonomic issues. The computer workstations in the facility did not meet the current Occupational Safety and Health Administration (OSHA) ergonomic recommendations. The chair armrests, keyboards, and monitors were not adjustable. All workstations in the facility should be adjusted and monitored. The ergonomic issues with regard to the workstations and chairs need to be corrected by fitting the workplace to the worker.

<u>NOISE</u>: Area noise monitoring levels in the Readiness Center determined that noise levels were below the OSHA permissible exposure limit (PEL) and Department of Defense Instruction (DoDI) Hearing Conservation Standard (6055.12 3 December 2010) on the day of URS' site visit.

2.0 SUPPLY / TRAINING AREA

2.1 Operation Description

This Readiness Center is primarily used for weekend training drills and conducting administrative functions. The building includes offices, classrooms, a supply area, gender separate bathrooms, locker storage rooms, storage rooms, a mess hall, a kitchen, an Assembly Hall and a former Indoor Firing Range.

The Readiness Center was found to be cluttered and unorganized at the time of URS' site visit.

2.2 Chemical and Physical Agents Sampled

2.2.1 Carbon Dioxide

On the day of the survey, carbon dioxide measurements were made in the Readiness Center. Interior carbon dioxide concentrations were found to be between 460 and 772 parts per million (ppm). Carbon dioxide levels were measured using a direct-reading TSI Q-Trak (Model 8551).

Carbon dioxide is a normal constituent of the atmosphere and ranges from about 250 to 450 ppm. The major source of excess carbon dioxide in the indoor environment is human respiration. Other sources can include open-flame heaters, fermentation processes, and motor vehicles. Carbon dioxide itself is not normally a cause of indoor air quality problems but is typically used as an indicator of the adequacy of fresh air intake. As the concentration of carbon dioxide increases, so do the background levels of other air contaminants.

To minimize air quality complaints, the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) has proposed that the carbon dioxide concentration within an occupied workspace be maintained below 700 ppm above ambient outside levels. For example, on the day of the survey, the outside carbon dioxide level was measured at 431 ppm. Therefore ASHRAE (Standard 62.1-2010) would recommend that interior carbon dioxide concentrations be maintained at or below

1,131 ppm. Using the ASHRAE guideline, the readings at the subject site were found to be below the suggested indoor to outdoor differential concentration.

2.2.2 Carbon Monoxide

The carbon monoxide concentration in the Readiness Center was measured between 0.0 ppm and 1.2 ppm on the day of the survey. ASHRAE recommends that average carbon monoxide concentrations not exceed 9 ppm. Typical average concentrations found in commercial buildings range from 0 to 6 ppm. The measured levels were below the ASHRAE guideline for indoor environments. Carbon monoxide was measured using a TSI Q-Trak Plus (Model 8554).

Key sources of carbon monoxide within indoor environments include internal combustion engines, motor vehicle and forklift exhaust, tobacco smoke, space heaters, and improperly adjusted oil or gas burners.

2.2.3 Relative Humidity

The average relative humidity within the Readiness Center measured with the Q-Trak Plus was 32.9%, which was within the guideline of less than 65% recommended by ASHRAE.

2.2.4 Temperature

Temperature should be maintained within the thermal comfort envelope suggested in ASHRAE Standard 55-2010. This standard on thermal environments specifies conditions in which 80% or more of building occupants should find the thermal environment acceptable. ASHRAE 55-2010 suggests temperatures of 68 to 75 degrees Fahrenheit (°F), during winter months, for people in typical seasonal clothing during light sedentary activity. For summer, the temperature should be in the range of 73 to 79 °F.

The average temperature inside the Readiness Center was, 65.2 °F, which was below the guideline of 68 to 75 °F recommended by ASHRAE for thermal comfort.

2.2.5 Lighting

Lighting in the Readiness Center was measured using a cal-Light 400 Light Meter. Table 2-1 below shows lighting measurements in foot candles (FC) and the recommended lighting requirements (Illuminating Engineering Society of North America (IESNA) RP-7-01).

Location	Function	Measured Illuminance in Foot Candles (FC)	Recommended Minimum Illuminance in Foot Candles (FC)
Conference Room, table	Admin	28.1	50
Rear Lobby Admin, workstation	Admin	18.9	50
Middle Admin, workstation	Admin	27.9	50
Exterior Admin, workstation	Admin	31.1	50
1 st SSG office, workstation	Admin	21.4	50
Recruiting Office, workstation	Admin	48.2	50
Kitchen, counter	Break Room	48.2	50
Conference Room/ Classroom, table	Admin	29.0	50
Conference Room/ Classroom, workstation	Admin	4.8	50
Supply Office, laptop workstation	Admin	53.3	50
Supply Office, desk-	Admin	3.7	50

 Table 2-1

 Lighting Measurements and Recommended Lighting Requirements

On the day of the survey, the illuminance in the Readiness Center was determined to be inadequate in all but two of the office/administrative locations.

2.2.6 Lead

Wipe testing for lead dust was conducted in the Readiness Center using ghost wipes, which meet ASTM E 1792 standards. The analytical report from AMA Analytical Services, Inc. (AMA) is contained in Appendix C. Table 2-2 below shows the results of the lead wipe testing.

Sample Location	URS Sample Number	Area Wiped in Square Feet (ft ²)	Results in Micrograms/ Square Feet (µg/ft ²)	Maximum Surface Contamination Level in Micrograms/ Square Feet (μg/ft ²)
Middle Admin Office, top of call radio	Quincy RC Wipe-01	0.108	<mark>530</mark>	200
Supply Room, top of shelf, by entry	Quincy RC Wipe-02	0.108	160	200
Conference Room, window sill by fire place	Quincy RC Wipe-03	0.108	220	200
Shop Clerk area (former Indoor Firing Range), top of TV	Quincy RC Wipe-04	0.108	210	200
Armorer Office, floor by entrance	Quincy RC Wipe-05	0.108	440	200
Drill Hall, cabinet in fitness area	Quincy RC Wipe-06	0.108	280	200
Latrine, unisex, top of paper towel dispenser	Quincy RC Wipe-07	0.108	1 <mark>50</mark>	200
Cafeteria/ Classroom, base of large fan	Quincy RC Wipe-08	0.108	630	200
Kitchen, top of voltage box	Quincy RC Wipe-09	0.108	8,900	200
Boiler Room, top of file cabinet	Quincy RC Wipe-10	0.108	1,300	200

Table 2-2 Levels of Lead Dust Found in the Readiness Center

Eight of the ten surface dust level measurements were found to contain lead at a level above the NGB recommended level, based on the OSHA clarification letter which states "as free as practicable" of lead contamination as specified under OSHA 29 CFR 1926.62.

Three paint chip samples were collected from areas of peeling paint within the facility and were analyzed for lead content. The analytical report from AMA is contained in Appendix C. According to the U.S. Department of Housing and Urban Development (HUD), paint is considered to be lead-based if the quantity of lead is greater than 0.5% by weight. OSHA has not established a minimum percentage of lead to be defined as lead-based paint, therefore paint with lead in any amount above the analytical detection limit is considered to be lead-based under these regulations. The results of URS' lead paint testing are contained in Table 2-3.

Table 2-3 Lead Content in Painted Surfaces

Paint Location	Lead Concentration (Percent Weight)	HUD Lead-Based Quantity (Percent Weight)	
White paint, Cafeteria, overhead pipes	0.035	0.5	
Red paint, floor, Boiler Room	0.4	0.5	
White paint, ceiling, Supply Room	0.45	0.5	

On the day of the survey, none of the paint chip samples were found to have a lead content above the HUD criteria for determination of paint as lead-based. However, since surface dust levels in the kitchen, where food is prepared, were elevated, the peeling paint should be made intact to prevent it contributing to elevated surface lead dust levels.

2.2.7 Asbestos

No damaged, friable suspect material was identified during this survey for sample collection.

Presumed asbestos-containing floor tiles and associated mastic were identified during this survey. Until suspect materials have been sampled and determined not to contain asbestos, they must be presumed to be asbestos-containing and managed accordingly.

2.3 Ventilation System Evaluation

The facility, not designed for vehicle maintenance, contains a ventilation system that is limited to localized personal ventilation (i.e. room fans, window air conditioning units) within the majority of rooms, and main negative draw fans in the Assembly Hall.

2.4 Noise Measurements

Area noise dosimetry was conducted within the administrative office area. Area exposures were measured using a data-logging Spark 703+ Noise Dosimeter. Area noise dosimetry results indicated that, on the day of the survey, workers were not exposed to noise levels above the DoDI Hearing Conservation Standard (6055.12 3 December 2010) of 85 decibels, A scale (dBA)/8-hour day. Table 2-4 indicates the individual monitored, the tasks performed and noise exposures.

Table 2-4 Noise Dosimetry Data

Location	Task	Sample Duration in Minutes	Monitoring Result TWA (dBA)*	Hearing Protection
Office-	Administrative	362	63.3	N/A

* The calculated 8-hour, time-weighted average (TWA) noise exposure in dBA. The OSHA PEL for noise exposure is 90 dBA. DoDI has established an employee exposure level of 85 dBA for requirement of a hearing conservation program.

2.5 Personal Protective Equipment

Personal protective equipment was orderly and readily available to employees in the Readiness Center. Personal protective equipment included hard hats, safety glasses, ear plugs and nitrile gloves.

3.0 SAFETY AND INDUSTRIAL HYGIENE PROGRAMS

3.1 Confined Spaces

A written confined spaces program is not applicable to this facility.

3.2 Hearing Conservation

A written hearing conservation program was identified on site. A review of normal site activities determined that no operations were identified that would warrant hearing protection. Based on area noise dosimetry results and a review of normal site operations, a hearing conservation program is not required for this site.

3.3 Respiratory Protection

A site-specific written program regarding Respiratory Protection was identified on site. No operations were observed by URS that would require the use of respiratory protection.

3.4 Hazard Communication

A site-specific hazard communication program was identified on site.

Material safety data sheets, a site map, and list of full time personnel were readily available on the day of the survey.

3.5 Personal Protective Equipment

A written personal protective equipment program was identified on site. A hazard assessment should be conducted to determine whether personal protective equipment is required for activities typically undertaken at the Readiness Center.

3.6 Asbestos Operations and Maintenance Program

A written asbestos operations and maintenance program was not identified on site.

3.7 Safety

The basement former Indoor Firing Range was posted as unsafe due to lead contamination. No evidence was found that all fire extinguishers were being inspected on a monthly basis. Outlets without covers were observed in 1st SSG Office. Illuminated emergency exit signs were not observed throughout the facility. Emergency escape plans were not posted throughout the facility. Walk ways in storage areas were cluttered at the time of this survey.

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4.0 REFERENCES

American Conference of Governmental Industrial Hygienists

Industrial Ventilation: A Manual of Recommended Practice, 27th Edition, 2010

Guidelines for the Assessment of Bio-aerosols in the Indoor Environment, 1989

American National Standards Institute

American National Standards Institute/Illuminating Engineering Society of North America (ANSI/IESNA) RP-1-04: American National Standard Practice for Office Lighting

ANSI/IESNA RP-7-01: Recommended Practice for Lighting Industrial Facilities

American Society of Heating, Refrigerating and Air-Conditioning Engineers

ANSI/ASHRAE Standard 62.1-2010: Ventilation for Acceptable Indoor Air Quality

ANSI/ASHRAE Standard 55-2010: Thermal Environmental Conditions for Human Occupancy.

Department of the Army

DA PAM 40-21, Ergonomics Program, 15 August 2003

Unified Facilities Criteria, Heating, Ventilating and Air Conditioning, 3-520-05, 14 April 2008

DA PAM 40-501, Hearing Conservation Program, 10 December 1998.

AR 385-10, The Army Safety Program, 23 August 2007; RAR Issue Date: 4 October 2011

National Guard Pamphlet 420-15

Department of Defense

DoDI 6055.12, Hearing Conservation, 3 December 2010

Creating the Ideal Computer Workstation: A Step-by-Step Guide, June 2000

National Institute for Occupational Safety and Health

Current Intelligence Bulletin 50: Carcinogenic Effects of Exposure to Diesel Exhaust, August 1988

U. S. Environmental Protection Agency

Asbestos Hazard Emergency Response Act (40 CFR Part 763)

National Emissions Standards for Hazardous Pollutants (40 CFR Part 61)

U. S. Department of Housing and Urban Development

Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (1995, 1997, 2012)

U. S. Occupational Safety and Health Administration

Standard for General Industry: 29 CFR 1910

OSHA Clarification Letter – Clarification of "as free as practicable" of lead contamination under 29 CFR 1926.62, 13 January 2003.

APPENDIX A

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SHOP DRAWING



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NGMA-FMO-PP

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APPENDIX B

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PERSONNEL LIST

Full Time Personnel

Quincy Armory



Posted to NGB FOIA Reading Room May, 2018

FOIA Requested Record #J-15-0085 (MA) Released by National Guard Bureau Page 3039 of 3473

APPENDIX C

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ANALYTICAL RESULTS

AMA Analytical Services, Inc.

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Attention:

A Specialized Environmental Laboratory

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CERTIFICATE OF ANALYSIS

AIHA LAP, LLC ACCREDITED LABORATORY INDUSTRAL HYGIENE, ENVIRONMENTAL LEAD & ENVIRONMENTAL MICROBIOLOGY ISONEC 17025/2005 www.athuaccreditediatio.org

LAB #100470

Client: Address:	National Guard Bureau 301-IH Old Bay Lane, Attn: ARNG-CJG-P, State Military Reservation	Job Name: Job Location:	MA ARNG 1000 Hancock Street, St. Quincy, MA	Chain Of Custody: Date Submitted:	515478 4/1/2013		
_	Havre de Grace, Maryland 21078	Job Number: P.O. Number:	Quincy RC W912K6-09-A-0003	Person Submitting: Date Analyzed:	Non-Resp 4/8/2013	Neport Date:	4/8/2013

Summary of Atomic Absorption Analysis for Lead

Page 1 of 2

AMA Sample Number	Client Sample Number	Analysis Type	Sample Type	Air Volume (L)	Area Wiped (ft²)	Rep L	orting limit	Total ug	Final Res	ult	Comments
13049878	Quincy RC Wipe-01	Flame	Wipe	****	0.108	110	ug/ft²	58	530	ug/ft²	
13049879	Quincy RC Wipe-02	Flame	Wipe	****	0.108	110	ug/ft²	17	160	ug/ft²	
13049880	Quincy RC Wipe-03	Flame	Wipe	****	0.108	110	ug/ft²	23	220	ug/ft²	
13049881	Quincy RC Wipe-04	Flame	Wipe	****	0.108	110	ug/fl²	22	210	ug/ft ²	
13049882	Quincy RC Wipe-05	Flame	Wipe	****	0.108	110	ug/ft²	47	440	ug/ft²	
13049883	Quincy RC Wipe-06	Flame	Wipe	****	0.108	110	ug/ft²	30	280	ug/ft²	
13049884	Quincy RC Wipe-07	Flame	Wipe	****	0.108	110	ug/ft²	16	150	ug/ft²	
13049885	Quincy RC Wipe-08	Flame	Wipe	****	0.108	110	ug/ft²	68	630	ug/ft²	
13049886	Quincy RC Wipe-09	Flame	Wipe	****	0.108	110	ug/ft²	960	8900	ug/ft²	
13049887	Quincy RC Wipe-10	Flame	Wipe	****	0.108	110	ug/ft²	140	1300	ug/ft²	
13049888	Quincy RC Wipe-FB	Flame	Wipe Blank	****	N/A	12	ug		<12	ug	
13049889	Quincy RC LP-01	Flame	Paint Chip	****	N/A	0.0062	%Рь		0.035	%Pb	
13049890	Quincy RC LP-02	Flame	Paint Chip	****	N/A	0.0059	%Pb		0.4	%Pb	
13049891	Quincy RC LP-03	Flame	Paint Chip	****	N/A	0.0071	%Pb		0.45	%Pb	

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these Laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from us. Sample types, locations, and collection protocols are based upon the information provided by the persons submitting them and, unless collected by personnel of these Laboratories, we expressly disclaim any knowledge and liability for the accuracy and completeness of this information. Residual sample material will be discarded in accordance with the appropriate regulatory guidelines, unless otherwise requested by the client. This report must not be used to claim, and does not imply product certification, approval, or endorsement by NY ELAP, AIHA, or any agency of the Federal Government. All rights reserved. AMA Analytical Services, Inc.

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CERTIFICATE OF ANALYSIS

AIHA LAP, LLC ACCREDITED LABORATORY INCUSTRAL HIGENE, ENVIRONMENTAL LEAD & ENVIRONMENTAL WICROBOLOGY ISONEC 17025-2005 WWW ISONEC 17025-2005 WWW ISONEC 17025-2005 WWW ISONEC 17025-2005

Job Name: MA ARNG Chain Of Custody: 515478 Client: National Guard Bureau 1000 Hancock Street, St. Quincy, MA Address: 301-IH Old Bay Lane, Attn: ARNG-CJG-P, Job Location: 4/1/2013 Date Submitted: State Military Reservation Havre de Grace, Maryland 21078 Job Number: Quincy RC **Person Submitting:** W912K6-09-A-0003 P.O. Number: Date Analyzed: 4/8/2013 **Report Date:** 4/8/2013 Attention: Summary of Atomic Absorption Analysis for Lead Page 2 of 2

AMA Sample Number	Client Sample Number	Analysis Type	Sample Type	Air Volume (L)	Area Wiped (ft²)	Reporting Limit	Total ug	Final Result	Comments
Analysis Method fo Analysis Method F N/A = Not Applicat %Pb = percent lea Note: All samples Note: All results ha	or Flame: Air, Wipes, or Furnace: Air, Wipe ole mg/Kg = part d on a dry weight bas were received in good ave two significant dig idered when interpret	Paints, and Soil/S es, Paints, and So ts per million (ppm is ug = microg I condition unless its. Any additiona ing the result	Golids: EPA 600/F il/Solids : EPA 6 i) on a dry weight rams ug/L : otherwise noted. I digits shown	8-93/200(M)-7000 00/R-93/200(M)-7 basis mg/L = µ = parts per billion	B; Water: SM-311 010; Water: SM- parts per million (p (ppb)	1B See Qo 3113B associa ppm) sample	C Summary for an ated with these es.	nalytical results of qua	lity control samples
Air and Wipe result Final results for air supplied information All results are to be	ts are not corrected fo and wipe samples ar on nor verified by this e considered prelimina	or any blank result e based on client laboratory. ary and subject to	s		Non	-Respons	ive	N	on-Responsive
change unless sign	ned by the Technical I	Director or Deputy			Analyst		Тес	hnical Manager:	

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these Laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from us. Sample types, locations, and collection protocols are based upon the information provided by the persons submitting them and, unless collected by personnel of these Laboratories, we expressly disclaim any knowledge and liability for the accuracy and completeness of this information. Residual sample material will be discarded in accordance with the appropriate regulatory guidelines, unless otherwise requested by the client. This report must not be used to claim, and does not imply product certification, approval, or endorsement by NY ELAP, AIHA, or any agency of the Federal Government. All rights reserved. AMA Analytical Services, Inc.

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APPENDIX D

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PHOTOGRAPHIC LOG





APPENDIX E

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RECOMMENDATIONS FOR SURFACE LEAD DUST IN ARMORIES

Subject: Recommendations for Surface Lead Dust in Armories

- 1. In armories that do not contain childcare facilities, the National Guard Bureau (NGB) Region North Industrial Hygiene Office recommends cleaning the areas in which sample results are greater than 200 micrograms per square foot (µg/ft²). If a special function will be held in which children will be present in this facility, consider thoroughly cleaning the areas that will be accessible to children prior to the function. This guidance is based on professional judgment, risk assessments, adaptation of Occupational Safety and Health Administration (OSHA) guidance, and feasibility of cleaning to a certain level.
 - a. Environmental Protection Agency (EPA) standards (40 Code of Federal Regulations (CFR) 745.227(h)(3)) are not directly applicable because they are criteria for dust-lead hazards developed for floors (40 μ g/ft²) and windowsills (250 μ g/ft²) in residential dwellings and child occupied facilities. A child occupied facility is defined as a building, or portion of a building, constructed prior to 1978, visited regularly by the same child, 6 years of age or under, on at least two different days within any week (Sunday through Saturday period), provided that each day's visit lasts at least 3 hours and the combined weekly visit lasts at least 6 hours, and the combined annual visits last at least 60 hours. Most of the wipe samples in armories were collected in undisturbed areas and therefore, results are worst case scenarios and do not correlate to these standards.
 - b. OSHA has no specific requirement for work area surfaces. The lead standard (29 CFR 1910.1025(h)) states that all surfaces shall be maintained as free as practicable of accumulations of lead dust. In workplaces where lead dust is generated, surface levels may be much higher, but personnel exposures can be controlled by limiting airborne lead levels and following good cleanup and hygienic practices.
 - c. OSHA used to cite a level of 200 μ g/ft² in their Technical Manual and 29 CFR 1926.62 as guidance to its own inspectors for evaluating the cleanliness of lunchroom and locker room surfaces that are supposed to be kept as clean as possible.
 - d. In a report titled Derivation of Wipe Surface Screening Levels for Environmental Chemicals, the US Army Center for Health Promotion and Preventive Medicine (USACHPPM) has determined that 200 μ g/ft² is a safe surface contamination level. They have also applied these standards as the decontamination levels for surfaces in administrative offices.
 - e. It should be noted that levels above these recommendations do not necessarily mean there is a significant hazard to workers who are following good cleaning and hygienic practices since there is no

correlation between wipe and air samples. Rather, we recommend these levels as a precautionary measure.

- 2. The NGB Occupational Health Branch is developing guidance for armories that are used as childcare facilities. All states will receive this guidance when it is completed. In the interim, we recommend the following actions:
 - a. Clean all areas that will be accessible to children to the EPA dust-lead standard for children 6 years of age or under (40 μ g/ft² on floors and 250 μ g/ft² on windowsills).
 - b. Refer to the local authorities' regulations since they can be more stringent than federal regulations.
 - c. Post signs in the area to inform people of the presence of lead dust and its effects.
 - d. If soldiers clean weapons in the facility change the policy so that they cannot clean their weapons in the facility, or if they are allowed to clean their weapons indoors, they must clean the area by wet wiping and mopping the area when they are done.
 - e. If the paint is peeling, contact the state Environmental Office to test for lead content and provide recommendations.
- 3. Air samples collected on individuals in the armory were well below OSHA's permissible exposure limit for lead (29 CFR 1910.1025(c)) of 0.05 milligrams per cubic meter (mg/m³) averaged over an 8-hour day. Therefore, based on these conditions there is currently no overexposure to personnel from lead dust in this building.



Prepared For:

National Guard Bureau Army National Guard Region North Industrial Hygiene Office 301 - IH Old Bay Lane Havre De Grace, Maryland 21078

Prepared By:

URS Corporation 5 Industrial Way Salem, New Hampshire 03079

FINAL INDUSTRIAL HYGIENE SURVEY REPORT SOUTHBRIDGE ARMORY **153 CHESTNUT STREET** SOUTHBRIDGE, MASSACHUSETTS

July 2006 PN: 39741508





Project Manager

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APPENDIX H	POLICY AND RESPONSIBILITIES FOR INSPECTION, EVALUATION

APPENDIX H POLICY AND RESPONSIBILITIES FOR INSPECTION, EVALUATION AND OPERATION OF ARMY NATIONAL GUARD INDOOR FIRING RANGES (NATIONAL GUARD REGULATION 385-15 30 DECEMBER 2002)

FINDINGS AND RECOMMENDATIONS

Findings	Recommendation	Risk Assessment Code							
Lighting									
On the day of the survey, the illuminance in the administrative area was inadequate and the firing range was non-existent.	Increase lighting in the administrative areas. Through use of task lighting. Repair the lights in the Firing Range (ANSI / IESNA RP-1-04)	RAC 4							
Lead									
Lead was detected in wipe samples collected from the firing range in amounts greater than 200 µg/ft ²	Personnel trained in accordance with the OSHA Lead Standard should clean the drill hall where lead was detected in quantities of greater than 200 micrograms per square foot (OSHA 29 CFR 1910.1025(h)(1))	RAC 4							
Asbestos									
Damaged floor tile was present in the kitchen # 17.	Repair or remove asbestos- containing floor tile and tank insulation. Work should be completed by personnel trained in accordance with federal regulations (OSHA 29 CFR 1910.1001(k)(1))	RAC 3							
No site specific asbestos operations and maintenance plan available.	Develop a site specific asbestos operations and maintenance plan to manage asbestos-containing materials (OSHA 29 CFR 1910.1001(j))	RAC 3							
Hazard Communication									
No site specific hazard communication plan available.	Develop a site specific hazard communication plan to manage hazardous materials (OSHA 29 CFR 1910.1200(e))	RAC 4							

SUMMARY 1.0

At the request of the National Guard Bureau (NGB) Region North Industrial Hygiene Office, URS Corporation (URS) conducted an industrial hygiene survey at the Armory located at 153 Chestnut Street in Southbridge, Massachusetts 01550. This report includes an executive summary, a description of the survey protocol, a discussion of the survey evaluation and findings and a list of conclusions and recommendations.

On February 11, 2004, Mr Non-Responsive an industrial hygienist with URS, conducted a site visit to the Armory in Southbridge, Massachusetts. The purpose of this site visit was to conduct an industrial hygiene survey, which included the collection of air samples, bulk samples, lighting measurements, and a review of site health and safety procedures. maintenance worker for the Commonwealth of Mr. on-Massachusetts National Guard was Mr site contact for this survey. Through discussions with Mr. Mr. learned that the Armory has been scheduled for closure. An exact date has not been determined.

A layout drawing of the facility, which shows the locations where measurements were made during this survey, is contained in Appendix A.

2.0 ADMINISTRATIVE AREA

2.1 **Operation Description**

This building area contains multiple offices located throughout the building. Asbestoscontaining pipe insulation is in good condition throughout the facility. There is approximately 10 square feet of asbestos-containing floor tile located in the kitchen.

2.2 **Chemical and Physical Agents Sampled**

2.2.1 **Relative Humidity**

Relative humidity levels were measured using a TSI Q-Track (Model 8551). Relative humidity on the day of the survey averaged 16.6%. This average reading was below the recommended maximum level of 65% set by the American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. (ANSI / ASHRAE Standard 62.1-2004).

2.2.2 Carbon Dioxide

On the day of the survey, carbon dioxide measurements were made at various locations throughout the Armory. Carbon dioxide concentrations ranged from 426 to 778 parts per million (ppm), with an average of 499 ppm. Carbon dioxide levels were measured using a direct reading TSI Q-Track (Model 8551).

Carbon dioxide is a normal constituent of the atmosphere and ranges from about 250 to 450 ppm. The major source of excess carbon dioxide in the indoor environment is people. Other sources can include open-flame heaters, fermentation processes, and motor vehicles. Carbon dioxide itself is not normally a cause of indoor air quality problems because concentrations must exceed 5,000 to 10,000 ppm before health effects such as headache, drowsiness, and increased respiration are noted. Typically, carbon dioxide is used as an indicator of the adequacy of fresh air intake. As the concentration of carbon dioxide increases, so do the background levels of other air contaminants.

ASHRAE (62.1-2004) recommends that levels of carbon dioxide be maintained below 700 ppm above background level. Since the average interior carbon dioxide level was below 700 ppm an exterior reading was not made.

2.2.3 Carbon Monoxide

Carbon monoxide was also measured in the Armory. Carbon monoxide concentrations remained at 0 parts per million (ppm) throughout the survey period. This measured level was below the ASHRAE guideline for indoor environments. Carbon monoxide was measured using a TSI Q-Track (Model 8551).

Key sources of carbon monoxide within indoor environments include internal combustion engines, motor vehicle and forklift exhaust, tobacco smoke, space heaters, and improperly adjusted oil or gas burners. Health effects from exposure to elevated concentrations of carbon monoxide may include fatigue, impairment of visual acuity, irregular heartbeat, headache, nausea, and confusion. ASHRAE recommends that average carbon monoxide concentrations not exceed 9 ppm. Typical average concentrations found in commercial buildings range from 0 to 6 ppm.

2.2.4 Lighting

Lighting in the administrative area was measured using a Sper Scientific Ltd. Light Meter (Model 840020C). Table 2-1 below shows lighting measurements and the recommended lighting requirement (ANSI / IESNA RP -1-04 American National Standard Practice for Office Lighting).

Table 2-1 Lighting Measurements and Recommended Lighting Requirements

Location	Function	Measured Illuminance (foot candles)	Recommended Minimum Illuminance (foot candles)
Kitchen	Administrative Duties	16	50
Orderly Office	Administrative Duties	46	50

On the day of the survey the illuminance in the administrative area was inadequate.

2.2.5 Lead

Wipe testing for lead dust was conducted in the administrative area using ghost wipes, which meet ASTM E 1792 standards. The analytical report from AMA Analytical Services, Inc. (AMA) is contained in Appendix D. Table 2-2 below shows the results of the lead sampling.

Sample Location	URS Sample Number	Area Wiped (ft ²)	Result (µg/ft ²)	Maximum Surface Contamination Level (μg/ft ²)
Orderly Room	0211-15	1.000	41	200
Classroom / Mess Hall	0211-16	1.000	21	200
Blank	0211-09	N/A	<12 μg	N/A

Table 2-2 Levels of Lead Dust Found in the Administrative Area

2.2.6 Asbestos

Bulk samples were collected from damaged suspect asbestos-containing floor tile and mastic (Photo # 0008) in this area for a determination of asbestos content. Analytical procedures were performed in accordance with the U.S. Environmental Protection Agency (EPA) Recommended Method for the Determination of Asbestos in Bulk Samples by Polarized Light Microscopy and Dispersion Staining (PLM/DS)(EPA-600/M4-82-020 EPA-600/R-93-116). Table 2-3 below presents the results of the sample analysis.

Table 2-3 Sample Results of Suspect ACM

Sample Location	Material Sampled	URS Sample Number	Total Asbestos (%)	
Kitchen	9" x 9" Beige Floor Tile	0211-18A	2% chrysotile	
Kitchen	9" x 9" Beige Floor Tile	0211-18B	2% chrysotile	
Kitchen	9" x 9" Beige Floor Tile	0211-18C	2% chrysotile	
Kitchen	Floor Tile Mastic	0211-19A	NAD	
Kitchen	Floor Tile Mastic	0211-19B	NAD	
Kitchen	Floor Tile Mastic	0211-19C	NAD	

NAD = "No Asbestos Detected"

The U. S. Environmental Protection Agency (EPA) states that any material with greater than 1% asbestos must be treated as ACM (U.S. EPA, Title 40 CFR Part 763.87 (c)(2)). The analytical report from AMA Analytical Services, Inc. is contained in Appendix D. Mr.

2.3 Ventilation System Evaluation

Not applicable to this operation.

2.4 Noise Measurements

Not applicable to this operation.

2.5 Personal Protective Equipment

Not applicable to this operation.

2.6 Interpretation of Results

<u>GENERAL</u>: In general, the administrative area was neat and orderly. The fire exits and extinguishers were marked and easily accessible.

<u>LIGHTING</u>: On the day of the survey, the illuminance in the administrative area was inadequate. URS recommends increasing lighting in the few administrative areas. While work is in progress the administrative area must be lighted by at least the minimum light intensities.

<u>ASBESTOS:</u> Samples of the beige floor tile in the Kitchen were determined to contain asbestos in a concentration greater than one percent (Photo # 0008). It is recommended that the damaged tile be replaced with new, non-asbestos tile by an appropriately trained technician.

3.0 FIRING RANGE

3.1 Operation Description

The firing range is now inactive (Photos # 0001 and 0002) and has in the past been used for storage. Lighting was not present in this area due to a loose wire.

3.2 Chemical and Physical Agents Sampled

3.2.1 Lead

Wipe testing for lead was conducted in the former firing range using ghost wipes, which meet ASTM E 1792 standards. The analytical report from AMA is contained in Appendix D. Table 3-1 below shows the results of the lead sampling.

Sample Location	URS Sample Number	Area Wiped (ft ²)	Result (μg/ft ²)	Maximum Surface Contamination Level (μg/ft ²)
Firing Range – East	0211-04	1.00	160	200
Firing Range – West	0211-05	1.00	370	200
Firing Range-Floor – West at bullet trap	0211-10	1.00	230	200
Firing Range-Floor- Light fixture	0211-11	1.00	1700	200
Firing Range-Floor- Duct	0211-12	1.00	2000	200
Blank	0211-09	N/A	<12 μg	N/A

Table 3-1Levels of Lead Dust Found in the Former Firing Range

One air sample for lead dust was also collected in the former firing range. Table 3-2 below shows the result of this air sample.

Table 3-2 Level of Lead Found in the Air

Sample Location	URS Sample Number	Air Volume (L)	Result (µg/m ³)	OSHA's PEL(µg/m ³)
Firing Range	0211-02	330	<9.1	50.0
Blank	0130-LA03	N/A	<3.0 μg	N/A

On the day of the survey, the airborne lead dust level in the former firing range was found to be acceptable, below OSHA's permissible exposure limit (PEL) for lead (29 CFR 1910.1025(c)) of 50.0 µg/m³ averaged over an 8-hour day. The analytical report from AMA is contained in Appendix D.

3.3 Ventilation System Evaluation

Not applicable to this operation.

3.4 **Noise Measurements**

Not applicable to this operation.

3.5 **Personal Protective Equipment**

Not applicable to this operation.

Interpretation of Results 3.6

LIGHTING: The firing range is currently not lighted due to wiring problems.

LEAD: Four of the five surface wipe samples collected in the firing range were found to contain lead dust levels above the maximum limit set by the National Guard Bureau Region North Industrial Hygiene Office (See Appendix G). URS recommends properly trained technicians clean this area. Appendix H contains guidelines for the clean-up and rehabilitation of former indoor firing ranges.

4.0 DRILL HALL

4.1 Operation Description

The drill hall is an approximate 6,000 square foot area with about a 30-foot high ceiling used for assembling personnel and storing equipment. The walls are constructed of cinder-block with a concrete floor.

4.2 Chemical and Physical Agents Sampled

4.2.1 Lead

Wipe testing for lead dust was conducted in the drill hall using ghost wipes, which meet ASTM E 1792 standards. The analytical report from AMA is contained in Appendix D. Table 4-1 below shows the results of the lead sampling.

Sample Location	URS Sample Number	Area Wiped (ft ²)	Result (µg/ft ²)	Maximum Surface Contamination Level (μg/ft ²)
Drill Hall – Northwest	0211-06	1.00	32	200
Drill Hall - Center	0211-07	1.00	50	200
Drill Hall Southeast	0211-08	1.00	42	200
Drill Hall South Center	0211-13	1.00	61	200
Drill Hall –West Center	0211-14	1.00	40	200
Blank	0211-09	N/A	<12 μg	N/A

Table 4-1 Levels of Lead Dust Found in the Drill Hall

One air sample for lead dust was collected in the drill hall. Table 4-2 below shows the result of this air sample.

Table 4-2 Level of Lead Found in the Air

Sample Location	URS Sample Number	Air Volume (L)	Result (µg/m ³)	OSHA's PEL(µg/m ³)
Drill Hall	0211-01	270	<11.0	50.0
Blank	0211-03	N/A	<3.0 µg	N/A

On the day of the survey, the airborne lead dust level in the drill hall was found to be acceptable, below OSHA's permissible exposure limit (PEL) for lead (29 CFR 1910.1025(c)) of 50.0 μ g/m³ averaged over an 8-hour day.

4.3 Ventilation System Evaluation

Not applicable to this operation.

4.4 Noise Measurements

Not applicable to this operation.

4.5 Personal Protective Equipment

Not applicable to this operation.

4.6 Interpretation of Results

LEAD: Wipe samples collected in the Drill Hall were all found to contain lead at a level below the 200 micrograms per square foot limit set by the National Guard Bureau Region North Industrial Hygiene Office (See Appendix G).

5.1 **Operation Description**

The boiler room is a mechanical space constructed of cinder block walls with a concrete floor, containing a furnace and associated piping.

5.2 **Chemical and Physical Agents Sampled**

URS did no sample any chemical or physical agents in this area.

5.3 Ventilation System Evaluation

Not applicable to this operation.

5.4 **Noise Measurements**

Not applicable to this operation.

5.5 **Personal Protective Equipment**

Not applicable to this operation.

5.6 Interpretation of Results

The boiler room was neat and orderly with no damaged asbestos-containing materials or peeling paint.

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6.0 SAFETY AND INDUSTRIAL HYGIENE PROGRAMS

6.1 **Confined Spaces**

No safety program was found regarding confined spaces. No training records were found on site. A confined spaces program is not required for this site.

6.2 **Hearing Conservation**

No safety program was found regarding hearing conservation. No training records were found on site. A hearing conservation program is not required for this site.

6.3 **Respiratory Protection**

No safety program was found regarding respiratory protection. No training records were found on site. A respiratory protection program is not required for this site.

6.4 Hazard Communication

No program was found regarding hazard communication. No training records were found on site. A site-specific hazard communication program is required for this site and should include communication of hazards to employees, management of material safety data sheets, chemical labeling and spill protection.

6.5 **Personal Protective Equipment**

No safety program was found regarding personal protective equipment. No training records were found on site. A personal protective equipment program is not required for this site.

7.0 REFERENCES

American National Standards Institute

ANSI/ESNA RP-1-04: American National Standard Practice for Office Lighting

American Society of Heating Refrigerating and Air-Conditioning Engineers

ANSI/ASHRAE Standard 62.1-2004: Ventilation for Acceptable Indoor Air Quality

Department of the Army

Ergonomics Program Pamphlet 40-21 (15 August 2003)

Policy and Responsibilities For Inspection, Evaluation and Operation of Army National Guard Indoor Firing Ranges (National Guard Regulation 385-15 30 December 2002)

Department of Defense

DoD Hearing Conservation Program Standard 6055.12 April 1996

Creating an Ideal Workstation: A Step-by-Step Guide

U.S. Environmental Protection Agency

Asbestos Hazard Emergency Response Act (40 CFR Part 763)

National Emissions Standards for Hazardous Pollutants (40 CFR Part 61)

U.S. Housing and Urban Development

Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (1995, 1997)

U. S. Occupational Safety and Health Administration

Standard for General Industry: 29 CFR 1910

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APPENDIX A

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ARMORY DRAWING

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APPENDIX B

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PERSONNEL LIST

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APPENDIX C

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HAZARDOUS MATERIALS LIST

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APPENDIX D

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ANALYTICAL RESULTS


Summary of Atomic Absorption Analysis for Lead

AMA Sample Number	Client Sample Number	Analysis Type	Sample Type	Air Volume (L)	Area Wiped (R ^a)	Rep L	ertiog imit	3	final Re	sult	Comments
0451571	021B-01	Flame	Air	293	N/A	10.24	ug/m³	<	10	ug/m²	
0451592	0211-04	Flame	Wipe	****	1.000	12.00	ug/ftª		160	ug/ftª	
0451593	0211-04	Flame	Wipe	****	1.000	12.00	ug/ff		370	ug/ft²	
0451594	0211-05	Flame	Wipe	****	1.000	12.00	ug/ft=		32	ug/11*	
0451595	0211-07	Flame	Wipe		1.000	12.00	ug/ft²		50	ug/fP	
0451596	0211-08	Flame	Wipe		1.000	12.00	ug/ft ²		42	og/ff*	
0451597	0211-09	Flame	Wipe Blank	****	N/A	12.00	ug	<	12	ug	
0451598	0211-01	Flame	Air	270	N/A	11.11	ug/m*	<	н	ug/m*	
0451599	0211-02	Flame	Air	330	N/A	9.09	ug/m²	<	9.1	ug/m³	
0451600	0211-03	Flame	Air Blank	0	N/A	3.00	ug/m²	<	3	ug	

Analysis Method for Flame: Air, Wiges, Paints, and Soll/Solids: EPA 600/R-93/200(M)-7420; Water: SM-3111B

Analysis Method For Furnace: Air, Wipes, Paints, and Soll/Solids ; EPA 600/R-93/200(M)-7421; Water: SM-3113B

N/A = Not Applicable mg/Kg = parts per million (opm) by weight mg/L = parts per million (ppm)



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Analyse Test and transmission electron microscopy of ABERA air samples. This report must not be used to claim, and dees not imply product certification, approval, or enfortement? A Analysis are well transmission electron microscopy of ABERA air samples. This report must not be used to claim, and dees not imply product certification, approval, or enfortement? A Analysis are well transmission electron microscopy of ABERA air samples. This report must not be used to claim, and dees not imply product certification, approval, or enfortement? A Analysis are well transmission electron microscopy of ABERA air samples. This report must not be used to claim, and dees not imply product certification, approval, or enfortement? A Analysis are well to claim, and dees not imply product certification, approval, or enfortement? A Area View of the reactions are based upon the examples. This report must not be used to claim, and dees not imply product certification, approval, or enfortement? A Area View of the reactions are based upon the examples. This report must not be used to claim, and dees not imply product certification, approval, or enfortement? A Area View of the reactions are based upon the information electron microscopy of ABERA air samples. This report must not be used to claim, and dees not imply product certification, approval, or enfortement? A Proveduation of the PRIX (2001) 459-2643

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Client:	National Guard Bureau	Job Name:	Агтогу	Chain Of Custody:	128495	AIHA	
Address:	301-III Old Bay Lane, Attn: NGB-AVN-SI, State Military Reservation	Job Location:	Southbridge, MA	Date Analyzed:	06/16/2004		
	Havre de Grace, Maryland 21078	Job Number:	Not Provided	Person Submitting:			
		P.O. Number:	Not Provided		8		
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Summary of Polarized Light Microscopy

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AMA Sample Number	Client Sample #	Total Asbestos	Chrysotile Percent	Amosite Percent	Crocidolite Percent	Other Asbestos Percent	Mineral Wool Percent	Fiberglass Percent	Organic Percent	Synthetic Percent	Other Percent	Particulate Percent	Sample Color	Analyst ID	Comments
			····			···		1. a.e.							
0451601	0211-18 A	2	2	19 <u>04</u> -1	-	744	•			-		98	Beige	PC	
0451602	0211-18 B	2	2	1977	: 	275		73 .		9 55 0	275	98	Beige	PC	
0451603	0211-18 C	2	2	522	322			-	-			98	Beige	PC	
0451604	0211-19 A	NAD						••	2			98	Black	PC	
0451605	0211-19 B	NAD		-	122	0 <u>85</u>			3	-	322	97	Black	PC	
0451606	0211-19 C	NAD				-			TR			100	Black	PC	

The following footnotes only apply to those samples which the total asbestos result is flagged with a note number.

- TEM RECOMMENDATION Please note, due to resolution limitations with optical microscopy and/or interference from matrix components of this sample, results which are reported via PLM as negative 1 or trace (<1%) for asbestos may contain a significant quantity of asbestos. It is recommended that the additional analytical technique of TEM be used to check for asbestos fibers below the resolution limits of optical microscopy.
- MATRIX REDUCTION RECOMMENDATION Please note, due to interference from the matrix components of this sample, results which are reported via PLM as negative or trace (<1%) for asbestos may 2 contain a significant quantity of asbestos which is obscured from view. It is recommended that the additional preparation technique of gravimetric reduction be performed on this sample to minimize the obscuring effects of matrix components, followed by reanalysis by PLM and/or TEM.

Analysis Method - EPA/600/R-93/116 dated July 1993

NAD = "No Asbestos Detected"

TR = "Trace equals less than 1% of this component"



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AMA Analytical Services, Inc.



A Specialized Environmental Laboratory

CERTIFICATE OF ANALYSIS



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AMA Sample Number	Client Sample Number	Analysis Type	Sample Type	Air Volume (L)	Area Wiped (ft ²)	Rep L	orting limit	F	inal Res	ult	Comments	
0542009	0211-10	Flame	Wipe	****	£.000	12.00	ug/ft²	: 11	230	ug/ft²		
0542010	0211-11	Flame	Wipe	****	1.000	12.00	ug/ft²		1700	ug/fi²		
0542011	0211-12	Flame	Wipe	****	1.000	12.00	ug/ft²		2000	ug/ft²		
0542012	0211-13	Flame	Wipe	****	1.000	12.00	ug/ft²		61	ug/ft²		
0542013	0211-14	Flame	Wipe	****	1.000	12.00	ug/ft²		40	ug/N²		
0542014	0211-15	Flame	Wipe	****	1.000	12.00	ug/it²		41	ug/ft²		
0542015	0211-16	Flame	Wipe	****	1.000	12.00	ug/ll²		21	ug/ft ²		6
0542016	0211-17	Flame	Wipe Blank	****	N/A	12.00	ug	<	12	ug		
	Et. Alexandre	B	Educ EDA COOLD OOL	000/0 T (00. Web	Chi Statan	C 00	Cumment for	mahdia	al manult	a of quality as	stral associas	

Analysis Method for Flame: Air, Wipes, Paints, and Soil/Solids: EPA 600/R-93/200(M)-7420; Water: SM-3111B Analysis Method For Furnace: Air, Wipes, Paints, and Soli/Solids : EPA 600/R-93/200(M)-7421; Water: SM-3113B mg/Kg = parts per million (ppm) by weight mg/L = parts per million (ppm) N/A = Not Applicable

ug/L = parts per billion (ppb)

ug = micrograms

See QC Summary for analytical results of quality control samples associated with these samples.



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APPENDIX E

TRAINING CERTIFICATES

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From-URS CORPORATION

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APPENDIX F

PHOTOGRAPHS

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APPENDIX G

RECOMMENDATIONS FOR SURFACE LEAD DUST IN ARMORIES

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1.1

Subject: Recommendations for Surface Lead Dust in Armories

1. In armories that do not contain childcare facilities, the National Guard Bureau (NGB) Region North Industrial Hygiene Office recommends cleaning the areas in which sample results are greater than 200 micrograms per square foot (μ g/ft²). If a special function will be held in which children will be present in this facility, consider thoroughly cleaning the areas that will be accessible to children prior to the function. This guidance is based on professional judgment, risk assessments, adaptation of Occupational Safety and Health Administration (OSHA) guidance, and feasibility of cleaning to a certain level.

a. Environmental Protection Agency (EPA) standards (40 Code of Federal Regulations (CFR) 745.227(h)(3)) are not directly applicable because they are criteria for dust-lead hazards developed for floors (40 µg/ft²) and windowsills (250 µg/ft²) in residential dwellings and child occupied facilities. A child occupied facility is defined as a building, or portion of a building, constructed prior to 1978, visited regularly by the same child, 6 years of age or under, on at least two different days within any week (Sunday through Saturday period), provided that each day's visit lasts at least 3 hours and the combined weekly visit lasts at least 6 hours, and the combined annual visits last at least 60 hours. Most of the wipe samples in armories were collected in undisturbed areas and therefore, results are worst case scenarios and do not correlate to these standards.

b. OSHA has no specific requirement for work area surfaces. The lead standard (29 CFR 1910.1025(h)) states that all surfaces shall be maintained as free as practicable of accumulations of lead dust. In workplaces where lead dust is generated, surface levels may be much higher, but personnel exposures can be controlled by limiting airborne lead levels and following good cleanup and hygienic practices.

c. OSHA used to cite a level of 200 μ g/ft² in their Technical Manual and 29 CFR 1926.62 as guidance to its own inspectors for evaluating the cleanliness of lunchroom and locker room surfaces that are supposed to be kept as clean as possible.

d. In a report titled Derivation of Wipe Surface Screening Levels for Environmental Chemicals, the US Army Center for Health Promotion and Preventive Medicine (USACHPPM) has determined that 200 μ g/ft² is a safe surface contamination level. They have also applied these standards as the decontamination levels for surfaces in administrative offices.

e. It should be noted that levels above these recommendations do not necessarily mean there is a significant hazard to workers who are following good cleaning and hygienic practices since there is no correlation between wipe and air samples. Rather, we recommend these levels as a precautionary measure.

2. The NGB Occupational Health Branch is developing guidance for armories that are used as childcare facilities. All states will receive this guidance when it is completed. In the interim, we recommend the following actions:

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a. Clean all areas that will be accessible to children to the EPA dust-lead standard for children 6 years of age or under (40 μ g/ft² on floors and 250 μ g/ft² on windowsills).

b. Refer to the local authorities' regulations since they can be more stringent than federal regulations.

c. Post signs in the area to inform people of the presence of lead dust and its effects.

d. If soldiers clean weapons in the facility change the policy so that they cannot clean their weapons in the facility, or if they are allowed to clean their weapons indoors, they must clean the area by wet wiping and mopping the area when they are done.

e. If the paint is peeling, contact the state Environmental Office to test for lead content and provide recommendations.

3. Air samples collected on individuals in the armory were well below OSHA's permissible exposure limit for lead (29 CFR 1910.1025(c)) of 0.05 mg/m³ averaged over an 8-hour day. Therefore, based on these conditions there is currently no overexposure to personnel from lead dust in this building.

APPENDIX H

POLICY AND RESPONSIBILITIES FOR INSPECTION, EVALUATION AND OPERATION OF ARMY NATIONAL GUARD INDOOR FIRING RANGES (NATIONAL GUARD REGULATION 385-15 30 DECEMBER 2002)

NGB-AVS-SG SUBJECT: All States (Log Number P01-0075) Army National Guard (ARNG) Safety and Occupational Health Program – POLICY AND RESPONSIBILITIES FOR INSPECTION, EVALUATION AND OPERATION OF ARMY NATIONAL GUARD INDOOR FIRING RANGES

ADDENDUM

GUIDELINES FOR IFR REHABILITATION, CONVERSION, AND CLEANING

CONTENTS (Listed by paragraph number)

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Contaminated Sand and Lead Waste	11
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Appendices

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Appendix A - General Procedures for Collecting Wipe Samples

Appendix B - Sampling Strategy for Collection of Wipe Samples

Appendix C - Interpretation of Sample Results (Prior to Cleaning)

Appendix D - Interpretation of Sample Results (After Cleaning)

Appendix E - Recommended Sample Media and Containers

Appendix F - Examples of Computation of Lead Levels from Wipe Sample Results

Appendix G - Surface Wipe Sample Sheet

Appendix H - Air Sampling Sheet

Appendix I - Glossary

Purpose

1. This addendum establishes policy and procedures for rehabilitation, conversion, and cleaning of ARNG indoor firing ranges.

2. References

Related publications are listed below.

a. DODI 6055.1 (Department of Defense Instruction, Occupational Safety and Health (OSH) Program).

- b. AR 11-34 (The Army Respiratory Protection Program).
- c. AR 40-5 (Preventive Medicine).

d. NGR 385-15 Policy, Responsibilities, and Procedures for Inspection, Evaluation, and Operation of ARNG Indoor Firing Ranges).

e. 29 Code of Federal Regulations (CFR), Part 1910, Occupational Safety and Health Standards

f. OSHA Technical Manual, Edition VII.

g. DHEW NIOSH 76-130 (Lead Exposure and Design Considerations for Indoor Firing Ranges).

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SUBJECT: All States (Log Number P01-0075) Army National Guard (ARNG) Safety and Occupational Health Program – POLICY AND RESPONSIBILITIES FOR INSPECTION, EVALUATION AND OPERATION OF ARMY NATIONAL GUARD INDOOR FIRING RANGES

Explanation of Abbreviations and Terms

Abbreviations and special terms used in this publication are listed in the glossary.

4. Policy and Procedures

Conversion of Ranges. Indoor firing ranges can be safely rehabilitated or converted for other uses, such as a storage area, kitchen, or office space, provided the following -

a. Previously active ranges must be thoroughly decontaminated and cleaned to acceptable levels.

b. The level of cleanliness is to be determined by sampling. The Occupational Safety and Health Administration's (OSHA) Technical Manual, ^{5th} Edition, provides guidance on the methods and techniques needed to collect wipe samples (Appendix A).

(1) Wipe samples must be collected and analyzed prior to and after cleaning.

(2) Post-cleaning surface wipe sample results must be less than or equal to 200 micrograms per square feet (ug/sq ft). The sampling strategy, which is the amount and location of wipe samples to be collected, is provided in Appendix B. Methods for interpreting the sample results are contained in Appendix C and D.

c. Equipment/Items previously stored in the range must be decontaminated and cleaned to acceptable levels.

(1) Samples must be collected from equipment/items stored in the range. Sample selection is critical, because the number of items stored and length of storage differs from range to range. The amount and location of the samples, should be representative of the areas where lead dust is most likely to accumulate. The more samples collected, the better the statistical comparison of the results.

(2) Samples must be collected from the smooth surfaces of the equipment/Items, in so much as possible. Results of samples collected from a rough surface will be inaccurate due to the minimal surface contact of the media. Further, the likelihood of tearing the media filter is greater on rough surfaces.

(3) Samples should also be collected on items stored the longest period of time, and which have not been disturbed. Items stored closest to the bullet trap and firing line are likely to have higher concentrations of lead dust. Methods for interpreting the sample results are contained in Appendix C and D.

5. Goal

To ensure every indoor firing range is free of lead dust, and to reduce the number of unsafe ARNG indoor firing ranges.

6. Background

The Environmental Protection Agency (EPA) identifies lead as a highly toxic metal. Elemental lead is indestructible, and common in the environment. Lead can enter the body by inhalation (breathing) or ingestion (eating). In addition, lead is a cumulative poison. It accumulates in the blood, bones, and organs, including the kidneys, brain and liver. Effects include nervous and reproductive system disorders, delays in neurological and physical development, cognitive and behavioral changes, and hypertension. Symptoms include loss of appetite, difficulty sleeping, irritability, fatigue, headache, and inability to concentrate. It can stay in the bones for decades. Worker awareness and training are important to ensure that employees can recognize the symptoms of exposure and get prompt medical attention.

7. Wipe Sample Media

a. OSHA Technical Manual provides the necessary guidance on the technique needed to collect wipe samples (Appendix A). Only distilled or deionized water will be used to saturate dry sample media. At least one field blank filter must be submitted with each sample sheet. The field blank must be from the same lot, and labeled as a blank on the sample sheet. Appendix E identifies how and where to obtain sample media. Use the following guidance for determining media acceptability.

(1) Acceptable Media consists of -

(a) Ghost Wipes™ (PREFERRED METHOD)- Pre moistened

(b) Thirty-seven (37) millimeters (mm) mixed cellulose ester (MCE) filters, with or without the cassettes.

(b)Eleven (11) centimeter (cm)/diameter Whatman ///#40 paper

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(2) Unacceptable Media consists of but is not limited to-

- (a) Cotton balls
- (b) Baby wipes or wet wipes

b. Documentation of Sample Collection. A Surface Wipe Sample Sheet must be completed and submitted with samples to your supporting laboratory. A copy of this form is located in Appendix G. Refer to Appendix A on how to collect wipe samples.

8. Wipe Sampling Protocol

See Appendix A.

9. Ranges Cleaning Instructions

a. Written procedures, such as a scope of work, or Standing Operating Procedure (SOP) that complies with all federal, state and local regulations must be established prior to decontamination operations. The range ventilation system will be in operation during range cleaning to ensure that a negative pressure environment is maintained. In the absence of mechanical ventilation system, all doors and windows will be sealed to eliminate fugitive emissions. A High Efficiency Particulate Air (HEPA) filtered vacuum system is the preferred method of cleanup followed by wet wiping of the range. The HEPA vacuum is designed to collect loose surface lead dust particles.

b. Any general purpose cleaning solution can be used. However, Spic and Span[™] has been found to be an effective cleaning solution by other Army organizations. Mix new solutions of cleaning solution frequency. Wet wiping will require dual containers of water; one container for wetting the applicator (mops, rags, sponge, etc.) and the other container for rinsing the applicator after the dust has been wiped from the surfaces. When placed in containers, wastewater should be left to evaporate.

c. PROPERLY DISPOSE OF ALL HAZARDOUS WASTE. DO NOT PLACE LEAD CONTAMINATED WASTE INTO THE SEWER SYSTEM OR ONTO THE GROUND.

d. Mop-heads, sponges and rags will be discarded as hazardous waste following cleanup.

e. Wet cleaning by a high-pressure system is prohibited, as this method may embed the lead into the substratum and generate large quantities of unwanted hazardous waste.

f. Dry sweeping is not permitted.

g. All surface areas of the range must be cleaned. Do not remove the coating on smooth painted surfaces that are properly sealed.

h. Wood floors should receive a coat of deck enamel or urethane; concrete floors should be sealed with deck enamel and linoleum or tile floors should be waxed.

i. A progression of cleaning from top to bottom and from behind the steel backstop to the firing line should be used. After removing the sand, if applicable, and the steel backstop, areas in front of and behind the bullet trap along with the steel backstop plate(s) should be cleaned. Next, clean the ceiling, lights, baffles, retrieval system, heating system(s), and ventilation duct(s). Acoustical material should be vacuumed and removed rather than painted over.

j. A Toxic Characteristic Leaching Procedures (TCLP) test for lead only may need to be performed on the acoustical material. A TCLP test will determine if the material is classified as "hazardous" and can be disposed of in a sanitary landfill. Contact your State Environmental Office for assistance before arranging for this laboratory testing. The floor should be the last surface cleaned, starting at the bullet trap and ending behind the firing line.

k. After wet wiping all surfaces, permit the area to dry. Vacuum all surface areas until no dust or residue can be seen using the HEPA.

 A thorough visual inspection to detect dust should be made following cleanup and prior to collecting post surface wipe samples.

m. As a variety of conditions exist in ranges, unique situation may arise and specific written guidance from your Regional Industrial Hygiene Office may be required.

10. Cleaning Stored Contaminated Equipment

a. Equipment contaminated (sample result is higher than 200 micrograms/sq ft) with lead dust must be decontaminated before it is removed from the range.

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b. Equipment located near the bullet trap and firing line should be cleaned first and then removed. The cleaning method depends on the size of the equipment and the material it is comprised of, i.e. metal, wood, concrete, porus, non-porus, smooth or rough finish etc. However, either HEPA vacuum or the wet wipe method will be used. Refer to paragraph 9 for additional guidance.

c. Every attempt should be made to clean and reclaim items since disposing of equipment, as hazardous waste is costly and wasteful. Only as a last resort will the item be discarded as hazardous waste. Porous items, such as office partitions and carpet that were present during firing should be considered grossly contaminated and be discarded unless analysis proves otherwise. Consult your State Environmental Office for the proper hazardous waste disposal methods.

11. Contaminated Sand and Lead Waste

Consult your State Environmental Office for specific disposal guidance to ensure compliance with local laws and regulations.

12. Medical Surveillance

a. A pre-placement medical examination is required for all individuals involved with range cleanup operations. Consult 29 CFR 1910.1025 for additional information on medical surveillance requirements. A medical examination must include—

- (1) A detailed work and medical history
- (2) A thorough physical examination
- (3) A respirator use evaluation
- (4) A blood pressure measurement
- (5) Blood sample analysis to include:
 - (a) A baseline blood lead level
 - (b) A complete blood count (CBC)
 - (c) Blood urea nitrogen (BUN)
- (6) Serum creatinine
- (7) Zinc protoporphyrin
- (8) A routine urine analysis
- (9) Recordkeeping

b. Air Monitoring. Worker breathing zone (BZ) air samples must be collected to ensure personnel are not overexposed to airborne lead during the cleanup phase. Representative air samples will be collected on all personnel involved in the cleanup operation. These exposure levels will be used to evaluate work practices and personal protective equipment. Within five (5) working days after receipt of monitoring results, each employee will be notified in writing of the air sampling results. Contact your Regional Industrial Hygiene Office for additional information pertaining to air sampling.

13. Worker Education

OSHA 29 CFR 1910.1025 requires that workers who are potentially exposed to any lead level shall be informed of the content of Appendix A and B of this standard. A training program must be instituted for all individuals who are subject to exposure to lead at or above the action level or for whom the possibility of skin or eye irritations exists. The training program shall be repeated for personnel currently involved in range cleanup operations, at least annually, this training must be documented on DD Form 1556 or DD Form 1556-1 and filed permanently in the employee's Official Personnel File (OPF) or the soldier's Official Military Personnel File (OMPF). As a minimum, complete blocks 1, 2, 3, 7, 8, 11, 12, 13, 17, 18, 24, 33 and 36 of DD Form 1556. Place the following statement in block 18, "Do not destroy, retain this record for the duration of employment/service plus 30 years." The employer will assure that each employee is informed of the following:

- a. The content of the standard and its appendices.
- b. The specific nature of operations that could result in exposure to lead above the action level.
- c. The purpose, proper selection, filling, use and limitations of respirators.
- d. The purpose and a description of medical surveillance program.
- e. Ealing and drinking are prohibited in lead contaminated areas.
- f. Smoking and smoking materials will not be permitted in contaminated areas.

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- g. Employees must wash their hands and other exposed skin whenever they leave the work area.
- h. The engineering controls and work practices associated with the individual's job assignment.
- i. The contents of any compliance plan in effect.

14. Personal Protective Equipment

For housekeeping and rehabilitation the employer shall select respirators from among those approved for protection against lead dust, fume, and mist by the National Institute for Occupational Safety and Health (NIOSH). The employer shall institute a respiratory protection program in accordance with 29 CFR 1910.134. As a minimum, personnel conducting the decontamination of the range will be provided with the following personal protective equipment.

a. Employees engaged in range rehabilitation and/or range conversion, the employer shall provide at no cost to the employee, and assure that the employee uses appropriate protective work clothing and equipment such as, but not limited to:

- (1) Protective coveralls with hood and shoe covers or disposable Tyvek ™ full body suit.
- (2) Disposable rubber gloves; and disposable shoe coverlets (If necessary).
- (3) Full-face air purifying respirator with P-100 cartridges.

b. The employer shall provide the clothing required in a clean and dry condition at least daily to employees engaged in the conversion of indoor firing ranges.

c. The employer shall provide for the cleaning, laundering, or disposal of used or contaminated protective clothing and equipment.

d. The employer shall assure that all protective clothing is removed at the completion of a work shift only in areas designated for that purpose (Change Areas or Change Rooms).

e. The employer will ensure that contaminated protective clothing that is to be cleaned, laundered, or disposed of, is placed in a closed container in the change area that seals sufficiently enough to prevent dispersion of lead dust.

f. The employer will further inform in writing any person who cleans or launders protective clothing or equipment of the potentially harmful effects of exposure to lead.

15. Housekeeping

This chapter applies to all active indoor ranges classified as "safe" for use. To keep the range operating properly and to keep possible hazards to a minimum, a routine housekeeping/ maintenance program is essential.

a. The employer must establish a housekeeping program sufficient to maintain all surfaces as free as practicable of accumulations of lead dust. To this end the range will be clean at the conclusion of each firing day.

b. The range ventilation system will be in operation during all cleaning operations, to ensure a negative pressure environment is maintained.

c. Ranges will be cleaned by using the wet method or vacuuming. A HEPA (High Efficiency Particulate Air) filtered vacuum system is the preferred method of meeting this requirement. The use of compressed air to clean floors is absolutely prohibited. If the wet method is utilized the floor should be equipped with a floor drain, and collection system. When there is no collection system, the water can be allowed to slowly evaporate leaving lead deposits/sludge. The deposits/sludge can then be collected, placed in metal drums, and stored for future delivery to an authorized hazardous waste disposal site. Drums must be labeled to identify contents, in accordance with the hazardous waste program.

d. A NIOSH approved respirator (P-100) for protection against lead dust, fume, and mist will be worn at all times while cleaning.

e. When cleaning start behind the firing line forward, cleaning the floor and horizontal surfaces.

16. Maintenance

The following are the minimum maintenance requirements, which must be performed quarterly by the range custodian, or by a person designated by the facility commander.

a. Inspect the ventilation system fan for condition of belts to ensure that they are not frayed or slipping.

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b. Evaluate static pressure and compare to the baseline static pressure reading. Any changes will be reported through the safety manager to the Regional Industrial Hygienist.

c. Inspect Louvers, if applicable, to ensure they are opening fully.

d. Inspect the bullet trap for pitting or other damage and for sharp edges on venetian blind type bullet traps.

e. Bullet Trap. The bullet trap will be cleaned every 480 hours of operation at a minimum, or when the trap is three guarters full.

f. The range ventilation system will be operational during all bullet trap cleaning procedures.

g. All personnel involved in cleaning of the bullet trap will wear a NIOSH approved respirator, and proper personal protective equipment.

h. All debris from the bullet trap will be collected, package and turned in, in accordance with guidance from the environmental office.

17. Range Rehabilitation.

This chapter applies to all indoor firing ranges that have been identified as candidates for rehabilitation. This chapter further provides guidance for cleaning and/or sampling that might be required prior to the start of rehabilitation.

a. The portion(s) of the range to under go rehabilitation must be sampled to determine the level of lead contamination. Wipe samples will be taken per the established sampling protocol. See Appendix A.

b. All personnel involved in range rehabilitation will wear a NIOSH approved respirator (P-100), and proper personal protective equipment as prescribed in paragraph 14 above.

c. Prior to start of rehabilitation the environmental office must be notified to determine the disposition of lead containing debris.

18. Conversion of Indoor Ranges

Prior to the start of decontamination, employers must ensure that all procedures to be used comply with Federal, State, and local regulations. To ensure that all lead contamination is removed the following procedure is established.

a. All ranges slated for conversion will be inspected and evaluated.

b. All equipment stored in the range, if applicable, prior to the start of decontamination must be sampled, decontaminated, re-sampled and removed or turned in as lead contaminated material. See paragraph 10 above.

c. All acoustical tiles and/or sound proofing material (if applicable) must be removed and turned in as lead contaminated material through the environmental office.

d. The backstop, bullet trap, target retrieval system and firing line stations must be removed and turned in as lead containing material through the environmental office.

e. Light fixtures and ventilation system grills must be removed and decontaminated.

f. Ventilation system ducts need to be decontaminated or removed and replaced.

g. The exhaust fans and/or the complete ventilation air-handling unit (if applicable) must be decontaminated or removed.

 h. Cover all openings of any component previously decontaminated prior to start of interior decontamination of the firing range.

19. Deviation

Deviations from this guidance will require a written exception to policy from your Regional Industrial Hygiene Office. Questions and/or comments regarding this subject should be directed to your Regional Industrial Hygiene Office or Chief, National Guard Bureau, Attn: NGB-AVS-S, 111 South George Mason Drive, Arlington, VA 22204-1382.

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APPENDIX A GENERAL PROCEDURES FOR COLLECTING WIPE SAMPLES

A-1 If multiple samples are to be collected at the work site, prepare a rough sketch of the area(s) or room(s), which are to be wipe sampled.

A-2 A new set of clean, impervious gloves should be used for each sample to avoid contamination of the media by previous samples and to prevent contact with the substance.

A-3 (1) If using Ghost Wipes[™], tear open the individually sealed package. Remove the moistened wipe. Unfold the wipe.

(2) If using a dry media such as MCE or Whatman[™] filter, moisten the filter with distilled or deionized water prior to sampling.

A-4 Place a 10 cm by 10 cm template on the area to be wiped.

A-5 Apply uniform firm pressure while wiping the area inside the template.

A-6 To insure that all portions of the partitioned area are wiped, start at the outside edge and progress toward the center making progress toward the center making concentric squares decreasing in size.

A-7 After collecting a sample, fold the filter or wipe inward and place into a container and number it. Note the number at the sample location on the sketch.

A-8 At least one blank filter treated in the same fashion but without wiping, should be submitted to the laboratory.

APPENDIX B

SAMPLING STRATEGY FOR COLLECTION OF WIPE SAMPLES

B-1 Prior to cleaning the ranges, the three samples must be collected and analyzed for total lead dust on each surface, i.e., floor, ceiling, backstop, and wall to include the plenum wall, if applicable. In addition, a total of 3 samples should be collected from areas which have been least disturbed by airflow. Established walkways should be avoided.

B-2 Samples should be staggered to different areas of the range. A grid system should be utilized. Each range surface areas should be divided evenly into 3 by 3 sections. Samples should not be collected on all one section of a wall or end of the building.

APPENDIX C

INTERPRETATION OF SAMPLE RESULTS (PRIOR TO CLEANING)

C-1 200 micrograms/sq ft or LESS

If all sample results are 200-micrograms/sq ft or less, the range can be converted and/or used for any purpose.

C-2 BETWEEN 201 and 200,000 micrograms/sq ft

Range must be decontaminated. Continued with cleaning instructions listed in paragraph 9 Sample results will be used to establish a baseline.

C-3 Over 200,000 micrograms/sq ft

Your sample media may not be capable of collecting additional lead dust and results that are above 200,000 micrograms/sg ft, and should be considered suspect.

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APPENDIX C (Continued)

C-4 High sample results may exist due to personnel walking or moving equipment/vehicles over the range surface causing the lead dust to be "ground" into the substratum. For examples, a maintenance activity may have oversprayed paint or spilled solvents onto the surface Regional Industrial Hygiene Office for specific guidance.

APPENDIX D

INTERPRETATION OF SAMPLE RESULTS (AFTER CLEANING)

D-1 200 micrograms/sq. ft or less

If all sample results are less than 200 micrograms/sq ft, the range can be converted and/or used for any purpose after a coat of lead-free latex paint is applied.

APPENDIX E

RECOMMENDED SAMPLE MEDIA AND CONTAINERS

E-1 The following is a list of vendors, which supply the media and containers necessary to collect air and lead surface wipe samples. The information is provided to assist in obtaining the proper media and containers. Alternative vendors are available and may be utilized, if known. Contact your Regional Industrial Hyglene Office for additional assistance or clarification.

E-2 Pre-loaded 3 piece cassette with mixed cellulose ester (MCE) filter and pad, 37 millimeter (mm), pore size 0.8 microns, breathing zone (BZ) and general area (GA) air samples.

Order From Catalog Number

- a. Millipore Corp. MAWP-037-A0 Ashdy Road Bedford, MA 01730 617-275-9200 800-225-1380
- b. Gelman Sciences 64678 (GN-4) 600 South Wagner Rd Ann Arbor, MI 48106 313-665-0651 800-521-1520
- c. Supelco. Inc. 2-3368M Supelco Park Bellefonte, PA 16823 800-247-6628 800-359-3041

E-3 37 mm MCE Filter with pad, no cassette included, for lead surface wipe samples.

Order From Catalog Number

a. Supelco Inc. 2-33811M Supelco Park Bellefonte, PA 16823

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APPENDIX E (Continued)

800-247-6628 800-359-3041

b. Millipore Corp. AAWP-037-00 Ashdy Road Bedford, MA 01730 617-275-9200 800-225-1380

c. SKC, Inc. 225-5 334 Valley View Rd. Eighty Four, PA 15330 412-941-9701 800-752-8472



- a. Pierce Chemical Co. 13219 (screw cap) P.O. Box 117 Rockford, IL 61105 815-968-0747 800-874-3723
- b. Alltech Associates, Inc. 95321 (screw cap) Applied Science Labs 2051 Waukegan Rd. Deerfield, IL 60015 312-948-8600

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APPENDIX E (Continued)

800-255-8324

E-6. Ghost Wipes™.

Order From Catalog Number

Environmental Express SC4200 490 Wando Park Blvd. Mt. Pleasant, SC 29464 1-800-343-5319

E-7. Ghost Wipe™ Containers

Order From Catalog Number

Environmental Express SC499 490 Wando Park Blvd. Mt. Pleasant, SC 29464 1-800-343-5319

E-8. Plastic ziplock bags can be obtained through the Army logistics system. Many sizes are available. Contact your supporting logistics branch for assistance.

E-9. Distilled water can be purchased at larger grocery stores, usually by the gallon, at a cost of approximately \$1.25. Deionized water can be obtained at local and state water labs or a hospital.

APPENDIX F EXAMPLES OF COMPUTATION OF LEAD LEVELS FROM WIPE SAMPLE RESULTS

Sample results will be returned in the form of micrograms. The results must be converted to micrograms per square foot. This can be accomplished by following the examples listed below:

75 ug	92	29 cm ²		
100 cm^2		1 sq ft		
75 x <u>929</u>	=	69675	=	696.75ug/sq ft
100		100		

ug - Microgram

Cm2 - Centimeters squared

Sq ft - Square foot

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APPENDIX G SURFACE WIPE SAMPLING SHEET

•			Point of Cor	itact (name & phone #)			
Return Address							
			Samples Collected By				
Sampled Facility	Sampled Facility City			Location (bldg/area)			
Description of Or	peration		Date Collect	ed Date Shipped			
AnalysIs Desired							
Sampling Data							
Lab Use Only	Sample #	Resu	lts	Remarks			

1

Station Station

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APPENDIX I (Continued)

Section II Terms

HEPA

Refers to high efficiency particulate air filter systems capable of capturing up to 99.97 percent of particles 0.3 microns in size or larger.

Lead-Contaminated Range

It is assumed that all indoor ranges, which have been fired in, are lead-contaminated.

Wipe Sample

The terms wipe, swipe, or smear samples are use synonymously to describe the techniques utilized for assessing lead surface contamination.

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Prepared For:

National Guard Bureau Army National Guard Region North Industrial Hygiene Office 301 – IH Old Bay Lane Havre De Grace, Maryland 21078

Prepared By:

URS Corporation 5 Industrial Way Salem, New Hampshire 03079

INDUSTRIAL HYGIENE SURVEY REPORT SPRINGFIELD ARMORY 1505 ROOSEVELT AVENUE SPRINGFIELD, MASSACHUSETTS

January 2006 PN: 39741508







Project Manager

Posted to NGB FOIA Reading Room May, 2018 **BEST AVAILABLE COPY**

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FINDINGS AND RECOMMENDATIONS

Findings	Recommendation	Risk Assessment		
r noinga	Recommendation	Code		
Lighting		Alexandre 👬 Alexandre		
On the day of the survey, the	Increase lighting in the			
illuminance in the administrative	administrative areas. While work is			
area was inadequate in	in progress, the administrative area	RAC 4		
approximately half the offices.	shall be lighted by at least the			
	minimum lighting intensities (ANSI /			
	[IESNA RP-1-04]			
Lead				
Lead was detected in wipe	Personnel trained in accordance			
samples collected from the firing	with the OSHA Lead Standard			
range in amounts greater than	should clean the drill hall where lead			
200 μg/ft″	was detected in quantities of greater	RAC 4		
	than 200 micrograms per square			
	foot (OSHA 29 CFR			
	1910.1025(h)(1))			
Hazard Communication		· · ·		
No site specific hazard	Develop a site specific hazard			
communication plan available.	communication plan to manage	RAC 4		
	hazardous materials (OSHA 29 CFR	10.00		
	1910.1200(e))			
Confined Space		· · ·		
A confined space located behind	The MA ARNG must determine if			
the bullet trap has not been	any confined spaces are permit	RAC 3		
evaluated	required confined spaces (OSHA 29			
	CFR 1910.(c)(1))			

-

1.0 SUMMARY

At the request of the National Guard Bureau Region North Industrial Hygiene Office (NGB), URS Corporation (URS) conducted an industrial hygiene survey at the Armory located at 1505 Roosevelt Avenue in Springfield, Massachusetts 01109. This report includes an executive summary, a description of the survey protocol, a discussion of the survey evaluation and findings and a list of conclusions and recommendations.

an industrial hygienist with URS, conducted a On February 6, 2004, Mr. site visit to the Armory in Springfield, Massachusetts. The purpose of this site visit was to conduct an industrial hygiene survey, which included the collection of air samples, bulk samples, lighting measurements, and a review of site health and safety of the Commonwealth of Massachusetts Army National procedures. SGT Guard was Mr. Non-Responsive site contact for this survey.

The armory was constructed in 1985 and has fifteen full-time employees. A roster of these employees was not available at the time of the survey. A shop layout drawing of the facility, which shows the locations where measurements were made during this survey, is contained in Appendix A.

2.0 ADMINISTRATIVE AREA

2.1 Operation Description

This building area contains multiple offices located throughout the building with desks and computer workstations.

2.2 Chemical and Physical Agents Sampled

2.2.1 Relative Humidity

Relative humidity levels were measured using a TSI Q-Track (Model 8551). Relative humidity on the day of the survey ranged from 15.3 – 16.3% with an average of 15.5%. This average reading was below the recommended range of 30.0% to 60.0% set by the American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. (ANSI / ASHRAE Standard 55-2004).

2.2.2 Carbon Dioxide

On the day of the survey, carbon dioxide measurements were made at various locations throughout the Readiness Center. Carbon dioxide concentrations ranged from 445 to 559 parts per million (ppm), with an average of 457 ppm. Carbon dioxide levels were measured using a direct reading TSI Q-Track (Model 8551).

Carbon dioxide is a normal constituent of the atmosphere and ranges from about 250 to 450 ppm. The major source of excess carbon dioxide in the indoor environment is people. Other sources can include open-flame heaters, fermentation processes, and motor vehicles. Carbon dioxide itself is not normally a cause of indoor air quality problems because concentrations must exceed 5,000 to 10,000 ppm before health effects such as headache, drowsiness, and increased respiration are noted. Typically, carbon dioxide is used as an indicator of the adequacy of fresh air intake. As the concentration of carbon dioxide increases, so do the background levels of other air contaminants.

ASHRAE (62.1-2004) recommends that levels of carbon dioxide be maintained below 700 ppm above background level. Since interior carbon dioxide levels were below 700. ppm, an exterior reading was not collected.

2.2.3 Carbon Monoxide

Carbon monoxide was also measured in the Armory. Carbon monoxide concentrations remained at 0 parts per million (ppm) throughout the survey period. This measured level was below the ASHRAE guideline for indoor environments (62.1-2004). Carbon monoxide was measured using a TSI Q-Track (Model 8551).

Key sources of carbon monoxide within indoor environments include internal combustion engines, motor vehicle and forklift exhaust, tobacco smoke, space heaters, and improperly adjusted oil or gas burners. Health effects from exposure to elevated concentrations of carbon monoxide may include fatigue, impairment of visual acuity, irregular heartbeat, headache, nausea, and confusion. ASHRAE (62.1-2004) recommends that average carbon monoxide concentrations not exceed 9 ppm. Typical average concentrations found in commercial buildings range from 0 to 6 ppm.

2.2.4 Lighting

Lighting in the administrative area was measured using a Sper Scientific Ltd. Light Meter (Model 840020C). Table 2-1 below shows lighting measurements and the recommended lighting requirement (ANSI / IESNA RP -1-04 American National Standard Practice for Office Lighting)

		Measured	Recommended	
Location	Eupotion	Illuminance	Minimu m .	
Location	FUNCTION	(lux / foot	Illuminance (lux	
		candles)	/ foot candles)	
Mess Hall	Break Room	296/27.5	300/30	
Administrative Office	Administrative Duties	229/21.3	500 / 50	
2 nd Floor Hall	Access way	309/28.7	30/3	
2 nd Floor Staff Room	Administrative Duties	343/31.9	500 / 50	

Table 2-1 Lighting Measurements and Recommended Lighting Requirements

On the day of the survey the illuminance in the administrative area was inadaquate in all but one office.

2.2.5 Lead

Wipe testing for lead dust was conducted in the administrative area using ghost wipes, which meet ASTM E 1792 standards. The analytical report from AMA Analytical Services Inc. (AMA) is contained in Appendix D. Table 2-2 below shows the results of the lead sampling.

Sample Location	URS Sample Number	Area Wiped (ft ²)	Result (µg/ft ²)	Maximum Acceptable Surface Contamination Level (μg/ft ²)
Exercise Room	0206-16	1.000	47	200
Hatl Outside Former Firing Range	0206-17	1.000	<12	200
Administrative Office	0206-18	1.000	<12	200
Locker Room (Floor)	0206-19	1.000	<12	200
Locker Room (Locker Top)	0206-20	1.000	<120	200
Blank	0206-21	1.000	<12 µg	N/A

Table 2-2 Levels of Lead Dust Found in the Administrative Area

2.3 Ventilation System Evaluation

Not applicable to this operation.

Noise Measurements 2.4

Not applicable to this operation.

2.5 Personal Protective Equipment

Not applicable to this operation.

2.6 Interpretation of Results

GENERAL: In general, the administrative area was neat and orderly. The fire exits and

extinguishers were marked and easily accessible.

LIGHTING: On the day of the survey, the illuminance in the administrative area was inadequate in all but one office. URS recommends increasing lighting in the administrative areas through use of task lighting. While work is in progress the administrative area must be lighted by at least the minimum light intensities.

URS 5

3.0 FORMER FIRING RANGE

3.1 Operation Description

The firing range has been dismantled and is now primarily used for storage.

3.2 Chemical and Physical Agents Sampled

3.2.1 Lead

Wipe testing for lead was conducted in the former firing range using ghost wipes, which meet ASTM E 1792 standards. The analytical report from AMA is contained in Appendix D. Table 3-1 below shows the results of the lead sampling.

Sample Location	URS Sample Number	Area Wiped (ft ²)	Result (µg/ft²)	Maximum Acceptable Surface Contamination Level (µg/ft ²)
Former Firing Range-Bullet	0206-04	1.000	140,000	200
Former Firing Range- Storage Box	0206-05	1.000	1,300	200
Former Firing Range-Top of Ceiling panel	0206-13	1.000	2,300	200
Former Firing Range- Floor	0206-14	1.000	2,200	200
Former Firing Range-Firing	0206-15	1.000	210	200
ena filoor	2222.24	└─── ′		
Blank	0206-21	N/A	<12 μg	200

Table 3-1 Levels of Lead Dust Found in the Former Firing Range

One air sample for lead dust was also collected in the former firing range. Table 3-2 below shows the result of this air sample.

Table 3-2 Level of Lead Found in the Air

Sample Location	URS Sample	Air Volume	Result	OSHA's
	Number	(L)	(µg/m ³)	PEL(µg/m ³)
Former Firing Range	0206-01	388	<7.7	50.0

On the day of the survey, the airborne lead dust level in the former firing range was found to be acceptable, below OSHA's permissible exposure limit (PEL) for lead (29) CFR 1910.1025(c)) of 50.0 μ g/m³ averaged over an 8-hour day. The analytical report from AMA is contained in Appendix D.

3.3 Ventilation System Evaluation

Not applicable to this operation.

3.4 Noise Measurements

Not applicable to this operation.

Personal Protective Equipment 3.5

Not applicable to this operation.

3.6 Interpretation of Results

LEAD: The five surface wipe samples in the former firing range were found to contain lead dust levels above the safe maximum limit set by the National Guard Bureau (See Appendix G). URS recommends that a contractor or personnel trained in accordance with the OSHA lead standard (29 CFR 1910.1025 and 29 CFR 1910.62) clean and decontaminate this building area. Appendix H provides guidelines for the rehabilitation and cleaning of indoor firing ranges.
4.0 DRILL HALL

4.1 Operation Description

The drill hall is used for assembling personnel and storing equipment. The walls are constructed of cinder-block with a concrete floor.

4.2 Chemical and Physical Agents Sampled

4.2.1 Lighting

Lighting in the drill hall was measured using a Sper Scientific Ltd. Light Meter (Model 840020C). Table 4-1 below shows lighting measurements and the recommended lighting requirement (ANSI / IESNA RP –1-04 American National Standard Practice for Office Lighting)

Table 4-1 Lighting Measurements and Recommended Lighting Requirements

		Measured	Recommended
Leastion	Eurotion	Illuminance	Minimum
Location	Function	(lux / foot	Illuminance (lux
		candles)	/ foot candles)
Drill Hall Center	Assembly / Storage	171 / 15.9	300

On the day of the survey lighting levels were found to be inadequate in the drill hall. **4.2.2** Lead

Wipe testing for lead dust was conducted in the drill half using ghost wipes, which meet ASTM E 1792 standards. The analytical report from AMA is contained in Appendix D. Table 4-2 below shows the results of the lead sampling.

Table 4-2Levels of Lead Dust Found in the Drill Hall

Sample Location	URS Sample Number	Area Wiped (ft²)	Result (µg/ft ²)	Maximum Acceptable Surface Contamination Level (μg/ft ²)
Drill Floor - Near Bay Door	0206-06	1.000	37	200
Drill Floor - Center	0206-07	1.000	140	200

Sample Location	URS Sample Number	Area Wiped (ft ²)	Result (µg/ft²)	Maximum Acceptable Surface Contamination Level (µg/ft ²)
Drill Floor Center at Firing Range	0206-08	1.000	37	200
Drill Floor – Control Office	0206-10	1.000	100	200
Drill Floor	0206-11	1.000	<12	200
Drill Floor	0206-12	1.000	96	200
Blank	0206-21	N/A	<12 μg	200

Table 4-2 (Continued) Levels of Lead Dust Found in the Drill Hall

One air sample for lead dust was collected in the drill hall. Table 4-3 below shows the result of this air sample.

Table 4-3 Levels of Lead Found in the Air

Sample Location	LIPS Sample Number	Air Volume	Result	OSHA's	
Sample Location	OKS Sample Number	(L).	· (μ g /m ³)	PEL(µg/m³)	
Drill Hall	0206-02	319	<9.4	50.0	

On the day of the survey, the airborne lead dust level in the drill hall was found to be acceptable, below OSHA's permissible exposure limit (PEL) for lead (29 CFR 1910.1025(c)) of 50.0 μg/m³ averaged over an 8-hour day.

4.3 Ventilation System Evaluation

Not applicable to this operation.

4.4 Noise Measurements

Not applicable to this operation.

4.5 Personal Protective Equipment

Not applicable to this operation.

4.6 Interpretation of Results

LEAD: The wipe samples collected in the drill hall were all found to have a lead content below the National Guard Bureau limit of 200 micrograms per square foot (See Appendix G).

5.0 BOILER ROOM

5.1 Operation Description

The boiler room is a mechanical space constructed of cinder block walls with a concrete floor, containing a furnace and associated piping. The gas fired furnace has replaced the original oil burning furnace.

5.2 Chemical and Physical Agents Sampled

No chemical or physical agents were sampled in this area.

5.3 Ventilation System Evaluation

Not applicable to this operation.

5.4 **Noise Measurements**

Not applicable to this operation.

Personal Protective Equipment 5.5

Not applicable to this operation.

5.6 Interpretation of Results

6.0 SAFETY AND INDUSTRIAL HYGIENE PROGRAMS

6.1 Confined Spaces

No safety program was found regarding confined spaces. No training records were found on site. A confined spaces program is required for this site with a confined space. behind the old bullet trap of the former firing range.

6.2 Hearing Conservation

No safety program was found regarding hearing conservation. No training records were found on site. A hearing conservation program is not required for this site.

6.3 **Respiratory Protection**

No safety program was found regarding respiratory protection. No training records were found on site. A respiratory protection program is not required for this site.

6.4 Hazard Communication

No program was found regarding hazard communication. No training records were found on site. A site-specific hazard communication program is required for this site and should include communication of hazards to employees, management of material safety data sheets, chemical labeling and spill protection.

6.5 Personal Protective Equipment

No safety program was found regarding personal protective equipment. No training records were found on site. A personal protective equipment program is not required for this site.

7.0 REFERENCES

American National Standards Institute

ANSI/IESNA RP-1-04: American National Standard Practice for Office Lighting

American Society of Heating Refrigerating and Air-Conditioning Engineers

ANSLASHRAE Standard 55-2004: Thermal Environmental Conditions for Human Occupancy

ANSI/ASHRAE Standard 62.1-2004: Ventilation for Acceptable Indoor Air Quality

Army Corps of Engineers

Safety and Health Requirements Manual EM 385-1-1 November 2003

Department of the Army

Ergonomics Program Pamphlet 40-21 (15 August 2003)

Policy and Responsibilities For Inspection, Evaluation and Operation of Army National Guard Indoor Firing Ranges (National Guard Regulation 385-15, 30 December 2002)

Department of Defense

DoD Hearing Conservation Program Standard 6055.12 April 1996

Creating an Ideal Workstation: A Step-by-Step Guide

U. S. Environmental Protection Agency

Asbestos Hazard Emergency Response Act (40 CFR Part 763)

National Emissions Standards for Hazardous Pollutants (40 CFR Part 61)

U. S. Housing and Urban Development

Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (1995, 1997)

U. S. Occupational Safety and Health Administration

Standard for General Industry: 29 CFR 1910

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APPENDIX A

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SHOP DRAWING





2ND FLOOR

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APPENDIX B

PERSONNEL LIST

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APPENDIX C

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HAZARDOUS MATERIALS LIST

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APPENDIX D

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ANALYTICAL RESULTS

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HCal Servi Rized Environmental	National Guard Bureau	301-IH Old Bay Lane, Ath State Military Reservation	Havre de Grace, Maryland		Non-Re	sponsive	Officent Sample A Number	0206-04	0206-05	0206-06	0206-07	0206-08	0206-09	0206-01	0206-02	Flame: Air, Wipes, Pain	r Fumace: Air, Wipes, F	e mg/Kg = parts pe	by weight ug = micr	re two significant digits.		the sample, or samples, ion taccepted to the exclusive strons and collection prote- dions and competenees of this inf full microscopy of bulk sam sy of the Foderal Governme		
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AMA Analytical Services, Inc.



A Specialized Environmental Laboratory

CERTIFICATE OF ANALYSIS



26-May-05

Page 1 of 2

Attention:

Summary of Atomic Absorption Analysis for Lead

Air Volume Area Wiped Reporting Final Result Sample Type Comments **Client Sample** Analysis Type AMA Sample (L) (ft²) Limit Number Number **** 100 ug/ft² 1.000 Wipe 12.00 ug/ft2 0206-10 Flame 0541293 **** 1.000 12 ug/n² 12.00 ug/ft2 < Wipe 0541294 0206-11 Flame **** 96 1.000 ug/ft2 12.00 ug/ft2 0206-12 Flame Wipe 0541295 **** 2300 ug/ft' Wipc 1.000 12.00 ug/R2 0541296 0206-13 Flame **** 1.000 ug/ft' 2200 12.00 ug/ft2 Wipe 0541297 0206-14 Flame **** 1.000 210 ug/ft² Wine 12.00 ug/fl2 0541298 0206-15 Flame **** 1.000 47 ug/ft2 Wipe 12.00 ug/fl2 0206-16 Flame 0541299 **** 1.000 12 ug/fl2 Wipe 12.00 ug/fl2 < 0541300 0206-17 Flame **** 1.000 12 ug/ft2 0206-18 Flame Wipe 12.00 ug/fl² < 0541301 **** 12 ug/fl2 1.000 12.00 Wipe ug/fl² < 0206-19 0541302 Flame ug/ft² **** 1.000 12 12.00 0206-20 Flame Wipe ug/ft2 < 0541303 **** N/A 12 12.00 < ug 0541304 0206-21 Flame Wipc Blank ug

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public and these Laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from us. Sample types, locations and collection protocols are based upon the information provided by the persons submitting them and, unless collected by personnel of these Laboratories, we expressly disclaim any knowledge and liability for the accuracy and completeness of this information. Residual sample material will be discarded in accordance with the appropriate regulatory guidelines, unless otherwise requested by the client. NVLAP Accreditation applies only to polarized light microscopy of bulk samples and transmission electron microscopy of AHERA air samples. This report must not be used to claim, and does not imply product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

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Client:	National Guard Burcau	Job Name:	Armory	Chain Of Custody:	128459
Address:	301-JH Old Bay Lane, Attn: NGB-AVN-SI, State Military Reservation	Job Location:	Springfield, MA	Date Analyzed:	6/4/2004
	Havre de Grace, Maryland 21878	Job Number:	Not Provided	Person Submitting:	
		P.O. Number:	BPA #W912K6-04-A0002	Report Date:	04-Jun-04

Summary of Atomic Absorption Analysis for Lead

Client Sample Number	Analysis Type	Sample Type	Air Volame (L)	Area Wiped (fi ^a)	Rep	Reporting Limit		Final Result				
0206-01	Flame	Air	388	N/A	7.73	ug/ari*	<	7.7	ug/m²			
0206-02	Flame	Air	319	N/A	9.40	ug/m²	<	9.4	ag/m*			
Flame: Air, Wipes,	Paints, and Soil/Sol	lids: EPA 600/R-93/2	200(M)-7420; Wate	r. SM-3111B								
r Fumace: Air, Wipe e mg/Kg = par	es, Paints, and Soil/ ts per million (ppm)	Salids : EPA 600/R- by weight mg/L =	93/200(M)-7421; V parts per million (p	Valer: SNI-3113B pm)								
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Analyst

Technical Manager:

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STATE:

APPENDIX E

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TRAINING CERTIFICATES

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Awardad to

MARCH 25. 2003

Presented by

Exam Grade: 100%

Exam Date: 03/25/2003

Pate: 03/25/2004

Training Director

APPENDIX F

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PHOTOGRAPHS



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Photo 0015: Boiler Room

APPENDIX G

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RECOMMENDATIONS FOR SURFACE LEAD DUST IN ARMORIES

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Subject: Recommendations for Surface Lead Dust in Armories

1. In armories that do not contain childcare facilities, the National Guard Bureau (NGB) Region North Industrial Hygiene Office recommends cleaning the areas in which sample results are greater than 200 micrograms per square foot (μ g/ft²). If a special function will be held in which children will be present in this facility, consider thoroughly cleaning the areas that will be accessible to children prior to the function. This guidance is based on professional judgment, risk assessments, adaptation of Occupational Safety and Health Administration (OSHA) guidance, and feasibility of cleaning to a certain level.

a. Environmental Protection Agency (EPA) standards (40 Code of Federal Regulations (CFR) 745.227(h)(3)) are not directly applicable because they are criteria for dust-lead hazards developed for floors (40 µg/ft²) and windowsills (250 µg/ft²) in residential dwellings and child occupied facilities. A child occupied facility is defined as a building, or portion of a building, constructed prior to 1978, visited regularly by the same child, 6 years of age or under, on at least two different days within any week (Sunday through Saturday period), provided that each day's visit lasts at least 3 hours and the combined weekly visit lasts at least 6 hours, and the combined annual visits last at least 60 hours. Most of the wipe samples in armories were collected in undisturbed areas and therefore, results are worst case scenarios and do not correlate to these standards.

b. OSHA has no specific requirement for work area surfaces. The lead standard (29 CFR 1910.1025(h)) states that all surfaces shall be maintained as free as practicable of accumulations of lead dust. In workplaces where lead dust is generated, surface levels may be much higher, but personnel exposures can be controlled by limiting airborne lead levels and following good cleanup and hygienic practices.

c. OSHA used to cite a level of 200 μ g/ft² in their Technical Manual and 29 CFR 1926.62 as guidance to its own inspectors for evaluating the cleanliness of lunchroom and locker room surfaces that are supposed to be kept as clean as possible.

d. In a report titled Derivation of Wipe Surface Screening Levels for Environmental Chemicals, the US Army Center for Health Promotion and Preventive Medicine (USACHPPM) has determined that 200 μ g/ft² is a safe surface contamination level. They have also applied these standards as the decontamination levels for surfaces in administrative offices.

e. It should be noted that levels above these recommendations do not necessarily mean there is a significant hazard to workers who are following good cleaning and hygienic practices since there is no correlation between wipe and air samples. Rather, we recommend these levels as a precautionary measure.

2. The NGB Occupational Health Branch is developing guidance for armories that are used as childcare facilities. All states will receive this guidance when it is completed. In the interim, we recommend the following actions:

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a. Clean all areas that will be accessible to children to the EPA dust-lead standard for children 6 years of age or under (40 μ g/ft² on floors and 250 μ g/ft² on windowsills).

b. Refer to the local authorities' regulations since they can be more stringent than federal regulations.

c. Post signs in the area to inform people of the presence of lead dust and its effects.

d. If soldiers clean weapons in the facility, change the policy so that they cannot clean their weapons in the facility, or if they are allowed to clean their weapons indoors, they must clean the area by wet wiping and mopping the area when they are done.

e. If the paint is peeling, contact the state Environmental Office to test for lead content and provide recommendations.

3. Air samples collected on individuals in the armory were well below OSHA's permissible exposure limit for lead (29 CFR 1910.1025(c)) of 0.05 mg/m³ averaged over an 8-hour day. Therefore, based on these conditions there is currently no overexposure to personnel from lead dust in this building,

APPENDIX H

POLICY AND RESPONSIBILITIES FOR INSPECTION, EVALUATION AND OPERATION OF ARMY NATIONAL GUARD INDOOR FIRING RANGES (NATIONAL GUARD REGULATION 385-15, 30 DECEMBER 2002)

NGB-AVS-SG SUBJECT: All States (Log Number P01-0075) Army National Guard (ARNG) Safety and Occupational Health Program – POLICY AND RESPONSIBILITIES FOR INSPECTION, EVALUATION AND OPERATION OF ARMY NATIONAL GUARD INDOOR FIRING RANGES

ADDENDUM

GUIDELINES FOR IFR REHABILITATION, CONVERSION, AND CLEANING

CONTENTS (Lisled by paragraph number)

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Appendices

Appendix A - General Procedures for Collecting Wipe Samples

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Appendix G - Surface Wipe Sample Sheet

Appendix H - Air Sampling Sheet

Appendix I - Glossary

Purpose

1. This addendum establishes policy and procedures for rehabilitation, conversion, and cleaning of ARNG indoor firing ranges.

2. References

Related publications are listed below.

a. DODI 6055.1 (Department of Defense Instruction, Occupational Safety and Health (OSH) Program).

- b. AR 11-34 (The Army Respiratory Protection Program).
- c. AR 40-5 (Preventive Medicine).

d. NGR 385-15 Policy, Responsibilities, and Procedures for Inspection, Evaluation, and Operation of ARNG Indoor Firing Ranges).

e. 29 Code of Federal Regulations (CFR), Part 1910, Occupational Safety and Health Standards

- f. OSHA Technical Manual, Edition VII.
- g. DHEW NIOSH 76-130 (Lead Exposure and Design Considerations for Indoor Firing Ranges).

SUBJECT: All States (Log Number 201-0075) Army National Guard (ARNG) Safety and Occupational Health Program – POLICY AND RESPONSIBILITIES FOR INSPECTION, EVALUATION AND OPERATION OF ARMY NATIONAL GUARD INDOOR FIRING RANGES

3. Explanation of Abbreviations and Terms

Abbreviations and special terms used in this publication are listed in the glossary.

4. Policy and Procedures

Conversion of Ranges. Indoor firing ranges can be safely rehabilitated or converted for other uses, such as a storage area, kitchen, or office space, provided the following –

a. Previously active ranges must be thoroughly decontaminated and cleaned to acceptable levels.

b. The level of cleanliness is to be determined by sampling. The Occupational Safety and Health Administration's (OSHA) Technical Manual, ^{5th} Edition, provides guidance on the methods and techniques needed to collect wipe samples (Appendix A).

(1) Wipe samples must be collected and analyzed prior to and after cleaning.

(2) Post-cleaning surface wipe sample results must be less than or equal to 200 micrograms per square feet (ug/sq ft). The sampling strategy, which is the amount and location of wipe samples to be collected, is provided in Appendix B. Methods for interpreting the sample results are contained in Appendix C and D.

c. Equipment/Items previously stored in the range must be decontaminated and cleaned to acceptable levels.

(1) Samples must be collected from equipment/items stored in the range. Sample selection is critical, because the number of items stored and length of storage differs from range to range. The amount and location of the samples, should be representative of the areas where lead dust is most likely to accumulate. The more samples collected, the better the statistical comparison of the results.

(2) Samples must be collected from the smooth surfaces of the equipment/items, in so much as possible. Results of samples collected from a rough surface will be inaccurate due to the minimal surface contact of the media. Further, the likelihood of tearing the media filter is greater on rough surfaces.

(3) Samples should also be collected on items stored the longest period of time, and which have not been disturbed. Items stored closest to the bullet trap and firing line are likely to have higher concentrations of lead dust. Methods for interpreting the sample results are contained in Appendix C and D.

5. Goel

To ensure every indoor firing range is free of lead dust, and to reduce the number of unsefe ARNG indoor firing ranges.

6. Background

The Environmental Protection Agency (EPA) identifies lead as a highly toxic metal. Elemental lead is indestructible, and common in the environment. Lead can enter the body by Inhalation (breathing) or ingestion (eating). In addition, lead is a cumulative poison. It accumulates in the blood, bones, and organs, including the kidneys, brain and liver. Effects include nervous and reproductive system disorders, delays in neurological and physical development, cognitive and behavioral changes, and hypertension. Symptoms include loss of appetite, difficulty sleeping, kritability, fatigue, headache, and inability to concentrate. It can stay in the bones for decades. Worker awareness and training are important to ensure that employees can recognize the symptoms of exposure and get prompt medical attention.

7, Wipe Sample Media

a. OSHA Technical Manual provides the necessary guidance on the technique needed to collect wipe samples (Appendix A). Only distilled or deionized water will be used to saturate dry sample media. At seast one field blank filter must be submitted with each sample sheet. The field blank must be from the same lot, and labeled as a blank on the sample sheet. Appendix E identifies how and where to obtain sample media. Use the following guidance for determining media acceptability.

(1) Acceptable Media consists of -

(a) Ghost Wipes [™] (PREFERRED METHOD)- Pre moistened

(b) Thirty-seven (37) millimeters (mm) mixed cellulose ester (MCE) filters, with or without the cassettes.

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(2) Unacceptable Media consists of but is not limited to—

(a) Cotton balls

(b) Baby wipes or wet wipes

b. Occumentation of Sample Collection. A Surface Wipe Sample Sheet must be completed and submitted with samples to your supporting faboratory. A copy of this form is located in Appendix G. Refer to Appendix A on how to collect wipe samples.

8. Wipe Sampling Protocol

See Appendix A.

9. Ranges Cleaning Instructions

a. Written procedures, such as a scope of work, or Standing Operating Procedure (SOP) that complies with all federal, state and local regulations must be established prior to decontamination operations. The range ventilation system will be in operation during range cleaning to ensure that a negative pressure environment is maintained. In the absence of mechanical ventilation system, all doors and windows will be sealed to eliminate fugitive emissions. A High Efficiency Particulate Air (HEPA) filtered vacuum system is the preferred method of cleanup followed by wet wiping of the range. The HEPA vacuum is designed to collect loose surface lead dust particles.

b. Any general purpose cleaning solution can be used. However, Spic and Span[™] has been found to be an effective cleaning solution by other Army organizations. Mix new solutions of cleaning solution frequency. Wet wiping will require dual containers of water; one container for wetting the applicator (mops, rags, sponge, etc.) and the other container for rinsing the applicator after the dust has been wiped from the surfaces. When placed in containers, wastewater should be left to evaporate.

c. PROPERLY DISPOSE OF ALL HAZARDOUS WASTE. DO NOT PLACE LEAD CONTAMINATED WASTE INTO THE SEWER SYSTEM OR ONTO THE GROUND.

d. Mop-heads, sponges and rags will be discarded as hazardous waste following cleanup.

e. Wet cleaning by a high-pressure system is prohibited, as this method may embed the lead into the substraium and generate large quantities of unwanted hazardous waste.

f. Dry sweeping is not permitted.

g. All surface areas of the range must be cleaned. Do not remove the coaling on smooth painted surfaces that are properly sealed.

h. Wood floors should receive a coat of deck enamel or urethane; concrete floors should be sealed with deck enamel and linoleum or life floors should be waxed.

I. A progression of cleaning from top to bottom and from behind the steel backstop to the firing line should be used. After removing the sand, if applicable, and the steel backstop, areas in front of and behind the bullet trap along with the steel backstop plate(s) should be cleaned. Next, clean the ceiling, lights, baffles, retrieval system, heating system(s), and ventilation duct(s). Acoustical material should be vacuumed and removed rather than painted over.

j. A Toxic Characteristic Leaching Procedures (TCLP) test for lead only may need to be performed on the acoustical material. A TCLP test will determine if the material is classified as "hazardous" and can be disposed of in a sanitary landfill. Contact your State Environmental Office for assistance before arranging for this laboratory testing. The floor should be the last surface cleaned, starting at the bullet trap and ending behind the firing line.

k. After wet wiping all surfaces, permit the area to dry. Vacuum all surface areas until no dust or residue can be seen using the HEPA.

 A thorough visual inspection to detect dust should be made following cleanup and prior to collecting post surface wipe samples.

m. As a variety of conditions exist in ranges, unique situation may arise and specific written guidance from your Regional Industrial Hygiene Office may be required.

10. Cleaning Stored Contaminated Equipment

a. Equipment contaminated (sample result is higher than 200 micrograms/sq ft) with lead dust must be decontaminated before it is removed from the range.

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b. Equipment located near the bullet trap and firing line should be cleaned first and then removed. The cleaning method depends on the size of the equipment and the material it is comprised of, i.e. metal, wood, concrete, porus, non-porus, smooth or rough finish etc. However, either HEPA vacuum or the wet wipe method will be used. Refer to paragraph 9 for additional guidance.

c. Every attempt should be made to clean and reclaim items since disposing of equipment, as hazardous waste is costly and wasteful. Only as a last resort will the item be discarded as hazardous waste. Porous items, such as office partitions and carpet that were present during firing should be considered grossly contaminated and be discarded unless analysis proves otherwise. Consult your State Environmental Office for the proper hazardous waste disposal methods.

11. Contaminated Sand and Lead Waste

Consult your State Environmental Office for specific disposal guidance to ensure compliance with local laws and regulations.

12. Medical Surveillance

a. A pre-placement medical examination is required for all individuals involved with range cleanup operations. Consult 29 CFR 1910.1025 for additional information on medical surveillance requirements. A medical examination must include—

- (1) A detailed work and medical history
- (2) A thorough physical examination
- (3) A respirator use evaluation
- (4) A blood pressure measurement
- (5) Blood sample analysis to include:
 - (a) A baseline blood lead level
 - (b) A complete blood count (CBC)
 - (c) Blood urea nitrogen (BUN)
- (6) Serum creatinine
- (7) Zinc protoporphyrin
- (8) A routine urine analysis
- (9) Recordkeeping

b. Air Monitoring. Worker breathing zone (BZ) air samples must be collected to ensure personnel are not overexposed to airborne lead during the cleanup phase. Representative air samples will be collected on all personnel involved in the cleanup operation. These exposure levels will be used to evaluate work practices and personal protective equipment. Within five (5) working days after receipt of monitoring results, each employee will be notified in writing of the air sampling results. Contact your Regional industrial Hygiene Office for additional information pertaining to air sampling.

13. Worker Education

OSHA 29 CFR 1910.1025 requires that workers who are potentially exposed to any lead level shall be informed of the content of Appendix A and B of this standard. A training program must be instituted for all individuals who are subject to exposure to lead at or above the action level or for whom the possibility of skin or eye irritations exists. The training program shall be repeated for personnel currently involved in range cleanup operations, at least annually, this training must be documented on DD Form 1556 or DD Form 1556-1 and filed permanently in the employee's Official Personnel File (OPF) or the soldier's Official Military Personnel File (OMPF). As a minimum, complete blocks 1, 2, 3, 7, 8, 11, 12, 13, 17, 18, 24, 33 and 36 of DD Form 1556. Place the following statement in block 18, "Do not destroy, retain this record for the duration of employment/service plus 30 years." The employer will assure that each employee is informed of the following:

- a. The content of the standard and its appendices.
- b. The specific nature of operations that could result in exposure to lead above the action level.
- c. The purpose, proper selection, filting, use and limitations of respirators.
- d. The purpose and a description of medical surveillance program.
- e. Eating and drinking are prohibited in lead contaminated areas.
- f. Smoking and smoking materials will not be permitted in contaminated areas.

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g. Employees must wash their hands and other exposed skin whenever they leave the work area.

h. The engineering controls and work practices associated with the individual's job assignment.

i. The contents of any compliance plan in effect.

14, Personal Protective Equipment

For housekeeping and rehabilitation the employer shall select respirators from among those approved for protection against lead dust, fume, and mist by the National Institute for Occupational Safety and Health (NIOSH). The employer shall institute a respiratory protection program in accordance with 29 CFR 1910.134. As a minimum, personnel conducting the decontamination of the range will be provided with the following personal protective equipment.

a. Employees engaged in range rehabilitation and/or range conversion, the employer shall provide at no cost to the employee, and assure that the employee uses appropriate protective work clothing and equipment such as, but not limited to:

(1) Protective coveralls with hood and shoe covers or disposable Tyvek 🏧 full body suit.

(2) Disposable rubber gloves; and disposable shoe coverlets (If necessary).

(3) Full-face air purifying respirator with P-100 cartridges.

b. The employer shall provide the clothing required in a clean and dry condition at least daily to employees engaged in the conversion of indoor firing ranges.

c. The employer shall provide for the cleaning, laundering, or disposal of used or contaminated protective clothing and equipment.

d. The employer shall assure that all protective clothing is removed at the completion of a work shift only in areas designated for that purpose (Change Areas or Change Rooms).

e. The employer will ensure that contaminated protective clothing that is to be cleaned, laundered, or disposed of, is placed in a closed container in the change area that seals sufficiently enough to prevent dispersion of lead dust.

f. The employer will further inform in writing any person who cleans or launders protective clothing or equipment of the potentially harmful effects of exposure to lead.

15. Housekeeping

This chapter applies to all active indoor ranges classified as "safe" for use. To keep the range operating property and to keep possible hazards to a minimum, a routine housekeeping/ maintenance program is essential.

a. The employer must establish a housekeeping progrem sufficient to maintain all surfaces as free as practicable of accumulations of lead dust. To this end the range will be clean at the conclusion of each firing day.

b. The range ventilation system will be in operation during all cleaning operations, to ensure a negative pressure environment is maintained.

c. Ranges will be cleaned by using the wet method or vacuuming. A HEPA (High Efficiency Particulate Air) filtered vacuum system is the preferred method of meeting this requirement. The use of compressed air to clean floors is absolutely prohibited. If the wet method is utilized the floor should be equipped with a floor drain, and collection system. When there is no collection system, the water can be allowed to slowly evaporate leaving lead deposits/sludge. The deposits/sludge can then be collected, placed in metal drums, and stored for future delivery to an authorized hazardous waste disposal site. Drums must be labeled to identify contents, in accordance with the hazardous waste program.

d. A NIOSH approved respirator (P-100) for protection against lead dust, fume, and mist will be worn at all times while cleaning.

e. When cleaning start behind the firing line forward, cleaning the floor and horizontal surfaces.

16. Maintenance

The following are the minimum maintenance requirements, which must be performed quarterly by the range custodian, or by a person designated by the facility commander.

 a. Inspect the ventilation system fan for condition of belts to ensure that they are not frayed or slipping.

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b. Evaluate static pressure and compare to the baseline static pressure reading. Any changes will be reported through the safety manager to the Regional Industrial Hygienist.

c. Inspect Louvers, if applicable, to ensure they are opening fully.

d. Inspect the bullet trap for pitting or other damage and for sharp edges on venetian blind type bullet traps.

e. Bullet Trap. The bullet trap will be cleaned every 480 hours of operation at a minimum, or when the trap is three quarters full.

f. The range ventilation system will be operational during all bullet trap cleaning procedures.

g. All personnel Involved in cleaning of the bullet trap will wear a NIOSH approved respirator, and proper personal protective equipment.

 All debris from the bullet (rap will be collected, package and turned in, in accordance with guidance from the environmental office.

17. Range Rehabilitation.

This chapter applies to all indoor firing ranges that have been identified as candidates for rehabilitation. This chapter further provides guidance for cleaning and/or sampling that might be required prior to the start of rehabilitation.

a. The portion(s) of the range to under go rehabilitation must be sampled to determine the level of load contamination. Whe samples will be taken per the established sampling protocol. See Appendix A.

b. All personnel involved in range rehabilitation will wear a NIOSH approved respirator (P-100), and proper personal protective equipment as prescribed in paragraph 14 above.

c. Prior to start of rehabilitation the environmental office must be notified to determine the disposition of lead containing debris.

18. Conversion of Indoor Ranges

Prior to the start of decontamination, employers must ensure that all procedures to be used comply with Federal, State, and local regulations. To ensure that all lead contamination is removed the following procedure is established.

a. All ranges stated for conversion will be inspected and evaluated.

b. All equipment stored in the range, if applicable, prior to the start of decontamination must be sampled, decontaminated, re-sampled and removed or turned in as lead contaminated material. See paragraph 10 above.

c. All acoustical tiles and/or sound proofing material (if applicable) must be removed and turned in as lead contaminated material through the environmental office.

d. The backstop, builet trap, target retrieval system and firing line stations must be removed and turned in as lead containing material through the environmental office.

e. Light fixtures and ventilation system grills must be removed and decontaminated.

f. Ventilation system ducts need to be decontaminated or removed and replaced.

g. The exhaust (ans and/or the complete ventilation air-handling unit (if applicable) must be decontaminated or removed.

h. Cover all openings of any component previously decontaminated prior to start of interior decontamination of the firing range.

19. Deviation

Deviations from this guidance will require a written exception to policy from your Regional Industrial Hygiene Office. Questions and/or comments regarding this subject should be directed to your Regional Industrial Hygiene Office or Chief, National Guard Bureau, Attn: NGB-AVS-S, 111 South George Mason Drive, Aritngton, VA 22204-1382.

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APPENDIX A GENERAL PROCEDURES FOR COLLECTING WIPE SAMPLES

A-1 If multiple samples are to be collected at the work site, prepare a rough sketch of the area(s) or room(s), which are to be wipe sampled.

A-2 A new set of clean, impervious gloves should be used for each sample to avoid contamination of the media by previous samples and to prevent contact with the substance.

A-3 (1) If using Ghost Wipes[™], tear open the individually sealed package. Remove the moistened wipe. Unfold the wipe,

(2) If using a dry media such as MCE or Whatman[™] filter, moisten the filter with distilled or deionized water prior to sampling.

A-4 Place a 10 cm by 10 cm template on the area to be wiped.

A-5 Apply uniform firm pressure while wiping the area inside the template.

A-8 To insure that all portions of the partitioned area are wiped, start at the outside edge and progress toward the center making concentric squares decreasing in size.

A-7 After collecting a sample, fold the filter or wipe inward and place into a container and number it. Note the number at the sample location on the sketch.

A-8 At least one blank filter treated in the same fashion but without wiping, should be submitted to the laboratory.

APPENDIX B

SAMPLING STRATEGY FOR COLLECTION OF WIPE SAMPLES

B-1 Prior to cleaning the ranges, the three samples must be collected and analyzed for total lead dust on each surface, i.e., floor, celling, backstop, and wall to include the plenum wall, if applicable. In addition, a total of 3 samples should be collected from areas which have been least disturbed by airflow. Established walkways should be avoided.

B-2 Samples should be staggered to different areas of the range. A grid system should be utilized. Each range surface areas should be divided evenly into 3 by 3 sections. Samples should not be collected on all one section of a wall or end of the building.

APPENDIX C

INTERPRETATION OF SAMPLE RESULTS (PRIOR TO CLEANING)

C-1 200 micrograms/sq ft or LESS

If all sample results are 200-micrograms/sq ft or less, the range can be converted and/or used for any purpose.

C-2 BETWEEN 201 and 200,000 micrograms/sq ft

Range must be decontaminated. Continued with cleaning instructions listed in paragraph 9 Sample results will be used to establish a baseline.

C-3 Over 200,000 micrograms/sq ft

Your sample media may not be capable of collecting additional lead dust and results that are above 200,000 micrograms/sq ft, and should be considered suspect.

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APPENDIX C (Continued)

C-4 High sample results may exist due to personnel walking or moving equipment/vehicles over the range surface causing the lead dust to be "ground" into the substratum. For examples, a maintenance activity may have oversprayed paint or splited solvents onto the surface Regional Industrial Hygiene Office for specific guidance.

APPENDIX D

INTERPRETATION OF SAMPLE RESULTS (AFTER CLEANING)

D-1 200 micrograms/sq. ft or less

If all sample results are less than 200 micrograms/sq ft, the range can be converted and/or used for any purpose after a coat of lead-free latex paint is applied.

APPENDIX E

RECOMMENDED SAMPLE MEDIA AND CONTAINERS

E-1 The following is a list of vendors, which supply the media and containers necessary to collect air and lead surface wipe samples. The information is provided to assist in obtaining the proper media and containers. Alternative vendors are available and may be utilized, if known. Contact your Regional Industrial Hygiene Office for additional assistance or clarification.

E-2 Pre-loaded 3 piece casselve with mixed cellulose ester (MCE) filter and pad, 37 millimeter (mm), pore size 0.6 microns, breathing zone (BZ) and general area (GA) air samples.

Order From Catalog Number

- a. Millipore Corp. MAWP-037-A0 Ashdy Road Bedford, MA 01730 617-275-9200 800-225-1380
- b. Geiman Sciences 64678 (GN-4) 600 South Wagner Rd Ann Arbor, MI 48106 313-665-0651 800-521-1520
- c. Supelco, Inc. 2-3388M Supelco Park Bellefonte, PA 16823 800-247-6628 800-359-3041

E-3 37 mm MCE Filter with pad, no cassette included, for lead surface wipe samples.

Order From Catalog Number

a. Supelco Inc. 2-3381)M Supelco Park Bellefonte, PA 16823 NGB-AVS-SG SUBJECT: All States (Log Number P01-0075) Army National Guard (ARNG) Safety and Occupational Health Program - POLICY AND RESPONSIBILITIES FOR INSPECTION, EVALUATION AND OPERATION OF ARMY NATIONAL GUARD INDOOR FIRING RANGES

APPENDIX & (Continued)

800-247-6628 800-359-3041

b, Millipore Corp. AAWP-037-00 Ashdy Road Bedford, MA 01730 617-275-9200 800-225-1380

 SKC, Inc. 225-5 334 Valloy View Rd. Eighty Four, PA 15330 412-941-9701 800-752-8472

为你们可以在这个人都是我的人的,这个人的,也就是我们的你的,我们可能不知道的。""你是你是你是你的,你们就是你们的心意。"他说道: "你们们可以是你们们都是我们的你们,你们们们们们的你们们就能是你们的问题。""你们们们们们们们们们们们们们们们们们们们们们们们们们们们们们们们们们们们们
and the second

E-5. Glass container (25 milliliter) for collection and shipment of media.

Order From Catalog Number

a. Pierce Chemical Co. 13219 (screw cap) P.O. Box 117 Rockford, IL 61105 815-968-0747 800-874-3723

 Alitech Associates, Inc. 95321 (screw cap) Applied Science Labs 2051 Waukegan Rd. Deerfield, IL 60015 312-948-8600

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APPENDIX E (Continued)

800-255-8324

E-6. Ghost Wipes **.

Order From Catalog Number

Environmental Express SC4200 490 Wando Park Bivd. Mt. Pteasant, SC 29464 1-800-343-5319

E-7, Ghost Wipe™ Containers

Order From Catalog Number

Environmental Express SC499 490 Wando Park Blvd. Mt. Pleasant, SC 29464 1-800-343-5319

E-8. Plastic ziplock bags can be obtained through the Army logistics system. Many sizes are available. Contact your supporting logistics branch for assistance.

E-9. Distilled water can be purchased at larger grocery stores, usually by the gallon, at a cost of approximately \$1.25. Deionized water can be obtained at local and state water labs or a hospital.

APPENDIX F EXAMPLES OF COMPUTATION OF LEAD LEVELS FROM WIPE SAMPLE RESULTS

Sample results will be returned in the form of micrograms. The results must be converted to micrograms per square foot. This can be accomplished by following the examples listed below:

<u>75 ug</u> 100 cm²	92	<u>1 sq ft</u>	
<u>75 x 929</u> 100	=	<u>69675</u> 100	= 696.75ug/sq ft

ug – Microgram

Cm2 – Centimeters squared

Sq ft - Square foot

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APPENDIX G SURFACE WIPE SAMPLING SHEET

	Industrial	Hygiene Su	rface W	lipe San	nple Sheet	
Return Address			Poir	t of Conta	ct (name & phone #)	
			Sam			
				pies conci		
Sampled Facility		City		State	Location (bldg/area)	-
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Comments to Lab):					

NG8-AVS-SG SUBJECT: All States (Log Number P01-0075) Army National Guard (ARNG) Safety and Occupational Health Program -- POLICY AND RESPONSIBILITIES FOR INSPECTION, EVALUATION AND OPERATION OF ARMY NATIONAL GUARD INDOOR FIRING RANGES

APPENDIX H AIR SAMPLING SHEET

-		Industrial Hy	/giene A	ir Samp	ole Sheet	
Return Addr	953		Point of	Contact (name/phone #)	•
			Sample	s Collecter	d By	
Sampled Fa	cility	City	State	Locatio	on (bldg/area)	
Description o	f Operation	Persons Exposed	.,	ay Met	hod of Collection	
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NGB-AVS-SG SUBJECT: All States (Log Number PD1-0075) Army National Guard (ARNG) Sefety and Occupational Health Program – POLICY AND RESPONSIBILITIES FOR INSPECTION, EVALUATION AND OPERATION OF ARMY NATIONAL GUARD INDOOR FIRING RANGES

> APPENDIX I ABBREVIATIONS AND TERMS

Section I Abbreviations

ARNG Army National Guard

BUN Blood urea nitrogen

BZ Breathing zone

CBC Complete blood count

CFR Code of Federal Regulations

cm Centimeter

DHEW Department of Health, Education and Welfare

EPA Environmental Protection Agency

GA General area

OMPF Official Military Personnel File

OPF Official Personnel File

OSHA Occupational Safety and Health Administration

TOLP Toxic Characteristic Leaching Procedures

ug/sq /t Micrograms per square **fo**ot

NGB-AVS-SG SUBJECT: All States (Log Number P01-0075) Army National Guard (ARNG) Safety and Occupational Health Program -- POLICY AND RESPONSIBILITIES FOR INSPECTION, EVALUATION AND OPERATION OF ARMY NATIONAL GUARD INDOOR FIRING RANGES

APPENDIX I (Continued)

Section II Terms

HEPA

Refers to high efficiency particulate air filter systems capable of capturing up to 99.97 percent of particles 0.3 microns in size or larger.

Lead-Contaminated Range

It is assumed that all indoor ranges, which have been fired in, are lead-contaminated.

Wipe Sample

The terms wipe, swipe, or smear samples are use synonymously to describe the techniques utilized for assessing lead surface contamination.

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FOIA Requested Record #J-15-0085 (MA) Released by National Guard Bureau Page 3153 of 3473 274812 Mar. 202

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Industrial Hygiene Survey

Massachusetts Army National Guard (MA ARNG)

Prepared For: NGB ARNG- Region North IH Office

Survey Location:

Springfield Readiness Center 1505 Roosevelt Avenue Springfield, MA 01109-2438

Prepared By: Aria Environmental, Inc. (AEI) PO Box 286 Woodbine, MD 21797

Survey Date: July 30, 2010 Report Date: September 22, 2010

AEI Project #: J10-513 3a MA Springfield RC

Non-Responsiv

Industrial Hygienist



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- Table 2 Results of Paint Chip Sampling for the MA ARNG RC Springfield, Readiness Center on July 30, 2010.
- Table 3 Acceptable Ranges of Temperature and Relative Humidity in Summer and Winter
- Appendix A Building Layout
- Appendix B Certificates of Analysis for Air, Dust Wipe and Bulk Samples
- Appendix C Photo Documentation
- Appendix D IAQ and Lighting Survey Log Sheets

Executive Summary

Aria Environmental, Inc. (AEI) was contracted to perform an industrial hygiene evaluation for the Readiness Center located at 1505 Roosevelt Avenue, Springfield, MA, 01109-2438. Not-Responsive performed the evaluation on July 30, 2010. The point of contact for the facility was Master Sergeant Clayton. The point of contact for the facility was Master Sergeant Clayton. The purpose of the evaluation was to identify and measure the existence and extent of potentially hazardous operations or conditions at Army National Guard (ARNG) facilities. The survey included: (1) evaluations of operations including operation description, ventilation system evaluations, noise dosimetry if appropriate, lighting surveys, hazard control evaluations and any additional information pertinent to the operations; (2) an evaluation of the physical condition of the facility and personnel concerns including materials, water damage or mold problems; indoor air quality concerns; and housekeeping practices; and (3) photographs of the exterior and interior of the readiness center. The results of the evaluation indicated the following:

Noise Hazards: No noise-generating activities were taking place on the day of the survey. Due to the nature of the tasks performed onsite, no activities requiring noise monitoring are anticipated to occur at the RC.

Lead in Air Samples: Lead in air samples to determine if any airborne contamination of lead existed in the facility were not collected at the Springfield Readiness Center due to sample pump malfunction.

Paint Chip and Wipe Samples for Lead Contamination: Three samples collected from the former firing range and one sample collected from the shelf in the Supply Room (room 38 on the drawing) were above the National Guard criteria for lead contamination ($200 \mu g/ft^2$). Samples ranged from 1.2 to 190 times the National Guard criteria. Lead was identified in the bullet trap, on top of the light fixture, and on the floor of the range. Peeling paint was observed on the ceiling of the garage/weight room; therefore, one paint chip was collected. The paint chip sample was below regulatory limits of 0.5% lead by weight.

Visual Inspection for Damaged Asbestos-Containing Materials: No damaged suspect asbestoscontaining materials were observed at the Springfield Readiness Center.

Visual Inspection for Water Damage and Mold Growth: A visual inspection was performed to determine if there was any water damage or visible mold growth at the facility. There was no evidence of water damage or mold growth at the facility.

Visual Inspection for Housekeeping Concerns: A visual inspection was performed to assess the state of housekeeping in the facility. The housekeeping was good. All areas were clean and tidy.

Lighting: A lighting survey was performed in all areas within the readiness center. The evaluation indicated that there are some illumination deficiencies in several offices, kitchen, boiler room and the garage/weight room. The illumination measurements indoors ranged from a low of 18.3 foot candles (fc) to a high of 186.7 fc.

Indoor Air Quality: Temperatures and relative humidity measurements were outside the acceptable range in most of the facility. These results are not unexpected due to outdoor conditions on the day of the survey and the lack of air conditioning in most of the facility. Indoor levels of CO_2 ranged from 356 to 591 parts per million (ppm) and outdoor CO_2 levels were

approximately 360 ppm during the monitored period. CO₂ measurements were below the guideline in all areas, indicating adequate fresh air exchange. Indoor levels of CO ranged from 0 to 0.2 ppm; therefore, concentrations are below occupational exposure limits, ASHRAE and the NAAQS-recommended CO concentrations.

1 Introduction

Aria Environmental, Inc. (AEI) was contracted to perform an industrial hygiene evaluation for the Massachusetts Army National Guard (MA ARNG) Readiness Center located at 1505 Roosevelt Avenue, Springfield, MA, 01109-2438. Non-Responsive performed the evaluation on July 30, 2010. The point of contact for the facility was Master Sergeant to responsive. The purpose of the evaluation was to identify and measure the existence and extent of potentially hazardous operations or conditions at Army National Guard (ARNG) facilities.

The Springfield Readiness Center is staffed with 15 fulltime National Guard administrative personnel. Some of the National Guard personnel are assigned to Springfield from the Westfield Readiness Center. The operations conducted at the facility include supply and administrative duties. A diagram of the building layout is provided in Appendix A. All sampling sheets and laboratory certificates of analysis are provided in Appendix B. Selected photographs taken during the evaluation are provided in Appendix C. Indoor air quality and lighting survey measurement log sheets are provided in Appendix D. Lists of all references used during the evaluation are included in the main body of the report.

2 Evaluation Methods

The industrial hygiene survey of the Springfield Readiness Center consisted of visual inspections, interviews with employees and sampling plan development in order to achieve the following: (1) evaluations of operations including operation description, sampling for lead in air or on surfaces if appropriate, ventilation system evaluations, noise measurements if appropriate, lighting surveys, hazard control evaluations and any additional information pertinent to the operations; (2) an evaluation of the physical condition of the facility and personnel concerns including visual inspections for peeling potentially lead-based paint, damaged suspect asbestos-containing materials, water damage or mold problems; indoor air quality concerns; and housekeeping practices; and (3) a building layout and photographic documentation of the interior of the facility.

The National Guard Bureau (NGB) Region North IH Office provided all industrial hygiene equipment for air sampling (equipment and media), ventilation, lighting, noise and IAQ survey instruments and paid for laboratory analytical fees. Laboratories were chosen or approved by the NGB IH office..

3 Operations

Operations conducted at the Springfield facility consists exclusively of supply and administrative duties. No maintenance of vehicles, painting of equipment or other physical tasks are performed at the facility. Ground maintenance and upkeep of the building are the responsibility of the state employed Armorer and not part of the duties of National Guard personnel.

4 Noise Hazards

No noise-generating activities were taking place on the day of the survey. Due to the nature of the tasks performed onsite, no activities requiring noise monitoring are anticipated to occur at the RC.

5 Hazard Controls

Ventilation Systems

Heat is supplied to the facility through a boiler located in the boiler room and overhead heaters in the drill hall. The boiler certificate for the Springfield was expired and is not up to date. Any air conditioning provided to the building is through window air conditioning units. No local ventilation systems were present at the facility.

6 Physical Condition of the Facility and Personnel Concerns

An evaluation of the physical condition of the facility and personnel concerns was performed including visual inspections for peeling potentially lead-based paint, damaged suspect asbestos-containing materials, water damage or mold problems; indoor air quality concerns; and housekeeping practices. Lighting and indoor air quality measurements were taken in all areas of the facility as well.

Lead in Air Samples

Lead in air samples to determine if any airborne contamination of lead existed in the facility were not collected at the Springfield Readiness Center due to sample pump malfunction.

Paint Chip and Dust Wipe Samples for Lead Contamination

To determine if any cross contamination of lead from any source into areas of the facility existed, wipe samples were collected using ghost wipes and 10cm x 10cm templates. Wipe samples for surface dust were collected in 20 locations. The Environmental Protection Agency (EPA) and the Commonwealth of Massachusetts limits for lead in dust are 40 micrograms per square foot $(\mu q/ft^2)$ on floors, 250 $\mu q/ft^2$ on window sills, and 400 $\mu q/ft^2$ in window troughs. These limits apply to pre-1978 Army facilities only if children under 6 years of age occupy them for 60 or more hours per year. The NGB Region North Industrial Hygiene Office concurs with the US Army Center for Health Promotion and Preventive Medicine (USACHPPM) recommended maximum level for adult exposures of 200 µg/ft² on floors and frequently contacted surfaces, which is more stringent for window sills than the EPA/State standards. Dust wipe samples were submitted to Aerosol Monitoring and Analysis Analytical Services, Inc. (AMA) for atomic absorption spectrophotometry (AAS) following the analytical method ASTM D3335-85A. Three samples collected from the former firing range and one sample collected from the shelf in the Supply Room (room 38 on the drawing) were above the National Guard criteria for lead contamination (200 µg/ft²). Samples ranged from 1.2 to 190 times the National Guard criteria. Lead was identified in the bullet trap, on top of the light fixture, and on the floor of the range. Results are given in Table 2 and certificates of analysis are included in Appendix B.

Wipe Sample #	Sample Location	Result (µg/ft²)*
SF-PB-01	Drill Hall, Middle of Floor	<110
SF-PB-02	Drill Hall, Top of Storage Container	<110
SF-PB-03	Drill Hall, From Top of Desk/Table by Overhead Door	<110
SF-PB-04	Kitchen, From Prep Counter	<110

Table 1 – Results of Dust Wipe Sampling for MA ARNG Springfield Readiness Center on July 30, 2010.

Table 1 – Results of Dust Wipe Sampling for MA ARNG Springfield Readiness Center on July 30, 2010.

Wipe Sample #	Sample Location	Result (µg/ft²)*
SF-PB-05	Room 28, From Air Vent	<110
SF-PB-06	Immediately Outside Room 43 on Floor	<110
SF-PB-07	Room 43, Former Indoor Firing Range, Bullet Trap	38,000
SF-PB-08	Room 43, Former Indoor Firing Range, Light Fixture	530
SF-PB-09	Room 43, Former Indoor Firing Range, Stored Footlocker	<110
SF-PB-10	Room 43, Former Indoor Firing Range, Middle of Floor	240
SF-PB-11	Room 42, On Weight Bench	<110
SF-PB-12	Room 38, Top of Supply Shelf	320
SF-PB-13	Room 31, Window Sill	<110
SF-PB-14	Room 24, Desktop	<110
SF-PB-15	Room 17, Top of File Cabinet	<110
SF-PB-16	Room 10, Supply Vent	<110
SF-PB-17	Room 3, Floor Immediately Inside Door	<110
SF-PB-18	Room 1, On Top of Locker	<110
SF-PB-19	Room 5, On Top of Locker	<110
SF-PB-20	Room 30, On Top Stair	<110

*The US Army CHPPM recommends a maximum level for adult exposures of 200 µg/ft² lead on floors

A visual inspection was performed to determine if there were any areas of peeling paint at the facility that could pose a lead exposure hazard. Peeling paint was observed on the ceiling of the garage/weight room; therefore, one paint chip was collected. The paint chip sample was collected following operational protocols set forth in HUD's *Guidelines for the Evaluation and Control of Lead-Based Paint Hazard in Housing (1995)*. The paint chip sample was submitted to Aerosol Monitoring and Analysis Analytical Services, Inc. (AMA) of Lanham, MD for analysis. The analyses were performed using Flame Atomic Absorption Spectrophotometry (AAS) following the analytical method SW 846 7420. AMA is accredited for the analysis of paint chip samples through the AIHA Proficiency Testing Program (#100470). In the Commonwealth of Massachusetts, paint is considered to be lead-based if it contains more than 0.5 % lead by weight. The paint chip sample was below regulatory limits of 0.5% lead by weight. Results are given in Table 3 and certificates of analysis are included in Appendix B.

Table 2 – Results of Paint Chip Sampling for MA ARNG Springfield Readiness Center on July 30, 2010.

Paint Chip Sample #	Sample Location	Result (% by wt)*
SF-LBP-01	Peeling Paint from Garage/Weight Room Ceiling	0.020

*Paint is considered lead-based if it is > 0.5% by weight.

Visual Inspection for Damaged Suspect Asbestos-Containing Materials

A visual inspection was performed to determine if there were any suspect asbestos-containing material and its condition. No suspect asbestos-containing material were observed.

Visual Inspection for Water Damage and Mold Growth

A visual inspection was performed to determine if there was any water damage or visible mold growth at the facility. There was no evidence of water damage or mold growth at the facility.

Visual Inspection for Housekeeping Concerns

A visual inspection was performed to assess the state of housekeeping in the facility. The housekeeping was good. All areas were clean and tidy.

Lighting

Illumination levels were measured using a Cal-Light 400L, calibrated on July 30, 2009, and compared to minimum lighting requirements for various facilities and functions based on the following references: American National Standards Institute/Illumination Engineering Society of North America (ANSI/IESNA) Standard RP-1-04 (Office Lighting) and ANSI/IESNA Standard RP-7-01 (Lighting Industrial Facilities).

A lighting survey was performed in all areas within the readiness center. The evaluation indicated that there are some illumination deficiencies in several offices, kitchen, boiler room and the garage/weight room. The illumination measurements indoors ranged from a low of 18.3 foot candles (fc) to a high of 186.7 fc. The complete results of the evaluation are presented in Appendix D, including whether the results met minimum requirements for illumination. Additional illumination can be achieved by replacing burned-out lamps, cleaning fixtures, relocating detailed work to more illuminated areas, using supplemental task lighting, and opening doors or windows to provide more natural lighting.

Indoor Air Quality (IAQ)

Indoor air quality measurements (i.e., temperature, relative humidity, carbon dioxide and carbon monoxide) were taken using a factory calibrated TSI Q-Trak Plus Model 7565X. Temperature, relative humidity and carbon dioxide (CO₂) measurements were compared to the recommended levels established by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE). Carbon monoxide (CO) concentrations were compared to the ACGIH Threshold Limit Value (TLV) for CO and the Environmental Protection Agency's (EPA's) National Ambient Air Quality Standard (NAAQS) for CO.

Industry guidelines or standards for seasonal temperature and humidity ranges for thermal comfort are established by ASHRAE standard 55-2004. These ranges are presented in Table 3. The U.S. EPA also recommends maintaining relative humidity below 60% and ideally between 30 and 50% to prevent mold growth. Complete results are provided in Appendix G with the lighting survey measurements.

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Relative Humidity	Winter Temperature	Summer Temperature
30%	68.5°F - 76.0°F	74.0°F – 80°F
40%	68.5°F – 75.5°F	73.5°F – 79.5°F
50%	68.5°F - 74.5°F	73.0°F - 79.0°F
60%	68.0°F - 74.0°F	72.5°F - 78.0°F

Table 3 - Acceptable Ranges of Temperature and Relative Humidity in Summer and Winter^a

•adapted from ASHRAE Standard 55-2004

Temperature and Relative Humidity

Indoor temperature and relative humidity (Rh) measurements in the facility ranged from 76 to 83.3° F and 36.6 to 54.6% Rh. Outdoor temperature and humidity measurements were 80.5° F and 40.6% on the day of monitoring. Temperatures and relative humidity measurements were outside the acceptable range in most of the facility. These results are not unexpected due to outdoor conditions on the day of the survey and the lack of air conditioning in most of the facility.

Carbon Dioxide (CO2) and Carbon Monoxide (CO)

Carbon dioxide and carbon monoxide measurements are used to assess ventilation system performance. The exhaled breath of building occupants is the main indoor source of carbon dioxide; therefore, the build up of CO_2 indicates inadequate ventilation. The concentration of concern for carbon dioxide is set by ASHRAE standard 62.1 - 2007 as 700 ppm above outdoor concentrations. Indoor levels of CO_2 ranged from 356 to 591 parts per million (ppm) and outdoor CO_2 levels were approximately 360 ppm during the monitored period. CO_2 measurements were below the guideline in all areas, indicating adequate fresh air exchange.

Carbon monoxide is a byproduct of incomplete combustion. Indoor concentrations indicate contamination caused by improperly vented or malfunctioning boilers, furnaces or stoves or from vehicle exhaust entering the building from garages, loading docks, nearby roads or parking lots. The concentration of interest set by ASHRAE standard 62.1-2007 and the National Ambient Air Quality Standards (NAAQS) for carbon monoxide is an 8 hour average of 9 ppm. The ACGIH TLV for CO is 25 ppm. Indoor levels of CO ranged from 0 to 0.2 ppm; therefore, concentrations are below occupational exposure limits, ASHRAE and the NAAQS-recommended CO concentrations.

7 Conclusions

The results of the evaluation indicated no concerns with the following at the facility: contamination of clean air sources, the presence of damaged suspect asbestos-containing materials, peeling lead-based paints, noise hazards, indoor air quality, visible mold and housekeeping. The results of the evaluation indicated industrial hygiene concerns in the following areas: cross contamination of lead dust from the former firing range, and lighting. Overall, Springfield Readiness Center has few industrial hygiene issues, and programs are in place to protect, inform and train employees.

8 Limitations

This report has been prepared for the exclusive use of the U.S. Army National Guard (USARNG) and/or their agents. This service has been performed in accordance with generally accepted

industrial hygiene and environmental practices. No other warranty, expressed or implied, is made. Our conclusions and recommendations are based, in part, upon information provided to us by others and our site observations. We have not verified the completeness or accuracy of the information provided to us by others, unless otherwise noted. Our observations and recommendations are based upon conditions readily visible at the site at the time of our site visit, and upon current industry standards.

By virtue of providing the services described in this report, the preparer does not assume the responsibility of the person(s) in charge of the site, or otherwise undertake responsibility for reporting to any local, state, or federal public agencies any conditions at the site that my present a potential danger to public health, safety, or the environment. It is the Client's responsibility to notify the appropriate local, state, or federal public agencies as required by law, or otherwise to disclose, in a timely manner, any information that may be necessary to prevent any danger to public health, safety, or the environment. Under this scope of services, the preparer assumes no responsibility regarding response actions initiated as a result of these findings. Response actions are the sole responsibility of the Client and should be conducted in accordance with local, state, and/or federal requirements, and should be performed by appropriately licensed personnel as warranted.

9 References

- 1. Title 29, Code of Federal Regulations (CFR), Part 1910, Occupational Safety and Health Administration, current edition.
- 2. Title 24, Code of Federal Regulations (CFR), Part 35, Subpart B, Sections 35.110, Definitions of Lead-Based Paint, Housing and Urban Development, U.S. Department of Housing.
- 3. Department of Defense Instruction (DODI) 6055.1, Department of Defense Occupational Safety and Health (OSH) Program, August 19, 1998.
- 4. Army Regulation (AR) 40-5, Medical Service, Preventive Medicine, May 25, 2007.
- 5. Army Regulation (AR) 385-10, The Army Safety Program, August 23, 2007.
- 6. Department of the Army Pamphlet (DA PAM) 40-501, Medical Service, Hearing Conservation Program, December 15, 1998.
- 7. Department of the Army Pamphlet (DA PAM) 40-503, Medical Service, Industrial Hygiene Program, October 30, 2000.
- 8. Technical Manual (TM) 5-810-1, Mechanical Design, Heating, Ventilation, and Air Conditioning, June 1991.
- 9. Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs), American Conference of Governmental Industrial Hygienists (ACGIH), current edition.
- 10. RP-1-2004 (Office Lighting) and RP-7-2001 (Industrial Lighting), Illuminating Engineering Society of North America (IESNA)/ANSI.
- 11. The American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE), Standard 62.1-2007, "Ventilation for Acceptable Indoor Air Quality" and Standard 55-2004, "Thermal Environmental Conditions for Human Occupancy".
- 12. NIOSH website: http://www.cdc.gov/niosh/
- 13. OSHA website: <u>http://www.osha.gov/</u>.

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Industrial Hygiene Survey Report Massachusetts Army National Guard (MA ARNG) Springfield Readiness Center

- 14. Army CHPPM website: http://chppm-www.apgea.army.mil/.
- 15. EPA website: <u>http://www.epa.gov</u>.

Appendix A Building Layout



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Appendix B Certificates of Analysis for Air, Dust Wipe and Bulk Samples

AMA Analytical Services, Inc.

National Guard Bureau

State Military Reservation

on-Respons

Havre de Grace, Maryland 21078

A Specialized Environmental Laboratory

301-IH Old Bay Lane, Attn: NGB-AVN-SI,

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Springfield Armory

W912K6-09-A-0003

Springfield, MA

Not Provided

Job Name:

Job Location:

Job Number:

P.O. Number:

CERTIFICATE OF ANALYSIS



Page 1 of 2

Attention:

Client:

Address:

Summary of Atomic Absorption Analysis for Lead

AMA Sample **Client Sample** Analysis Type Sample Type Air Volume Area Wiped Reporting Total ug **Final Result** Comments Number Number (L) (ft2) Limit **** 0.108 <12 ug/fl² 1066338 . SF-Pb-01 Flame Wipe 110 ug/ft2 <110 **** 0.108 1066339 SF-Pb-02 Flame Wipe 110 ug/ft2 <12 <110ug/fl² **** 0.108 <12 1066340 SF-Pb-03 Flame Wipe 110 ug/ft2 <110 ug/fl2 ug/ft² 0.108 <12 1066341 SF-Pb-04 Flame Wipe 110 ug/ft2 <110 **** 0.108 <12 1066342 SF-Pb-05 Flame Wipe 110 ug/ft2 <110 ug/ft2 **** 1066343 0.108 <12 ug/fl2 SF-Pb-06 Flame Wipe 110 ug/ft2 <110 **** 1066344 SF-Pb-07 Flame Wipe 0.108 110 ug/ft2 4100 38000 ug/fl2 **** 0.108 57 530 1066345 SF-Pb-08 Flame Wipe 110 ug/ft2 ug/ft2 **** 0.108 1066346 SF-Pb-09 Flame Wipe 110 ug/ft2 <12 <110 ug/ft² **** 0.108 25 1066347 SF-Pb-10 Flame Wipe 110 ug/ft2 240 ug/Π^2 **** 0.108 <12 <110 ug/ft² 1066348 SF-Pb-11 Flame Wipe 110 ug/ft2 **** 1066349 SF-Pb-12 Flame Wipe 0.108 110 ug/ft2 35 320 ug/ft2 **** 0.108 <12 ug/fl2 1066350 SF-Pb-13 Flame Wipe 110 ug/fl2 <110 **** 0.108 <12 1066351 SF-Pb-14 Flame Wipe 110 ug/fl2 <110 ug/ft2 **** 1066352 0.108 ug/ft2 <12 SF-Pb-15 Flame Wipe 110 <110 ug/ft2 **** 1066353 SF-Pb-16 Flame 0.108 <12 Wipe 110 ug/ft2 <110 ug/fl² **** 1066354 SF-Pb-17 Flame Wipe 0.108 110 ug/ft2 <12 <110 ug/ft2 **** 1066355 0.108 <12 ug/ft2 SF-Pb-18 Flame Wipe 110 ug/fl2 <110 **** SF-Pb-19 0.108 <12 <110 ug/ft2 1066356 Flame Wipe 110 ug/ft2

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these Laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from us. Sample types, locations, and collection protocols are based upon the information provided by the persons submitting them and, unless collected by personnel of these Laboratories, we expressly disclaim any knowledge and liability for the accuracy and completeness of this information. Residual sample material will be discarded in accordance with the appropriate regulatory guidelines, unless otherwise requested by the client. NVLAP accreditation applies only to polarized light microscopy of bulk samples and transmission electron microscopy of AHERA air samples. This report must not be used to claim, and does not imply product certification, approval, or endorsement by NY ELAP, AHA, NVLAP, NIST, or any agency of the Federal Government. All rights reserved. AMA Analytical Services, Inc.

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AMA Analytical Services, Inc.

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CERTIFICATE OF ANALYSIS

						ww	w.alhaaccreditedtabs.org
Client:	National Guard Bureau	Job Name:	Springfield Armory	Chain Of Custody:	508465	F	
Address:	301-IH Old Bay Lane, Attn: NGB-AVN-SI, State Military Reservation	Job Location:	Springfield, MA	Date Submitted:	8/2/2010		10920
	Havre de Grace, Maryland 21078	Job Number:	Not Provided	Person Submitting:	Non-Responsive		
		P.O. Number:	W912K6-09-A-0003	Date Analyzed:	8/6/2010	Report Date:	8/9/2010
	Non Deeneneius						

Summary of Atomic Absorption Analysis for Lead

Page 2 of 2

AIHA LAP, LLC

ACCREDITED LABORATOR NOUSTRIAL HYGIENE, ENVIRONMENTAL LEAD & ENVIRONMENTAL MICROBIOLOGY

AMA Sample Number	Client Sample Number	Analysis Type	Sample Type	Air Volume (L)	Area Wiped (ft²)	Rep L	orting imit	Total ug	Final Res	ult	Comments
1066357	SF-Pb-20 Flame	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/ft²	
1066358	SF-LBP-01	Flame	Paint Chip	****	N/A	0.0087	%Pb		0.02	%Pb	
Analysis Method fo Analysis Method F	or Flame: Air, Wipes, or Furnace: Air, Wipe	Paints, and Soil/S es, Paints, and So	olids: EPA 600/F il/Solids : EPA 6	R-93/200(M)-7420 00/R-93/200(M)-7	; Water: SM-311 421; Water: SM	11B 1-3113B	See QC associa NY ELA	Summary for an ted with these sa	alytical result mpes.	s of quality c	ontrol samples

N/A = Not Applicable mg/Kg = parts per million (ppm) on a dry weight basis mg/L = parts per million (ppm)

%Pb = percent lead on a dry weight basis ug/L = parts per billion (ppb) ug = micrograms

Note: All samples were received in good condition unless otherwise noted.

Note: All results have two significant digits. Any additional digits shown should not be considered when interpreting the result.

Air and Wipe results are not corrected for any blank results Final results for air and wipe samples are based on client supplied information nor verified by this laboratory.

All results are to be considered preliminary and subject to change unless signed by the Technical Director or Deputy.

samples.

Nida McGarvey Analyst:

Technical Manager: G Edward Carney

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these Laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from us. Sample types, locations, and collection protocols are based upon the information provided by the persons submitting them and, unless collected by personnel of these Laboratories, we expressly disclaim any knowledge and liability for the accuracy and completeness of this information. Residual sample material will be discarded in accordance with the appropriate regulatory guidelines, unless otherwise requested by the client. NVLAP accreditation applies only to polarized light microscopy of bulk samples and transmission electron microscopy of AHERA air samples. This report must not be used to claim, and does not imply product certification, approval, or endorsement by NY ELAP, AIHA, NVLAP, NIST, or any agency of the Federal Government. All rights reserved. AMA Analytical Services, Inc.

An AIHA (#100470), NVLAP (1061370) And BYELOR (#10920) Accredited Laboratory Posted to NGB FOIA Reading Room FOIA Requested Record #J-15-0085 (MA) May, 2018 4475 Forbes Blvd. · Lanham, MD, 20706 · (301) 459-2640 · Toll Free (800) 346-0961 · Fax (301) 459-2643 Released by National Guard Bureau Page 3170 of 3473



A Specialized Environmental Laboratory

Attention:

BEST AVAILABLE COPY OWI (410) 247-2024 159202 210 REV. 6.08 **RMA Analutical Services, Inc.** Focused on Results www.amalab.com (Please Refer To This 508465 A1HA (#100470) NVLAP (#101143-0) NY ELAP (10920) Number For Inquires) CHAIN OF CUSTODY 4475 Forbes Blvd. • Lanham, MD 20706 (301) 459-2640 • (800) 346-0961 • Fax (301) 459-2643 Mailing/Billing Information: Submittal Information: 1. Client Name: National Guard Bureau SPEINGEIELD ARMUR 1. Job Name: SPRINGFIELD 2. Address I: 301-IH Old Bay Lane 2. Job Location: 3. Address 2: ____Attn: NGB-AVN-SI. State Military Reservation 3. Job #: 4. Address 3: Havre de Grace, Maryland 21078. 4. Contact Per esponsive 5. Phone #: (410) 942-0273 Fax #: (410) 942-0254 5. Submitted b Reporting Information (Results will be provide NORMAL BUSINESS HOURS REPORT TO: AFTER HOURS (must be pre-scheduled) 2 Include COC/Field Data Sheets with Report 3 Day Immediate Date Duc:_ O Immediate Results Required By Noon D Next Day S Day + D Email: 24 Hours Time Due: _ (EveryAttempt Will Be U Fax:_shirley.chapman1@us.armv.mil L 2 Day Date Due: Made to Accomodate) Comments:__ ken.forsythe@us.army.mil U Verbals: **Asbestos Analysis** Metals Analysis TEM Bulk PCM Air - Please Indicate Filter Type: Pb Paint Chip ______(QTY Pb Dust Wipe (wipe type G405) LELAP 198.4/Chatfield (QTY) (QTY) ZÒ NIOSH 7400_ (OTY) (OTY) NY State PLM/TEM____ (OTY) Pb Air_ G Fiberglass_ (OTY) (OTY) Residual Ash (OTY) TEM Air - Please Indicate Filter Type: U Pb Soil/Solid _(QTY) TEM Dust AHERA (OTY) Pb TCLP_ (OTY) Qual. (pres/abs) Vacuunt/Dust_ (OTY) NIOSH 7402 (OTY) Drinking Water DPb (QTY) Cu___(QTY) CAs___(QTY) Quan, (s/area) Vacuum D5755-95 ... (OTY) U Other (specify_ (QTY) Waste Water C Pb____ (QTY) Q Cu___(QTY) Q A3___(QTY) Quan. (s/area)Dust D6480-99 (QTY) PLM Bulk DPb Furnace (Media (OTY) TEM Water EPA 600 - Visual Estimate_ (QTY) **Fungal Analysis** Qual. (pres/abs).... (OTY) EPA Point Count. (OTY) Collection Apparatus for Spore Traps/Air Samples:_ GELAP 198.2/EPA 100.2____ (OTY) ONY State Friable 198.1. (OTY) Collection Media_ C EPA 100.1_____ (OTY) Grav. Reduction ELAP 198.6 (QTY) G Spore-Trap (QTY) Surface Vacuum Dust_ (OTY) COTher (specify_ (QTY) All samples received All samples received in good condition unless otherwise noted. Surface Swab____ Culturable ID Genus (Media, (OTY) (OTY) MISC _____() Surface Tope_ -(OTY) Culturable ID Species (Media (OTY) U Vermiculite C Other (Specify_ Q Asbestos Soil PIM_(Qual) PLM_(Qual) PLM/TEM_(Qual) PLM/TEM_(Qual) _(OTY) MATRIX SAMPLE INFORMATION ANALYSIS CLIENT CONTACT VOLUME WIPE SAMPLE LOCATION/ CUENTID E SE 8 DATE AREA (LABORATORY STAFF ONLY) **IDENTIFICATION** (LITERS) NUMBER 4 7130/10 5-73-01 INTROM Date/Time: Contact: By: F-PB- 67 PB - OK QB - 04 Date/Time: Contact: - 65 By: -67 ms **Jon-Responsive** Via: 1. Date/l'ime RCVD: By (Print LABORATORY @ 2. Date/Time Analyzed: By (Print) STAFF ONLY: 3. Results Reported To:______ Postectionsigner Postection Reading Room May 2018 4. Comments: ______ BEST AVAILABLE COP Date: FOIA Requested Record #J-195-0085 (MA) Released by National Guard Bureau May, 2018 Page 3171 of 3473

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Appendix C Photo Documentation **BEST AVAILABLE COPY**

Springfield RC



Drill Hall



Remnants of Water Damage in Posted to NGB FOIA Reading Room May, Magdical Center

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Mess Hall



Water Damaged Drop Ceiling in FOIA Requested Record #J-15-0085 (MA) Medical Center Released by National Guard Byreau Page 3174 of 3473 BEST AVAILABLE COPY

Springfield RC



Kitchen



Boiler Room Posted to NGB FOIA Reading Room May, 2018



Storage Area



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LOCKER ROOM FOIA Requested Record #J-15-0085 (MA) Released by National Guard Bureau Page 3175 of 3473 Appendix D IAQ and Lighting Survey Log Sheets

National Guard Industrial Hygiene Survey For Indoor Air Quality and Light Level

State	MA	City	Springfield	I IAQ Light										
Date	7/30/2010	Inspector	Non-Responsive	Instrument			Q-TRAK 7	Instrument	CAL-LIGHT 400					
Facility Description	Readiness Ctr			Serial Number 7565X0839017							Serial Numbe	K070277		
Weather Conditions		Last Calibrati			Sep-0	8			Last Calibration		30-Jul-09			
Location	Function	No. Occupants		Temp. (°F)	Exceeded	RH (%)	Exceeded	CO ₂ (ppm)	Exceeded	CO (ppm)	Exceeded	Illuminance (fc)	Insufficient	Illuminance Reference Value (fc)
1	Locker Room	0		80.9	х	47.3	х	395		0.0		40.1		7
2	Locker Room	0		83.1	х	46.2	х	448		0.0		72.9		7
3	Offices	0		83.3	х	46.5	х	435		0.0		73.6		50
4	Men's Room	0		83.3	х	47.0	х	485		0.0		18.4		5
5	Women's Room	0		83.1	x	48.7	x	440		0.0		24.8		5
6	Hallway	0		82.9	x	45.2	x	552		0.0		23.7		5
7	Locker Room/Offices	0		82.6	x	43.3	x	455		0.0		29.8		5-50
8	Offices	0		80.3	x	40.1	x	475		0.0		50.5		50
9	Classroom	0		77.8		39.5		401		0.0		27.5	x	50
10	Offices	0		76.0		42.9		529		0.0		77.1		50
11	Offices	0		80.0	х	37.3	х	470		0.0		75.9		50
12	Locker	0		79.9		39.5		469		0.0		88.2		7
13	Offices	0		79.7		38.2		484		0.0		59.0		50
14	Offices	0		79.2		36.9		431		0.0		73.3		50
15	Confrence room	0		79.1		36.6		518		0.0		37.8		30-50
16	Office	0		79.2		38.7		490		0.0		50.5		50
17	Office	0		79.1		39.1		513		0.0		128.8		50
18	Confrence room	0		79.4		38.3		591		0.0		30.8		30-50
Notes:				Relative 30	nidity	Winter Temp. 68.5°F-76.0°F			ummer Tem 4.0°F-80.0° 3.5°E-79.5°					
				50	1%		68.	.5°F-74.5°F	7	3.0°F-79.0°	F			
				60	1%	ļ	68.	.0°F-74.0°F	7	2.5°F-78.0°	F			

State	MA	City	Springfield	IAQ Light						Light	ight			
Date	7/30/2010	Inspector	Non-Responsive	Instrument Q-TRAK 7565-X						Instrument		CAL-LIGHT 400		
Facility Description	Readiness Ct	r		Serial Numb	Serial Number		7565X0839017					Serial Number		K070277
Weather Conditions		Last Calibration			Sep-08					Last Calibration		30-Jul-09		
Location	Function	No. Occupants		Temp. (°F)	Exceeded	RH (%)	Exceeded	CO ₂ (ppm)	Exceeded	CO (ppm)	Exceeded	Illuminance (fc)	Insufficient	Illuminance Reference Value (fc)
19	Office	0		78.8		38.9		476		0.0		51.6		50
20	Office	0		78.1		37.4		437		0.0		66.5		50
21	Office	0		78.6		41.1		464		0.0		35.2	Х	50
22	Office	0		81.1	Х	40.4	х	431		0.0		43.0	Х	50
23	Office	0		78.7		39.3		455		0.0		25.7	Х	50
24	Office	0		78.5		39.4		469		0.0		48.6	Х	50
25	Storage	0		79.8		38.0		429		0.0		37.7		30
26	Stairs	0		78.8		40.9		485		0.0		186.7		5
27	Office	0		78.2		40.0		513		0.2		24.7	Х	50
28	Office	0		79.0		40.0		589		0.0		20.9	Х	50
29	Entry/Hall	0		78.4		42.4		466		0.0		64.7		10
30	Stairs	0		78.5		43.4		444		0.0		21.3		5
31	Mess Hall	0		76.9		38.8		420		0.0		30.7		10
32	Kitchen	0		76.7		40.3		416		0.0		24.2	Х	50
33	Women's Room	0		77.9		43.6		530		0.0		40.3		5
34	Men's Room	0		78.6		48.0		513		0.0		78.6		5
35	Boiler Room	0		80.7	Х	47.1	х	461		0.0		25.4	Х	30
36	Office	0		81.1	Х	38.1	х	456		0.0		66.4		50
Notes:				Relative 30 40	Hur)%)%	nidity	Wi 68. 68.	nter Temp. 5°F-76.0°F 5°F-75.5°F	Si 7 7	ummer Terr 4.0°F-80.0° 3.5°F-79.5°	ip. F			
				60)%		68	0°F-74.0°F	7	2.5°F-78.0°	<u>r</u> F	1		

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State	MA	City	Springfield	Light										
Date	7/30/2010	Inspector	Non-Responsive	Instrument Q-				Q-TRAK 7565-X				Instrument	CAL-LIGHT 400	
Facility Description	Readiness Cti	•		Serial Number		7565X0839017						Serial Numb	K070277	
Weather Conditions				Last Calibra	Sep-0/					Last Calibration		30-Jul-09		
Location	Function	No. Occupants		Temp. (°F)	Exceeded	RH (%)	Exceeded	CO ₂ (ppm)	Exceeded	CO (ppm)	Exceeded	Illuminance (fc)	Insufficient	Illuminance Reference Value (fc)
37	Supply Office	0		80.9	х	40.8	Х	363		0.1		18.3	х	50
38	Supply Office	0		80.5	х	40.7	х	356		0.0		44.1	x	50
39	Stairs	0		80.7	х	46.6	х	458		0.0		83.2		5
40	Drill Hall	0		80.3	х	40.6	Х	359		0.0		124.0		30-50
41	Distance Learning Center	0		81.2	х	40.9	х	369		0.0		54.3		50
42	Garage/Weight Room	0		81.4	х	40.7	Х	369		0.0		20.7	x	30
43	Storage	0		80.0	х	50.2	х	383		0.1		48.6		5-30
44	Storage	0		80.6	х	54.6	Х	392		0.0		19.7		5-30
45	Storage	0		79.8	Х	53.4	Х	398		0.1		38.6		5-30
Notes:	Relative	nidity	dity Winter Temp.			ummer Tem								
	30%			68.5°F-76.0°F			4.0°F-80.0°							
				40		68.5°F-74.5°F			3.5°F-79.5° 3.0°F-79.0°					
	60%			68.0°F-74.0°F			2.5°F-78.0°	1						



Prepared For:

National Guard Bureau Army National Guard Region North Industrial Hygiene Office 301 – IH Old Bay Lane Havre De Grace, Maryland 21078

Prepared By:

URS Corporation 5 Industrial Way Salem, New Hampshire 03079

INDUSTRIAL HYGIENE SURVEY REPORT MASSACHUSETTS NATIONAL GUARD READINESS CENTER 1505 ROOSEVELT AVENUE SPRINGFIELD, MA 01109

July 17, 2013 PN: 39743799



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APPENDICES

APPENDIX A	SHOP DRAWING
APPENDIX B	PERSONNEL LIST
APPENDIX C	ANALYTICAL RESULTS
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APPENDIX E	RECOMMENDATIONS FOR SURFACE LEAD DUST IN
	ARMORIES
FINDINGS AND RECOMMENDATIONS MASSACHUSETTS NATIONAL GUARD READINESS CENTER 1505 ROOSEVELT AVE., SPRINGFIELD, MA

Findings	Recommendations	Risk Assessment Code (RAC)
Lighting		
On the day of the survey, the illuminance was inadequate in several locations tested.	Increase lighting in the work areas. While work is in progress, these areas must be lighted by at least the minimum lighting intensities (ANSI / IESNA RP-1-04).	RAC 4
Ergonomics		
Computer workstations in the Administrative Areas were observed with un-adjustable chairs, arm rests and keyboards.	Ergonomic issues with regard to the desks and chairs should be corrected by fitting the workplace to the worker (Department of the Army Pamphlet 40-21, Chapter 4, Page 7, Section 4- 3).	RAC 3
Water Intrusion	· · · · · · · · · · · · · · · · · · ·	
Evidence of water intrusion and staining was noted on the ceilings and ceiling tiles throughout the facility.	The source of the water intrusion should be identified and repaired. The water-stained materials should be repaired or replaced (ACGIH – Guidelines for the Assessment of Bio- aerosols in the Indoor Environment).	RAC 3
Lead	•	
Three of the 10 lead wipe samples indicated elevated lead levels.	Personnel trained in accordance with the OSHA Lead Standard should clean the areas where elevated lead dust levels were identified (OSHA 29 CFR 1910.1025(h)(1)).	RAC 3
Emergency Exits		
Emergency exit signs and escape plans were not visible from all areas of the facility or illuminated.	Emergency exits should be properly illuminated (29 CFR 1910.37 (q)(6)).	RAC 3
Asbestos		
Presumed asbestos- containing floor tiles and associated mastic were observed; an Asbestos Operation and Maintenance Program was not available on- Site.	Develop a site-specific asbestos operations and maintenance program for management of asbestos- containing materials in place as required by OSHA 29 CFR 1910.1001(j)(2).	RAC 4

Findings	Recommendations	Risk Assessment Code (RAC)
Personal Protective Equipment	nt	
Hazard assessments have not been conducted to determine whether personal protective equipment is required	Conduct a hazard assessment of site operations to determine what types of PPE are required for each type of work (29 CFR 1910.132(d)(1)).	RAC 4
Former Indoor Firing Range		
The former Indoor Firing Range was not posted as unsafe due to lead contamination; however the area is still regularly used and elevated lead in dust levels were identified in wipe samples.	Personnel trained in accordance with the OSHA Lead Standard should clean the areas where elevated lead dust levels were identified (OSHA 29 CFR 1910.1025(h)(1)).	RAC 3
Since the former indoor firing range is contaminated with lead and several wipe samples were found to contain elevated lead levels, good hygiene practices should be used when entering this building area.	Good hygiene practices shall be employed when entering building areas where lead dust may become airborne (29 CFR 1910.1025 (i)(1)).	RAC 3
Ladder Storage		
Ladders were not properly secured and stored.	Ladders not in use shall be properly stored in a vertical position fastened to walls (29 CFR 1910.25 (c)(2)(i)).	RAC 3
Housekeeping		
Housekeeping in the former Indoor Firing Range was poor.	All places of employment, passageways, storerooms and service rooms shall be kept clean and orderly and in a sanitary condition (29 CFR 1910.22 (a)(1)).	RAC 3
Slip, Trip and Fall Hazards		
Electric cords were extended across walkways in the Administrative Area.	Extension cords must be secured to avoid a tripping hazard and are only permitted on a temporary basis (29 CFR 1910.303).	RAC 4
Hazard Communication		
No written hazard communication program was identified at the site.	Employers shall develop, implement and maintain a written hazard communication program (29 CFR 1910.1200 (e)(1)).	RAC 3

1.0 SUMMARY

At the request of the National Guard Bureau (NGB) Region North Industrial Hygiene Office, URS Corporation (URS) conducted an industrial hygiene survey at the Readiness Center in Springfield, Massachusetts.

URS representative, Ms. **Non-Responsive**, conducted the Industrial Hygiene Survey on May 23, 2013. The scope of work included an overall assessment of the facility as it relates to industrial hygiene and included a walkthrough of the facility, collection of photographs, and when required, measurements for illumination (light), area and personal air sampling, and noise monitoring.

The Springfield Readiness Center is a two-story brick building, consisting of offices, a supply area, classrooms, a mess hall, gender separate bathrooms, locker/storage rooms, an Assembly Hall and a former Indoor Firing Range. A layout of the Readiness Center is provided in Appendix A.

<u>GENERAL</u>: Illuminated emergency exit signs were not observed throughout the facility. Emergency escape plans were not posted throughout the facility. Evidence of water intrusion was observed throughout the ceiling and on ceiling tiles throughout the facility. Ladders were not properly stored.

<u>LIGHTING</u>: Lighting in the Readiness Center was found to be inadequate in many of the areas measured. Areas noted within the report as having inadequate lighting require upgrading by either increasing the general lighting or through the use of task lighting. While work is in progress work areas must be lighted by at least the minimum light intensities.

<u>LEAD</u>: Three of the ten wipe samples collected in the Readiness Center were found to contain lead in a concentration above the recommended limit set by the NGB, Region North IH Office.

On the day of the survey, none of the paint chip samples were found to contain a level of lead above the HUD criteria for determination of paint as lead-based.

<u>ASBESTOS</u>: Presumed asbestos-containing floor tiles and associated mastic were identified during this survey. Until suspect materials have been sampled and determined not to contain asbestos, they must be presumed to be asbestos-containing and managed accordingly.

<u>ERGONOMICS</u>: Many of the work stations had ergonomic issues which require attention. Computer workstations were assessed during the walkthrough for ergonomic issues. The computer workstations in the facility did not meet the current Occupational Safety and Health Administration (OSHA) ergonomic recommendations. The chair armrests, keyboards, and monitors were not adjustable. All workstations in the facility should be adjusted and monitored. The ergonomic issues with regard to the workstations and chairs need to be corrected by fitting the workplace to the worker.

<u>NOISE</u>: Area noise monitoring levels in the Readiness Center determined that noise levels were below the OSHA permissible exposure limit (PEL) and Department of Defense Instruction (DoDI) Hearing Conservation Standard (6055.12 3 December 2010) on the day of URS' site visit.

2.0 SUPPLY / TRAINING AREA

2.1 Operation Description

This Readiness Center is primarily used for weekend training drills and conducting administrative functions. The building includes offices, a supply area, classrooms, a mess hall, gender separate bathrooms, locker/storage rooms, an Assembly Hall and a former Indoor Firing Range.

The Readiness Center was found to be neat and organized at the time of URS' site visit.

2.2 Chemical and Physical Agents Sampled

2.2.1 Carbon Dioxide

On the day of the survey, carbon dioxide measurements were made in the Readiness Center. Interior carbon dioxide concentrations were found to be between 415 and 682 parts per million (ppm). Carbon dioxide levels were measured using a direct-reading TSI Q-Trak (Model 8551).

Carbon dioxide is a normal constituent of the atmosphere and ranges from about 250 to 450 ppm. The major source of excess carbon dioxide in the indoor environment is human respiration. Other sources can include open-flame heaters, fermentation processes, and motor vehicles. Carbon dioxide itself is not normally a cause of indoor air quality problems but is typically used as an indicator of the adequacy of fresh air intake. As the concentration of carbon dioxide increases, so do the background levels of other air contaminants.

To minimize air quality complaints, the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) has proposed that the carbon dioxide concentration within an occupied workspace be maintained below 700 ppm above ambient outside levels. For example, on the day of the survey, the outside carbon dioxide level was measured at 455 ppm. Therefore ASHRAE (Standard 62.1-2010) would recommend that interior carbon dioxide concentrations be maintained at or below 1,155 ppm. Using the ASHRAE guideline, the readings at the subject site were found to be below the suggested indoor to outdoor differential concentration.

2.2.2 Carbon Monoxide

The carbon monoxide concentrations in the Readiness Center were measured between 0.0 ppm and 0.7 ppm on the day of the survey. ASHRAE recommends that average carbon monoxide concentrations not exceed 9 ppm. Typical average concentrations found in commercial buildings range from 0 to 6 ppm. The measured levels were below the ASHRAE guideline for indoor environments. Carbon monoxide was measured using a TSI Q-Trak Plus (Model 8554).

Key sources of carbon monoxide within indoor environments include internal combustion engines, motor vehicle and forklift exhaust, tobacco smoke, space heaters, and improperly adjusted oil or gas burners.

2.2.3 Relative Humidity

The average relative humidity within the Readiness Center measured with the Q-Trak Plus was 56%, which was within the guideline of less than 65% recommended by ASHRAE.

2.2.4 Temperature

Temperature should be maintained within the thermal comfort envelope suggested in ASHRAE Standard 55-2010. This standard on thermal environments specifies conditions in which 80% or more of building occupants should find the thermal environment acceptable. ASHRAE 55-2010 suggests temperatures of 68 to 75 degrees Fahrenheit (°F), during winter months, for people in typical seasonal clothing during light sedentary activity. For summer, the temperature should be in the range of 73 to 79 °F.

The average temperature inside the Readiness Center was, 75.7 °F, which was within the guideline of 73 to 79 °F recommended by ASHRAE for thermal comfort during summer months. URS received several complaints about warm temperature during this survey.

2.2.5 Lighting

Lighting in the Readiness Center was measured using a cal-Light 400 Light Meter. Table 2-1 below shows lighting measurements in foot candles (FC) and the recommended lighting requirements (Illuminating Engineering Society of North America (IESNA) RP-7-01).

Location	Function	Measured Illuminance in Foot Candles (FC)	Recommended Minimum Illuminance in Foot Candles (FC)			
2 nd Floor, desk- ^{Non-Responsive}	Admin	7.8	50			
2 nd Floor, desk	Admin	27.9	50			
2 nd Floor, desk-	Admin	15.8	50			
2 nd Floor, desk-	Admin	42.2	50			
2 nd Floor, desk-	Admin	33.7	50			
2 nd Floor, conference room, table	Admin	43.3	50			
2 nd Floor, vacant office, desk	Admin	28.3	50			
2 nd Floor, desk-	Admin	29.2	50			
2 nd Floor, desk-	Admin	21.2	50			
2 nd Floor, desk-	Admin	46.5	50			
2 nd Floor, desk-	Admin	53.4	50			
2 nd Floor, north hall	Hall	39.0	5			
2 nd Floor, desk-	Admin	20.7	50			
2 nd Floor, desk-	Admin	12.0	50			
2 nd Floor, desk-	Admin	34.5	50			
2 nd Floor, desk-	Admin	49.0	50			
2 nd Floor, desk	Admin	35.0	50			
2 nd Floor, desk- Non-Responsive	Admin	34.8	50			
2 nd Floor, desk-	Admin	51.2	50			
2 nd Floor, desk-	Admin	23.8	50			
2 nd Floor, desk adjacent to copier	Admin	38.7	50			
2 nd Floor, storage room	Storage	12.6	30			
2 nd Floor, storage room, desk	Admin	31.7	50			
South Hallway	Hall	8.0	5			
South Hallway	Hall	15.4	5			
South Hallway	Hall	25.1	5			
1 st Floor, desk-	Admin	32.0	50			
1 st Floor, desk-	Admin	15.3	50			
1 st Floor, desk-	Admin	33.3	50			

 Table 2-1

 Lighting Measurements and Recommended Lighting Requirements

Location	Function	Measured Illuminance in Foot Candles (FC)	Recommended Minimum Illuminance in Foot Candles (FC)
1 st Floor, desk-	Admin	23.0	50
1 st Floor, desk-	Admin	15.2	50
1 st Floor, northeast hallway	Hall	22.6	5
1 st Floor, classroom/ mess hall, table	Break Room	48.1	30
1 st Floor, hallway	Hall	55.0	5
1 st Floor, Recruiter's storage	Storage	49.1	30
Assembly Hall	Hall	15.7	10
Assembly Hall	Hall	15.9	10
Distance Learning Center, desk	Admin	32.5	50
1 st Floor, storage, desk	Admin	12.7	50

On the day of the survey, the illuminance in the Readiness Center was determined to be inadequate in many of the locations surveyed.

2.2.6 Lead

Wipe testing for lead dust was conducted in the Readiness Center using ghost wipes, which meet ASTM E 1792 standards. The analytical report from AMA Analytical Services, Inc. (AMA) is contained in Appendix C. Table 2-2 below shows the results of the lead wipe testing.

Sample Location	URS Sample Number	Area Wiped in Square Feet (ft ²)	Result in Micrograms/ Square Foot (µg/ft ²)	Maximum Surface Contamination Level in Micrograms/ Square Foot (μg/ft ²)		
2 nd Floor, Office- Non-Responsive, file cabinet adjacent to window	Springfield RC W-01	0.108	<110	200		
1 st Floor, Office-	Springfield RC W -02	0.108	<110	200		
2 nd Floor, Office- 1 , floor adjacent to safe	Springfield RC W-03	0.108	<110	200		

 Table 2-2

 Levels of Lead Dust Found in the Readiness Center

Sample Location	URS Sample Number	Area Wiped in Square Feet (ft ²)	Result in Micrograms/ Square Foot (µg/ft ²)	Surface Contamination Level in Micrograms/ Square Foot (μg/ft ²)			
2 nd Floor, office- Non-Responsive, shelving unit adjacent to window	Springfield RC W-04	0.108	<110	200			
2 nd Floor, office-	Springfield RC W-05	0.108	<110	200			
1 st Floor, storage area, under cabinet	Springfield RC W-06	0.108	460	200			
Classroom/ Mess Hall, behind doorway	Springfield RC W-07	0.108	<110	200			
Assembly Hall, adjacent to loading area, next to door	Springfield RC W-08	0.108	220	200			
Former Indoor Firing Range, doorway	Springfield RC W-09	0.108	190	200			
2 nd Floor, locker room, floor in southern corner	Springfield RC W-10	0.108	360	200			

Three of the ten surface dust level measurements were found to contain lead at a level above the NGB recommended level, based on the OSHA clarification letter which states "as free as practicable" of lead contamination as specified under OSHA 29 CFR 1926.62.

Three paint chip samples were collected from areas of peeling paint in the facility and analyzed for lead content. The analytical report from AMA is contained in Appendix C.

According to the U.S. Department of Housing and Urban Development (HUD), paint is considered to be lead-based if the quantity of lead is greater than 0.5% by weight. OSHA has not established a minimum percentage of lead to be defined as lead-based paint, therefore paint with lead in any amount above the analytical detection limit is considered to be lead-based under these regulations. The results of URS' lead paint testing are contained in Table 2-3.

Paint Location	Lead Concentration (Percent Weight)	HUD Lead-Based Quantity (Percent Weight)
1 st Floor, storage room, wall	<0.0064	0.5
1 st Floor, storage room, wall	<0.0068	0.5
Doorway to Former Indoor Firing Range, ceiling	0.018	0.5

Table 2-3 Lead Content in Painted Surfaces

On the day of the survey, none of the paint chip samples were found to have a lead content above the HUD criteria for determination of paint as lead-based.

2.2.7 Asbestos

Presumed asbestos-containing floor tiles and associated mastic were identified during this survey. Until suspect materials have been sampled and determined not to contain asbestos, they must be presumed to be asbestos-containing and managed accordingly.

2.3 Ventilation System Evaluation

The facility, not designed for vehicle maintenance, contains a ventilation system that is limited to localized personal ventilation (i.e. room fans, window air conditioning units) within the majority of rooms, and main negative draw fans in the Assembly Hall.

2.4 Noise Measurements

Area noise dosimetry was conducted within the administrative office area. Noise exposures were measured using a data-logging Spark 703+ Noise Dosimeter. Area noise dosimetry results indicated that, on the day of the survey, workers were not exposed to noise levels above the DoDI Hearing Conservation Standard (6055.12 3 December 2010) of 85 decibels, A scale (dBA)/8-hour day. Table 2-5 indicates the individual monitored, the tasks performed and noise exposures.

Table 2-5 Noise Dosimetry Data

Location	Task	Sample Duration in Minutes	Monitoring Result TWA (dBA)*	Hearing Protection
Office- Non-Responsive	Administrative	403	69.3	N/A

* The calculated 8-hour, time-weighted average (TWA) noise exposure in dBA. The OSHA PEL for noise exposure is 90 dBA. DoDI has established an employee exposure level of 85 dBA for requirement of a hearing conservation program.

2.5 Personal Protective Equipment

Personal protective equipment was orderly and readily available to employees in the Readiness Center. Personal protective equipment included safety glasses, ear plugs and nitrile gloves. No personal protective equipment was observed to be in use at the time of URS' site visit.

3.0 SAFETY AND INDUSTRIAL HYGIENE PROGRAMS

3.1 Confined Spaces

A written confined spaces program is not required for this site.

3.2 Hearing Conservation

A written hearing conservation program was not identified on site. A review of normal site activities determined that no operations were identified that would warrant hearing protection. Based on area noise dosimetry results, a hearing conservation program is not required for this site.

3.3 Respiratory Protection

A site-specific written program regarding Respiratory Protection was not identified on site. No operations were observed by URS that would require the use of respiratory protection.

3.4 Hazard Communication

A site-specific hazard communication program was not identified on site.

Material safety data sheets, a site map, and list of full time personnel were readily available on the day of the survey.

3.5 Personal Protective Equipment

A written personal protective equipment program was not identified on site. A hazard assessment should be conducted to determine whether personal protective equipment is required for activities typically undertaken at the Readiness Center.

3.6 Asbestos Operations and Maintenance Program

A written asbestos operations and maintenance program was not identified on site.

3.7 Safety

Ladders were not properly stored. Cords were extended across walkways. Emergency exit signs and escape plans were not properly posted throughout the facility. Evidence of water intrusion and water staining was observed throughout ceilings and ceiling tiles in the facility.

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4.0 REFERENCES

American Conference of Governmental Industrial Hygienists

Industrial Ventilation: A Manual of Recommended Practice, 27th Edition, 2010

Guidelines for the Assessment of Bio-aerosols in the Indoor Environment, 1989

American National Standards Institute

American National Standards Institute/Illuminating Engineering Society of North America (ANSI/IESNA) RP-1-04: American National Standard Practice for Office Lighting

ANSI/IESNA RP-7-01: Recommended Practice for Lighting Industrial Facilities

American Society of Heating, Refrigerating and Air-Conditioning Engineers

ANSI/ASHRAE Standard 62.1-2010: Ventilation for Acceptable Indoor Air Quality

ANSI/ASHRAE Standard 55-2010: Thermal Environmental Conditions for Human Occupancy.

Department of the Army

DA PAM 40-21, Ergonomics Program, 15 August 2003

Unified Facilities Criteria, Heating, Ventilating and Air Conditioning, 3-520-05, 14 April 2008

DA PAM 40-501, Hearing Conservation Program, 10 December 1998.

AR 385-10, The Army Safety Program, 23 August 2007; RAR Issue Date: 4 October 2011

National Guard Pamphlet 420-15, Guidelines and Procedures for Rehabilitation and Conversion of Indoor Firing Ranges, 3 November 2006

Department of Defense

DoDI 6055.12, Hearing Conservation, 3 December 2010

Creating the Ideal Computer Workstation: A Step-by-Step Guide, June 2000

National Institute for Occupational Safety and Health

Current Intelligence Bulletin 50: Carcinogenic Effects of Exposure to Diesel Exhaust, August 1988

U. S. Environmental Protection Agency

Asbestos Hazard Emergency Response Act (40 CFR Part 763)

National Emissions Standards for Hazardous Pollutants (40 CFR Part 61)

U. S. Department of Housing and Urban Development

Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (1995, 1997, 2012)

U. S. Occupational Safety and Health Administration

Standard for General Industry: 29 CFR 1910

OSHA Clarification Letter – Clarification of "as free as practicable" of lead contamination under 29 CFR 1926.62, 13 January 2003.

APPENDIX A

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SHOP DRAWING

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APPENDIX B

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PERSONNEL LIST



APPENDIX C

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ANALYTICAL RESULTS

AMA Analytical Services, Inc.

A Specialized Environmental Laboratory

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CERTIFICATE OF ANALYSIS

AIHA LAP, LLC ACCREDITED LABORATORY INDUSTRIAL HYGIENE, ENVIRONMENTAL LEAD **& ENVIRONMENTAL MICROBIOLOGY** ISONEC 17025 2005

LAS #100470

Client:	National Guard Bureau	Job Name:	MA ARNG	Chain Of Custody:	515978		
Address:	301-IH Old Bay Lane, Attn: ARNG-CJG-P, State Military Reservation	Job Location:	Springfield RC	Date Submitted:	5/28/2013		
	Havre de Grace, Maryland 21078	Job Number:	39743799.00035	Person Submitting:	Non-Respon	nsive	
		P.O. Number:	W912K6-09-A-0003	Date Analyzed:	5/31/2013	Report Date:	6/3/2013

Attention:

Summary of Atomic Absorption Analysis for Lead

Page 1 of 2

AMA Sample Number	nple Client Sample r Number	Analysis Type	Sample Type	Air Volume (L)	Area Wiped (ft²)	Rep L	orting Jimit	Total ug	Final Res	ult	Comments
13065726	Springfield RC W-01	Flame	Wipe	***	0.108	110	ug/fl²	<12	<110	ug/ft²	
13065727	Springfield RC W-02	Flame	Wipe	***	0.108	110	ug/ft²	<12	<110	ug/ft²	
13065728	Springfield RC W-03	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/ft²	
13065729	Springfield RC W-04	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/ft²	
13065730	Springfield RC W-05	Flame	Wipe	****	0.108	110	ug/fl²	<12	<110	ug/ft²	
13065731	Springfield RC W-06	Flame	Wipe	****	0.108	110	ug/fl²	50	460	ug/ft²	
13065732	Springfield RC W-07	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/ft²	
13065733	Springfield RC W-08	Flame	Wipe	****	0.108	110	ug/ft²	23	220	ug/ft²	
13065734	Springfield RC W-09	Flame	Wipe	****	0.108	110	ug/ft²	20	190	ug/fl ²	
13065735	Springfield RC W-10	Flame	Wipe	****	0.108	110	ug/ft²	39	360	ug/ft²	
13065736	Springfield RC LBP- 01	Flame	Paint Chip	****	N/A	0.0064	%Pb		<0.0064	%Pb	
13065737	Springfield RC LBP- 02	Flame	Paint Chip	****	N/A	0.0068	%Pb		<0.0068	%Pb	
13065738	Springfield RC LBP- 03	Flame	Paint Chip	****	N/A	0.0074	%Pb		0.018	%Pb	
13065739	TB-W	Flame	Wipe Blank	****	N/A	12	ug		<12	ug	

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AMA Analytical Services, Inc.

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CERTIFICATE OF ANALYSIS

515978 Job Name: MA ARNG Chain Of Custody: Client: National Guard Bureau Address: 301-IH Old Bay Lane, Attn: ARNG-CJG-P, Job Location: Springfield RC Date Submitted: 5/28/2013 State Military Reservation Havre de Grace, Maryland 21078 39743799.00035 Job Number: **Person Submitting:** P.O. Number: W912K6-09-A-0003 5/31/2013 Date Analyzed: **Report Date:** 6/3/2013 Attention:

Summary of Atomic Absorption Analysis for Lead

Page 2 of 2

AIHA LAP, LLC

ACCREDITED LABORATORY

NOUSTRIAL HYGIENE, ENVIRONMENTAL LEAD & ENVIRONMENTAL MICROBIOLOGY ISONEC 6 17025 2005 www.ahaaceredictilabs.org LAB #100470

AMA Sample Number	Client Sample Number	Analysis Type	Sample Type	Air Volume (L)	Area Wiped (ft²)	Reporting Limit	Total ug	Final Result	Comments
Analysis Method fo Analysis Method F N/A = Not Applicat	or Flame: Air, Wipes, or Furnace: Air, Wip ole mg/Kg = par	Paints, and Soil/S es, Paints, and So ts per million (ppn	Solids: EPA 600/ il/Solids : EPA 6 i) on a dry weigh	R-93/200(M)-7000 00/R-93/200(M)- 1 basis mg/L =	DB; Water: SM-31 7010; Water: SM- parts per million (p	11B See QC 3113B associa sample	Summary for an ted with these s.	nalytical results of quality	control samples
Note: All samples	were received in good	d condition unless	otherwise noted.	- parts per billion	(ppb)				
Note: All results has should not be cons	ive two significant dig	its. Any additiona ting the result.	l digits shown						
Air and Wipe resul	ts are not corrected for	or any blank result	s						
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All results are to be change unless sign	e considered prelimin ned by the Technical	ary and subject to Director or Deputy			Analyst: Supr	menimapad	100	ennical Manager: G Ec	ward Camey

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	Mailing/Billing Informa 1. Client Name:National 2. Address 1:301-3 3. Address 2:Attn: 4. Address 3:Attn: 5. Phone #:(410) 94/3	ation: onal Guard Bureau IH Old Bay Lane NGB-AVN-SI, State a de Grace, Marylan 2-0273	Military d 2107	Reserva /8 :(410).9	tion 342-0254			Su 1. 2. 3. 4. 5.	ibmitt Job J Job J Job I Con Subi	al Ini Name Locat #: tact P	form ion ううチ ers	tion:		Al	R	e	S	oons	ive	on-Respo	15/78
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APPENDIX D

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APPENDIX E

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RECOMMENDATIONS FOR SURFACE LEAD DUST IN ARMORIES

Subject: Recommendations for Surface Lead Dust in Armories

- 1. In armories that do not contain childcare facilities, the National Guard Bureau (NGB) Region North Industrial Hygiene Office recommends cleaning the areas in which sample results are greater than 200 micrograms per square foot (µg/ft²). If a special function will be held in which children will be present in this facility, consider thoroughly cleaning the areas that will be accessible to children prior to the function. This guidance is based on professional judgment, risk assessments, adaptation of Occupational Safety and Health Administration (OSHA) guidance, and feasibility of cleaning to a certain level.
 - a. Environmental Protection Agency (EPA) standards (40 Code of Federal Regulations (CFR) 745.227(h)(3)) are not directly applicable because they are criteria for dust-lead hazards developed for floors (40 μ g/ft²) and windowsills (250 μ g/ft²) in residential dwellings and child occupied facilities. A child occupied facility is defined as a building, or portion of a building, constructed prior to 1978, visited regularly by the same child, 6 years of age or under, on at least two different days within any week (Sunday through Saturday period), provided that each day's visit lasts at least 3 hours and the combined weekly visit lasts at least 6 hours, and the combined annual visits last at least 60 hours. Most of the wipe samples in armories were collected in undisturbed areas and therefore, results are worst case scenarios and do not correlate to these standards.
 - b. OSHA has no specific requirement for work area surfaces. The lead standard (29 CFR 1910.1025(h)) states that all surfaces shall be maintained as free as practicable of accumulations of lead dust. In workplaces where lead dust is generated, surface levels may be much higher, but personnel exposures can be controlled by limiting airborne lead levels and following good cleanup and hygienic practices.
 - c. OSHA used to cite a level of 200 μ g/ft² in their Technical Manual and 29 CFR 1926.62 as guidance to its own inspectors for evaluating the cleanliness of lunchroom and locker room surfaces that are supposed to be kept as clean as possible.
 - d. In a report titled Derivation of Wipe Surface Screening Levels for Environmental Chemicals, the US Army Center for Health Promotion and Preventive Medicine (USACHPPM) has determined that 200 μ g/ft² is a safe surface contamination level. They have also applied these standards as the decontamination levels for surfaces in administrative offices.
 - e. It should be noted that levels above these recommendations do not necessarily mean there is a significant hazard to workers who are following good cleaning and hygienic practices since there is no

correlation between wipe and air samples. Rather, we recommend these levels as a precautionary measure.

- 2. The NGB Occupational Health Branch is developing guidance for armories that are used as childcare facilities. All states will receive this guidance when it is completed. In the interim, we recommend the following actions:
 - a. Clean all areas that will be accessible to children to the EPA dust-lead standard for children 6 years of age or under (40 μ g/ft² on floors and 250 μ g/ft² on windowsills).
 - b. Refer to the local authorities' regulations since they can be more stringent than federal regulations.
 - c. Post signs in the area to inform people of the presence of lead dust and its effects.
 - d. If soldiers clean weapons in the facility change the policy so that they cannot clean their weapons in the facility, or if they are allowed to clean their weapons indoors, they must clean the area by wet wiping and mopping the area when they are done.
 - e. If the paint is peeling, contact the state Environmental Office to test for lead content and provide recommendations.
- 3. Air samples collected on individuals in the armory were well below OSHA's permissible exposure limit for lead (29 CFR 1910.1025(c)) of 0.05 milligrams per cubic meter (mg/m³) averaged over an 8-hour day. Therefore, based on these conditions there is currently no overexposure to personnel from lead dust in this building.

Industrial Hygiene Survey

Massachusetts Army National Guard (MA ARNG)

Prepared For: NGB ARNG- Region North IH Office

Survey Location:

Ware Readiness Center 323 West Street Ware, MA 01082-1400

Prepared By: Aria Environmental, Inc. (AEI) PO Box 286 Woodbine, MD 21797

Survey Date: July 30, 2010 Report Date: September 22, 2010

AEI Project #: J10-513 3a MA Ware RC

Non-Responsiv

Industrial Hygienist



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- Appendix B Certificates of Analysis for Air, Dust Wipe and Bulk Samples
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Executive Summary

Aria Environmental, Inc. (AEI) was contracted to perform an industrial hygiene evaluation for the Readiness Center located at 323 West Street, Ware, MA 01082-1400. Non-Responsive performed the evaluation on July 30, 2010. The point of contact for the facility was Sergeant workesponse. The purpose of the evaluation was to identify and measure the existence and extent of potentially hazardous operations or conditions at Army National Guard (ARNG) facilities. The survey included: (1) evaluations of operations including operation description, ventilation system evaluations, noise dosimetry if appropriate, lighting surveys, hazard control evaluations and any additional information pertinent to the operations; (2) an evaluation of the physical condition of the facility and personnel concerns including materials, water damage or mold problems; indoor air quality concerns; and housekeeping practices; and (3) photographs of the exterior and interior of the readiness center. The results of the evaluation indicated the following:

Noise Hazards: No noise-generating activities were taking place on the day of the survey. Due to the nature of the tasks performed onsite, no activities requiring noise monitoring are anticipated to occur at the RC.

Lead in Air Samples: Lead in air samples to determine if any airborne contamination of lead existed in the facility were not collected at the Ware Readiness Center due to sample pump malfunction.

Paint Chip and Wipe Samples for Lead Contamination: Three of six samples collected from the former firing range were above the National Guard criteria for lead contamination ($200 \mu g/ft^2$). Samples ranged from 5.5 to 185 times the National Guard criteria. Lead was identified in the bullet trap, exhaust fan and on the floor of the range. Peeling paint was observed in the supply room; therefore, one paint chip was collected. The paint chip sample was below regulatory limits of 0.5% lead by weight.

Visual Inspection for Damaged Asbestos-Containing Materials: Damaged pipe fittings that might contain asbestos were observed in the crawlspace of the boiler room. The TSI pipe fitting located in the crawlspace contained 2% Chrysotile, 53% Amosite and 5% Crocidilite asbestos.

Visual Inspection for Water Damage and Mold Growth: A visual inspection was performed to determine if there was any water damage or visible mold growth at the facility. Evidence of water damage was observed in two locations: the Supply Room (room 16 on the drawing) and one office (room 8 on the drawing). The water damage in the Supply Room also had visible evidence of mold.

Visual Inspection for Housekeeping Concerns: A visual inspection was performed to assess the state of housekeeping in the facility. The housekeeping was good. All areas were clean and tidy except where mold was observed.

Lighting: The evaluation indicated that there are some illumination deficiencies in the Boiler Room. The illumination measurements indoors ranged from a low of 18.6 foot candles (fc) to a high of 113.8 fc.

Indoor Air Quality: Temperatures and relative humidity measurements were outside the acceptable range in most of the facility. These results are not unexpected due to outdoor conditions on the day of the survey and the lack of air conditioning in most of the facility. Indoor

levels of CO₂ ranged from 335 to 542 parts per million (ppm) and outdoor CO₂ levels were approximately 350 ppm during the monitored period. CO_2 measurements were below the guideline in all areas, indicating adequate fresh air exchange. Indoor levels of CO were 0 ppm in all areas; therefore, concentrations are below occupational exposure limits, ASHRAE and the NAAQS-recommended CO concentrations.

1 Introduction

Aria Environmental, Inc. (AEI) was contracted to perform an industrial hygiene evaluation for the Massachusetts Army National Guard (MA ARNG) Readiness Center located at 323 West Street, Ware, MA 01082-1400. Non-Responsive performed the evaluation on July 30, 2010. The point of contact for the facility was Sergeant of Potentially hazardous operations or conditions at Army National Guard (ARNG) facilities.

The Ware Readiness Center is staffed with 4 fulltime National Guard administrative personnel. The operations conducted at the facility include supply and administrative duties. A diagram of the building layout is provided in Appendix A. All sampling sheets and laboratory certificates of analysis are provided in Appendix B. Selected photographs taken during the evaluation are provided in Appendix C. Indoor air quality and lighting survey measurement log sheets are provided in Appendix D. Lists of all references used during the evaluation are included in the main body of the report.

2 Evaluation Methods

The industrial hygiene survey of the Ware Readiness Center consisted of visual inspections, interviews with employees and sampling plan development in order to achieve the following: (1) evaluations of operations including operation description, sampling for lead in air or on surfaces if appropriate, ventilation system evaluations, noise measurements if appropriate, lighting surveys, hazard control evaluations and any additional information pertinent to the operations; (2) an evaluation of the physical condition of the facility and personnel concerns including visual inspections for peeling potentially lead-based paint, damaged suspect asbestos-containing materials, water damage or mold problems; indoor air quality concerns; and housekeeping practices; and (3) a building layout and photographic documentation of the interior of the facility.

The National Guard Bureau (NGB) Region North IH Office provided all industrial hygiene equipment for air sampling (equipment and media), ventilation, lighting, noise and IAQ survey instruments and paid for laboratory analytical fees. Laboratories were chosen or approved by the NGB IH office.

3 Operations

Operations conducted at the Ware facility consists exclusively of supply and administrative duties. No maintenance of vehicles, painting of equipment or other physical tasks are performed at the facility. Ground maintenance and upkeep of the building are the responsibility of the state employed Armorer and not part of the duties of National Guard personnel.

4 Noise Hazards

No noise-generating activities were taking place on the day of the survey. Due to the nature of the tasks performed onsite, no activities requiring noise monitoring are anticipated to occur at the readiness center.
5 Hazard Controls

Ventilation Systems

Heat is supplied to the facility through a boiler located in the boiler room and overhead heaters in the drill hall. The boiler certificate for the Ware facility expired in 2005 and is not up to date. Any air conditioning provided to the building is through window air conditioning units. No local ventilation systems were present at the facility.

6 Physical Condition of the Facility and Personnel Concerns

An evaluation of the physical condition of the facility and personnel concerns was performed including visual inspections for peeling potentially lead-based paint, damaged suspect asbestos-containing materials, water damage or mold problems; indoor air quality concerns; and housekeeping practices. Lighting and indoor air quality measurements were taken in all areas of the facility as well.

Lead in Air Samples

Lead in air samples to determine if any airborne contamination of lead existed in the facility were not collected at the Ware Readiness Center due to sample pump malfunction.

Paint Chip and Dust Wipe Samples for Lead Contamination

To determine if any cross contamination of lead from any source into areas of the facility existed, wipe samples were collected using ghost wipes and 10cm x 10cm templates. Wipe samples for surface dust were collected in 15 locations. The Environmental Protection Agency (EPA) and the Commonwealth of Massachusetts limits for lead in dust are 40 micrograms per square foot $(\mu q/ft^2)$ on floors, 250 $\mu q/ft^2$ on window sills, and 400 $\mu q/ft^2$ in window troughs. These limits apply to pre-1978 Army facilities only if children under 6 years of age occupy them for 60 or more hours per year. The NGB Region North Industrial Hygiene Office concurs with the US Army Center for Health Promotion and Preventive Medicine (USACHPPM) recommended maximum level for adult exposures of 200 µg/ft² on floors and frequently contacted surfaces, which is more stringent for window sills than the EPA/State standards. Dust wipe samples were submitted to Aerosol Monitoring and Analysis Analytical Services, Inc. (AMA) for atomic absorption spectrophotometry (AAS) following the analytical method ASTM D3335-85A. Three of six samples collected from the former firing range, now used but not converted to storage, were above the National Guard criteria for lead contamination (200 µg/ft²). Samples ranged from 5.5 to 185 times the National Guard criteria. Lead was identified in the bullet trap, exhaust fan and on the floor of the range. Results are given in Table 1 and certificates of analysis are included in Appendix B.

Wipe Sample #	Sample Location	Result (µg/ft²)*
WAR-PB-01	Kitchen, Service Counter	<110
WAR-PB-02	Drill Hall, On Stored Chairs	<110
WAR-PB-03	Drill Hall, Middle of Floor	<110
WAR-PB-04	Drill Hall, Table by Wall with Entry	<110
WAR-PB-05	Room 8, Radiator Vent	<110

Table 1 – Results of Dust Wipe Sampling for MA ARNG Ware Readiness Center on July 30, 2010.

Wipe Sample #	Sample Location	Result (µg/ft²)*
WAR-PB-06	Room 15, Former Indoor Firing Range, Bullet Trap	37,000
WAR-PB-07	Room 15, Former Indoor Firing Range, Light Fixture	<110
WAR-PB-08	Room 15, Former Indoor Firing Range, Exhaust Fan	1,100
WAR-PB-09	Room 15, Former Indoor Firing Range, Middle of Floor	2,200
WAR-PB-10	Room 15, Former Indoor Firing Range, Storage Table	<110
WAR-PB-11	Room 17, Immediately Outside Room 15	<110
WAR-PB-12	Room 10, Top of File Cabinet	<110
WAR-PB-13	Room 11, Middle of Floor	<110
WAR-PB-14	Room 16, Top of Supply Shelf	<110
WAR-PB-15	Room 1, Window Sill	<110

Table 1 – Results of Dust Wipe Sampling for MA ARNG Ware Readiness Center on July 30, 2010.

*The US Army CHPPM recommends a maximum level for adult exposures of 200 µg/ft² lead on floors

A visual inspection was performed to determine if there were any areas of peeling paint at the facility that could pose a lead exposure hazard. Peeling paint was observed in the supply room; therefore, one paint chip was collected. The paint chip sample was collected following operational protocols set forth in HUD's *Guidelines for the Evaluation and Control of Lead-Based Paint Hazard in Housing (1995)*. The paint chip sample was submitted to Aerosol Monitoring and Analysis Analytical Services, Inc. (AMA) of Lanham, MD for analysis. The analyses were performed using Flame Atomic Absorption Spectrophotometry (AAS) following the analytical method SW 846 7420. AMA is accredited for the analysis of paint chip samples through the AIHA Proficiency Testing Program (#100470). In the Commonwealth of Massachusetts, paint is considered to be lead-based if it contains more than 0.5 % lead by weight. The paint chip sample was below regulatory limits of 0.5% lead by weight. Results are given in Table 2 and certificates of analysis are included in Appendix B.

Table 2 – Results of Paint Chip Sampling for MA ARNG Ware Readiness Center on July 30, 2010.

Paint Chip Sample #	Sample Location	Result (% by wt)*
WAR-LBP-01	Peeling Pipe Paint From Room 16	0.012

*Paint is considered lead-based if it is > 0.5% by weight.

Visual Inspection for Damaged Asbestos-Containing Materials

A visual inspection was performed to determine if there were any suspect asbestos-containing material and its condition. Damaged pipe fittings that might contain asbestos were observed in the crawlspace of the boiler room. Bulk samples of pipe fittings were collected. Samples were submitted to AMA Analytical Services, Inc. of Lanham, MD 20706 (NIST-NVLAP Accreditation No.

101143-0) for analysis by Polarized Light Microscopy (PLM) using EPA method 600/R-93/116. The EPA defines an asbestos-containing material as one percent (1%) or more asbestos by visual estimation. The TSI pipe fitting located in the crawlspace contained 2% Chrysotile, 53% Amosite and 5% Crocidilite asbestos. Results are given in Table 4 and certificates of analysis are included in Appendix B.

Table 3 - Results of Asbestos Sampling for the MA ARNG RC	
Ware, MA on July 30, 2010.	

Bulk Sample #	Sample Location	Result (%)
WAR-ASB-01	Damaged Fitting in Crawlspace in Boiler Room	2% Chrysotile 53% Amosite 5% Crocidilite

Visual Inspection for Water Damage and Mold Growth

A visual inspection was performed to determine if there was any water damage or visible mold growth at the facility. Evidence of water damage was observed in two locations: the Supply Room (room 16 on the drawing) and one office (room 8 on the drawing). The water damage in the Supply Room also had visible evidence of mold.

Visual Inspection for Housekeeping Concerns

A visual inspection was performed to assess the state of housekeeping in the facility. The housekeeping was good. All areas were clean and tidy except where mold was observed.

Lighting

Illumination levels were measured using a Cal-Light 400L, calibrated on July 30, 2009, and compared to minimum lighting requirements for various facilities and functions based on the following references: American National Standards Institute/Illumination Engineering Society of North America (ANSI/IESNA) Standard RP-1-04 (Office Lighting) and ANSI/IESNA Standard RP-7-01 (Lighting Industrial Facilities).

A lighting survey was performed in all areas within the readiness center. The evaluation indicated that there are some illumination deficiencies in the Boiler Room. The illumination measurements indoors ranged from a low of 18.6 foot candles (fc) to a high of 113.8 fc. The complete results of the evaluation are presented in Appendix D, including whether the results met minimum requirements for illumination. Additional illumination can be achieved by replacing burned-out lamps, cleaning fixtures, relocating detailed work to more illuminated areas, using supplemental task lighting, and opening doors or windows to provide more natural lighting.

Indoor Air Quality (IAQ)

Indoor air quality measurements (i.e., temperature, relative humidity, carbon dioxide and carbon monoxide) were taken using a factory calibrated TSI Q-Trak Plus Model 7565X. Temperature, relative humidity and carbon dioxide (CO₂) measurements were compared to the recommended levels established by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE). Carbon monoxide (CO) concentrations were compared to the ACGIH Threshold Limit Value (TLV) for CO and the Environmental Protection Agency's (EPA's) National Ambient Air Quality Standard (NAAQS) for CO.

Industry guidelines or standards for seasonal temperature and humidity ranges for thermal comfort are established by ASHRAE standard 55-2004. These ranges are presented in Table 4. The U.S. EPA also recommends maintaining relative humidity below 60% and ideally between 30 and 50% to prevent mold growth. Complete results are provided in Appendix D with the lighting survey measurements.

Relative Humidity	Winter Temperature	Summer Temperature
30%	68.5°F - 76.0°F	74.0°F - 80°F
40%	68.5°F – 75.5°F	73.5°F – 79.5°F
50%	68.5°F - 74.5°F	73.0°F - 79.0°F
60%	68.0°F - 74.0°F	72.5°F - 78.0°F

Table 4 - Acceptable Ranges of Temperature and Relative Humidity in Summer and Winter^a

adapted from ASHRAE Standard 55-2004

Temperature and Relative Humidity

Indoor temperature and relative humidity (Rh) measurements in the facility ranged from 78.3 to 81.2° F and 41.4 to 59.7% Rh. Outdoor temperature and humidity measurements were 79.2° F and 45.6% on the day of monitoring. Temperatures and relative humidity measurements were outside the acceptable range in most of the facility. These results are not unexpected due to outdoor conditions on the day of the survey and the lack of air conditioning in most of the facility.

Carbon Dioxide (CO2) and Carbon Monoxide (CO)

Carbon dioxide and carbon monoxide measurements are used to assess ventilation system performance. The exhaled breath of building occupants is the main indoor source of carbon dioxide; therefore, the build up of CO_2 indicates inadequate ventilation. The concentration of concern for carbon dioxide is set by ASHRAE standard 62.1 - 2007 as 700 ppm above outdoor concentrations. Indoor levels of CO_2 ranged from 335 to 542 parts per million (ppm) and outdoor CO_2 levels were approximately 350 ppm during the monitored period. CO_2 measurements were below the guideline in all areas, indicating adequate fresh air exchange.

Carbon monoxide is a byproduct of incomplete combustion. Indoor concentrations indicate contamination caused by improperly vented or malfunctioning boilers, furnaces or stoves or from vehicle exhaust entering the building from garages, loading docks, nearby roads or parking lots. The concentration of interest set by ASHRAE standard 62.1-2007 and the National Ambient Air Quality Standards (NAAQS) for carbon monoxide is an 8 hour average of 9 ppm. The ACGIH TLV for CO is 25 ppm. Indoor levels of CO were 0 ppm in all areas; therefore, concentrations are below occupational exposure limits, ASHRAE and the NAAQS-recommended CO concentrations.

7 Conclusions

The results of the evaluation indicated no concerns with the following at the facility: contamination of clean air sources, peeling lead-based paints, noise hazards, and housekeeping. The results of the evaluation indicated industrial hygiene concerns in the following areas: cross contamination of lead dust from the former firing range, the presence of damaged suspect asbestos-containing materials, indoor air quality, visible mold and lighting.

Overall, Ware Readiness Center has few industrial hygiene issues, and programs are in place to protect, inform and train employees.

8 Limitations

This report has been prepared for the exclusive use of the U.S. Army National Guard (USARNG) and/or their agents. This service has been performed in accordance with generally accepted industrial hygiene and environmental practices. No other warranty, expressed or implied, is made. Our conclusions and recommendations are based, in part, upon information provided to us by others and our site observations. We have not verified the completeness or accuracy of the information provided to us by others, unless otherwise noted. Our observations and recommendations readily visible at the site at the time of our site visit, and upon current industry standards.

By virtue of providing the services described in this report, the preparer does not assume the responsibility of the person(s) in charge of the site, or otherwise undertake responsibility for reporting to any local, state, or federal public agencies any conditions at the site that my present a potential danger to public health, safety, or the environment. It is the Client's responsibility to notify the appropriate local, state, or federal public agencies as required by law, or otherwise to disclose, in a timely manner, any information that may be necessary to prevent any danger to public health, safety, or the environment. Under this scope of services, the preparer assumes no responsibility regarding response actions initiated as a result of these findings. Response actions are the sole responsibility of the Client and should be conducted in accordance with local, sate, and/or federal requirements, and should be performed by appropriately licensed personnel as warranted.

9 References

- 1. Title 29, Code of Federal Regulations (CFR), Part 1910, Occupational Safety and Health Administration, current edition.
- 2. Title 24, Code of Federal Regulations (CFR), Part 35, Subpart B, Sections 35.110, Definitions of Lead-Based Paint, Housing and Urban Development, U.S. Department of Housing.
- 3. Department of Defense Instruction (DODI) 6055.1, Department of Defense Occupational Safety and Health (OSH) Program, August 19, 1998.
- 4. Army Regulation (AR) 40-5, Medical Service, Preventive Medicine, May 25, 2007.
- 5. Army Regulation (AR) 385-10, The Army Safety Program, August 23, 2007.
- 6. Department of the Army Pamphlet (DA PAM) 40-501, Medical Service, Hearing Conservation Program, December 15, 1998.
- 7. Department of the Army Pamphlet (DA PAM) 40-503, Medical Service, Industrial Hygiene Program, October 30, 2000.
- 8. Technical Manual (TM) 5-810-1, Mechanical Design, Heating, Ventilation, and Air Conditioning, June 1991.
- 9. Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs), American Conference of Governmental Industrial Hygienists (ACGIH), current edition.
- 10. RP-1-2004 (Office Lighting) and RP-7-2001 (Industrial Lighting), Illuminating Engineering Society of North America (IESNA)/ANSI.

Industrial Hygiene Survey Report Massachusetts Army National Guard (MA ARNG) Ware Readiness Center

- 11. The American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE), Standard 62.1-2007, "Ventilation for Acceptable Indoor Air Quality" and Standard 55-2004, "Thermal Environmental Conditions for Human Occupancy".
- 12. NIOSH website: http://www.cdc.gov/niosh/
- 13. OSHA website: <u>http://www.osha.gov/</u>.
- 14. Army CHPPM website: http://chppm-www.apgea.army.mil/.
- 15. EPA website: <u>http://www.epa.gov</u>.

Appendix A Building Layout

ANNEX A SECTION V (SAFETY)

EVACUATION PLAN

MASSACHUSETTS ARMY NATIONAL GUARD NATIONAL GUARD ARMORY West Street, Ware, Massachusetts 01082

1. The Armony Evacuation Plan is designed to facilitate the evacuation of troops from the Armory, West Street, Ware, MA, in the event of an enemy attack, fire, or other disorder.

2. This plan will be posted in all rooms of the Armory. Unit commanders will, at least once a year, hold an "Evacuation Drill" to insure that all members are familiar with the proper exits and designated assembly areas.

3. This plan will be reviewed by the safety officer at least once during each quarter, or more often is needed, to insure its being kept up to date.

4. After each evacuation of the Armory, Unit Commanders will immediatly have a roll call to insure that all troops have been evacuated. The building will not be re-entered until all safety factors have been taken into consideration. Fire fighting must be under control of authorized personnel of the unit or by unit officers. Periodic checks will be made to insure that all company personnel are familiar with the locations of the fire extinguishers. The local FIRE DEPARTMENT PHONE NUMBER IS: 967-5901.



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Appendix B Certificates of Analysis for Air, Dust Wipe and Bulk Samples

AMA Analytical Services, Inc.

A Specialized Environmental Laboratory

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CERTIFICATE OF ANALYSIS



Client: National Guard Bureau Job Name: Ware Armory Chain Of Custody: 508467 Address: 301-IH Old Bay Lane, Attn: NGB-AVN-SI, Job Location: Ware, MA Date Analyzed: 8/6/2010 State Military Reservation Not Provided Job Number: **Person Submitting:** Havre de Grace, Maryland 21078 P.O. Number: W912K6-09-A-0003 Page 1 of 1 Attention: Summary of Polarized Light Microscopy

AMA Sample Number	Client Sample #	Total Asbestos	Chrysotile Percent	Amosite Percent	Crocidolite Percent	Other Asbestos Percent	Mineral Wool Percent	Fiberglass Percent	Organic Percent	Synthetic Percent	Other Percent	Particulate Percent	Sample Color	Homogeneity	Analyst 1D	Comments
1066393	WAR-ASB-01	60	2	53	5							40	White	Homogeneous	SW	

The following footnotes only apply to those samples which the total asbestos result is flagged with a note number.

- 1 TEM RECOMMENDATION Please note, due to resolution limitations with optical microscopy and/or interference from matrix components of this sample, results which are reported via PLM as negative or trace (<1%) for asbestos may contain a significant quantity of asbestos. It is recommended that the additional analytical technique of TEM be used to check for asbestos fibers below the resolution limits of optical microscopy.
- 2 MATRIX REDUCTION RECOMMENDATION Please note, due to interference from the matrix components of this sample, results which are reported via PLM as negative or trace (<1%) for asbestos may contain a significant quantity of asbestos which is obscured from view. It is recommended that the additional preparation technique of gravimetric reduction be performed on this sample to minimize the obscuring effects of matrix components, followed by reanalysis by PLM and/or TEM.</p>

Analysis Method - EPA/600/R-93/116 dated July 1993

NAD = "No Asbestos Detected" TR = "Trace equals less than 1% of this component"

Uncertainty: For samples containing asbestos in range of 1-10% the CV is 0.43, 11-35% CV=0.55, >35 CV=0.23

All results are to be considered preliminary and subject to change unless signed by the Technical Director or Deputy.

Technical Director





This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these Laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from us. Sample types, locations, and collection protocols are based upon the information provided by the persons submitting them and, unless collected by personnel of these Laboratories, we expressly disclaim any knowledge and liability for the accuracy and completeness of this information. Residual sample material will be discarded in accordance with the appropriate regulatory guidelines, unless otherwise requested by the client. NVLAP accreditation applies only to polarized light microscopy of bulk samples and transmission electron microscopy of AHERA air samples. This report must not be used to claim, and does not imply product certification, approval, or endorsement by NY ELAP, NVLAP, NIST, or any agency of the Federal Government. All rights reserved. AMA Analytical Services, Inc.

Posted to NGB FOIA Reading Room May, 2018 An AIHA (#100470), NVLAP (1016459), Available Copy#10920) Accredited Laboratory May, 2018 Forbes Blvd. · Lanham, MD, 20706 · (301) 459-2640 · Toll Free (800) 346-0961 · Fax (301) 459-2643 Released by National Guard Bureau Page 3227 of 3473

BEST AVAILABLE COPY OWI (410) 247-2024 159202 210 REV. 6.08 508467 AMA Analytical Services, Inc. (Please Refer To This Focused on Results www.amalab.com Number For Inquires) AIHA (#100470) NVLAP (#101143-0) NY ELAP (10920) CHAIN OF CUSTODY 4475 Forbes Blvd, + Lanham, MD 20706 (301) 459-2640 · (800) 346-0961 · Fax (301) 459-2643 Mailing/Billing Information: Submittal Information: ARMORY UARE 1. Client Name: National Guard Bureau Job Name: LANE Ans 2. Address 1: ____ 301-IH Old Bay Lane 2. Job Location: 3. Address 2: Attn: NGB-AVN-SI, State Military Reservation 3. Job #: esponsive 4. Address 3: Havre de Grace, Maryland, 21078 4. Contact Per 5. Phone #: (410) 942-0273 Pax #: (410) 942-0254 5. Submitted I Reporting Information (Results will be provide AFTER HOURS (must be pre-scheduled) NORMAL BUSINESS HOURS REPORT TO: C 3 Day D Include COC/Field Data Sheets with Report C Immediate Immediate Date Due:_ Results Required By Noon E Email: O Next Day 5 Day + 24 Hours 'Time Due:_ (EveryAttempt Will Be Ous.army.mil L 2 Day Dale Due: U Fax: Comments: Made to Accomodate) Q Verb Dus.army.mi Asbestos Analysis Metals Analysis TEM Bulk Pb Paint Chip (QTY) Pb Dust Wipe (wipe type CH2ST PCM Air - Please Indicate Filter Type: LI ELAP 198.4/Chatfield (OTY) UNIOSH 7400____ (QTY) (YTO) NY State PLM/TEM (OTY) G Fiberglass (QTY) D Pb Air (QTY) Residual Ash (OTY) TEM Air - Please Indicate Filter Type: Pb Soil/Solid (QTY) TEM Dust AHERA (YTO) D Pb TCLP_ (OTY) U Qual. (pres/abs) Vacuum/Dust. (OTY) NIOSH 7402 (QTY) Drinking Water DPb _(QTY) Cu___(QTY) CAs___(QTY) Quan. (s/area) Vacuum D5755-95 _ (OTY) U Other (specify_ (YTO) Waste Water D Pb $(QTY) \Box Cu (QTY) \Box As (QTY)$ Quan. (s/area)Dust D6480-99_ (QTY) PLM Bulk L Pb Furnace (Media (OTY) TEM Water EPA 600 - Visual Estimate_ (QTY) **Funeal Analysis** Oual (pres/abs) (OTY) _(OTY) Collection Apparatus for Spore Traps/Air Samples:_ C ELAP 198.2/EPA 100.2. (QTY) ONY State Friable 198.1. (OTY) Collection Media_ EPA 100.1___ (QTY) Grav. Reduction ELAP 198.6. (QTY) Surface Vacuum Dust Spore-Trap____(OTY) (OTY) Other (specify_ (OTY) All samples received in good condition unless otherwise noted. (TEM Water samples ______°C) Surface Swab_ (QTY) Culturable ID Genus (Media (OTY) MISC Surface Tape_____ (QTY) Culturable ID Species (Media, (QTY) Q Vermiculite Other (Specify____)___(QTY) CAsbestos Soil PLM_(Qual) PLM_(Qual) PLM/TEM_(Qual) PLM/TEM_(Qual) SAMPLE INFORMATION ANALYSIS CLIENT CONTACT VOLUME WIPE CLIENT ID SAMPLE LOCATION/ NUMBER **IDENTIFICATION** DATE AJTERS) AREA (LABORATORY STAFF ONLY) Lon- 78-01 10410C 24 Date/Time: Contact: By: 1.AR-PB-02 * WAR-PB-08 -04 WA2-08 41.90-13-05 Date/Time: Contact: By: WAR-PB-OL 6An- PB-67 WAR PB-05 Date/Time: Contact: By: WAR- DB-AS WAR-PR TO n-Response wan-PB -71 WAR-PB-12 1. Date/Time RCVD: cLABORATORY 2. Date/Time Analyz By (Print): STAFF ONLY: Posted to NGB FOIA Reading Restricts Reported 7 May, 2018 4 Comments AVAILARI Released by National Guard Bureau Page 3228 of 3473

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Z. Date/Time Analyzed: Posted to NGB FOIA Reading, Results Reported To: May, 20(1)STODY) 4. Comments on-4. Comments:

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AMA Analytical Services, Inc.

National Guard Bureau

State Military Reservation

Havre de Grace, Maryland 21078

A Specialized Environmental Laboratory

301-IH Old Bay Lane, Attn: NGB-AVN-SI,

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Page 1 of 2

Attention:

Client:

Address:

Summary of Atomic Absorption Analysis for Lead

Air Volume Area Wiped **AMA Sample Client Sample** Analysis Type Sample Type Reporting Total ug **Final Result** Comments Number Number (ft2) Limit (L) **** Wipe 0.108 110 ug/ft2 <12 <110 ug/ft2 1066377 WAR-Pb-01 Flame **** 1066378 WAR-Pb-02 Wipe 0.108 110 ug/ft2 <12 <110 ug/fl² Flame **** 0.108 <12 <110 ug/ft2 1066379 WAR-Pb-03 Flame Wipe 110 ug/ft2 **** ug/ft2 1066380 WAR-Pb-04 Flame Wipe 0.108 110 <12 <110 ug/ft2 **** 1066381 WAR-Pb-05 0.108 110 <12 <110 ug/ft2 Flame Wipe ug/fl2 **** 1066382 WAR-Pb-06 0.108 110 ug/ft2 4000 37000 ug/ft2 Flame Wipe 1066383 **** 0.108 <12 <110 ug/ft2 WAR-Pb-07 Flame Wipe 110 ug/ft2 **** 0.108 110 120 1100 ug/ft² 1066384 WAR-Pb-08 Flame Wipe ug/ft2 **** 1066385 WAR-Pb-09 Flame Wipe 0.108 110 ug/fl2 230 2200 ug/ft2 **** WAR-Pb-10 0.108 110 ug/ft2 <12 <110 ug/ft2 1066386 Flame Wipe **** 1066387 0.108 <12 <110 ug/ft2 WAR-Pb-11 Flame Wipe 110 ug/ft2 1066388 **** 0.108 110 <12 <110 ug/ft2 WAR-Pb-12 Flame Wipe ug/ft2 **** ug/ft2 1066389 WAR-Pb-13 0.108 110 <12 <110 ug/ft² Flame Wipe **** 1066390 WAR-Pb-14 Flame Wipe 0.108 110 ug/ft² <12 <110 ug/ft2 **** 0.108 110 <12 <110 ug/ft2 1066391 WAR-Pb-15 Flame Wipe ug/fl² **** N/A 1066392 %Pb 0.012 %Pb WAR-LBP-01 Flame Paint Chip 0.011

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these Laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from us. Sample types, locations, and collection protocols are based upon the information provided by the persons submitting them and, unless collected by personnel of these Laboratories, we expressly disclaim any knowledge and liability for the accuracy and completeness of this information. Residual sample material will be discarded in accordance with the appropriate regulatory guidelines, unless otherwise requested by the client. NVLAP accreditation applies only to polarized light microscopy of bulk samples and transmission electron microscopy of AHERA air samples. This report must not be used to claim, and does not imply product certification, approval, or endorsement by NY ELAP, AIHA, NVLAP, NIST, or any agency of the Federal Government. All rights reserved. AMA Analytical Services, Inc.

Posted to NGB FOIA Reading Room An AIHA (#100470), NVLAP (10 best 0 Available & dody #10920) Accredited Laboratory FOIA Requested Record #J-15-0085 (MA) May, 2018 4475 Forbes Bivd. · Lanham, MD, 20706 · (301) 459-2640 · Toll Free (800) 346-0961 · Fax (301) 459-2643 Released by National Guard Bureau Page 3230 of 3473

AMA Analytical Services, Inc. A Specialized Environmental Laboratory BEST AVAILABLE COPY CERTIFICATE OF ANALYSIS

Client	: National Guard Bureau	Job Name:	Ware Armory	Chain Of Custody:	508467	N	JY FI AP
Addre	ss: 301-IH Old Bay Lane, Attn: NGB-AVN-SI, State Military Reservation	Job Location:	Ware, MA	Date Submitted:	8/2/2010		10920
	Havre de Grace, Maryland 21078	Job Number:	Not Provided	Person Submitting:	Hon-Hespaniak		
		P.O. Number:	W912K6-09-A-0003	Date Analyzed:	8/6/2010	Report Date:	8/9/2010
Atten	ion: Non-Responsive						
		Summary of	Atomic Absorption	Analysis for Lead			Page 2 of 2

AMA Sample Number	Client Sample Number	Analysis Type	Sample Type	Air Volume (L)	Area Wiped (ft²)	Reporting Limit	Total ug	Final Result	Comments

Analysis Method for Flame: Air, Wipes, Paints, and Soil/Solids: EPA 600/R-93/200(M)-7420; Water: SM-3111B Analysis Method For Furnace: Air, Wipes, Paints, and Soil/Solids: EPA 600/R-93/200(M)-7421; Water: SM-3113B N/A = Not Applicable mg/Kg = parts per million (ppm) on a dry weight basis mg/L = parts per million (ppm) %Pb = percent lead on a dry weight basis ug = micrograms ug/L = parts per billion (ppb)

Note: All samples were received in good condition unless otherwise noted.

Note: All results have two significant digits. Any additional digits shown should not be considered when interpreting the result.

Air and Wipe results are not corrected for any blank results

Final results for air and wipe samples are based on client supplied information nor verified by this laboratory.

All results are to be considered preliminary and subject to change unless signed by the Technical Director or Deputy.





See QC Summary for analytical results of quality control samples

NY ELAP accreditation applies only to paint chip, wipe, and soil

associated with these sampes.

samples.

AIHA LAP. LLC

ACCREDITED LABORATORY INDUSTRIAL HYDRENE, ENVIRONMENTAL LEAD & ENVIRONMENTAL MICROBIOLOGY ISONICE 17825-2005 Www.inhasccreditablas.org

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Appendix C Photo Documentation

Ware RC



Mess Hall



Water Damage on Ceiling May, 2018



Kitchen



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Storage Area, Former Firing Range FOIA Requested Record #J-15-0085 (MA) Released by National Guard Bureau Page 3235 of 3473

Ware RC



Storage Area



Water Damage on Ceiling Tiles in May, Office

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Flaking Paint on Pipe

Drill Hall



Ware RC



Boiler Room



Boiler Room, Damaged TSI



Boiler Room, Damaged TSI May, 2018

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Appendix D IAQ and Lighting Survey Log Sheets

National Guard Industrial Hygiene Survey For Indoor Air Quality and Light Leve	National Guard Industria	I Hygiene Survey F	For Indoor Air Quali	ty and Light Level
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State	MA	City	Ware	IAQ								Light		
Date	7/30/2010	Inspector	Non-Responsive	Instrument				Q-TRAK 7	565-	X		Instrument		CAL-LIGHT 400
Facility Description	Readiness Ctr			Serial Numbe	er			7565X083	901	7		Serial Numbe	ər	K070277
Weather Conditions				Last Calibrat	ion			Sep-0	8			Last Calibration		30-Jul-09
Location	Function		T	Temp. (°F)	Exceeded	RH (%)	Exceeded	CO ₂ (ppm)	Exceeded	CO (ppm)	Exceeded	Illuminance (fc)	Insufficient	lluminance Reference Value (fc)
1	Mess Hall			81.2	x	48.6	x	448		0.0		105.7		10
2	Boiler Room			80.7	x	49.8	x	360		0.0		20.3	x	30
3	Kitchen			80.1	x	48.9	x	542		0.0		75.2		50
4	Women's Room/ Shower			80.6	x	59.7	x	411		0.0		27.3		5
5	Men's Room/ Shower			80.0	x	50.4	x	415		0.0		38.6		5
6	Storage			80.1	x	50.0	x	390		0.0		45.7		30
7	Office/ Storage			79.7	x	51.9	x	452		0.0		42.3		30
8	Office			79.7	x	51.5	x	387		0.0		53.8		50
9	Entry			79.7	x	50.6	x	440		0.0		18.6		10
10	Office			80.3	X	43.1	x	410		0.0		91.5		50
11	Hallway		<u> </u>	79.4		41.7		367		0.0		53.7		5
12	Office			78.5		44.0		335		0.0		113.8		50
13	Office/ Conference Room			78.3		42.2		379		0.0		64.4		50
14	Storage			80.5	X	47.1	x	380		0.0		46.6		30
15	Storage			81.1	x	48.1	x	411		0.0		82.4		30
16	Supply Office			79.5		41.4		344		0.0		50.2		50
17	Drill Hall		<u> </u>	79.2		45.6		352		0.0		54.4	Ē	30-50
Notes:				Relative 30	Hum)%	nidity	Wi 68	nter Temp. .5°F-76.0°F	Su 7	ummer Tem 4.0°F-80.0°	۱р. 'F			
				40	1%	!	68	.5°F-75.5°F	7	3.5°F-79.5°	<u>'F</u>	-		
				60	<u>.</u> %		68	.0°F-74.0°F	7	2.5°F-78.0°	<u>-</u> 'F	4		



Prepared For:

National Guard Bureau Army National Guard Region North Industrial Hygiene Office 301 – IH Old Bay Lane Havre De Grace, Maryland 21078

Prepared By:

URS Corporation 5 Industrial Way Salem, New Hampshire 03079

INDUSTRIAL HYGIENE SURVEY REPORT MASSACHUSETTS NATIONAL GUARD READINESS CENTER 233 WEST STREET WARE, MA 01082

July 17, 2013 PN: 39743799



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APPENDICES

APPENDIX A	SHOP DRAWING
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APPENDIX D	PHOTOGRAPHIC LOG
APPENDIX E	RECOMMENDATIONS FOR SURFACE LEAD DUST IN
	ARMORIES

FINDINGS AND RECOMMENDATIONS MASSACHUSETTS NATIONAL GUARD READINESS CENTER 233 WEST ST., WARE, MA

Findings	Recommendations	Risk Assessment Code (RAC)
Lighting		
On the day of the survey, the illuminance was inadequate in several locations tested.	Increase lighting in the work areas. While work is in progress, these areas must be lighted by at least the minimum lighting intensities (ANSI / IESNA RP-1-04).	RAC 4
Ergonomics		
Computer workstations in the Administrative Areas were observed with un-adjustable chairs, arm rests and keyboards.	Ergonomic issues with regard to the desks and chairs should be corrected by fitting the workplace to the worker (Department of the Army Pamphlet 40- 21, Chapter 4, Page 7, Section 4-3).	RAC 3
Water Intrusion		
Evidence of water intrusion and staining was noted on ceilings in the classroom/ mess hall and east admin area.	The source of the water intrusion should be identified and repaired. The water-stained materials should be repaired or replaced (ACGIH – Guidelines for the Assessment of Bio- aerosols in the Indoor Environment).	RAC 3
Lead		
Four of the 10 lead wipe samples indicated elevated lead levels.	Personnel trained in accordance with the OSHA Lead Standard should clean the areas where elevated lead dust levels were identified (OSHA 29 CFR 1910.1025(h)(1)).	RAC 3
Emergency Exits		
Emergency exit signs and escape plans were not visible from all areas of the facility or illuminated.	Emergency exits should be properly illuminated (29 CFR 1910.37 (q)(6)).	RAC 3
Asbestos		
Presumed asbestos- containing floor tiles and associated mastic were observed; an Asbestos Operation and Maintenance Program was not available on-Site.	Develop a site-specific asbestos operations and maintenance program for management of asbestos- containing materials in place as required by OSHA 29 CFR 1910.1001(j)(2).	RAC 4

Findings	Recommendations	Risk Assessment
		Code (RAC)
Personal Protective Equipme	nt	
Hazard assessments have not been conducted to determine whether personal protective equipment is required.	Conduct a hazard assessment of site operations to determine what types of PPE are required for each type of work (29 CFR 1910.132(d)(1)).	RAC 4
Fire Extinguishers		
No records were available to document that fire extinguishers are inspected on a monthly basis.	Portable fire extinguishers shall be provided, mounted and located so that they are readily available (29 FR 1910.157 (c)(1) and 29 CFR 1910.38 (c)(2)).	RAC 4
Hazard Communication		
No written hazard communication program was identified at the site.	Employers shall develop, implement and maintain a written hazard communication program (29 CFR 1910.1200 (e)(1)).	RAC 3
Former Indoor Firing Range		
The former Indoor Firing Range was not posted as unsafe due to lead contamination; however the doors did not provide a secure barrier.	Personnel trained in accordance with the OSHA Lead Standard should clean the areas where elevated lead dust levels were identified (OSHA 29 CFR 1910.1025(h)(1)).	RAC 3
Since the former indoor firing range is contaminated with lead and several wipe samples were found to contain elevated lead levels, good hygiene practices should be used when entering this building area.	Good hygiene practices shall be employed when entering building areas where lead dust may become airborne (29 CFR 1910.1025 (i)(1)).	RAC 3

1.0 SUMMARY

At the request of the National Guard Bureau (NGB) Region North Industrial Hygiene Office, URS Corporation (URS) conducted an industrial hygiene survey at the Readiness Center in Ware, Massachusetts.

URS representative, Ms. Non-Responsive, conducted the Industrial Hygiene Survey on May 29, 2013. The scope of work included an overall assessment of the facility as it relates to industrial hygiene and included a walkthrough of the facility, collection of photographs, and when required, measurements for illumination (light), area and personal air sampling, and noise monitoring.

The Ware Readiness Center is a one-story brick building, consisting of offices, a classroom, a supply area, a classroom/mess hall, gender separate bathrooms, and an Assembly Hall. A layout of the Readiness Center is provided in Appendix A.

<u>GENERAL</u>: Illuminated emergency exit signs were not observed throughout the facility. Emergency escape plans were not posted throughout the facility. The door to the former Indoor Firing Range does not provide a secure barrier to ensure that lead dust does not migrate outside the contaminated area. The former Indoor Firing Range has not been decontaminated and is routinely accessed by staff since the area is used for storage. Evidence of water intrusion and water staining was observed throughout the ceilings in the classroom/mess hall and east administrative area. No evidence that fire extinguishers were being inspected on a monthly basis was found.

<u>LIGHTING</u>: Lighting in the Readiness Center was found to be inadequate in several of the areas measured. Areas noted within the report as having inadequate lighting require upgrading by either increasing the general lighting or through the use of task lighting. While work is in progress work areas must be lighted by at least the minimum light intensities. <u>LEAD</u>: Four of the ten wipe samples collected in the Readiness Center were found to contain lead in a concentration above the recommended limit set by the NGB, Region North IH Office.

On the day of the survey, none of the paint chip samples were found to contain a level of lead above the HUD criteria for determination of paint as lead-based.

The door to the former Indoor Firing Range does not provide a secure barrier to ensure that lead dust does not migrate outside the contaminated area.

<u>ASBESTOS</u>: Presumed asbestos-containing floor tiles and associated mastic were identified during this survey. Until suspect materials have been sampled and determined not to contain asbestos, they must be presumed to be asbestos-containing and managed accordingly.

<u>ERGONOMICS</u>: Many of the work stations had ergonomic issues which require attention. Computer workstations were assessed during the walkthrough for ergonomic issues. The computer workstations in the facility did not meet the current Occupational Safety and Health Administration (OSHA) ergonomic recommendations. The chair armrests, keyboards, and monitors were not adjustable. All workstations in the facility should be adjusted and monitored. The ergonomic issues with regard to the workstations and chairs need to be corrected by fitting the workplace to the worker.

<u>NOISE</u>: Noise monitoring in the Readiness Center determined that noise levels were below the OSHA permissible exposure limit (PEL) and Department of Defense Instruction (DoDI) Hearing Conservation Standard (6055.12 3 December 2010) on the day of URS' site visit.

2.0 SUPPLY / TRAINING AREA

2.1 Operation Description

This Readiness Center is primarily used for weekend training drills and conducting administrative functions. The building includes offices, a classroom, a supply area, a classroom/mess hall, gender separate bathrooms, and an Assembly Hall.

The Readiness Center was found to be somewhat cluttered and unorganized at the time of URS' site visit.

2.2 Chemical and Physical Agents Sampled

2.2.1 Carbon Dioxide

On the day of the survey, carbon dioxide measurements were made in the Readiness Center. Interior carbon dioxide concentrations were found to be between 435 and 619 parts per million (ppm). Carbon dioxide levels were measured using a direct-reading TSI Q-Trak (Model 8551).

Carbon dioxide is a normal constituent of the atmosphere and ranges from about 250 to 450 ppm. The major source of excess carbon dioxide in the indoor environment is human respiration. Other sources can include open-flame heaters, fermentation processes, and motor vehicles. Carbon dioxide itself is not normally a cause of indoor air quality problems but is typically used as an indicator of the adequacy of fresh air intake. As the concentration of carbon dioxide increases, so do the background levels of other air contaminants.

To minimize air quality complaints, the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) has proposed that the carbon dioxide concentration within an occupied workspace be maintained below 700 ppm above ambient outside levels. For example, on the day of the survey, the outside carbon dioxide level was measured at 405 ppm. Therefore ASHRAE (Standard 62.1-2010) would recommend that interior carbon dioxide concentrations be maintained at or below 1,105 ppm. Using the ASHRAE guideline, the readings at the subject site were found to be below the suggested indoor to outdoor differential concentration.

2.2.2 Carbon Monoxide

The carbon monoxide concentrations in the Readiness Center were measured between 0.1 ppm and 0.7 ppm on the day of the survey. ASHRAE recommends that average carbon monoxide concentrations not exceed 9 ppm. Typical average concentrations found in commercial buildings range from 0 to 6 ppm. The measured levels were below the ASHRAE guideline for indoor environments. Carbon monoxide was measured using a TSI Q-Trak Plus (Model 8554).

Key sources of carbon monoxide within indoor environments include internal combustion engines, motor vehicle and forklift exhaust, tobacco smoke, space heaters, and improperly adjusted oil or gas burners.

2.2.3 Relative Humidity

The average relative humidity within the Readiness Center measured with the Q-Trak Plus was 60.6%, which was within the guideline of less than 65% recommended by ASHRAE.

2.2.4 Temperature

Temperature should be maintained within the thermal comfort envelope suggested in ASHRAE Standard 55-2010. This standard on thermal environments specifies conditions in which 80% or more of building occupants should find the thermal environment acceptable. ASHRAE 55-2010 suggests temperatures of 68 to 75 degrees Fahrenheit (°F), during winter months, for people in typical seasonal clothing during light sedentary activity. For summer, the temperature should be in the range of 73 to 79 °F.

The average temperature inside the Readiness Center was, 67.8 °F, which was slightly below the guideline of 68 to 75 °F recommended by ASHRAE for thermal comfort. No complaints regarding temperature were received by URS during this survey.

2.2.5 Lighting

Lighting in the Readiness Center was measured using a cal-Light 400 Light Meter. Table 2-1 below shows lighting measurements in foot candles (FC) and the recommended lighting requirements (Illuminating Engineering Society of North America (IESNA) RP-7-01).

Location	Function	Measured Illuminance in Foot Candles (FC)	Recommended Minimum Illuminance in Foot Candles (FC)
Office- ^{Non-Responsive} , table	Admin	57.9	50
Office, desk-	Admin	70.4	50
Supply Room, desk	Admin	55.4	50
Office, desk-	Admin	29.1	50
Office, desk-	Admin	69.4	50
West Office, table	Admin	41.5	50
Office, desk-	Admin	36.0	50
Office, desk-	Admin	67.0	50
Office, desk-	Admin	42.5	50
Lobby	Hall	5.3	10
Supply Room	Storage	15.4	30
Assembly Hall	Hall	38.8	10
Classroom/ Mess Hall, table	Break Room	74.8	10
Classroom/ Mess Hall, table	Break Room	69.3	10
Kitchen, counter	Break Room	46.7	10
Assembly Hall, adjacent to loading area	Hall	54.9	10
Hallway	Hall	55.0	10

 Table 2-1

 Lighting Measurements and Recommended Lighting Requirements

On the day of the survey, the illuminance in the Readiness Center was determined to be inadequate in five of the locations surveyed.

2.2.6 Lead

Wipe testing for lead dust was conducted in the Readiness Center using ghost wipes, which meet ASTM E 1792 standards. The analytical report from AMA Analytical Services, Inc. (AMA) is contained in Appendix C. Table 2-2 below shows the results of the lead wipe testing.

Sample Location	URS Sample Number	Area Wiped in Square Feet (ft ²)	Result in Micrograms/ Square Foot (µg/ft ²)	Maximum Surface Contamination Level in Micrograms/ Square Foot (μg/ft ²)
Supply Room, window sill adjacent to desk	Ware RC W-01	0.108	340	200
Former Indoor Firing Range, outside doorway adjacent to vault	Ware RC W-02	0.108	160	200
Classroom, northeast corner, floor	Ware RC W-03	0.108	<110	200
Supply Room, adjacent to doorway	Ware RC W-04	0.108	170	200
Assembly Hall, under fridge adjacent to classroom/ mess hall	Ware RC W-05	0.108	420	200
Office- ^{Non-Responsive} floor corner adjacent to window and cabinet	Ware RC W-06	0.108	<110	200
Office- ^{Non-Responsive} , window sill, south corner	Ware RC W-07	0.108	2,500	200
Office, west wing, floor behind TV	Ware RC W-08	0.108	<110	200
Office-	Ware RC W-09	0.108	<110	200
Female Latrine, top of locker adjacent to window	Ware RC W-10	0.108	230	200

Table 2-2 Levels of Lead Dust Found in the Readiness Center

Four of the ten surface dust level measurements were found to contain lead at a level above the NGB recommended level, based on the OSHA clarification letter which states "as free as practicable" of lead contamination as specified under OSHA 29 CFR 1926.62.

Two paint chip samples were collected from areas of peeling paint in the facility and were analyzed for lead content. The analytical report from AMA is contained in Appendix C.

According to the U.S. Department of Housing and Urban Development (HUD), paint is considered to be lead-based if the quantity of lead is greater than 0.5% by weight. OSHA has not established a minimum percentage of lead to be defined as lead-based paint, therefore paint with lead in any amount above the analytical detection limit is considered to be lead-based under these regulations. The results of URS' lead paint testing are contained in Table 2-3.

Table 2-3 Lead Content in Painted Surfaces

Paint Location	Lead Concentration (Percent Weight)	HUD Lead-Based Quantity (Percent Weight)
Black paint, Supply Room, pipe	0.092	0.5
Black paint, Supply Room, pipe	0.09	0.5

On the day of the survey, neither of the paint chip samples was found to have a lead content above the HUD criteria for determination of paint as lead-based.

2.2.7 Asbestos

No damaged, friable suspect materials were identified for sample collection.

Presumed asbestos-containing floor tiles and associated mastic were also identified during this survey. Until suspect materials have been sampled and determined not to contain asbestos, they must be presumed to be asbestos-containing and managed accordingly.

2.3 Ventilation System Evaluation

The facility, not designed for vehicle maintenance, contains a ventilation system that is limited to localized personal ventilation (i.e. room fans, window air conditioning units) within the majority of rooms, and main negative draw fans in the Assembly Hall.

2.4 Noise Measurements

Area noise dosimetry was conducted within the administrative office area. Noise exposures were measured using a data-logging Spark 703+ Noise Dosimeter. Area noise dosimetry results indicated that, on the day of the survey, workers were not exposed to noise levels above the DoDI Hearing Conservation Standard (6055.12 3 December 2010) of 85 decibels, A scale (dBA)/8-hour day. Table 2-5 indicates the individual monitored, the tasks performed and noise exposures.

Table 2-5 Noise Dosimetry Data

Location	Task	Sample Duration in Minutes	Monitoring Result TWA (dBA)*	Hearing Protection
Non-Responsive	Administrative	375	65.6	N/A

* The calculated 8-hour, time-weighted average (TWA) noise exposure in dBA. The OSHA PEL for noise exposure is 90 dBA. DoDI has established an employee exposure level of 85 dBA for requirement of a hearing conservation program.

2.5 Personal Protective Equipment

Personal protective equipment was orderly and readily available to employees in the Readiness Center. Personal protective equipment included safety glasses, ear plugs and nitrile gloves. No personal protective equipment was observed in use at the time of URS' site visit.

3.0 SAFETY AND INDUSTRIAL HYGIENE PROGRAMS

3.1 Confined Spaces

A written confined spaces program was not required for this site.

3.2 Hearing Conservation

A written hearing conservation program was not identified on site. A review of normal site activities determined that no operations were identified that would warrant hearing protection. Based on area noise dosimetry results, a hearing conservation program is not required for this site.

3.3 Respiratory Protection

A site-specific written program regarding Respiratory Protection was not identified on site and is not required for this facility

3.4 Hazard Communication

A site-specific hazard communication program was not identified on site.

Material safety data sheets, a site map, and list of full time personnel were readily available on the day of the survey.

3.5 Personal Protective Equipment

A written personal protective equipment program was not identified on site. A hazard assessment should be conducted to determine whether personal protective equipment is required for activities typically undertaken at the Readiness Center.

3.6 Asbestos Operations and Maintenance Program

A written asbestos operations and maintenance program was not identified on site.

3.7 Safety

The door to the former Indoor Firing Range does not provide a secure barrier to ensure that lead dust does not migrate outside the contaminated area. Emergency exit signs were not properly posted throughout the facility. Evidence of water intrusion and water staining was observed throughout the ceilings in the classroom/ mess hall and east admin area. No evidence that fire extinguishers were being inspected on a monthly basis was found.

URS
4.0 REFERENCES

American Conference of Governmental Industrial Hygienists

Industrial Ventilation: A Manual of Recommended Practice, 27th Edition, 2010

Guidelines for the Assessment of Bio-aerosols in the Indoor Environment, 1989

American National Standards Institute

ANSI/IESNA RP-1-04: American National Standard Practice for Office Lighting

ANSI/IESNA RP-7-01: Recommended Practice for Lighting Industrial Facilities

American Society of Heating, Refrigerating and Air-Conditioning Engineers

ANSI/ASHRAE Standard 62.1-2010: Ventilation for Acceptable Indoor Air Quality

ANSI/ASHRAE Standard 55-2010: Thermal Environmental Conditions for Human Occupancy.

Department of the Army

DA PAM 40-21, Ergonomics Program, 15 August 2003

Unified Facilities Criteria, Heating, Ventilating and Air Conditioning, 3-520-05, 14 April 2008

DA PAM 40-501, Hearing Conservation Program, 10 December 1998.

AR 385-10, The Army Safety Program, 23 August 2007; RAR Issue Date: 4 October 2011

National Guard Pamphlet 420-15, Guidelines and Procedures for Rehabilitation and Conversion of Indoor Firing Ranges, 3 November 2006

Department of Defense

DoDI 6055.12, Hearing Conservation, 3 December 2010

Creating the Ideal Computer Workstation: A Step-by-Step Guide, June 2000

National Institute for Occupational Safety and Health

Current Intelligence Bulletin 50: Carcinogenic Effects of Exposure to Diesel Exhaust, August 1988

U. S. Environmental Protection Agency

Asbestos Hazard Emergency Response Act (40 CFR Part 763)

National Emissions Standards for Hazardous Pollutants (40 CFR Part 61)

U. S. Department of Housing and Urban Development

Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (1995, 1997, 2012)

U. S. Occupational Safety and Health Administration

Standard for General Industry: 29 CFR 1910

OSHA Clarification Letter – Clarification of "as free as practicable" of lead contamination under 29 CFR 1926.62, 13 January 2003.

APPENDIX A

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SHOP DRAWING



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APPENDIX B

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PERSONNEL LIST

Ware Armory Fulltime Personnel



FOIA Requested Record #J-15-0085 (MA) Released by National Guard Bureau Page 3259 of 3473

APPENDIX C

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ANALYTICAL RESULTS

AMA Analytical Services, Inc.

A Specialized Environmental Laboratory

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CERTIFICATE OF ANALYSIS

AIHA LAP, LLC ACCREDITED LABORATORY NOUSTRIAL HYGIENE, ENVIRONMENTAL LEAD **& ENVIRONMENTAL MICROBIOLOGY** ISONEC 17025 2005 LAS #100470

Client:	National Guard Bureau	Job Name:	MA ARNG	Chain Of Custody:	516023	
Address:	301-IH Old Bay Lane, Attn: ARNG-CJG-P, State Military Reservation	Job Location:	Ware RC	Date Submitted:	6/3/2013	
	Havre de Grace, Maryland 21078	Job Number:	39743799.00037	Person Submitting:	Non-Responsive	
		P.O. Number:	W912K6-09-A-0003	Date Analyzed:	6/10/2013 Report Date: 6/10/201	3



Summary of Atomic Absorption Analysis for Lead

Page 1 of 2

AMA Sample Number	Client Sample Number	Analysis Type	Sample Type	Air Volume (L)	Area Wiped (ft²)	Rep L	orting imit	Total ug	Final Res	ult	Comments
13067127	RC Ware W-01	Flame	Wipe	****	0.108	110	ug/ft²	36	340	ug/ft²	
13067128	RC Ware W-02	Flame	Wipe	****	0.108	110	ug/ft²	17	160	ug/ft²	
13067129	RC Ware W-03	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/ft²	
13067130	RC Ware W-04	Flame	Wipe	****	0.108	110	ug/ft²	19	170	ug/ft²	
13067131	RC Ware W-05	Flame	Wipe	****	0.108	110	ug/ft²	45	420	ug/ft ²	
13067132	RC Ware W-06	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/ft²	
13067133	RC Ware W-07	Flame	Wipe	****	0.108	110	ug/fi²	270	2500	ug/fl²	
13067134	RC Ware W-08	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/ft²	
13067135	RC Ware W-09	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/fl²	
13067136	RC Ware W-10	Flame	Wipe	****	0.108	110	ug/ft²	25	230	ug/ft²	
13067137	RC Ware TB-W	Flame	Wipe Blank	****	N/A	12	ug		<12	ug	
13067138	RC Ware LBP-01	Flame	Paint Chip	****	N/A	0.0094	%Pb		0.092	%Pb	
13067139	RC Ware LBP-02	Flame	Paint Chip	****	N/A	0.016	%Pb		0.09	%Pb	Insufficient sample was submitted to meet

recommended reporting limits.

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these Laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from us. Sample types, locations, and collection protocols are based upon the information provided by the persons submitting them and, unless collected by personnel of these Laboratories, we expressly disclaim any knowledge and liability for the accuracy and completeness of this information. Residual sample material will be discarded in accordance with the appropriate regulatory guidelines, unless otherwise requested by the client. This report must not be used to claim, and does not imply product certification, approval, or endorsement by NY ELAP, AIHA, or any agency of the Federal Government. All rights reserved. AMA Analytical Services, Inc.

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CERTIFICATE OF ANALYSIS



Summary of Atomic Absorption Analysis for Lead

AIHA LAP, LLC ACCREDITED LABORATORY

NOUSTRIAL HYGIENE, ENVIRONMENTAL LEAD & ENVIRONMENTAL MICROBIOLOGY ISONEC 17025-2005 www.aihaaccreditediabs.or LAB #100476

AMA Sample Number	Client Sample Number	Analysis Type	Sample Type	Air Volume (L)	Area Wiped (ft²)	Reporting Limit	Total ug	Final Result	Comments
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Note: All results has should not be cons	ave two significant dig sidered when interpre	gits. Any additionation and the second strain the result.	l digits shown						-
Air and Wipe resul Final results for air supplied informatio	Its are not corrected f and wipe samples a on nor verified by this	or any blank resul re based on client laboratory.	is			on-	-Re	espc	onsive

All results are to be considered preliminary and subject to change unless signed by the Technical Director or Deputy.

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APPENDIX D

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PHOTOGRAPHIC LOG





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PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
MA ARNG- Ware RC	233 West St., Ware, MA	39743799
Photo No. Date: 3 5/29/13		11
Description:	1 1 1 1	
Storage area with presumed asbestos floor tiles and associated mastic.		



Storage and offices areas, somewhat disorganized at the time of survey.



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APPENDIX E

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RECOMMENDATIONS FOR SURFACE LEAD DUST IN ARMORIES

Subject: Recommendations for Surface Lead Dust in Armories

- 1. In armories that do not contain childcare facilities, the National Guard Bureau (NGB) Region North Industrial Hygiene Office recommends cleaning the areas in which sample results are greater than 200 micrograms per square foot (µg/ft²). If a special function will be held in which children will be present in this facility, consider thoroughly cleaning the areas that will be accessible to children prior to the function. This guidance is based on professional judgment, risk assessments, adaptation of Occupational Safety and Health Administration (OSHA) guidance, and feasibility of cleaning to a certain level.
 - a. Environmental Protection Agency (EPA) standards (40 Code of Federal Regulations (CFR) 745.227(h)(3)) are not directly applicable because they are criteria for dust-lead hazards developed for floors (40 μ g/ft²) and windowsills (250 μ g/ft²) in residential dwellings and child occupied facilities. A child occupied facility is defined as a building, or portion of a building, constructed prior to 1978, visited regularly by the same child, 6 years of age or under, on at least two different days within any week (Sunday through Saturday period), provided that each day's visit lasts at least 3 hours and the combined weekly visit lasts at least 6 hours, and the combined annual visits last at least 60 hours. Most of the wipe samples in armories were collected in undisturbed areas and therefore, results are worst case scenarios and do not correlate to these standards.
 - b. OSHA has no specific requirement for work area surfaces. The lead standard (29 CFR 1910.1025(h)) states that all surfaces shall be maintained as free as practicable of accumulations of lead dust. In workplaces where lead dust is generated, surface levels may be much higher, but personnel exposures can be controlled by limiting airborne lead levels and following good cleanup and hygienic practices.
 - c. OSHA used to cite a level of 200 μ g/ft² in their Technical Manual and 29 CFR 1926.62 as guidance to its own inspectors for evaluating the cleanliness of lunchroom and locker room surfaces that are supposed to be kept as clean as possible.
 - d. In a report titled Derivation of Wipe Surface Screening Levels for Environmental Chemicals, the US Army Center for Health Promotion and Preventive Medicine (USACHPPM) has determined that 200 μ g/ft² is a safe surface contamination level. They have also applied these standards as the decontamination levels for surfaces in administrative offices.
 - e. It should be noted that levels above these recommendations do not necessarily mean there is a significant hazard to workers who are following good cleaning and hygienic practices since there is no

correlation between wipe and air samples. Rather, we recommend these levels as a precautionary measure.

- 2. The NGB Occupational Health Branch is developing guidance for armories that are used as childcare facilities. All states will receive this guidance when it is completed. In the interim, we recommend the following actions:
 - a. Clean all areas that will be accessible to children to the EPA dust-lead standard for children 6 years of age or under (40 μ g/ft² on floors and 250 μ g/ft² on windowsills).
 - b. Refer to the local authorities' regulations since they can be more stringent than federal regulations.
 - c. Post signs in the area to inform people of the presence of lead dust and its effects.
 - d. If soldiers clean weapons in the facility change the policy so that they cannot clean their weapons in the facility, or if they are allowed to clean their weapons indoors, they must clean the area by wet wiping and mopping the area when they are done.
 - e. If the paint is peeling, contact the state Environmental Office to test for lead content and provide recommendations.
- 3. Air samples collected on individuals in the armory were well below OSHA's permissible exposure limit for lead (29 CFR 1910.1025(c)) of 0.05 milligrams per cubic meter (mg/m³) averaged over an 8-hour day. Therefore, based on these conditions there is currently no overexposure to personnel from lead dust in this building.

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Prepared for: National Guard Bureau Army National Guard Region North Industrial Hygiene Office Havre De Grace, Maryland



Industrial Hygiene Survey for NHARNG – Whitinsville Readiness Center 50 Lake Street Whitinsville, Massachusetts 01588

AECOM Environment October 2010 Document No.: 60159721 Whitinsville Readiness Center

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Prepared for: National Guard Bureau Army National Guard Region North Industrial Hygiene Office Havre De Grace, Maryland

Industrial Hygiene Survey for NHARNG – Whitinsville Readiness Center 50 Lake Street Whitinsville, Massachusetts 01588





Northeast District Health & Safety Manager

AECOM Environment October 2010 Document No.: 60159721 Whitinsville Readiness Center

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Executive Summary

On August 19, 2010, AECOM Environment conducted an Industrial Hygiene (IH) survey of the Whitinsville Readiness Center facility located at the 50 Lake Street in Whitinsville, Massachusetts. Non-Responsive was the point of contact for the facility and Non-Responsive, Program Coordinator I, accompanied AECOM during the survey to provide access and information concerning the Whitinsville Readiness Center operations.

The industrial hygiene survey was generally conducted in accordance with the scope of work as described in the "Statement of Work – Industrial Hygiene Services for National Guard Bureau Industrial Hygiene Region North – Baseline Surveys for Readiness Centers and Administrative Buildings", dated March 2009.

The Whitinsville Readiness Center is currently staffed by approximately ten personnel. The facility is configured as an administrative area and a Drill/Assembly Hall.

Personnel at the facility were undertaking normal daily activities, which are administrative in nature, at the time of the survey.

The activities undertaken during the Industrial Hygiene survey included facility descriptions, lead wipe/air sampling, evaluation of housekeeping, illumination studies, ventilation system evaluation, and a review of the physical building condition.

The Whitinsville Readiness Center is housed in a one story masonry slab-on grade building, consisting of approximately 50% administrative space and 50% drill hall.

Lighting levels measured throughout the facility were generally adequate as per <u>ANSI/IESNA RP-1-2004</u>, <u>Office Lighting</u>, <u>ANSI/IESNA RP-7-2001</u>, <u>Industrial Lighting</u>, and the <u>IESNA Lighting Handbook</u>, 9th Edition, 11 <u>April 2005</u>, with the exception of the Boiler Room.

Wipe samples collected throughout the facility indicated lead levels below the ARNG action level, with the exception of the firing range, where wipe samples indicated lead levels in excess of the ARNG action level.

Water damaged ceiling tile was observed in the classroom.

The HVAC system in the building consists of a boiler room that feeds radiant heaters throughout the building. There is no HVAC system that provides fresh air from the building exterior in administrative areas. The Drill Hall is equipped with two overhead air handling units. The two units in the Drill Hall were inaccessible at the time of the survey. No information was available regarding fan unit maintenance.

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1.0 Facility Description and Operations

The Whitinsville Readiness Center is an administrative facility within a masonry structure, slab on grade. The building consists of two main sections. The perimeter of the building contains office and administrative areas, and is finished with painted cinder block, drywall, or paneled walls, acoustical drop ceilings, and floor tile. The drill hall comprises the center of the building. This area is finished with painted cinder block walls, an exposed wooden roof deck, and concrete floors.

The primary activity at the Whitinsville Readiness Center is routine administrative duties and occasional use by units for support and training of soldiers. The Whitinsville Readiness Center is currently staffed by approximately 10 personnel. No vehicle maintenance activities are undertaken at the facility.

2.0 Sampling in Readiness Centers

2.1.1 Wipe Sampling

Wipe sampling for lead was conducted in the former firing range, the drill hall, and the administrative areas following the OSHA wipe sampling method and using Ghost wipes. Samples were collected in areas that are not frequently cleaned and showed signs of dust whenever possible.

The following table presents the results of the lead wipe sampling conducted at the facility.

Sample Number	Sample Location	Lead Concentration
WH-WRC – 1	Range Floor	<110 ug/ft ²
WH-WRC – 2	Range Duct	810 ug/ft ²
WH-WRC – 3	Range Light	13,000 ug/ft ²
WH-WRC – 4	Bullet Trap	<110 ug/ft ²
WH-WRC – 5	Outside Range	<110 ug/ft ²
WH-WRC – 6	Classroom Window Sill	<110 ug/ft ²
WH-WRC – 7	Drill Hall Floor	<110 ug/ft ²
WH-WRC – 8	Drill Hall Table	<110 ug/ft ²
WH-WRC – 9	Kitchen Table	<110 ug/ft ²
WH-WRC – 10	Audio/Visual Room	<110 ug/ft ²
WH-WRC – 11	Orderly Office	<110 ug/ft ²
WH-WRC – 12	S3 181 St. Eng. Bat.	<110 ug/ft ²

Table 2-1: Lead Wipe Sample Results

The wipe sample collected on top of a duct and on top of a light fixture in the former firing range detected levels of lead in excess of the ARNG action level of 200 ug/ft². Site personnel reported that the range was decontaminated on May 2, 1996. Laboratory analytical results are presented in Appendix C.

2.1.2 Air Sampling

Ambient air sampling for lead was conducted in two normally occupied areas of the facility.

Table 2-2: Lead Air Sample Results

Sample Number	Sample Location	Lead Concentration
HRC-10	Drill Hall	17 ug/m ³
HRC-11	Orderly Room	<15ug/m ³

One of the air samples collected indicated the presence of airborne lead above detectable limits, but below the OSHA Action Level. For reference, the OSHA Action Level for lead is 30 ug/m³ and the Permissible Exposure Limit (PEL) is 50 ug/m³. Laboratory analytical results are presented in Appendix C.

3.0 Physical Condition of Facility and Personnel Concerns

3.1.1 Lead Based Paint

Interior surfaces of walls are coated with paint. The paint on the walls appeared to be generally in good condition. Concrete flooring was generally tiled or unpainted. AECOM did not observe damaged or peeling paint during this evaluation.

3.1.2 Suspect Asbestos Containing Materials

AECOM did not observe damaged, friable suspect asbestos containing materials (ACM) in readily accessible areas of the Whitinsville Readiness Center during this survey. Thermal system piping is typically covered in ACM or fiberglass insulation with associated fittings in good condition. AECOM was provided with a partial Asbestos-Containing Materials Survey. As such, damaged friable suspect materials were not sampled, but presumed to be asbestos-containing based upon previous documentation. Two water tanks present in the overhead space of the boiler room and insulated with ACM showed signs of deterioration. Otherwise, materials were in good condition.

Other typical miscellaneous building materials observed include floor tiles and associated mastic, cove base and associated mastic, ceiling tiles, and window glazing compound and caulks.

3.1.3 Water Damage/Mold

AECOM observed water stained ceiling tiles in the classroom during this survey. Site personnel were unaware of any water leaks at the facility. The impacted area was limited to less than 10 square feet and no visible mold was apparent.

3.1.4 Housekeeping

The Whitinsville Readiness Center was observed to be generally clean and orderly during this assessment. AECOM did not observe dust accumulation on readily accessible horizontal surfaces within areas commonly used in the facility. Dust accumulation was observed in areas of infrequent use.

3.1.5 Indoor Air Quality/ Ergonomics

The Administration Section contains general office space. The Administration Section is generally utilized by all of the Whitinsville Readiness Center staff members. No Indoor Air Quality concerns were noted by the Whitinsville Readiness Center personnel.

Instantaneous real-time reading for carbon monoxide, carbon dioxide, temperature, and relative humidity are presented in the following table. The readings appeared to be within generally accepted guidelines.

Table 3-1: Indoor Air Quality Monitoring Results

Location	Carbon Monoxide (ppm)	Carbon Dioxide (ppm)	Temp (°F)	Relative Humidity (%)
Exterior - Baseline	1.9	449	67.9	59.3
Drill Hall	1.7	534	78.0	56.1
Table 1-3 Guidelines: Carbon Monoxide: Office/Wareh OSHA Permissible Exposure Lin Carbon Dioxide: Office Space -A 2007). Not Applicable to wareho Relative Humidity: Mechanically 5.10.1). Temperature: Winter (clothing in Summer Temp - 73 – 79°F. (De	ouse Space – 9 ppm bas nit (PEL) = 50 ppm. ACG opproximately 700 ppm a use and vehicle mainten air-conditioned space – sulation = 1.0 clo) Relati rived from ASHRAE Sta	sed on EPA National Am GH Threshold Limit value bove background (Deriv ance bays. Maximum 65% (Derived ve humidity 30-60% - Te ndard 55-2004)	bient Air Quality e (TLV) = 25, ppm red from ASHRAE from ASHRAE S emp - 68 – 75°F	Standard. n. 5 Standard 62.1- tandard 62.1-2007 –

Whitinsville Readiness Center personnel did not report any ergonomics issues or concerns. Office furniture and accessories designed to promote ergonomically correct behaviors were observed.

4.0 Ventilation and HVAC System

4.1.1 Ventilation Systems and Potential for Contamination of Clean Air Sources

Potential for contamination of clean air sources was not observed in the facility.

The Whitinsville Readiness Center is heated by a radiant heating system fed by a boiler located in the boiler room that is adjacent to the drill hall. Supply and return air is not provided by mechanical means. Outdoor air is provided in the building through open windows and doors.

Two air handling units are located in the overhead space of the drill hall, but the units were inaccessible and site personnel could not provide information on the use or status of the system. The fans were not observed in operation during the survey.

4.1.2 HVAC Maintenance

There was no maintenance schedule associated with an active ventilation system.

5.0 Lighting

Lighting levels in all areas were measured utilizing a Cal-Light 400 light meter that displays lighting levels in foot-candles. Lighting levels were adequate in all areas measured except the Boiler Room.

Table 5-1: Light Survey

Location	Results – (Foot candles)	Met Standard (Y/N)	Standard*
Drill Hall	34.8	Ŷ	10
Classroom	43.4	Y	30
Kitchen	38.2	Y	50
Women's Room	8.3	Y	5
Men's Room	10.1	Y	5
Orderly Room	48.1	Y	30
Company Commander	31.8	Y	30
1 st Sergeant	32.2	Y	30
Commo	36.1	Y	30
Boiler Room	27.5	Ν	30
Corridor	13.4	Y	5
Weight Room	59.1	Y	30
S31 181 st Eng. Bat.	74.6	Y	30
Armorer	11.4	Y	10
Audio/Visual Room	55.0	Y	30
BN COR	36.1	Y	30
XO	56.5	Y	30
CSM	37.3	Y	30
S4	33.5	Y	30
S1	46.4	Y	30
Recruiter	35.3	Y	30
Office Lighting (ANSI/IESNA RP-1-04) and Industrial Lighting Facilities (ANSI RP-7-01)			

6.0 Evaluation of Attached Garage

There is no garage associated with the Whitinsville Readiness Center.

7.0 Conclusions and Limitations

AECOM has conducted this survey in accordance with applicable OSHA methods and standard industrial hygiene practice. The following conclusions were based on the observations and assessments of activities that occurred during the on-site evaluation:

Housekeeping is performed regularly at the Whitinsville Readiness Center, and AECOM did not observe any damaged, suspect asbestos containing materials or peeling paint in readily accessible areas of the facility during the evaluation.

Evidence of water intrusion was observed in the classroom. Water intrusion is a mold growth risk factor.

Lighting levels in all areas except the Boiler room were in compliance with ANSI/IESNA guideline levels.

Air samples collected and analyzed did not indicate levels of airborne lead above the OSHA Action Level.

Wipe samples collected in the former firing range indicated levels of lead on surfaces in excess of the ARNG Action Level. Various other locations throughout the building did not indicate levels of lead on surfaces in excess of the ARNG action level.

AECOM provided these services consistent with the level and skill ordinarily exercised by members of the profession currently providing similar services under similar circumstances at the time the services were provided. This statement is in lieu of other statements either expressed or implied. This report is intended for the sole use of National Guard Bureau – Army National Guard. The scope of services performed in execution of this evaluation may not be appropriate to satisfy the needs of other users, and use or re-use of this document, the findings, conclusions, or recommendations is at the risk of said user.

As with all such surveys, the results of the sampling represent conditions found on the date of the survey and may not represent conditions found at other times. Additionally, this survey was limited with respect to the specific parameters indicated above and should not be construed to be a comprehensive evaluation or a definitive representation of conditions within the facility. The information presented in this report is intended to be used as a guide to evaluate the need for further investigation or the need for modifications to the processes or procedures surveyed.

The Client recognizes and agrees that all testing and remediation methods have reliability limitations, no method nor number of sampling locations can guarantee that a condition will be discovered within the performance of the services as authorized by the Client. Additionally, the passage of time may result in a change in the environmental characteristics at this site. This report does not warrant against future operations or conditions that could affect the recommendations made. The results, findings, conclusions, and recommendations expressed in this report are based only on conditions that were observed during AECOM's inspection of the site.

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Appendix A

Whitins ville Readiness Center Facility Layout



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Whitins ville Readiness Center Photographs
















Appendix C

Analytical Results

A Sp	ecialized Environmental Laboratory	CI	ERTIFICATE OF ANA	LYSIS		ACCREDITED LABORATORY IDUSTRAL HYDENE, DV/ROMENTAL LEAD & EV/ROMENTAL MICROBOLOGY ISONE 1905-2005 www.shaacceedited.ets.org
Client:	National Guard Bureau	Job Name:	Whitinsville Readiness Center	Chain Of Custody:	508623	
Address:	301-1H Old Bay Lane, Attn: NGB-AVN-SI, State Military Reservation	Job Location:	50 Lake St., Whitinsville, MA	Date Submitted:	8/23/2010	10920
	Havre de Grace, Maryland 21078	Job Number:	Not Provided	Person Submitting:		
		P.O. Number:	W912K6-09-A-0003	Date Analyzed:	8/30/2010	Report Date: 8/31/2010

Summary of Atomic Absorption Analysis for Lead

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AMA Sample Number	Client Sample Number	Analysis Type	Sample Type	Air Volume (L)	Arca Wiped (ft²)	Rej	porting Limit	Total ug	Final Res	ult	Comments
1073178	WH-WRC-01	Flame	Wipe		0.111	110	ag/ft ¹	<12	<110	ug/ft²	
1073179	WH-WRC-02	Flame	Wipe	****	0.111	110	ug/ft ³	90	810	ug/ft²	
1073180	WH-WRC-03	Flame	Wipe	****	0.111	110	ug/ft ¹	1400	13000	ug/ft²	
1073181	WH-WRC-04	Flame	Wipe	****	0.111	110	ug/ft ²	<12	<110	ug/ft²	
1073182	WH-WRC-05	Flame	Wipe	****	0.111	110	ug/ft ¹	<12	<110	ug/ft²	
1073183	WH-WRC-06	Flame	Wipc	****	0.111	110	ug/ft1	<12	<110	ug/ft²	
1073184	WH-WRC-07	Flame	Wipe	****	0.111	110	ug/ft ²	<12	<110	ug/ft²	
1073185	WH-WRC-08	Flame	Wipe	****	0.111	110	ug/ft ¹	<12	<110	ug/ft²	
1073186	WH-WRC-09	Flame	Wipe	****	0.111	110	ug/ft ¹	<12	<110	ug/ft²	
1073187	WH-WRC-10	Flame	Wipe	****	0.111	110	ug/ft:	<12	<110	ug/ft²	
1073188	WH-WRC-11	Flame	Wipe	****	0.111	110	ug/ft ²	<12	<110	ug/ft²	
1073189	WH-WRC-12	Flame	Wipe	****	0.111	110	ug/ft ¹	<12	<110	ug/ft²	
1073190	WH-WRC-01 Å	Flame	Air	200	N/A	15	ug/m ¹	3.3	17	ug/m³	
1073191	WH-WRC-02 A	Flame	Air	200	N/A	15	ug/m³	<3	<15	ug/m³	

This report applies only to the sample, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these Laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from us. Sample types, locations, and collection protocols are based upon the information provided by the persons submitting them and, unless collected by personnel of these Laboratories, we expressly dischaim any knowledge and liability for the accuracy and completeness of this information. Residual sample material will be discarded in accordance with the appropriate regulatory guidelines, unless otherwise requested by the client. NVLAP accreditation applies only to polarized light microscopy of bulk samples. This report must not be used to claim, and does not imply product certification, approval, or endorsement by NY ELAP, AIHA, NVLAP, NIST, or any agency of the Federal Government. All rights reserved. AMA Analytical Services, Inc.

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WH URC 12 53/8/55 F2 BT		Via: COLOX By frei	Date	Time: Contact:	By:
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(301) 439-2643 Maillag/Billing Information: Submittal Information: L. Click Nume: Minical Stard Bureau 1. Job Nume: Minical Stard Bureau 2. Address 1:	2082
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WRC OFA 9/14/0 X.0 X X Date/Time: Date/Time: Date/Time:	LABORATORY STAFF ONLY)
	Contact: By:
Date/line:	
Date/Time:	
	Contact: By:
	Contract: By:
	Connect, Dy.
LABORATORY 1. Date/Time RCVD: / @Via:By (Print):	
STAFF ONLY: 2. Date/Time Analyzed:/ @ By (Print): Sign:	Sign:

FOIA Requested Record #J-15-0085 (MA) Released by National Guard Bureau Page 3300 of 3473 Appendix D

References

References

1. Title 29, Code of Federal Regulations (CFR), Part 1910, Occupational Safety and Health Administration, current Ed. http://www.osha.gov/comp-links.html

2. Department of Defense Instruction (DODI) 6055.1, Department of Defense Occupational Safety and Health (OSH) Program, August 19, 1998. http://www.dtic.mil/whs/directives/corres/pdf/i60551_081998/i60551p.pdf

3. Army Regulation (AR) 11-34, The Army Respiratory Protection Program, 15 February 1990. http://www.usapa.army.mil/pdffiles/r11_34.pdf

4. AR 40-5, Medical Service, Preventive Medicine, 25 May 2007. http://www.usapa.army.mil/pdffiles/r40_5.pdf

5. AR 385-10, The Army Safety Program, 23 August 2007. http://www.usapa.army.mil/pdffiles/r385_10.pdf

6. Department of the Army Pamphlet (DA PAM) 40-501, Medical Services, Hearing Conservation Program, 10 December 1998. http://www.usapa.army.mil/pdffiles/p40_501.pdf

7. AR 40-11, Preventive Medicine, 22 July 2005. http://www.army.mil/usapa/epubs/pdf/p40_11.pdf

8. DA PAM 40-503, Medical Services, Industrial Hygiene Program, 30 October 2000. http://www.usapa.army.mil/pdffiles/p40_503.pdf

9. UFC 3-410-01FA, Heating, Ventilating, and Air Conditioning, 15 May 2003. http://www.wbdg.org/ccb/DOD/UFC/ufc_3_410_01fa.pdf

10. Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs), American Conference of Governmental Industrial Hygienists (ACGIH), current Ed.

11. Industrial Ventilation – A Manual of Recommended Practice for Design, ACGIH, current Ed.

12. American National Standards Institute (ANSI) Z358.1-2004, Emergency Eyewash and Shower Equipment.

13. American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. (ASHRAE) 62.1-2007, Ventilation for Acceptable Indoor Air Quality.

14. RP-1-2004, Office Lighting, ANSI/IESNA.

15. RP-7-2001, Industrial Lighting, ANSI/IESNA, change 20 July 2004.

16. Unified Facilities Criteria, (UFC) 3-410-01FA, Heating, Ventilating, and Air Conditioning, 15 May 2003, including change 3, Aug. 03.



Prepared For:

National Guard Bureau Army National Guard **Region North Industrial Hygiene Office** 301 - IH Old Bay Lane Havre De Grace, Maryland 21078

Prepared By:

URS Corporation 5 Industrial Way Salem, New Hampshire 03079

INDUSTRIAL HYGIENE SURVEY REPORT MASSACHUSETTS NATIONAL GUARD READINESS CENTER **50 LAKE STREET** WHITINSVILLE, MA 01588

July 17, 2013 PN: 39743799





Director, Industrial Hygiene Services

Project Manager

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	ARMORIES

FINDINGS AND RECOMMENDATIONS MASSACHUSETTS NATIONAL GUARD READINESS CENTER 50 LAKE ST., WHITINSVILLE, MA

Findings	s Recommendations A		
Lighting			
On the day of the survey, the illuminance was inadequate in several locations tested.	Increase lighting in the work areas. While work is in progress, these areas must be lighted by at least the minimum lighting intensities (ANSI / IESNA RP-1-04).	RAC 4	
Ergonomics			
Computer workstations in the Administrative Areas were observed with un-adjustable chairs, arm rests and keyboards.	Ergonomic issues with regard to the desks and chairs should be corrected by fitting the workplace to the worker (Department of the Army Pamphlet 40- 21, Chapter 4, Page 7, Section 4-3).	RAC 3	
Lead			
Three of the 10 lead wipe samples indicated elevated lead levels.	Personnel trained in accordance with the OSHA Lead Standard should clean the areas where elevated lead dust levels were identified (OSHA 29 CFR 1910.1025(h)(1)).	RAC 3	
Asbestos			
Presumed asbestos- containing floor tiles and associated mastic were observed throughout the facility; an Asbestos Operation and Maintenance Program was not available on-Site.	Develop a site-specific asbestos operations and maintenance program for management of asbestos- containing materials in place as required by OSHA 29 CFR 1910.1001(j)(2).	RAC 4	
Personal Protective Equipme	nt		
Hazard assessments have not been conducted to determine whether personal protective equipment is required.	Conduct a hazard assessment of site operations to determine what types of PPE are required for each type of work (29 CFR 1910.132(d)(1)).	RAC 4	
Chemical Storage			
Chemicals/ flammable materials were observed improperly stored and labeled.	Each container of hazardous chemicals in the work place must be labeled with the identity of the chemical and appropriate hazard warnings (29 CFR 1910.1200).	RAC 3	

Findings Recommendations		Risk Assessment Code (RAC)
Fire Extinguishers		
No evidence was found that all fire extinguishers were being inspected on a monthly basis.	All fire extinguishers must be inspected on a monthly basis to determine that they are full and readily accessible (OSHA 29 CFR 1910.157(e)(2)).	RAC 3
Ladders		
Ladders were observed not properly stored in the boiler room.	Ladders not in use shall be properly stored in a vertical position fastened to walls (29 CFR 1910.25 (c)(2)(i)).	RAC 4
Former Indoor Firing Range		
The former Indoor Firing Range has been posted as unsafe due to lead contamination; however the area is still regularly used. The door to the area was not secured.	Personnel trained in accordance with the OSHA Lead Standard should decontaminate the areas where elevated lead dust levels were identified in accordance with National Guard Pamphlet 420-15 (OSHA 29 CFR 1910.1025(h)(1)).	RAC 3

1.0 SUMMARY

At the request of the National Guard Bureau (NGB) Region North Industrial Hygiene Office, URS Corporation (URS) conducted an industrial hygiene survey at the Readiness Center in Whitinsville, Massachusetts.

URS representative, Mr. **Non-Responsive**, conducted the Industrial Hygiene Survey on May 14, 2013. The scope of work included an overall assessment of the facility as it relates to industrial hygiene and included a walkthrough of the facility, collection of photographs, and when required, measurements for illumination (light), area and personal air sampling, and noise mapping.

The Whitinsville Readiness Center is a one-story brick building, consisting of offices, classrooms, a supply area, a mess hall, gender separate bathrooms, locker storage rooms, storage rooms, a kitchen, an Assembly Hall and a former Indoor Firing Range. A layout of the Readiness Center is provided in Appendix A.

<u>GENERAL</u>: The former Indoor Firing Range is posted as unsafe for working conditions due to lead contamination and it is not in use. Chemicals/ flammable materials were observed not properly stored in a flammables cabinet and not properly labeled. Ladders were not properly secured and stored. No evidence was found that all fire extinguishers were being inspected on a monthly basis. The boiler inspection certificate expired in 2010.

<u>LIGHTING</u>: Lighting in the Readiness Center was found to be inadequate in several of the areas measured. Areas noted within the report as having inadequate lighting require upgrading by either increasing the general lighting or through the use of task lighting. While work is in progress work areas must be lighted by at least the minimum light intensities.

<u>LEAD</u>: Three of ten wipe samples collected in the Readiness Center were found to contain lead in a concentration above the recommended limit set by the NGB, Region North IH Office. None of the paint chip samples collected in the Readiness Center were

found to contain lead in a concentration above the recommended limit set by the NGB, Region North IH Office.

<u>ASBESTOS</u>: Presumed asbestos-containing floor tiles and associated mastic were identified during this survey, however no Asbestos Operations and Maintenance Program was found on site. Until suspect materials have been sampled and determined not to contain asbestos, they must be presumed to be asbestos-containing and managed accordingly.

<u>ERGONOMICS</u>: Many of the work stations had ergonomic issues which require attention. Computer workstations were assessed during the walkthrough for ergonomic issues. The computer workstations in the facility did not meet the current Occupational Safety and Health Administration (OSHA) ergonomic recommendations. The chair armrests, keyboards, and desks were not adjustable. All workstations in the facility should be adjusted and monitored. The ergonomic issues with regard to the workstations and chairs need to be corrected by fitting the workplace to the worker.

<u>NOISE</u>: Area noise dosimetry in the Readiness Center determined that noise levels were below the OSHA permissible exposure limit (PEL) and Department of Defense Instruction (DoDI) Hearing Conservation Standard (6055.12 3 December 2010) on the day of URS' site visit.

2.0 SUPPLY / TRAINING AREA

2.1 Operation Description

This Readiness Center is primarily used for weekend training drills and conducting administrative functions. The building includes offices, classrooms, a supply area, gender separate bathrooms, storage rooms, a mess hall, a kitchen, an Assembly Hall and a former Indoor Firing Range.

2.2 Chemical and Physical Agents Sampled

2.2.1 Carbon Dioxide

On the day of the survey, carbon dioxide measurements were made in the Readiness Center. Interior carbon dioxide concentrations were found to be between 517 and 672 parts per million (ppm). Carbon dioxide levels were measured using a direct-reading TSI Q-Trak (Model 8551).

Carbon dioxide is a normal constituent of the atmosphere and ranges from about 250 to 450 ppm. The major source of excess carbon dioxide in the indoor environment is human respiration. Other sources can include open-flame heaters, fermentation processes, and motor vehicles. Carbon dioxide itself is not normally a cause of indoor air quality problems but is typically used as an indicator of the adequacy of fresh air intake. As the concentration of carbon dioxide increases, so do the background levels of other air contaminants.

To minimize air quality complaints, the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) has proposed that the carbon dioxide concentration within an occupied workspace be maintained below 700 ppm above ambient outside levels. For example, on the day of the survey, the outside carbon dioxide level was measured at 397 ppm. Therefore ASHRAE (Standard 62.1-2010) would recommend that interior carbon dioxide concentrations be maintained at or below 1,097 ppm. Using the ASHRAE guideline, the readings at the subject site were found to be below the suggested indoor to outdoor differential concentration.

2.2.2 Carbon Monoxide

The carbon monoxide concentration in the Readiness Center was measured to be 0.0 ppm on the day of the survey. ASHRAE recommends that average carbon monoxide concentrations not exceed 9 ppm. Typical average concentrations found in commercial buildings range from 0 to 6 ppm. The measured levels were below the ASHRAE guideline for indoor environments. Carbon monoxide was measured using a TSI Q-Trak Plus (Model 8554).

Key sources of carbon monoxide within indoor environments include internal combustion engines, motor vehicle and forklift exhaust, tobacco smoke, space heaters, and improperly adjusted oil or gas burners.

2.2.3 Relative Humidity

The average relative humidity within the Readiness Center measured with the Q-Trak Plus was 32.7%, which was within the guideline of less than 65% recommended by ASHRAE.

2.2.4 Temperature

Temperature should be maintained within the thermal comfort envelope suggested in ASHRAE Standard 55-2010. This standard on thermal environments specifies conditions in which 80% or more of building occupants should find the thermal environment acceptable. ASHRAE 55-2010 suggests temperatures of 68 to 75 degrees Fahrenheit (°F), during winter months, for people in typical seasonal clothing during light sedentary activity. For summer, the temperature should be in the range of 73 to 79 °F.

The average temperature inside the Readiness Center was, 65.8 °F, which was below the guideline of 68 to 75 °F recommended by ASHRAE for thermal comfort. No complaints regarding temperature were received by URS during this survey.

2.2.5 Lighting

Lighting in the Readiness Center was measured using a cal-Light 400 Light Meter. Table 2-1 below shows lighting measurements in foot candles (FC) and the recommended lighting requirements (Illuminating Engineering Society of North America (IESNA) RP-7-01).

Location	Function	Measured Illuminance in Foot Candles (FC)	Recommended Minimum Illuminance in Foot Candles (FC)
Admin, conference table	Admin	56.7	50
South Admin, front desk	Admin	45.2	50
South Admin, right window desk	Admin	213.7	50
South Admin, left window desk	Admin	58.9	50
Admin, next to Recruiting Office, front desk	Admin	53.9	50
Admin, desk -	Admin	67.2	50
DL Classroom, table	Admin	23.2	50
Admin off classroom/ mess hall, window desk	Admin	80.2	50
Kitchen, counter	Break Room	51.9	10
Admin near Commo, left office	Admin	53.2	50
Admin near Commo, right office	Admin	53.9	50
Supply, desk - Non-Responsive	Admin	84.7	50
Supply, front desk	Admin	43.3	50

 Table 2-1

 Lighting Measurements and Recommended Lighting Requirements

On the day of the survey, the illuminance in the Readiness Center was determined to be inadequate in three of the office/administrative locations.

2.2.6 Lead

Wipe testing for lead dust was conducted in the Readiness Center using ghost wipes, which meet ASTM E 1792 standards. The analytical report from AMA Analytical Services, Inc. (AMA) is contained in Appendix C. Table 2-2 below shows the results of the lead wipe testing.

Sample Location	URS Sample Number	Area Wiped in Square Feet (ft ²)	Result in Micrograms/ Square Foot (µg/ft ²)	Maximum Surface Contamination Level in Micrograms/ Square Foot (μg/ft ²)
Admin conference room, top of TV	Whitinsville RC Wipe-01	0.108	<110	200
Supply Office, top of black file cabinet	Whitinsville RC Wipe-02	0.108	<1 1 0	200
Classroom/ mess hall, middle window sill	Whitinsville RC Wipe-03	0.108	<110	200
Admin near Commo, right window sill	Whitinsville RC Wipe-04	0.108	240	200
South admin, top of shelf	Whitinsville RC Wipe-05	0.108	<110	200
Boiler Room, top of water heater	Whitinsville RC Wipe-06	0.108	320	200
Drill Hall, floor near fitness equipment	Whitinsville RC Wipe-07	0.108	<110	200
Kitchen, shelf above stove top	Whitinsville RC Wipe-08	0.108	<110	200
Supply Storage, floor by green shelves	Whitinsville RC Wipe-09	0.108	<110	200
Former Indoor Firing Range, vent on door	Whitinsville RC Wipe-10	0.108	550	200

Table 2-2 Levels of Lead Dust Found in the Readiness Center

Three of the ten surface dust level measurements were found to contain lead at a level above the NGB recommended level, based on the OSHA clarification letter which states "as free as practicable" of lead contamination as specified under OSHA 29 CFR 1926.62.

Three paint chip samples were collected from areas of peeling paint within the the facility and were analyzed for lead content. The analytical report from AMA is contained in Appendix C.

According to the U.S. Department of Housing and Urban Development (HUD), paint is considered to be lead-based if the quantity of lead is greater than 0.5% by weight. OSHA has not established a minimum percentage of lead to be defined as lead-based paint, therefore paint with lead in any amount above the analytical detection limit is considered to be lead-based under these regulations. The results of URS' lead paint testing are contained in Table 2-3.

Table 2-3 Lead Content in Painted Surfaces

Paint Location	Lead Concentration (Percent Weight)	HUD Lead-Based Quantity (Percent Weight)	
Silver paint, electric box, boiler room	0.077	0.5	
Yellow paint, walls, boiler room	0.1	0.5	
Gray paint, rolling door, assembly hall	0.47	0.5	

On the day of the survey, none of the paint chip samples were found to have a lead content above the HUD criteria for determination of paint as lead-based, although the gray paint on the rolling door in the Assembly Hall was determined to have a lead conent approximating the HUD value.

2.2.7 Asbestos

No damaged, friable suspect material was identified during this survey for sample collection.

Presumed asbestos-containing floor tiles and associated mastic were identified during this survey. Until suspect materials have been sampled and determined not to contain asbestos, they must be presumed to be asbestos-containing and managed accordingly.

2.3 Ventilation System Evaluation

The facility, not designed for vehicle maintenance, contains a ventilation system that is limited to localized personal ventilation (i.e. room fans, window air conditioning units) within the majority of rooms, and main negative draw fans in the Assembly Hall.

2.4 Noise Measurements

Area noise dosimetry was conducted within the administrative office area. Area exposures were measured using a data-logging Spark 703+ Noise Dosimeter. Area noise dosimetry results indicated that, on the day of the survey, workers were not exposed to noise levels above the DoDI Hearing Conservation Standard (6055.12 3 December 2010) of 85 decibels, A scale (dBA)/8-hour day. Table 2-4 indicates the individual monitored, the tasks performed and noise exposures.

Table 2-4 Noise Dosimetry Data

Location	fice Administrative	Sample Duration in Minutes	Monitoring Result TWA (dBA)*	Hearing Protection
Supply Office	Administrative	401	58.1	N/A

* The calculated 8-hour, time-weighted average (TWA) noise exposure in dBA. The OSHA PEL for noise exposure is 90 dBA. DoDI has established an employee exposure level of 85 dBA for requirement of a hearing conservation program.

2.5 Personal Protective Equipment

Personal protective equipment was orderly and readily available to employees in the Readiness Center. Personal protective equipment included safety glasses, ear plugs and nitrile gloves. On the day of URS' site visit, no personal protective equipment was observed to be in use.

3.0 SAFETY AND INDUSTRIAL HYGIENE PROGRAMS

3.1 Confined Spaces

A written confined spaces program is not applicable to this facility.

3.2 Hearing Conservation

A written hearing conservation program was identified on site. A review of normal site activities determined that no operations were identified that would warrant hearing protection. Based on area noise dosimetry results and a review of normal site operations, a hearing conservation program is not required for this site. The hearing conservation program can be discarded.

3.3 Respiratory Protection

A site-specific written program regarding Respiratory Protection was identified on site. Individual fit tests were not available. No operations were observed by URS that would require the use of respiratory protection. The respiratory protection program can be discarded.

3.4 Hazard Communication

A site-specific hazard communication program was identified on site.

Material safety data sheets, a site map, and list of full time personnel were readily available on the day of the survey.

3.5 Personal Protective Equipment

A written personal protective equipment program was identified on site. A hazard assessment should be conducted to determine whether personal protective equipment is required for activities typically undertaken at the Readiness Center.

3.6 Asbestos Operations and Maintenance Program

A written asbestos operations and maintenance program was not identified on site.

3.7 Safety

Chemicals/flammable materials in the boiler room were observed not properly stored in a flammables cabinet. Ladders were not properly secured and stored in the boiler room. No evidence was found that all fire extinguishers were being inspected on a monthly basis.

4.0 REFERENCES

American Conference of Governmental Industrial Hygienists

Industrial Ventilation: A Manual of Recommended Practice, 27th Edition, 2010

Guidelines for the Assessment of Bio-aerosols in the Indoor Environment, 1989

American National Standards Institute

ANSI/IESNA RP-1-04: American National Standard Practice for Office Lighting

ANSI/IESNA RP-7-01: Recommended Practice for Lighting Industrial Facilities

American Society of Heating, Refrigerating and Air-Conditioning Engineers

ANSI/ASHRAE Standard 62.1-2010: Ventilation for Acceptable Indoor Air Quality

ANSI/ASHRAE Standard 55-2010: Thermal Environmental Conditions for Human Occupancy.

Department of the Army

DA PAM 40-21, Ergonomics Program, 15 August 2003

Unified Facilities Criteria, Heating, Ventilating and Air Conditioning, 3-520-05, 14 April 2008

DA PAM 40-501, Hearing Conservation Program, 10 December 1998.

AR 385-10, The Army Safety Program, 23 August 2007; RAR Issue Date: 4 October 2011

National Guard Pamphlet 420-15, Guidelines and Procedures for Rehabilitation and Conversion of Indoor Firing Ranges, 3 November 2006

Department of Defense

DoDI 6055.12, Hearing Conservation, 3 December 2010

Creating the Ideal Computer Workstation: A Step-by-Step Guide, June 2000

National Institute for Occupational Safety and Health

Current Intelligence Bulletin 50: Carcinogenic Effects of Exposure to Diesel Exhaust, August 1988

U. S. Environmental Protection Agency

Asbestos Hazard Emergency Response Act (40 CFR Part 763)

National Emissions Standards for Hazardous Pollutants (40 CFR Part 61)

U. S. Department of Housing and Urban Development

Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (1995, 1997, 2012)

U. S. Occupational Safety and Health Administration

Standard for General Industry: 29 CFR 1910

OSHA Clarification Letter – Clarification of "as free as practicable" of lead contamination under 29 CFR 1926.62, 13 January 2003.

APPENDIX A

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SHOP DRAWING



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APPENDIX B

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PERSONNEL LIST

Classification: UNCLASSIFIED



Very respectfully,

Non-Responsive

Delta Company 1-181 IN Supply Sergeant

office-(508)234-6585 cell-<mark>Non-Responsive</mark>

Massachusetts Army National Guard Armory 50 Lake Street Whitinsville, MA 01588

-----Original Message-----From: Non-Responsive Sent: Tuesday, May 14, 2013 10:44 AM To:Non-Responsive Subject: FW: Postings (UNCLASSIFIED)

When time permits; can you please print out Lead MEMO & Lead Information pdfs so I can post on former IFR door; In addition please print out Worcester_Salisbury floor plan.

Thank you.

Regards.



From: Non-Responsive MAJ USARMY NG MAARNG (US) Sent: Saturday, May 04, 2013 2:11 PM To: Non-Responsive SFC USARMY (US) Subject: Postings (UNCLASSIFIED)

Posted to NGB FOIA Reading Room May, 2018 https://web.mail.mil/owa/?ae=Item&a=Open&t=IPM Note&id=RgAAAADPTdPsabXXBr 5/14/2013

APPENDIX C

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ANALYTICAL RESULTS

AMA Analytical Services, Inc.

Attention:

A Specialized Environmental Laboratory

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CERTIFICATE OF ANALYSIS

AIHA LAP, LLC ACCREDITED LABORATORY NOUSTRIAL HYGIENE, ENVIRONMENTAL LEAD & ENVIRONMENTAL MICROBIOLOGY ISOIEC 17025-2005 www.aihancerediteclabs.org LAS#100470

Client:	National Guard Bureau	Job Name:	MA ARNG	Chain Of Custody:	515915		
Address:	301-IH Old Bay Lane, Attn: ARNG-CJG-P, State Military Reservation	Job Location:	50 Lake Street, Whitinsville, MA	Date Submitted:	5/17/2013		
	Havre de Grace, Maryland 21078	Job Number:	Whitinsville RC	Person Submitting:	Non-Responsive		
		P.O. Number:	W912K6-09-A-0003	Date Analyzed:	5/24/2013	Report Date:	5/24/2013
	Man Deservative						

Summary of Atomic Absorption Analysis for Lead

Page 1 of 2

AMA Sample Number	Client Sample Number	Client Sample Analysis Type Sample Type Air Volume Area Wiped Reporting Number (L) (ft²) Limit		porting Limit	Total ug	Final Res	ult	Comments			
13063200	WhitinsvilleRC Wipe-01	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/ft²	
13063201	WhitinsvilleRC Wipe-02	Flame	Wipe	****	0.108	110	ug/fl²	<12	<110	ug/ft²	
13063202	WhitinsvilleRC Wipe-03	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/ft²	
13063203	WhitinsvilleRC Wipe-04	Flame	Wipe	****	0.108	110	ug/fl²	26	240	ug/ft²	
13063204	WhitinsvilleRC Wipe-05	Flame	Wipe	****	0.108	110	ug/ft ²	<12	<110	ug/ft²	
13063205	WhitinsvilleRC Wipc-06	Flame	Wipe	****	0.108	110	ug/ft²	35	320	ug/ft²	
13063206	WhitinsvilleRC Wipe-07	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/ft²	
13063207	WhitinsvilleRC Wipe-08	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/ft²	
13063208	WhitinsvilleRC Wipe-09	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/ft²	
13063209	WhitinsvilleRC Wipe-10	Flame	Wipe	****	0.108	110	ug/ft²	59	550	ug/ft²	
13063210	WhitinsvilleRC Wipe-FB	Flame	Wipe Blank	****	N/A	12	ug		<12	ug	

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these Laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from us. Sample types, locations, and collection protocols are based upon the information provided by the persons submitting them and, unless collected by personnel of these Laboratories, we expressly disclaim any knowledge and liability for the accuracy and completeness of this information. Residual sample material will be discarded in accordance with the appropriate regulatory guidelines, unless otherwise requested by the client. This report must not be used to claim, and does not imply product certification, approval, or endorsement by NY ELAP, AIHA, or any agency of the Federal Government. All rights reserved. AMA Analytical Services, Inc.

An AIHA (#100470) and NY ELAP (#10920) Accredited Laboratory

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AMA Analytical Services, Inc.

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CERTIFICATE OF ANALYSIS

Job Name: MA ARNG Chain Of Custody: 515915 Client: National Guard Bureau Address: 301-IH Old Bay Lane, Attn: ARNG-CJG-P, Job Location: 50 Lake Street, Whitinsville, MA Date Submitted: 5/17/2013 State Military Reservation Havre de Grace, Maryland 21078 Whitinsville RC Job Number: Person Submitting: P.O. Number: W912K6-09-A-0003 Date Analyzed: 5/24/2013 **Report Date:** Attention:

Summary of Atomic Absorption Analysis for Lead

Page 2 of 2

AMA Sample Number	Client Sample Number	Analysis Type	Sample Type	Air Volume (L)	Area Wiped (ft²)	Reporting Limit		Total ug	Final Result		Comments
13063211	WhitinsvilleRC LP- 01	Flame	Paint Chip	****	N/A	0.01	%Pb		0.077	%Pb	
13063212	WhitinsvilleRC LP- 02	Flame	Paint Chip	****	N/A	0.0051	%Рь		0.1	%Pb	
13063213	WhitinsvilleRC LP- 03	Flame	Paint Chip	****	N/A	0.0071	%Pb		0.47	%Pb	

Analysis Method for Flame: Air, Wipes, Paints, and Soil/Solids: EPA 600/R-93/200(M)-7000B; Water: SM-3111BAnalysis Method For Furnace: Air, Wipes, Paints, and Soil/Solids: EPA 600/R-93/200(M)-7010; Water: SM-3113BN/A = Not Applicablemg/Kg = parts per million (ppm) on a dry weight basismg/L = parts per million (ppm)

%Pb = percent lead on a dry weight basis ug = micrograms ug/L = parts per billion (ppb)

Note: All samples were received in good condition unless otherwise noted.

Note: All results have two significant digits. Any additional digits shown

should not be considered when interpreting the result.

Air and Wipe results are not corrected for any blank results Final results for air and wipe samples are based on client

supplied information nor verified by this laboratory. All results are to be considered preliminary and subject to change unless signed by the Technical Director or Deputy. See QC Summary for analytical results of quality control samples associated with these samples.



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APPENDIX D

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APPENDIX E

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RECOMMENDATIONS FOR SURFACE LEAD DUST IN ARMORIES

Subject: Recommendations for Surface Lead Dust in Armories

- 1. In armories that do not contain childcare facilities, the National Guard Bureau (NGB) Region North Industrial Hygiene Office recommends cleaning the areas in which sample results are greater than 200 micrograms per square foot (µg/ft²). If a special function will be held in which children will be present in this facility, consider thoroughly cleaning the areas that will be accessible to children prior to the function. This guidance is based on professional judgment, risk assessments, adaptation of Occupational Safety and Health Administration (OSHA) guidance, and feasibility of cleaning to a certain level.
 - a. Environmental Protection Agency (EPA) standards (40 Code of Federal Regulations (CFR) 745.227(h)(3)) are not directly applicable because they are criteria for dust-lead hazards developed for floors (40 μ g/ft²) and windowsills (250 μ g/ft²) in residential dwellings and child occupied facilities. A child occupied facility is defined as a building, or portion of a building, constructed prior to 1978, visited regularly by the same child, 6 years of age or under, on at least two different days within any week (Sunday through Saturday period), provided that each day's visit lasts at least 3 hours and the combined weekly visit lasts at least 6 hours, and the combined annual visits last at least 60 hours. Most of the wipe samples in armories were collected in undisturbed areas and therefore, results are worst case scenarios and do not correlate to these standards.
 - b. OSHA has no specific requirement for work area surfaces. The lead standard (29 CFR 1910.1025(h)) states that all surfaces shall be maintained as free as practicable of accumulations of lead dust. In workplaces where lead dust is generated, surface levels may be much higher, but personnel exposures can be controlled by limiting airborne lead levels and following good cleanup and hygienic practices.
 - c. OSHA used to cite a level of 200 μ g/ft² in their Technical Manual and 29 CFR 1926.62 as guidance to its own inspectors for evaluating the cleanliness of lunchroom and locker room surfaces that are supposed to be kept as clean as possible.
 - d. In a report titled Derivation of Wipe Surface Screening Levels for Environmental Chemicals, the US Army Center for Health Promotion and Preventive Medicine (USACHPPM) has determined that 200 μ g/ft² is a safe surface contamination level. They have also applied these standards as the decontamination levels for surfaces in administrative offices.
 - e. It should be noted that levels above these recommendations do not necessarily mean there is a significant hazard to workers who are following good cleaning and hygienic practices since there is no

correlation between wipe and air samples. Rather, we recommend these levels as a precautionary measure.

- 2. The NGB Occupational Health Branch is developing guidance for armories that are used as childcare facilities. All states will receive this guidance when it is completed. In the interim, we recommend the following actions:
 - a. Clean all areas that will be accessible to children to the EPA dust-lead standard for children 6 years of age or under (40 μ g/ft² on floors and 250 μ g/ft² on windowsills).
 - b. Refer to the local authorities' regulations since they can be more stringent than federal regulations.
 - c. Post signs in the area to inform people of the presence of lead dust and its effects.
 - d. If soldiers clean weapons in the facility change the policy so that they cannot clean their weapons in the facility, or if they are allowed to clean their weapons indoors, they must clean the area by wet wiping and mopping the area when they are done.
 - e. If the paint is peeling, contact the state Environmental Office to test for lead content and provide recommendations.
- 3. Air samples collected on individuals in the armory were well below OSHA's permissible exposure limit for lead (29 CFR 1910.1025(c)) of 0.05 milligrams per cubic meter (mg/m³) averaged over an 8-hour day. Therefore, based on these conditions there is currently no overexposure to personnel from lead dust in this building.

Prepared for: National Guard Bureau Army National Guard Region North Industrial Hygiene Office Havre De Grace, Maryland



Industrial Hygiene Survey for MAARNG – Worcester Lincoln Readiness Center 701 Lincoln Street Worcester, Massachusetts 01605

AECOM Environment October 2010 Document No.: 60159721/Worcester Lincoln Readiness Center

Prepared for: National Guard Bureau Army National Guard Region North Industrial Hygiene Office Havre De Grace, Maryland

Industrial Hygiene Survey for MAARNG – Worcester Lincoln Readiness Center 701 Lincoln Street Worcester, Massachusetts 01605



Project Manager



AECOM Environment October 2010 Document No.: 60159721/Worcester Lincoln Readiness Center

Posted to NGB FOIA Reading Room May, 2018

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Executive Summary

On August 19, 2010, AECOM Environment conducted an Industrial Hygiene (IH) survey of the Worcester Lincoln Readiness Center facility located at 701 Lincoln Street in Worcester, Massachusetts. Non-Responsive, Program Coordinator I, was the point of contact for the facility and accompanied AECOM during the survey to provide access and information concerning the Worcester Lincoln Readiness Center operations.

The industrial hygiene survey was generally conducted in accordance with the scope of work as described in the "Statement of Work – Industrial Hygiene Services for National Guard Bureau Industrial Hygiene Region North – Baseline Surveys for Readiness Centers and Administrative Buildings", dated March 2009.

The Worcester Lincoln Readiness Center is currently staffed by approximately ten personnel. The facility was erected circa 1963.

Personnel at the facility were undertaking normal daily activities, which are administrative in nature, at the time of the survey.

The activities undertaken during the Industrial Hygiene survey included facility descriptions, lead wipe/air sampling, evaluation of housekeeping, illumination studies, ventilation system evaluation, and a review of the physical building condition.

The Worcester Lincoln Readiness Center is housed in a single story masonry building; consisting of approximately 60% administrative space, 40% drill hall.

Lighting levels measured throughout the facility were generally inadequate as per <u>ANSI/IESNA RP-1-2004</u>, <u>Office Lighting</u>, <u>ANSI/IESNA RP-7-2001</u>, <u>Industrial Lighting</u>, and the <u>IESNA Lighting Handbook</u>, 9th Edition, 11 <u>April 2005</u>, with the exception of most storage areas.

Wipe samples collected throughout the facility indicated lead levels above the ARNG action level.

No water damage or suspect mold growth was observed.

The HVAC system in the building consists of a boiler room that feeds radiant heaters throughout the building. There is no HVAC system that provides fresh air from the building exterior in administrative areas. The Drill Hall is equipped with overhead radiant heaters with fans.

1.0 Facility Description and Operations

The Worcester Lincoln Readiness Center is administrative facility within a masonry structure, slab on grade. The building consists of two main sections. The surrounding exterior section of the building contains office and administrative areas, and is finished with painted cinder block walls, acoustical drop ceilings, and floor tile. The drill hall comprises the center portion of the building. This area is finished with painted cinder block walls, an exposed roof deck, and concrete floors.

The primary activity at the Worcester Lincoln Readiness Center is routine administrative duties and occasional use by units for support and training of soldiers. The Worcester Lincoln Readiness Center is currently staffed by approximately ten personnel. No vehicle maintenance activities are undertaken at the facility.

2.0 Sampling in Readiness Centers

2.1.1 Wipe Sampling

Wipe sampling for lead was conducted in the drill hall, rifle range and administrative areas following the OSHA wipe sampling method and using Ghost wipes. Samples were collected in areas that are not frequently cleaned and showed signs of dust whenever possible.

The rifle range is reportedly no longer used and is used for general storage; however, levels of lead above ARNG guidelines were identified in dust within the range. There is no record of the range undergoing any kind of lead abatement.

The following table presents the results of the lead wipe sampling conducted at the facility.

Sample Number	Sample Location	Lead Concentration
WRC-1	Range Floor	<110 ug/ft ²
WRC-2	Bullet Trap	<110 ug/ft ²
WRC-3	Range Storage Chest	<110 ug/ft ²
WRC-4	Range Duct	4900 ug/ft ²
WRC-5	Outside Range	<110 ug/ft ²
WRC-6	Classroom	<110 ug/ft ²
WRC-7	Kitchen	<110 ug/ft ²
WRC-8	Drill Shed Floor	<110 ug/ft ²
WRC-9	125 th Supply	<110 ug/ft ²
WRC-10	Recruiter	<110 ug/ft ²
WRC-11	Orderly Room	<110 ug/ft ²
WRC-12	1166 th Admin	<110 ug/ft ²

Table 2-1: Lead Wipe Sample Results

The wipe samples collected on top of the duct in the rifle range indicated detectable levels of lead. All other areas had levels that were below the ARNG action level of 200 ug/ft². Laboratory analytical results are presented in Appendix C.

2.1.2 Air Sampling

Ambient air sampling for lead was conducted in two normally occupied areas of the facility.

Table 2-2: Lead Air Sample Results

Sample Number	Sample Location	Lead Concentration
WRC-01A	Drill Shed	<17 ug/m ³
WRC-02A	Orderly Room	<17 ug/m ³

None of the air samples collected indicated the presence of airborne lead above detectable limits. For reference, the OSHA Action Level for lead is 30 ug/m³ and the Permissible Exposure Limit (PEL) is 50 ug/m³. Laboratory analytical results are presented in Appendix C.

3.0 Physical Condition of Facility and Personnel Concerns

3.1.1 Lead Based Paint

Interior surfaces of walls are coated with paint. The paint on the walls appeared to be generally in good condition. Concrete flooring was generally tiled or unpainted. AECOM did not observe any damaged/peeling paint during this evaluation.

3.1.2 Suspect Asbestos Containing Materials

AECOM did not observe any damaged, friable asbestos containing materials (ACM) in readily accessible areas of the Worcester Lincoln Readiness Center during this survey. Thermal system piping is typically covered in ACM or fiberglass insulation with associated fittings. AECOM was provided with a partial Asbestos-Containing Materials Survey. As such, any friable suspect materials were not sampled, but presumed to be asbestos-containing based upon previous documentation.

Other typical miscellaneous building materials observed but not sampled include floor tiles and associated mastic, cove base and associated mastic, ceiling tiles, and window glazing compound and caulks.

3.1.3 Water Damage/Mold

AECOM did not observe any evidence of water intrusion or any suspect mold growth during this survey.

3.1.4 Housekeeping

The Worcester Lincoln Readiness Center was observed to be generally clean and orderly during this assessment. AECOM did not observe dust accumulation on readily accessible horizontal surfaces within areas commonly used in the facility

The Worcester Lincoln Readiness Center was observed to be generally clean and orderly during this assessment. AECOM did not observe dust accumulation on readily accessible horizontal surfaces within areas commonly used in the facility.

3.1.5 Indoor Air Quality/ Ergonomics

The Administration Section contains general office space. The Administration Section is generally utilized by all of the Worcester Lincoln Readiness Center staff members. No Indoor Air Quality concerns were noted by the Worcester Lincoln Readiness Center personnel.

Table 3-1: Indoor Air Quality Monitoring Results

Location	Carbon Monoxide (ppm)	Carbon Dioxide (ppm)	Temp (°F)	Relative Humidity (%)		
Exterior - Baseline	2.2	445	85.3	49.0		
Drill Shed	Shed 2.6 608 82.5 52.0 1-3 Guidelines:					
Table 1-3 Guidelines: Carbon Monoxide: Office/Wareh OSHA Permissible Exposure Lin Carbon Dioxide: Office Space -A 2007). Not Applicable to wareho Relative Humidity: Mechanically 5.10.1). Temperature: Winter (clothing in Summer Temp - 73 – 79°F. (De	ouse Space – 9 ppm bas nit (PEL) = 50 ppm. ACG opproximately 700 ppm a use and vehicle mainten air-conditioned space – sulation = 1.0 clo) Relati rived from ASHRAE Sta	sed on EPA National Am IH Threshold Limit value bove background (Deriv ance bays. Maximum 65% (Derived ve humidity 30-60% - Te ndard 55-2004)	bient Air Quality e (TLV) = 25, ppm red from ASHRAE from ASHRAE S emp - 68 – 75°F	Standard. n. : Standard 62.1- tandard 62.1-2007 –		

Worcester Lincoln Readiness Center personnel did not report any ergonomics issues or concerns. Office furniture and accessories designed to promote ergonomically correct behaviors were observed.

4.0 Ventilation and HVAC System

4.1.1 Ventilation Systems and Potential for Contamination of Clean Air Sources

Potential for contamination of clean air sources was not observed in the facility.

The Worcester Lincoln Readiness Center is heated by a forced hot water heating system fed by a boiler located in the boiler room that is in the basement. Supply and return air is not provided by mechanical means. Outdoor air is provided in the building through open windows and doors.

Unit heaters are located in the overhead space of the drill hall, but the units were inaccessible and site personnel could not provide information on the use or status of the system. The fans within the units were not observed in operation during the survey.

4.1.2 HVAC Maintenance

There was no maintenance schedule associated with an active ventilation system.

5.0 Lighting

Lighting levels in all areas were measured utilizing a Cal-Light 400 light meter that displays lighting levels in foot-candles. Lighting levels in storage areas were generally adequate. The majority of offices in the facility were below the recommended lighting levels.

Table 5-1: Light Survey

Location	Results – (Foot candles)	Met Standard (Y/N)	Standard*
Drill Shed	41.2	Ŷ	10
Classroom	40.6	Y	30
Kitchen	16.7	Y	10
125 th Maintenance Office	50.0	Y	50
Boiler Room	21.3	Ν	30
SSG Office	46.9	Ν	50
Recruiting	31.2	Ν	50
Recruiter Storage	12.3	Y	5
Custodian	10.0	Y	5
Conference Room	31.2	Y	30
125 PLT LDR/PSG	40.8	Ν	50
Orederly Room	35.2	Ν	50
125 th SGT	40.5	Ν	50
125 th CDR	29.2	Ν	50
Storage Cages	24.2	Y	5
1166 th TNCO	32.4	Ν	50
1166 th Administrator	26.0	Ν	50
Storage	48.7	Y	5
1SG Office	42.6	Ν	50
Commander Office	48.4	Ν	50
1166 th Supply	13.9	Y	5
125 th Water	10.1	Y	5
125 th Supply	31.4	Y	5
125 th Storage	19.7	Y	5
Office Lighting (ANSI/IESNA RP-1-04	4) and Industr31.4ial L	ighting Facilities (ANS	I RP-7-01)

6.0 Evaluation of Attached Garage

There is no garage associated with the Worcester Lincoln Readiness Center.

7.0 Conclusions and Limitations

AECOM has conducted this survey in accordance with applicable OSHA methods and standard industrial hygiene practice. The following conclusions were based on the observations and assessments of activities that occurred during the on-site evaluation:

Housekeeping is performed regularly at the Worcester Lincoln Readiness Center.

AECOM did not observe any damaged asbestos containing materials during the evaluation.

AECOM did not observe any peeling paint during this evaluation.

AECOM did not observe any evidence of water intrusion at the Worcester Lincoln Readiness Center.

Lighting levels in most storage areas were in compliance with ANSI/IESNA guideline levels. However, most office areas require additional lighting to meet guideline levels.

Air samples collected and analyzed did not indicate quantifiable levels of airborne lead.

Wipe samples collected in various locations throughout the building indicated levels of lead on surfaces in compliance of the ARNG action level except the duct in the former range.

AECOM provided these services consistent with the level and skill ordinarily exercised by members of the profession currently providing similar services under similar circumstances at the time the services were provided. This statement is in lieu of other statements either expressed or implied. This report is intended for the sole use of National Guard Bureau – Army National Guard. The scope of services performed in execution of this evaluation may not be appropriate to satisfy the needs of other users, and use or re-use of this document, the findings, conclusions, or recommendations is at the risk of said user.

As with all such surveys, the results of the sampling represent conditions found on the date of the survey and may not represent conditions found at other times. Additionally, this survey was limited with respect to the specific parameters indicated above and should not be construed to be a comprehensive evaluation or a definitive representation of conditions within the facility. The information presented in this report is intended to be used as a guide to evaluate the need for further investigation or the need for modifications to the processes or procedures surveyed.

The Client recognizes and agrees that all testing and remediation methods have reliability limitations, no method nor number of sampling locations can guarantee that a condition will be discovered within the performance of the services as authorized by the Client. Additionally, the passage of time may result in a change in the environmental characteristics at this site. This report does not warrant against future operations or conditions that could affect the recommendations made. The results, findings, conclusions, and recommendations expressed in this report are based only on conditions that were observed during AECOM's inspection of the site.

Appendix A

Worcester Lincoln Readiness Center Facility Layout



Posted to NGB FOIA Reading Room May, 2018

FOIA Requested Record #J-15-0085 (MA) Released by National Guard Bureau Page 3347 of 3473 Appendix B

Worcester Lincoln Readiness Center Photographs













Appendix C

Analytical Results



Summary of Atomic Absorption Analysis for Lead

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AMA Sample Number 1073268 WRC-01A	Client Sample Analysis Type Number	Analysis Type	Analysis Type	Analysis Type	Analysis Type	Analysis Type	Analysis Type	Analysis Type	Analysis Type	Analysis Type	Analysis Type	Analysis Type	Analysis Type	Sample Type	Air Volume (L)	Area Wiped (ft²)	Rep I	oorting Limit	Total ug	Final Res	sult	Comments					
	Flame	Air	175	N/A	17	ug/m²	4	<17	ug/m³																		
1073269	WRC-02A	Flame	Air	175	N/A	17	ug/m³	<3	<17	ug/m³																	
1073270	WRC-01	Flame	Wipe	****	0.111	110	ug/ft²	<12	<110	ug/ft²																	
1073271	WRC-02	Flame	Wipe	****	0.111	110	ug/ft²	<12	<110	ug/ft²																	
1073272	WRC-03	Flame	Wipe	****	0.111	110	ug/ft²	<12	<110	ug/ft²																	
1073273	WRC-04	Flame	Wipe	****	0.111	110	ug/fl²	550	4900	ug/ft²																	
1073274	WRC-05	Flame	Wipe	****	0.111	110	ug/ft²	<12	<110	ug/ft²																	
1073275	WRC-06	Flame	Wipe	****	0.111	110	ug/ft²	<12	<110	ug/ft²																	
1073276	WRC-07	Flame	Wipe	****	0.111	110	ug/ft2	<12	<110	ug/ft²																	
1073277	WRC-08	Flame	Wipe	****	0.111	110	ug/ft²	<12	<110	ug/ft²																	
1073278	WRC-09	Flame	Wipe	****	0.111	110	ug/fl²	<12	<110	ug/ft²																	
1073279	WRC-10	Flame	Wipe	****	0.111	110	ug/ft ²	<12	<110	ug/ft²																	
1073280	WRC-11	Flame	Wipe	****	0.111	110	ug/ft ²	<12	<110	ug/ft²																	
1073281	WRC-12	Flame	Wipe	****	0.111	110	ug/ft?	<12	<110	ug/ft²																	

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these Laboratories, this report is submitted and accepted for the esclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from us. Sample types, locations, and collection protocols are based upon the information provided by the persons submitting them and, unless collected by personnel of these Laboratories, we expressly disclaim any knowledge and liability for the accuracy and completeness of this information. Residual sample material will be discarded in accordance with the appropriate regulatory guidelines, unless otherwise requested by the client. NVLAP accreditation applies only to polarized light microscopy of bulk samples. This report must not be used to claim, and does not imply product certification, approval, or endorsement by NY ELAP, AIHA, NVLAP, NIST, or any agency of the Federal Government. All rights reserved. AMA Analytical Services, Inc.

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Appendix D

References

References

1. Title 29, Code of Federal Regulations (CFR), Part 1910, Occupational Safety and Health Administration, current Ed. http://www.osha.gov/comp-links.html

2. Department of Defense Instruction (DODI) 6055.1, Department of Defense Occupational Safety and Health (OSH) Program, August 19, 1998. http://www.dtic.mil/whs/directives/corres/pdf/i60551_081998/i60551p.pdf

3. Army Regulation (AR) 11-34, The Army Respiratory Protection Program, 15 February 1990. http://www.usapa.army.mil/pdffiles/r11_34.pdf

4. AR 40-5, Medical Service, Preventive Medicine, 25 May 2007. http://www.usapa.army.mil/pdffiles/r40_5.pdf

5. AR 385-10, The Army Safety Program, 23 August 2007. http://www.usapa.army.mil/pdffiles/r385_10.pdf

6. Department of the Army Pamphlet (DA PAM) 40-501, Medical Services, Hearing Conservation Program, 10 December 1998. http://www.usapa.army.mil/pdffiles/p40_501.pdf

7. AR 40-11, Preventive Medicine, 22 July 2005. http://www.army.mil/usapa/epubs/pdf/p40_11.pdf

8. DA PAM 40-503, Medical Services, Industrial Hygiene Program, 30 October 2000. http://www.usapa.army.mil/pdffiles/p40_503.pdf

9. UFC 3-410-01FA, Heating, Ventilating, and Air Conditioning, 15 May 2003. http://www.wbdg.org/ccb/DOD/UFC/ufc_3_410_01fa.pdf

10. Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs), American Conference of Governmental Industrial Hygienists (ACGIH), current Ed.

11. Industrial Ventilation – A Manual of Recommended Practice for Design, ACGIH, current Ed.

12. American National Standards Institute (ANSI) Z358.1-2004, Emergency Eyewash and Shower Equipment.

13. American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. (ASHRAE) 62.1-2007, Ventilation for Acceptable Indoor Air Quality.

14. RP-1-2004, Office Lighting, ANSI/IESNA.

15. RP-7-2001, Industrial Lighting, ANSI/IESNA, change 20 July 2004.

16. Unified Facilities Criteria, (UFC) 3-410-01FA, Heating, Ventilating, and Air Conditioning, 15 May 2003, including change 3, Aug. 03.


Prepared For:

National Guard Bureau Army National Guard Region North Industrial Hygiene Office 301 - IH Old Bay Lane Havre De Grace, Maryland 21078

Prepared By:

URS Corporation **5 Industrial Way** Salem, New Hampshire 03079

INDUSTRIAL HYGIENE SURVEY REPORT MASSACHUSETTS NATIONAL GUARD READINESS CENTER 701 LINCOLN STREET WORCESTER, MA 01605

July 17, 2013 PN: 39743799





Director, Industrial Hygiene Services

Posted to NGB FOIA Reading Room May, 2018

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	ARMORIES

FINDINGS AND RECOMMENDATIONS MASSACHUSETTS NATIONAL GUARD READINESS CENTER 701 LINCOLN ST., WORCESTER, MA

Findings	Recommendations	Risk Assessment Code (RAC)
Lighting		
On the day of the survey, the illuminance was inadequate in several locations tested.	Increase lighting in the work areas. While work is in progress, these areas must be lighted by at least the minimum lighting intensities (ANSI / IESNA RP-1-04).	RAC 4
Ergonomics		
Computer workstations in the Administrative Areas were observed with un-adjustable chairs, arm rests and keyboards. Several wheeled chairs with four casters were noted.	Ergonomic issues with regard to the desks and chairs should be corrected by fitting the workplace to the worker (Department of the Army Pamphlet 40-21, Chapter 4, Page 7, Section 4-3).	RAC 3
Personal Protective Equipment		
Hazard assessments have not been conducted to determine whether personal protective equipment is required.	Conduct a hazard assessment of site operations to determine what types of PPE are required for each type of work (29 CFR 1910.132(d)(1)).	RAC 4
Fire Extinguishers		
No evidence was found that all fire extinguishers were being inspected on a monthly basis.	All fire extinguishers must be inspected on a monthly basis to determine that they are full and readily accessible (OSHA 29 CFR 1910.157(e)(2)).	RAC 3
Water Intrusion		
Water staining was observed on ceiling and ceiling tiles throughout the facility.	The source of the water intrusion should be identified and repaired. The water-stained materials should be repaired or replaced (ACGIH – Guidelines for the Assessment of Bio-aerosols in the Indoor Environment).	RAC 3
Flammable Storage		
Chemicals/ flammable materials were observed improperly stored throughout the storage areas.	Each container of hazardous chemicals in the work place must be labeled with the identity of the chemical and appropriate hazard warnings (29 CFR 1910.1200).	RAC 3

Findings	Recommendations	Risk Assessment Code (RAC)
Aspestos		
Presumed asbestos-containing floor tiles and associated mastic were observed throughout the facility; an Asbestos Operation and Maintenance Program was not available onsite.	Develop a site-specific asbestos operations and maintenance program for management of asbestos-containing materials in place as required by OSHA 29 CFR 1910.1001(j)(2).	RAC 4
Emergency Exits	Emergency switz should be areasyly	
escape plans were not visible from all areas of the facility or illuminated.	illuminated (29 CFR 1910.37 (q)(6)).	RAC 3
Lead		
Two of the 10 lead wipe samples indicated elevated lead levels.	Personnel trained in accordance with the OSHA Lead Standard should clean the areas where elevated lead dust levels were identified (OSHA 29 CFR 1910.1025(h)(1)).	RAC 3
Ladders		
Ladders were observed not properly stored in the boiler room.	Ladders not in use shall be properly stored in a vertical position fastened to walls (29 CFR 1910.25 (c)(2)(i)).	RAC 4
Housekeeping		
Storage areas were cluttered, including exits and passageways.	All places of employment, passageways, storerooms and service rooms shall be kept clean and orderly and in a sanitary condition (29 CFR 1910.22 (a)(1)).	RAC 3
Handrails		
The stairs at the exterior entrance on the west side of the building did not have a handrail installed.	Every flight of stairs having four or more risers shall be equipped with standard stair railings (29 CFR 1910.23 (d)(1)).	RAC 3

1.0 SUMMARY

At the request of the National Guard Bureau (NGB) Region North Industrial Hygiene Office, URS Corporation (URS) conducted an industrial hygiene survey at the Readiness Center in Worcester, Massachusetts.

URS representative, Ms. Non-Responsive, conducted the Industrial Hygiene Survey on April 24, 2013. The scope of work included an overall assessment of the facility as it relates to industrial hygiene and included a walkthrough of the facility, collection of photographs, and when required, measurements for illumination (light), area and personal air sampling, and noise mapping.

The Worcester Readiness Center is a single-story brick building, consisting of offices, classrooms, a supply area, gender separate bathrooms, locker storage rooms, storage rooms, a kitchen, Assembly Hall, a former Indoor Firing Range and a weapons training maintenance area. A layout of the Readiness Center is provided in Appendix A.

<u>GENERAL</u>: The former Indoor Firing Range was posted as unsafe due to lead contamination. Walkways in storage areas were cluttered at the time of this survey. One fire extinguisher in the facility failed to display an inspection tag. Tripping hazards exist in the commander's office and storage areas. Water staining was observed on ceilings and ceiling tiles throughout the facility. Illuminated emergency exit signs were not observed throughout the facility. Emergency escape plans were not posted throughout the facility. Ladders observed to be improperly stored in Storage Areas.

<u>LIGHTING</u>: Lighting in the Readiness Center was found to be inadequate in several of the areas measured. Areas noted within the report as having inadequate lighting require upgrading by either increasing the general lighting or through the use of task lighting. While work is in progress work areas must be lighted by at least the minimum light intensities. <u>LEAD</u>: Two of ten wipe samples collected in the Readiness Center were found to contain lead in a concentration above the recommended limit set by the NGB, Region North IH Office.

On the day of the survey, the paint chip sample collected from an area of peeling paint was not found to contain a level of lead above the U.S. Department of Housing and Urban Development (HUD) criteria for determination of paint as lead-based.

On the day of the survey, the personal airborne lead dust level in the Readiness Center was found to be acceptable, below the Occupational Safety and Health Administration's (OSHA's) permissible exposure limit (PEL) for lead (29 CFR 1910.1025(c)) of 50.0 micrograms per cubic meter (μ g/m³) averaged over an 8-hour day.

<u>ASBESTOS</u>: Presumed asbestos-containing floor tiles and associated mastic were identified during this survey, however no Asbestos Operations and Maintenance Program was found on site. Until suspect materials have been sampled and determined not to contain asbestos, they must be presumed to be asbestos-containing and managed accordingly.

<u>ERGONOMICS</u>: Many of the work stations had ergonomic issues which require attention. Computer workstations were assessed during the walkthrough for ergonomic issues. The computer workstations in the facility did not meet the current OSHA ergonomic recommendations. The chair armrests, keyboards, and desks were not adjustable. All workstations in the facility should be adjusted and monitored. The ergonomic issues with regard to the workstations and chairs need to be corrected by fitting the workplace to the worker. Wheeled chairs with four casters were identified throughout the admin areas.

<u>NOISE</u>: Personal noise monitoring levels in the Readiness Center determined that noise levels were below the OSHA PEL and Department of Defense Instruction (DoDI) Hearing Conservation Standard (6055.12 3 December 2010) on the day of URS' site visit.

2.0 SUPPLY / TRAINING AREA

2.1 Operation Description

This Readiness Center is primarily used for weekend training drills and conducting administrative functions. Weapons training and maintenance is also performed in the facility. The building includes offices, classrooms, a supply area, gender separate bathrooms, storage rooms, a kitchen, an Assembly Hall, a former Indoor Firing Range and a weapons maintenance training area.

The Readiness Center was found to be somewhat cluttered and unorganized in the supply area at the time of URS' site visit.

2.2 Chemical and Physical Agents Sampled

2.2.1 Carbon Dioxide

On the day of the survey, carbon dioxide measurements were made in the Readiness Center. Interior carbon dioxide concentrations were found to be between 517 and 734 parts per million (ppm). Carbon dioxide levels were measured using a direct-reading TSI Q-Trak (Model 8551).

Carbon dioxide is a normal constituent of the atmosphere and ranges from about 250 to 450 ppm. The major source of excess carbon dioxide in the indoor environment is human respiration. Other sources can include open-flame heaters, fermentation processes, and motor vehicles. Carbon dioxide itself is not normally a cause of indoor air quality problems but is typically used as an indicator of the adequacy of fresh air intake. As the concentration of carbon dioxide increases, so do the background levels of other air contaminants.

To minimize air quality complaints, the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) has proposed that the carbon dioxide concentration within an occupied workspace be maintained below 700 ppm above ambient outside levels. For example, on the day of the survey, the outside carbon dioxide level was measured at 378 ppm. Therefore ASHRAE (Standard 62.1-2010) would recommend that interior carbon dioxide concentrations be maintained at or below

1,078 ppm. Using the ASHRAE guideline, the readings at the subject site were found to be below the suggested indoor to outdoor differential concentration.

2.2.2 Carbon Monoxide

The carbon monoxide concentration in the Readiness Center was measured between 0.0 ppm and 0.6 ppm on the day of the survey. ASHRAE recommends that average carbon monoxide concentrations not exceed 9 ppm. Typical average concentrations found in commercial buildings range from 0 to 6 ppm. The measured levels were below the ASHRAE guideline for indoor environments. Carbon monoxide was measured using a TSI Q-Trak Plus (Model 8554).

Key sources of carbon monoxide within indoor environments include internal combustion engines, motor vehicle and forklift exhaust, tobacco smoke, space heaters, and improperly adjusted oil or gas burners.

2.2.3 Relative Humidity

The average relative humidity within the Readiness Center measured with the Q-Trak Plus was 38.3%, which was within the guideline of less than 65% recommended by ASHRAE.

2.2.4 Temperature

Temperature should be maintained within the thermal comfort envelope suggested in ASHRAE Standard 55-2010. This standard on thermal environments specifies conditions in which 80% or more of building occupants should find the thermal environment acceptable. ASHRAE 55-2010 suggests temperatures of 68 to 75 degrees Fahrenheit (°F), during winter months, for people in typical seasonal clothing during light sedentary activity. For summer, the temperature should be in the range of 73 to 79 °F.

The average temperature inside the Readiness Center was, 68.0 °F, which was within the guideline of 68 to 75 °F recommended by ASHRAE for thermal comfort.

2.2.5 Lighting

Lighting in the Readiness Center was measured using a cal-Light 400 Light Meter. Table 2-1 below shows lighting measurements in foot candles (FC) and the recommended lighting requirements (Illuminating Engineering Society of North America (IESNA) RP-7-01).

Location	Function	Measured Illuminance in Foot Candles (FC)	Recommended Minimum Illuminance in Foot Candles (FC)
Classroom/ Mess Hall, table	Admin	20.8	50
Classroom/ Mess Hall, workstation	Admin	29.6	50
Supply Room, center desk - Non-Responsive	Admin	35.4	50
Supply Room, center desk	Admin	19.2	50
Supply Room, center, storage	Storage	15.3	30
1166 th Supply office, desk - Non-Responsive	Admin	35.5	50
1166 th Supply, storage shelf	Storage	24.3	30
Recruiter's office, desk	Admin	81.2	50
Recruiter's office, desk - Non-Responsive	Admin	36.4	50
Recruiter's office, desk - Non-Responsive	Admin	16.7	50
Admin, east, desk - Non-Responsive	Admin	41.2	50
Admin, east, desk – window workstation	Admin	84.1	50
Admin, east, desk -	Admin	47.1	50
Admin, east, desk - Non-Responsive	Admin	27.1	50
East hallway, table	Hall	11.4	5
PT room	Break Room	48.3	10
4 th Platoon office, workstation	Admin	40.4	50
2 nd Platoon office, workstation	Admin	4.2	50
Conference room, conference table	Admin	42.7	50
West hallway	Hall	9.5	5
Admin, west, window workstation	Admin	31.9	50
Admin, west, inventory workstation	Admin	21.2	50
Admin, west, rear window workstation	Admin	45.5	50
Admin, west, workstation	Admin	51.2	50
Commander's office, desk	Admin	42.3	50
Unit Room/ Supply	Storage	25.3	30
Supply room, desk - Non-Responsive	Admin	32.8	50

Table 2-1Lighting Measurements and Recommended Lighting Requirements

On the day of the survey, the illuminance in the Readiness Center was determined to be inadequate in all but six of the office/administrative locations.

2.2.6 Lead

Wipe testing for lead dust was conducted in the Readiness Center using ghost wipes, which meet ASTM E 1792 standards. The analytical report from AMA Analytical Services, Inc. (AMA) is contained in Appendix C. Table 2-2 below shows the results of the lead wipe testing.

Sample Location	URS Sample Number	Area Wiped in Square Feet (ft ²)	Result in Micrograms/ Square Foot (µg/ft ²)	Maximum Surface Contamination Level in Micrograms/ Square Foot (μg/ft ²)
Classroom/ Mess Hall, window sill towards storage building	Worcester RC Wipe-01	0.108	430	200
East admin, 1166 th , floor under desk by entrance	Worcester RC Wipe-02	0.108	<110	200
West admin, TV stand, bottom shelf	Worcester RC Wipe-03	0.108	<110	200
Men's Latrine, floor at doorway	Worcester RC Wipe-04	0.108	<110	200
PT Room, center window sill	Worcester RC Wipe-05	0.108	<110	200
Former Indoor Firing Range, floor at doorway	Worcester RC Wipe-06	0.108	210	200
Drill Hall, floor under fire extinguisher near vestibule	Worcester RC Wipe-07	<mark>0.1</mark> 08	<1 1 0	200
Unit Storage, doorway to former indoor firing range.	Worcester RC Wipe-08	0.108	<110	200
Storage, south storage units, storage shelves	Worcester RC Wipe-09	0.108	<1 1 0	200
Storage, 1166 th storage, floor by rolling door	Worcester RC Wipe-10	0.108	<110	200

Table 2-2 Levels of Lead Dust Found in the Readiness Center

Two of the ten surface dust level measurements were found to contain lead at a level above the NGB recommended level, based on the OSHA clarification letter which states "as free as practicable" of lead contamination as specified under OSHA 29 CFR 1926.62.

One paint chip sample was collected from an area of peeling paint and was analyzed for lead content. The analytical report from AMA is contained in Appendix C.

According to HUD, paint is considered to be lead-based if the quantity of lead is greater than 0.5% by weight. OSHA has not established a minimum percentage of lead to be defined as lead-based paint, therefore paint with lead in any amount above the analytical detection limit is considered to be lead-based under these regulations. The results of URS' lead paint testing are contained in Table 2-3.

Table 2-3 Lead Content in Painted Surfaces

Paint Location	Lead Concentration (Percent Weight)	HUD Lead-Based Quantity (Percent Weight)
Dull white paint, ceiling, storage rooms	0.25%	0.5%

On the day of the survey, the paint chip collected was not found to contain a level of lead above the HUD criteria for determination of paint as lead-based.

Personal air sampling for lead was also conducted in the Readiness Center on one individual performing routine inspection activities inside the former Indoor Firing Range and general administrative functions. The analytical report from AMA is contained in Appendix C. Table 2-4 below shows the results of the lead air sampling.

Table 2-4 Personal Airborne Lead Dust Level Found in the Maintenance Area

Sample Location	URS Sample Number	Volume Collected in Liters	Sample Duration in Minutes	TWA in Micrograms/ Cubic Meters (μg/m ³)	OSHA's PEL in Micrograms/ Cubic Meters (μg/m ³)
Non-Responsive	Worcester RC Air-01	912.5	365	< 3	50.0

On the day of the survey, the personal airborne lead dust level in the Weapons Maintenance Work Area was found to be acceptable, below the OSHA's PEL for lead (29 CFR 1910.1025(c)) of 50.0 μ g/m³ averaged over an 8-hour day.

2.2.7 Asbestos

No damaged, friable suspect material was identified during this survey for sample collection.

Presumed asbestos-containing floor tiles and associated mastic were identified during this survey. Until suspect materials have been sampled and determined not to contain asbestos, they must be presumed to be asbestos-containing and managed accordingly.

2.3 Ventilation System Evaluation

The facility, not designed for vehicle maintenance, contains a ventilation system that is limited to localized personal ventilation (i.e. room fans, window air conditioning units) within the majority of rooms, and main negative draw fans in the Assembly Hall.

2.4 Noise Measurements

Personal noise dosimetry was conducted within the Readiness Center. Personal exposures were measured using a data-logging Spark 703+ Noise Dosimeter. Personal noise dosimetry results indicated that, on the day of the survey, workers were not exposed to noise levels above the DoDI Hearing Conservation Standard (6055.12 3)

December 2010) of 85 decibels, A scale (dBA)/8-hour day. Table 2-5 indicates the individual monitored, the tasks performed and noise exposures.

Table 2-5 Noise Dosimetry Data

Location	Task	Sample Duration in Minutes	Monitoring Result TWA (dBA)*	Hearing Protection
Non-Responsive	Administrative	361	79.3	N/A

* The calculated 8-hour, time-weighted average (TWA) noise exposure in dBA. The OSHA PEL for noise exposure is 90 dBA. DoDI has established an employee exposure level of 85 dBA for requirement of a hearing conservation program.

2.5 Personal Protective Equipment

Personal protective equipment was orderly and readily available to employees in the Readiness Center. Personal protective equipment included hard hats, safety glasses, ear plugs, dust masks and nitrile gloves.

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3.0 SAFETY AND INDUSTRIAL HYGIENE PROGRAMS

3.1 Confined Spaces

A written confined spaces program was identified on site but one is not required for this facility.

3.2 Hearing Conservation

A written hearing conservation program was identified on site. A review of normal site activities determined that no operations were identified that would warrant hearing protection. Based on personal noise dosimetry results and a review of normal site operations, a hearing conservation program is not required for this site.

3.3 **Respiratory Protection**

A site-specific written program regarding Respiratory Protection was identified on site. No operations were observed by URS that would require the use of respiratory protection. Since workers are allowed access to the former firing range, which has not been decontaminated and is currently used for storage, a hazard assessment should be conducted to determine whether respiratory protection and other forms of PPE should be required in this area.

3.4 Hazard Communication

A site-specific hazard communication program was identified on site.

Material safety data sheets, a site map, and list of full time personnel were readily available on the day of the survey.

3.5 Personal Protective Equipment

A written personal protective equipment program was identified on site. A hazard assessment should be conducted to determine whether personal protective equipment is required for activities typically undertaken at the Readiness Center.

3.6 Asbestos Operations and Maintenance Program

A written asbestos operations and maintenance program was not identified on site.

3.7 Safety

The former Indoor Firing Range was posted as unsafe due to lead contamination. One fire extinguisher in the facility failed to display an inspection tag. Tripping hazards exist in the Commander's office and storage areas. Water staining was observed on ceilings and ceiling tiles throughout the facility. The exterior exit at west entrance does not have a handrail installed. Flammables were improperly stored in throughout storage areas. Illuminated emergency exit signs were not observed throughout the facility. Emergency escape plans were not posted throughout the facility. Ladders were improperly stored in storage areas.

FOIA Requested Record #J-15-0085 (MA) Released by National Guard Bureau Page 3376 of 3473

4.0 REFERENCES

American Conference of Governmental Industrial Hygienists

Industrial Ventilation: A Manual of Recommended Practice, 27th Edition, 2010

Guidelines for the Assessment of Bio-aerosols in the Indoor Environment, 1989

American National Standards Institute

ANSI/IESNA RP-1-04: American National Standard Practice for Office Lighting

ANSI/IESNA RP-7-01: Recommended Practice for Lighting Industrial Facilities

American Society of Heating, Refrigerating and Air-Conditioning Engineers

ANSI/ASHRAE Standard 62.1-2010: Ventilation for Acceptable Indoor Air Quality

ANSI/ASHRAE Standard 55-2010: Thermal Environmental Conditions for Human Occupancy.

Department of the Army

DA PAM 40-21, Ergonomics Program, 15 August 2003

Unified Facilities Criteria, Heating, Ventilating and Air Conditioning, 3-520-05, 14 April 2008

DA PAM 40-501, Hearing Conservation Program, 10 December 1998.

AR 385-10, The Army Safety Program, 23 August 2007; RAR Issue Date: 4 October 2011

National Guard Pamphlet 420-15, Guidelines and Procedures for Rehabilitation and Conversion of Indoor Firing Ranges, 3 November 2006

Department of Defense

DoDI 6055.12, Hearing Conservation, 3 December 2010

Creating the Ideal Computer Workstation: A Step-by-Step Guide, June 2000

National Institute for Occupational Safety and Health

Current Intelligence Bulletin 50: Carcinogenic Effects of Exposure to Diesel Exhaust, August 1988

U. S. Environmental Protection Agency

Asbestos Hazard Emergency Response Act (40 CFR Part 763)

National Emissions Standards for Hazardous Pollutants (40 CFR Part 61)

U. S. Department of Housing and Urban Development

Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (1995, 1997, 2012)

U. S. Occupational Safety and Health Administration

Standard for General Industry: 29 CFR 1910

OSHA Clarification Letter – Clarification of "as free as practicable" of lead contamination under 29 CFR 1926.62, 13 January 2003.

APPENDIX A

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SHOP DRAWING



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FOIA Requested Record #J-15-0085 (MA) Released by National Guard Bureau Page 3380 of 3473

APPENDIX B

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PERSONNEL LIST

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FOIA Requested Record #J-15-0085 (MA) Released by National Guard Bureau Page 3382 of 3473

APPENDIX C

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ANALYTICAL RESULTS



A Specialized Environmental Laboratory

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CERTIFICATE OF ANALYSIS

HALAP, LLC ACCREDITED LABORATOR NEWSTRAL HYGIENE, ENVIRONMENTAL LEA & ENVIRONMENTAL MOROBIOLOGY ISOLEC 176/5 2005 Www.situatoreditediabs.org

LAB 4100470

Client:	National Guard Bureau	Job Name:	MA ARNG	Chain Of Custody:	515724			
Address:	301-IH Old Bay Lane, Attn: ARNG-CJG-P, State Military Reservation	Job Location:	701 Lincoln Street, Worcester, MA	Date Submitted:	4/29/2013			
	Havre de Grace, Maryland 21078	Job Number: P.O. Number:	Worcester-Lincoln RC W912K6-09-A-0003	Person Submitting: Date Analyzed:	Non-Responsive	Report Date:	5/6/2013	
Attention:	Non-Responsive							

Summary of Atomic Absorption Analysis for Lead

Page 1 of 2

AMA Sample Number	Client Sample Number	Analysis Type	Sample Type	Air Volume (L)	Area Wiped (ff²)	Re	porting Limit	Total ug	Final Res	sult	Comments
13058025	WorcesterRC PbAir- 01	Flame	Air	913	N/A	3.3	ug/m³	<3	<3.3	ug/m³	
13058026	WorcesterRC PbAir- FB	Flame	Air Blank	0	N/A	3	ug/m³		<3	ug	
13058027	WorcesterRC Wipe- 01	Flame	Wipe	****	0.108	110	ug/ft²	46	430	ug/ſt²	
13058028	WorcesterRC Wipe- 02	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/ft²	
13058029	WorcesterRC Wipe- 03	Flame	Wipe	****	0.108	110	ug/ft*	<12	<110	ug/ft²	
13058030	WorcesterRC Wipe- 04	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/ft²	
13058031	WorcesterRC Wipe- 05	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/fl²	
13058032	WorcesterRC Wipe- 06	Flame	Wipe	****	0.108	110	ug/fl²	23	210	ug/fl²	
13058033	WorcesterRC Wipe- 07	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/ft²	
13058034	WorcesterRC Wipe- 08	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/ft²	
13058035	WorcesterRC Wipe-	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/ft²	

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clicats, the public, and these Laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from us. Sample types, locations, and collection protocols are based upon the information provided by the persons submitting them and, unless collected by personnel of these Laboratories, we expressly disclaim any knowledge and liability for the accuracy and completeness of this information. Residual sample material will be discarded in accordance with the appropriate regulatory guidelines, unless otherwise requested by the client. This report must not be used to claim, and does not imply product certification, approval, or endorsement by NY ELAP, AIHA, or any agency of the Federal Government. All rights reserved. AMA Analytical Services, Inc.

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AMA Analytical Services, Inc.

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A Specialized Environmental Laboratory

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CERTIFICATE OF ANALYSIS

AIHA LAP, LLC ACCREDITED LABORATOR INCUSTRAL HIGENE DAVISONIBENTAL LA & ENVIRONMENTAL WORDEDLOGY INCUSC 1 TODE 2005 TYPE athane conductation org

LAB #100470



Summary of Atomic Absorption Analysis for Lead

Page 2 of 2

AMA Sample Number	Client Sample Number	Client Sample Number	Client Sample Number	Analysis Type	Sample Type	Air Volume (L)	Area Wiped (ft ²)	Rep. L	orting imit	Total ug	Final Res	ult	Comments
13058036	WorcesterRC Wipe- 10	Flame	Wipe	****	0.108	110	ug/ft²	<12	<110	ug/ft²			
13058037	WorcesterRC Wipe- FB	Flame	Wipe Blank	****	N/A	12	ug		<12	ug			
13058038	WorcesterRC PaintChip-LBP-01	Flame	Paint Chip	****	N/A	0.0081	%Pb		0.25	%Pb			

 Analysis Method for Flame: Air, Wipes, Paints, and Soil/Solids: EPA 600/R-93/200(M)-7000B; Water: SM-3111B

 Analysis Method For Furnace: Air, Wipes, Paints, and Soil/Solids: EPA 600/R-93/200(M)-7010; Water: SM-3113B

 N/A = Not Applicable
 mg/Kg = parts per million (ppm) on a dry weight basis

 mg/L = parts per million (ppm)

%Pb = percent lead on a dry weight basis ug = micrograms ug/L = parts per billion (ppb)

Note: All samples were received in good condition unless otherwise noted.

Note: All results have two significant digits. Any additional digits shown

should not be considered when interpreting the result.

Air and Wipe results are not corrected for any blank results Final results for air and wipe samples are based on client

supplied information nor verified by this laboratory.

All results are to be considered preliminary and subject to change unless signed by the Technical Director or Deputy. See QC Summary for analytical results of quality control samples associated with these samples.

Non-Responsive

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these Laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from us. Sample types, locations, and collection protocols are based upon the information provided by the persons submitting them and, unless collected by personnel of these Laboratories, we expressly disclaim any knowledge and liability for the accuracy and completeness of this information. Residual sample material will be discarded in accordance with the appropriate regulatory guidelines, unless otherwise requested by the client. This report must not be used to claim, and does not imply product certification, approval, or endorsement by NY ELAP, AIHA, or any agency of the Rederal Government. All rights reserved. AMA Analytical Services, Inc.

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APPENDIX D

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PHOTOGRAPHIC LOG



PHOTOGRAPHIC LOG

Client Name:		Site Location:	Project No.
MA ARNG- Worcester- Lincoln RC		701 Lincoln St., Worcester, MA	39743799
Photo No. 1	Date: 4/24/13		
Description: West exit exter does not have a installed.	ior stairway a handrail		



 Page 1 of 2
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PHOTOGRAPHIC LOG

Client Name: MA ARNG- Worcester- Lincoln RC		Site Location: 701 Lincoln St., Worcester, MA	Project No. 39743799		
Photo No. 3 Description: Evidence of w damage to ce storage area. water intrusion and ceiling tile throughout bu	Date: 4/24/13				
Photo No	Date:		2		

Photo No.	Date:	
4	4/24/13	
Description:		
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Improperly sto	ored	
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area. Flamma	bles were	
observed imp	roperly	
stored throug	hout the	
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APPENDIX E

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RECOMMENDATIONS FOR SURFACE LEAD DUST IN ARMORIES

Subject: Recommendations for Surface Lead Dust in Armories

- 1. In armories that do not contain childcare facilities, the National Guard Bureau (NGB) Region North Industrial Hygiene Office recommends cleaning the areas in which sample results are greater than 200 micrograms per square foot (µg/ft²). If a special function will be held in which children will be present in this facility, consider thoroughly cleaning the areas that will be accessible to children prior to the function. This guidance is based on professional judgment, risk assessments, adaptation of Occupational Safety and Health Administration (OSHA) guidance, and feasibility of cleaning to a certain level.
 - a. Environmental Protection Agency (EPA) standards (40 Code of Federal Regulations (CFR) 745.227(h)(3)) are not directly applicable because they are criteria for dust-lead hazards developed for floors (40 μ g/ft²) and windowsills (250 μ g/ft²) in residential dwellings and child occupied facilities. A child occupied facility is defined as a building, or portion of a building, constructed prior to 1978, visited regularly by the same child, 6 years of age or under, on at least two different days within any week (Sunday through Saturday period), provided that each day's visit lasts at least 3 hours and the combined weekly visit lasts at least 6 hours, and the combined annual visits last at least 60 hours. Most of the wipe samples in armories were collected in undisturbed areas and therefore, results are worst case scenarios and do not correlate to these standards.
 - b. OSHA has no specific requirement for work area surfaces. The lead standard (29 CFR 1910.1025(h)) states that all surfaces shall be maintained as free as practicable of accumulations of lead dust. In workplaces where lead dust is generated, surface levels may be much higher, but personnel exposures can be controlled by limiting airborne lead levels and following good cleanup and hygienic practices.
 - c. OSHA used to cite a level of 200 μ g/ft² in their Technical Manual and 29 CFR 1926.62 as guidance to its own inspectors for evaluating the cleanliness of lunchroom and locker room surfaces that are supposed to be kept as clean as possible.
 - d. In a report titled Derivation of Wipe Surface Screening Levels for Environmental Chemicals, the US Army Center for Health Promotion and Preventive Medicine (USACHPPM) has determined that 200 μ g/ft² is a safe surface contamination level. They have also applied these standards as the decontamination levels for surfaces in administrative offices.
 - e. It should be noted that levels above these recommendations do not necessarily mean there is a significant hazard to workers who are following good cleaning and hygienic practices since there is no

correlation between wipe and air samples. Rather, we recommend these levels as a precautionary measure.

- 2. The NGB Occupational Health Branch is developing guidance for armories that are used as childcare facilities. All states will receive this guidance when it is completed. In the interim, we recommend the following actions:
 - a. Clean all areas that will be accessible to children to the EPA dust-lead standard for children 6 years of age or under (40 μ g/ft² on floors and 250 μ g/ft² on windowsills).
 - b. Refer to the local authorities' regulations since they can be more stringent than federal regulations.
 - c. Post signs in the area to inform people of the presence of lead dust and its effects.
 - d. If soldiers clean weapons in the facility change the policy so that they cannot clean their weapons in the facility, or if they are allowed to clean their weapons indoors, they must clean the area by wet wiping and mopping the area when they are done.
 - e. If the paint is peeling, contact the state Environmental Office to test for lead content and provide recommendations.
- 3. Air samples collected on individuals in the armory were well below OSHA's permissible exposure limit for lead (29 CFR 1910.1025(c)) of 0.05 milligrams per cubic meter (mg/m³) averaged over an 8-hour day. Therefore, based on these conditions there is currently no overexposure to personnel from lead dust in this building.

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Prepared for: National Guard Bureau Army National Guard Region North Industrial Hygiene Office Havre De Grace, Maryland



Industrial Hygiene Survey for MAARNG – Worcester Salisbury Readiness Center 44 Salisbury Street Worcester, Massachusetts 01609

AECOM Environment October 2010 Document No.: 60159721/Worcester 44 Salisbury Readiness Center

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Executive Summary

On August 20, 2010, AECOM Environment conducted an Industrial Hygiene (IH) survey of the Worcester Salisbury Street Readiness Center facility located at 44 Salisbury Street in Worcester, Massachusetts.

The industrial hygiene survey was generally conducted in accordance with the scope of work as described in the "Statement of Work – Industrial Hygiene Services for National Guard Bureau Industrial Hygiene Region North – Baseline Surveys for Readiness Centers and Administrative Buildings", dated March 2009.

The Worcester Salisbury Readiness Center is currently staffed by approximately three personnel. The facility is configured as a museum with minimal administrative space and drill hall.

Personnel at the facility were undertaking normal daily activities, which are administrative in nature, at the time of the survey.

The activities undertaken during the Industrial Hygiene survey included facility descriptions, lead wipe sampling, evaluation of housekeeping, illumination studies, ventilation system evaluation, and a review of the physical building condition.

The Worcester Salisbury Readiness Center is housed in a four story masonry building; consisting of approximately 10% administrative space, 30% drill hall, 50% display area, 10% vacant rooms plus a basement.

Lighting levels measured throughout the facility were generally adequate as per <u>ANSI/IESNA RP-1-2004</u>, <u>Office Lighting</u>, <u>ANSI/IESNA RP-7-2001</u>, <u>Industrial Lighting</u>, and the <u>IESNA Lighting Handbook</u>, 9th Edition, 11 <u>April 2005</u>, with the exception of most storage areas.

Wipe samples collected throughout the facility indicated lead levels above the ARNG action level.

Water damaged ceiling tile in the men's restroom was observed.

The HVAC system in the building consists of a boiler room that feeds radiant heaters throughout the building. There is no HVAC system that provides fresh air from the building exterior in administrative areas. The Drill Hall is equipped with overhead radiant heaters with fans.

1.0 Facility Description and Operations

The Worcester Salisbury Center is a museum with some administrative space and a drill hall. The masonry structure was erected in 1889. The building consists of two main sections. The four story section of the building contains offices and exhibit showcases. This portion of the building consists of plaster walls and ceilings along with floor tile. The drill hall comprises the rear portion of the building. This area is finished with painted brick walls, an exposed roof deck painted to match the walls, and hardwood floors.

The primary activity at the Worcester Salisbury Readiness Center is routine administrative duties and occasional use by units for support and training of soldiers. The Worcester Salisbury Readiness Center is currently staffed by approximately 3 personnel. No vehicle maintenance activities are undertaken at the facility.

2.0 Sampling in Readiness Centers

2.1.1 Wipe Sampling

Wipe sampling for lead was conducted in the drill hall, rifle range and administrative areas following the OSHA wipe sampling method and using Ghost wipes. Samples were collected in areas that are not frequently cleaned and showed signs of dust whenever possible.

The rifle range in the basement is reportedly no longer used; however, levels of lead above ARNG guidelines were identified in dust within and adjacent to the range. The rifle range and basement area is used for general storage and is not part of the museum that is designated to the general public however it is not a securable space. There is no record of the range undergoing any kind of lead abatement.

The following table presents the results of the lead wipe sampling conducted at the facility.

Sample Number	Sample Location	Lead Concentration
SAL-WRC-1	Rifle Range Floor	5900 ug/ft ²
SAL-WRC-2	Cabinet in Rifle Range	280 ug/ft ²
SAL-WRC-3	Bullet Trap	95,000 ug/ft ²
SAL-WRC-4	Outside Range	780 ug/ft ²
SAL-WRC-5	Display/Conf.	1,600 ug/ft ²
SAL-WRC-6	Office/Conference	<110 ug/ft ²
SAL-WRC-7	Display Room	<110 ug/ft ²
SAL-WRC-8	Lounge	<110 ug/ft ²
SAL-WRC-9	Drill Shed	<110 ug/ft ²
SAL-WRC-10	Display Room/2 nd Floor	<110 ug/ft ²
SAL-WRC-11	Archive Room/3 rd Floor	360 ug/ft ²
SAL-WRC-12	Office/3 rd Floor	120 ug/ft ²

Table 2-1: Lead Wipe Sample Results

The wipe samples collected on the Rifle Range Floor, on top of a cabinet in the rifle range, in the bullet trap, outside the range, in the display/conf. rm., in the Archive/3rd floor, and in the 3rd floor office indicated detectable levels of lead. Levels detected were generally above the ARNG action level of 200 ug/ft². Laboratory analytical results are presented in Appendix C.

2.1.2 Air Sampling

Ambient air sampling for lead was conducted in two normally occupied areas of the facility.

Table 2-2: Lead Air Sample Results

Sample Number	Sample Location	Lead Concentration
SAL-WRC-01A	Drill Hall	<17 ug/m ³
SAL-WRC-02A	Office/Conference	<17 ug/m ³

None of the air samples collected indicated the presence of airborne lead above detectable limits. For reference, the OSHA Action Level for lead is 30 ug/m³ and the Permissible Exposure Limit (PEL) is 50 ug/m³. Laboratory analytical results are presented in Appendix C.

3.0 Physical Condition of Facility and Personnel Concerns

3.1.1 Lead Based Paint

Interior surfaces of walls are coated with paint. The paint on the walls appeared to be generally in good condition. Concrete flooring was generally tiled or unpainted. AECOM observed damaged/peeling paint during this evaluation. Sampling of damaged paint was conducted and results are summarized in the table below:

Table 3-1: Paint Chip Sample Results

Sample Number	Sample Location	Lead Concentration
SAL-WRC-01C	Main Corridor	<0.0099% Pb
SAL-WRC-02C	Former Cafeteria	0.34% Pb
SAL-WRC-03C	Corridor 1	0.23% Pb

Every paint chip sample collected at Worcester Salisbury showed the presence of quantifiable lead (29 CFR 1910.1025).

3.1.2 Suspect Asbestos Containing Materials

AECOM observed damaged, friable asbestos containing materials (ACM) in readily accessible areas of the Worcester Salisbury Readiness Center during this survey. Thermal system piping is typically covered in ACM or fiberglass insulation with associated fittings. AECOM was provided with a partial Asbestos-Containing Materials Survey. As such, damaged friable suspect materials were not sampled, but presumed to be asbestos-containing based upon previous documentation.

Other typical miscellaneous building materials observed but not sampled include floor tiles and associated mastic, cove base and associated mastic, ceiling tiles, and window glazing compound and caulks.

3.1.3 Water Damage/Mold

AECOM observed evidence of water intrusion in the 1st floor display area during this survey. Water stained tiles were observed on ceilings in the 1st floor exhibit area. Site personnel were not certain the cause of the stained ceiling tiles. The impacted areas were limited to less than 10 square feet.

3.1.4 Housekeeping

The Worcester Salisbury Readiness Center was observed to be generally clean and orderly during this assessment. AECOM did not observe dust accumulation on readily accessible horizontal surfaces within areas commonly used in the facility.

3.1.5 Indoor Air Quality/ Ergonomics

The Administration Section contains general office space. The Administration Section is generally utilized by all of the Worcester Salisbury Readiness Center staff members. No Indoor Air Quality concerns were noted by the Worcester Salisbury Readiness Center personnel.

Instantaneous real-time reading for carbon monoxide, carbon dioxide, temperature, and relative humidity are presented in the following table. With the exception of slightly elevated temperature in the 2nd floor display room, the readings appeared to be within generally accepted guidelines.

Table 3-2:	Indoor	Air	Quality	Monitoring	Results
------------	--------	-----	---------	------------	---------

Location	Carbon Monoxide (ppm)	Carbon Dioxide (ppm)	Temp (°F)	Relative Humidity (%)
Exterior – Baseline	1.0	445	75.9	60.5
Basement – Main Corridor	1.6	524	75.9	55.8
1 st Floor Display/Conference	1.8	434	79.8	55.1
2 nd Floor Display Rm. 1	1.0	484	80.1	54.8
3 rd Floor Archive #1	1.3	442	78.2	54.3
4 th Floor Storage	1.9	479	79.1	55.2

Table 1-3 Guidelines:

Carbon Monoxide: Office/Warehouse Space – 9 ppm based on EPA National Ambient Air Quality Standard. OSHA Permissible Exposure Limit (PEL) = 50 ppm. ACGIH Threshold Limit value (TLV) = 25, ppm.

Carbon Dioxide: Office Space -Approximately 700 ppm above background (Derived from ASHRAE Standard 62.1-2007). Not Applicable to warehouse and vehicle maintenance bays.

Relative Humidity: Mechanically air-conditioned space – Maximum 65% (Derived from ASHRAE Standard 62.1-2007 – 5.10.1).

Temperature: Winter (clothing insulation = 1.0 clo) Relative humidity 30-60% - Temp - 68 - 75°F Summer Temp - 73 - 79°F. (Derived from ASHRAE Standard 55-2004)

Worcester Salisbury Readiness Center personnel did not report any ergonomics issues or concerns. Office furniture and accessories designed to promote ergonomically correct behaviors were observed.

4.0 Ventilation and HVAC System

4.1.1 Ventilation Systems and Potential for Contamination of Clean Air Sources

Potential for contamination of clean air sources was not observed in the facility.

The Worcester Salisbury Readiness Center is heated by a radiant heating system fed by a boiler located in the boiler room that is in the basement. Supply and return air is not provided by mechanical means. Outdoor air is provided in the building through open windows and doors.

Unit heaters are located in the overhead space of the drill hall, but the units were inaccessible and site personnel could not provide information on the use or status of the system. The fans within the units were not observed in operation during the survey.

4.1.2 HVAC Maintenance

There was no maintenance schedule associated with an active ventilation system.

5.0 Lighting

Lighting levels in all areas were measured utilizing a Cal-Light 400 light meter that displays lighting levels in foot-candles. Lighting levels in storage areas were generally adequate. Much of the facility is used for storage or museum use and seldom requires extensive lighting. Occupied office space lighting was generally inadequate.

Table 5-1: Light Survey

Location	Results – (Foot	Standard*		
Eocation	candles)	(Y/N)	Standard	
Basement				
Men's Toilet	8.6	Y	5	
Locker Room	13.3	Y	7	
Shower	2.5	Ν	5	
Former Cafeteria (now storage)	No Lighting	Ν	5	
Storage #1	21.6	Y	5	
Storage #2	No Lighting	Ν	5	
Storage #2	No Lighting	Ν	5	
Stairwell	47.5	Y	5	
Maintenance/Elec.	26.5	Ν	30	
Elec. Rm.	10.1	Ν	30	
Storage #3	15.7	Y	5	
Storage #4	5.6	Y	5	
Storage #5	11.1	Y	5	
Storage #6	18.6	Y	5	
Storage #7	23.2	Y	5	
Storage #8	31.2	Y	5	
Storage #10	14.4	Y	5	
Storage #9	23.3	Y	5	
Main Corridor	50.3	Y	5	
Water Tank Room	3.9	Ν	5	
Storage #11	18.3	Y	5	
Boiler Room	8.4	Ν	30	
Coal Storage	5.6	Y	5	
Storage #12	17.5	Y	5	
Storage #13	4.5	Ν	5	
Storage #14	9.8	Y	5	
Storage Archive	8.5	Y	5	
Storage #15	38.7	Y	5	
Storage #16	14.5	Y	5	
Storage #17	37.0	Y	5	
Storage #18	No Lighting	Ν	5	
1 st Floor				
Armorer	14.5	Y	10	
Office #1	26.0	Ν	50	
Disp./Conference	10.5	Ν	30	
Office #2	15.0	Ν	50	

Location	Results – (Foot	Met Standard	Standard*
	candles)	(Y/N)	
Display Room	15.9	Y	5
Office/Conference	23.4	N	50
Office #3	34.0	N	50
Lounge	38.1	Y	10
Toilet	9.5	Y	5
Office #4	33.1	N	50
Women's Toilet	96.4	Y	5
Men's Toilet	66.8	Y	5
Display Room Storage	No Lighting	N	5
Drill Shed	32.1	Y	10
2 ^{na} Floor			
Display Room 1	13.1	Y	5
Display Room 2	15.3	Y	5
Storage #1	12.4	Y	5
Storage #2	39.1	Y	5
Storage #3	11.6	Y	5
Storage #4	5.1	Y	5
Display Room 3	34.0	Y	5
Display Room 4	44.0	Y	5
Display Room 5	37.0	Y	5
Storage #5	9.0	Y	5
Toilet #1	11.0	Y	5
Display Room 6	24.6	Y	5
Display Room 7	7.5	Y	5
Display Room 8	No Lighting	Ν	5
Kitchen	13.8	Ν	50
Display Room 9	10.8	Y	5
Display Room 10	24.7	Y	5
Display Room 11	16.4	Y	5
Display Room 12	18.4	Y	5
Toilet #2	8.9	Y	5
Hall	5.3	Y	5
3 rd Floor			
Archive #1	18.2	Y	5
Archive #2	18.4	Y	5
Storage #1	7.1	Y	5
Storage #2	18.7	Y	5
Archive #3	33.1	Y	5
Archive #4	5.4	Y	5
Fire System Room	7.1	Y	30
Storage #4	18.4	Y	5
Photo Room	3.0	Ν	5
Storage #3	No Liahtina	Ν	5
Archive #5	7.3	Y	5
Archive #6	21.7	Y	5
Storage #5	25.2	Y	5
Storage #6	45.4	Ý	5
Storage #7	23.8	Ŷ	5
Toilet #1	28.7	Ý	5
Office #1	19.9	N	50

Location	Results – (Foot candles)	Met Standard (Y/N)	Standard*
Toilet #2	8.8	Y	5
Office #2	25.2	Ν	50
Supply Room	27.1	Y	5
4 th Floor			
Storage #1	32.8	Y	5
Storage #2	27.1	Y	5
Storage #3	31.5	Y	5
Storage #4	18.2	Y	5
Storage #5	36.7	Y	5
Storage #6	40.2	Y	5
Storage #7	29.8	Y	5
Storage #8	26.2	Y	5
Storage #9	31.1	Ŷ	5
Office Lighting (ANSI/IESNA RP-1-04	1) and Industrial Lighti	ng Facilities (ANSI RP	-7-01)

6.0 Evaluation of Attached Garage

There is no garage associated with the Worcester Salisbury Readiness Center.

7.0 Conclusions and Limitations

AECOM has conducted this survey in accordance with applicable OSHA methods and standard industrial hygiene practice. The following conclusions were based on the observations and assessments of activities that occurred during the on-site evaluation:

Housekeeping is performed regularly at the Worcester Salisbury Readiness Center.

AECOM observed damaged, known asbestos containing materials during the evaluation.

AECOM observed peeling paint during this evaluation. Quantifiable levels of lead were detected in two of the three samples collected.

Evidence of water intrusion was observed in the 1st floor display area. Localized, staining was observed on ceiling tiles in the 1st floor display area.

Lighting levels in most areas were in compliance with ANSI/IESNA guideline levels. Some areas require additional lighting to meet guideline levels.

Air samples collected and analyzed did not indicate quantifiable levels of airborne lead.

Wipe samples collected in various locations throughout the building indicated levels of lead on surfaces in excess of the ARNG action level.

AECOM provided these services consistent with the level and skill ordinarily exercised by members of the profession currently providing similar services under similar circumstances at the time the services were provided. This statement is in lieu of other statements either expressed or implied. This report is intended for the sole use of National Guard Bureau – Army National Guard. The scope of services performed in execution of this evaluation may not be appropriate to satisfy the needs of other users, and use or re-use of this document, the findings, conclusions, or recommendations is at the risk of said user.

As with all such surveys, the results of the sampling represent conditions found on the date of the survey and may not represent conditions found at other times. Additionally, this survey was limited with respect to the specific parameters indicated above and should not be construed to be a comprehensive evaluation or a definitive representation of conditions within the facility. The information presented in this report is intended to be used as a guide to evaluate the need for further investigation or the need for modifications to the processes or procedures surveyed.

The Client recognizes and agrees that all testing and remediation methods have reliability limitations, no method nor number of sampling locations can guarantee that a condition will be discovered within the performance of the services as authorized by the Client. Additionally, the passage of time may result in a change in the environmental characteristics at this site. This report does not warrant against future operations or conditions that could affect the recommendations made. The results, findings, conclusions, and recommendations expressed in this report are based only on conditions that were observed during AECOM's inspection of the site.

Appendix A

Worcester Salisbury Readiness Center Facility Layout





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Appendix B

Worcester Salisbury Readiness Center Photographs



























Appendix C

Analytical Results



Summary of Atomic Absorption Analysis for Lead

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AMA Sample Number 1073207	Client Sample Number	Analysis Type	Sample Type	Air Volume (L)	Area Wiped (ft²)	Rep L	orting imit	Total ug	Final Res	alt	Comment
	SAL-WRC-01C	Flame	Paint Chip	int Chip ****	N/A	0.0099	%РЬ		<0.0099	%Рь	
1073208	SAL-WRC-02 C	Flame	Paint Chip	****	N/A	0.0084	%Pb		0.34	%Pb	
1073209	SAL-WRC-03 C	Flame	Paint Chip	****	N/A	0.0084	%Pb		0.23	%Pb	
1073210	SAL-WRC-01 A	Flame	Air	175	N/A	17	ug/m³	<3	<17	ug/m³	
1073211	SAL-WRC-02 A	Flame	Air	175	N/A	17	ug/m³	<3	<17	ug/m*	
1073212	SAL-WRC-01	Flame	Wipe	****	0.111	110	ug/ft²	660	5900	ug/it*	
1073213	SAL-WRC-02	Flame	Wipe	****	0.111	110	ug/ft²	31	280	ug/il²	
1073214	SAL-WRC-03	Flame	Wipe	****	0.111	110	ug/ft²	11000	95000	ug/ft*	
1073215	SAL-WRC-04	Flame	Wipe	****	0.111	110	ug/ft²	87	780	ug/it²	
1073216	SAL-WRC-05	Flame	Wipe	****	0.111	110	ug/ft²	180	1600	ug/it ²	
1073217	SAL-WRC-06	Flame	Wipe	****	0.111	110	ug/ft²	<12	<110	ug/il²	
1073218	SAL-WRC-07	Flame	Wipe	****	0.111	110	ug/ft²	<12	<110	ug/llª	
1073219	SAL-WRC-08	Flame	Wipe	••••	0.111	110	ug/ft²	<12	<110	ug/it²	
1073220	SAL-WRC-09	Flame	Wipe	****	0.111	110	ug/ft²	<12	<110	ug/ft²	
1073221	SAL-WRC-10	Flame	Wipe	****	0.111	110	ug/ft²	<12	<110	ug/ft²	
1073222	SAL-WRC-11	Flame	Wipe	****	0.111	110	ug/ft²	40	360	ug/it ^a	
1073223	SAL-WRC-12	Flame	Wipe	****	0.111	110	ug/ft ²	14	120	ug/ft²	

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D Immediate Date Due:	Immediate Asy Solution Asy Asy Day Day Date Due:	8/31/10 Results Required By No (EveryAttempt Will Be Made to Accomedate)	son 8 L C	
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Appendix D

References

References

1. Title 29, Code of Federal Regulations (CFR), Part 1910, Occupational Safety and Health Administration, current Ed. http://www.osha.gov/comp-links.html

2. Department of Defense Instruction (DODI) 6055.1, Department of Defense Occupational Safety and Health (OSH) Program, August 19, 1998. http://www.dtic.mil/whs/directives/corres/pdf/i60551_081998/i60551p.pdf

3. Army Regulation (AR) 11-34, The Army Respiratory Protection Program, 15 February 1990. http://www.usapa.army.mil/pdffiles/r11_34.pdf

4. AR 40-5, Medical Service, Preventive Medicine, 25 May 2007. http://www.usapa.army.mil/pdffiles/r40_5.pdf

5. AR 385-10, The Army Safety Program, 23 August 2007. http://www.usapa.army.mil/pdffiles/r385_10.pdf

6. Department of the Army Pamphlet (DA PAM) 40-501, Medical Services, Hearing Conservation Program, 10 December 1998. http://www.usapa.army.mil/pdffiles/p40_501.pdf

7. AR 40-11, Preventive Medicine, 22 July 2005. http://www.army.mil/usapa/epubs/pdf/p40_11.pdf

8. DA PAM 40-503, Medical Services, Industrial Hygiene Program, 30 October 2000. http://www.usapa.army.mil/pdffiles/p40_503.pdf

9. UFC 3-410-01FA, Heating, Ventilating, and Air Conditioning, 15 May 2003. http://www.wbdg.org/ccb/DOD/UFC/ufc_3_410_01fa.pdf

10. Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs), American Conference of Governmental Industrial Hygienists (ACGIH), current Ed.

11. Industrial Ventilation – A Manual of Recommended Practice for Design, ACGIH, current Ed.

12. American National Standards Institute (ANSI) Z358.1-2004, Emergency Eyewash and Shower Equipment.

13. American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. (ASHRAE) 62.1-2007, Ventilation for Acceptable Indoor Air Quality.

14. RP-1-2004, Office Lighting, ANSI/IESNA.

15. RP-7-2001, Industrial Lighting, ANSI/IESNA, change 20 July 2004.

16. Unified Facilities Criteria, (UFC) 3-410-01FA, Heating, Ventilating, and Air Conditioning, 15 May 2003, including change 3, Aug. 03.



Prepared For:

National Guard Bureau Army National Guard Region North Industrial Hygiene Office 301 – IH Old Bay Lane Havre De Grace, Maryland 21078

Prepared By:

URS Corporation 5 Industrial Way Salem, New Hampshire 03079

INDUSTRIAL HYGIENE SURVEY REPORT MASSACHUSETTS NATIONAL GUARD READINESS CENTER 44 SALISBURY STREET WORCESTER, MA 01609

July 17, 2013 PN: 39743799





Director, Industrial Hygiene Services

Project Manager

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	ARMORIES

FINDINGS AND RECOMMENDATIONS MASSACHUSETTS NATIONAL GUARD READINESS CENTER 44 SALISBURY ST., WORCESTER, MA

Findings	Recommendations	Risk Assessment Code (RAC)
Lighting	Transformed and the second sec	
On the day of the survey, the illuminance was inadequate in several locations tested.	Increase lighting in the work areas. While work is in progress, these areas must be lighted by at least the minimum lighting intensities (ANSI / IESNA RP-1-04).	RAC 4
Ergonomics		
Computer workstations in the Administrative Areas were observed with un-adjustable chairs, arm rests and keyboards.	Ergonomic issues with regard to the desks and chairs should be corrected by fitting the workplace to the worker (Department of the Army Pamphlet 40-21, Chapter 4, Page 7, Section 4-3).	RAC 3
Lead		
Eight of the 10 lead wipe samples indicated elevated lead levels. One of four lead paint samples indicated elevated lead levels.	Personnel trained in accordance with the OSHA Lead Standard should clean the areas where elevated lead dust levels were identified (OSHA 29 CFR 1910.1025(h)(1)).	RAC 3
Emergency Exits	.	
Emergency exit signs and escape plans were not visible from all areas of the facility or illuminated.	Emergency exits should be properly illuminated (29 CFR 1910.37 (q)(6)).	RAC 3
PPE		
Hazard assessments have not been conducted to determine whether personal protective equipment is required.	Conduct a hazard assessment of site operations to determine what types of PPE are required for each type of work (29 CFR 1910.132(d)(1)).	RAC 4
Fire Extinguishers		
No evidence was found that all fire extinguishers were being inspected on a monthly basis.	All fire extinguishers must be inspected on a monthly basis to determine that they are full and readily accessible (OSHA 29 CFR 1910.157(e)(2)).	RAC 3

Findings	Recommendations	Risk Assessment Code (RAC)
Housekeeping		
Storage areas were cluttered, including exits and passageways.	All places of employment, passageways, storerooms and service rooms shall be kept clean and orderly and in a sanitary condition (29 CFR 1910.22 (a)(1)).	RAC 3
Emergency Egress		
Emergency escape plans were not posted throughout the facility.	Each place of employment shall develop an emergency action plan which includes emergency escape procedures and emergency route assignments (29 CFR 1910.38 (a)(2)(i)).	RAC 3

1.0 SUMMARY

At the request of the National Guard Bureau (NGB) Region North Industrial Hygiene Office, URS Corporation (URS) conducted an industrial hygiene survey at the Salisbury Readiness Center in Worcester, Massachusetts.

URS representative, Mr. **Non-Responsive** conducted the Industrial Hygiene Survey on May 15, 2013. The scope of work included an overall assessment of the facility as it relates to industrial hygiene and included a walkthrough of the facility, collection of photographs, and when required, measurements for illumination (light), area and personal air sampling, and noise mapping.

The Worcester-Salisbury Readiness Center is a four-story brick building, consisting of offices, classrooms, a mess hall, gender separate bathrooms, storage areas, an Assembly Hall and a former Indoor Firing Range. The building was in the process of being vacated at the time of this survey. Operations are being moved to a new location. A layout of the Readiness Center is provided in Appendix A.

<u>GENERAL</u>: The basement former Indoor Firing Range is currently used for storage. According to interviews with site personnel, lead abatement of the former Indoor firing range is scheduled for May 2013. No evidence was found that all fire extinguishers were being inspected on a monthly basis. Illuminated emergency exit signs were not observed throughout the facility. Emergency escape plans were not posted throughout the facility. Walk ways in storage areas were cluttered at the time of this survey. There is an unmarked hole in the fourth floor at the base of a drain pipe. The facility is in the process of being vacated and no personnel were working in the facility at the time of this survey.

<u>LIGHTING</u>: Lighting in the Readiness Center was found to be inadequate in several of the areas measured. Areas noted within the report as having inadequate lighting require upgrading by either increasing the general lighting or through the use of task lighting. While work is in progress work areas must be lighted by at least the minimum light intensities. <u>LEAD</u>: Eight of ten wipe samples collected in the Readiness Center were found to contain lead in a concentration above the recommended limit set by the NGB, Region North IH Office.

On the day of the survey, one of the paint chip samples was found to contain a level of lead above the U.S. Department of Housing and Urban Development (HUD) criteria for determination of paint as lead-based.

<u>ASBESTOS</u>: No damaged, friable suspect materials were identified for sample collection during this survey.

<u>ERGONOMICS</u>: Many of the work stations had ergonomic issues which require attention. Computer workstations were assessed during the walkthrough for ergonomic issues. The computer workstations in the facility did not meet the current Occupational Safety and Health Administration (OSHA) ergonomic recommendations. The chair armrests, keyboards, and desks were not adjustable. All workstations in the facility should be adjusted and monitored. The ergonomic issues with regard to the workstations and chairs need to be corrected by fitting the workplace to the worker.

<u>NOISE</u>: Area noise mapping was not conducted in the Readiness Center as it is currently being vacated and no longer used as a full time work place for ARNG personnel.

2.0 OFFICE / TRAINING AREA

2.1 Operation Description

This Readiness Center is primarily used for conducting administrative functions, however it is now in the process of closing and no work is conducted any longer at the facility. The building includes offices, classrooms, a mess hall, gender separate bathrooms, storage areas, an Assembly Hall and a former Indoor Firing Range.

The Readiness Center was found to be cluttered and unorganized at the time of URS' site visit. This is mostly attributed to the closure process of the facility.

2.2 Chemical and Physical Agents Sampled

2.2.1 Carbon Dioxide

On the day of the survey, carbon dioxide measurements were made in the Readiness Center. Interior carbon dioxide concentrations were found to be between 520 and 735 parts per million (ppm). Carbon dioxide levels were measured using a direct-reading TSI Q-Trak (Model 8551).

Carbon dioxide is a normal constituent of the atmosphere and ranges from about 250 to 450 ppm. The major source of excess carbon dioxide in the indoor environment is human respiration. Other sources can include open-flame heaters, fermentation processes, and motor vehicles. Carbon dioxide itself is not normally a cause of indoor air quality problems but is typically used as an indicator of the adequacy of fresh air intake. As the concentration of carbon dioxide increases, so do the background levels of other air contaminants.

To minimize air quality complaints, the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) has proposed that the carbon dioxide concentration within an occupied workspace be maintained below 700 ppm above ambient outside levels. For example, on the day of the survey, the outside carbon dioxide level was measured at 403 ppm. Therefore ASHRAE (Standard 62.1-2010) would recommend that interior carbon dioxide concentrations be maintained at or below

1,103 ppm. Using the ASHRAE guideline, the readings at the subject site were found to be below the suggested indoor to outdoor differential concentration.

2.2.2 Carbon Monoxide

The carbon monoxide concentration in the Readiness Center was measured between 0.0 ppm and 0.5 ppm on the day of the survey. ASHRAE recommends that average carbon monoxide concentrations not exceed 9 ppm. Typical average concentrations found in commercial buildings range from 0 to 6 ppm. The measured levels were below the ASHRAE guideline for indoor environments. Carbon monoxide was measured using a TSI Q-Trak Plus (Model 8554).

Key sources of carbon monoxide within indoor environments include internal combustion engines, motor vehicle and forklift exhaust, tobacco smoke, space heaters, and improperly adjusted oil or gas burners.

2.2.3 Relative Humidity

The average relative humidity within the Readiness Center measured with the Q-Trak Plus was 42.1%, which was within the guideline of less than 65% recommended by ASHRAE.

2.2.4 Temperature

Temperature should be maintained within the thermal comfort envelope suggested in ASHRAE Standard 55-2010. This standard on thermal environments specifies conditions in which 80% or more of building occupants should find the thermal environment acceptable. ASHRAE 55-2010 suggests temperatures of 68 to 75 degrees Fahrenheit (°F), during winter months, for people in typical seasonal clothing during light sedentary activity. For summer, the temperature should be in the range of 73 to 79 °F.

The average temperature inside the Readiness Center was, 61.95 °F, which was below the guideline of 68 to 75 °F recommended by ASHRAE for thermal comfort. No ARNG personnel occupy the facility, so no complaints regarding temperature were received by URS during this survey.

2.2.5 Lighting

Lighting in the Readiness Center was measured using a cal-Light 400 Light Meter. Table 2-1 below shows lighting measurements in foot candles (FC) and the recommended lighting requirements (Illuminating Engineering Society of North America (IESNA) RP-7-01).

Location	Function	Measured Illuminance in Foot Candles (FC)	Recommended Minimum Illuminance in Foot Candles (FC)
1 st floor, conference room, table	Admin	24.7	50
1 st floor, storage desk	Admin	6.8	50
Command office, desk	Admin	101.2	50
Desk- ^{Non-Responsive}	Admin	80.7	50
2 nd floor, east display, table	Admin	20.1	50
2 nd floor, west display, table	Admin	17.4	50
3 rd floor, east archival, table	Admin	34.9	50
3 rd floor, west archival, table	Admin	40.7	50
3 rd floor, NE office	Admin	58.9	50
3 rd floor, NW office	Admin	64.8	50

 Table 2-1

 Lighting Measurements and Recommended Lighting Requirements

On the day of the survey, the illuminance in the Readiness Center was determined to be inadequate in six of the office/administrative locations.

2.2.6 Lead

Wipe testing for lead dust was conducted in the Readiness Center using ghost wipes, which meet ASTM E 1792 standards. The analytical report from AMA Analytical Services, Inc. (AMA) is contained in Appendix C. Table 2-2 below shows the results of the lead wipe testing.

Sample Location	URS Sample Number	Area Wiped in Square Feet (ft ²)	Result in Micrograms/ Square Foot (µg/ft ²)	Maximum Surface Contamination Level in Micrograms/ Square Foot (μg/ft ²)
1 st floor west display, right window sill	Worcester, Salisbury RC Wipe-01	0.108	350	200
1 st floor lounge, top of mantle	Worcester, Salisbury RC Wipe-02	0.108	<110	200
2 nd floor east display, front left window sill	Worcester, Salisbury RC Wipe-03	0.108	<mark>1,200</mark>	200
3 rd floor NW office, mantle	Worcester, Salisbury RC Wipe-04	<mark>0.1</mark> 08	1,400	200
4 th floor WS vacant storage, floor by heater	Worcester, Salisbury RC Wipe-05	0.108	7,800	200
Boiler Room, top of water heater	Worcester, Salisbury RC Wipe-06	0.108	890	200
Former Mess Hall, left window sill	Worcester, Salisbury RC Wipe-07	0.108	2,100	200
Drill hall, top of fire extinguisher box	Worcester, Salisbury RC Wipe-08	0.108	500	200
Basement latrine, floor near entrance	Worcester, Salisbury RC Wipe-09	0.108	740	200
Basement corridor, top of file cabinets	Worcester, Salisbury RC Wipe-10	0.108	180	200

Table 2-2 Levels of Lead Dust Found in the Readiness Center

Eight of the ten surface dust level measurements were found to contain lead at a level above the NGB recommended level, based on the OSHA clarification letter which states "as free as practicable" of lead contamination as specified under OSHA 29 CFR 1926.62. No wipe samples were collected in the former indoor firing range since this building area was secured.

Four paint chip samples were collected from areas of peeling paint within the facility and were analyzed for lead content. The analytical report from AMA is contained in Appendix C.

According to the HUD, paint is considered to be lead-based if the quantity of lead is greater than 0.5% by weight. OSHA has not established a minimum percentage of lead to be defined as lead-based paint, therefore paint with lead in any amount above the analytical detection limit is considered to be lead-based under these regulations. The results of URS' lead paint testing are contained in Table 2-3.

Table 2-3 Lead Content in Painted Surfaces

Paint Location	Lead Concentration (Percent Weight)	HUD Lead-Based Quantity (Percent Weight)
Yellow paint, walls, basement hallway	0.081	0.5
Blue paint, walls, former mess hall	0.21	0.5
Gray paint, walls, boiler room	0.015	0.5
Green paint, walls, 4 th floor vacant SW corner room	3.2	0.5

On the day of the survey, one of the paint chip sample was found to have a lead content above the HUD criteria for determination of paint as lead-based.

2.2.7 Asbestos

No damaged, friable suspect material was identified during this survey for sample collection.

2.3 Ventilation System Evaluation

The facility, not designed for vehicle maintenance, contains a ventilation system that is limited to localized personal ventilation (i.e. room fans, window air conditioning units) within the majority of rooms, and main negative draw fans in the Assembly Hall.

2.4 Noise Measurements

Area noise dosimetry was not conducted within the administrative office area as the facility is in the process of being vacated and the building is no longer used for full time MA ARNG work or personnel.

2.5 Personal Protective Equipment

Personal protective equipment was not observed readily available to employees in the Readiness Center, as no employees occupy the facility.

3.0 SAFETY AND INDUSTRIAL HYGIENE PROGRAMS

3.1 Confined Spaces

A written confined spaces program is not applicable to this facility. A confined space program was not identified at the facility.

3.2 Hearing Conservation

A written hearing conservation program was not identified on site. A review of normal site activities determined that no operations were identified that would warrant hearing protection for this site.

3.3 Respiratory Protection

A site-specific written program regarding Respiratory Protection was not identified on site. No operations were observed by URS that would require the use of respiratory protection.

3.4 Hazard Communication

A site-specific hazard communication program was not identified on site.

Material safety data sheets were not readily available on the day of the survey.

3.5 Personal Protective Equipment

A written personal protective equipment program was not identified on site. Since the site is being vacated, no personal protective equipment program is required for this site.

3.6 Asbestos Operations and Maintenance Program

A written asbestos operations and maintenance program was not identified on site.

3.7 Safety

The basement former Indoor Firing Range is currently used for storage. No evidence was found that all fire extinguishers were being inspected on a monthly basis. Illuminated emergency exit signs were not observed throughout the facility. Emergency

escape plans were not posted throughout the facility. Walk ways in storage areas were cluttered at the time of this survey. An unmarked hole in the fourth floor was observed at the base of a drain pipe.

4.0 REFERENCES

American Conference of Governmental Industrial Hygienists

Industrial Ventilation: A Manual of Recommended Practice, 27th Edition, 2010

Guidelines for the Assessment of Bio-aerosols in the Indoor Environment, 1989

American National Standards Institute

ANSI/IESNA RP-1-04: American National Standard Practice for Office Lighting

ANSI/IESNA RP-7-01: Recommended Practice for Lighting Industrial Facilities

American Society of Heating, Refrigerating and Air-Conditioning Engineers

ANSI/ASHRAE Standard 62.1-2010: Ventilation for Acceptable Indoor Air Quality

ANSI/ASHRAE Standard 55-2010: Thermal Environmental Conditions for Human Occupancy.

Department of the Army

DA PAM 40-21, Ergonomics Program, 15 August 2003

Unified Facilities Criteria, Heating, Ventilating and Air Conditioning, 3-520-05, 14 April 2008

DA PAM 40-501, Hearing Conservation Program, 10 December 1998.

AR 385-10, The Army Safety Program, 23 August 2007; RAR Issue Date: 4 October 2011

National Guard Pamphlet 420-15, Guidelines and Procedures for Rehabilitation and Conversion of Indoor Firing Ranges, 3 November 2006

Department of Defense

DoDI 6055.12, Hearing Conservation, 3 December 2010

Creating the Ideal Computer Workstation: A Step-by-Step Guide, June 2000

National Institute for Occupational Safety and Health

Current Intelligence Bulletin 50: Carcinogenic Effects of Exposure to Diesel Exhaust, August 1988

U. S. Environmental Protection Agency

Asbestos Hazard Emergency Response Act (40 CFR Part 763)

National Emissions Standards for Hazardous Pollutants (40 CFR Part 61)

U. S. Department of Housing and Urban Development

Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (1995, 1997, 2012)

U. S. Occupational Safety and Health Administration

Standard for General Industry: 29 CFR 1910

OSHA Clarification Letter – Clarification of "as free as practicable" of lead contamination under 29 CFR 1926.62, 13 January 2003.

APPENDIX A

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SHOP DRAWING



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23 March 2010 FOIA Requested Record #J-15-0085 (MA) Released by National Guard Bureau Page 3456 of 3473



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APPENDIX B

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PERSONNEL LIST

List of Full-Time Personnel was not available at the time of the survey.

APPENDIX C

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ANALYTICAL RESULTS

AMA Analytical Services, Inc.

A Specialized Environmental Laboratory

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CERTIFICATE OF ANALYSIS

AIHA LAP, LLC ACCREDITED LABORATORY INCUSTRIAL HYGIENE, ENVIRONMENTAL LEAD & ENVIRONMENTAL MICROBIOLOGY ISONEC 17025-2005 www.aihastoreditediabs.org LAS #100470

Client:	National Guard Bureau	Job Name:	MA ARNG	Chain Of Custody:	515914
Address:	301-IH Old Bay Lane, Attn: ARNG-CJG-P, State Military Reservation	Job Location:	44 Salisbury Street, Worcester, MA	Date Submitted:	5/17/2013
	Havre de Grace, Maryland 21078	Job Number:	Worcester, Salisbury RC	Person Submitting:	Non-Responsive
	Non-Responsive	P.O. Number:	W912K6-09-A-0003	Date Analyzed:	5/23/2013 Report Date: 5/23/2013
Attention:					

Summary of Atomic Absorption Analysis for Lead

Page 1 of 2

AMA Sample Number	Client Sample Number	Analysis Type	Sample Type	Air Volume (L)	lume Area Wiped Reporting .) (ft²) Limit		Air Volume Area Wiped Reporting Total ug Final Result (L) (ft²) Limit Image: Second				ult	Comments		
13063185	Worcester,SalisburyR C Wipe-01	Flame	Wipe	****	0.108	110	ug/ft²	38	350	ug/ft²				
13063186	Worcester,SalisburyR C Wipe-02	Flame	Wipe	****	0.108	110	ug/ft ²	<12	<110	ug/fl²				
13063187	Worcester,SalisburyR C Wipe-03	Flame	Wipe	****	0.108	110	ug/ft²	130	1200	ug/fl²				
13063188	Worcester,SalisburyR C Wipe-04	Flame	Wipe	****	0.108	110	ug/ft²	150	1400	ug/fl²				
13063189	Worcester,SalisburyR C Wipc-05	Flame	Wipe	****	0.108	110	ug/ft²	840	7800	ug/ft²				
13063190	Worcester,SalisburyR C Wipe-06	Flame	Wipe	****	0.108	110	ug/ft²	96	890	ug/ft²				
13063191	Worcester,SalisburyR C Wipe-07	Flame	Wipe	***	0.108	110	ug/ft²	230	2100	ug/ft²				
13063192	Worcester,SalisburyR C Wipe-08	Flame	Wipe	****	0.108	110	ug/ft²	54	500	ug/ft²				
13063193	Worcester,SalisburyR C Wipe-09	Flame	Wipe	****	0.108	110	ug/ft²	80	740	ug/ft²				
13063194	Worcester, SalisburyR C Wipe-10	Flame	Wipe	****	0.108	110	ug/ft ²	19	180	ug/ft²				
13063195	Worcester, SalisburyR C Wipe-FB	Flame	Wipe Blank	****	N/A	12	ug		<12	ug				

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these Laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from us. Sample types, locations, and collection protocols are based upon the information provided by the persons submitting them and, unless collected by personnel of these Laboratories, we expressly disclaim any knowledge and liability for the accuracy and completeness of this information. Residual sample material will be discarded in accordance with the appropriate regulatory guidelines, unless otherwise requested by the client. This report must not be used to claim, and does not imply product certification, approval, or endorsement by NY ELAP, AIIIA, or any agency of the Federal Government. All rights reserved. AMA Analytical Services, Inc.

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AMA Analytical Services, Inc.

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Attention:

A Specialized Environmental Laboratory

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CERTIFICATE OF ANALYSIS

AIHA LAP, LLC ACCREDITED LABORATORY INDUSTRIAL HYGIENE, ENVIRONMENTAL LEAD & ENVIRONMENTAL MICROBIOLOGY ISOMEC 17025-2005 Wyw.anhanecorditectiate.org

LAS#100470

Client:	National Guard Bureau	Job Name:	MA ARNG	Chain Of Custody:	515914		
Address:	301-IH Old Bay Lane, Attn: ARNG-CJG-P, State Military Reservation	Job Location:	44 Salisbury Street, Worcester, MA	Date Submitted:	5/17/2013		
	Havre de Grace, Maryland 21078	Job Number:	Worcester, Salisbury RC	Person Submitting:	Non-Respo	onsive	
		P.O. Number:	W912K6-09-A-0003	Date Analyzed:	5/23/2013	Report Date:	5/23/2013

Summary of Atomic Absorption Analysis for Lead

Page 2 of 2

AMA Sample Number	Client Sample Number	Analysis Type	Sample Type	Air Volume (L)	Area Wiped (ft²)	Rep L	orting imit	Total ug	Final Res	ult	Comments
13063196	Worcester,SalisburyR C LP-01	Flame	Paint Chip	***	N/A	0.0069	%Pb		0.081	%Pb	
13063197	Worcester, SalisburyR C LP-02	Flame	Paint Chip	****	N/A	0.0076	%Pb		0.21	%Pb	
13063198	Worcester, SalisburyR C LP-03	Flame	Paint Chip	****	N/A	0.0052	%Pb	÷.	0.015	%Pb	
13063199	Worcester,SalisburyR C LP-04	Flame	Paint Chip	****	N/A	0.0067	%Pb		3.2	%Pb	

Analysis Method for Flame: Air, Wipes, Paints, and Soil/Solids: EPA 600/R-93/200(M)-7000B; Water: SM-3111B Analysis Method For Furnace: Air, Wipes, Paints, and Soil/Solids: EPA 600/R-93/200(M)-7010; Water: SM-3113B N/A = Not Applicable mg/Kg = parts per million (ppm) on a dry weight basis mg/L = parts per million (ppm) %Pb = percent lead on a dry weight basis ug = micrograms ug/L = parts per billion (ppb)

Note: All samples were received in good condition unless otherwise noted.

Note: All results have two significant digits. Any additional digits shown should not be considered when interpreting the result.

Air and Wipe results are not corrected for any blank results Final results for air and wipe samples are based on client supplied information nor verified by this laboratory.

All results are to be considered preliminary and subject to change unless signed by the Technical Director or Deputy. See QC Summary for analytical results of quality control samples associated with these samples.



This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these Laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from us. Sample types, locations, and collection protocols are based upon the information provided by the persons submitting them and, unless collected by personnel of these Laboratories, we expressly disclaim any knowledge and liability for the accuracy and completeness of this information. Residual sample material will be discarded in accordance with the appropriate regulatory guidelines, unless otherwise requested by the client. This report must not be used to claim, and does not imply product certification, approval, or endorsement by NY ELAP, AIHA, or any agency of the Federal Government. All rights reserved. AMA Analytical Services, Inc.

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APPENDIX D

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PHOTOGRAPHIC LOG

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Client Name: MA ARNG- W Salisbury RC	/orcester-	Site Location: 44 Salisbury St., Worcester, MA	Project No. 39743799
Photo No. 1 Description: Unmarked ho of drain line ir fourth floor.	Date: 5/15/13 le at base floor on		



 Page 1 of 2
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APPENDIX E

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RECOMMENDATIONS FOR SURFACE LEAD DUST IN ARMORIES

Subject: Recommendations for Surface Lead Dust in Armories

- 1. In armories that do not contain childcare facilities, the National Guard Bureau (NGB) Region North Industrial Hygiene Office recommends cleaning the areas in which sample results are greater than 200 micrograms per square foot (µg/ft²). If a special function will be held in which children will be present in this facility, consider thoroughly cleaning the areas that will be accessible to children prior to the function. This guidance is based on professional judgment, risk assessments, adaptation of Occupational Safety and Health Administration (OSHA) guidance, and feasibility of cleaning to a certain level.
 - a. Environmental Protection Agency (EPA) standards (40 Code of Federal Regulations (CFR) 745.227(h)(3)) are not directly applicable because they are criteria for dust-lead hazards developed for floors (40 μ g/ft²) and windowsills (250 μ g/ft²) in residential dwellings and child occupied facilities. A child occupied facility is defined as a building, or portion of a building, constructed prior to 1978, visited regularly by the same child, 6 years of age or under, on at least two different days within any week (Sunday through Saturday period), provided that each day's visit lasts at least 3 hours and the combined weekly visit lasts at least 6 hours, and the combined annual visits last at least 60 hours. Most of the wipe samples in armories were collected in undisturbed areas and therefore, results are worst case scenarios and do not correlate to these standards.
 - b. OSHA has no specific requirement for work area surfaces. The lead standard (29 CFR 1910.1025(h)) states that all surfaces shall be maintained as free as practicable of accumulations of lead dust. In workplaces where lead dust is generated, surface levels may be much higher, but personnel exposures can be controlled by limiting airborne lead levels and following good cleanup and hygienic practices.
 - c. OSHA used to cite a level of 200 μ g/ft² in their Technical Manual and 29 CFR 1926.62 as guidance to its own inspectors for evaluating the cleanliness of lunchroom and locker room surfaces that are supposed to be kept as clean as possible.
 - d. In a report titled Derivation of Wipe Surface Screening Levels for Environmental Chemicals, the US Army Center for Health Promotion and Preventive Medicine (USACHPPM) has determined that 200 μ g/ft² is a safe surface contamination level. They have also applied these standards as the decontamination levels for surfaces in administrative offices.
 - e. It should be noted that levels above these recommendations do not necessarily mean there is a significant hazard to workers who are following good cleaning and hygienic practices since there is no

correlation between wipe and air samples. Rather, we recommend these levels as a precautionary measure.

- 2. The NGB Occupational Health Branch is developing guidance for armories that are used as childcare facilities. All states will receive this guidance when it is completed. In the interim, we recommend the following actions:
 - a. Clean all areas that will be accessible to children to the EPA dust-lead standard for children 6 years of age or under (40 μ g/ft² on floors and 250 μ g/ft² on windowsills).
 - b. Refer to the local authorities' regulations since they can be more stringent than federal regulations.
 - c. Post signs in the area to inform people of the presence of lead dust and its effects.
 - d. If soldiers clean weapons in the facility change the policy so that they cannot clean their weapons in the facility, or if they are allowed to clean their weapons indoors, they must clean the area by wet wiping and mopping the area when they are done.
 - e. If the paint is peeling, contact the state Environmental Office to test for lead content and provide recommendations.
- 3. Air samples collected on individuals in the armory were well below OSHA's permissible exposure limit for lead (29 CFR 1910.1025(c)) of 0.05 milligrams per cubic meter (mg/m³) averaged over an 8-hour day. Therefore, based on these conditions there is currently no overexposure to personnel from lead dust in this building.