Former National Guard Armory
Wetmuka, Oklahoma

Remediation Final Report

Prepared by:
Department of Environmental Quality
707 North Robinson
Oklahoma City, Oklahoma 73101

DEQ
OKLAHOMA
DEPARTMENT OF ENVIRONMENTAL QUALITY
... for a clean, attractive, prosperous Oklahoma

The Oklahoma Department of Environmental Quality (DEQ) is pleased to present the Wetumka Public Schools with the Final Remediation Report for the former Wetumka Armory.

DEED NOTICE

A Notice of Remediation has been filed in the county courthouse and is included in this report. It summarizes remediation performed at the former Wetumka Armory and describes continuing operation and maintenance and land use restrictions. This completes the DEQ cleanup of the property. For more detail on the activities described below, see enclosed reports.

ASBESTOS REMEDIATION

DEQ and its contractors completed the following activities:

- Asbestos inspection, including:
  - Asbestos containing floor tile and mastic.
- Asbestos Abatement, including:
- Removal of floor tile and mastic.

TARGETED BROWNFIELD ASSESSMENT

In December 2010, DEQ provided a Phase I Targeted Brownfield Assessment to the City of Oklahoma City. A copy of this report is available at http://www.deq.state.ok.us/lpdnew/scapIndex.htm

LEAD REMEDIATION

DEQ and its contractors completed the following activities:

- Lead-based paint (LBP) inspection
- Lead dust wipe sampling
- LBP abatement, including:
  - Scraping and sealing walls, lintels, and door frames containing LBP
  - Removal and replacement of doors containing LBP
  - Removal and replacement of windows containing LBP
- Lead dust abatement, including:
  - HEPA vacuuming and wet washing of floors in the building
- Proper disposal of associated waste

DEQ
OKLAHOMA
DEPARTMENT OF ENVIRONMENTAL QUALITY

1. Deeds and Legal Documents
2. Maintenance Plan
3. Inspection Reports
4. Scope of Work
5. Final Abatement Reports
6. Confirmation Sampling

DEEDS AND LEGAL DOCUMENTS

MEMORANDUM OF AGREEMENT
BETWEEN
THE OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY AND
THE WETUMKA PUBLIC SCHOOLS

1. PURPOSE: The purpose of this Memorandum of Agreement (MOA) is to establish a mutual framework governing the respective organizational relationships, responsibilities, and activities between the Oklahoma Department of Environmental Quality (DEQ) and the Wetumka Public Schools (School). This agreement is primarily for occupancy and access to the local armory building at 22 West St. Louis, Wetumka, Oklahoma before and during remediation. The areas of responsibility and relationships presented herein provide the concept under which the program will be executed.

2. BACKGROUND: There is a strong likelihood that the building contains asbestos and/or lead based paint. If an indoor firing range is located in the building, high concentrations of lead will be present. The DEQ plans to confirm the presence of hazards using sampling and analysis and to abate the asbestos, abate the lead based paint, and remediate the firing range.

3. RESPONSIBILITIES OF THE PARTIES: The following paragraphs identify responsibilities of the parties under this MOA:

The School's Responsibilities:

- Provide keys and access to DEQ and its contractors as needed to evaluate and remediate building;
- Restrict occupant's use/presence in the building before and during remediation, as requested. This could include removing equipment, vehicles and other items that may be in the way of cleanup activities; and
- Coordinate with DEQ during the remediation process.

The DEQ's Responsibilities:

- Provide regular progress reports to the School;
- Mitigate hazards to remedial goals with minimal use restrictions;

- Supply the School with a final report of all DEQ activities;
- File mandatory Notice of Remediation, i.e. deed notice;
- Notify the School of ongoing operations and maintenance issues, if any; and
- Perform armory transfer ceremony, if appropriate.

4. BUILDING USE RESTRICTIONS BEFORE CLEANUP

- No access to or use of the indoor firing range, if one is located there;
- No residential use;
- No use as a child occupied or elder care facility; and
- No use of the property without DEQ approval.
- No use that would allow exposure to contaminants.

5. RESPONSIBILITY FOR COSTS: The DEQ is responsible for costs associated with site characterization and remediation in the armory building. The DEQ is not responsible for costs associated with insuring, maintenance and mowing of the property. The DEQ is not responsible for structural issues, replacement of roofing systems, mold issues, or building security. This MOA is expressly contingent upon funding and shall terminate without penalty either in whole or in part if funds are not made available to the Site Cleanup Assistance Program.

6. PUBLIC INFORMATION: The School is generally responsible for all public information. However, the DEQ may make public announcements and respond to all inquiries relating to the characterization and remediation of the building. The School and the DEQ shall make their best efforts to give the other party advance notice before making any public statement regarding work contemplated, undertaken, or completed pursuant to this MOA. DEQ will prepare a press release in advance of the armory ceremony, if one is held.

7. COMMUNICATIONS AND COORDINATION REPRESENTATIVES: To provide consistent and effective communication between the DEQ and the School, each party shall appoint a principal representative to serve as its central point of contact on matters relating to this MOA.

For the DEQ:

Brian Stanila
Program Specialist
Box 1677, OKC, OK 73101-1677
405-702-5138
Brian.Stanila@deq.ok.gov

For the School:

Mr. Mike Jaggars
416 S. Tiger
Wetumka, OK 74883
405-452-5150

8. MISCELLANEOUS: This MOA shall not affect any pre-existing or independent relationships or obligations between the parties.

9. EFFECTIVE DATE: This Agreement becomes effective upon the date of the signature of the Executive Director of the DEQ and will remain in effect until the armory building has been remediated and released for occupancy by the DEQ.

10. ACCEPTANCE OF AGREEMENT: The parties acknowledge and agree that they have read the Agreement and that they accept the responsibilities with which they are charged. The School agrees to comply with the building use restrictions before cleanup and understands that failure to comply with said restrictions or failure to adhere to the responsibilities enumerated in this Agreement may result in delayed remediation.

Mike Jaggars
Superintendent
Wetumka Public Schools

10/11/2012
DATE

Steven A. Thompson
Executive Director
Department of Environmental Quality

12-11-12
DATE

418

4381

GEO. D. BARNARD & CO., ST. LOUIS.

STATE OF OKLAHOMA, }
Hughes County. } ss.

KNOW ALL MEN BY THESE PRESENTS:- That The Board of Trustees Of Incorporated Town of Wetumka Hughes County, Oklahoma, through their Fuly Elected and Qualified President of the Board and Clerk of same

part ies of the first part, in consideration of the sum of Fifteen Thousand & No/100 ($15000.00) DOLLARS, in hand paid, the receipt of which is hereby acknowledged, do hereby Grant, Bargain, Sell and Convey unto Board of Directors of School District No 5 of Hughes County Oklahoam, parties of tje second part, the following described real property and premises, situate in Wetumka, Hughes County, State of Oklahoma, to-wit:

Lots one, two and three, (1,2,& 3,) in Block Fifty Two (52) in the Incorporated Town of Wetumka, Oklahoma, as laid off and platted by the Town Sight, Commission, and Approved by the Secretary of the Interior, Nov. 13th. 1901, and Lots, One, two, three, four, five, six, seven, eight, Nine, ten, eleven and Twelve, (1,2,3,4,5,6,7,8,9,10,11,& 12,) in block Sixty One, (61), of the Tiger Addition to said Town as platted and Filed in Wewoka. 13th Recording District, in 1905.

together with all the improvements thereon and the appurtenances thereunto belonging, and Warrant the title to the same.

TO HAVE AND TO HOLD Said described premises unto the said part ies of the second part, and to their successors ~~heirs and assigns, forever,~~ in office forever, free, clear and discharged of and from all former grants, charges, taxes, judgments, mortgages and other liens and incumbrances of whatsoever nature,

Sealed
Signed and delivered this 1st day of September 1909

WITNESSES:

Seal of the Incorporated Town of WETUMKA, HUGHES COUNTY, OKLAHOMA.

John D. Reed
President of Board of Trustees

M.L.Nichols
Town Clerk, Incorporated Town of Wetumka, Hughes County, Okla.

STATE OF OKLAHOMA, }
HUGHES County. } ss.

BEFORE ME, a Notary Public in and for said County and State, on the 1st day of September 1909, personally appeared John D. Reed, President Board of Trustees Inc. Town of Wetumka and M.L.Nichols, Town Clerk, and Custodian of the City Seal known by me to be such city officers, and also to me known to be the identical person s who executed the within and foregoing instrument, and acknowledged to me that they executed the same as their free and voluntary act and deed of said Board of Trustees for the uses and purposes therein set forth.

WITNESS my hand and official seal, the day and date above written.

(SEAL)

Nat Williams
Notary Public.

My commission expires July 26th 1910 191

STATE OF OKLAHOMA, }
County. } ss.

Notary Public.

My commission expires 191

This Instrument was filed for record on the 15 day of December A. D. 1916, at 9 o'clock A.M.

A.J.Johnson
County Clerk.

By Deputy.

2774 WARRANTY DEED

THIS INDENTURE, made and entered into this 16th day of September, 1935, by and between the Board of Education of the City of Wetumka, of the State of Oklahoma, acting by and through R. L. Anderson, the duly elected, qualified and acting President of the Board of the Board of Education of the City of Wetumka, of the State of Oklahoma, party of the First Part, and the State of Oklahoma, acting as Trustee for the Oklahoma National Guard, party of the second part, Witnesseth:

That, Whereas, on the 16th day of September, 1935, the said Board of Education of the City of Wetumka, of the State of Oklahoma, made an Order by proper resolution, authorizing the said party of the first part to sell certain real estate belonging to the said Board of Education of the City of Wetumka, of the State of Oklahoma, to the said second party, and directing the said President of the Board of Education of the City of Wetumka, of the State of Oklahoma, to execute and deliver a deed thereto to the said second party.

NOW, THEREFORE, KNOW ALL MEN BY THESE PRESENTS: That the Board of Education of the City of Wetumka, of the State of Oklahoma, acting by and through R. L. Anderson, the duly elected, qualified and acting President of the Board of Education of the City of Wetumka, of the State of Oklahoma, party of the first part in consideration of the sum of One Dollar and other good and valuable considerations in hand paid, the receipt of which is hereby acknowledged, does grant, bargain, sell and convey unto the State of Oklahoma, for the use and benefit of the Oklahoma National Guard, party of the second part, the following described real property and premises situated in Hughes County, State of Oklahoma, to-wit:

> Beginning at a point on the North line of Lot Six (6) in Block Fifty Two (52) of the original Townsite of the City of Wetumka, of the State of Oklahoma, Forty (40) feet West of the Northeast corner of said Lot, running thence West One Hundred Fifty (150) feet; thence South two hundred Twenty (220) feet; thence East One Hundred Fifty (150) feet; thence North Two Hundred Twenty (220) feet to the place of beginning.

together with all improvements thereon and the appurtenances thereunto belonging, and warrant the title to same.

TO HAVE AND TO HOLD the said described premises unto the said party of the second part, its successors and assigns forever free, clear and discharged of and from all former grants taxes, judgments, mortgages, and other liens and incumbrances of whatsoever nature.

Signed and delivered this 16th day of September, 1935.

No Seal
Attest: H. L. Jackson,
Clerk of the Board of Education
of the City of Wetumka, of
the State of Oklahoma.

THE BOARD OF EDUCATION OF THE CITY OF WETUMKA,
OF THE STATE OF OKLAHOMA.
By: R. L. Anderson,
President.

STATE OF OKLAHOMA,)
) SS
HUGHES COUNTY,)

Before me, the undersigned, a Notary Public, within and for the above named County and State, on this the 16th day of September, 1935, personally appeared Mr. R. L. Anderson to me known to be the duly elected, qualified and acting President of the Board of Education of the City of Wetumka, of the State of Oklahoma, and the identical person who executed the within and foregoing instrument, and acknowledged to me that he executed the within and foregoing instrument, and acknowledged to me that he executed the same in his capacity as President of the Board of Education of the City of Wetumka, of the State of Oklahoma, as his free and voluntary act and deed as such President of said Board and as the free and voluntary act and deed of the Board of Education of the City of Wetumka, of the State of Oklahoma, for the uses and purposes therein set forth.

Witness my hand and seal the date first above written.

Nita Booker,
Notary Public.

(Seal)
My commission expires:
April 19, 1938.

Accepted by the undersigned, Charles F. Barrett, the Adjutant General of the State of Oklahoma, pursuant to Chapter 25, House Bill No. 226, of the Session Laws of the State of Oklahoma for 1931.

This 17 day of September, 1935.

Chas. F. Barrett,
Adjutant General,
State of Oklahoma.

I, E. W. Marland, Governor of the State of Oklahoma, do hereby approve the above and foregoing acceptance, this 18 day of September, 1935.

E. W. Marland,
Governor, STATE OF OKLAHOMA.

Filed for record May 4, 1936 at 8 o'clock A.M.

A. C. Bailey,
County Clerk.

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00741

NOTICE OF REMEDIATION
FORMER WETUMKA ARMORY
WETUMKA, OKLAHOMA

LEGAL BASIS FOR NOTICE: The Oklahoma Department of Environmental Quality (DEQ) hereby files this Notice of Remediation pursuant to Oklahoma Statutes, 27A § 2-7-123 (C). This Notice does not grant any right to any person not already allowed by law and shall not be construed to authorize or encourage any person or other legal entity to cause or increase pollution, to avoid compliance with state or federal laws and regulations regarding pollution or to escape responsibility for maintaining environmentally sound operations.

The DEQ may take administrative or civil action to recover costs or to compel compliance with the Land Use Restrictions and to prevent damage to or interference with the Engineering Controls and Continuing Operation, Maintenance of said Engineering Controls herein described.

The Land Use Restrictions, Engineering Controls and Continuing Operation, Maintenance of said Engineering Controls shall apply to the Affected Property and to persons who own and/or use the Affected Property until such time as the DEQ files a subsequent Notice of Remediation that changes or removes one or more of them. Activities that cause or could cause damage to the Remedy or the Engineering Controls or recontamination of soil or groundwater are prohibited.

REASON FOR NOTICE: The below described Affected Property was contaminated with materials that required remediation pursuant to state and federal environmental laws and regulations. Sampling performed by DEQ contractors, conducted on June 5, 2012, indicated that there was asbestos, lead-based paint, and lead dust in the building.

AFFECTED PROPERTY: The Affected Property is the former Wetumka Armory located at 220 St. Louis Avenue, City of Wetumka, Hughes County, Oklahoma, 74883.

The legal description is as follows:

Lots one, two and three, (1, 2, & 3) in Block Fifty Two (52) in the Incorporated Town of Wetumka, Oklahoma, as laid off and platted by the Town Sight Commission, and Approved by the Secretary of the Interior, Nov. 13th, 1901, and Lots one, two, three, four, five, six, seven, eight, nine, ten, eleven, and twelve (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, & 12) in block Sixty One, (61), of the Tiger Addition to said Town as platted and Filed in Wewoka, 13th Recording District, in 1905.

REMEDY: Remediation activities (Remedy) at the Affected Property included abatement of asbestos, lead-based paint and lead dust. The remedy was completed on October 11, 2013.

For more detailed information please refer to *Former National Guard Armory Wetumka, Oklahoma Remediation Final Report.* To obtain a copy of the report, contact:

Oklahoma Department of Environmental Quality
Central Records

Mailing Address
P.O. Box 1677
Oklahoma City, Oklahoma 73101

Physical Address
707 N Robinson
Oklahoma City, OK 73102

Electronic Address
http://www.deq.state.ok.us/lpdnew/scapIndex.htm

DISCLAIMER

(A) Lead: DEQ did not test every painted surface inside and outside of the building, therefore there is a potential for lead-based paint at the affected property.

(B) Asbestos: DEQ did not test all building materials inside and outside of the building, therefore there is a potential for asbestos at the affected property.

CONTINUING OPERATION, MAINTENANCE AND MONITORING

(A) Lead-based paint encapsulant: Lead-based paint encapsulant was applied over lead-based paint on non-friction surfaces. These areas should be periodically inspected and maintained as appropriate.

(B) Sealant: Following cleanup, sealant was applied to the Indoor Firing Range (IFR) and room floors where lead-based paint abatement was performed. Sealant should be inspected on a periodic basis and maintained as appropriate.

LAND USE RESTRICTIONS: The land use restrictions at the above-described Affected Property are:

a. No residential use of the property by children age 6 or under. Residential use is defined as having a child present at the Affected Property for more than sixteen (16) hours a day in excess of 30 days per year.

a. The IFR shall not be used as a child occupied facility. Child-occupied facilities include, but are not limited to, day-care centers, preschools, and kindergarten classrooms where a child 6 or under spends at least 6 hours per week.

These land use restrictions apply to the entirety of the Affected Property described herein above.

CHANGING LAND USE RESTRICTIONS: Changes to land use restrictions must be approved by the DEQ or its successor agency. The person requesting the change in land use must demonstrate to the DEQ's satisfaction that contamination at the site has reached levels appropriate for the proposed new land uses and that further remediation is not necessary or that additional institutional or engineering controls are adequate to achieve levels protective of human health and the environment for the proposed uses.

The DEQ may require oversight costs, work plans, sampling, reports, and public participation as part of its review of the new information to support the requested change in land use restrictions. The person requesting the change will be required to follow agency procedures effective at the time of the request.

The DEQ at its discretion may determine, based on the new information submitted, that contaminants are present at the Site at levels that will not pose a risk to human health or the environment if the new land use restrictions being requested are allowed. Upon making this determination, the DEQ will file a recordable notice of remediation pursuant to state law in the land records in the in the office of the county clerk where the Site is located designating the new land use restrictions.

This Notice of Remediation and the restrictions and requirements contained herein run with the land and no change of ownership of the Affected Property will change the Land Use Restrictions.

Scott A. Thompson, Executive Director
Oklahoma Department of Environmental Quality

1-29-14
Date

ACKNOWLEDGMENT

STATE OF OKLAHOMA
COUNTY OF OKLAHOMA

Before me, a Notary Public, in and for said County and State, on this 29 day of January 2014, personally appeared Scott A. Thompson to me known to be the identical person who executed the within and foregoing instrument and acknowledged to me that executed the same as free and voluntary act and deed for the uses and purposed therein set forth. In Testimony Whereof, I have hereunto set my hand and official seal the day and year above written.

My Commission expires:

3-15, 2017.

Notary Public

LINDA YARBER NOTARY # 13002580 EXP. 03/15/17 PUBLIC STATE OF OKLAHOMA

STATE OF OKLAHOMA HUGHES COUNTY, SS
Filed for record
At 12:40 o'clock P M., and recorded in
FEB 18 2014
Book 1281 at Page 30
Joquita Watton, County Clerk
Deputy

MAINTENANCE PLAN

MAINTENANCE PLAN
FORMER WETUMKA ARMORY
WETUMKA, OKLAHOMA

The Armory located at 220 St. Louis Avenue, Wetumka, Oklahoma was contaminated with materials that required remediation pursuant to State and Federal environmental laws and regulations. Please refer to Attachment 1 for land use restrictions. Sampling performed by DEQ contractors, conducted on June 5, 2012 indicated that there was asbestos, lead-based paint, and lead dust in the building. Remediation activities at the Affected Property included abatement of asbestos, lead-based paint, and lead dust. The remedy was completed on October 11, 2013. The following maintenance plan is to be completed by the owner of the Affected Property. DEQ recommends inspection of remediated areas every 5 years. During site inspections the owner should note any signs of disrepair or improper maintenance. Continuing operation, maintenance and monitoring should include:

1. Firing Range – Walls, floor and ceiling of indoor firing range were cleaned and sealed with acrylic sealant and construction grout to remediate surfaces below 40µg/SF for lead. These surfaces need to be resealed if acrylic sealant shows signs of deterioration, damage, or flaking.

2. All window lintels and down spouts were scraped and encapsulated with lead-based paint encapsulant. Window sills were remediated below 250µg/SF lead and encapsulated with a lead-based paint encapsulant. These surfaces need to be re-encapsulated if lead-based paint encapsulant shows signs of deterioration, damage, or flaking.

3. Door frames, handrails, and stairs had lead-based paint removed and were encapsulated. These surfaces need to be re-encapsulated if lead-based paint encapsulant shows signs of deterioration, damage, or flaking. See Attachment 2 for Wetumka Armory Floor Plan Map.

4. The floors of rooms 17, 19, 28, and 29 were cleaned and sealed with acrylic sealant to remediate surfaces below 40µg/SF for lead. These surfaces need to be resealed if acrylic sealant shows signs of deterioration, damage, or flaking. See Attachment 2 for Wetumka Armory Floor Plan Map.

Note – A list of DEQ approved acrylic sealant and elastomeric encapsulants is attached (Attachment 3). DEQ did not test every painted surface and all building materials inside and outside of the building, therefore a potential for lead-based paint and asbestos at the affected property.

If you have any questions or concerns feel free to contact me at (405) 702-5138.

Sincerely,

Brian Stanila
Environmental Programs Specialist
Site Cleanup Assistance Program
DEQ Land Protection Division

ATTACHMENT 1

Land use Restrictions

LAND USE RESTRICTIONS: The land use restrictions at the above-described Affected Property are:

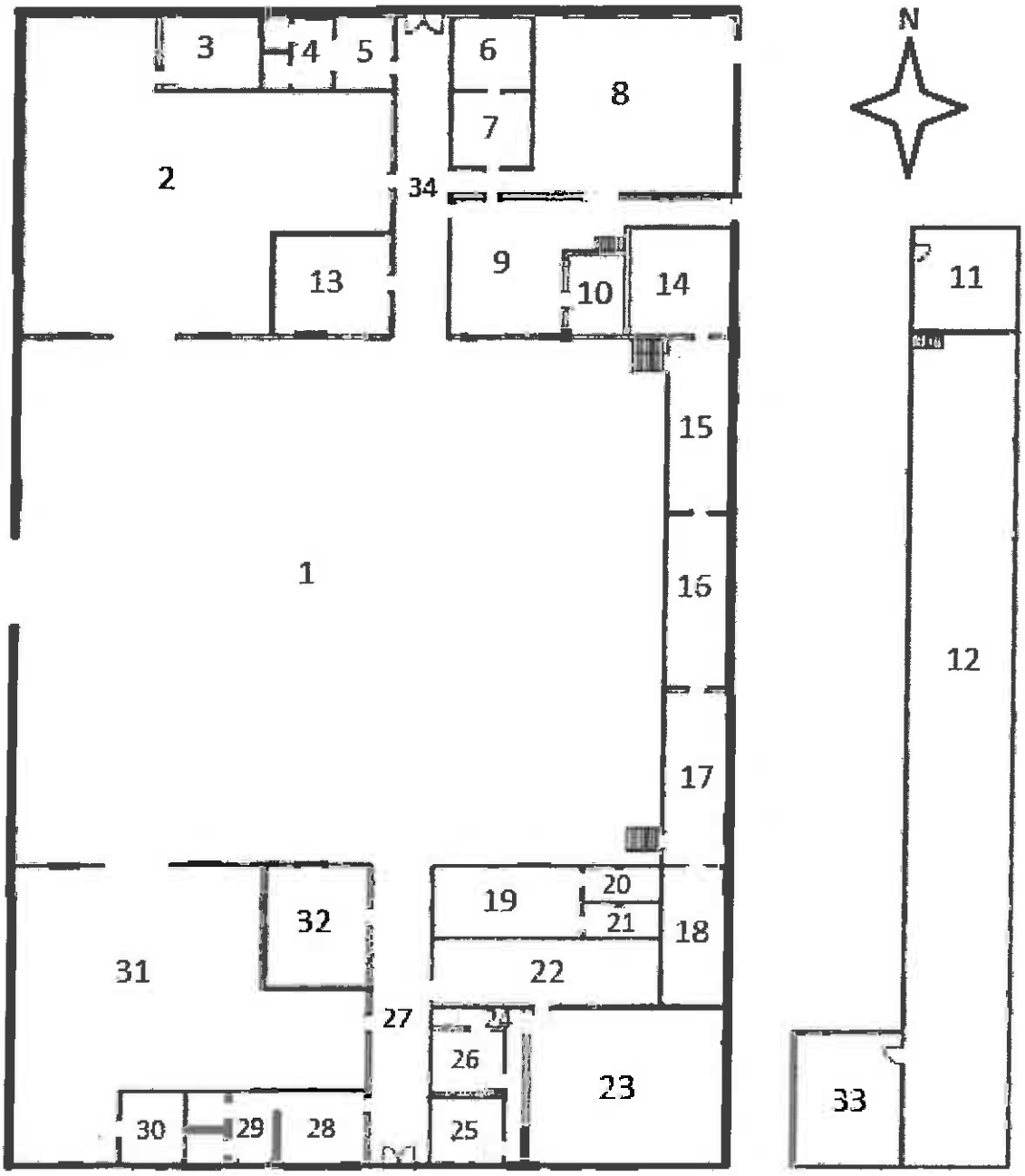
a. No residential use of the property by children age 6 or under. Residential use is defined as having a child present at the Affected Property for more than sixteen (16) hours a day in excess of 30 days per year.

a. The IFR should not be used as a child occupied facility. Child-occupied facilities include, but are not limited to, day-care centers, preschools, and kindergarten classrooms where a child 6 or under spends at least 6 hours per week.

These land use restrictions apply to the entirety of the Affected Property described herein above.

ATTACHMENT 2

Wetumka Floor Plan Map



ATTACHMENT 3

DEQ Approved Sealants and Encapsulants List

Acrylic Sealant approved by DEQ

KM-669 Acrylic

Lead-Based Paint Encapsulants approved by DEQ

Encapsulant Manufacturer	Encapsulant Product(s)
Coronado Paint Company	LEAD BLOCK™
Dumond Chemicals	LEAD STOP™
Dynacraft Industries, Inc.	Back to Nature Protect-A-Coat
Encap Systems Corporation	EncapSeal™ I
Encap Systems Corporation	EncapSeal™ II
Fiberlock Technologies, Inc.	Child GUARD interior/exterior
Fiberlock Technologies, Inc.	L-B-C® Type III
Global Encasement, Inc.	LeadLock™
Grace Construction Products	Lead Seal®
Grace Construction Products	Barrier Coat® II
Insl-x Products Corporation	INSL-CAP™
SAFE Encasement Systems	SE-120 Protective Skin
Specification Chemicals, Inc.	NU-WAL® #2500 Coating

INSPECTION REPORTS

GMR & Associates, Inc.

Engineering and Environmental Consultants

July11, 2012

Mr. Brian D. Stanila
Land Protection Division
Oklahoma Department of Environmental Quality
707 North Robinson
Oklahoma City, Oklahoma 73101

REF: Asbestos, Lead-Based Paint, and Lead in Settled Dust Inspection Reports
Wetumka Armory
Wetumka, Oklahoma

Dear Mr. Stanila:

GMR is pleased to attach one (1) Final copy each of our referenced inspection reports pertaining to the Wetumka Armory.

As mentioned previously, based on the laboratory reports, asbestos containing materials (ACMs), lead in settled dust and lead-based paint (LBP) were indicated in the Armory building. Non-friable asbestos floor tile and/or mastic material were indicated in Rooms 4, 5, 9, and 24. We recommend removal of the ACM prior to any renovation or demolition work in the affected rooms. Numerous floors in rooms throughout the Armory building contained concentrations of lead in dust in excess of EPA/HUD guidelines of 40 micrograms per square foot ($\mu g/ft^2$). We recommend removing the lead in dust and re-sampling the affected floors after removal to assure that the post-removal concentrations are less than the recommended EPA/HUD concentration. In addition, numerous architectural components in the Armory building contain concentrations of LBP in excess of the EPA threshold of 1 mg/cm^2 lead. We present numerous interim control and/or removal options in the attached LBP Inspection report.

Please contact me if you have any questions at 405-528-7017, Ext. 302, or email at mreis@gmrinc.net if you have any questions.

Sincerely

Marty Reis
Vice President

Attachments

2520 West I-44 Service Road, Suite 200
P.O. Box 57827
Oklahoma City, OK 73157-7827
Telephone: 405-528-7017
Fax: 405-528-3346

SURVEY FOR LEAD IN SETTLED DUST

NATIONAL GUARD ARMORY
22 ST. LOUIS AVENUE
WETUMKA, OK 74883

GMR Project Number 2012042
June 18, 2012

Oklahoma Department of Environmental Quality
Land Protection Division
P. O. Box 1677
Oklahoma City, OK 73101-1677
Attention: Brian D. Stanila

GMR & Associates, Inc.
ENGINEERS, PLANNERS, ENVIRONMENTAL SPECIALISTS, HYDROGEOLOGISTS
2520 West I-44 Service Road, Suite 200
P.O. Box 57827
Oklahoma City, OK 73157-7827
Telephone: 405-528-7017
Fax: 405-528-3346

Prepared by:

A. E. Murray Jr.

Arless E. Murray, Jr.
President
LBP Inspector, OKRASR13458

Reviewed by:

J. M. Reis

James M. Reis
Vice President
Project Manager

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Appendices

SURVEY FOR LEAD IN SETTLED DUST
WETUMKA NATIONAL GUARD ARMORY
22 ST. LOUIS AVENUE
WETUMKA, OKLAHOMA 74883

1.0 EXECUTIVE SUMMARY

GMR & Associates, Inc. (GMR) has completed a Survey for Lead in Settled Dust (Survey) at the Wetumka National Guard Armory, 22 St. Louis Avenue, Wetumka, Oklahoma. The Survey was conducted on June 5, 2012 by Mr. Arless Murray of GMR.

The Survey included the collection of dust wipe samples from the floor in each room and from window sills located along the south, east and west sides of the building. The samples were collected using EPA/HUD wipe sampling protocols.

The laboratory analytical results of the floor and sill samples obtained at the armory were compared to EPA/HUD criteria. The EPA/HUD recommended maximum concentration for lead in settled dust is 40 micrograms per square foot ($\mu g/ft^2$) for floors and 250 $\mu g/ft^2$ for window sills.

The results of the wipe samples collected from the floors and window sills revealed the following:

- Lead concentrations in settled dust in excess of 40 $\mu g/ft^2$ were present on the floor in all rooms, **except for** Rooms 2, 6, 7, 8, 9, 10, 19, 22, 24, 27, 28, 29 and 31.

2.0 INTRODUCTION

On June 5, 2012, GMR personnel performed a Survey for Lead in Settled Dust (Survey) at the Wetumka National Guard Armory, 22 St. Louis Avenue, Wetumka, Oklahoma. The Wetumka Armory is owned by the Wetumka Public Schools, 410 East Benson, Wetumka, Oklahoma 74883. The purpose of the Survey was to identify the locations of lead contaminated dust in the Armory. The Survey was conducted by Mr. Arless Murray of GMR. The Lead-Based Risk Assessor Certification is provided in Appendix A. A Site Layout Map of the building showing room numbers and sampling locations is included in Appendix B.

3.0 BUILDING DESCRIPTION

Constructed in 1936, the Wetumka Armory building has a total area of 22,681 square feet and is comprised of one floor constructed over a concrete slab. The building consists of a large central drill room, with offices, bathrooms and workrooms located on the north, south and east. A firing range is located below ground level with stairs north of the stage.

4.0 METHODOLOGY

One (1) dust wipe sample was obtained in each room, except for the drill room, where three (3) samples were obtained. A template measuring one square foot was used to provide a known sampling area for collection of floor samples.

The laboratory analytical results of the floor and sill samples obtained at the armory were compared to EPA/HUD criteria. The EPA/HUD recommended maximum concentration for lead in settled dust is 40 micrograms per square foot ($\mu g/ft^2$) for floors and 250 $\mu g/ft^2$ for window sills.

5.0 FINDING SUMMARY OF LEAD IN SETTLED DUST

Laboratory results from the dust wipe samples are presented in Appendix C. Floor and sill samples having lead levels greater than EPA/HUD recommended maximum concentrations are shown in the table below. A layout of the building is presented in Appendix B.

Table 1
Positive Dust Wipe Locations

Sample No.	Lead Content ($\mu g/ft^2$)	Location	EPA/HUD Max. Level ($\mu g/ft^2$)
WE-001C	55.8	Room 1 - Floor	40
WE-003	338	Room 3 - Floor	40
WE-004	179	Room 4 - Floor	40
WE-005	115	Room 5 - Floor	40
WE-011	122	IFR Room 11 - Floor	40
WE-012A	558	IFR Room 12 - Floor	40
WE-012B	2,340	IFR Room 12 - Floor	40
WE-013	348	Room 13 - Floor	40
WE-014	62.4	Room 14 - Floor	40
WE-015	276	Room 15 - Floor	40
WE-016	997	Room 16 - Floor	40
WE-017	153	Room 17 – Floor	40
WE-018	73.5	Room 18 - Floor	40
WE-020	118	Room 20 - Floor	40
WE-021	77.1	Room 21 - Floor	40
WE-023	53.2	Room 23 - Floor	40
WE-025	108	Room 25 - Floor	40
WE-026	79.2	Room 26- Floor	40
WE-030	225	Room 30 - Floor	40
WE-033	3,310	IFR Room 33 - Floor	40
WE-034	314	Room 34 - Floor	40

IFR – Indoor Firing Range

6.0 RECOMMENDATIONS

The majority of the floors in the building had elevated levels of lead in settled dust. Therefore, it is recommended that all floors and window sills in the building be cleaned using the following procedure:

- HEPA vacuum the entire floor area and the window sills if applicable;
- Wet clean the entire floor area and the window sills if applicable;
- HEPA vacuum the entire floor area and the window sills if applicable; and
- Perform dust wipe sampling to assure that all lead contaminated dust has been reduced to acceptable levels.

7.0 BUDGETARY ABATEMENT COST ESTIMATE

Cleanup of Lead Dust on Affected Floors: ***$4,500.00-$5,500.00***

P:\2012042.001 Wetumka Armory, DEQ\Lead in Dust\2012042-Wetumka Armory-Lead in Settled Dust Survey Report.doc

Appendix A

Certifications

Department of Environmental Quality

This is to Certify That

ARLESS MURRAY JR

has met the specifications set forth in the Oklahoma Lead-Based Paint Abatement Act and is certified as a Lead-Based Paint

INSPECTOR/RISK ASSESSOR

Certification #: OKRASR13458

This certificate is valid from the date of issuance and expires as prescribed by law.

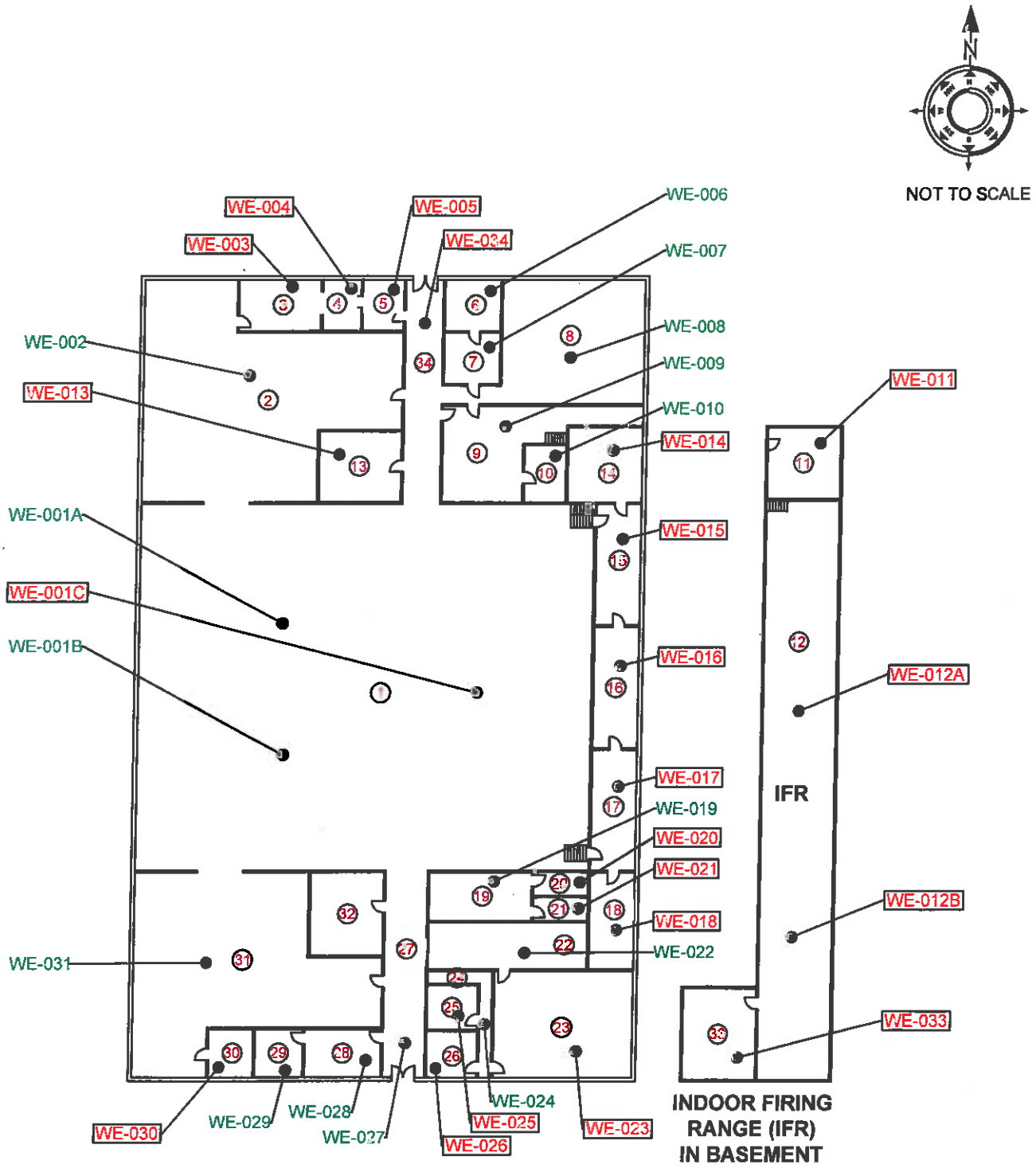
Issued on: **4/1/2010** Expires on: **3/31/2011**

Division Director
Air Quality Division

Environmental Programs Manager
Air Quality Division

Appendix B

Site Layout with Sample Locations



(#) DENOTES ROOM NUMBERS DEVELOPED FOR SURVEY
WE-### FLOOR SAMPLES WITH GREATER THAN OR EQUAL TO 40 µg/ft²
WE-### FLOOR SAMPLES WITH LESS THAN 40 µg/ft²

GMR
& Associates, Inc.
2520 West I-44 Service Road, Ste. 200
P.O Box 57827
Oklahoma City, OK 73157-7827
Phone: 405/528-7017, Fax: 405/528-3346

Figure 1
Dust Sampling Locations
Wetumka Armory
22 St. Louis Avenue
Wetumka, Oklahoma 74883

Appendix C

Laboratory Results and Chain of Custody Field Sheets

2033 Heritage Park Drive / Oklahoma City. OK 73120 / (405) 755-7272 / Fax (405) 755-2058

GMR & Associates, Inc.
PO Box 57827
Oklahoma City, OK 73157

Re: QuanTEM ID 208651

QuanTEM appreciates the opportunity to provide analytical testing services to you. Attached are your reports and other supporting documentation for the above referenced project.

Thank you for making QuanTEM your lab of choice. If you have any question concerning this or other reports please feel free to contact us at 800-822-1650.

We continually work to improve our service. Help us out by providing feed back on your experience at www.QuanTEM.com. Click on Service Survey and fill out the form. We look forward to hearing from you.

Respectfully,
QuanTEM Laboratories, LLC.

2033 Heritage Park Drive / Oklahoma City, OK 73120 / (405) 755-7272 / Fax (405) 755-2058

Environmental Chemistry Analysis Report

QuanTEM Set ID: 208651
Date Received: 06/06/12
Received By: Sherrie Leftwich
Date Sampled:
Time Sampled:
Analyst: BM
Date of Report: 6/8/2012

AIHA ID: 101352

Client: GMR & Associates, Inc.
PO Box 57827
Oklahoma City, OK 73157

Acct. No.: B216

Project: Wetumka Armory
Location: 22 W. St. Louis Ave, Wetumka, OK
Project No.: 2012042-001

QuanTEM ID	Client ID	Matrix	Parameter	Results	Reporting Limits	Units	Date/Time Analyzed	Method
001	WE-008	Wipe	Lead	<16.0	16	ug/sq. Ft.	06/08/12 15:20	W NIOSH 9100
002	WE-007	Wipe	Lead	<16.0	16	ug/sq. Ft.	06/08/12 15:20	W NIOSH 9100
003	WE-006	Wipe	Lead	22.4	16	ug/sq. Ft.	06/08/12 15:20	W NIOSH 9100
004	WE-009	Wipe	Lead	<16.0	16	ug/sq. Ft.	06/08/12 15:20	W NIOSH 9100
005	WE-010	Wipe	Lead	18.5	16	ug/sq. Ft.	06/08/12 15:20	W NIOSH 9100
006	WE-011	Wipe	Lead	122	16	ug/sq. Ft.	06/08/12 15:20	W NIOSH 9100
007	WE-003	Wipe	Lead	338	16	ug/sq. Ft.	06/08/12 15:20	W NIOSH 9100
008	WE-004	Wipe	Lead	179	16	ug/sq. Ft.	06/08/12 15:20	W NIOSH 9100
009	WE-005	Wipe	Lead	115	16	ug/sq. Ft.	06/08/12 15:20	W NIOSH 9100
010	WE-013	Wipe	Lead	348	16	ug/sq. Ft.	06/08/12 15:20	W NIOSH 9100
011	WE-014	Wipe	Lead	62.4	16	ug/sq. Ft.	06/08/12 15:20	W NIOSH 9100
012	WE-015	Wipe	Lead	276	16	ug/sq. Ft.	06/08/12 15:20	W NIOSH 9100
013	WE-034	Wipe	Lead	314	16	ug/sq. Ft.	06/08/12 15:20	W NIOSH 9100
014	WE-002	Wipe	Lead	31.3	16	ug/sq. Ft.	06/08/12 15:20	W NIOSH 9100
015	WE-001A	Wipe	Lead	17.8	16	ug/sq. Ft.	06/08/12 15:20	W NIOSH 9100
016	WE-001B	Wipe	Lead	<16.0	16	ug/sq. Ft.	06/08/12 15:20	W NIOSH 9100
017	WE-001C	Wipe	Lead	55.8	16	ug/sq. Ft.	06/08/12 15:20	W NIOSH 9100

Note: Sample results have not been corrected for blank values.

This report applies only to the standards or procedures indicated and to the specific samples tested. It is not indicative of the qualities of apparently identical or similar products or procedures, nor does it represent an ongoing assurance program unless so noted. These reports are for the exclusive use of the client and are not to be reproduced without specific written permission.

Unless otherwise noted, upon receipt the condition of the sample was acceptable for analysis.

Wipe materials must meet ASTM E1792 criteria. Method detection limits and resultant reporting limits may not be valid for non-ASTM E1792 wipe material.

EPA Method 7000B (1) = EPA 600/R-93/200 Preparation Modified. EPA 7000B Analysis Modified

EPA Method 7082 (2) = EPA 600/R-93/200 Preparation Modified. EPA 7082 Analysis Modified

2033 Heritage Park Drive / Oklahoma City, OK 73120 / (405) 755-7272 / Fax (405) 755-2058

Environmental Chemistry Analysis Report

QuanTEM Set ID: 208651
Date Received: 06/06/12
Received By: Sherrie Leftwich
Date Sampled:
Time Sampled:
Analyst: BM
Date of Report: 6/8/2012

AIHA ID: 101352

Client: GMR & Associates, Inc.
PO Box 57827
Oklahoma City, OK 73157

Acct. No.: B216

Project: Wetumka Armory
Location: 22 W. St. Louis Ave, Wetumka, OK
Project No.: 2012042-001

QuanTEM ID	Client ID	Matrix	Parameter	Results	Reporting Limits	Units	Date/Time Analyzed	Method
018	WE-016	Wipe	Lead	997	16	ug/sq. Ft.	06/08/12 15:20	W NIOSH 9100
019	WE-017	Wipe	Lead	153	16	ug/sq. Ft.	06/08/12 15:20	W NIOSH 9100
020	WE-018	Wipe	Lead	73.5	16	ug/sq. Ft.	06/08/12 15:20	W NIOSH 9100
021	WE-019	Wipe	Lead	<16.0	16	ug/sq. Ft.	06/08/12 15:20	W NIOSH 9100
022	WE-020	Wipe	Lead	118	16	ug/sq. Ft.	06/08/12 15:20	W NIOSH 9100
023	WE-021	Wipe	Lead	77.1	16	ug/sq. Ft.	06/08/12 15:20	W NIOSH 9100
024	WE-022	Wipe	Lead	26.8	16	ug/sq. Ft.	06/08/12 15:20	W NIOSH 9100
025	WE-023	Wipe	Lead	53.2	16	ug/sq. Ft.	06/08/12 15:20	W NIOSH 9100
026	WE-024	Wipe	Lead	38.0	16	ug/sq. Ft.	06/08/12 15:20	W NIOSH 9100
027	WE-025	Wipe	Lead	108	16	ug/sq. Ft.	06/08/12 15:20	W NIOSH 9100
028	WE-026	Wipe	Lead	79.2	16	ug/sq. Ft.	06/08/12 15:20	W NIOSH 9100
029	WE-027	Wipe	Lead	25.9	16	ug/sq. Ft.	06/08/12 15:20	W NIOSH 9100
030	WE-028	Wipe	Lead	28.5	16	ug/sq. Ft.	06/08/12 15:20	W NIOSH 9100
031	WE-029	Wipe	Lead	32.5	16	ug/sq. Ft.	06/08/12 15:20	W NIOSH 9100
032	WE-030	Wipe	Lead	225	16	ug/sq. Ft.	06/08/12 15:20	W NIOSH 9100
033	WE-031	Wipe	Lead	<16.0	16	ug/sq. Ft.	06/08/12 15:20	W NIOSH 9100
034	WE-033	Wipe	Lead	3,130	16	ug/sq. Ft.	06/08/12 15:20	W NIOSH 9100

Note: Sample results have not been corrected for blank values.

This report applies only to the standards or procedures indicated and to the specific samples tested. It is not indicative of the qualities of apparently identical or similar products or procedures, nor does it represent an ongoing assurance program unless so noted. These reports are for the exclusive use of the client and are not to be reproduced without specific written permission.

Unless otherwise noted, upon receipt the condition of the sample was acceptable for analysis.

Wipe materials must meet ASTM E1792 criteria. Method detection limits and resultant reporting limits may not be valid for non-ASTM E1792 wipe material.

EPA Method 7000B (1) = EPA 600/R-93/200 Preparation Modified. EPA 7000B Analysis Modified

EPA Method 7082 (2) = EPA 600/R-93/200 Preparation Modified. EPA 7082 Analysis Modified

2033 Heritage Park Drive / Oklahoma City, OK 73120 / (405) 755-7272 / Fax (405) 755-2058

Environmental Chemistry Analysis Report

QuanTEM Set ID: 208651
Date Received: 06/06/12
Received By: Sherrie Leftwich
Date Sampled:
Time Sampled:
Analyst: BM
Date of Report: 6/8/2012

AIHA ID: 101352

Client: GMR & Associates, Inc.
PO Box 57827
Oklahoma City, OK 73157

Acct. No.: B216

Project: Wetumka Armory
Location: 22 W. St. Louis Ave, Wetumka, OK
Project No.: 2012042-001

QuanTEM ID	Client ID	Matrix	Parameter	Results	Reporting Limits	Units	Date/Time Analyzed	Method
035	WE-012A	Wipe	Lead	558	16	ug/sq. Ft.	06/08/12 15:20	W NIOSH 9100
036	WE-012B	Wipe	Lead	2,340	16	ug/sq. Ft.	06/08/12 15:20	W NIOSH 9100

Authorized Signature: _____
Benton Miller, Analyst

Note: Sample results have not been corrected for blank values.

This report applies only to the standards or procedures indicated and to the specific samples tested. It is not indicative of the qualities of apparently identical or similar products or procedures, nor does it represent an ongoing assurance program unless so noted. These reports are for the exclusive use of the client and are not to be reproduced without specific written permission.

Unless otherwise noted, upon receipt the condition of the sample was acceptable for analysis.

Wipe materials must meet ASTM E1792 criteria. Method detection limits and resultant reporting limits may not be valid for non-ASTM E1792 wipe material.

EPA Method 7000B (1) = EPA 600/R-93/200 Preparation Modified. EPA 7000B Analysis Modified

EPA Method 7082 (2) = EPA 600/R-93/200 Preparation Modified. EPA 7082 Analysis Modified

Supplemental Report
QAQC Results

QA ID: 10065
Test: Lead
Date: 6/8/2012
Matrix: Wipe
Lab Number: 208651
Approved By: Benton Miller
Date Approved: 6/8/2012

Notes:

Blank Data:

Type of Blank	Blank Value
FCB	0
ICB	0
Matrix Blank	0

Standards Data:

Standard	Low Limit	Obtained	High Limit
CCV	4.5	5.1	5.5
FCV	4.5	5	5.5
ICV	0.9	1.1	1.1
RLVS	0.256	0.349	0.384

Duplicate Data:

Recovery Data:

Sample Number	Result	Spike Level	Result + Spike	% Recovery	Dup. Result + Spike	% Dup. Recovery	% Spike RPD
MS-W2	0.000	5.167	5.293	102.4	5.367	103.9	1.4
MS-W1	0.000	5.188	5.283	101.8	5.635	108.6	6.5

Authorized Signature: _____

Benton Miller, Analyst

QUANTEM LABORATORIES
www.QuanTEM.com

LEAD CHAIN OF CUSTODY

2033 Heritage Park Drive, Oklahoma City, OK 73120-7502
(800) 822-1650 • (405) 755-7272 • Fax: (405) 755-2058

LEGAL DOCUMENT - PLEASE PRINT LEGIBLY

For Lab Use Only	
Lab No. 208651	
Accept (circled)	Reject

Contact Information	
Company: GMR & Associates	Phone: 405-528-7017
Contact: Arless Murray	Cell Phone: 405-401-2833
Account #:	E-mail: aemurray@gmrin.net

Project Information	
Project Name:	Wetumka Armory
Project Location:	22 W. St. Louis Ave, Wetumka OK
Project ID:	2012042-001

Report Results (☑ one box)	
✓	QuanTEM Website
	Other ______

Sampled By:	Name: Arless Murray	Date: 6-5-12

RELINQUISHED BY	DATE & TIME	VIA	RECEIVED BY	DATE & TIME
A.E. Murray	6-6-12, 0840		S. Leftwich	6/6/12 8:40

REQUESTED SERVICES (Please ☑ the Appropriate Boxes)

No.	Sample ID (10 Characters Max)	Sample Description	Volume (Liters)	Volume Area (Length x Width)	Sample Matrix Code	Pb			PPM	Wt %	mg / l	µg / ft²	µg / m³	mg / cm²
1	WE-008	F.T. -12" x12"		12"x12"	C	✓						✓		
2	WE-007	Painted Conc. Floor		12"x12"	C	✓						✓		
3	WE-006	Painted Conc. Floor		12"x12"	C	✓						✓		
4	WE-009	Painted 12"x12" F.T.		12"x12"	C	✓						✓		
5	WE-010	Conc. Floor		12"x12"	C	✓						✓		
6	WE-011	Conc. Floor		12"x12"	C	✓						✓		
7	WE-003	Conc. Floor		12"x12"	C	✓						✓		
8	WE-004	F.T. - 9"x9"		12"x12"	C	✓						✓		
9	WE-005	F.T. 9"x9"		12"x12"	C	✓						✓		
10	WE 013	Conc. Floor		12"x12"	C	✓						✓		
11	WE-014	Carpet		12"x12"	C	✓						✓		
12	WE-015	Conc. Floor		12"x12"	C	✓						✓		

Sample Matrix Codes	
A	Soil
B	Paint Chips
C	Surface / Dust Wipes
D	Bulk Miscellaneous
E	Air Cassette

TURNAROUND TIME	
	Same Day
	24 - Hour
	3 - Day
✓	5 - Day

QUANTEM LABORATORIES

www.QuanTEM.com

LEAD CHAIN OF CUSTODY

2033 Heritage Park Drive, Oklahoma City, OK 73120-7502
(800) 822-1650 • (405) 755-7272 • Fax: (405) 755-2058

LEGAL DOCUMENT - PLEASE PRINT LEGIBLY

For Lab Use Only
Lab No. 208651
(Accept) Reject

Project Information

Company: GMR & Associates, Inc. | Project Name: Wetumka Armory | Project Location: 22 W. St. Louis Ave., Wetumka, OK

REQUESTED SERVICES (Please check above)

No.	Sample ID (10 Characters Max)	Sample Description	Volume (Liters)	Volume/Area (Length x Width)	Sample Matrix Code	Pb	PPM	Wt %	mg / l	µg /ft²	µg / m³	mg / cm²
13	WE-034	Conc. Floor		12"x12"	C	✓				✓		
14	WE-002	Conc. Floor		12"x12"	C	✓				✓		
15	WE-001A	Conc. Floor		12"x12"	C	✓				✓		
16	WE-001B	Conc. Floor		12"x12"	C	✓				✓		
17	WE-001C	Conc. Floor		12"x12"	C	✓				✓		
18	WE-016	Conc. Floor		12"x12"	C	✓				✓		
19	WE-017	Conc. Floor		12"x12"	C	✓				✓		
20	WE-018	Carpet		12"x12"	C	✓				✓		
21	WE-019	Carpet		12"x12"	C	✓				✓		
22	WE-020	Conc. Floor		12"x12"	C	✓				✓		
23	WE-021	Conc. Floor		12"x12"	C	✓				✓		
24	WE-022	Conc. Floor		12"x12"	C	✓				✓		
25	WE-023	12"x12" F.T.		12"x12"	C	✓				✓		
26	WE-024	12"x12" F.T.		12"x12"	C	✓				✓		
27	WE-025	Conc. Floor		12"x12"	C	✓				✓		
28	WE-026	Painted Conc. Floor		12"x12"	C	✓				✓		
29	WE-027	Conc. Floor		12"x12"	C	✓				✓		
30	WE-028	Carpet		12"x12"	C	✓				✓		

Sample Matrix Codes	
A	Soil
B	Paint Chips
C	Surface / Dust Wipes
D	Bulk Miscellaneous
E	Air Cassette

SATURDAY SAMPLE DELIVERY - CALL TO SCHEDULE • Use this address for Saturday Delivery only: 4220 N. Santa Fe Ave., Oklahoma City, OK 73105-8517 • Mark Package "Hold for Saturday Pickup"

LEAD CHAIN OF CUSTODY

QUANTEM LABORATORIES
www.QuanTEM.com

2033 Heritage Park Drive, Oklahoma City, OK 73120-7502
(800) 822-1650 • (405) 755-7272 • Fax: (405) 755-2058

LEGAL DOCUMENT - PLEASE PRINT LEGIBLY

For Lab Use Only
Lab No. 208651
Accept (circled) Reject

Project Information

Company: G M R & Associates
Project Name: Wetumka Armory
Project Location: 22 W. St. Louis Wetumka, OK

REQUESTED SERVICES (Please ☒ the Appropriate Boxes)

No.	Sample ID (10 Characters Max)	Sample Description	Volume (Liters)	Volume/Area (Length x Width)	[illegible]	Analysis: Pb			Units: PPM	Wt %	mg / l	µg /ft²	µg / m³	mg / cm²
31	WE-029	Carpet		12"x12"	C	✓						✓		
32	WE-030	Conc. Floor		12"x12"	C	✓						✓		
33	WE-032	Conc. Floor		12"x12"	C	✓						✓		
34	WE-033	Conc. Floor		12"x12"	C	✓						✓		
35	WE-012A	Conc. Floor		12"x12"	C	✓						✓		
36	WE-012B	Conc. Floor		12"x12"	C	✓						✓		
19														
20														
21														
22														
23														
24														
25														
26														
27														
28														
29														
30														

Sample Matrix Codes	
A	Soil
B	Paint Chips
C	Surface / Dust Wipes
D	Bulk Miscellaneous
E	Air Cassette

QUANTITATIVE FACILITY ASBESTOS SURVEY

NATIONAL GUARD ARMORY
22 ST. LOUIS AVENUE
WETUMKA, OK 74883

GMR Project Number 2012042
June 18, 2012

Oklahoma Department of Environmental Quality
Land Protection Division
P. O. Box 1677
Oklahoma City, OK 73101-1677
Attention: Mr. Brian D. Stanila

GMR & Associates, Inc.
ENGINEERS, PLANNERS, ENVIRONMENTAL SPECIALISTS, HYDROGEOLOGISTS
2520 West I-44 Service Road, Suite 200
P.O. Box 57827
Oklahoma City, OK 73157-7827
Telephone: 405-528-7017
Fax: 405-528-3346

Prepared by:

Bill Harris
ODOL AHERA Inspector License OK150035

Reviewed by:

James M. Reis
Vice President
Project Manager

TABLE OF CONTENTS

QUANTITATIVE FACILITY ASBESTOS SURVEY
WETUMKA NATIONAL GUARD ARMORY
22 ST. LOUIS AVENUE
WETUMKA, OKLAHOMA

1.0 EXECUTIVE SUMMARY

On June 5, 2012 GMR & Associates, Inc. (GMR) performed a survey for asbestos containing materials (ACM) in the National Guard Armory at 22 St. Louis Avenue in Wetumka, Oklahoma.

The objective of the survey was to assess the presence and quantities of (ACM). Bulk samples of suspect (ACM) were collected during the survey and submitted for laboratory analysis for asbestos content. During the survey, a total of 36 samples were collected in the Wetumka Armory. However, a paint sample, identified as WT-04A, also contained an inseparable layer of mastic that the laboratory was compelled to analyze. Therefore, the laboratory analyzed 37 samples.

GMR identified sixteen (16) homogenous areas in the building. However, GMR identified **non-friable asbestos** in five (5) homogenous areas. Laboratory results indicated **non-friable** floor tile and mastic present in four (4) homogeneous areas.

2.0 INTRODUCTION

On June 5, 2012, GMR & Associates, Inc. (GMR) performed a survey for asbestos containing materials (ACM) in the National Guard Armory at 22 St. Louis Avenue in Wetumka, Oklahoma.

The objective of the survey was to assess the presence and quantities of asbestos containing building materials (ACM). Bulk samples of suspect (ACM) were collected during the survey and submitted for laboratory analysis for asbestos content.

3.0 BUILDING DESCRIPTION

Main Building

Constructed in 1936, the Wetumka Armory building has a total area of 22,681 square feet and is comprised of one floor. The central portion of the building serves as a motor pool/drill room with offices located in the north and south wings of the building. A firing range is located below ground level on the east side of the motor pool.

4.0 FINDING SUMMARY OF ASBESTOS CONTAINING MATERIALS

GMR identified sixteen (16) homogenous areas in the building. However, GMR identified **non-friable asbestos** in five (5) homogenous areas. Laboratory results indicate **non-friable** floor tile and mastic present in four (4) homogeneous areas. Homogenous areas 5 and 6 are in Room 9. Homogenous areas 8 and 9 are in Rooms 4 and 5. Homogenous area 12 was floor tile only in Room 24. No thermal insulation was observed in the Wetumka Armory. The results of the positive samples are presented in Table 1. The asbestos sampling locations are shown in Appendix C, Figures 1-3.

Table 1
Summary of Asbestos Containing Building Materials

Sample Number	Material Category	Description	Quantities	General Location
WT-05A WT-05B	Category 2 Non-Friable	Brown Floor Tile	750 SF Total Floor Area	Floor – Room 9
WT-06A WT-06B	Category 2 Non-Friable	Black Mastic – Associated with Brown Floor Tile	750 SF Total Floor Area	Floor – Room 9
WT-08A WT-08B	Category 2 Non-Friable	Brown Floor Tile	220 SF Total Floor Area	Floor – Rooms 4-5
WT-09A WT-09B	Category 2 Non-Friable	Black Mastic – Associated with Brown Floor Tile	220 SF Total Floor Area	Floor - Rooms 4-5
WT-012A WT-012B	Category 2 Non-Friable	Tan Marbled Floor Tile	125 SF Total Floor Area	Floor Room - 24

Table 2
Bulk Samples and Analytical Results

Sample ID	Description	Approx. Amount	Asbestos Type & Percent
WT-01A	12" x 12" Beige Floor Tile – Room 8	N/A	None Detected
WT-01B	Yellow Mastic on 12" x 12" Beige Floor Tile – Room 8	N/A	None Detected
WT-02A	12" x 12" Beige Floor Tile – Room 8	N/A	None Detected
WT-02B	Yellow Mastic on 12" x 12" Beige Floor Tile – Room 8	N/A	None Detected
WT-03A	White Ceiling Tile – Room 8	N/A	None Detected
WT-03B	White Ceiling Tile – Room 8	N/A	None Detected
WT-03C	White Ceiling Tile – Room 8	N/A	None Detected
WT-04A	Gray Paint (Layered) Floor – Room 9	N/A	None Detected
WT-04A	Yellow Mastic (Layered) Floor – Room 9	N/A	None Detected
WT-05A	12" x 12" Brown Floor Tile – Room 9	SF	8% Chrysotile
WT-05B	12" x 12" Lt. Brown Floor Tile – Room 9	SF	6% Chrysotile
WT-06A	Black Mastic on 12" x 12" Brown Floor Tile – Room 9	SF	7% Chrysotile
WT-06B	Black Mastic on 12" x 12" Lt. Brown Floor Tile – Room 9	SF	7% Chrysotile
WT-07A	White Wall Texture – Room 10	N/A	None Detected
WT-07B	White Wall Texture– Room 10	N/A	None Detected
WT-07C	White Paint – Wall – Room 21	N/A	None Detected
WT-08A	9" x 9" Brown Floor Tile – Room 4	220 SF	8% Chrysotile
WT-08B	9" x 9" Brown Floor Tile – Room 5	220 SF	8% Chrysotile
WT-09A	Black Mastic on 9" x 9" Brown Floor Tile – Room 4	220 SF	6% Chrysotile
WT-09B	Black Mastic on 9" x 9" Brown Floor Tile – Room 5	220 SF	6% Chrysotile
WT-10A	2 x 4 Ceiling Tile – Room 1	N/A	None Detected
WT-10B	2 x 4 Ceiling Tile – Room 1	N/A	None Detected
WA-10C	2 x 4 Ceiling Tile – Room 1	N/A	None Detected
WT-11A	2 x 4 Ceiling Tile – Rooms 19-22, 24-26, 31	N/A	None Detected
WT-11B	2 x 4 Ceiling Tile – Rooms 19-22, 24-26, 31	N/A	None Detected
WT-11C	2 x 4 Ceiling Tile – Rooms 19-22, 24-26, 31	N/A	None Detected

SF = Square Feet; LF = Lineal Feet; EA = Each

Table 2 (Continued)
Bulk Samples and Analytical Results

Sample ID	Description	Approx. Amount	Asbestos Type & Percent
WT-12A	12" x 12" Tan Marbled Floor Tile – Room 24	125 SF	4% Chrysotile
WT-12B	12" x 12" Tan Marbled Floor Tile – Room 24	125 SF	5% Chrysotile
WT-013A	Yellow Mastic on 12" x12" Tan Marbled Floor Tile – Room 24	N/A	None Detected
WT-0l3B	Yellow Mastic on 12" x12" Tan Marbled Floor Tile – Room 24	N/A	None Detected
WT-14A	2 x 4 Ceiling Tile – Room 18	N/A	None Detected
WT-14B	2 x 4 Ceiling Tile – Room 18	N/A	None Detected
WT-014C	2 x 4 Ceiling Tile – Room 18	N/A	None Detected
WT-015A	Window Caulking – Room 17	N/A	None Detected
WT-16A	Wallboard – No Joint Compound – Room 22	N/A	None Detected
WT-16B	Wallboard – No Joint Compound – Room 22	N/A	None Detected
WT-16C	Wallboard – No Joint Compound – Room 22	N/A	None Detected

SF = Square Feet; LF = Lineal Feet; EA = Each

5.0 SAMPLING PROCEDURES

5.1 SURVEY PROCEDURES

The asbestos survey involved visual Inspection and Sampling, Laboratory Analysis, and Quantity Assessment. During the survey, a total of 36 samples were collected in the Wetumka Armory. However, a paint sample, identified as WT-04A, also contained an inseparable layer of mastic that the laboratory was compelled to analyze. Therefore, the laboratory analyzed 37 samples.

During the physical survey, sample collection data sheets were completed using the unique identification numbers previously described as a reference for the entry of more detailed information regarding the item being sampled. The individual sample numbers were recorded along with the item description, location within the area and condition of the material being sampled. As each sample was collected, it was deposited in a sealable plastic bag or screw-top plastic collection container. The container was then marked with the sample identifier and recorded on the data sheet. All Inspectors are licensed as an AHERA Inspector by the State of Oklahoma. The completed survey forms and samples for each area were then taken to Quantem Laboratory, an accredited laboratory in Oklahoma City and the survey data was entered into a computer system for processing.

5.2 ANALYTICAL PROCEDURES

Bulk samples collected by GMR were analyzed by Quantem Laboratory in Oklahoma City, Oklahoma. Bulk samples were analyzed by Polarized Light Microscopy (PLM. All samples that were submitted were analyzed. Quantem laboratory is accredited through the American Industrial Hygiene Association (AIHA) or National Voluntary Laboratory Accreditation Program (NVLAP).

6.0 RECOMMENDATIONS

Maintain asbestos containing floor tile and mastic. Do not sand or cut these materials.

6.1 RECOMMENDED ACTIONS FOR PLANNED RENOVATIONS

Abatement of non-friable materials (floor tile and mastic) that would be disturbed during renovation activities is not regulated by the Oklahoma Department of Labor. However, OSHA requirements in 29 CFR 1926.1101 must be followed.

6.2 RECOMMENDED ACTIONS FOR PLANNED DEMOLITION

Non-friable floor tile and mastic material may be left in place and disposed of as demolition debris.

6.3 RECOMMENDED ACTIONS FOR ASBESTOS LEFT IN-PLACE

Prepare and implement an Operations and Management (O&M) Plan to manage the asbestos in place. The O&M plan shall meet the requirements established in the Oklahoma Control Act, page 26, 380:50-14-1.

7.0 BUDGETARY ABATEMENT COST ESTIMATE

Floor Tile and Mastic Removal: ***$3,000.00-$4,000.00***

P:\2012042.001 \Wetumka Armory DEQ\2012042-Wetumka Armory-Asbestos Survey Report.doc

Appendix A

Laboratory Results and Chain of Custody Field Sheets

2033 Heritage Park Drive / Oklahoma City, OK 73120 / (405) 755-7272 / Fax (405) 755-2058

Polarized Light Microscopy Asbestos Analysis Report

QuanTEM Lab No. 208627
Account Number: B216

Client: GMR & Associates, Inc.
PO Box 57827
Oklahoma City, OK 73157

Date Received: 06/06/2012
Received By: Joanna Mueller
Date Analyzed: 06/12/2012
Analyzed By: Sandy Baker
Methodology: EPA/600/R-93/116

Project: Wetumka Armory
Project Location: Wetumka
Project Number: N/A

QuanTEM Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
001	WT-01A	Homogeneous	Beige Floor Tile	Asbestos Not Present	NA	Vinyl CaCO3
002	WT-01B	Homogeneous	Yellow Mastic	Asbestos Not Present	NA	Glue
003	WT-02A	Homogeneous	Beige Floor Tile	Asbestos Not Present	NA	Vinyl CaCO3
004	WT-02B	Homogeneous	Yellow Mastic	Asbestos Not Present	NA	Glue
005	WT-03A	Homogeneous	White Ceiling Tile	Asbestos Not Present	Cellulose 30 Glass Fiber 30	Perlite Paint
006	WT-04A	Layered	Gray Paint	Asbestos Not Present	NA	Paint
006a		Layered	Yellow Mastic	Asbestos Not Present	NA	Glue

Unless otherwise noted, upon receipt the condition of the sample was acceptable for analysis.

2033 Heritage Park Drive / Oklahoma City, OK 73120 / (405) 755-7272 / Fax (405) 755-2058

Polarized Light Microscopy Asbestos Analysis Report

QuanTEM Lab No. 208627
Account Number: B216

Client: GMR & Associates, Inc.
PO Box 57827
Oklahoma City, OK 73157

Date Received: 06/06/2012
Received By: Joanna Mueller
Date Analyzed: 06/12/2012
Analyzed By: Sandy Baker
Methodology: EPA/600/R-93/116

Project: Wetumka Armory
Project Location: Wetumka
Project Number: N/A

QuanTEM Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
007	WT-03B	Homogeneous	White Ceiling Tile	Asbestos Not Present	Cellulose 30 Glass Fiber 30	Perlite Paint
008	WT-05A	Homogeneous	Brown Floor Tile	Asbestos Present Chrysotile 8	NA	Vinyl CaCO3
009	WT-06A	Homogeneous	Black Mastic	Asbestos Present Chrysotile 7	NA	Tar
010	WT-05B	Homogeneous	Light Brown Floor Tile	Asbestos Present Chrysotile 6	NA	Vinyl CaCO3
011	WT-06B	Homogeneous	Black Mastic	Asbestos Present Chrysotile 7	NA	Tar
012	WT-03C	Homogeneous	White Ceiling Tile	Asbestos Not Present	Cellulose 30 Glass Fiber 30	Perlite Paint
013	WT-07A	Homogeneous	White Paint	Asbestos Not Present	NA	Paint

Unless otherwise noted, upon receipt the condition of the sample was acceptable for analysis.

2033 Heritage Park Drive / Oklahoma City, OK 73120 / (405) 755-7272 / Fax (405) 755-2058

Polarized Light Microscopy Asbestos Analysis Report

QuanTEM Lab No. 208627
Account Number: B216

Client: GMR & Associates, Inc.
PO Box 57827
Oklahoma City, OK 73157

Date Received: 06/06/2012
Received By: Joanna Mueller
Date Analyzed: 06/12/2012
Analyzed By: Sandy Baker
Methodology: EPA/600/R-93/116

Project: Wetumka Armory
Project Location: Wetumka
Project Number: N/A

QuanTEM Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
014	WT-07B	Homogeneous	White Paint	Asbestos Not Present	NA	Paint
015	WT-07C	Homogeneous	White Paint	Asbestos Not Present	NA	Paint
016	WT-08A	Homogeneous	Brown Floor Tile	Asbestos Present Chrysotile 8	NA	Vinyl CaCO3
017	WT-09A	Homogeneous	Black Mastic	Asbestos Present Chrysotile 6	NA	Tar
018	WT-08B	Homogeneous	Brown Floor Tile	Asbestos Present Chrysotile 8	NA	Vinyl CaCO3
019	WT-09B	Homogeneous	Black Mastic	Asbestos Present Chrysotile 6	NA	Tar
020	WT-10A	Homogeneous	White Ceiling Tile	Asbestos Not Present	Cellulose 30 Glass Fiber 30	Perlite Paint

Unless otherwise noted, upon receipt the condition of the sample was acceptable for analysis.

2033 Heritage Park Drive / Oklahoma City, OK 73120 / (405) 755-7272 / Fax (405) 755-2058

Polarized Light Microscopy Asbestos Analysis Report

QuanTEM Lab No. 208627
Account Number: B216

Client: GMR & Associates, Inc.
PO Box 57827
Oklahoma City, OK 73157

Date Received: 06/06/2012
Received By: Joanna Mueller
Date Analyzed: 06/12/2012
Analyzed By: Sandy Baker
Methodology: EPA/600/R-93/116

Project: Wetumka Armory
Project Location: Wetumka
Project Number: N/A

QuanTEM Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
021	WT-10B	Homogeneous	White Ceiling Tile	Asbestos Not Present	Cellulose 30 Glass Fiber 30	Perlite Paint
022	WT-10C	Homogeneous	White Ceiling Tile	Asbestos Not Present	Cellulose 30 Glass Fiber 30	Perlite Paint
023	WT-11A	Homogeneous	White Ceiling Tile	Asbestos Not Present	Cellulose 30 Glass Fiber 30	Perlite Paint
024	WT-11B	Homogeneous	White Ceiling Tile	Asbestos Not Present	Cellulose 30 Glass Fiber 30	Perlite Paint
025	WT-11C	Homogeneous	White Ceiling Tile	Asbestos Not Present	Cellulose 30 Glass Fiber 30	Perlite Paint
026	WT-12A	Homogeneous	Tan Floor Tile	Asbestos Present Chrysotile 4	NA	Vinyl CaCO3
027	WT-13A	Homogeneous	Yellow Mastic	Asbestos Not Present	NA	Glue

Unless otherwise noted, upon receipt the condition of the sample was acceptable for analysis.

QUANTEM® LABORATORIES

2033 Heritage Park Drive / Oklahoma City, OK 73120 / (405) 755-7272 / Fax (405) 755-2058

Polarized Light Microscopy Asbestos Analysis Report

QuanTEM Lab No. 208627
Account Number: B216

Client: GMR & Associates, Inc.
PO Box 57827
Oklahoma City, OK 73157

Date Received: 06/06/2012
Received By: Joanna Mueller
Date Analyzed: 06/12/2012
Analyzed By: Sandy Baker
Methodology: EPA/600/R-93/116

Project: Wetumka Armory
Project Location: Wetumka
Project Number: N/A

QuanTEM Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
028	WT-12B	Homogeneous	Tan Floor Tile	Asbestos Present Chrysotile 5	NA	Vinyl CaCO3
029	WT-13B	Homogeneous	Yellow Mastic	Asbestos Not Present	NA	Glue
030	WT-14A	Homogeneous	White Ceiling Tile	Asbestos Not Present	Cellulose 30 Glass Fiber 30	Perlite Paint
031	WT-14B	Homogeneous	White Ceiling Tile	Asbestos Not Present	Cellulose 30 Glass Fiber 30	Perlite Paint
032	WT-14C	Homogeneous	White Ceiling Tile	Asbestos Not Present	Cellulose 30 Glass Fiber 30	Perlite Paint
033	WT-15A	Homogeneous	Beige Window Glazing	Asbestos Not Present	NA	CaCO3 Paint
034	WT-16A	Homogeneous	White Sheetrock	Asbestos Not Present	Cellulose 10	Gypsum

Unless otherwise noted, upon receipt the condition of the sample was acceptable for analysis.

2033 Heritage Park Drive / Oklahoma City, OK 73120 / (405) 755-7272 / Fax (405) 755-2058

Polarized Light Microscopy Asbestos Analysis Report

QuanTEM Lab No. 208627
Account Number: B216

Client: GMR & Associates, Inc.
PO Box 57827
Oklahoma City, OK 73157

Date Received: 06/06/2012
Received By: Joanna Mueller
Date Analyzed: 06/12/2012
Analyzed By: Sandy Baker
Methodology: EPA/600/R-93/116

Project: Wetumka Armory
Project Location: Wetumka
Project Number: N/A

QuanTEM Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)		Non Fibrous
035	WT-16B	Homogeneous	White Sheetrock	Asbestos Not Present	Cellulose	10	Gypsum
036	WT-16C	Homogeneous	White Sheetrock	Asbestos Not Present	Cellulose	10	Gypsum

Sandy Baker, Analyst

6/12/2012
Date of Report

Unless otherwise noted, upon receipt the condition of the sample was acceptable for analysis.

QUANTEM LABORATORIES

Asbestos Chain-of-Custody

2033 Heritage Park Drive, Oklahoma City, OK 73120-7502
(800) 822-1650 (405) 755-7272 Fax: (405) 755-2058
www.quantem.com

Page 1 of 2

This Box for Lab Use Only
Lab No. 208627 Asbd Spisd

Company Name: GMR + Associates, INC. Acct #: B Project Name: Wetumka Armory
Project Location: Wetumka Project Number:

LEGAL DOCUMENT
Please Print Legibly

#	Sample Number	To Be Analyzed	Color / Description	Volume / Area (if applicable)	Comments
1	WT-01A		1x1 Beige FT		
2	01B		1x1 Beige FT	Rm 8	
3	02A		mastic on 01A		
4	02B		mastic on 02B		
5	03A		2x4 CT (6tile Rm 8)		
6	04A		Floor coating (Post FT removal)		
7	03B		2x4 CT Rm 8 Restrooms		
8	05A		1x1 Painted FT		
9	06A		mastic on 05A		
10	05B		1x1 Painted FT		
11	06B		mastic on 05B		
12	03C		2x4 CT adjoint among		FG Rm 9
13	07A		Wall Texture outside Rm		10 (10x10)
14	07B		" "	"	" " 11 (10x10)
15 X	07C		Wall Texture	" Rm	21 (8x20)
16	08A		9x9 FT		
17	09A		mastic on 08A	10x	22
18	08B		9x9 FT		
19	09B		mastic on 09A		
20	10A		2x4 CT Drill Room		

PLM	
X	Bulk Analysis non-quantitative
	400 Point Count
	1000 Point Count
	Gravimetric Preparation Plus
	Other

PCM	
	NIOSH 7400
	Other

TEM	
	Air - AHERA
	Air - NIOSH 7402
	Bulk - Qualitative [Yes / No] - EPA 600/R-93/116
	Bulk - Quantitative [weight %] - Chatfield
	Dust - Qualitative [Yes / No]
	Dust - Quantitative [fibers/sq cm] - ASTM D5755
	Drinking Water - EPA 100.2
	Waste Water - EPA 600/4-83-043
	Other

TURNAROUND TIME	
	Rush
	Same Day
	24 Hour
	3-Day
X	5-Day

CONTACT INFORMATION
Name:
Phone:
Report Results VIA (CHOOSE ONE):
FAX:
QuanTEM WebSite
E-Mail:

Relinquished by: C. E. Murray Date/Time: 6-6-[illegible] 0840 Received by: S. Jeffwicz 6/4/12 8:40 Analyzed by:

Saturday FedEx Shipping - CALL TO SCHEDULE
Use this address for Saturday FedEx only: 4220 N. Santa Fe Ave., Oklahoma City, OK 73105-8517

QUANTEM LABORATORIES

Asbestos Chain-of-Custody

2033 Heritage Park Drive, Oklahoma City, OK 73120-7902
(800) 822-1650 (405) 755-7272 Fax: (405) 755-2058
www.quantem.com

Page 2 of 2

This Box for Lab Use Only
Lab No. 208627
Accept Reject

Company Name: GMR & Associates, INC Acct.#:
Project Name: Wetumka Armory
Project Location: Wetumka
Project Number:

	Sample Number	To Be Analyzed	Color / Description	Volume / Area (if applicable)	Comments
21	WT- 10b		2x4 CT Drill Rm		
22	10C		2x4 CT " "		
23	11A		2x4 CT long gauge	19,20	21,22,24
24	11B		" " " "	26,21	
25	11C		" " " "		
26	WT- 12A		1x1 Tan Marble FT		
27	13A		mastic on 12A		
28	12B		1x1 Tan Marble FT		
29	13B		mastic on 12B		
30	14A		2x4 CT	Rm 18	
31	14B		" " "	"	
32	14C		" " "	"	
33	15A		Window Caulking inside		Rm 17
34	16A		Sheetrock Wall no joint		
35	16B		" " "	"	
36	16C		" " "	"	

LEGAL DOCUMENT
Please Print Legibly

PLM
- Bulk Analysis
- 400 Point Count
- 1000 Point Count
- Gravimetric Preparation Fee
- Other

TEM
- Air - AHERA
- Air - NIOSH 7402
- Bulk - Qualitative (Yes / No) - EPA 600/R-93/116
- Bulk - Quantitative (weight %) - Chatfield
- Dust - Qualitative (Yes / No)
- Dust - Quantitative (Structures/cm2) - ASTM D5755
- Drinking Water - EPA 100.2
- Waste Water - EPA 600/4-83-043
- Other

PCM
- NIOSH 7400
- Other

TURNAROUND TIME
- Rush
- Same Day
- 24 Hour
- 3-Day
- 5-Day

CONTACT INFORMATION
Name:
Phone:
Report Results VIA (CHOOSE ONE):
- FAX:
- QuanTEM WebSite
- E-Mail:

Relinquished by: Date/Time: Via:
Received by: S Leftwich 6/6/12 8:40
Date/Time: Via:
Received by:

Saturday FedEx Shipping - CALL TO SCHEDULE
Use this address for Saturday FedEx only: 4220 N. Santa Fe Ave., Oklahoma City, OK 73105-8517

Appendix B

Certifications

FEE: $25 00

Oklahoma Department of Labor

Bill Harris

has filed in the office of the Commissioner of I abor of the State of Oklahoma
an application for a Limited Asbestos Contractor's license for

AHERA INSPECTOR

Now, therefore, The Commissioner of Labor of the State of Oklahoma, by virtue of
the power vested in him by law hereby issues to the
applicant license **No. OK150035.**

Mark Costello

MARK COSTELLO
Commissioner of Labor

May 08, 2012
Date of Issuance

EXPIRES: May 02, 2013

United States Department of Commerce
National Institute of Standards and Technology

NVLAP®

Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 101959-0

QuanTEM Laboratories, LLC
Oklahoma City, OK

is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

BULK ASBESTOS FIBER ANALYSIS

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).

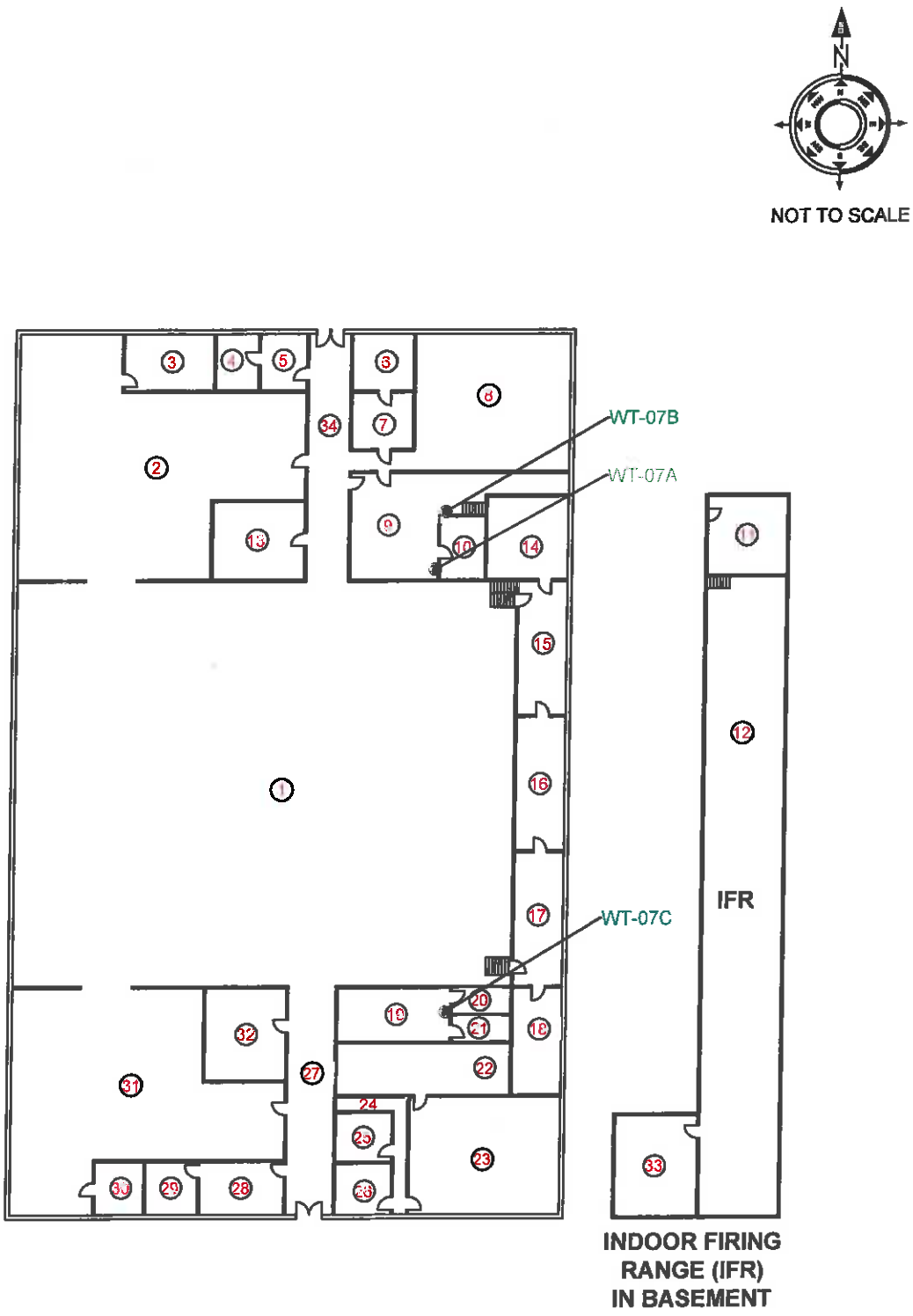
2011-10-01 through 2012-09-30
Effective dates

Sally S. Bruce
For the National Institute of Standards and Technology

NVLAP-01C (REV. 2009-01-28)

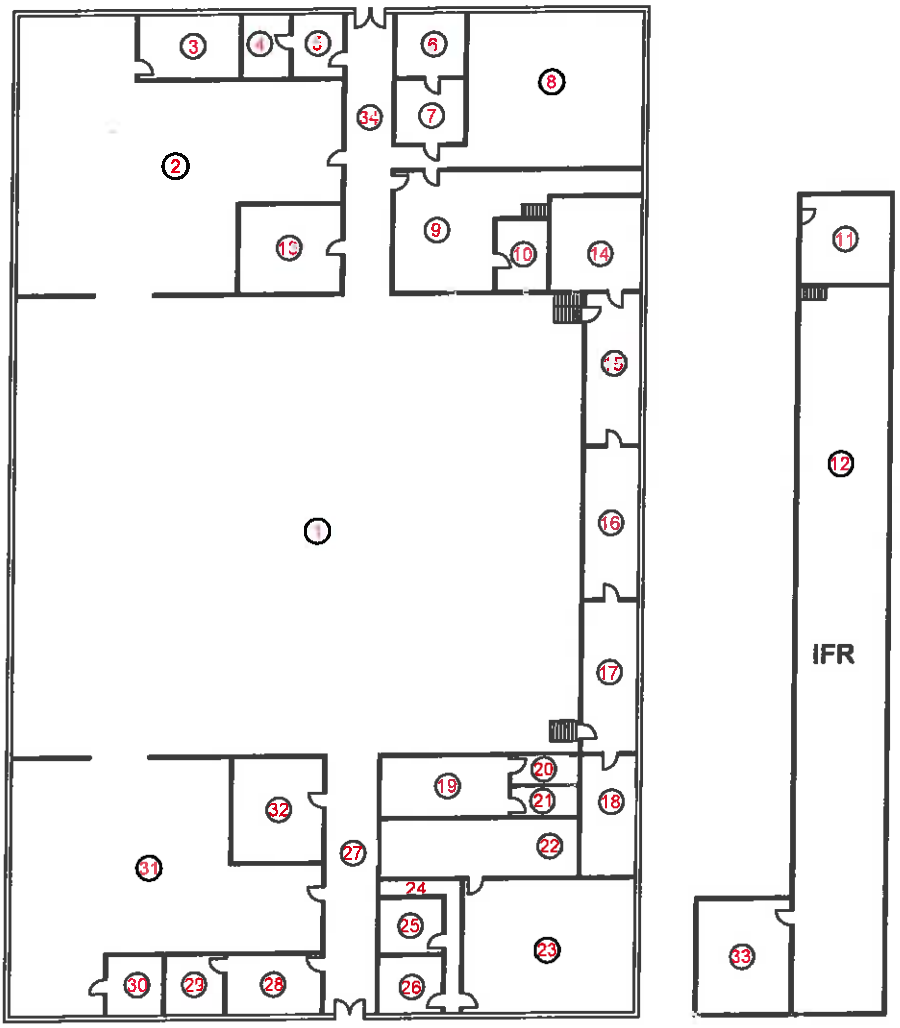
Appendix C

Site Layout with Sample and Asbestos Locations



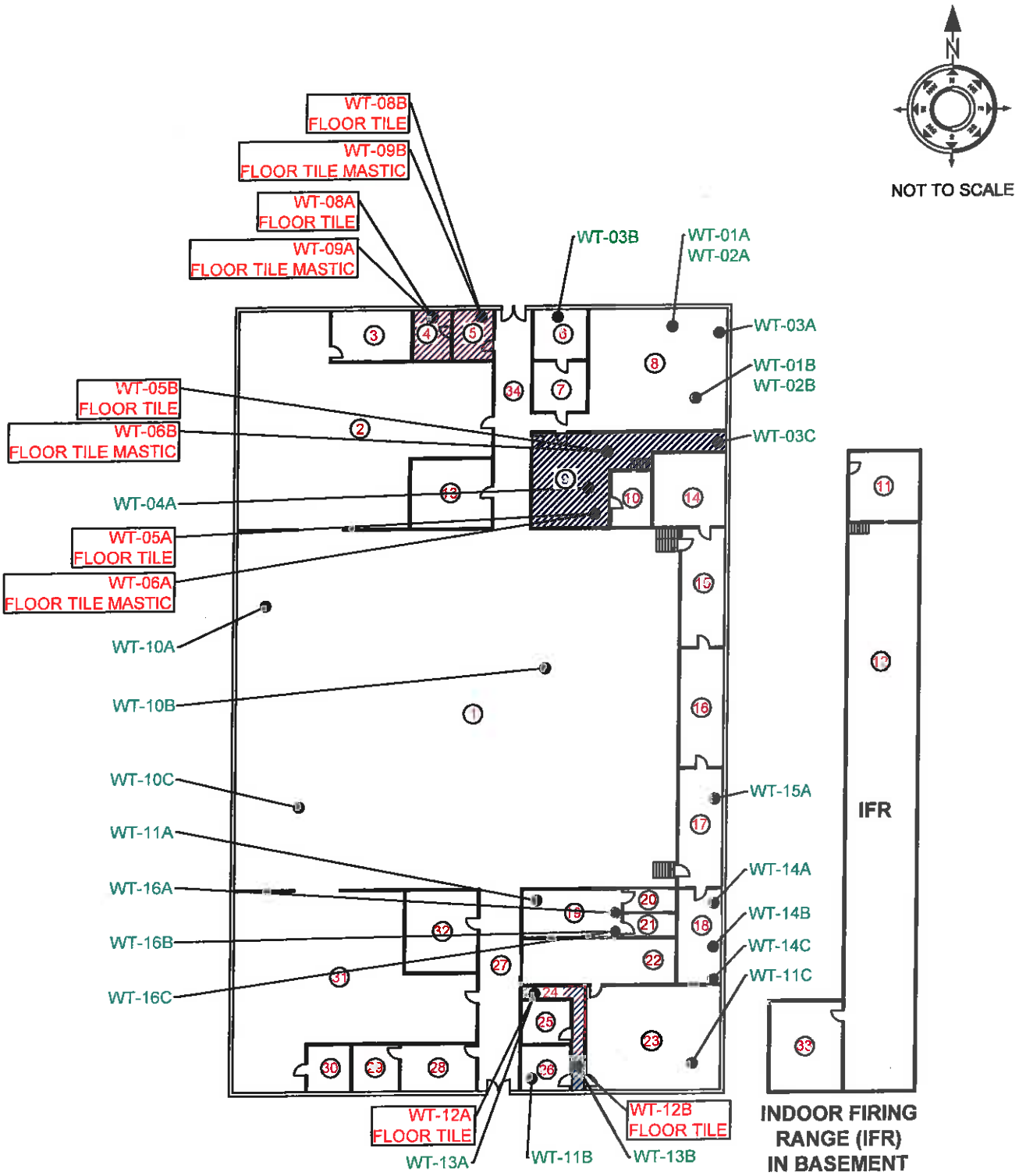
GMR
& Associates, Inc.
2520 West I-44 Service Road, Ste. 200
P.O Box 57827
Oklahoma City, OK 73157-7827
Phone: 405/528-7017, Fax: 405/528-3346

Figure 1
Asbestos Surface Sampling Locations
Wetumka Armory
22 St. Louis Avenue
Wetumka, Oklahoma 74883



GMR
& Associates, Inc.
2520 West I-44 Service Road, Ste. 200
P.O Box 57827
Oklahoma City, OK 73157-7827
Phone: 405/528-7017, Fax: 405/528-3346

Figure 2
Asbestos Thermal Sampling Locations
Wetumka Armory
22 St. Louis Avenue
Wetumka, Oklahoma 74883



GMR
& Associates, Inc.
2520 West I-44 Service Road, Ste. 200
P.O Box 57827
Oklahoma City, OK 73157-7827
Phone: 405/528-7017, Fax: 405/528-3346

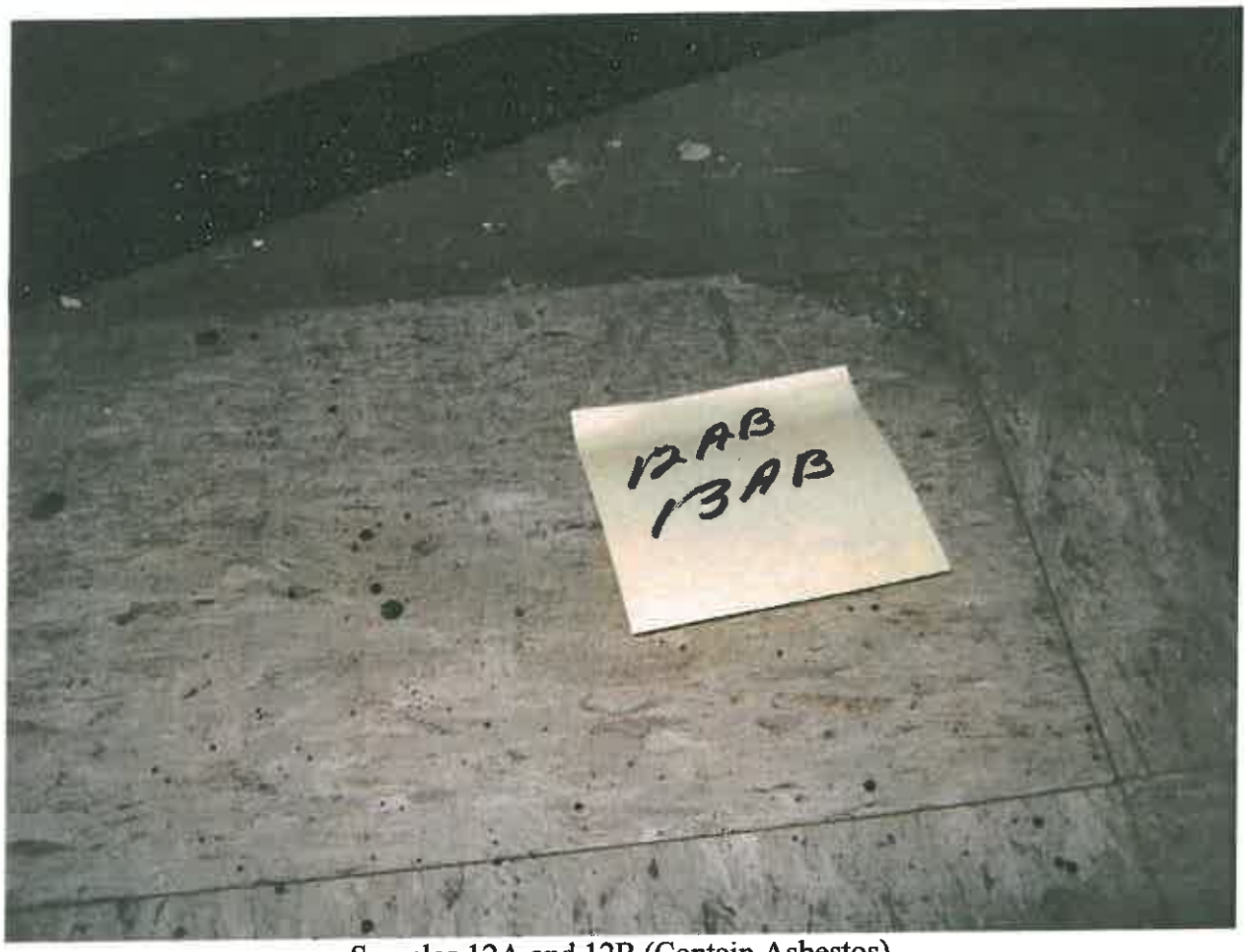
Figure 3
Asbestos Miscellaneous Sampling Locations
Wetumka Armory
22 St. Louis Avenue
Wetumka, Oklahoma 74883

Appendix D

Photo Record

Samples 05A, 05B, 06A and 06B (Contain Asbestos)

Samples 08A, 08B, 09A and 09B (Contain Asbestos)



Samples 12A and 12B (Contain Asbestos)

LEAD-BASED PAINT INSPECTION REPORT

NATIONAL GUARD ARMORY
22 ST. LOUIS AVENUE
WETUMKA, OKLAHOMA 74883

GMR Project Number 2012042
June 18, 2012

Oklahoma Department of Environmental Quality
Land Protection Division
P. O. Box 1677
Oklahoma City, OK 73101-1677
Attention: Mr. Brian D. Stanila

GMR & Associates, Inc.
ENGINEERS, PLANNERS, ENVIRONMENTAL SPECIALISTS, HYDROGEOLOGISTS
2520 West I-44 Service Road, Suite 200
P.O. Box 57827
Oklahoma City, OK 73157-7827
Telephone: 405-528-7017
Fax: 405-528-3346

Prepared by:

Jason Lee
Basin Environmental and Safety Technologies
LBP Inspector, OKRASR13451

Reviewed by:

Arless Murray, Jr.
President

EXECUTIVE SUMMARY

The Oklahoma Department of Environmental Quality (ODEQ) contracted GMR & Associates, Inc. to provide lead-based paint and leaded dust assessment services at the Former National Guard Armory in Wetumka, Oklahoma. GMR & Associates, Inc. contracted Basin Environmental and Safety Technologies (Basin) to perform the lead-based paint inspection of the interior and exterior painted surfaces at this facility. The building was inspected on June 5, 2012. The property is located at 22 St. Louis Avenue, Wetumka, OK 74883 and is owned by Wetumka Public Schools, 410 East Benson, Wetumka, OK 74883 (405-452-5150). The inspection identified the presence, quantity, locations, and characteristics of lead on all interior and exterior painted surfaces and building components. Surfaces were tested according to the specifications described in the protocols for lead-based paint testing in the Department of Housing and Urban Development's (HUD) Guidelines, Chapter 7 (1997 revision) and any applicable Federal, State, and Local regulations.

The objective of the inspection was to identify surfaces with lead in concentrations above the Environmental Protection Agency's (EPA) threshold of 1.0 mg/cm^2 by X-Ray Fluorescence (XRF) analysis. A total of thirty-four (34) room equivalents, including the building exterior and playground were inspected.

Surfaces found to contain lead-based paint by XRF analysis are listed in the table below. All testing combinations not specifically tested, but identical to those represented below should be considered positive for lead-based paint unless otherwise noted. A listing of all tests can be found in **Appendix A**.

Reading Number	Room	Side	Component	Feature	Color	Condition	Substrate	Lead (mg/cm2)
16	1	A	Door		Beige	Poor	Wood	4.0
17	1	A	Door	Casing	Beige	Poor	Wood	3.6
18	1	B	Stair	Hand Rail	Beige	Poor	Metal	4.4
19	1	B	Stair	Tread	Beige	Poor	Concrete	1.3
20	1	B	Stair	Riser	Beige	Poor	Concrete	4.2
22	1	B	Stage	Floor	Red	Fair	Concrete	3.2
25	1	D	Garage Door	Casing	Beige	Poor	Metal	4.5
34	2	D	Garage Door	Casing	Beige	Poor	Metal	2.1
36	2	A	Window	Guard	Blue	Fair	Metal	1.4
38	2	B	Door		Beige	Intact	Wood	4.6
39	2	B	Door	Casing	Beige	Intact	Wood	2.5
45	34	A	Door		Beige	Intact	Wood	3.6
46	34	A	Door	Casing	Beige	Intact	Wood	4.0
60	4	D	Door	Casing	Blue	Fair	Wood	3.3
61	4	A	Window	Guard	Blue	Fair	Metal	1.6

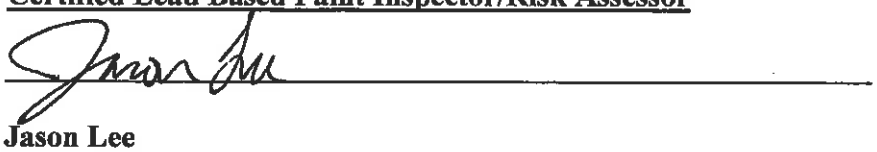
Reading Number	Room	Side	Component	Feature	Color	Condition	Substrate	Lead (mg/cm2)
62	5	A	Window	Guard	Blue	Fair	Metal	2.7
63	4	B	Baseboard		Blue	Fair	Wood	1.5
75	6	C	Door	Casing	White	Intact	Wood	3.0
77	7	C	Door		White	Intact	Wood	3.2
78	7	C	Door	Casing	White	Intact	Wood	3.3
95	8	C	Door		White	Intact	Wood	2.8
121	14	B	Window	Sash	Beige	Poor	Metal	1.4
132	15	A	Door	Casing	Beige	Intact	Wood	2.3
133	15	A	Door		Beige	Intact	Wood	1.8
134	16	A	Door	Casing	Beige	Intact	Wood	2.7
135	15	B	Window	Sash	Beige	Poor	Metal	1.4
146	17	B	Window	Sash	Beige	Poor	Metal	1.2
147	18	B	Window	Sash	Beige	Poor	Metal	1.8
148	18	A	Door	Casing	Beige	Fair	Metal	2.8
149	18	A	Door		Beige	Fair	Wood	4.6
179	22	D	Door		Beige	Fair	Metal	2.7
185	23	B	Window	Sash	Beige	Fair	Metal	3.3
192	24	A	Door	Casing	Beige	Fair	Metal	3.2
197	25	A	Wall		Beige	Fair	Brick	2.3
203	25	C	Window	Sash	Beige	Fair	Metal	4.3
205	26	B	Wall		Beige	Intact	Concrete	1.0
207	26	D	Wall		Beige	Intact	Concrete	1.3
213	27	C	Door	Casing	Beige	Intact	Metal	3
214	27	C	Door		Beige	Intact	Wood	3.3
217	28	A	Baseboard		Beige	Fair	Concrete	3.3
224	28	C	Window	Sash	Beige	Fair	Metal	2.2
227	29	A	Baseboard		Beige	Fair	Concrete	2.9
232	30	C	Window	Sash	Black	Fair	Metal	1.9
233	30	D	Door	Casing	Blue	Fair	Metal	2.1
234	31	C	Window	Sash	Blue	Poor	Metal	1.1
235	31	A	Garage Door	Casing	Beige	Fair	Metal	3.5
236	31	A	Door	Casing	Beige	Fair	Wood	4.7
237	31	A	Door		Beige	Fair	Wood	2.8
238	31		Ceiling	Beam	Red	Intact	Metal	1.2
241	Exterior	A	Door	Casing	White	Fair	Wood	2.9
243	Exterior	A	Door		White	Poor	Wood	5.2
244	Exterior	B	Gutter		Beige	Poor	Metal	7.2
248	Exterior	D	Garage Door	Casing	Beige	Poor	Metal	2.9

TABLE OF CONTENTS

I. CERTIFICATION

I certify that this inspection, conducted at the Former National Guard Armory located at 22 St. Louis Avenue, Wetumka, OK 74883, complies with accepted standards, practices, and regulations promulgated by the U.S. Department of Housing and Urban Development, the Environmental Protection Agency, and the Oklahoma Department of Environmental Quality. The results accurately reflect the condition of the property at the time the inspection was performed.

Certified Lead Based Paint Inspector/Risk Assessor



Jason Lee
Certified Lead-Based Paint Inspector/Risk Assessor
Registration No: OKRASR13451 State: OK

Certified Lead Based Paint Firm No. OKFIRM13434
Basin Environmental and Safety Technologies
3120 S. Meridian Ave.
Oklahoma City, OK 73119
405-232-5737

Revision Number:	Review Date:	Reviewed By:	Reviewer Initials:
2.1	6/14/12	Jeff Burger	

II. INTRODUCTION

The Oklahoma Department of Environmental Quality (ODEQ) contracted GMR & Associates, Inc. to provide lead-based paint and leaded dust assessment services at the Former National Guard Armory in Wetumka, Oklahoma. GMR & Associates, Inc. contracted Basin Environmental and Safety Technologies (Basin) to perform the lead-based paint inspection of the interior and exterior painted surfaces at this facility. The building was inspected on June 5, 2012. The property is located at 22 St. Louis Avenue, Wetumka, OK 74883 and is owned by Wetumka Public Schools, 410 East Benson, Wetumka, OK 74883 (405-452-5150). The inspection identified the presence, quantity, locations, and characteristics of lead on all interior and exterior painted surfaces and building components. Surfaces were tested according to the specifications described in the protocols for lead-based paint testing in the Department of Housing and Urban Development's (HUD) Guidelines, Chapter 7 (1997 revision) and any applicable Federal, State, and Local regulations.

The objective of the inspection was to identify surfaces with lead in concentrations above the Environmental Protection Agency's (EPA) threshold of 1.0 mg/cm^2 by X-Ray Fluorescence (XRF) analysis. A total of thirty-four (34) room equivalents, including the building exterior and playground, were inspected.

III. INSPECTION FINDINGS

Surfaces found to contain lead-based paint by XRF analysis are listed in **Tables 1, 2, and 3** below. All testing combinations not specifically tested, but identical to those represented below, should be considered positive for lead-based paint unless otherwise noted. A listing of all tests can be found in **Appendix A.**

Table 1: Door Components with Lead-Based Paint

Reading Number	Room	Side	Component	Feature	Color	Condition	Substrate	Lead (mg/cm2)
16	1	A	Door		Beige	Poor	Wood	4.0
17	1	A	Door	Casing	Beige	Poor	Wood	3.6
25	1	D	Garage Door	Casing	Beige	Poor	Metal	4.5
34	2	D	Garage Door	Casing	Beige	Poor	Metal	2.1
38	2	B	Door		Beige	Intact	Wood	4.6
39	2	B	Door	Casing	Beige	Intact	Wood	2.5
45	34	A	Door		Beige	Intact	Wood	3.6
46	34	A	Door	Casing	Beige	Intact	Wood	4.0
60	4	D	Door	Casing	Blue	Fair	Wood	3.3
75	6	C	Door	Casing	White	Intact	Wood	3
77	7	C	Door		White	Intact	Wood	3.2

Table 1: Door Components with Lead-Based Paint (continued)

Reading Number	Room	Side	Component	Feature	Color	Condition	Substrate	Lead (mg/cm2)
78	7	C	Door	Casing	White	Intact	Wood	3.3
95	8	C	Door		White	Intact	Wood	2.8
132	15	A	Door	Casing	Beige	Intact	Wood	2.3
133	15	A	Door		Beige	Intact	Wood	1.8
134	16	A	Door	Casing	Beige	Intact	Wood	2.7
148	18	A	Door	Casing	Beige	Fair	Metal	2.8
149	18	A	Door		Beige	Fair	Wood	4.6
179	22	D	Door		Beige	Fair	Metal	2.7
192	24	A	Door	Casing	Beige	Fair	Metal	3.2
213	27	C	Door	Casing	Beige	Intact	Metal	3.0
214	27	C	Door		Beige	Intact	Wood	3.3
233	30	D	Door	Casing	Blue	Fair	Metal	2.1
235	31	A	Garage Door	Casing	Beige	Fair	Metal	3.5
236	31	B	Door	Casing	Beige	Fair	Wood	4.7
237	31	B	Door		Beige	Fair	Wood	2.8
241	Exterior	A	Door	Casing	White	Fair	Wood	2.9
243	Exterior	A	Door		White	Poor	Wood	5.2
248	Exterior	D	Garage Door	Casing	Beige	Poor	Metal	2.9

Table 2: Window Components with Lead-Based Paint

Reading Number	Room	Side	Component	Feature	Color	Condition	Substrate	Lead (mg/cm2)
36	2	A	Window	Guard	Blue	Fair	Metal	1.4
61	4	A	Window	Guard	Blue	Fair	Metal	1.6
62	5	A	Window	Guard	Blue	Fair	Metal	2.7
121	14	B	Window	Sash	Beige	Poor	Metal	1.4
135	15	B	Window	Sash	Beige	Poor	Metal	1.4
146	17	B	Window	Sash	Beige	Poor	Metal	1.2
147	18	B	Window	Sash	Beige	Poor	Metal	1.8
185	23	B	Window	Sash	Beige	Fair	Metal	3.3
203	25	C	Window	Sash	Beige	Fair	Metal	4.3
224	28	C	Window	Sash	Beige	Fair	Metal	2.2
232	30	C	Window	Sash	Black	Fair	Metal	1.9
234	31	C	Window	Sash	Blue	Poor	Metal	1.1

Table 3: Miscellaneous Surfaces with Lead-Based Paint

Reading Number	Room	Side	Component	Feature	Color	Condition	Substrate	Lead (mg/cm2)
18	1	B	Stair	Hand Rail	Beige	Poor	Metal	4.4
19	1	B	Stair	Tread	Beige	Poor	Concrete	1.3
20	1	B	Stair	Riser	Beige	Poor	Concrete	4.2
22	1	B	Stage	Floor	Red	Fair	Concrete	3.2
63	4	B	Baseboard		Blue	Fair	Wood	1.5
197	25	A	Wall		Beige	Fair	Brick	2.3
205	26	B	Wall		Beige	Intact	Concrete	1.0
207	26	D	Wall		Beige	Intact	Concrete	1.3
217	28	A	Baseboard		Beige	Fair	Concrete	3.3
227	29	A	Baseboard		Beige	Fair	Concrete	2.9
238	31		Ceiling	Beam	Red	Intact	Metal	1.2
244	Exterior	B	Gutter		Beige	Poor	Metal	7.2

Photographs of lead-based paint locations can be found in **Appendix B.** Diagrams identifying room equivalents and lead-based paint locations can be found in **Appendix C.**

IV. SCOPE OF PROJECT

1. Background

The property, located at 22 St. Louis Avenue, Wetumka, OK 74883, was constructed in 1936. The property consists of a brick building with approximately 22,681 square feet of floor space. The building is composed of one single level structure containing thirty-two (32) room equivalents. Exterior walls on the main building (and/or annex building) and the playground are, for the purposes of this report, also considered room equivalents.

2. Training

All inspectors utilized by Basin are EPA/Oklahoma Department of Environmental Quality (ODEQ) licensed Lead-Based Paint Inspector/Risk Assessors. Furthermore, all Inspector/Risk Assessors are aware of the hazards associated with and the safe handling of radioactive materials. See **Appendix D** for copies of appropriate training documentation.

3. Equipment

A Niton Model XLp703AW (Serial #10713) XRF Analyzer was used for the inspection. The instrument contained Cadmium-109 as its radioactive source. The source was installed on April 14, 2011. During the inspection, the XRF was used in K+L testing mode for all surfaces. The Performance Characteristics Sheet for the instrument can be found in **Appendix E**. The manufacturer calibration record for the instrument can be founding **Appendix F**.

4. Methodology

The inspection procedure used at this location complies with the EPA Performance Characteristic Sheet (PCS) for the specific XRF instrument used during the inspection; this includes adhering to the manufacturer's modifications and recommendations. The specific instrument used was manufactured by NITON Corporation, 900 Middlesex Turnpike, Building 8, Billerica, Massachusetts 01821. The lead-based paint inspection and testing protocols followed are found in the *HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (June 1995), Chapter 7 (1997 Revision)* and all State and Local regulations were followed. The standard threshold for lead-based paint as per HUD/EPA and the ODEQ of 1.0 mg/cm^2 was utilized for classification of positive (above the threshold) and negative (below the threshold). When evaluating this report, it is assumed that (according to Chapter 7 of the HUD Guidelines) if one testing combination is positive for lead-based paint, then all other similar testing combinations are positive. The same assumption applies to negative readings. Any inconclusive readings are immediately followed by an additional reading of the same testing combination and test location.

Surfaces were classified by a testing combination consisting of the room equivalent, building component type, and substrate. The sides of room equivalents were labeled A, B, C, and D. Side A is the address (street facing) side of the building. Sides B, C, and D are identified clockwise of Side A while facing the address side of the building. Paint conditions were recorded as either "intact", "fair", or "poor." Paint in poor condition was defined as deterioration of more than two square feet on large components such as walls or 10% on smaller components such as baseboards. Paint in "fair" condition was defined as deterioration of less than or equal to two square feet on large components or 10% on smaller components. Paint in "intact" condition was defined as surfaces with no deteriorated paint. Interior painted surfaces that were tested included but were not limited to walls, doors, windows, trim, vents, stairwells, ceilings, cabinets, and bookcases.

Calibration of the XRF instrument was checked using a lead paint standard known to contain 1.0 mg/cm^2 of lead. The instrument was checked three times before the inspection begins and three times when the inspection is completed. Additionally, on days that the inspection lasted more than four hours, the instrument calibration was checked every four hours during the inspection. The instrument maintained a consistent

calibration reading within the manufacturer's range of 0.8 – 1.2 mg/cm^2 for this inspection.

V. RECOMMENDATIONS

Options for controlling potential lead-based paint hazards include, but are not limited to:

- Removal and replacement of building components
- Removal of lead-based paint
- Encapsulation of lead-based paint
- Enclosure of lead-based paint

Basin was contracted by GMR and Associates, Inc. to conduct this lead-based paint inspection for the ODEQ and make recommendations for the control of lead-based paint hazards. Based on conditions present at this property at the time of the inspection, we recommend the following interim control and abatement options:

- Remove and replace doors and door components with lead-based paint
- Remove and replace window components with lead-based paint
- Remove and replace stair hand rails
- Remove and replace exterior gutters
- Remove lead-based paint on garage door casings
- Remove lead-based paint from stairs and stage floor
- Remove lead-based paint from baseboards
- Remove lead-based paint from walls
- Encapsulate lead-based paint on ceiling beams

Basin estimates the cost for the above mentioned lead-based paint abatement option to be between $43,000 to $48,000.

VI. LIMITATIONS

Environmental conditions are subject to change and conditions reported herein apply only to the date and time of the testing. Therefore, changes in environmental conditions including, but not limited to the condition of painted components may change following this inspection are not predicted by this report. Those areas that are not accessible at the time of the inspection should be considered positive for the presence of lead-based paint and lead hazards.

This document is the rendering of a professional service, the essence of which is to render advice, judgment, opinion, or professional skill. No attempt was made to document the condition of each and every structural or nonstructural element. In the event that additional information becomes available that could affect the conclusions reached in this investigation, Basin reserves the right to review and change if required, some or all of the opinions presented herein.

APPENDIX A

Rd. #	Time	Duration	Units	Site	Room	Side	Component	Feature	Color	Condition	Substrate	Results	Depth Index	Action Level	Lead (mg/cm2)	Error
1	6/5/2012 11:55	92.57	cps													
2	6/5/2012 11:58	21.08	mg / cm ^2				Calibrate								4.13	0
3	6/5/2012 11:58	21.03	mg / cm ^2				Calibrate					Positive	1.07	1	1	0.1
4	6/5/2012 12:00	37.12	mg / cm ^2				Calibrate					Positive	1.04	1	1	0.1
5	6/5/2012 12:00	20.41	mg / cm ^2				Calibrate					Negative	1.03	1	0.16	0.05
6	6/5/2012 12:05	2.3	mg / cm ^2	Wetumka Armory	1		Ceiling	Beam	Beige	Poor	Metal	Positive	1.07	1	1	0.1
7	6/5/2012 12:07	1.32	mg / cm ^2	Wetumka Armory	1	A	Door	Track	Silver	Poor	Metal	Negative	1.75	1	0.7	0.3
8	6/5/2012 12:10	1.32	mg / cm ^2	Wetumka Armory	1	A	Wall	Board	Beige	Intact	Wood	Negative	1	1	< LOD	0.07
9	6/5/2012 12:10	1.98	mg / cm ^2	Wetumka Armory	1	A	Goal	Support	Beige	Fair	Metal	Negative	2.54	1	< LOD	0.71
10	6/5/2012 12:15	92.63	cps									Negative	1	1	< LOD	0.03
11	6/5/2012 12:16	1.65	mg / cm ^2	Wetumka Armory	1	A	Goal	Hoop	Orange	Fair	Metal	Negative	1.07	1	< LOD	0.03
12	6/5/2012 12:16	3.61	mg / cm ^2	Wetumka Armory	1	A	Goal	Hoop	Orange	Fair	Metal	Negative	1.5	1	0.8	0.1
13	6/5/2012 12:16	1.96	mg / cm ^2	Wetumka Armory	1	A	Wall	Electrical Panel	Beige	Fair	Metal	Negative	1	1	< LOD	0.03
14	6/5/2012 12:18	1.31	mg / cm ^2	Wetumka Armory	1	A	Wall	Conduit	Beige	Fair	Metal	Negative	4.4	1	< LOD	0.33
15	6/5/2012 12:18	3.96	mg / cm ^2	Wetumka Armory	1	A	Wall		Beige	Fair	Brick	Negative	2.42	1	0.5	0.3
16	6/5/2012 12:19	3.93	mg / cm ^2	Wetumka Armory	1	A	Door		Beige	Poor	Wood	Positive	4	1	4	0.7
17	6/5/2012 12:19	1.32	mg / cm ^2	Wetumka Armory	1	A	Door	Casing	Beige	Poor	Wood	Positive	3.38	1	3.6	1.4
18	6/5/2012 12:20	1.05	mg / cm ^2	Wetumka Armory	1	B	Stair	Hand Rail	Beige	Poor	Metal	Positive	4.63	1	4.4	1.8
19	6/5/2012 12:20	3.95	mg / cm ^2	Wetumka Armory	1	B	Stair	Tread	Beige	Poor	Concrete	Positive	3.47	1	1.3	0.3
20	6/5/2012 12:21	4.95	mg / cm ^2	Wetumka Armory	1	B	Stair	Riser	Beige	Poor	Concrete	Positive	4.82	1	4.2	0.7
21	6/5/2012 12:22	2.63	mg / cm ^2	Wetumka Armory	1	B	Wall		Beige	Fair	Brick	Negative	3.11	1	< LOD	0.12
22	6/5/2012 12:23	1.32	mg / cm ^2	Wetumka Armory	1	B	Stage	Floor	Red	Fair	Concrete	Positive	1.59	1	3.2	0.9
23	6/5/2012 12:24	3.62	mg / cm ^2	Wetumka Armory	1	C	Wall		Beige	Fair	Brick	Negative	2.65	1	0.6	0.3
24	6/5/2012 12:24	1.66	mg / cm ^2	Wetumka Armory	1	D	Wall		Beige	Fair	Brick	Negative	3.26	1	< LOD	0.95
25	6/5/2012 12:25	2.65	mg / cm ^2	Wetumka Armory	1	D	Garage Door	Casing	Beige	Poor	Metal	Positive	6.47	1	4.6	1.8
26	6/5/2012 12:26	4.59	mg / cm ^2	Wetumka Armory	1		Floor		Black	Poor	Concrete	Negative	1	1	< LOD	0.03
27	6/5/2012 12:27	1.31	mg / cm ^2	Wetumka Armory	1		Ceiling	Joist	Black	Poor	Metal	Negative	1	1	< LOD	0.03
28	6/5/2012 12:32	5.27	mg / cm ^2	Wetumka Armory	2		Ceiling	Beam	Silver	Fair	Metal	Negative	1	1	0.7	0.1
29	6/5/2012 12:35	1.63	mg / cm ^2	Wetumka Armory	2		Ceiling	Joist	Silver	Fair	Metal	Negative	1	1	< LOD	0.03
30	6/5/2012 12:37	1.64	mg / cm ^2	Wetumka Armory	2	A	Wall		Blue	Fair	Brick	Negative	1.29	1	< LOD	0.07
31	6/5/2012 12:37	2.3	mg / cm ^2	Wetumka Armory	2	B	Wall		Blue	Fair	Brick	Negative	1	1	< LOD	0.03
32	6/5/2012 12:37	2.3	mg / cm ^2	Wetumka Armory	2	C	Wall		Blue	Fair	Brick	Negative	1	1	< LOD	0.03
33	6/5/2012 12:38	2.96	mg / cm ^2	Wetumka Armory	2	D	Wall		Blue	Fair	Brick	Negative	1	1	< LOD	0.03
34	6/5/2012 12:39	2.31	mg / cm ^2	Wetumka Armory	2	D	Garage Door	Casing	Beige	Poor	Metal	Positive	5.31	1	2.1	1
35	6/5/2012 12:41	1.66	mg / cm ^2	Wetumka Armory	2	A	Wall	Pipe	Blue	Intact	Metal	Negative	1	1	< LOD	0.03
36	6/5/2012 12:42	2.31	mg / cm ^2	Wetumka Armory	2	A	Window	Guard	Blue	Fair	Metal	Positive	1.33	1	1.4	0.3
37	6/5/2012 12:43	1.31	mg / cm ^2	Wetumka Armory	2	A	Wall	Conduit	Blue	Fair	Metal	Negative	1.29	1	< LOD	0.07
38	6/5/2012 12:44	1.32	mg / cm ^2	Wetumka Armory	2	B	Door		Beige	Intact	Wood	Positive	2.62	1	4.6	1.5
39	6/5/2012 12:44	1.97	mg / cm ^2	Wetumka Armory	2	B	Door	Casing	Beige	Intact	Wood	Positive	2.64	1	2.5	0.8
40	6/5/2012 12:48	1.97	mg / cm ^2	Wetumka Armory	34		Ceiling		Beige	Intact	Concrete	Negative	3.15	1	< LOD	0.91
41	6/5/2012 12:49	2.63	mg / cm ^2	Wetumka Armory	34	A	Wall		Beige	Intact	Brick	Negative	2.14	1	< LOD	0.75
42	6/5/2012 12:49	2.3	mg / cm ^2	Wetumka Armory	34	B	Wall		Beige	Intact	Brick	Negative	1	1	< LOD	0.04
43	6/5/2012 12:50	2.64	mg / cm ^2	Wetumka Armory	34	C	Wall		Beige	Intact	Brick	Negative	1.47	1	< LOD	0.06
44	6/5/2012 12:50	3.62	mg / cm ^2	Wetumka Armory	34	D	Wall		Beige	Intact	Brick	Negative	2.12	1	0.6	0.3
45	6/5/2012 12:51	1.65	mg / cm ^2	Wetumka Armory	34	A	Door		Beige	Intact	Wood	Positive	4.13	1	3.6	1.4
46	6/5/2012 12:51	3.62	mg / cm ^2	Wetumka Armory	34	A	Door	Casing	Beige	Intact	Wood	Positive	3.96	1	4	0.7
47	6/5/2012 12:52	0.99	mg / cm ^2	Wetumka Armory	34	D	Wall	Conduit	Beige	Intact	Metal	Negative	7.18	1	< LOD	0.84
48	6/5/2012 12:54	2.31	mg / cm ^2	Wetumka Armory	3	A	Wall		Blue	Fair	Brick	Negative	3.55	1	< LOD	0.24
49	6/5/2012 12:56	90.67	cps												4.19	0
50	6/5/2012 12:57	0.98	mg / cm ^2	Wetumka Armory	3	B	Wall		Blue	Fair	Brick	Negative	1	1	< LOD	0.01
51	6/5/2012 12:58	0.65	mg / cm ^2	Wetumka Armory	3	C	Wall		Blue	Fair	Brick	Negative	1	1	< LOD	0.01
52	6/5/2012 12:58	0.66	mg / cm ^2	Wetumka Armory	3	D	Wall		Blue	Fair	Brick	Negative	2.81	1	< LOD	0.01

Rd. #	Time	Duration	Units	Site	Room	Side	Component	Feature	Color	Condition	Substrate	Results	Depth Index	Action Level	Lead (mg/cm2)	Error
53	6/5/2012 12:58	1.31	mg / cm ^2	Wetumka Armory	3	D	Wall	Conduit	Blue	Fair	Metal	Negative	1.8	1	< LOD	0.01
54	6/5/2012 12:59	0.66	mg / cm ^2	Wetumka Armory	4	B	Wall	Conduit	Blue	Poor	Metal	Negative	1.92	1	< LOD	0.01
55	6/5/2012 13:00	0.98	mg / cm ^2	Wetumka Armory	4	A	Wall		Blue	Poor	Concrete	Negative	2.88	1	< LOD	0.01
56	6/5/2012 13:00	0.65	mg / cm ^2	Wetumka Armory	4	B	Wall		Blue	Poor	Concrete	Negative	1.77	1	< LOD	0.01
57	6/5/2012 13:00	0.66	mg / cm ^2	Wetumka Armory	4	C	Wall		Blue	Poor	Concrete	Negative	10	1	< LOD	0.01
58	6/5/2012 13:00	0.66	mg / cm ^2	Wetumka Armory	4	D	Wall		Blue	Poor	Concrete	Negative	3.39	1	< LOD	0.01
59	6/5/2012 13:00	0.99	mg / cm ^2	Wetumka Armory	4	D	Door		Blue	Fair	Wood	Null	4.57	1	< LOD	3.6
60	6/5/2012 13:01	3.61	mg / cm ^2	Wetumka Armory	4	D	Door	Casing	Blue	Fair	Wood	Positive	3.07	1	3.3	0.5
61	6/5/2012 13:02	1.98	mg / cm ^2	Wetumka Armory	4	A	Window	Guard	Blue	Fair	Metal	Positive	1.93	1	1.6	0.5
62	6/5/2012 13:03	0.99	mg / cm ^2	Wetumka Armory	5	A	Window	Guard	Blue	Fair	Metal	Positive	1.8	1	2.7	1.3
63	6/5/2012 13:04	3.63	mg / cm ^2	Wetumka Armory	4	B	Baseboard		Blue	Fair	Wood	Positive	3.65	1	1.6	0.3
64	6/5/2012 13:05	0.99	mg / cm ^2	Wetumka Armory	5	D	Baseboard		Blue	Poor	Wood	Negative	7.19	1	< LOD	0.01
65	6/5/2012 13:06	0.98	mg / cm ^2	Wetumka Armory	5	A	Wall	Conduit	Blue	Fair	Metal	Negative	9.6	1	< LOD	0.01
66	6/5/2012 13:07	1.32	mg / cm ^2	Wetumka Armory	5	A	Wall		Beige	Poor	Concrete	Negative	6.52	1	< LOD	0.01
67	6/5/2012 13:07	1.32	mg / cm ^2	Wetumka Armory	5	B	Wall		Beige	Poor	Concrete	Negative	2.44	1	< LOD	0.01
68	6/5/2012 13:07	0.66	mg / cm ^2	Wetumka Armory	5	C	Wall		Beige	Poor	Concrete	Negative	1	1	< LOD	0.01
69	6/5/2012 13:07	0.99	mg / cm ^2	Wetumka Armory	5	D	Wall		Beige	Poor	Concrete	Negative	1.22	1	< LOD	0.01
70	6/5/2012 13:09	0.99	mg / cm ^2	Wetumka Armory	6	A	Wall		White	Intact	Brick	Negative	4.31	1	< LOD	0.01
71	6/5/2012 13:09	0.98	mg / cm ^2	Wetumka Armory	6	B	Wall		White	Intact	Brick	Negative	4.43	1	< LOD	0.01
72	6/5/2012 13:09	0.98	mg / cm ^2	Wetumka Armory	6	C	Wall		White	Intact	Brick	Negative	5.06	1	< LOD	0.01
73	6/5/2012 13:09	0.65	mg / cm ^2	Wetumka Armory	6	D	Wall		White	Intact	Brick	Negative	5.25	1	< LOD	0.01
74	6/5/2012 13:10	1.31	mg / cm ^2	Wetumka Armory	6	D	Wall	Pipe	White	Intact	Metal	Negative	2.19	1	< LOD	0.01
75	6/5/2012 13:10	1.32	mg / cm ^2	Wetumka Armory	6	C	Door	Casing	White	Intact	Wood	Positive	4.53	1	3	1.5
76	6/5/2012 13:10	0.66	mg / cm ^2	Wetumka Armory	6	C	Door		White	Intact	Wood	Negative	2.52	1	< LOD	0.01
77	6/5/2012 13:20	2.3	mg / cm ^2	Wetumka Armory	7	C	Door		White	Intact	Wood	Positive	4.06	1	3.2	1.1
78	6/5/2012 13:20	1.98	mg / cm ^2	Wetumka Armory	7	C	Door	Casing	White	Intact	Wood	Positive	3.84	1	3.3	1.2
79	6/5/2012 13:22	0.66	mg / cm ^2	Wetumka Armory	7	A	Wall		White	Intact	Concrete	Negative	8.49	1	< LOD	0.01
80	6/5/2012 13:22	0.66	mg / cm ^2	Wetumka Armory	7	B	Wall		White	Intact	Concrete	Negative	2.06	1	< LOD	0.01
81	6/5/2012 13:23	0.66	mg / cm ^2	Wetumka Armory	7	C	Wall		White	Intact	Concrete	Negative	2.14	1	< LOD	0.01
82	6/5/2012 13:23	0.66	mg / cm ^2	Wetumka Armory	7	D	Wall		White	Intact	Concrete	Negative	3.99	1	< LOD	0.01
83	6/5/2012 13:23	0.98	mg / cm ^2	Wetumka Armory	7	D	Wall	Pipe	White	Intact	Metal	Negative	2.85	1	< LOD	0.01
84	6/5/2012 13:24	0.99	mg / cm ^2	Wetumka Armory	7		Floor		Blue	Intact	Concrete	Negative	1	1	< LOD	0.01
85	6/5/2012 13:24	0.66	mg / cm ^2	Wetumka Armory	6		Floor		Blue	Intact	Concrete	Negative	1	1	< LOD	0.01
86	6/5/2012 13:25	0.98	mg / cm ^2	Wetumka Armory	8	A	Wall		White	Intact	Brick	Negative	5.71	1	< LOD	0.01
87	6/5/2012 13:26	0.98	mg / cm ^2	Wetumka Armory	8	B	Wall		White	Intact	Brick	Negative	1.9	1	< LOD	0.01
88	6/5/2012 13:26	0.98	mg / cm ^2	Wetumka Armory	8	C	Wall		White	Intact	Brick	Negative	1	1	< LOD	0.01
89	6/5/2012 13:26	0.99	mg / cm ^2	Wetumka Armory	8	D	Wall		White	Intact	Brick	Negative	1	1	< LOD	0.01
90	6/5/2012 13:27	0.98	mg / cm ^2	Wetumka Armory	8	D	Wall	Conduit	White	Intact	Metal	Negative	4.73	1	< LOD	0.01
91	6/5/2012 13:27	0.98	mg / cm ^2	Wetumka Armory	8	B	Wall	Board	White	Intact	Wood	Negative	1	1	< LOD	0.01
92	6/5/2012 13:28	0.99	mg / cm ^2	Wetumka Armory	8	B	Door	Casing	White	Intact	Metal	Negative	4.51	1	< LOD	0.01
93	6/5/2012 13:28	0.98	mg / cm ^2	Wetumka Armory	8	B	Door		White	Intact	Metal	Negative	3.99	1	< LOD	0.01
94	6/5/2012 13:28	1.32	mg / cm ^2	Wetumka Armory	8	C	Door	Casing	White	Intact	Wood	Negative	10	1	< LOD	0.01
95	6/5/2012 13:29	3.62	mg / cm ^2	Wetumka Armory	8	C	Door		White	Intact	Wood	Positive	7.34	1	2.8	0.7
96	6/5/2012 13:31	0.66	mg / cm ^2	Wetumka Armory	8		Ceiling	Beam	Silver	Poor	Metal	Negative	1.52	1	< LOD	0.01
97	6/5/2012 13:39	92.62	cps												3.72	0
98	6/5/2012 13:41	0.66	mg / cm ^2	Wetumka Armory	9	A	Wall		White	Intact	Brick	Negative	2.22	1	< LOD	0.01
99	6/5/2012 13:41	0.99	mg / cm ^2	Wetumka Armory	9	B	Wall		White	Intact	Brick	Negative	1	1	< LOD	0.01
100	6/5/2012 13:41	0.66	mg / cm ^2	Wetumka Armory	9	C	Wall		White	Intact	Brick	Negative	3.54	1	< LOD	0.01
101	6/5/2012 13:41	0.66	mg / cm ^2	Wetumka Armory	9	D	Wall		White	Intact	Brick	Negative	1	1	< LOD	0.01
102	6/5/2012 13:42	0.65	mg / cm ^2	Wetumka Armory	9	B	Door		White	Intact	Wood	Negative	1	1	< LOD	0.01
103	6/5/2012 13:42	0.99	mg / cm ^2	Wetumka Armory	9	B	Door	Casing	White	Intact	Wood	Negative	1	1	< LOD	0.01
104	6/5/2012 13:43	0.66	mg / cm ^2	Wetumka Armory	9	A	Wall	Conduit	White	Intact	Metal	Negative	5.41	1	< LOD	0.01

Rd. #	Time	Duration	Units	Site	Room	Side	Component	Feature	Color	Condition	Substrate	Results	Depth Index	Action Level	Lead (mg/cm2)	Error
105	6/5/2012 13:44	0.98	mg / cm ^2	Wetumka Armory	10	B	Wall	Conduit	White	Intact	Metal	Negative	5.46	1	< LOD	0.01
106	6/5/2012 13:44	0.99	mg / cm ^2	Wetumka Armory	10	A	Wall		White	Intact	Concrete	Negative	1	1	< LOD	0.01
107	6/5/2012 13:45	0.99	mg / cm ^2	Wetumka Armory	10	B	Wall		White	Intact	Concrete	Negative	1	1	< LOD	0.01
108	6/5/2012 13:45	0.98	mg / cm ^2	Wetumka Armory	10	C	Wall		White	Intact	Concrete	Negative	1	1	< LOD	0.01
109	6/5/2012 13:45	0.98	mg / cm ^2	Wetumka Armory	10	D	Wall		White	Intact	Concrete	Negative	1	1	< LOD	0.01
110	6/5/2012 13:47	0.66	mg / cm ^2	Wetumka Armory	10		Ceiling		White	Intact	Concrete	Negative	1	1	< LOD	0.01
111	6/5/2012 13:48	0.99	mg / cm ^2	Wetumka Armory	9		Floor		Beige	Intact	Concrete	Negative	1	1	< LOD	0.01
112	6/5/2012 13:55	0.66	mg / cm ^2	Wetumka Armory	12	A	Wall		White	Poor	Concrete	Negative	10	1	< LOD	0.01
113	6/5/2012 13:56	0.99	mg / cm ^2	Wetumka Armory	12	B	Wall		White	Poor	Concrete	Negative	4.51	1	< LOD	0.01
114	6/5/2012 13:56	0.99	mg / cm ^2	Wetumka Armory	12	D	Wall		White	Poor	Concrete	Negative	1	1	< LOD	0.01
115	6/5/2012 13:57	0.99	mg / cm ^2	Wetumka Armory	13	A	Wall		Beige	Fair	Brick	Negative	1.29	1	< LOD	0.01
116	6/5/2012 13:58	0.66	mg / cm ^2	Wetumka Armory	13	B	Wall		Beige	Fair	Brick	Negative	1	1	< LOD	0.01
117	6/5/2012 13:58	0.98	mg / cm ^2	Wetumka Armory	13	C	Wall		Beige	Fair	Brick	Negative	3.5	1	< LOD	0.01
118	6/5/2012 13:59	0.99	mg / cm ^2	Wetumka Armory	13	D	Wall		Beige	Fair	Brick	Negative	1.22	1	< LOD	0.01
119	6/5/2012 13:59	0.98	mg / cm ^2	Wetumka Armory	13	C	Wall	Pipe	Beige	Poor	Metal	Negative	1.29	1	< LOD	0.01
120	6/5/2012 14:00	1.32	mg / cm ^2	Wetumka Armory	14	C	Wall	Conduit	Beige	Intact	Metal	Negative	3.71	1	< LOD	0.01
121	**6/5/2012 14:01**	**2.62**	**mg / cm ^2**	**Wetumka Armory**	**14**	**B**	**Window**	**Sash**	**Beige**	**Poor**	**Metal**	**Positive**	**1.41**	**1**	**1.4**	**0.3**
122	6/5/2012 14:03	0.65	mg / cm ^2	Wetumka Armory	14	A	Wall		Beige	Fair	Brick	Negative	10	1	< LOD	0.01
123	6/5/2012 14:03	1.32	mg / cm ^2	Wetumka Armory	14	B	Wall		Beige	Fair	Brick	Negative	6.54	1	< LOD	0.01
124	6/5/2012 14:04	0.99	mg / cm ^2	Wetumka Armory	14	C	Wall		Beige	Fair	Brick	Negative	6.82	1	< LOD	0.01
125	6/5/2012 14:05	0.66	mg / cm ^2	Wetumka Armory	14	D	Wall		Beige	Fair	Brick	Negative	3.54	1	< LOD	0.01
126	6/5/2012 14:05	0.99	mg / cm ^2	Wetumka Armory	15	A	Wall		Beige	Fair	Brick	Negative	3.06	1	< LOD	0.01
127	6/5/2012 14:05	0.66	mg / cm ^2	Wetumka Armory	15	B	Wall		Beige	Fair	Brick	Negative	1	1	< LOD	0.01
128	6/5/2012 14:05	0.65	mg / cm ^2	Wetumka Armory	15	C	Wall		Beige	Fair	Brick	Negative	1	1	< LOD	0.01
129	6/5/2012 14:06	0.65	mg / cm ^2	Wetumka Armory	15	D	Wall		Beige	Fair	Brick	Negative	1	1	< LOD	0.01
130	6/5/2012 14:08	90.67	cps												3.71	0
131	6/5/2012 14:09	1.66	mg / cm ^2	Wetumka Armory	15	C	Wall	Conduit	Beige	Fair	Metal	Negative	1	1	< LOD	0.03
132	**6/5/2012 14:10**	**1.98**	**mg / cm ^2**	**Wetumka Armory**	**15**	**A**	**Door**	**Casing**	**Beige**	**Intact**	**Wood**	**Positive**	**2.4**	**1**	**2.3**	**0.7**
133	**6/5/2012 14:10**	**2.3**	**mg / cm ^2**	**Wetumka Armory**	**15**	**A**	**Door**		**Beige**	**Intact**	**Wood**	**Positive**	**2.26**	**1**	**1.8**	**0.5**
134	**6/5/2012 14:11**	**1.99**	**mg / cm ^2**	**Wetumka Armory**	**16**	**A**	**Door**	**Casing**	**Beige**	**Intact**	**Wood**	**Positive**	**2.64**	**1**	**2.7**	**0.6**
135	**6/5/2012 14:12**	**3.3**	**mg / cm ^2**	**Wetumka Armory**	**15**	**B**	**Window**	**Sash**	**Beige**	**Poor**	**Metal**	**Positive**	**1.43**	**1**	**1.4**	**0.3**
136	6/5/2012 14:13	1.33	mg / cm ^2	Wetumka Armory	16	A	Wall	Conduit	Beige	Fair	Metal	Negative	9.39	1	< LOD	0.86
137	6/5/2012 14:13	3.63	mg / cm ^2	Wetumka Armory	16	A	Wall	Conduit	Beige	Fair	Brick	Negative	4.97	1	0.5	0.3
138	6/5/2012 14:14	3.28	mg / cm ^2	Wetumka Armory	16	B	Wall	Conduit	Beige	Fair	Brick	Negative	1.19	1	< LOD	0.6
139	6/5/2012 14:14	4.6	mg / cm ^2	Wetumka Armory	16	C	Wall	Conduit	Beige	Fair	Brick	Negative	1.94	1	0.6	0.3
140	6/5/2012 14:14	4.95	mg / cm ^2	Wetumka Armory	16	D	Wall	Conduit	Beige	Fair	Brick	Negative	1.73	1	0.6	0.3
141	6/5/2012 14:15	2.98	mg / cm ^2	Wetumka Armory	17	A	Wall		Beige	Fair	Brick	Negative	3.93	1	< LOD	0.75
142	6/5/2012 14:15	3.61	mg / cm ^2	Wetumka Armory	17	B	Wall		Beige	Fair	Brick	Negative	2.72	1	< LOD	0.45
143	6/5/2012 14:16	3.62	mg / cm ^2	Wetumka Armory	17	C	Wall		Beige	Fair	Brick	Negative	4.43	1	0.6	0.3
144	6/5/2012 14:16	3.63	mg / cm ^2	Wetumka Armory	17	D	Wall		Beige	Fair	Brick	Negative	1.89	1	0.6	0.3
145	6/5/2012 14:16	2.63	mg / cm ^2	Wetumka Armory	17	A	Wall	Conduit	Beige	Fair	Brick	Negative	10	1	< LOD	0.58
146	**6/5/2012 14:18**	**4.93**	**mg / cm ^2**	**Wetumka Armory**	**17**	**B**	**Window**	**Sash**	**Beige**	**Poor**	**Metal**	**Positive**	**1.25**	**1**	**1.2**	**0.1**
147	**6/5/2012 14:19**	**1.97**	**mg / cm ^2**	**Wetumka Armory**	**18**	**B**	**Window**	**Sash**	**Beige**	**Poor**	**Metal**	**Positive**	**2.14**	**1**	**1.8**	**0.5**
148	**6/5/2012 14:20**	**0.99**	**mg / cm ^2**	**Wetumka Armory**	**18**	**A**	**Door**	**Casing**	**Beige**	**Fair**	**Metal**	**Positive**	**1.93**	**1**	**2.8**	**1.4**
149	**6/5/2012 14:20**	**1.3**	**mg / cm ^2**	**Wetumka Armory**	**18**	**A**	**Door**		**Beige**	**Fair**	**Wood**	**Positive**	**3.16**	**1**	**4.6**	**1.7**
150	6/5/2012 14:20	1.97	mg / cm ^2	Wetumka Armory	18	A	Wall	Conduit	Beige	Fair	Metal	Negative	3.8	1	< LOD	0.34
151	6/5/2012 14:21	1.65	mg / cm ^2	Wetumka Armory	18	A	Wall		Beige	Fair	Brick	Negative	3.37	1	< LOD	0.15
152	6/5/2012 14:21	3.29	mg / cm ^2	Wetumka Armory	18	B	Wall		Beige	Fair	Brick	Negative	3.79	1	< LOD	0.6
153	6/5/2012 14:21	1.97	mg / cm ^2	Wetumka Armory	18	C	Wall		Beige	Fair	Brick	Negative	1	1	< LOD	0.03
154	*6/5/2012 14:22*	*1.64*	*mg / cm ^2*	*Wetumka Armory*	*18*	*D*	*Wall*		*Beige*	*Fair*	*Brick*	*Null*	*2.61*	*1*	*< LOD*	*0.12*
155	6/5/2012 14:24	2.3	mg / cm ^2	Wetumka Armory	19	A	Wall		Beige	Intact	Brick	Negative	1.07	1	< LOD	0.03
156	6/5/2012 14:25	2.96	mg / cm ^2	Wetumka Armory	19	B	Wall		Beige	Intact	Concrete	Negative	1.03	1	< LOD	0.03

Rd. #	Time	Duration	Units	Site	Room	Side	Component	Feature	Color	Condition	Substrate	Results	Depth Index	Action Level	Lead (mg/cm2)	Error
157	6/5/2012 14:25	1.31	mg / cm ^2	Wetumka Armory	19	C	Wall		Beige	Intact	Drywall	Negative	1	1	< LOD	0.03
158	6/5/2012 14:25	1.65	mg / cm ^2	Wetumka Armory	19	D	Wall		Beige	Intact	Brick	Negative	2.61	1	< LOD	0.15
159	6/5/2012 14:27	0.98	mg / cm ^2	Wetumka Armory	19	B	Door		Stained	Intact	Wood	Negative	1	1	< LOD	0.04
160	6/5/2012 14:27	1.98	mg / cm ^2	Wetumka Armory	19	B	Door	Casing	Beige	Intact	Wood	Negative	1	1	< LOD	0.72
161	6/5/2012 14:28	1.97	mg / cm ^2	Wetumka Armory	20	A	Wall		Blue	Intact	Concrete	Null	1	1	< LOD	1.2
162	6/5/2012 14:28	1.66	mg / cm ^2	Wetumka Armory	20	A	Wall		Blue	Intact	Concrete	Negative	1	1	< LOD	0.09
163	6/5/2012 14:28	1.64	mg / cm ^2	Wetumka Armory	20	B	Wall		Blue	Intact	Concrete	Negative	3.54	1	< LOD	0.15
164	6/5/2012 14:28	1.65	mg / cm ^2	Wetumka Armory	20	C	Wall		Blue	Intact	Concrete	Negative	2.32	1	< LOD	0.1
165	6/5/2012 14:29	1.97	mg / cm ^2	Wetumka Armory	20	D	Wall		Blue	Intact	Concrete	Negative	3.85	1	< LOD	0.17
166	6/5/2012 14:33	92.6	cps												3.63	0
167	6/5/2012 14:35	1.32	mg / cm ^2	Wetumka Armory	21	A	Wall		Beige	Intact	Concrete	Negative	2.22	1	< LOD	0.01
168	6/5/2012 14:35	0.66	mg / cm ^2	Wetumka Armory	21	B	Wall		Beige	Intact	Concrete	Negative	2.66	1	< LOD	0.01
169	6/5/2012 14:36	0.99	mg / cm ^2	Wetumka Armory	21	C	Wall		Beige	Intact	Drywall	Negative	1	1	< LOD	0.01
170	6/5/2012 14:37	0.98	mg / cm ^2	Wetumka Armory	21	D	Wall		Beige	Intact	Drywall	Negative	1.76	1	< LOD	0.01
171	6/5/2012 14:38	0.66	mg / cm ^2	Wetumka Armory	22	A	Wall		Beige	Intact	Drywall	Negative	1	1	< LOD	0.01
172	6/5/2012 14:38	0.66	mg / cm ^2	Wetumka Armory	22	A	Wall		Beige	Intact	Brick	Negative	1.23	1	< LOD	0.01
173	6/5/2012 14:38	0.98	mg / cm ^2	Wetumka Armory	22	B	Wall		Beige	Intact	Brick	Negative	1	1	< LOD	0.01
174	6/5/2012 14:38	0.66	mg / cm ^2	Wetumka Armory	22	C	Wall		Beige	Intact	Brick	Negative	1	1	< LOD	0.01
175	6/5/2012 14:38	0.66	mg / cm ^2	Wetumka Armory	22	D	Wall		Beige	Intact	Brick	Negative	3.44	1	< LOD	0.01
176	6/5/2012 14:39	0.65	mg / cm ^2	Wetumka Armory	22	D	Wall	Conduit	Beige	Intact	Metal	Negative	1.02	1	< LOD	0.01
177	6/5/2012 14:39	0.98	mg / cm ^2	Wetumka Armory	22	D	Door	Casing	Beige	Fair	Metal	Negative	10	1	< LOD	0.01
178	6/5/2012 14:40	21.36	mg / cm ^2	Wetumka Armory	22	D	Door	Casing	Beige	Fair	Metal	Negative	9.09	1	< LOD	0.01
179	6/5/2012 14:40	1.98	mg / cm ^2	Wetumka Armory	22	D	Door		Beige	Fair	Metal	Positive	3.98	1	2.7	1
180	6/5/2012 14:42	0.99	mg / cm ^2	Wetumka Armory	22	B	Door		Beige	Fair	Wood	Negative	1	1	< LOD	0.01
181	6/5/2012 14:43	0.66	mg / cm ^2	Wetumka Armory	23	D	Door		Stained	Fair	Wood	Negative	1	1	< LOD	0.01
182	6/5/2012 14:43	0.66	mg / cm ^2	Wetumka Armory	23	D	Door	Casing	Beige	Fair	Wood	Negative	1	1	< LOD	0.01
183	6/5/2012 14:43	0.66	mg / cm ^2	Wetumka Armory	23	A	Wall		Beige	Fair	Brick	Negative	1.36	1	< LOD	0.01
184	6/5/2012 14:44	0.66	mg / cm ^2	Wetumka Armory	23	B	Wall		Beige	Fair	Brick	Negative	1	1	< LOD	0.01
185	6/5/2012 14:44	1.99	mg / cm ^2	Wetumka Armory	23	B	Window	Sash	Beige	Fair	Metal	Positive	3.56	1	3.3	1.1
186	6/5/2012 14:45	0.65	mg / cm ^2	Wetumka Armory	23	C	Wall		Beige	Fair	Brick	Negative	1.41	1	< LOD	0.01
187	6/5/2012 14:45	0.66	mg / cm ^2	Wetumka Armory	23	D	Wall		Beige	Fair	Brick	Negative	10	1	< LOD	0.01
188	6/5/2012 14:48	90.68	cps												3.9	0
189	6/5/2012 14:51	92.55	cps												3.73	0
190	6/5/2012 14:53	1.31	mg / cm ^2	Wetumka Armory	23	C	Wall	Conduit	Beige	Fair	Metal	Negative	6.82	1	< LOD	0.73
191	6/5/2012 14:54	1.32	mg / cm ^2	Wetumka Armory	24	D	Wall	Conduit	Beige	Fair	Metal	Negative	5.68	1	< LOD	0.58
192	6/5/2012 14:54	0.93	mg / cm ^2	Wetumka Armory	24	A	Door	Casing	Beige	Fair	Metal	Positive	2.04	1	3.2	1.6
193	6/5/2012 14:55	1.65	mg / cm ^2	Wetumka Armory	24	A	Wall		Beige	Fair	Brick	Negative	1	1	< LOD	0.03
194	6/5/2012 14:55	0.66	mg / cm ^2	Wetumka Armory	24	B	Wall		Beige	Fair	Concrete	Null	1	1	< LOD	0.03
195	6/5/2012 14:55	0.99	mg / cm ^2	Wetumka Armory	24	C	Wall		Beige	Fair	Concrete	Negative	1	1	< LOD	0.05
196	6/5/2012 14:56	1.64	mg / cm ^2	Wetumka Armory	24	D	Wall		Beige	Fair	Concrete	Negative	1.87	1	< LOD	0.05
197	6/5/2012 14:56	1.97	mg / cm ^2	Wetumka Armory	25	A	Wall		Beige	Fair	Brick	Positive	3.24	1	2.3	0.9
198	6/5/2012 14:56	1.65	mg / cm ^2	Wetumka Armory	25	B	Wall		Beige	Fair	Brick	Null	4.98	1	1.4	0.8
199	6/5/2012 14:57	1.31	mg / cm ^2	Wetumka Armory	25	C	Wall		Beige	Fair	Brick	Null	4.91	1	< LOD	0.9
200	6/5/2012 14:57	2.31	mg / cm ^2	Wetumka Armory	25	C	Wall		Beige	Fair	Brick	Negative	3.94	1	< LOD	0.7
201	6/5/2012 14:57	0.98	mg / cm ^2	Wetumka Armory	25	D	Wall		Beige	Fair	Concrete	Null	1	1	< LOD	0.03
202	6/5/2012 14:58	3.64	mg / cm ^2	Wetumka Armory	24	C	Window	Sash	Beige	Fair	Metal	Negative	3.35	1	< LOD	0.08
203	6/5/2012 14:59	0.66	mg / cm ^2	Wetumka Armory	25	C	Window	Sash	Beige	Fair	Metal	Positive	1.69	1	4.3	2.2
204	6/5/2012 15:00	20.41	mg / cm ^2	Wetumka Armory	26	A	Wall		Beige	Intact	Concrete	Negative	3.92	1	0.27	0.1
205	6/5/2012 15:02	31.23	mg / cm ^2	Wetumka Armory	25	B	Wall		Beige	Intact	Concrete	Positive	4.44	1	1	0.1
206	6/5/2012 15:02	1.98	mg / cm ^2	Wetumka Armory	26	C	Wall		Beige	Intact	Concrete	Negative	3.55	1	< LOD	0.79
207	6/5/2012 15:03	7.58	mg / cm ^2	Wetumka Armory	26	D	Wall		Beige	Intact	Concrete	Positive	4.01	1	1.3	0.2
208	6/5/2012 15:04	1.65	mg / cm ^2	Wetumka Armory	27	A	Wall		Beige	Intact	Brick	Negative	4.24	1	< LOD	0.83

Rd. #	Time	Duration	Units	Site	Room	Side	Component	Feature	Color	Condition	Substrate	Results	Depth Index	Action Level	Lead (mg/cm2)	Error
209	6/5/2012 15:04	3.94	mg / cm ^2	Wetumka Armory	27	B	Wall		Beige	Intact	Brick	Negative	1.65	1	< LOD	0.03
210	6/5/2012 15:05	1.64	mg / cm ^2	Wetumka Armory	27	C	Wall		Beige	Intact	Brick	Negative	3.8	1	< LOD	0.81
211	6/5/2012 15:05	1.65	mg / cm ^2	Wetumka Armory	27	D	Wall		Beige	Intact	Brick	Negative	1.08	1	< LOD	0.04
212	6/5/2012 15:05	0.66	mg / cm ^2	Wetumka Armory	27	C	Wall	Conduit	Beige	Intact	Metal	Negative	3.02	1	< LOD	1.09
213	6/5/2012 15:05	1.64	mg / cm ^2	Wetumka Armory	27	C	Door	Casing	Beige	Intact	Metal	Positive	3.29	1	3	1.2
214	6/5/2012 15:06	1.65	mg / cm ^2	Wetumka Armory	27	C	Door		Beige	Intact	Wood	Positive	3.9	1	3.3	1.3
215	6/5/2012 15:06	1.65	mg / cm ^2	Wetumka Armory	27		Floor		Blue	Poor	Concrete	Negative	1	1	< LOD	0.03
216	6/5/2012 15:11	1.32	mg / cm ^2	Wetumka Armory	27		Ceiling		Beige	Intact	Concrete	Negative	9.05	1	< LOD	0.91
217	6/5/2012 15:12	1.64	mg / cm ^2	Wetumka Armory	28	A	Baseboard		Beige	Fair	Concrete	Positive	5.29	1	3.3	1.5
218	6/5/2012 15:13	1.64	mg / cm ^2	Wetumka Armory	28	A	Wall		Beige	Fair	Concrete	Negative	4.55	1	< LOD	0.77
219	*6/5/2012 15:13*	*1.64*	*mg / cm ^2*	*Wetumka Armory*	*28*	*B*	*Wall*		*Beige*	*Fair*	*Concrete*	*Null*	*4.19*	*1*	*< LOD*	*0.48*
220	6/5/2012 15:13	1.67	mg / cm ^2	Wetumka Armory	28	C	Wall		Beige	Fair	Concrete	Negative	6.96	1	< LOD	0.8
221	6/5/2012 15:13	1.64	mg / cm ^2	Wetumka Armory	28	D	Wall		Beige	Fair	Concrete	Negative	6.96	1	< LOD	0.8
222	6/5/2012 15:14	1	mg / cm ^2	Wetumka Armory	28	C	Wall	Conduit	Beige	Fair	Metal	Negative	1	1	< LOD	0.03
223	6/5/2012 15:14	11.19	mg / cm ^2	Wetumka Armory	28	C	Window	Sash	Beige	Fair	Metal	Null	1.58	1	1	0.1
224	6/5/2012 15:15	1.31	mg / cm ^2	Wetumka Armory	28	C	Window	Sash	Beige	Fair	Metal	Positive	1.84	1	2.2	0.7
225	6/5/2012 15:16	1.65	mg / cm ^2	Wetumka Armory	29	C	Window	Sash	Beige	Fair	Metal	Negative	1	1	< LOD	0.04
226	6/5/2012 15:16	1.99	mg / cm ^2	Wetumka Armory	29	C	Wall	Conduit	Beige	Fair	Metal	Negative	9.92	1	< LOD	0.61
227	6/5/2012 15:16	1.64	mg / cm ^2	Wetumka Armory	29	A	Baseboard		Beige	Fair	Concrete	Positive	4.41	1	2.9	1.3
228	6/5/2012 15:19	1.96	mg / cm ^2	Wetumka Armory	29	A	Wall		Beige	Fair	Concrete	Negative	3.21	1	< LOD	0.75
229	6/5/2012 15:19	2.3	mg / cm ^2	Wetumka Armory	29	B	Wall		Beige	Fair	Concrete	Negative	5.44	1	< LOD	0.75
230	6/5/2012 15:19	1.65	mg / cm ^2	Wetumka Armory	29	C	Wall		Beige	Fair	Concrete	Negative	1.93	1	< LOD	0.13
231	6/5/2012 15:19	1.97	mg / cm ^2	Wetumka Armory	29	D	Wall		Beige	Fair	Concrete	Negative	5.79	1	< LOD	0.74
232	6/5/2012 15:21	1.32	mg / cm ^2	Wetumka Armory	30	C	Window	Sash	Black	Fair	Metal	Positive	1.31	1	1.9	0.6
233	6/5/2012 15:22	0.99	mg / cm ^2	Wetumka Armory	30	D	Door	Casing	Blue	Fair	Metal	Positive	1.29	1	2.1	0.9
234	6/5/2012 15:25	7.89	mg / cm ^2	Wetumka Armory	31	C	Window	Sash	Blue	Poor	Metal	Positive	1.1	1	1.1	0.1
235	6/5/2012 15:27	1.64	mg / cm ^2	Wetumka Armory	31	A	Garage Door	Casing	Beige	Fair	Metal	Positive	3.13	1	3.5	1.2
236	6/5/2012 15:28	0.99	mg / cm ^2	Wetumka Armory	31	B	Door	Casing	Beige	Fair	Wood	Positive	3.91	1	4.7	3
237	6/5/2012 15:29	1.32	mg / cm ^2	Wetumka Armory	31	B	Door		Beige	Fair	Wood	Positive	2.35	1	2.8	1
238	6/5/2012 15:32	4.93	mg / cm ^2	Wetumka Armory	31		Ceiling	Beam	Red	Intact	Metal	Positive	1.12	1	1.2	0.1
239	6/5/2012 15:33	1.64	mg / cm ^2	Wetumka Armory	31		Ceiling	Joist	Black	Fair	Metal	Negative	2.14	1	< LOD	0.09
240	6/5/2012 15:37	1.64	mg / cm ^2	Wetumka Armory	Exterior	A	Window	Apron	White	Poor	Concrete	Negative	3.11	1	< LOD	0.9
241	6/5/2012 15:37	1.32	mg / cm ^2	Wetumka Armory	Exterior	A	Door	Casing	White	Fair	Wood	Positive	6.14	1	2.9	1.7
242	6/5/2012 15:38	1.31	mg / cm ^2	Wetumka Armory	Exterior	A	Door		White	Poor	Wood	Negative	8.02	1	< LOD	0.59
243	6/5/2012 15:38	2.3	mg / cm ^2	Wetumka Armory	Exterior	A	Door		White	Poor	Wood	Positive	7.34	1	5.2	2.3
244	6/5/2012 15:39	1.65	mg / cm ^2	Wetumka Armory	Exterior	B	Gutter		Beige	Poor	Metal	Positive	4.62	1	7.2	2.9
245	6/5/2012 15:39	0.99	mg / cm ^2	Wetumka Armory	Exterior	B	Door		Beige	Fair	Metal	Negative	1	1	< LOD	0.04
246	6/5/2012 15:40	1.32	mg / cm ^2	Wetumka Armory	Exterior	B	Door	Casing	Beige	Fair	Metal	Negative	1.5	1	< LOD	0.05
247	6/5/2012 15:41	1.32	mg / cm ^2	Wetumka Armory	Exterior	B	Stage	Support	Red	Fair	Metal	Negative	1.17	1	< LOD	0.03
248	6/5/2012 15:42	1.35	mg / cm ^2	Wetumka Armory	Exterior	D	Garage Door	Casing	Beige	Poor	Metal	Positive	7.91	1	2.9	1.8
249	6/5/2012 15:45	1.97	mg / cm ^2	Wetumka Armory	Playground		Horseshoe		White	Fair	Concrete	Negative	1	1	< LOD	0.03
250	6/5/2012 15:46	0.98	mg / cm ^2	Wetumka Armory	Playground		Pavilion	Support	Red	Intact	Metal	Negative	1.74	1	< LOD	0.13
251	6/5/2012 15:48	2.64	mg / cm ^2	Wetumka Armory	Playground		Merrygoround		White	Poor	Metal	Negative	1	1	< LOD	0.03
252	6/5/2012 15:49	1.31	mg / cm ^2	Wetumka Armory	Playground		Slide		White	Poor	Metal	Negative	1	1	< LOD	0.03
253	6/5/2012 15:49	0.99	mg / cm ^2	Wetumka Armory	Playground		Slide	Hand Rail	Red	Intact	Metal	Negative	10	1	< LOD	0.86
254	6/5/2012 15:50	2.97	mg / cm ^2	Wetumka Armory	Playground		Bee		Yellow	Intact	Metal	Negative	10	1	< LOD	0.64
255	6/5/2012 15:51	1.97	mg / cm ^2	Wetumka Armory	Playground		Moto		Red	Intact	Metal	Negative	2.56	1	< LOD	0.82
256	6/5/2012 15:51	1.97	mg / cm ^2	Wetumka Armory	Playground		Jet		Red	Intact	Metal	Negative	4.75	1	< LOD	0.76
257	6/5/2012 15:52	1.66	mg / cm ^2	Wetumka Armory	Playground		Bikewheel		Red	Intact	Metal	Negative	2.48	1	< LOD	0.07
258	6/5/2012 15:53	1.65	mg / cm ^2	Wetumka Armory	Playground		Dome		Red	Intact	Metal	Negative	1	1	< LOD	0.03
259	6/5/2012 15:56	21.72	mg / cm ^2				Calibrate					Negative	1.03	1	0.9	0.08
260	6/5/2012 15:57	23.02	mg / cm ^2				Calibrate					Negative	1.03	1	0.9	0.06

Rd. #	Time	Duration	Units	Site	Room	Side	Component	Feature	Color	Condition	Substrate	Results	Depth Index	Action Level	Lead (mg/cm2)	Error
261	8/5/2012 15:58	20.71	mg / cm ^2				Calibrate					Positive	1.07	1	1	0.1

APPENDIX B

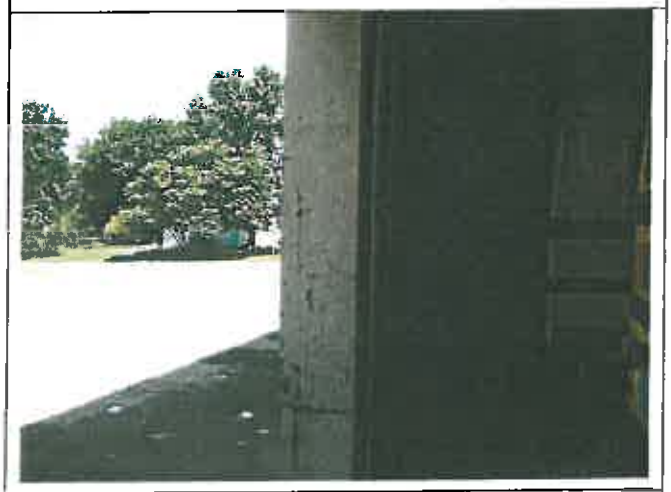
Former Wetumka Armory

Reading 16, Room 1, Side A, Wood door & casing

Readings 18-20, Room 1, Side B, Stair handrail, treads, and risers

Reading 22, Room 1, Side B, Stage floor fascia

Reading 25, Room 1, Side D, Garage door casing



Reading 34, Room 2, Side D, Garage door casing

Reading 36, Room 2, Side A, Window guard

Readings 38 & 39, Room 2, Side B, Door and casing

Readings 45 & 46, Room 34, Side A, Door and casing

Reading 60, Room 4, Side D, Door casing

Reading 61, Room 4, Side A, Window guard

Reading 62, Room 5, Side A, Window guard

Reading 63, Room 4, Side B, Baseboard

Reading 75, Room 6, Side C, Door

Reading 121, Room 14, Side B, Window sash

Reading 132 & 133, Room 15, Side A, Door and casing

Reading 134, Room 16, Side A, Door casing

Reading 135, Room 15, Window sash

Reading 146, Room 17, Side B, Window sash

Reading 147, Room 18, Side B, Window sash

Reading 148 & 149, Room 18, Side A, Door and casing

Reading 179, Room 22, Side D, Door

Reading 185, Room 23, Side B, Window sash

Reading 203, Room 25, Side C, Window sash

Reading 205, Room 26, Side B, Wall

Reading 213 & 214, Room 27, Side C, Door and casing

Reading 217, Room 28, Side A, Baseboard

Reading 224, Room 28, Side C, Window sash

Reading 227, Room 29, Side A, Baseboard

Reading 232, Room 30, Side C, Window sash

Reading 233, Room 30, Side D, Door casing

Reading 234, Room 31, Side C, Window sash

Reading 235, Room 31, Side A, Garage door casing

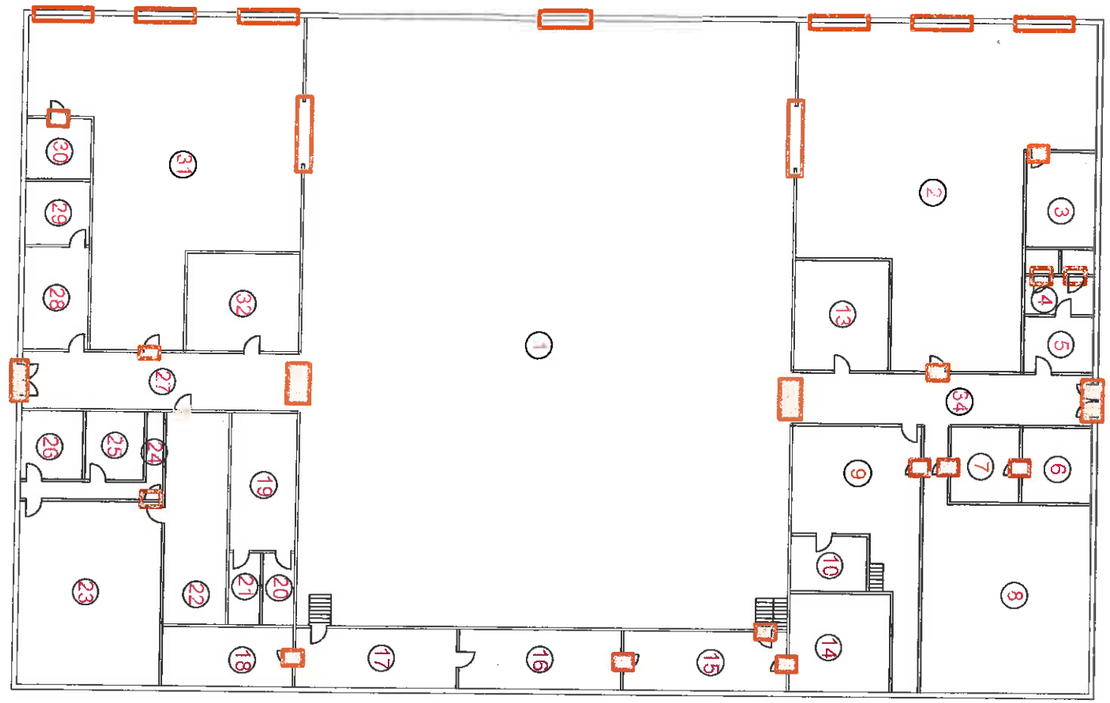
Reading 238, Room 31, Ceiling beam

Readings 241 & 243, Exterior, Side A, Door and casing

Reading 244, Exterior, Side B, Gutter downspout

Reading 248, Exterior, Side D, Garage door casing

APPENDIX C



Former Wetumka Armory
St. Louis & Wetumka St.
Wetumka, OK 74833

LEGEND

Doors

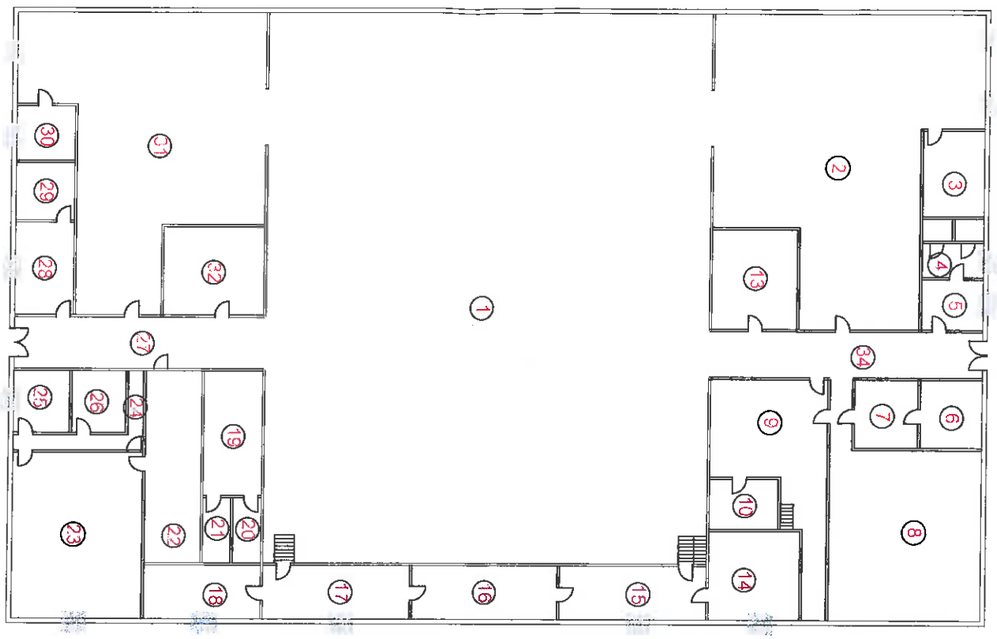
Door Frames

Doors & Door Frames

W S N E

GMR & Associates, Inc.
Engineering and Environmental Consultants

FIGURE 1: Door Components with Lead-Based Paint



Former Wetumka Armory
St. Louis & Wetumka St.
Wetumka, OK 74833

LEGEND

Window Components

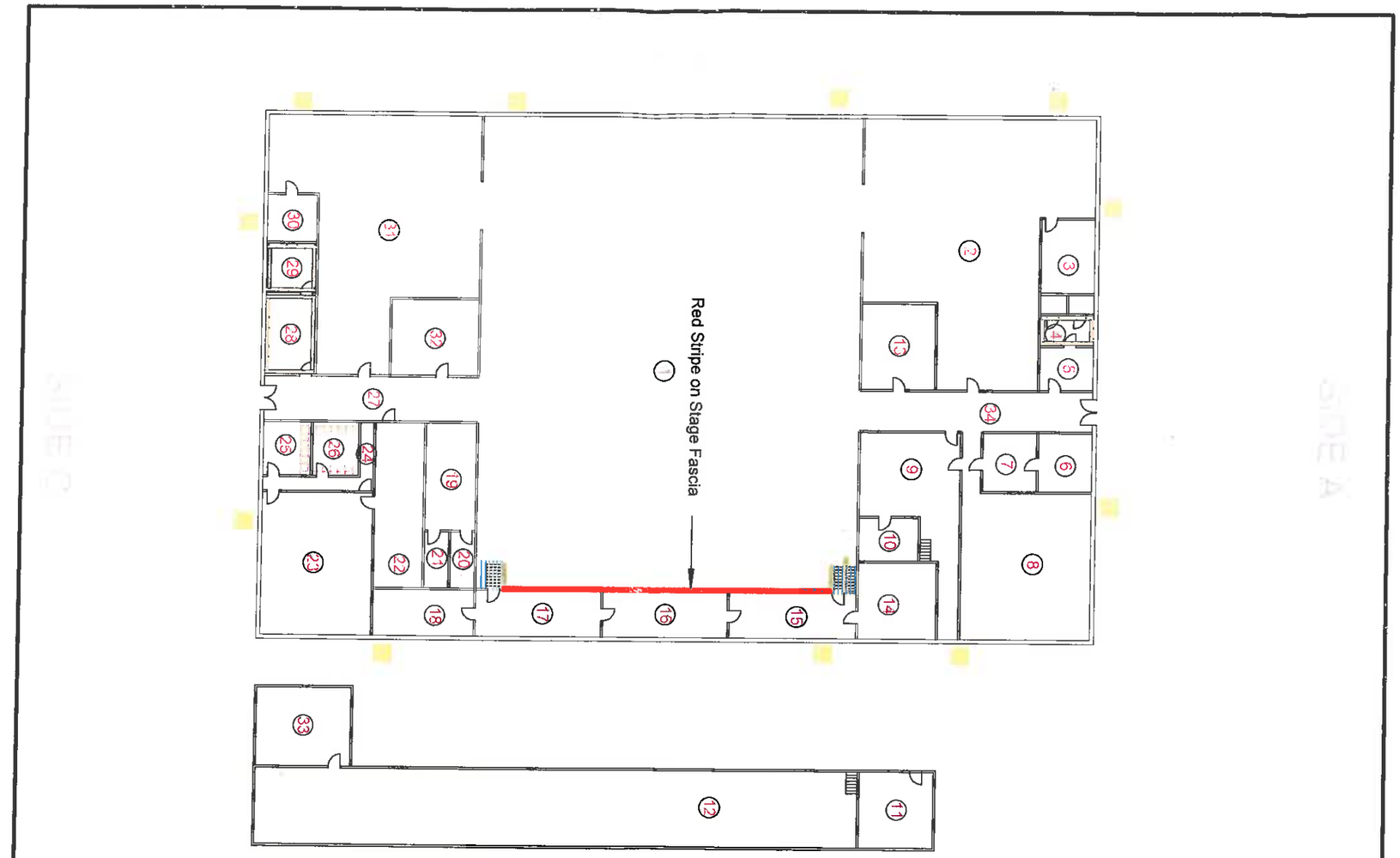
Window Frames

Window Frames & Components

W
S
N
E

GMR & Associates, Inc.
Engineering and Environmental Consultants

FIGURE 2: Window Components with Lead-Based Paint



Former Wetumka Armory
St. Louis & Wetumka St.
Wetumka, OK 74833

LEGEND

Stair Hand Rail	Ceiling Beams
Stairs	Gutter Downspouts
Baseboards	
Walls	

GMR & Associates, Inc.
Engineering and Environmental Consultants

FIGURE 3: Miscellaneous Surfaces with Lead-Based Paint

APPENDIX D

Department of Environmental Quality

This is to Certify That

JASON LEE

has met the specifications of the Oklahoma Lead-Based Paint Management Act
and is certified as a Lead-Based Paint

INSPECTOR/RISK ASSESSOR

Certification #: OKRASR13451

This certificate is valid from the date of issuance and expires as prescribed by law.

Issued on: **4/1/2012** Expires on: **3/31/2013**

Division Director
Air Quality Division

Environmental Programs Manager
Air Quality Division

Department of Environmental Quality

This is to Certify That

BASIN ENVIRONMENTAL

has met the specifications of the Oklahoma Lead-Based Paint Management Act
and is certified as a Lead-Based Paint

FIRM

Certification #: OKFIRM13434

This certificate is valid from the date of issuance and expires as prescribed by law

Issued on: **4/1/2012** Expires on: **3/31/2013**

Division Director
Air Quality Division

Environmental Programs Manager
Air Quality Division

APPENDIX E

Performance Characteristic Sheet

EFFECTIVE DATE: **September 24, 2004** **EDITION NO.: 1**

MANUFACTURER AND MODEL:

Make: *Niton LLC*
Tested Model: *XLp 300*
Source: ^{109}Cd
Note: This PCS is also applicable to the equivalent model variations indicated below, for the Lead-in-Paint K+L variable reading time mode, in the XLi and XLp series:

XLi 300A, XLi 301A, XLi 302A and XLi 303A.
XLp 300A, XLp 301A, XLp 302A and XLp 303A.
XLi 700A, XLi 701A, XLi 702A and XLi 703A.
XLp 700A, XLp 701A, XLp 702A, and XLp 703A.

Note: The XLi and XLp versions refer to the shape of the handle part of the instrument. The differences in the model numbers reflect other modes available, in addition to Lead-in-Paint modes. The manufacturer states that specifications for these instruments are identical for the source, detector, and detector electronics relative to the Lead-in-Paint mode.

FIELD OPERATION GUIDANCE

OPERATING PARAMETERS:

Lead-in-Paint K+L variable reading time mode.

XRF CALIBRATION CHECK LIMITS:

0.8 to 1.2 mg/cm^2 (inclusive)

The calibration of the XRF instrument should be checked using the paint film nearest 1.0 mg/cm^2 in the NIST Standard Reference Material (SRM) used (e.g., for NIST SRM 2579, use the 1.02 mg/cm^2 film).

If readings are outside the acceptable calibration check range, follow the manufacturer's instructions to bring the instruments into control before XRF testing proceeds.

SUBSTRATE CORRECTION:

For XRF results using Lead-in-Paint K+L variable reading time mode, substrate correction is <u>not</u> needed for:

Brick, Concrete, Drywall, Metal, Plaster, and Wood

INCONCLUSIVE RANGE OR THRESHOLD:

K+L MODE READING DESCRIPTION	SUBSTRATE	THRESHOLD (mg/cm^2)
Results not corrected for substrate bias on any substrate	Brick	1.0
	Concrete	1.0
	Drywall	1.0
	Metal	1.0
	Plaster	1.0
	Wood	1.0

BACKGROUND INFORMATION

EVALUATION DATA SOURCE AND DATE:

This sheet is supplemental information to be used in conjunction with Chapter 7 of the HUD *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing* ("HUD Guidelines"). Performance parameters shown on this sheet are calculated from the EPA/HUD evaluation using archived building components. Testing was conducted in August 2004 on 133 testing combinations. The instruments that were used to perform the testing had new sources; one instrument's was installed in November 2003 with 40 mCi initial strength, and the other's was installed June 2004 with 40 mCi initial strength.

OPERATING PARAMETERS:

Performance parameters shown in this sheet are applicable only when properly operating the instrument using the manufacturer's instructions and procedures described in Chapter 7 of the HUD Guidelines.

SUBSTRATE CORRECTION VALUE COMPUTATION:

Substrate correction is not needed for brick, concrete, drywall, metal, plaster or wood when using Lead-in-Paint K+L variable reading time mode, the normal operating mode for these instruments. If substrate correction is desired, refer to Chapter 7 of the HUD Guidelines for guidance on correcting XRF results for substrate bias.

EVALUATING THE QUALITY OF XRF TESTING:

Randomly select ten testing combinations for retesting from each house or from two randomly selected units in multifamily housing. Use the K+L variable time mode readings.

Conduct XRF retesting at the ten testing combinations selected for retesting.

Determine if the XRF testing in the units or house passed or failed the test by applying the steps below.

Compute the Retest Tolerance Limit by the following steps:

Determine XRF results for the original and retest XRF readings. Do not correct the original or retest results for substrate bias. In single-family housing a result is defined as the average of three readings. In multifamily housing, a result is a single reading. Therefore, there will be ten original and ten retest XRF results for each house or for the two selected units.

Calculate the average of the original XRF result and retest XRF result for each testing combination.

Square the average for each testing combination.

Add the ten squared averages together. Call this quantity C.

Multiply the number C by 0.0072. Call this quantity D.

Add the number 0.032 to D. Call this quantity E.

Take the square root of E. Call this quantity F.

Multiply F by 1.645. The result is the Retest Tolerance Limit.

Compute the average of all ten original XRF results.

Compute the average of all ten re-test XRF results.

Find the absolute difference of the two averages.

If the difference is less than the Retest Tolerance Limit, the inspection has passed the retest. If the difference of the overall averages equals or exceeds the Retest Tolerance Limit, this procedure should be repeated with ten new testing combinations. If the difference of the overall averages is equal to or greater than the Retest Tolerance Limit a second time, then the inspection should be considered deficient.

Use of this procedure is estimated to produce a spurious result approximately 1% of the time. That is, results of this procedure will call for further examination when no examination is warranted in approximately 1 out of 100 dwelling units tested.

TESTING TIMES:

For the Lead-in-Paint K+L variable reading time mode, the instrument continues to read until it is moved away from the testing surface, terminated by the user, or the instrument software indicates the reading is complete. The following table provides testing time information for this testing mode. The times have been adjusted for source decay, normalized to the initial source strengths as noted above. Source strength and type of substrate will affect actual testing times. At the time of testing, the instruments had source strengths of 26.6 and 36.6 mCi.

Testing Times Using K+L Reading Mode (Seconds)						
	All Data			Median for laboratory-measured lead levels (mg/cm^2)		
Substrate	25^{th} Percentile	Median	75^{th} Percentile	Pb < 0.25	0.25 ≤ Pb<1.0	1.0 ≤ Pb
Wood Drywall	4	11	19	11	15	11
Metal	4	12	18	9	12	14
Brick Concrete Plaster	8	16	22	15	18	16

CLASSIFICATION RESULTS:

XRF results are classified as positive if they are greater than or equal to the threshold, and negative if they are less than the threshold.

DOCUMENTATION:

A document titled *Methodology for XRF Performance Characteristic Sheets* provides an explanation of the statistical methodology used to construct the data in the sheets, and provides empirical results from using the recommended inconclusive ranges or thresholds for specific XRF instruments. For a copy of this document call the National Lead Information Center Clearinghouse at 1-800-424-LEAD.

This XRF Performance Characteristic Sheet was developed by the Midwest Research Institute (MRI) and QuanTech, Inc., under a contract between MRI and the XRF manufacturer. HUD has determined that the information provided here is acceptable when used as guidance in conjunction with Chapter 7, Lead-Based Paint Inspection, of HUD's *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing.*

APPENDIX F

ThermoFisher SCIENTIFIC
The world leader in serving science

Certificate of Calibration

Paint QC (Service)
Document #: FRM018
Revision: A
Revision Date: Sept. 19, 2008

Serial Number: 10713 Model: XLp703A Software: 5.2D Date of Q.C.: 4/14/2011

Resolution: 379.84 Escale: 4.07 Source: Cd-109 Inspector: JC

K+L Mode 20 Second readings each

Std	L	Lerr	K	Kerr	DI	L Status	K Status
1.0 Surface Wood-1	1.10	0.10	0.90	0.30	1.0	OK	OK
1.0 Surface Wood-2	1.00	0.10	0.90	0.30	1.1	OK	OK
1.0 Buried Wood-1	1.10	0.10	0.80	0.30	2.4	OK	OK
1.0 Buried Wood-2	1.10	0.10	0.80	0.30	2.3	OK	OK
Blank Wood-1	0.00	0.02	0.13	0.22	2.6	OK	OK
Blank Wood-2	0.01	0.02	0.04	0.22	1.0	OK	OK
3.5 Surface Wood-1	3.70	0.20	3.30	0.40	1.3	OK	OK
3.5 Surface Wood-1	3.60	0.20	3.20	0.40	1.3	OK	OK
0.3 Surface Concrete-1	0.30	0.03	0.10	0.37	1.0	OK	OK
0.3 Surface Concrete-2	0.29	0.03	0.21	0.38	1.0	OK	OK
Steel-1	0.00	0.02	0.07	0.34	1.0	OK	OK
Steel-2	0.00	0.02	0.10	0.35	1.0	OK	OK
Pure Pb-1	10.10	1.30	84.80	1.90	1.7	OK	OK
Pure Pb-2	10.10	1.30	86.30	1.90	1.6	OK	OK
1.0 Surface Drywall-1	1.00	0.10	1.10	0.30	1.1	OK	OK
1.0 Surface Drywall-2	1.00	0.10	0.90	0.30	1.0	OK	OK

STD Mode Readings

Std	Time	Result	
Drywall-1	1.83	0.01	OK
Drywall-2	1.81	0.03	OK
French Plaster-1	1.22	0.01	OK
French Plaster-2	1.81	0.01	OK

This certificate is issued in accordance with Thermo Fisher Scientific factory specifications.
The measurements were found to be within specification limits at the time of service and calibration.

Standards are traceable to National Institute of Standards & Technology (NIST) standards.
**** - Not Certified**

Signed:

Thermo Fisher Scientific
Niton Analyzers

800 Middlesex Turnpike
Building 8
Billerica, MA 01821

www.thermo.com/niton
1-800-875-1578

ThermoFisher SCIENTIFIC

Certificate of Calibration

Soil QC(Service)
Document#: FRM013
Revision B
Revision Date: Mar. 11, 2009

Unit Serial Number: 10713 Model: XLp 703AW Software: 5.2D Date of Q.C.: 4/14/2011

Resolution: 388.02 Escale: 4.07 Source: Cd-109 Inspector: JC

Run 1 reading per sample for 90 seconds
Elements that are in blue BOLD must be recorded!
NA = Not Available

Elements not in blue need not be detected but record if they are

NIST HIGH 2710	Certified	Low	High	Measured	Err	
Mo	19	10	40	13.909	3.237	OK
Zr	NR			166.265	13.2	
Sr	330	280	380	313.754	12.839	OK
Rb	129	80	160	118.77	8.98	OK
Pb	5532	5400	5700	5587.199	101.251	OK
Se	NA	-60	60	5.046	12.273	OK
As	626	510	750	633.68	76.88	OK
Hg	32.6	0	50	25.4	22.7	OK
Zn	6952	6700	7250	7024.19	128.47	OK
Cu	2950	2700	3200	2948.41	100.63	OK
Ni	14.3	-50	150	24.23	65.19	OK
Co	10	270	270	-99.05	176.316	OK
Fe	33800	31500	35500	33856.727	533.717	OK
Mn	10100	9500	11000	10206.4	418.0	OK
Cr	39	-100	120	58.51	309.327	OK

SiO2 (Blank)	Certified	Low	High	Measured	Err	
Mo	0	-10	10	0.134	1.328	OK
Zr	0	-10	10	1.346	2.125	OK
Sr	<210	-10	210	0.184	1.365	OK
Rb	0	-200	210	-0.897	1.247	OK
Pb	0	-20	20	-6.976	5.559	OK
Se	0	-10	10	-6.635	3.681	OK
As	0	-10	10	-0.459	4.04	OK
Hg	0	-10	10	-2.999	6.81	OK
Zn	0	-20	20	-2.268	13.51	OK
Cu	0	-30	30	1.616	18.265	OK
Ni	0	-50	50	6.444	22.567	OK
Co	0	-50	50	-8.063	16.813	OK
Fe	0	-100	300	0.944	28.597	OK
Mn	0	-70	70	23.183	33.885	OK
Cr	0	-120	120	-37.354	64.583	OK

NIST LOW	Certified	Low	High	Measured	Err	
Mo	2	-10	10	2.488	2.301	OK
Zr	160	115	210	183.046	10.585	OK
Sr	231	180	300	206.751	8.748	OK
Rb	96	60	115	74.47	5.62	OK
Pb	18.9	0	35	5.703	9.122	OK
Se	1.57	-30	30	-4.06	5.11	OK
As	17.7	0	35	18.43	7.39	OK
Hg	1.4	-10	10	8.6	9.5	OK
Zn	106	50	160	77.12	21.28	OK
Cu	34.6	0	60	42.85	23.35	OK
Ni	68	25	150	98.41	45.22	OK
Co	13.4	-250	250	130.63	135.709	OK
Fe	35000	25000	35000	26601.057	399.967	OK
Mn	538	0	700	614.1	185.0	OK
Cr	130	90	200	191.195	173.678	OK

RCRA	Certified*	Low	High	Measured	Err	
Mo	NA					OK
Zr	NA					OK
Sr	NA					OK
Rb	NA					OK
Pb	500	350	500	469.947	34.443	OK
Se	500	400	600	515.261	22.438	OK
As	500	300	600	441.657	30.442	OK
Hg	NA					OK
Zn	NA					OK
Cu	NA					OK
Ni	NA					OK
Co	NA					OK
Fe	NA					OK
Mn	NA					OK
Cr	500	275	600	461.544	241.123	OK

This certificate is issued in accordance with Thermo Fisher Scientific factory specifications.
The measurements were found to be within specification limits at the time of service and calibration.

Standards are traceable to National Institute of Standards & Technology (NIST) standards
** - Not Certified

Signed.

ThermoFisher SCIENTIFIC
The world leader in serving science

Certificate of Calibration

Thin Film QC (Service)
Revision: A
Revision Date: Sept. 24, 2008

Unit #: 10713 **Model:** XLp 703A **Date:** 4/15/2011 **Software:** 5.2D-Dual

Res: 383.7 **Escale:** 4.07 **Source:** Cd-109 **Inspector:** JC

Thin Film QC Sheet (1 reading at 30 seconds each sample)

Element:	Cert:	Read:	Error	OK?
Pb	51.7	54.47	2.74	OK
As	24.6	24.7	0.92	OK
Ni	40.4	42.72	2.21	OK
Cr	42.6	44.49	3.69	OK

37mm QC Readings (3 readings at 30 seconds each)

Element:	Cert:	Read:	Error	OK?
Pb	42	39.79	9.05	OK

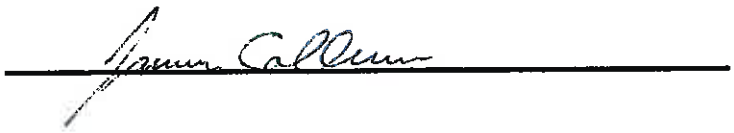
Dust Wipe QC Readings (Pb only) (4 readings at 30 seconds each)

Wipe Type:	Cert:	Read:	Error	OK?
Blank:	N/A	0.91	1.61	OK
Dust Low:	34-51	43.12	10.1	OK
DustHigh:	356-534	480.8	38.5	OK

This certificate is issued in accordance with Thermo Fisher Scientific factory specifications.
The measurements were found to be within specification limits at the time of manufacture and calibration.

**** - Not Certified**

Signed:



Thermo Fisher Scientific
Niton Analyzers

800 Middlesex Turnpike
Building 8
Billerica, MA 01821

www.thermo.com/niton
1-800-875-1578

SCOPES OF WORK

STATEMENT OF WORK
For
Remediation of Lead-Based Paint, Lead Contamination and Asbestos Contamination at Wetumka Armory

The Oklahoma Department of Environmental Quality (DEQ) is requesting bids from qualified bidders for remediation services at a former National Guard armory located in Wetumka, Oklahoma. This statement of work (SOW) describes the cleanup of lead contamination associated with the indoor firing range (IFR), lead contaminated dust on the floors of the building, lead-based paint (LBP) located on surfaces throughout the building and removal and proper disposal of asbestos containing material (ACM). This work must be performed to provide for safe re-use of the facility with unrestricted use such as storage areas, classrooms, or office space. A mandatory site visit and walk through will be held to give a better understanding of the site. A floor plan map of the Wetumka Armory is attached for review **(Attachment 1)**.

The building is located at **22 West St. Louis, Wetumka, Oklahoma 73750**. The building **does** have available water and electricity to use during remediation.

SPECIAL PROVISIONS:

1. Work Schedule: The Contractor shall schedule all work to be complete within 180 days after date of the written "Notice to Proceed".
    a. A pre-construction meeting shall be held at the site after the Notice to Proceed date to review Scope of Work and answer any questions the contractor may have.
    b. All on-site work shall be completed by the Contractor five (5) days prior to the scheduled contract completion date, with the remaining five (5) days utilized for final inspection and correction of all deficiencies.
    c. Work schedule may need to be phased in order to work around school scheduling conflicts.

2. Conditions of Work: The following conditions of work will apply in accomplishment of this contract:
    a. All work shall be performed in accordance with all applicable State and Federal regulations.
    b. The contractor shall perform this work in such a manner as to cause a minimum of interruption to normal work being performed in the contract area.
    c. Coordination of work areas shall be scheduled with DEQ.
    d. Disposal of Removed Materials: All materials removed by the Contractor under this contract shall be disposed of in accordance with State and Federal regulations. DEQ will sign as generator, if necessary.

CONTRACTOR SHALL:

- Attend mandatory pre-bid meeting and site walk through;
- Possess a current lead-based paint firm license and have a certified lead-based paint supervisor in order to perform lead-based paint abatement;
- Possess a current Oklahoma Department of Labor (ODOL) Asbestos Abatement Contractor License in order to perform asbestos abatement;
- Follow all appropriate OSHA requirements;

- Follow OSHA Lead in Construction Interim Final Standard (29 CFR 1926.62) for lead-based paint abatement, indoor firing range remediation, and lead dust remediation;
- Read Guidelines for Rehabilitation and Conversion of Indoor Firing Ranges, November 3, 2006, Departments of the Army and Air Force, National Guard Bureau (**Attachment 2**), and refer to this document as a reference and guideline for remediating IFR lead contamination.

Submit With Bid:

- Copy of lead-based paint firm license;
- Copy of lead-based paint supervisor license;
- Copy of ODOL Asbestos Abatement Contractor License;
- Three references with name, type of project, phone number, and location of similar work in the last three years.

Submit After Contract Award:

- A Work Plan with planned activities and schedule to DEQ for approval.

ASBESTOS ABATEMENT INSTRUCTIONS

The Wetumka Armory contains non-friable asbestos containing material (ACM) including floor tile and mastic. Abatement of non-friable materials (floor tile and mastic) is not regulated by the Oklahoma Department of Labor. However, OSHA requirements in 29 CFR 1926.1101 must be followed.

- Approximately 1095 SF of floor tile shall be removed
- Approximately 970 SF of mastic shall be removed
- For exact locations of floor tile and mastic please review Asbestos Inspection Report Map (**Attachment 3**)

LEAD-BASED PAINT ABATEMENT INSTRUCTIONS

1. <u>Non-Friction and Non-Impact Surfaces</u>

   - All items listed below shall be wet scraped, painted with a neutral colored primer, and encapsulated with DEQ approved elastomeric encapsulant. A list of DEQ approved elastomeric encapsulants is attached (**Attachment 5**). Encapsulant shall be a minimum of 20 mils thick. The Lead-Based Paint and Settled Dust Sampling Report with floor plan maps detailing the locations of the lead-based paint is attached for review (**Attachment 8**);
     - All Down Spouts and Gutters
     - All Window Lintels
     - All Overhead Door Frames

- All Garage Door Casings
- The walls in Rooms # 25 and #26

- The drill floor hand rails shall have all paint removed and then be painted with a neutral colored primer;
- Remove baseboards in Rooms #4, 28, and 29;
- Deteriorated paint removed from building surface will be properly disposed.

2. <u>Friction and Impact Surfaces</u>

A. Floors

- The paint on the stairs and stage shall have lead-based paint removed. Once paint is visibly removed, the floor shall be HEPA vacuumed and wet washed. DEQ will perform a visual inspection. Once DEQ determines abatement has been appropriately performed, the floor areas where lead-based paint abatement was performed shall be sealed with KM-669 Acrylic Sealer or equivalent;

B. Windows

- A Window-Scope of Work with map, window measurements, specifications for window replacement, and specific details on abatement requirements for each window is attached (**Attachment 6**);
- Windows installed must meet all attached specifications;
- Window installation and oversight of window removal shall be performed by a third party professional window installation company that is certified and recommended by the window manufacturer of the windows being installed;
    - Window installer shall have no less than five (5) years installation experience;
- Window installer shall have experience with removal of steel casement windows;
- All interior and exterior window sills shall be HEPA vacuumed and wet washed after windows have been removed and replaced;
    - Once window sills have been cleaned, contractor shall encapsulate with DEQ approved lead-based paint encapsulant.

C. Doors and Frames

- A Door-Scope of Work with map, door measurements, and specific details on abatement requirements for each door is attached (**Attachment 7**);
- Doors will be replaced with UL listed 90 minute standard metal doors;
- Doors will be replaced with Steelcraft L18 and L16 – Series Honeycomb Doors (Specifications Attached) or equivalent;
- Contractor must submit product data for approval if different from doors or door frames in bid package;
- Replacement doors and frames must meet all compliance and fire rating requirements in the attached specifications;

a. Exterior Doors

- Exterior doors will be replaced with galvannealed, 16 gage, honeycomb core insulated doors;

- Continuous Geared Door Hinges: As manufactured by Pemko or approved equal – Satin Nickel – Half Surface Safety Hinges: Standard (Specifications Attached);
- Threshold: As manufactured by National Guard Products or approved equal – 426E (Specifications Attached);
- Weather Strip: As manufactured by National Guard Products or approved equal – 160VA (Specifications Attached);
- Lever: As manufactured by Schlage or approved equal – D Series "Rhodes", 626 finish, function ND60PD (Specification Attached);
- Keying: All doors to be keyed alike;
- Provide sealant per 07920 specification attached.

b. Interior Doors

- Interior doors will be replaced with non-galvannealed, 18 gage, honeycomb core insulated doors;
- Continuous Geared Door Hinges: As manufactured by Pemko or approved equal – Satin Nickel – Half Surface Safety Hinges: Standard (Specifications Attached);
- Knob: As manufactured by Schlage or approved equal – A Series "Orbit", 626 finish, function A10S (Specification Attached);
- Provide sealant (caulking) per 07920 specification attached.

3. Clearance Inspection

- Once lead-based paint has been removed from surfaces, DEQ will perform a visual inspection to confirm lead-based paint has been removed appropriately before surfaces are painted or sealed.
- Once lead-based paint abatement is complete and after room floors are cleaned, contact Marshall Environmental Management to perform post abatement clearance sampling in these areas. See Section C (Confirmation and Clearance Sampling) for additional information.
- If samples do not meet EPA and HUD standards for lead dust (40 µg/SF for floors), areas shall be re-cleaned and re-sampled.

4. Sampling and Disposal

- DEQ assumes that all lead-based paint chips removed from surfaces are considered hazardous waste. Lead-based paint removed from surfaces shall be disposed as hazardous waste.
  - If Contractor uses a paint stripper that exhibits a characteristic of hazardous waste, or contains hazardous waste constituents, it is the Contractor's responsibility to characterize this waste under 40 CFR 262.11 and if they are determined to be hazardous waste, disposing of them as such. The Final Report shall contain all relevant information regarding the waste determination.

- A completed and signed waste manifest, Land Disposal Notification Form, and Certificate of Disposal demonstrating that the paint chips were properly disposed at a hazardous waste facility must be included in the Final Report.

LEAD DUST REMEDIATION INSTRUCTIONS

Sequence of Events

The initial cleaning of the building shall be as follows:

1. First –
   a. Any remaining debris inside the building determined by DEQ to be trash shall be properly disposed.
   b. The indoor firing range (IFR) shall be cleaned (See *Section 1. Indoor Firing Range (IFR)* below for details).
2. Second –
   a. All floors of the entire building shall be cleaned (See *Section 2. Remaining Building* for details).

1. Indoor Firing Range (IFR)

The IFR in these buildings is a long narrow basement room with attached small side room where the Oklahoma Military Department would target practice with weapons. Sometimes the IFR will have a steel bullet deflection plate and sand trap. The IFR is to be cleaned by removal of all lead contaminated materials, including debris (if present), sand (if present), steel plate (if present), lead-based paint (if present), and lead contaminated dust and other lead containing particulates on the floor, walls, and ceiling of the IFR.

- **Pre-remediation Preparation**
  - To ensure cross contamination does not occur, use engineering controls such as:
    - Sealing openings with 6 mil poly sheeting to contain dust inside IFR;
    - Covering floor of area outside IFR with 6 mil poly sheeting to make sure not to track lead dust into clean areas;
    - Securing IFR at the end of the work day. At no time shall the IFR be accessible for unauthorized entry without the contractor present;
  - When inside IFR wear appropriate personal protective equipment (See **Attachment 4**).
- **Water Removal**
  - All wash water from the IFR shall be filtered through a 1 micron filter and then sampled for total lead and total phosphorus. Total lead shall be run by ICP and total phosphorus shall be run by EPA Method 365.3. Wash water shall be

disposed appropriately. Sample results shall be submitted to DEQ to determine if wash water can be disposed at the local Waste Water Treatment Facility.

- **Pre-remediation Removal**

  - Decontaminate door to IFR side room, remove from frame, wrap in poly sheeting, and properly dispose;

  - Remove all paint from side room door frame to bare metal and paint frame with neutral colored primer;

  - If sand trap is present:
    - Decontaminate metal backstop, wrap in poly sheeting and properly dispose;
    - Decontaminate sand trap framework, wrap in poly sheeting and properly dispose;
    - Place sand in sealed drums and dispose of sand as hazardous waste.

  - Decontaminate all items to be removed from the IFR, wrap in poly sheeting, and properly dispose.
    - Items such as acoustical tiles, carpet, or other porous materials shall be HEPA vacuumed, washed, and sampled for TCLP. Acoustical tile, if present, will have 3 – five part composite samples taken. All other materials shall have 1 – five part composite sample taken of each material. If samples pass TCLP then properly dispose. If any samples fail TCLP, dispose of that item as hazardous waste.

- **Remediation**

  - HEPA vacuum and wet wash walls, floor, ceiling, vent fan, and other structures that are contaminated;

  - Dispose lead contaminated dust, wash water, and appropriate cleaning materials as hazardous waste or as appropriate (See section 3. Disposal of Materials for detailed information).

- **Post-remediation**

  - All post-remediation sampling shall be performed by Marshall Environmental Management (MEM). The Contractor shall provide MEM a minimum of five (5) calendar days prior notice to perform sampling. See *Section 4. Confirmation and Clearance Sampling* for contact information;

  - Post remediation sampling is required to confirm the IFR has been remediated to 200 micrograms per square foot (ug/SF);
    - Areas above 200 ug/SF shall be re-cleaned and re-tested until results are at or below 200 ug/SF;

- If surfaces of the IFR cannot be cleaned and DEQ determines that these surfaces contain imbedded lead fragments, construction grout shall be used over these surfaces.
  - Surfaces shall be thoroughly cleaned;
  - BASF Acryl 60 or DEQ approved equivalent shall be applied to surfaces according to manufacturer's specifications. Specifications are attached (**Attachment 5**);
  - BASF Construction Grout or DEQ approved equivalent shall be applied (sprayed or troweled) to surfaces according to manufacturer's specifications. Specifications are attached (**Attachment 5**).

- Once the IFR has been remediated to 200 ug/SF, seal the floor, ceiling, and walls with appropriate sealant;
  - Floor, ceiling, and walls will be sealed with KM-669 Acrylic Sealer or equivalent. Specifications attached (**Attachment 5**);
  - IFR area will have forced air applied to room 4 days after sealer is applied. This will be done to remove all vapors from the area;

- After surfaces are sealed, the Contractor shall provide MEM a minimum of five (5) calendar days prior notice to perform post remediation wipe sampling to confirm the IFR has been remediated to 40 ug/SF;

- Areas above 40 ug/SF shall be cleaned to remove lead dust from sealed surface. Once cleaned, the area shall be retested to confirm area has been remediated to 40 ug/SF;

- All re-testing of previously failed areas shall be performed by MEM. Contractor shall provide MEM a minimum of five (5) calendar day's prior notice to perform sampling.

- The chart below summarizes the clearance numbers for the indoor firing range. All lead wipe samples must be at or below these numbers in order for the room to be considered clean.

Post Remediation	Post Sealant
200 ug/SF	40 ug/SF

2. Remaining Building

Lead Dust Remediation (See Attachment 8)

- Properly clean up any large oil, grease, etc. spills on the floors and properly dispose before lead remediation begins;

- Surfaces above the floors such as walls, shelves, etc. may have accumulated dust that has settled. This accumulation shall be removed prior to the cleaning

of the floors. This shall be done to prevent recontamination of the floors after they are cleaned.

- Floors of the entire building shall require lead dust remediation;
  - Remove dust from all equipment, shelving, trash, etc, and remove these items from room before remediation begins;
  - Remove dust from all carpet, remove carpet from rooms, and dispose of all carpet as non-hazardous waste before lead dust remediation of floor begins;
  - Dispose any materials, determined by the DEQ to be trash, as non-hazardous waste;
  - HEPA vacuum and wet wash floors of entire building;
    - Lead levels on the floor are high in many areas of the building and lead contaminated dust may be ground into the pores and cracks of the concrete. It may be necessary to clean floors several times or use alternate cleaning methods after HEPA vacuuming and wet washing to remove the lead dust from the concrete and get the lead levels down to 40 micrograms per square foot (ug/SF).
  - Contact Marshall Environmental Management (MEM) to perform independent third-party post remediation wipe sampling to confirm that room floors with lead contamination have been appropriately remediated to 40 micrograms per square foot (ug/SF). See Section 4 (Confirmation and Clearance Sampling) for additional information;
  - Areas above 40 ug/SF shall be re-cleaned and re-tested until results are at or below 40 ug/SF;
  - Lead dust and appropriate cleaning materials shall be disposed as appropriate.
  - Wash Water Disposal
    - All wash water from the building shall be filtered through a 1 micron filter and stored on site in containers;
    - The wash water will be sampled for total lead and total phosphorus; Total lead shall be run by ICP and total phosphorus shall be run by EPA Method 365.3;
    - Sample results shall be submitted to DEQ to determine if wash water can be disposed at the local Waste Water Treatment Facility;
    - Wash water shall be disposed appropriately.

3. Disposal of Materials

Hazardous Waste

- Lead contaminated sand shall be disposed as hazardous waste;
- Lead contaminated dust from the cleaning of the IFR and remaining building shall be disposed as hazardous waste;

- Wash water filters shall be disposed as hazardous waste;
- Mop heads, towels, brushes, wipes, and other cleaning supplies shall be disposed as hazardous waste.

Other

- Poly Sheeting shall be disposed as appropriate. If contractor plans to dispose as non-hazardous waste, best management practices such as vacuuming, washing, wiping down, or cleaning poly sheeting prior to disposal shall be implemented.
- Personal protective equipment (gloves, tyvec, face masks, etc.) shall be disposed as appropriate.

4. Confirmation and Clearance Sampling

- Contractor may use his own lab to check progress of remediation, however all DEQ decisions shall be based on analytical data from MEM.
- Marshall Environmental Management (MEM) will be responsible for taking all post remediation samples.
- MEM shall be notified five (5) days prior to each sampling event.
- Contact Information: **Marshall Environmental Management Inc.**
  1601 Southwest 89th Street, Suite 100-A
  Oklahoma City, Oklahoma 73159
  Contact: Sara Marshall
  Phone: (405) 616 – 0401
- <u>The third-party sampling shall not be included in the contractors base bid;</u>
- All post remediation sampling done outside the indoor firing range will be performed after all initial abatement, remediation, and cleaning is complete.
- The chart below summarizes the clearance numbers for the building. All lead wipe samples shall be at or below these numbers in order for these areas to be considered clean.

IFR Post Remediation	IFR Post Sealant	Room Floors
200 ug/SF	40 ug/SF	40 ug/SF

FINAL REPORT

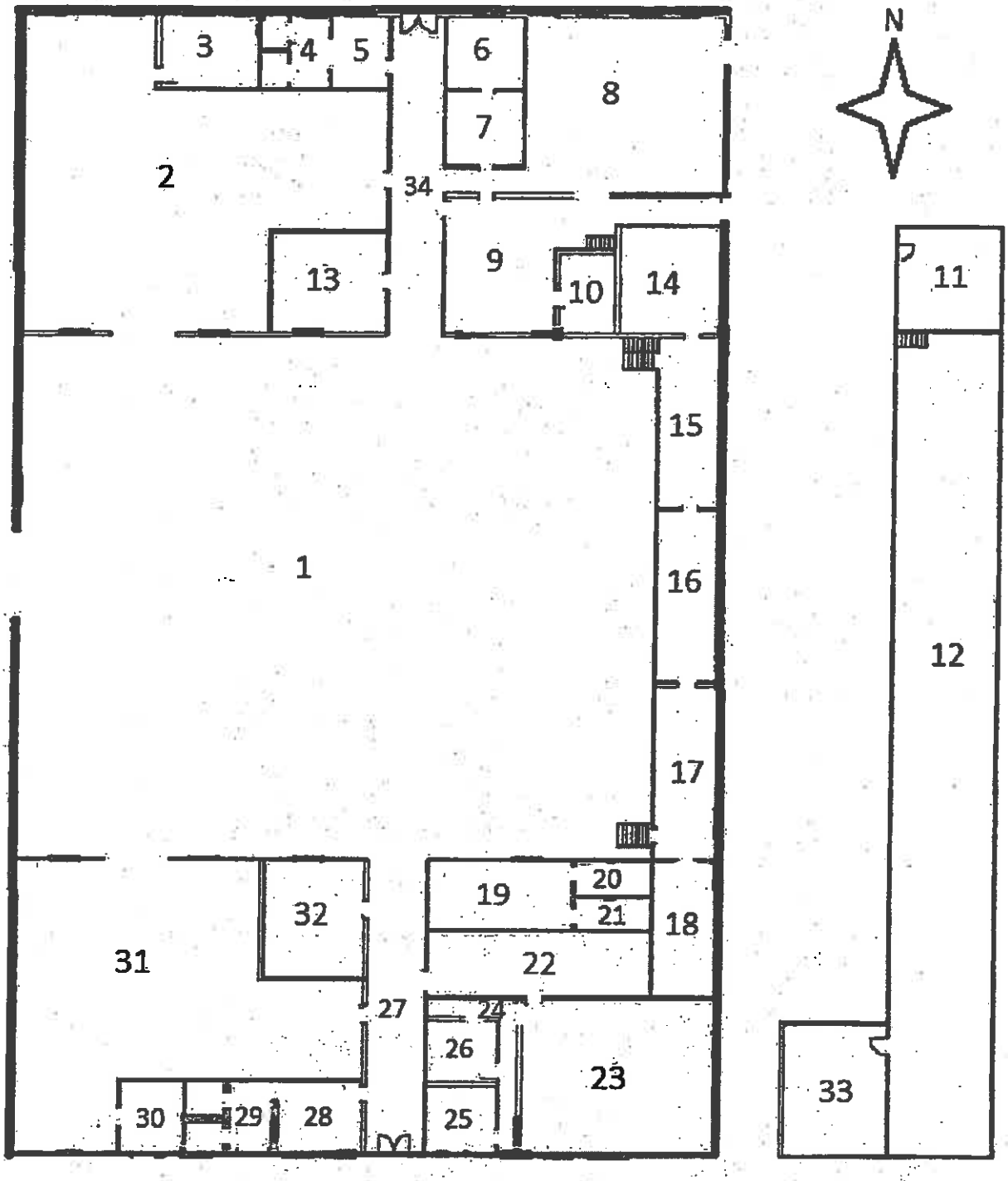
- Write final report and submit to DEQ;
  - Final report shall include asbestos, lead dust and lead-based paint abatement;
- Final report shall include:
  - A detailed summary of work including any warranties and data;
  - sample results;
  - waste manifests; and
  - photo documentation of work;
    - Photo documentation of work will have color digital photos with captions describing photo;
    - Photos will show before and after photos of work completed.
- Final report will be submitted in hard copy and electronically on disc.

OWNER REPRESTATIVE

Owner's Representative: Brian Stanila
Oklahoma Department of Environmental Quality
Land Protection Division
707 N. Robinson
Oklahoma City, OK 73101
(405) 702-5138 (Office)
(405) 702-5101 (Fax)
E-Mail: Brian.Stanila@deq.ok.gov

ATTACHMENT 1

Floor Plan Map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ATTACHMENT 2

Guidelines and Procedures for Rehabilitation and Conversion of Indoor Firing Ranges

Departments of the Army and the Air Force
National Guard Bureau
Arlington, VA 22202-3231
3 November 2006

*NG Pam 420-15

Facilities Engineering

Guidelines and Procedures for Rehabilitation and Conversion of Indoor Firing Ranges

By Order of the Secretaries of the Army and the Air Force:

H STEVEN BLUM
Lieutenant General, USA
Chief, National Guard Bureau

Official:

GEORGE R. BROCK
Chief, Plans and Policy Division

History. This printing publishes a revision of NG Pam (AR) 385-16/ANGPAM 91-101.

Summary. This pamphlet prescribes policy for rehabilitation and conversion of National Guard Indoor Firing Ranges (IFR).

Applicability. This guidance applies to all persons responsible for the operation of National Guard IFRs. As no regulation/guidance can foresee all situations that might arise, the following is written in a broad scope and is intended to be interpreted so as to ensure compliance with all applicable Federal and State laws and regulations.

Proponent and exception authority. The proponent of this regulation is Chief, NGB-SG-IH. The proponent has the authority to approve exceptions to this regulation that are consistent with controlling law and regulation.

Suggested Improvements. Users of this pamphlet are invited to send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to NGB-SG-IH, 1411 Jefferson Davis Highway, Arlington, VA 22202-3231.

Distribution. A.

Table of Contents

* This publication supersedes NP Pam (AR) 385-16/ANGPAM 91-101, dated 31 January 1994.

1-1. Purpose
This pamphlet establishes the policy and procedures for rehabilitation and conversion, of National Guard IFRs.

1-2. References
Required and related publications and referenced and prescribed forms are listed in Appendix A.

1-3. Explanation of abbreviations and terms
Abbreviations and special terms used in this publication are listed in the glossary.

1-4. Policy and Procedures
Indoor firing ranges can be safely rehabilitated or converted for other uses, such as a storage area, classrooms or office space, provided the following –

a. Prior to conversion active ranges must be thoroughly decontaminated and cleaned to acceptable levels. *All ranges converted prior to the publication date of this pamphlet, must be inspected and evaluated to determine lead contamination.* This will be accomplished by a certified National Guard Industrial Hygienist (IH) or a person certified to perform inspections, evaluations, and determinations of IFRs IAW with OSHA standards, other nationally accepted standards, and accepted IH practices for maintenance, cleaning, conversion, ventilation, and air sampling of IFRs.

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 B).

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

(2) Post-cleaning surface wipe sample results must be less than 200 micrograms per square foot (ug/ft^2) (40 micrograms in the case of child exposure). The sampling strategy, which is the amount and location of wipe samples to be collected, is provided in Appendix C.

c. Equipment/Items previously stored in the range must be decontaminated and cleaned to acceptable levels as determined by a person certified to perform inspections, evaluations, and determinations of IFRs IAW with OSHA standards, other nationally accepted standards, and accepted IH practices for maintenance, cleaning, conversion, ventilation, and air sampling of IFRs.

(1) Samples must be collected from equipment/items stored in the range. Sample selection is critical, because the number of items stored, length of storage, and level of contamination 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, as 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.

1-5. Goal
To ensure that every IFR is free of lead dust which means to test less than 200 micrograms and to reduce the number of unsafe National Guard IFRs.

1-6. 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, Office of the Joint Surgeon, ATTN: NGB-SG-IH, 1411 Jefferson Davis Highway, Arlington, VA 22202-3231..

Chapter 2
Health and Medical Aspects

2-1. Health Effects
29 Code of Federal Regulations (CFR) 1910.1025, Appendix A, 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.

2-2. Medical Surveillance for Occupational Exposure to Lead (Pb)

a. Per 29 CFR 1910.1025 (j)(i-ii), Medical Surveillance - General, "The employer shall institute a medical surveillance program for all employees who are or may be exposed above the action level for more than 30 days per year. The employer shall assure all medical examinations and procedures are performed by or under the supervision of a licensed physician."

b. The DOD 6055.5-M, Occupational Medical Surveillance Manual - Table 2-1 lists medical surveillance criteria for employees "who are or may be exposed above the action level for 30 days/year."

2-3. Air Monitoring

Worker breathing zone air samples must be collected to ensure that personnel are not overexposed to airborne lead during the cleanup phase. Daily air samples will be collected from all personnel involved in the cleanup operation. These exposure levels will be used to evaluate work practices and medical surveillance requirements.

2-4. Wipe Sampling Protocol and Media

A template measuring 10 centimeters by 10 centimeters square, approximately 4 inches square, should be used to accurately measure and mark the area before collecting wipe samples. Samples should be staggered to different areas of the range. A grid system should be utilized. Samples should not be collected all on one section of a wall, or end of the building. OSHA Technical Manual provides the necessary guidance on the technique needed to collect wipe samples (Appendix B). Only distilled or deionized water will be used to saturate dry sample media. At least one field blank must be submitted with every 10 samples. The field blank must be from the same lot, and labeled as a blank.

2-5. Personal Protective Equipment

29 CFR 1910.1025 (f) (2), for housekeeping and rehabilitation the employer shall select respirators from among those approved for protection against dust, fume, and mist by the National Institute for Occupational Safety and Health (NIOSH), under the provision of 42 CFR part 84. The employer shall institute a respiratory protection program in accordance with 29 CFR 1910.134 (b), (d), (e) and (f). As a minimum, personnel conducting the decontamination of the range will be provided with the following personal protective equipment.

a. Under 29 CFR 1910.1025 (g). For employees engaged in range rehabilitation and/or range conversion, the employer shall provide at no cost to the employee, and ensure 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 IFRs.

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.

g. The employer will ensure that the containers of contaminated protective clothing and equipment are labeled as follows: CAUTION: *CLOTHING CONTAMINATED WITH LEAD. DO NOT REMOVE DUST BY BLOWING OR SHAKING. DISPOSE OF LEAD CONTAMINATED WASH WATER IN ACCORDANCE WITH APPLICABLE LOCAL, STATE, OR FEDERAL REGULATIONS.*

2

Chapter 3
Education, Maintenance, Cleaning and Conversion

3-1. Worker Education

a. 29 CFR 1910.1025, Appendix B, requires an information and training program for all employees exposed to lead above the action level or who may suffer skin or eye irritation from lead. The program must inform the employees of the specific hazards associated with their work environment, protective measures which can be taken, the danger of lead to their bodies (including their reproductive systems), and their rights under the standard. In addition you must make readily available to all employees, including those exposed below the action level, a copy of this standard and its appendices. This training program will be repeated annually for personnel in range cleanup operations.

b. The commander/supervisor will ensure that each soldier or Army National Guard (ARNG) employee is informed of the following:

(1) The content of the standard and its appendices.
(2) The specific nature of operations that could result in exposure to lead above the action level.
(3) The purpose, proper selection, fitting, use and limitations of respirators.
(4) The purpose and a description of medical surveillance program.
(5) Eating and drinking are prohibited in lead contaminated areas.
(6) Smoking and smoking materials will not be permitted in contaminated areas.
(7) Soldiers and ARNG employees must wash their hands and other exposed skin whenever they leave the work area.
(8) The engineering controls and work practices associated with the individual's job assignment.
(9) The contents of any compliance plan in effect.
(10) Instructions to soldiers and ARNG employees that chelating agents should not routinely be used to remove lead from their bodies and should not be used at all except under the direction of a licensed physician.

3-2. Range Cleaning Instructions

a. Written procedures, such as a scope of work, or standing operating procedure that complies with all Federal, State and local regulations must be established prior to decontamination operations.

b. 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.

c. A High Efficiency Particulate Air (HEPA) filtered vacuum system, which is designed to collect loose surface lead dust particles, is the preferred method of cleanup. If a HEPA filtered vacuum is not available, the range can be cleaned using a wet method.

d. Prohibited methods include:

(1) Wet cleaning using high-pressure systems, since this method may embed the lead into the substratum and generate large quantities of hazardous waste.
(2) Dry sweeping is not permitted.

e. All surface areas of the range must be cleaned. In addition, areas outside of the IFR where lead can be tracked must be cleaned.

f. The preferred progression of cleaning is from top to bottom and from behind the steel bullet trap to the firing line.

(1) Clean the steel bullet trap, areas in front of and behind the bullet trap, and the steel bullet trap plate(s), after removing the sand (if applicable).
(2) Clean the ceiling, floors, lights, baffles, retrieval system, heating system(s), and ventilation duct(s).
(3) Vacuum and remove acoustical material. *Painting over this material is not recommended.*
(4) Clean the floor the last, starting at the bullet trap and ending behind the firing line.

g. When using a HEPA filtered vacuum, vacuum all surface areas until no dust or residue is visible.

h. Any general purpose cleaning solutions can be used for the wet method. However, Spic and Span™ has been found to be an effective cleaning solution by other Army organizations. Mix new solutions of cleaning solution frequently. 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. After wet wiping all surfaces, permit the area to dry.

i. *Properly dispose of all hazardous waste. Do not place lead contaminated waste into the sewer system or onto the ground.*

[redacted]

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

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

k. Wood floors should receive a coat of deck enamel or urethane; concrete floors should be sealed with deck enamel.

l. 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.

m. Any cleaning activities must be under the supervision by a trained and competent personnel IAW with OSHA and other nationally accepted standards and the work shall be according to current industry engineering standards under the control of the State Construction and Facilities Management Officer. Cleaning must recognize that there likely will be "background" lead presence in the readiness center totally independent of the existence of an indoor range and that the method of cleaning is less important than achieving the goal of less than 200 micrograms (40 micrograms in the case of child exposure).

3-3. Cleaning Stored Contaminated Equipment

a. Equipment contaminated (sample result is higher than 200 ug/ft^2) 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, porous, non-porous, smooth or rough finish etc. However, either HEPA vacuum or the wet wipe method will be used. Refer to paragraph 3-2 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.

3-4. Contaminated Sand and Lead Waste

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

3-5. Range Rehabilitation

This chapter applies to all IFRs that have been identified as candidates for rehabilitation. It provides further 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 B.

b. All personnel involved in range rehabilitation will wear a NIOSH approved respirator (P-100) and proper personal protective equipment as prescribed in paragraph 2-5 above.

c. Prior to the start of rehabilitation, the environmental office must be notified to determine the disposition of any debris containing hazardous materials (lead).

d. Supervision shall be by a person who is certified to perform inspections, evaluations, and determinations of IFRs IAW with OSHA standards, other nationally accepted standards, and accepted IH practices for maintenance, cleaning, conversion, ventilation, and air sampling of IFRs. All work shall be according to current industry engineering standards under the control of the State Construction and Facilities Management Officer.

3-6. Conversion of Indoor Firing 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 eradicated, the following procedure is established.

a. The State shall follow the project approval process as delineated in NGR 420-10 (or NGR 415-5 if the use of the military construction appropriation is required).

b. All ranges slated for conversion will be inspected and evaluated by the NGB Regional Industrial Hygiene Office.

c. 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.

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

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

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

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

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

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

j. Prior to start of washing, the interior of the range should be vacuumed with a HEPA filtered vacuum. The range should be washed using a cleaning solution of hot water and Spic and Span in five gallons of hot water. A progression of cleaning from top to bottom, and from back to front should be used. All surface areas of the range must be cleaned. Mix new solutions of water frequently. Washing will require dual containers of water; one container for wetting the applicators (mops, rags, sponges, etc.), and the other container for rinsing the applicators. [redacted] ***Properly dispose of all hazardous waste and do not place any lead contaminated waste into the sewer system or onto the ground.*** Mop heads, sponges and rags will be discarded as hazardous waste following decontamination of the range. After completion of decontamination, and prior to taking clearance samples, the ventilation system must be run for a period of 36 hours. Wipe clearance samples will be taken from ceiling, walls and floors. The range will be considered clean if no clearance sample is greater than 200 ug/ft^2, if any sample is above 200 ug/ft^2, the range is not considered clean, the range will need to be re-washed until clearance samples are below 200 ug/ft^2.

k. The regional industrial hygienist will do quality assurance sampling as needed.

l. After obtaining clearance, the walls of the range will be coated with a sealant (Not Paint), which is smooth, wood floors will receive a coat of deck enamel or urethane, concrete floors will be sealed with deck enamel. After sealing, floors will be tiled or covered with linoleum.

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

n. All personnel involved in the decontamination/conversion of IFRs as a minimum will be provided with the following personal protective equipment.

(1). Full Face air purifying respirator with HEPA cartridges. The requirements outline in 29 CFR 1910.134, must be met prior to placing workers in respiratory protection.

(2). Individuals will be provided personal protective equipment as required per paragraph 2-5, this pamphlet.

o. Any conversion must be supervised by a person certified to perform inspections, evaluations, and determinations of IFRs IAW with OSHA standards, other nationally accepted standards, and accepted IH practices for maintenance, cleaning, conversion, ventilation, and air sampling of IFRs. All work shall be according to current industry engineering standards under the control of the State Construction and Facilities Management Officer. Cleaning must recognize that there likely will be "background" lead presence in the readiness center totally independent of the existence of an indoor range and that the method of cleaning is less important than achieving the goal of less than 200 micrograms (40 micrograms in the case of child exposure).

p. After conversion, lead testing shall continue on an annual basis to verify that no lead migration from the substrate is occurring.

Appendix A
References

Section I
Required Publications

There are no entries in this section

Section II
Related Publications

ASTM E1792-03
Standard Specification for Wipe Sampling Materials for Lead in Surface Dust

AR 11-34
The Respiratory Protection Program

AR 40-5
Preventive Medicine

DODI 6055.5
Industrial Hygiene and Occupational Health

DOD 6055.5-M
Occupational Medical Surveillance Manual

29 CFR, Part 1910
Occupational Safety and Health Administration, Department of Labor

National Institute for Occupational Safety and Health (NIOSH) 76-130
Lead Exposure and Design Considerations for Indoor Firing Ranges, Department of Health, Education and Welfare

NGR 385-15
Policy and Responsibilities for Inspection, Evaluation and Operation Army National Guard National Guard Indoor Firing Ranges (IFRs).

NGR 415-5
Army National Guard Military Construction Program Development and Execution

NGR 420-10
Construction and Facilities Management Office Operations

Technical Manual, 5th Edition
Occupational Safety and Health Administration, Department of Labor

Section III
Prescribed Forms

There are no entries in this section

6

Section IV
Referenced Forms

There are no entries in this section

Appendix B
Protocol for Collecting Wipe Samples

B-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.

B-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.

B-3. Wipe Samples
a. If using Ghost Wipes™, tear open the individually sealed package. Remove the moistened wipe. Unfold the wipe.
b. If using a dry media such as MCE or Whatman™ filter, moisten the filter with distilled or deionized water prior to sampling.

B-4. Place a 10 centimeter by 10 centimeter template on the area to be wiped.

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

B-6. To ensure 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.

B-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.

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

Appendix C
Sampling Strategy for Collection of Wipe Samples

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

C-2. Samples should be collected from 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 from only one section of a wall or end of the building.

Glossary

Section I
Abbreviations

ARNG
Army National Guard

CFR
Code of Federal Regulations

HEPA
High Efficiency Particulate Air

IFR
Indoor Firing Range

NIOSH
National Institute for Occupational Safety and Health

OSHA
Occupational Safety and Health Administration

ug/ft²
Micrograms per square foot

Section II
Terms

Air monitoring
The sampling for and measuring of pollutants in the atmosphere.

Breathing zone
The imaginary globe of two feet radius surrounding the head.

General area
Collection of and later analysis of airborne contaminants in a given work environment. As the sampling pump and collection media are not attached to a worker, the concentrations found represent average concentrations in that area but may not representative of the actual exposure of the worker.

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 IFRs, which have been fired in, are lead-contaminated.

Respirator
A device designed to provide the wearer with respiratory protection against inhalation of airborne contaminants.

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

ATTACHMENT 3

Wetumka Armory Asbestos Floor Plan

ATTACHMENT 4

Health & Safety Aspects to Consider

Health & Safety Aspects to Consider

Project Goal: To ensure that former National Guard Armories are free of lead dust. Specifically, indoor firing ranges (IFR's) and other areas that contain lead contamination.

Please Note: the following information is from the Departments of the Army and the Air Force, National Guard Bureau, Guidelines and Procedures for Rehabilitation and Conversion of Indoor Firing Ranges (**Attachment 2**).

Health and Medical Aspects

Health Effects

29 Code of Federal Regulations (CFR) 1910.1025, Appendix A, 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.

Medical Surveillance for occupational Exposure to Lead

a. 29 CFR 1910.1025(j)(i-ii), Medical Surveillance - General: "The employer shall institute a medical surveillance program for all employees who are or may be exposed above the action level for more than 30 days per year. The employer shall assure all medical examinations and procedures are performed by or under the supervision of a licensed physician."

b. The DOD 6055.5-M, Occupational Medical Surveillance Manual - Table 2-I lists medical surveillance criteria for employees "who are or may be exposed above the action level for 30 days/year."

Personal Protective Equipment

29 CFR 1910.1025(f)(2),for housekeeping and rehabilitation the employer shall select respirators from among those approved for protection against dust, fume, and mist by the National Institute for Occupational Safety and Health (NIOSH), under the provision of 42 CFR part 84. The employer shall institute a respiratory protection program in accordance with 29 CFR 1910.134(b), (d), (e), and (f). As a minimum, personnel conducting the decontamination of the range shall be provided with the following personal protective equipment.

a. Under 29 CFR 1910.1025 (g). For employees engaged in range rehabilitation and/or range

conversion, the employer shall provide at no cost to the employee, and ensure 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 IFRs.

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

g. The employer shall ensure that the containers of contaminated protective clothing and equipment are labeled as follows: CAUTION: *CLOTHING CONTAMINATED WITH LEAD. DO NOT REMOVE DUST BY BLOWING OR SHAKING. DISPOSE OF LEAD CONTAMINATED WASH WATER IN ACCORDANCE WITH APPLICABLE LOCAL, STATE, OR FEDERAL REGULATIONS.*

Education, Maintenance, Cleaning and Conversion

Worker Education

a. 29 CFR 1910.1025, Appendix 13, requires an information and training program for **all employees exposed** to lead above the action level **or** who may suffer skin or eye irritation from lead. The program must inform the employees of the specific hazards associated with their work environment, protective measures which can be taken, the danger of lead to their bodies (including their reproductive systems), and their rights under the standard. In addition you must

make readily available to all employees, including those exposed below the action level, a copy of this standard and its appendices. This training program shall be repeated annually for personnel in range cleanup operations.

b. The supervisor shall ensure that each individual employee is informed of the following:

(1) The content of the standard and its appendices.

(2) The specific nature of operations that could result in exposure to lead above the action level.

(3) The purpose, proper selection, fitting, use, and limitations of respirators.

(4) The purpose and a description of medical surveillance program.

(5) Eating and drinking are prohibited in lead contaminated areas.

(6) Smoking and smoking materials shall not be permitted in contaminated areas.

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

(8) The engineering controls and work practices associated with the individual's job assignment.

(9) The contents of any compliance plan in effect.

(10) Instructions to employees that chelating agents should not routinely be used to remove lead from their bodies and should not be used at all except under the direction of a licensed physician.

REFERENCES

Section 1 Required Publications

There are no entries in this section

Section II Related Publications

ASTM E1792-03
Standard Specification for Wipe Sampling Materials for Lead in Surface Dust

AR 11-34
The Respiratory Protection Program

AR 40-5
Preventive Medicine

DODI 6055.5
Industrial Hygiene and Occupational Health

DOD 6055.5-M
Occupational Medical Surveillance Manual

29 CFR, Part 1910
Occupational Safety and Health Administration, Department of Labor

National Institute for Occupational Safety and Health (NIOSH) 76-130
Lead Exposure and Design Considerations for Indoor Firing Ranges, Department of Health, Education and Welfare

NGR 385-15
Policy and Responsibilities for Inspection, Evaluation and Operation Army National Guard National Guard Indoor Firing Ranges (IFRs).

NGR 415-5
Army National Guard Military Construction Program Development and Execution

NGR 420-10
Construction and Facilities Management Office Operations

Technical Manual, 5th Edition
Occupational Safety and Health Administration, Department of Labor Section III

ATTACHMENT 5

DEQ Approved Lead-Based Paint Encapsulants, Sealants, and Grout

Lead-Based Paint Encapsulants

Encapsulant Manufacturer	Encapsulant Product(s)
Coronado Paint Company	LEAD BLOCK™
Dumond Chemicals	LEAD STOP™
Dynacraft Industries, Inc.	Back to Nature Protect-A-Coat
Encap Systems Corporation	EncapSeal™ I
Encap Systems Corporation	EncapSeal™ II
Fiberlock Technologies, Inc.	Child GUARD interior/exterior
Fiberlock Technologies, Inc.	L-B-C® Type III
Global Encasement, Inc.	LeadLock™
Grace Construction Products	Lead Seal®
Grace Construction Products	Barrier Coat® II
Insl-x Products Corporation	INSL-CAP™
SAFE Encasement Systems	SE-120 Protective Skin
Specification Chemicals, Inc.	NU-WAL® #2500 Coating

KELLY-MOORE PAINTS

INDUSTRIAL COATINGS

HIGH PERFORMANCE SYSTEMS

KM-669

Acrylic Sealer

THIS PRODUCT MAY NOT BE AVAILABLE IN SOME AREAS DUE TO VOC REGULATIONS
Contact your Kelly-Moore representative for more information

Product Description
A one component, solvent borne, high gloss, clear acrylic sealer designed for use on concrete, masonry, and brick. Dustproofs concrete by penetrating surface pores leaving a tough, durable film.

Performance Features

- Non-Yellowing
- Excellent Adhesion to Concrete
- Good Water & Salt Chemical Resistance
- Good Abrasion Resistance
- Can be Sprayed, Padded or Rolled

Product Specifications

Resin Type	Acrylic
Color Range	Clear
Finish	High Gloss
Drying Time	8 hours to recoat
Practical Coverage	250-450 Sq. Ft. / Gallon
Recommended Dry Film Thickness	1.2 –2.2 mils per coat
Solids By Volume	35%
Sizes	Five gallon pails
V.O.C.	560 Grams per liter
Clean Up	KM-S-74 or KM-SA-50

Surface Preparation

WARNING! If you scrape, sand or remove old paint from any surface, you may release lead dust. LEAD IS TOXIC. EXPOSURE TO LEAD DUST CAN CAUSE SERIOUS ILLNESS, SUCH AS BRAIN DAMAGE, ESPECIALLY IN CHILDREN. PREGNANT WOMEN SHOULD ALSO AVOID EXPOSURE. Wear a NIOSH-approved respirator to control lead exposure. Carefully clean up with a wet mop or HEPA vacuum. Before you start, find out how to protect yourself and your family by contacting the U.S. EPA/Lead Information Hotline at 1-800-424-LEAD (5323) or log on to www.epa.gov/lead.

Surface Preparation:
Remove all dirt, grease, oil, soil, chemical contaminants, and other matter. Allow surface to dry.

Application Procedure:
When mixing, use an EXPLOSION PROOF SLOW SPEED DRILL WITH A JIFFY MIXER. Apply a uniform wet film, do not puddle material. Do not cover more area than can be worked in 10 minutes due to fast dry time. When spraying, use a low pressure machine. Two coats may be necessary depending on porosity or type of service.

For safety and product curing, proper ventilation is necessary throughout application and cure.

Dry Times: 8 hours

See Precautions and Limited Warranty next page

KM-669 (cont.)

Precautions
KM-669 is Flammable. KM-669 contains flammable solvents. Keep away from all sources of ignition during mixing, application, and cure. In confined areas, provide adequate forced air ventilation. The use of goggles, fresh air masks or NIOSH approved respirators, protective skin cream and protective clothing is a recommended standard practice when spraying coatings

Proper Disposal
For proper disposal of excess material, please contact your local city or county waste management agency.

SEE MATERIAL SAFETY DATA SHEETS FOR FULL SAFETY PRECAUTIONS.

KM-669 IS FOR PROFESSIONAL USE ONLY

KM-669 IS FOR INDUSTRIAL USE ONLY

KEEP AWAY FROM CHILDREN

MATERIAL SAFETY DATA SHEET

For Coatings, Resins & Related Materials

Section I

Manufactured For: Kelly-Moore Paints
Address: 987 Commercial Street
San Carlos, CA 94070

Prep Date: 07/28/06

Emergencies Involving Spills, Leaks, Fires, Exposure, Or Accident Contact
Chemtrec: 1-800-424-9300

Product Class: Acrylic Lacquer Sealer
Trade Name: KM-669 CLEAR
H.M.I.S. Codes: H F R P
2* 3 0 -

Information Phone: 1-888-677-2468

Section II - HAZARDOUS INGREDIENTS

Ingredient	C.A.S.#	Weight Percent	Occupt. Exposure Limits OSHA PEL	ACGIH TLV	Vapor Pressure mm Hg & Temp.F	
Acrylic Resins	Mixture	30-40	Not Established		Not Determined	
*Xylene	1330-20-7	40-50	100 ppm	100 ppm	5.1	68
*Ethyl Benzene	100-41-4	15-20	100 ppm	100 ppm	7.1	68

*Indicates toxic chemical(s) subject to reporting requirements of Section 313 of Title III and of 40 CFR 372.

Section III - PHYSICAL DATA

Boiling Range (Deg. F): 240*
Evaporation Rate: Slower than Ether
Percent Volatile By Volume: 70 ± 3%

Vapor Density: Heavier than air
Weight Per Gallon (lbs.): 7.75 ± .25

Section IV - FIRE & EXPLOSION HAZARD DATA

Flash Point (Deg. F): 80*

Lower Explosive Limit: 1.0

Extinguishing Media: Foam, alcohol foam, CO2, dry chemical, water spray

OSHA Flammability Classification: Flammable Liquid IC

Special Firefighting Procedures: Wear a NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing. Use water to keep fire exposed containers cool. Water may be ineffective as an extinguishing agent.

Unusual Fire & Explosion Hazards: Vapors are heavier than air and may travel along the ground or be moved by ventilation to ignition sources at locations distant from material handling point. Pressure may build up in containers and create an explosion hazard.

KM-669 CLEAR

Section V - HEALTH HAZARD DATA

THIS PRODUCT IS FLAMMABLE

Effects Of Overexposure:
Eyes: Irritation, burning, tearing and redness.
Skin: Moderate irritation or defatting of skin upon prolonged or repeated contact.
Ingestion: Abdominal pain, nausea, vomiting and diarrhea.
Inhalation: Excessive exposure to vapors can cause headache, dizziness, uncoordination, nausea and loss of consciousness.

Emergency & First Aid Procedures:
Eyes: Flush with water for 15 minutes.
Skin: Remove contaminated clothing, wash skin with soap and water.
Ingestion: Do not induce vomiting. Get medical attention immediately.
Inhalation: Move to fresh air, aid breathing if necessary.

In all cases, consult a physician for best treatment.

Chemical listed as carcinogen or potential carcinogen:
NTP: No IARC: No OSHA: No

Section VI - REACTIVITY DATA

Stability: Product Stable
Conditions to Avoid: All sources of ignition
Incompatibility (Materials to Avoid): Oxidizing agents, strong acids & bases
Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, nitrogen oxides and organic compounds.
Hazardous Polymerization: Will Not Occur

Section VII - SPILL OR LEAK PROCEDURES

Steps To Be Taken In Case Material Is Released Or Spilled: Dike spill area. Absorb spill with inert absorbent material. Place in sealed metal containers for proper disposal.

Waste Disposal Method: Dispose of in accordance with local, state and federal regulations.

Section VIII - SPECIAL PROTECTION INFORMATION

Respiratory Protection: Use a NIOSH/MSHA jointly approved respirator
Ventilation: Use mechanical ventilation
Protective Gloves: Neoprene or rubber
Eye Protection: Chemical splash goggles
Other Protective Equipment: Protective clothing, barrier cream, eye bath, safety shower

Section IX - SPECIAL PRECAUTIONS

Precautions To Be Taken In Handling & Storing: Store in dry area. Keep away from open flames and high temperatures.
Other Precautions: Minimize contact. Avoid breathing vapors. Practice good industrial hygiene and safe working practices.

State and Local Regulations
California Proposition 65
This product contains the following substances known to the State of California to cause cancer, birth defects or other reproductive hazards: Benzene, Toluene.

BASF

The Chemical Company

PRODUCT DATA

03 01 00 Maintenance of Concrete

ACRYL 60®

Water-based acrylic bonding and modifying admixture

Description

Acryl 60® is an acrylic-polymer emulsion mixed with Portland cement mortars, plasters, stucco, and concrete mixes to enhance their physical properties, adhesion to substrates, and durability.

Packaging

1 quart (0.9 L) bottles

1 gallon (3.8 L) bottles

5-gallon (18.9 L) pails

30 gallon (113.5 L) drums

55 gallon (208 L) drums

Color

Milky-white

Shelf Life

1 year when properly stored

Storage

Transport and store in unopened containers between 40 and 100° F (4 and 38° C). Protect from freezing.

Features	Benefits
• Acrylic polymers	Significantly improves adhesion, cohesion, tensile, compressive, and flexural strengths of cement-based materials
• Excellent chemical and UV resistance	Provides long-lasting repairs
• Improved freeze/thaw stability of Portland cement-based materials	Suitable for cold climate applications
• Stable	Will not re-emulsify when exposed to water

Where to Use

APPLICATION

- Cement-based mixes to improve their adhesion, and durability
- As gauging liquid for Thoro® waterproofing and repair products, such as Thoroseal® and Thoro®
- Walkways
- Ramps and structural beams

LOCATION

- Interior or exterior
- Above or below grade

SUBSTRATE

- Columns

How to Apply

Surface Preparation

1. The methods required for preparation will vary depending on the end product to be applied and the site and substrate conditions.

2. In all cases the surface must be clean and sound. Remove all loose and disintegrated material. Remove any and all traces of oil, grease, dirt, dust, efflorescence, biological, mold or mildew, and release or curing agents.

3. Vacuum, sweep, or blow out the areas to be patched with clean, oil-free air.

CONCRETE/CMU/MASONRY SURFACES

Predampen the area to be patched or coated with potable water to a saturated surface-dry (SSD) condition. Do not leave standing water on surface. Proper surface preparation and cleanliness are extremely important.

OTHER SURFACES

For other surface preparation guidelines, refer to the specific Thoro® product data guide for information.

Mixing

1. The normal ratio of Acryl 60® to clean potable water is 1 part Acryl 60® to 3 parts water (1 to 3). Where increased physical and chemical resistance are required, increase the Acryl 60® content in the mixing liquid to a 1 to 2 or 1 to 1 Acryl 60® to water ratio (see chart above).

2. Always mechanically mix. Do not overmix or stir at a high speed.

Thoro

Technical Data

Composition

Acryl 60® is an acrylic-polymer emulsion.

Typical Properties

PROPERTY	VALUE
Density, lbs/gal (kg/L), Lab Method	8.55 (1.04)
Solids content, by volume, %, Lab Method	28
Maximum water dilution, Parts Acryl 60® to H_2O, Lab Method	1:3

Test Data

The following properties are for sand/cement mortar samples:

PROPERTY	RESULTS		TEST METHOD
	With Water	With 1 to 1 Acryl 60® and Water	
Compressive strength, psi (MPa) 28 days	3,800 (26.2)	4,500 (31)	ASTM C 109
Tensile strength, psi (MPa) 28 days	225 (1.5)	350 (2.4)	ASTM C 190
Flexural strength, psi (MPa) 28 days	1,000 (6.9)	1,800 (12.4)	ASTM C 348
Freeze/thaw durability	11 at 98 cycles	102 at 300 cycles	Method A

Test results are averages obtained under laboratory conditions of 70° F (21° C) and 50% R. Reasonable variations can be expected.

Mixing Ratios

APPLICATION	RATIO
For scrub coats applied before patching or overlays	Use straight Acryl 60®
To improve the adhesion properties of patching mortars and to reduce cracking in cement plaster	Use 1 part Acryl 60® to 3 parts water
For large overlays or topping	Use 2 parts Acryl 60® to 1 part water
For bonding cement plaster no thicker than 1/4 – 3/8" (6 – 10 mm)	Use 1 part Acryl 60® to 3 parts water

NOTE: The above ratios are for normal conditions. Where bonding is more critical, increase the Acryl 60® content of the mixing liquid. A TEST PATCH IS ALWAYS RECOMMENDED.

For detailed application instructions for these® products, see specific product data sheets.

Application

SAND/CEMENT MORTAR

1. Thoroughly mix all cement and sand first. The sand must be clean, free of clay, and dry.
2. Make up mixing liquid from a 1 to 3 or 1 to 2 Acryl 60® water ratio depending upon requirements.
3. Slowly add the mixing liquid to the cement/sand mixture and mix with a slow-speed mixer for 1 – 2 minutes to avoid entrapping air. After preparing, cleaning, and predampening the surface, brush apply a scrub coat (not diluted) of the Acryl 60®-modified cement/sand. Scrub vigorously into the surface to displace any air pockets.
4. Place the mix into the scrub-coated repair area while the scrub coat is still wet or tacky. Place the mix and avoid overtroweling. The trowel should be cleaned frequently, kept wet, and used with minimal pressure.
5. Maximum time for placement should not exceed 20 minutes. Higher air and surface temperatures will decrease working and placement time.

Curing

1. When rapid drying is expected due to high temperatures, rapid air movement, or wind, it is recommended that the surface be covered with wet burlap to retain moisture.
2. For normal use, allow a 24-hour curing period.
3. For heavy wheeled traffic, allow a 4-day curing period.

Clean Up

Clean all tools and equipment immediately with water. Cured material may be removed by mechanical means only.

For Best Performance

- Do not use Acryl 60® modified mixes when the ambient air or surface temperature is below 40° F (4° C) or when the temperature is expected to fall below 40° F (4° C) within 24 hours. High relative humidity, excessive moisture, and low temperatures will retard the curing of Acryl 60® modified mixes.
- Do not use with air-entrained cement mixes or with air-entraining admixtures.
- Do not overmix or aerate mixes.
- Use with proper ventilation.
- Do not use Acryl 60® as a surface-applied external bonding agent or as a primer.
- Do not expose cement-based mixes modified with Acryl 60® to water immersion service for a minimum of 24 hours at 73° F (23° C).
- Not recommended for exposure to soft water or immersion where contact with water-treatment chemicals is present without a protective top coat.
- Caution should be used when a highly solvent material is being used over a base system that contains Acryl 60®.
- Make certain the most current versions of product data sheet and MSDS are being used; call Customer Service (1-800-433-9517) to verify the most current version.
- Proper application is the responsibility of the user. Field visits by BASF personnel are for the purpose of making technical recommendations only and not for supervising or providing quality control on the jobsite.

Health and Safety

ACRYL 60®

Caution

Acryl 60® contains no hazardous ingredients as defined by 29 CFR 1910.1200 WHMIS.

Risks

May cause skin, eye or respiratory irritation. Ingestion may cause irritation.

Precautions

Avoid contact with skin, eyes and clothing. Wash thoroughly after handling. Keep container closed when not in use. DO NOT take internally. Use only with adequate ventilation. Use impervious gloves, eye protection and if the TLV is exceeded or used in a poorly ventilated area, use NIOSH/MSHA approved respiratory protection in accordance with applicable Federal, state and local regulations.

First Aid

In case of eye contact, flush thoroughly with water for at least 15 minutes. In case of skin contact, wash affected areas with soap and water. If irritation persists, SEEK MEDICAL ATTENTION. Remove and wash contaminated clothing. If inhalation causes physical discomfort, remove to fresh air. If discomfort persists or any breathing difficulty occurs or if swallowed, SEEK IMMEDIATE MEDICAL ATTENTION.

Proposition 65

This product contains material listed by the state of California as known as to cause cancer, birth defects, or other reproductive harm.

VOC Content

1 g/L or 0.01 lbs/gal less water and exempt solvents.

For medical emergencies only, call Chemtrec (1-800-424-9300).

BASF Construction Chemicals, LLC –
Building Systems

889 Valley Park Drive
Shakopee, MN 55379

www.BuildingSystems.BASF.com

Customer Service 800-433-9517
Technical Service 800-243-6739

BASF

The Chemical Company

PRODUCT DATA

03 62 13 Non-Metallic Grouted Non-Shrink Grouting

CONSTRUCTION GROUT

General construction, mineral-aggregate nonshrink grout

Description

Construction Grout is a noncatalyzed, multi-purpose construction grout containing mineral aggregate.

Yield

One 50 lb (22.7 kg) bag of Construction Grout mixed with 1.15 gallons (4.35 L) of water (flowable mix) provides approximately 0.45 ft³ (0.013 m³) of mixed grout.

Packaging

50 lb (22.7 kg) multi-wall paper bags

Color

Concrete gray when cured

Shelf Life

1 year when properly stored

Storage

Store in unopened bags under clean, dry conditions.

Features	Benefits
• Concrete gray color fades during curing	Blends in with surrounding concrete
• No organic accelerators, including chlorides or other salts	Will not corrode reinforcing steel
• Can be extended with clean, well-graded, 3/8" (9.5 mm) coarse aggregate	Fills large voids without additional mix water
• Hardens free of bleeding when properly placed	Provides high effective bearing area for proper support and load transfer

Where to Use

APPLICATION

- Normal loads for columns and baseplates
- Bedding grout for precast panels
- Repairing of cavities resulting from ineffective concrete consolidation
- Caulking concrete pipe
- Backfilling, underpinning foundations, and pressure grouting of slabs needing alignment
- General construction applications
- Damp-pack applications

LOCATION

- Interior or exterior

How to Apply

Application

For aggregate extension guidelines refer to Appendix MB-10: Guide to Cementitious Grouting.

Mixing

By using the minimum amount of water to provide the desired workability, maximum strength will be achieved. Whenever possible, mix the grout with a mechanical mixer. Either a mortar mixer or an electric drill with a paddle device is acceptable. Put the measured amount of water into the mixer, add grout, then mix till a uniform consistency is attained. Do not use water in an amount or a temperature that will cause bleeding or segregation.

Curing

Cure all exposed grout shoulders by wet curing for 24 hours and by applying a recommended curing compound compliant with ASTM C309 or preferably ASTM C1315.

For Best Performance

- Contact your local representative for a pre-job conference to plan the installation.
- Construction Grout is designed for the 50 to 90° F (10 to 32° C) application temperature range. Consult your BASF representative when applying outside this range. Use cold and hot weather concreting practices (ACI 305 and ACI 306) when grouting within 10° F (5° C) of these minimum and maximum temperature ranges.
- To ensure optimum performance of Construction Grout, place at a plastic or flowable consistency and at ambient temperatures of 50° F (10° C) and above.
- For best results, allow a minimum of 1" (25 mm) vertical clearance under baseplates when placing Construction Grout.
- Do not use Construction Grout where it will come in contact with steel designed for stresses above 60,000 psi (552 MPa). Use Masterflow® 616, Masterflow® 1205, or Masterflow® 1341 post-tensioning cable grouts.

Technical Data

Composition

Construction Grout is a noncatalyzed hydraulic cement-based grout containing mineral aggregate.

Compliances

- CRD C 621 and ASTM C 1107, Grade C, at flowable or plastic consistency
- City of Los Angeles Research Report Number RR 23137

Typical Properties

Mixed Grout Data* (Flowable Mix)

PROPERTY	VALUE
Approximate Water, gal (L)	1.15 (4.35)
Initial set, hrs, at 70° F (21° C)	6
Final set, hrs, at 70° F (21° C)	8

*At a constant percent of water, consistency will vary with temperature. Final set takes place at approximately 8 hours at a flowable consistency and 70° F (21° C).

Test Data

PROPERTY	RESULTS	TEST METHOD
Flow, %, 5 drops	125 – 145	ASTM C230
Volume change, %, flowable consistency, after 28 days	0.09	ASTM C 1090
Compressive strength, psi (MPa)		ASTM C 942, according to ASTM C 1107

	Consistency		
	Flowable*	Plastic†	Stiff‡ (damp pack)
1 day	1,500 (10)	—	—
3 days	5,000 (34.5)	6,000 (41.4)	8,000 (55.2)
7 days	6,000 (41.3)	7,000 (48.3)	9,500 (65.5)
28 days	7,000 (48.0)	8,500 (58.6)	10,000 (69.0)

* 140% flow on flow table, ASTM C 230, 5 drops in 3 seconds
† 100% flow on flow table, ASTM C 230, 5 drops in 3 seconds
‡ 40% flow on flow table, ASTM C 230, 5 drops in 3 seconds

Test results are averages obtained under laboratory conditions. Reasonable variations can be expected.

- Do not add plasticizers, accelerators, retarders, or other additives unless advised in writing by BASF Technical Services.
- The surface to be grouted should be clean, strong, and roughened to CSP 5 – 9 according to ICRI Guideline 03732 to permit proper bond. For freshly placed concrete, consider using Liquid Surface Etchant (see Form No. 10201.99).
- Do not place Construction Grout in lifts greater than 6" (152 mm) unless the product is extended with aggregate to dissipate hydration heat.
- Where precision alignment and severe service, such as heavy loading, rolling, or impact resistance are required, use metallic-reinforced, noncatalyzed Embeco® 885 grout. If the amount of impact resistance needed is not great enough to require metallic reinforcement, use natural-aggregate, Masterflow® 928.
- The water requirement may vary with mixing efficiency, temperature, and other variables.
- The concrete surfaces should be saturated (ponded) with clean water for 24 hours before grouting. Remove water immediately before application.
- Make certain the most current versions of product data sheet and MSDS are being used; call Customer Service (1-800-433-9517) to verify the most current versions.
- Proper application is the responsibility of the user. Field visits by BASF personnel are for the purpose of making technical recommendations only and not for supervising or providing quality control on the jobsite.

Health and Safety:

CONSTRUCTION GROUT

WARNING!

Construction Grout contains silica, crystalline quartz; portland cement; limestone; calcium oxide; gypsum; silica, amorphous.

Risks

Product is alkaline on contact with water and may cause injury to skin or eyes. Ingestion or inhalation of dust may cause irritation. Contains small amount of free respirable quartz which has been listed as a suspected human carcinogen by NTP and IARC. Repeated or prolonged overexposure to free respirable quartz may cause silicosis or other serious and delayed lung injury.

Precautions

Avoid contact with skin, eyes and clothing. Prevent inhalation of dust. Wash thoroughly after handling. Keep container closed when not in use. DO NOT take internally. Use only with adequate ventilation. Use impervious gloves, eye protection and if the TLV is exceeded or used in a poorly ventilated area, use NIOSH/MSHA approved respiratory protection in accordance with applicable Federal, state and local regulations.

First Aid

In case of eye contact, flush thoroughly with water for at least 15 minutes. In case of skin contact, wash affected areas with soap and water. If irritation persists, SEEK MEDICAL ATTENTION. Remove and wash contaminated clothing. If inhalation causes physical discomfort, remove to fresh air. If discomfort persists or any breathing difficulty occurs or if swallowed, SEEK IMMEDIATE MEDICAL ATTENTION.

Waste Disposal Method

This product when discarded or disposed of is not listed as a hazardous waste in federal regulations. Dispose of in a landfill in accordance with local regulations. For additional information on personal protective equipment, first aid, and emergency procedures, refer to the product Material Safety Data Sheet (MSDS) on the job site or contact the company at the address or phone numbers given below.

Proposition 65

This product contains material listed by the State of California as known to cause cancer, birth defects or other reproductive harm.

VOC Content

0 g/L or 0 lbs/gal less water and exempt solvents.

For medical emergencies only, call ChemTrec (1-800-424-9300).

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Technical Service 800-243-6739

Form No. 10201.99
Printed in U.S.A.

ATTACHMENT 6

Window Scope of Work Including Measurements and Specifications

Wetumka Armory Window Measurements
And
Scope of Work

- **Window measurements are listed as approximate Width X Height; Contractor to field verify.**
- **All window bars shall be removed and properly disposed.**
- **Caulking shall be removed from outside edges of window and properly disposed prior to window removal.**
- **All removed windows shall be properly disposed.**
- **Window lintels and any remaining metal with lead-based paint shall be wet scraped and sealed with a DEQ approved encapsulant (See Attachment 5).**
- **Interior and Exterior window sills shall be HEPA vacuumed and wet washed to remove remaining lead dust. Once loose paint and lead dust is removed, window sills shall be sealed with a DEQ approved encapsulant (See Attachment 5).**
- **Attached is the Wetumka Armory Floor Plan with designated window numbers that correspond with the numbers on this Scope of Work.**
- **Specifications for replacement windows are attached.**

1. 3'2.5" X 6'8" – Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

2. 2'1" X 9'3.5" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

3. 3'2" X 9'3.5" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

4. 2'2" X 9'3.5" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

5. 2'2" X 9'3.5" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

6. 3'2." X 9'3.5" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

7. 2'2" X 9'3.5" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

8. 3'2.5" X 6'8" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

9. 3' X 3'2" - Replacement window will be non-opening window.

10. 3' X 3'2" – Replacement window will be non-opening window.

11. 3' X 3'2" - Replacement window will be non-opening window.

12. 3' X 3'2" - Replacement window will be non-opening window.

13. 3' X 3'2" - Replacement window will be non-opening window.

14. 3' X 3'2" - Replacement window will be non-opening window.

15. 3' X 3'2" - Replacement window will be non-opening window.

16. 3' X 3'2" - Replacement window will be non-opening window.

17. 3' X 3'2" - Replacement window will be non-opening window.

18. 3' X 3'2" - Replacement window will be non-opening window.

19. 2'2" X 7'11" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

20. 2'2" X 7'11" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

21. 3'2" X 7'11" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

22. 3'2" X 7'11" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

23. 2'2" X 7'11" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

24. 1'1" X 4'4" - Replacement window will be non-opening window.

25. 1'1" X 4'4" - Replacement window will be non-opening window.

26. 2'2" X 7'11" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

27. 3'2" X 7'11" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

28. 3'2" X 7'11" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

29. 2'2" X 7'11" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

30. 3'2" X 7'11" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

31. 2'6.5" X 2'7" - ~~Replacement window will be non-opening window.~~ Window will not be replaced due to ~~modifies~~ the presence of modified HVAC system.

32. 3'2" X 6'4" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

33. 3'2" X 6'4" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

34. 3'2" X 6'4" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

35. 3'2" X 7'11" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

36. 3'2" X 7'11" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

37. 3'2" X 6'4"– Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

38. 3'2" X 6'4"– Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

39. 3'2" X 6'4"– Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

40. 2'6.5" X 2'7"– ~~Replacement window will be non-opening window.~~ Window will not be replaced due to modified HVAC system

41. 2'6.5" X 2'7"– Replacement window will be non-opening window.

42. 2'2" X 7'11"– Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

43. 3'2" X 7'11"– Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

44. 3'2" X 7'11"– Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

45. 2'2" X 7'11"– Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

46. 1' X 4'4"– Replacement window will be non-opening window.

47. 1' X 4'4"– Replacement window will be non-opening window.

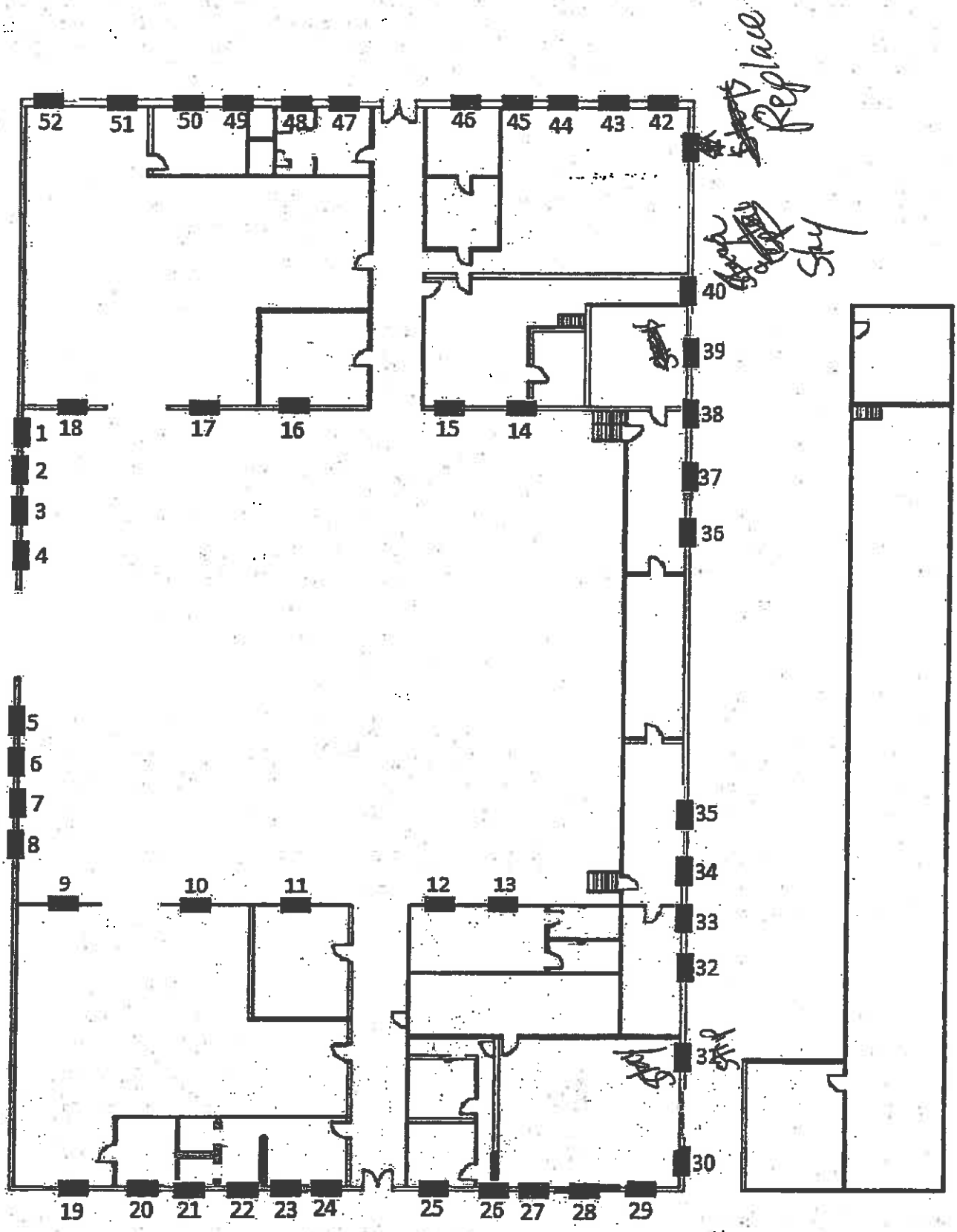
48. 2'2" X 7'11"– Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

49. 3'2" X 7'11"– Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

50. 3'2" X 7'11" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

51. 2'2" X 7'11" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.

52. 2'2" X 7'11" - Lower portion of window to be 4ft single hung opening window with top remainder to be fixed mapes panel all within one frame unit.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SECTION 08520 – ALUMINUM WINDOWS

PART 1 – GENERAL

1.1 SECTION REQUIRMENTS

A. Submit Product Data and Shop Drawings.
B. Product Substitution: Substitutions include products differing from those required by this specification.
   1. Submit two (2) copies of each request for product substitution. Identify product to be replaced and provide complete documentation showing compliance of proposed substitution with applicable requirements. Include a full comparison with the specified product, and a list of changes to other Work required to accommodate the substitution.
   2. Submit requests for product substitution in accordance with the time allotted to do so by the Scope of Work included within the Bid Solicitation.
   3. State of Oklahoma, Department of Environmental Quality will review the proposed substitution and notify bidder of its acceptance or rejection within the time allotted to do so by the Scope of Work included within the Bid Solicitation.
C. Structural Performance: Provide systems, including anchorage, capable of withstanding loads indicated for project location.
   1. Main Frame-Member Deflection: Limited to 1/175 of clear span for spans up to 13 feet 6 inches and to 1/240 of clear span plus ¼ inch for spans greater than 13 feet 6 inches or an amount that restricts edge deflection of individual glazing lites to ¾ inch, whichever is less.
   2. Structural-Testing: Systems tested according to ASTM E 330 at 150 percent of inward and outward wind-load design pressures do not evidence material failures, structural distress, deflection failures, or permanent deformation of main framing members exceeding 0.2 percent of clear span.
D. Air Infiltration: Limited to 0.06 cfm/sq. ft. (0.3 L/s per sq. m) of system surface area when tested according to ASTM E 283 at a static-air-pressure difference of 6.24 ibf./sq. ft.
E. Water Penetration: Systems do not evidence water leakage when tested according to ASTM E 331 at minimum differential pressure of 20 percent of inward acting wind load design pressure but not less than 10 ibf./sq/ ft.
F. Condensation Resistance Factor (CRF): The unit(s) shall be tested in accordance with AAMA 1502 and shall have a condensation resistance factor of no less than 48.
G. Average U-Value: Not more than 0.69 btu./sq. ft. x h x degree F when tested according to AAMA 1503.
H. Sound Transmission: Provide aluminum-framed systems with fixed glazing and framing areas having minimum STC 32 according to ATM E 413 and an OTIC 26 according to ASTM E 1332, as determined by testing according to ASTM E 90.
I. Installer Qualifications: Installer must be a third party professional window installation company that is certified and recommended by the window manufacturer of the windows being installed.
   a) Installer must have no less than five (5) years of installation experience.
   b) Installer must have experience with the removal of steel casement windows.
J. Warranty Requirements: Submit written warranties from window manufacturer for the following:
   1. Windows: Warrant against malfunctions due to defects in thermal breaks, hardware, materials and workmanship for a period of (10) ten years.
   2. Glazing: Glass shall be warranted as follows:
      a) Insulating glass units to remain sealed for (10) ten years,
      b) Laminated glass units to remain laminated for (5) five years,
      c) Polycarbonate to remain clear and ultraviolet light stabilized for (5) five years,
      d) Insulating plastic to not have more than (6) six percent decrease in light transmission and be ultraviolet light stabilized for (10) years.
   3. Finish: Warrant against chipping, peeling, cracking, and blistering for (10) ten years.
   4. Spandrel Panels: Warrant against malfunctions due to defect in finish, materials and workmanship for a period of (5) years.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that are considered acceptable and may be incorporated into the Work included, but not limited to, the following:
   1. Peerless
   2. Quaker
   3. Wojan
   4. Thermal Windows, Inc.

2.2 ALUMINUM WINDOWS

A. Single hung: Series 4000-4 Model 4140/4158 or approved equal.
   1. Thermal brake
   2. Screen cloth insect screens
   3. Color: Dark Bronze

B. Fixed: Series 4000-4 model 4170, or approved equal.
   1. Thermal brake
   2. Screen cloth insect screens
   3. Color: Dark Bronze

C. Glazing:
   1. All glass I.G. units shall be constructed to an overall minimum thickness of 1" with two lites of 3/16" glass specified. Exterior lite AFG 3/16" TI-AC 40 on #2 surface 5/8" Air Space / Interior lite 3/16" clear.
   2. All insulated glass units shall be tested, certified and carry the respective CBA level certification on the glass spacer.

2.3 SPANDREL PANELS

A. Spandrel Panel shall be Mapes 1" insulated panel of 5-ply, 2ld density polystyrene core.
   1. Finish: Polyester baked enamel on embossed aluminum, both sides.
   2. Color: Dark Bronze.

2.4 FINISH

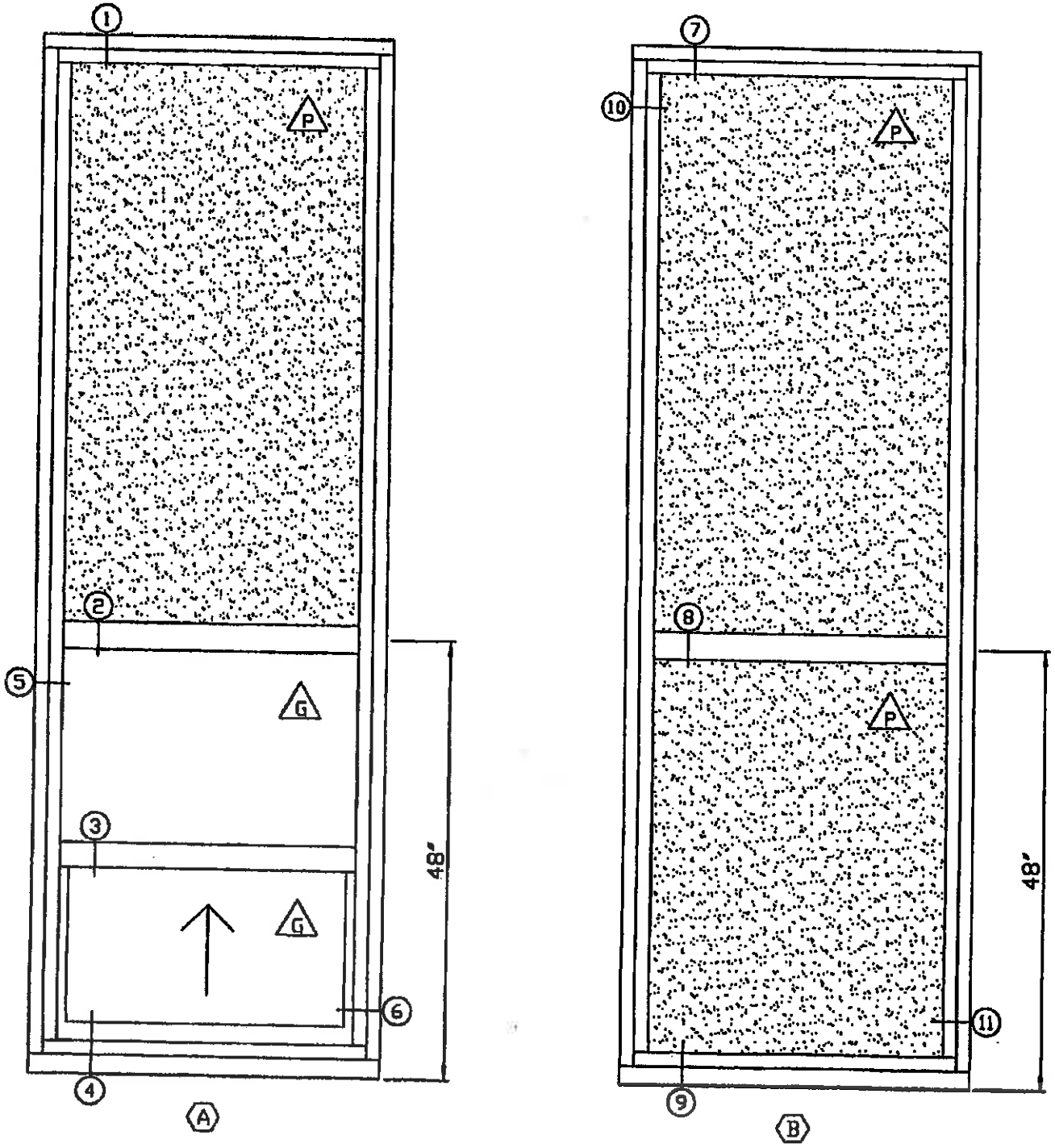
A. Organic coating tested and certified by window manufacturer to comply with the AAMA 2605. Application must be by the window manufacturer.

PART 3 – EXECUTION

3.1 INSTALLATION

A. Provide all hardware, operators, anchors, clips, limit devices, and other components necessary for a complete and weather tight installation per window manufacturer's specification and recommendations for installation.

B. Clean all surfaces with manufacturer approved cleaner. Remove any glazing or sealant compounds, dirt and other substances.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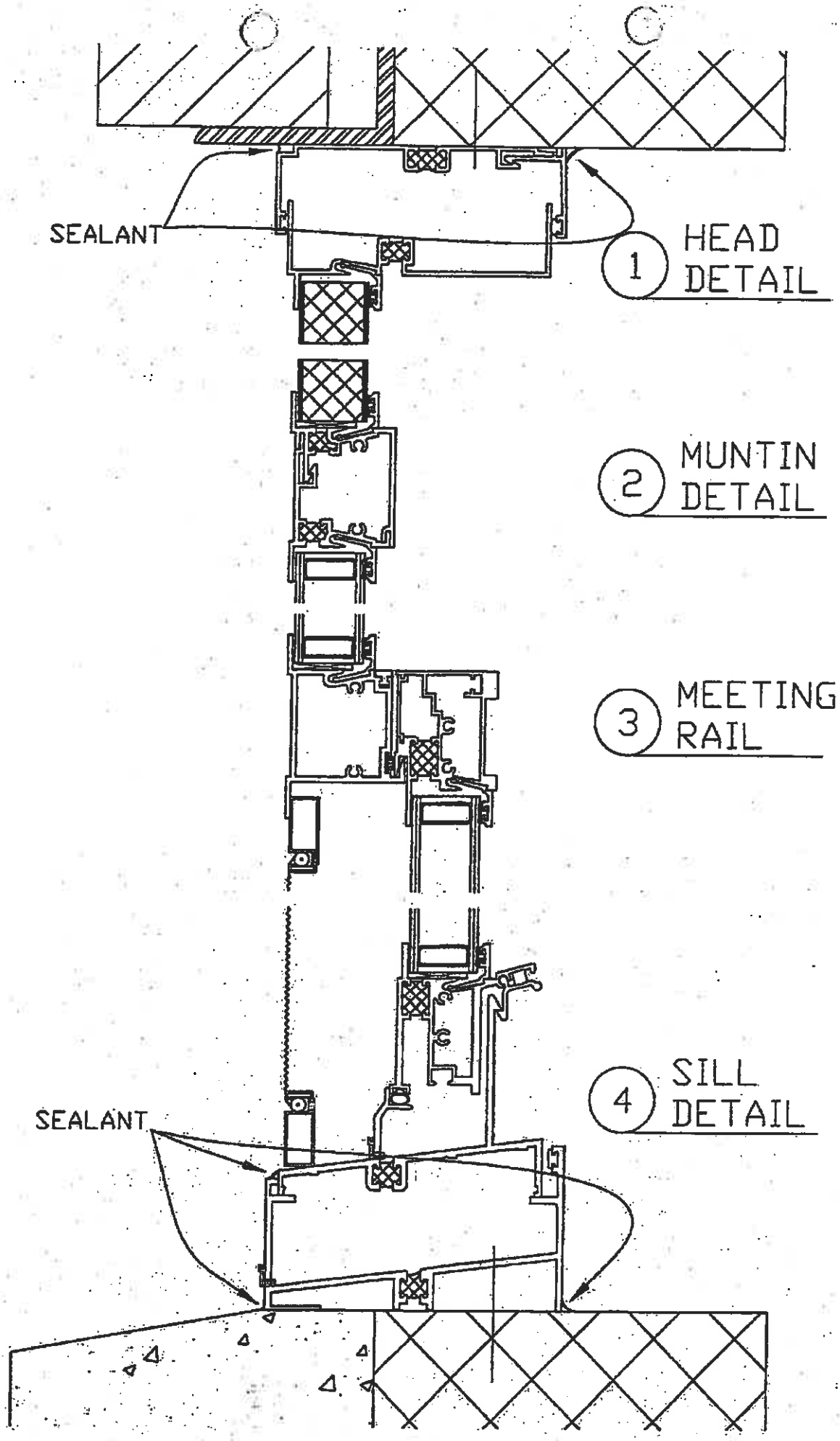
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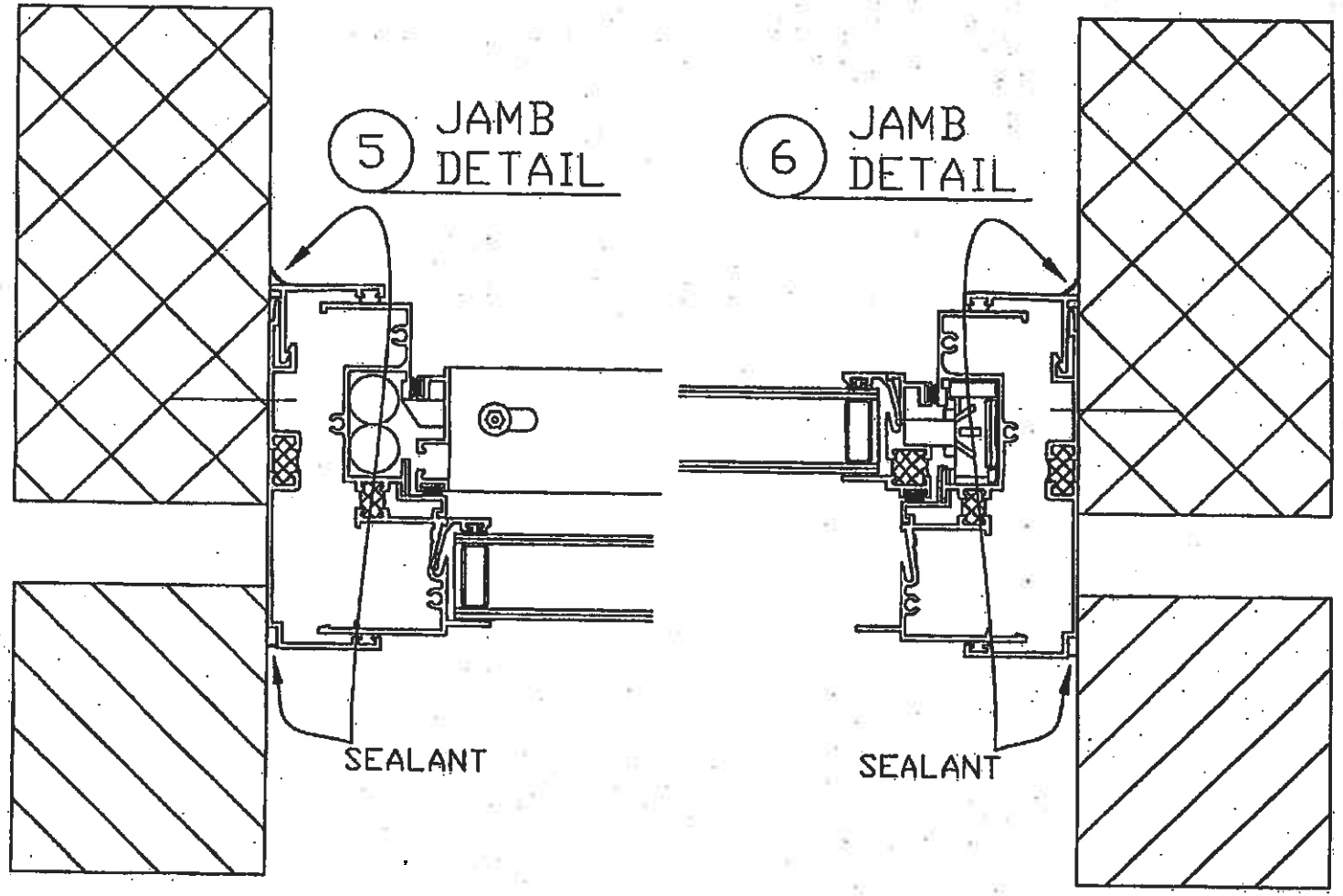
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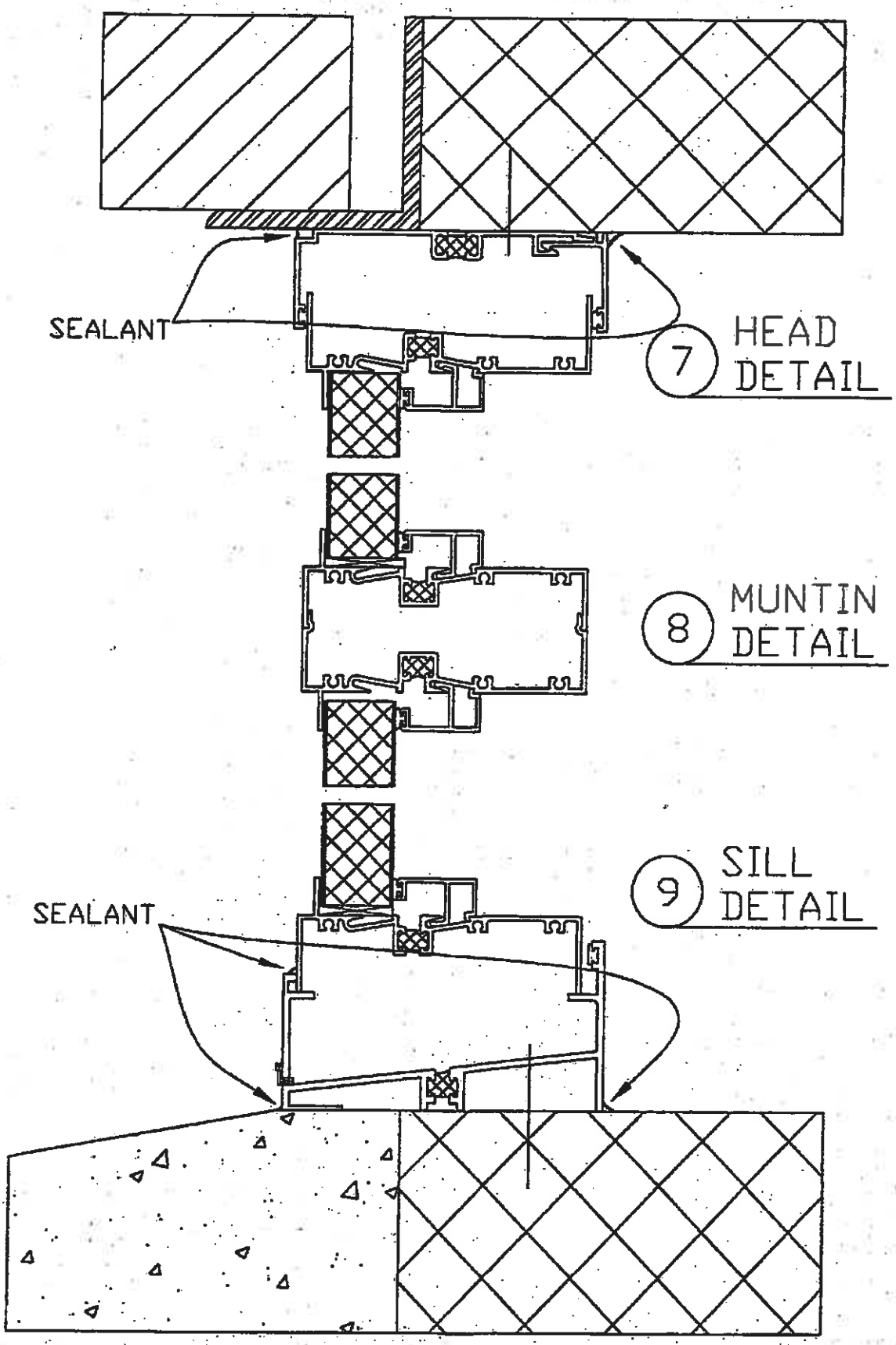
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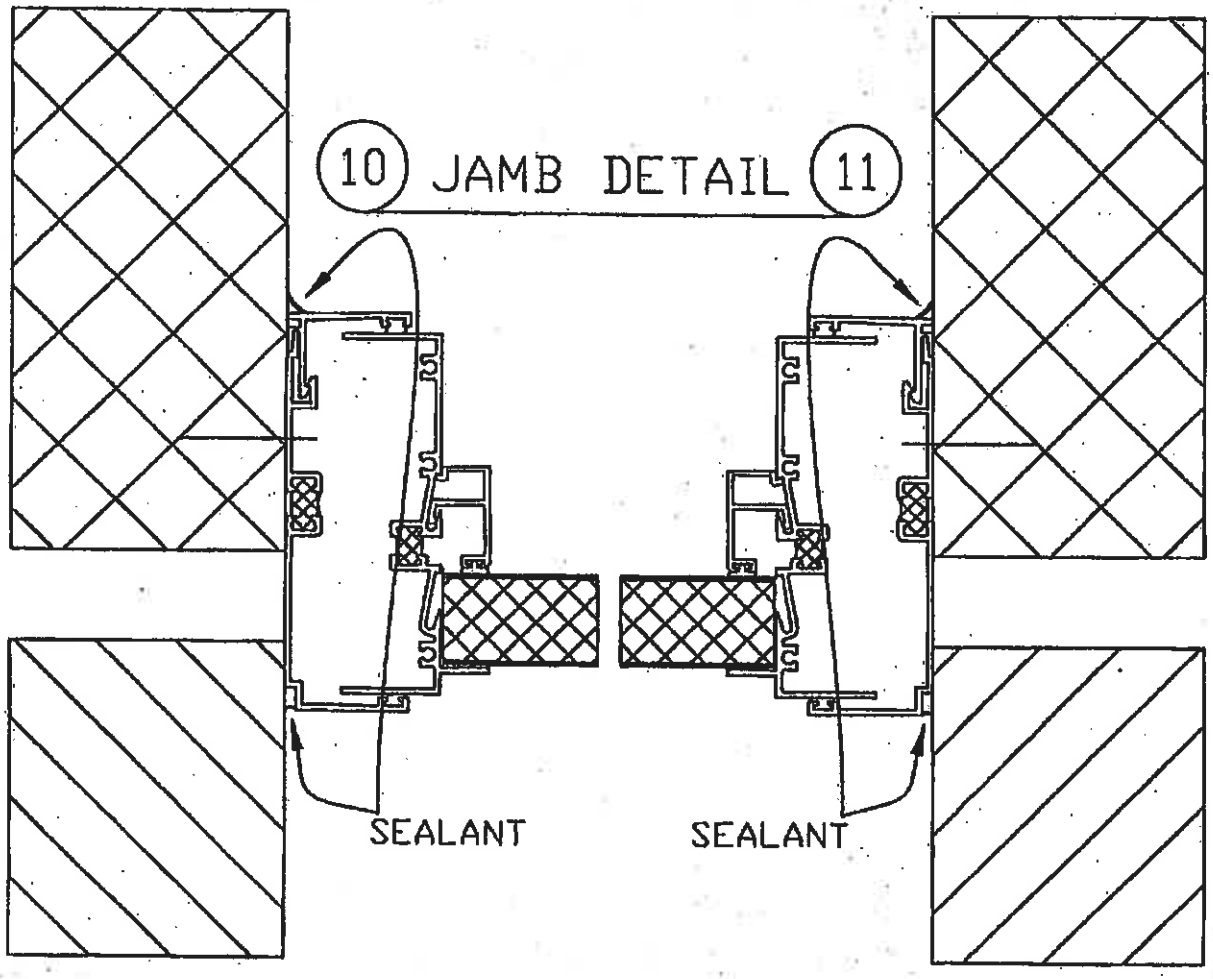
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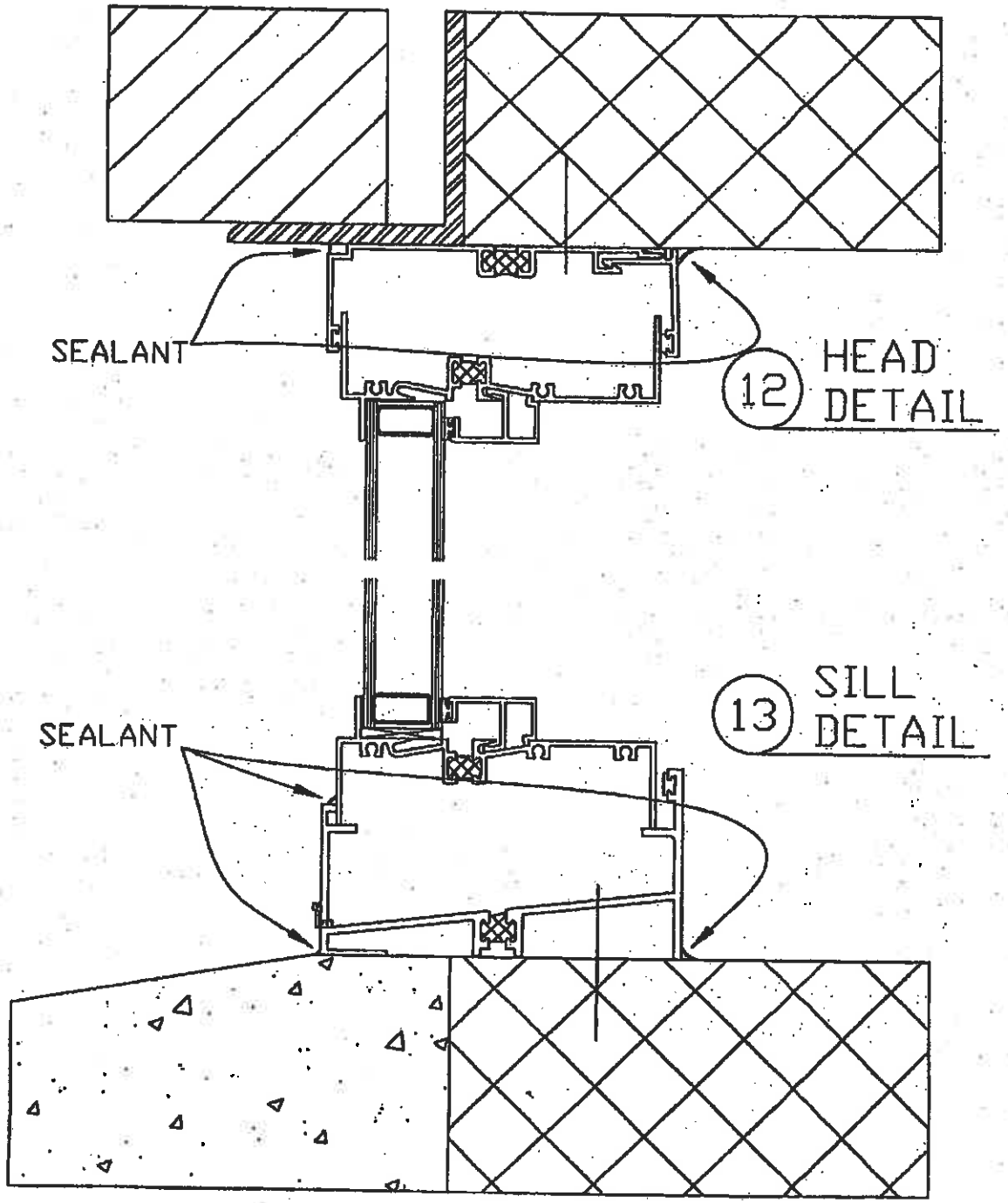
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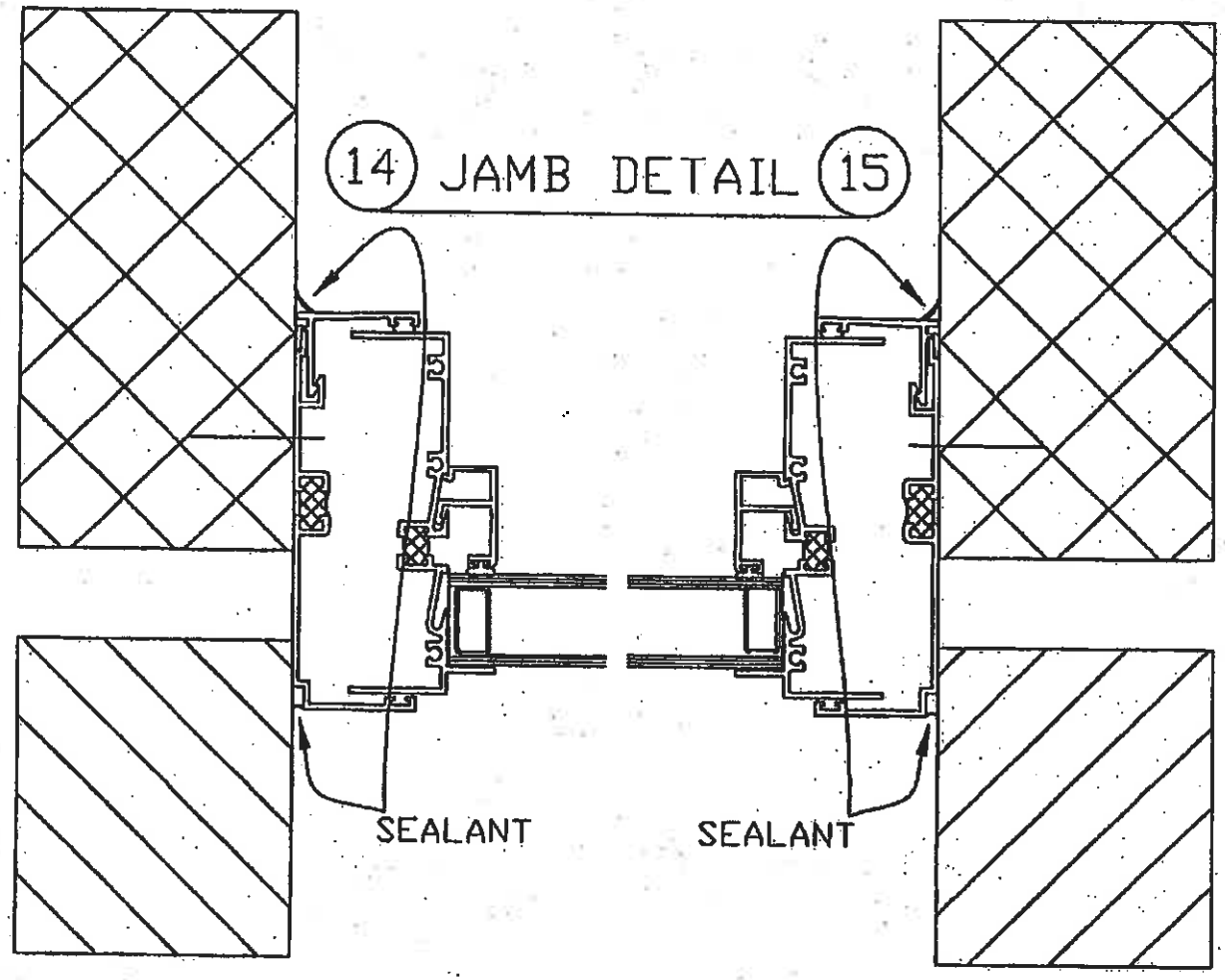
13 SILL DETAIL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ATTACHMENT 7

Door Scope of Work Including Measurements and Specifications

Wetumka Armory Door Measurements
And
Scope of Work

- **Door measurements are listed as approximate Width X Height; Contractor to field verify.**
- **All removed doors will be properly disposed.**
- **All removed lead-based paint will be properly disposed.**
- **Attached is a Wetumka armory Floor Plan with designated door numbers that correspond with the numbers on this Scope of Work.**
- **Specifications for replacement doors are attached.**

1. Remove door. Remove all paint from original door frame and repaint with a neutral colored primer. Install replacement door equipped with continuous geared hinges. Exterior Door Measurements – 2'9" X 7'

2. Remove door. Remove all paint from original door frame and repaint with a neutral colored primer. Install replacement door equipped with continuous geared hinges. Exterior Door Measurements – 2'9" X 7'

3. Remove double doors. Remove all paint from original door frame and repaint with a neutral colored primer. Install replacement double doors equipped with continuous gear hinges. Exterior Double Door Measurements – 5' X 6'11"

4. Remove door. Remove all paint from original door frame and repaint with a neutral colored primer. Install replacement door equipped with continuous geared hinges. Exterior Door Measurements – 2'8" X 6'11"

5. Remove door. Remove all paint from original door frame and repaint with a neutral colored primer. Install replacement door equipped with continuous geared hinges. Exterior Door Measurements – 2'8" X 7'

6. Remove door. Remove all paint from original door frame and repaint with a neutral colored primer. Install replacement door equipped with continuous geared hinges. Exterior Door Measurements – 2'8" X 7'

7. Remove double doors. Remove all paint from original door frame and repaint with a neutral colored primer. Install replacement double doors equipped with continuous gear hinges. Exterior Double Door Measurements – 5' X 6'11"

8. Remove double doors. Remove all paint from original door frame and repaint with a neutral colored primer. Install replacement double doors equipped with continuous gear hinges. Interior Double Door Measurements – 6' X 7'

9. Remove double doors. Remove all paint from original door frame and repaint with a neutral colored primer. Install replacement double doors equipped with continuous gear hinges. Interior Double Door Measurements – 6' X 7'

10. Remove door. Remove all paint from original door frame and repaint with a neutral colored primer. Install replacement door equipped with continuous geared hinges. Door Measurements – 3' X 7'

11. Remove door. Remove all paint from original door frame and repaint with a neutral colored primer. Install replacement door equipped with continuous geared hinges. Door Measurements – 3' X 7'

12. Remove door. Remove all paint from original door frame and repaint with a neutral colored primer. Install replacement door equipped with continuous geared hinges. Door Measurements – 3' X 7'

13. Remove door. Remove all paint from original door frame and repaint with a neutral colored primer. Install replacement door equipped with continuous geared hinges. Door Measurements – 3' X 7'

14. Remove door. Remove all paint from original door frame and repaint with a neutral colored primer. Install replacement door equipped with continuous geared hinges. Door Measurements – 3' X 7'

15. Remove door. Remove all paint from original door frame and repaint with a neutral colored primer. Install replacement door equipped with continuous geared hinges. Door Measurements – 3' X 7'

16. Remove door. Remove all paint from original door frame and repaint with a neutral colored primer. Install replacement door equipped with continuous geared hinges. Door Measurements – 3' X 7'

17. Remove door. Remove all paint from original door frame and repaint with a neutral colored primer. Install replacement door equipped with continuous geared hinges. Door Measurements – 4' X 7'

18. Remove door. Remove all paint from original door frame and repaint with a neutral colored primer. Install replacement door equipped with continuous geared hinges. Door Measurements – 3' X 7'

19. Remove door. Remove all paint from original door frame and repaint with a neutral colored primer. Install replacement door equipped with continuous geared hinges. Door Measurements – 3' X 7'

20. Remove door. Remove all paint from original door frame and repaint with a neutral colored primer. Install replacement door equipped with continuous geared hinges. Door Measurements – 2'4" X 7'

21. Remove door. Remove all paint from original door frame and repaint with a neutral colored primer. Install replacement door equipped with continuous geared hinges. Door Measurements – 2'4" X 7'

22. Remove door. Remove all paint from original door frame and repaint with a neutral colored primer. Install replacement door equipped with continuous geared hinges. Door Measurements – 3' X 7'

23. Remove door. Remove all paint from original door frame and repaint with a neutral colored primer. Install replacement door equipped with continuous geared hinges. Door Measurements – 4' X 7'

24. Remove door. Remove all paint from original door frame and repaint with a neutral colored primer. Install replacement door equipped with continuous geared hinges. Door Measurements – 3' X 7'

25. Remove door. Remove all paint from original door frame and repaint with a neutral colored primer. Install replacement door equipped with continuous geared hinges. Door Measurements – 2'6" X 6'8"

26. Remove all paint from original door frame and repaint with a neutral colored primer.

27. Remove door. Remove all paint from original door frame and repaint with a neutral colored primer. Install replacement door equipped with continuous geared hinges. Door Measurements – 2'8" X 7'

28. Remove door. Remove all paint from original door frame and repaint with a neutral colored primer. Install replacement door equipped with continuous geared hinges. Door Measurements – 3' X 7'

29. Remove door. Remove all paint from original door frame and repaint with a neutral colored primer. Install replacement door equipped with continuous geared hinges. Door Measurements – 4' X 6'

30. Remove door. Remove all paint from original door frame and repaint with a neutral colored primer. Install replacement door equipped with continuous geared hinges. Door Measurements – 3' X 7'

31. Remove door. Remove all paint from original door frame and repaint with a neutral colored primer. Install replacement door equipped with continuous geared hinges. Door Measurements – 3' X 7'

32. Remove door. Remove all paint from original door frame and repaint with a neutral colored primer. Install replacement door equipped with continuous geared hinges. Door Measurements – 2'4" X 7'

33. Remove door. Remove all paint from original door frame and repaint with a neutral colored primer. Install replacement door equipped with continuous geared hinges. Door Measurements – 2'4" X 7'

34. Remove door. Remove all paint from original door frame and repaint with a neutral colored primer. Install replacement door equipped with continuous geared hinges. Door Measurements – 3' X 7'

35. Remove door. Remove all paint from original door frame and repaint with a neutral colored primer. Install replacement door equipped with continuous geared hinges. Door Measurements – 4' X 7'

36. Remove door. Remove all paint from original door frame and repaint with a neutral colored primer. Install replacement door equipped with continuous geared hinges. Door Measurements – 3' X 7'

37. Remove door. Remove all paint from original door frame and repaint with a neutral colored primer. Install replacement door equipped with continuous geared hinges. Door Measurements – 2'6" X 6'8"

38. Remove door. Remove all paint from original door frame and repaint with a neutral colored primer. Install replacement door equipped with continuous geared hinges. Door Measurements – 3' X 7'

39. Remove all paint from original door frame and repaint with a neutral colored primer.

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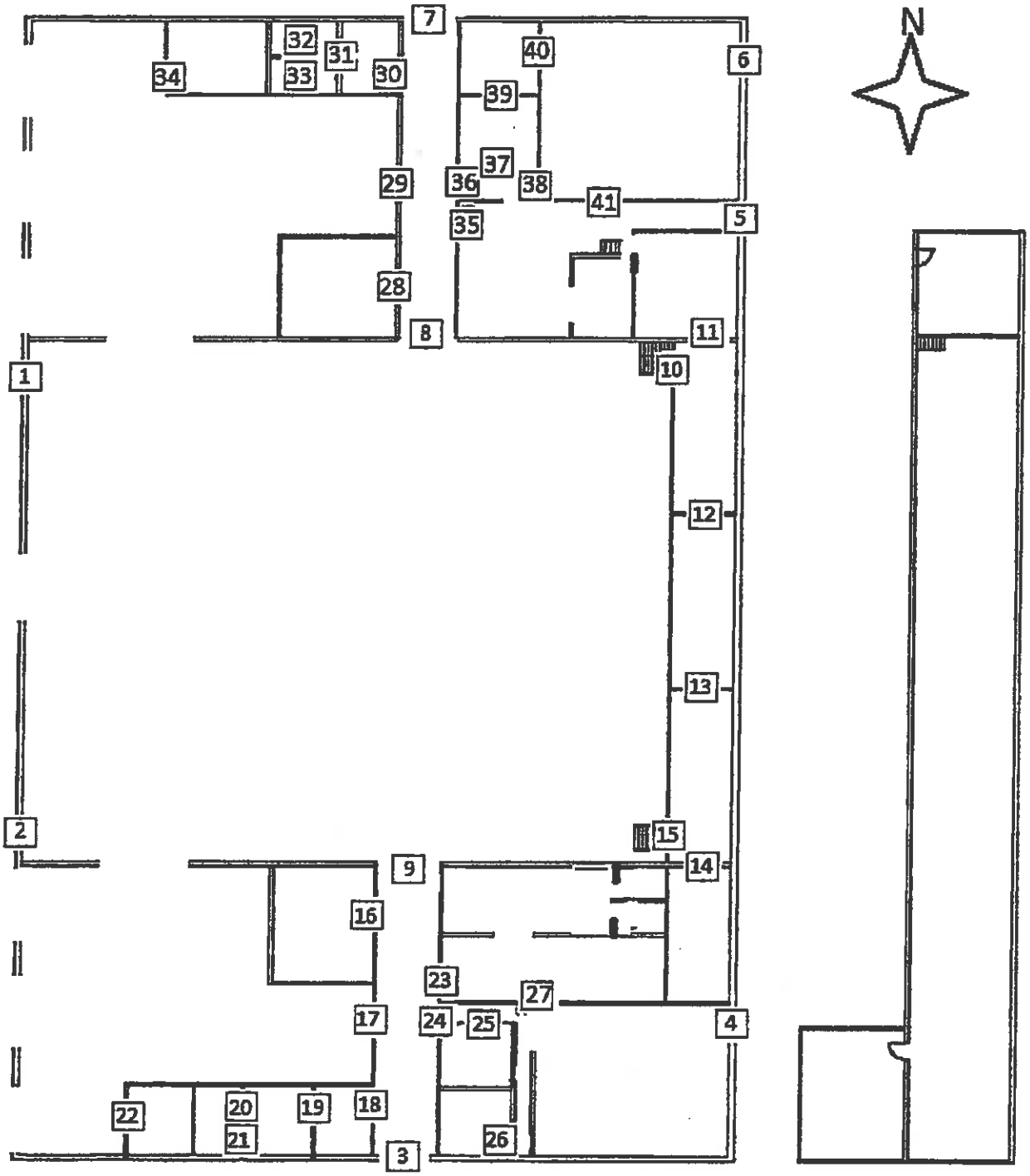
41. Remove door. Remove all paint from original door frame and repaint with a neutral colored primer. Install replacement door equipped with continuous geared hinges. Door Measurements – 2' X 6'9"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SECTION 07920 - JOINT SEALANTS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data.

B. Warranty: Warranty materials and workmanship of sealing against leaks, adhesion, and cohesive failure for a period of two years from the date of substantial completion.

C. References:

1. American Society for Testing and Materials
   a) ASTM C790 – Recommended practices for use of latex sealing compounds.
   b) ASTM C920 – Elastomer Joint Sealants.
2. Federal Specifications
   a) FS TT-S-00230C (2), Sealing Compound, Elastomeric Type, Single Component (for caulking, sealing and glazing in buildings and other structures).
   b) FS TT-S-00227E (3), Sealing Compound, Elastomeric Type, Multi-component (for caulking, sealing and glazing in buildings and other structures).

PART 2 - PRODUCTS

2.1 JOINT SEALANTS

A. Compatibility: Provide joint sealants, joint fillers, and other related materials that have been tested and found compatible with one another and with joint substrates under service and application conditions.

B. Interior Sealant: Provide ASTM C 834. If no color is specified, use Gray. Location(s) of sealant for the following:
1. Small voids between walls or partitions and adjacent door frames, and similar items.
2. Perimeter of frames at doors, windows, and access panels which adjoin exposed interior concrete and masonry surfaces.

C. Exterior Sealant: Provide ASTM C 920, polyurethane or polysulfide, Type M, Grade NS, Class 25, Shore A hardness of 20-40. If no color is specified, use Gray. Location(s) of sealant for the following:
1. Joints and recesses formed where frames and vents adjoin masonry, concrete, or metal frames. Use sealant at both exterior and interior surfaces of exterior wall penetrations. Color to match adjacent surface.

2.2 ACCESSORIES

A. Primers: Provide a nonstaining, quick-drying type and consistency recommended by the sealant manufacturer for the particular application.

B. Bond Breakers: Provide the type and consistency recommended by the sealant manufacturer to prevent adhesion of the sealant to backing or to bottom of the joint.

C. Cleaning Solvents: Provide type(s) recommended by the sealant manufacturer, except for aluminum and bronze surfaces that will be in contact with sealant.

PART 3 - EXECUTION

3.1 PREPARATION

A. Clean surfaces from dirt frost, moisture, grease, oil, wax, lacquer, paint, or other foreign matter that would tend to destroy or impair adhesion. Remove oil and grease with solvent. Surfaces must be wiped dry with clean cloths. When resealing an existing joint, remove existing calk or sealant prior to applying new sealant. For surface types not listed below, contact sealant manufacturer for specific recommendations.
1. Steel Surfaces: Remove loose mill scale by sandblasting or, if sandblasting is impractical or would damage finish work, scraping and wire brushing. Remove protective coatings by sandblasting or using a residue-free solvent.
2. Aluminum or Bronze Surfaces: Remove temporary protective coatings from surfaces that will be in contact with sealant. When masking tape is used as a protective coating, remove tape and any residual adhesive just prior to sealant application. For removing protective coatings and final cleaning, use nonstaining solvents recommended by the manufacturer of the item(s) containing aluminum or bronze surfaces.
3. Concrete and Masonry Surfaces: Where surfaces have been treated with curing compounds, oil, or other such materials, remove materials by sandblasting or wire brushing. Laitance, remove efflorescence and loose mortar from the joint cavity.

4. Wood Surfaces: Keep wood surfaces to be in contact with sealants free of splinters and sawdust or other loose particles.

B. Do not add liquids, solvents, or powders to the sealant. Mix multi-component elastomeric sealants in accordance with manufacturer's instructions.

3.2 INSTALLATION

A. Joint Width-to-Depth Ratios: Install per manufacturer's recommendation or as described below, whichever is more stringent.

		Minimum	Maximum
1.	Acceptable Ratios:		
a)	For metal, glass, or other nonporous surfaces:		
(1)	1/4 inch (6 mm) (minimum)	1/4 inch (6 mm)	1/4 inch (6 mm)
(2)	Over 1/4 inch (6 mm)	1/2 of width	Equal to width
b)	For wood, concrete, masonry, or stone:		
(1)	1/4 inch (6 mm) (minimum)	1/4 inch (6 mm)	1/4 inch (6 mm)
(2)	Over 1/4 inch(6 mm) to 1/2 inch (13 mm)	1/4 inch (6 mm)	Equal to width
(3)	Over 1/2 inch (13 mm) to 2 inch (50 mm)	1/2 inch (50 mm)	5/8 inch (16 mm)
(4)	Over 2 inch (50 mm)	(As recommended by sealant mfr.)	

2. Unacceptable Ratios: Where joints of acceptable width-to-depth ratios have not been provided, clean out joints to acceptable depths and grind or cut to acceptable widths without damage to the adjoining work. Grinding is not required on metal surfaces.

B. Masking Tape: Place masking tape on the finish surface on one or both sides of a joint cavity to protect adjacent finish surfaces from primer or sealant smears. Remove masking tape within 10 minutes after joint has been filled and tooled.

C. Immediately prime prior to application of the sealant, clean out loose particles from joints. Where recommended by sealant manufacturer, apply primer to joints in concrete masonry units, wood, and other porous surfaces in accordance with sealant manufacturer's instructions. Do not apply primer to exposed finish surfaces.

D. Provide bond breakers to the back or bottom of joint cavities, as recommended by the sealant manufacturer for each type of joint and sealant used, to prevent sealant from adhering to these surfaces. Carefully apply the bond breaker to avoid contamination of adjoining surfaces or breaking bond with surfaces other than those covered by the bond breaker.

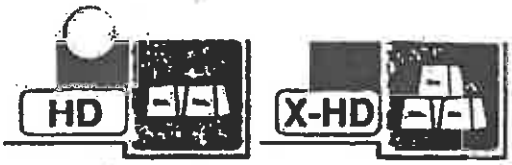
E. Provide a sealant compatible with the material(s) to which it is applied. Do not use a sealant that has exceeded shelf life or has jelled and can not be discharged in a continuous flow from the gun. Apply the sealant in accordance with the manufacturer's printed instructions with a gun having a nozzle that fits the joint width. Force sealant into joints to fill the joints solidly without air pockets. Tool sealant after application to ensure adhesion. Make sealant uniformly smooth and free of wrinkles. Upon completion of sealant application, roughen partially filled or unfilled joints, apply sealant, and tool smooth as specified. Apply sealer over the sealant when and as specified by the sealant manufacturer.

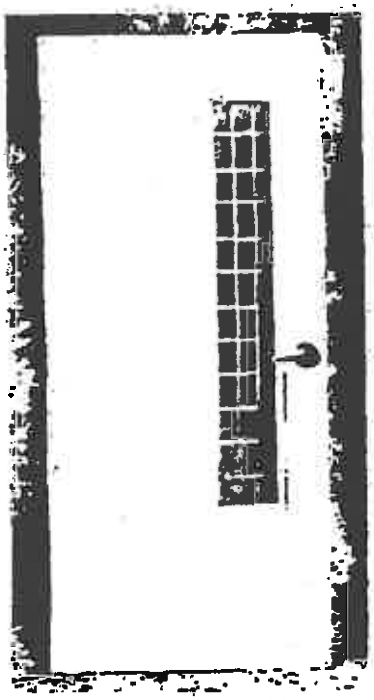
F. Thresholds: Place double bead of sealant under and along all sides of all exterior thresholds.

END OF SECTION 07920

STEELCRAFT

L18 AND L16-SERIES HONEYCOMB DOORS





FEATURES AND BENEFITS:

Steelcraft's L-Series Doors offer the following standard unique features, which enhance long term performance and durability.

1. **Honeycomb core system** enhances the structural integrity of the door, while significantly reducing the weight.
2. **Full height, epoxy filled mechanical interlock edges** provide structural support and stability the full height of the door edges.
3. **Patented universal hinge preparations** allow for easy field conversion from standard weight (.134) hinges to heavy weight (.180) hinges.
4. **14 gage top and bottom channels** provide stability and protection for the top and bottom edges from abuse.
5. **Beveled hinge and lock edges** allow for lighter installation tolerances, ensure easier operation, and eliminate binding and sticking.
6. **Recessed Dezigner™ glass trim** provide a clean, neat, and flush finish with the door surface.
7. **Factory applied baked on rust inhibiting primer** in accordance with ANSI A250.10.

ABOUT THE PRODUCT:

The L18 and L16-Series Flush Doors are designed to meet the architectural requirements for full flush doors. This premium door construction combines the strength and dimensional stability of steel with the structural integrity of the honeycomb core. The continuous bonding of core to metal provides an attractive flat door, free of face welding marks. Tests have proven that the L-Series door has integral high resistance to impact damage, low thermal conductivity, and high STC ratings.

To meet application, specification and performance requirements, the L-Series doors offer a wide range of specifiable options including sizes, glass lite designs, hardware (mechanical, pneumatic, electrical) preparations and edge constructions.

SPECIFICATION COMPLIANCE:

1. Door construction for the Steelcraft L18 and L16-Series Full Flush Doors meet the requirements of ANSI A250.8-1998 (commonly referred to as SDI-100).
2. Hardware preparations and reinforcements are in accordance with ANSI A250.6-1997. Locations are in accordance with ANSI/DHI A115.

FIRE RATINGS:

The L-Series doors meet the broadest fire rating requirements. They are listed for installations requiring compliance to both negative pressure testing (ASTM E152 and UL-10B) and positive pressure standards (UBC 7-2 and UL-10C).

Steel Thickness	Opening	Usage Frequency[1]	Frame Applications
16 gage (1.3mm)	Interior & Exterior	Extra-heavy duty	• 16 & 14 gage steel frames
18 gage (1mm)	Interior & Exterior	Heavy duty	• 16 gage steel frames
Steel Type	**Opening**	**Building Applications**	
Non Galvannealed[3]	Mainly Interior	• Typical building conditions	
Galvannealed[3]	Mainly Exterior	• Used in locations with high humidity and/or weather exposure	

MATERIAL:

Depending on environmental conditions, exterior doors are generally galvannealed and interior doors non galvanneal. All doors are supplied with a factory applied baked on primer for field applied finish paints.

[1] Usage frequency is based on ANSI A250.8-1998
[2] Reinforcements for galvannealed doors are also galvannealed
[3] Commercial quality carbon steel

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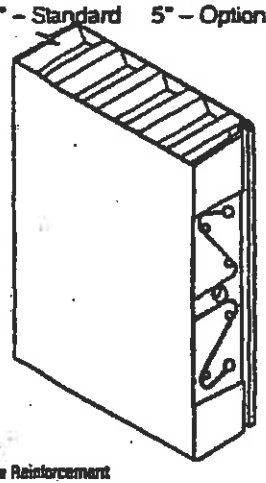
IR Security & Safety

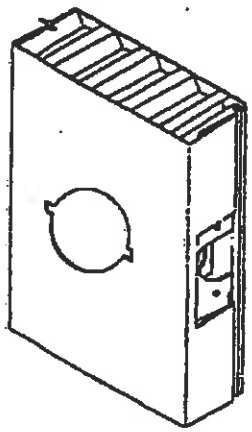
Details are subject to change without prior notice.

Universal Mortise Hinge Prep
4½" – Standard 5" – Optional



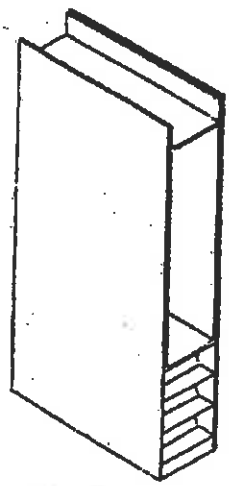
7 Gage Hinge Reinforcement

Lock Prep

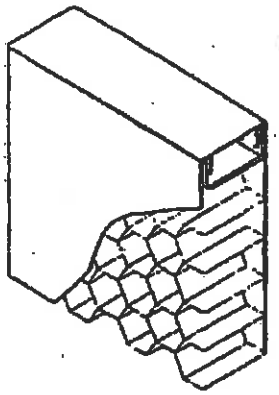


161 Cylindrical Lock shown

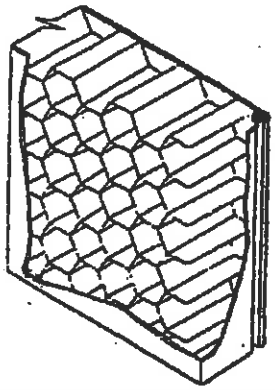
Optional 14 Gage Closer Reinforcement



Optional Snap-In Top Cap

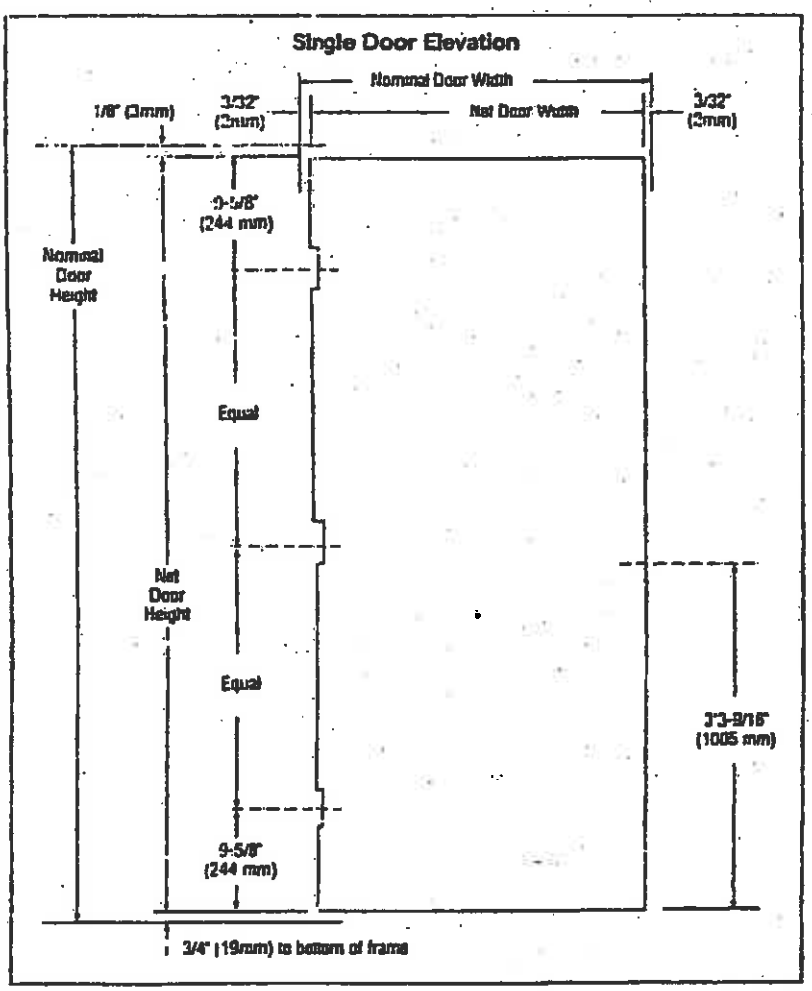


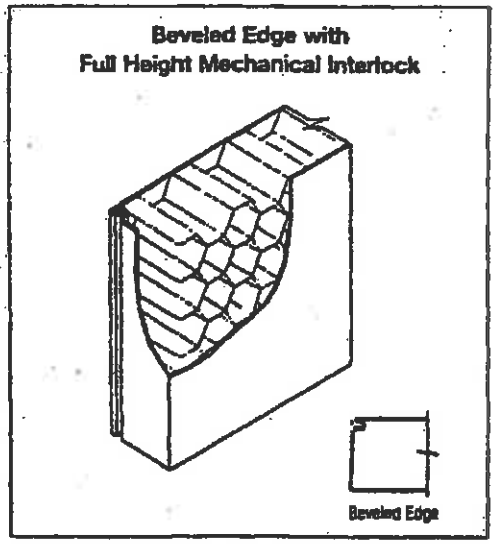
Rigid Honeycomb Core

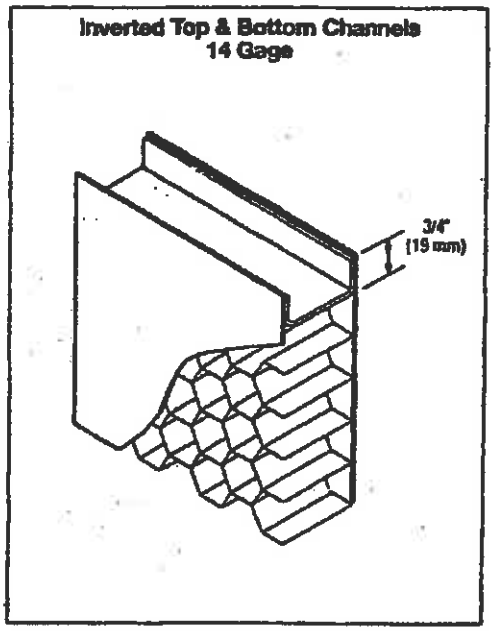


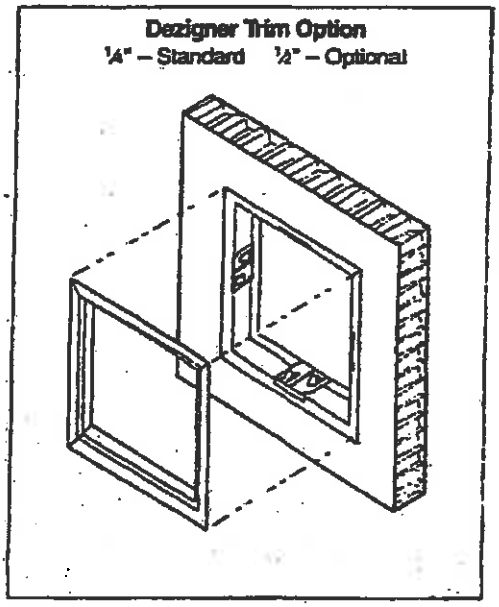
GENERAL NOTES:

1. **Edge construction:**
   - Vertical edges (both hinge and lock) are beveled with a visible seam.
   - Top and bottom edges are closed with inverted 14 gage welded channels. Exterior applications require the addition of snap-in top caps to protect against the weather.
2. **Optional edge seams** available in the L-Series door construction are as follows:
   - **LF** – The mechanical edge seam is filled and finished prior to applying the factory primer.
   - **LW** – The mechanical edge seam is welded and finished prior to applying the factory primer.
3. **Optional cores** available in the L-Series door construction:
   - **Polystyrene** for exterior applications in extreme weather conditions.
   - **Polyurethane** for exterior applications in arctic weather conditions. Not Fire Rated.
4. **Standard hardware preparations:** standard mortised and reinforced for:
   - **Universal hinge preps** – 4½"(114mm) patented preparation which allows easy and quick field conversion from standard to heavy weight hinges.
   - **Locks** – A multitude of standard lock preps are available. The most commonly used with a 4⅞" (124mm) strike are 161, 61L and 86.









CONSTRUCTION NOTES:

1. **Doors** are 1¾" (45mm) thick.
2. **Door opening size maximum:**
   Single door opening size 4'0" x 10'0" (1219mm x 3048mm)
   Double door opening size 8'0" x 10'0" (2438mm x 3048mm)
3. **Standard operating clearances** *(installed in frame)*:
   Head = ⅛" (3mm) to bottom of head or transom panel
   Hinge and lock side = 3/32" (2mm) to rabbet on jamb
4. **Standard core system:**
   1" (25mm) cell Kraft honeycomb core is laminated to both face sheets with contact adhesive. The honeycomb is phenolic resin impregnated and sanded to insure ultimate lamination and performance. To further enhance the structural stability of the door the honeycomb core material is subjected to several unique operations prior to assembly. If any of these operations are eliminated, the strength and durability of the door is compromised.
5. **Hardware preparations:** to meet specifications, doors can be prepared for all commercial mortised hardware, and can be factory reinforced for surface applied hardware applications.
   - **Lock preps** – details and dimensions shown are for cylindrical (ANSI 115.2) type locks. For mortise (ANSI A115.1) locks, the centerline of the lock is located ⅜" (9mm) lower.
6. **Glass lites with Dezigner® trim and louvers:** doors with glazed cutouts and doors with louvers are available (see *Lites and Louvers* section of *Spec Manual*).

INSTALLATION:

1. Installation shall conform to the published Steelcraft installation instructions, SDI 105 *Recommended Installation Instructions for Steel Frames*, and ANSI/DHI A115-IG *Installation Guide for Doors and Hardware*.
2. Fire Rated Assemblies must be in accordance with NFPA Pamphlet 80. The *Authority Having Jurisdiction* is the final authority in issues related to the installation and use of installed Fire Rated Doors.

DOOR EDGE APPLICATIONS:

The L-Series Doors are used in virtually all buildings and construction applications. The application and functionality dictate the door edge construction specified.

Edge	Usage	Application
L	Heavy & Extra-heavy duty	High traffic in all commercial applications
LF	Heavy & Extra-heavy duty	High traffic, in sanitation conditions
LW	Heavy & Extra-heavy duty	High traffic, in sanitation and high abuse conditions

CONVERSION CHART

ANSI A250.8 (SDI 100) *Recommended Specification for Standard Steel Doors and Frames.*

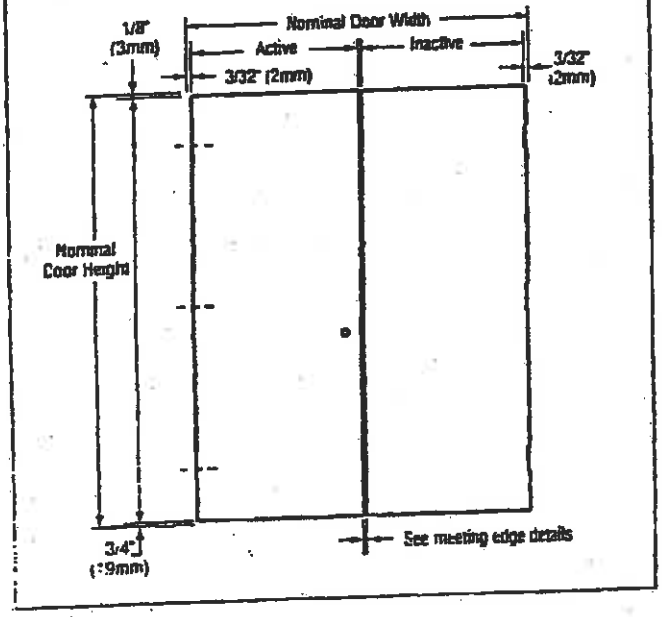
Series	Level	Model	Description	Edge Construction
L18	2	1	Full Flush	Full height, visible mechanical interlocked edge
LF18	2	2	Seamless	L-Series with epoxy filled edge seams
LW18	2	2	Seamless	L-Series with welded edge seams
L16	3	1	Full Flush	Full height, visible mechanical interlocked edge
LF16	3	2	Seamless	L-Series with epoxy filled edge seams
LW16	3	2	Seamless	L-Series with welded edge seams

DOUBLE DOOR APPLICATIONS:

L-Series doors are available in double door elevations, with active and inactive leaves and an overlapping astragal.

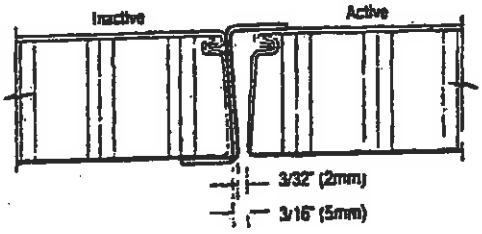
- **Standard operating clearances** *(installed in frame)*:
  - Head = ⅛" (3mm) to bottom of head or transom panel
  - Hinge side = 3/32" (2mm) to rabbet on jamb
  - Meeting edges = 3/32" (2mm) with or without astragal. For openings without an astragal, a wide inactive leaf is used.
  - Bottom = ¾" (19mm) to bottom of frame
- **Meeting edges:**
  - 14 Gage astragal is furnished loose for installation in the field by others.
  - Overlapping astragal kits are available to convert an active leaf to an inactive leaf.
  - When an astragal is not used, the width of the inactive leaf is increased 3/32" (2mm).
- **Hardware preparations:** the inactive leaf can be prepared for hardware as specified.

Double Door Elevation

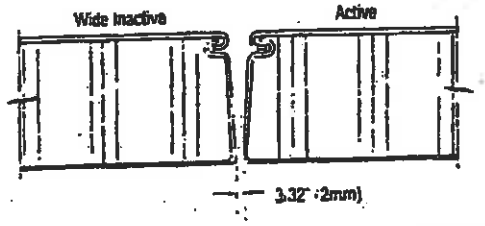


MEETING EDGE DETAILS:

Typical Astragal 14 Gage



Pairs without Astragal



Phone: 800-647-7874
Fax: 800-255-7874
www.ngp.com

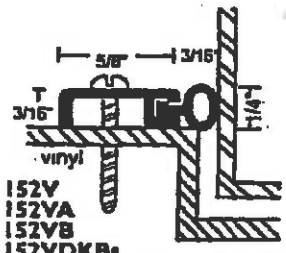
Vinyl Seals

Properties:
- Synthetic polymer: Polyvinyl Chloride
- Economical
- Flame resistant
- Moisture resistant
- Temperature range 0F to 140F
- Plasticizers evaporate with age and exposure to UV, Cold, Heat causing hardening, loss of memory, loss of resilience, cracking and crazing

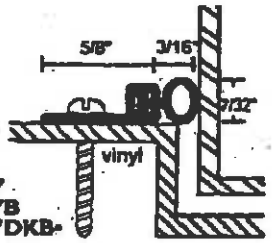
#6 x 3/4" Stainless Steel Sheet Metal Screws furnished
Screw holes slotted for adjustment

All vinyl seals this section

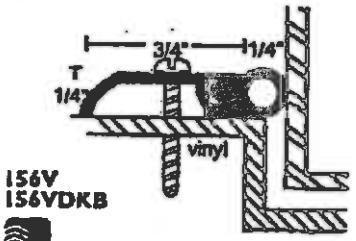
A - clear
B - gold
DKB - dark bronze
no suffix - mill
Vinyl is gray
(exception: •vinyl is black)



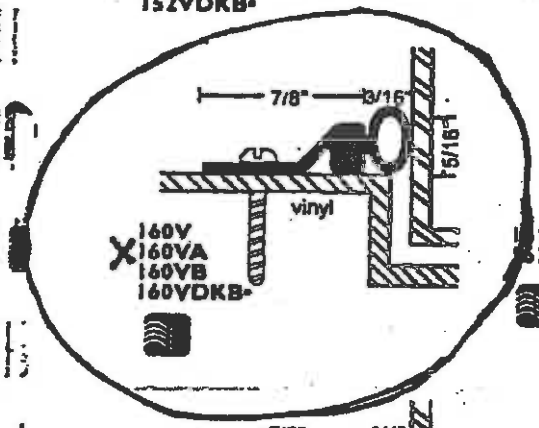
152V
152VA
152VB
152VDKB•



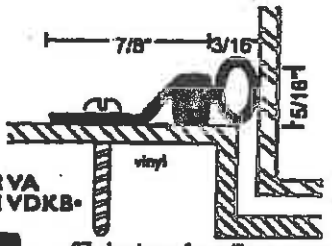
155V
155VB
155VDKB•



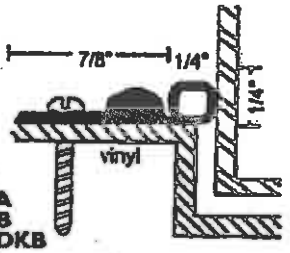
156V
156VDKB



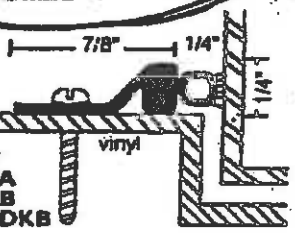
160V
160VA
160VB
160VDKB•



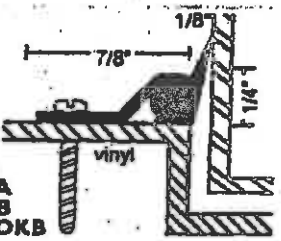
[illegible]VA
[illegible]VDKB•
.07 aluminum for military specs



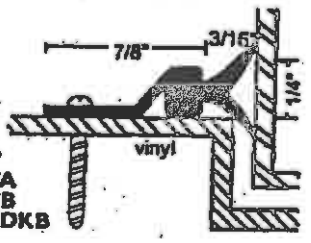
162V
162VA
162VB
162VDKB



164V
164VA
164VB
164VDKB

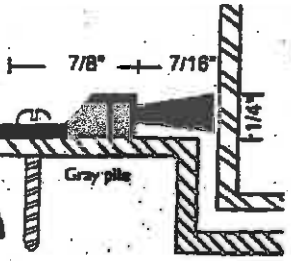


188V
188VA
188VB
188VDKB

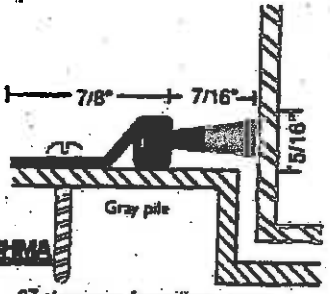


190V
190VA
190VB
190VDKB

Pile Seals



185P
185PA
185PB
185PDKB



161PA
161PDKB

.07 aluminum for military specs

Saddle Thresholds

All thresholds this page

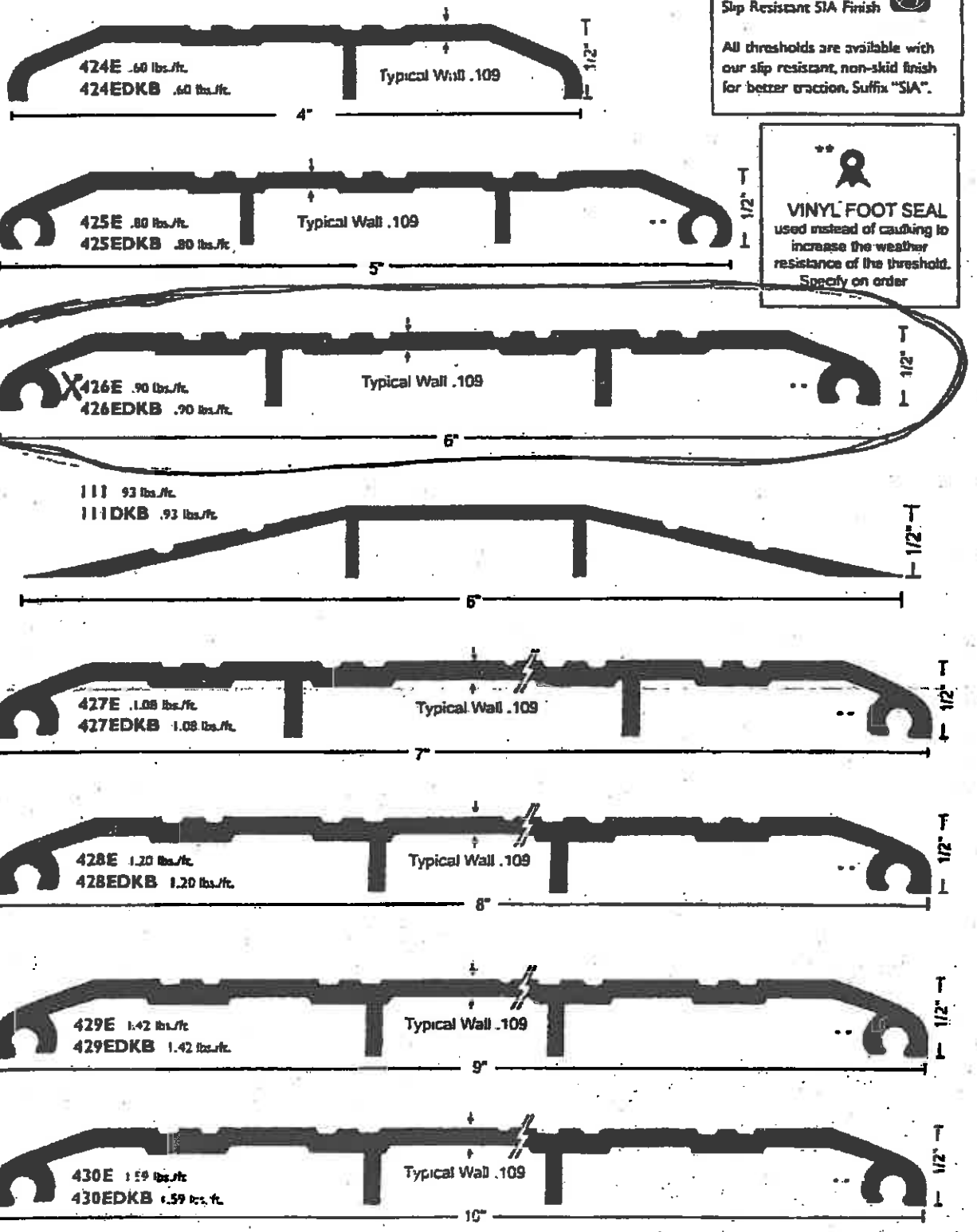
MATERIALS & FINISHES

- Aluminum mill finish
- DKB - Aluminum dark bronze finish

Slip Resistant SIA Finish

All thresholds are available with our slip resistant, non-skid finish for better traction. Suffix "SIA".

VINYL FOOT SEAL
used instead of caulking to increase the weather resistance of the threshold. Specify on order



Specifications

Handing:
All D-Series lever locksets are non-handed.

Door Thickness:
1⅜" to 2⅛" (41mm–54mm) standard including Vandlgard® functions.
See accessories (Page 12) for spacers required for 1⅜" doors.

Backsets
2¾" (70mm) standard. 2⅜", 3¾" and 5" (60mm, 95mm, 127mm) optional.

Faceplates
Brass, bronze or stainless steel. 1⅛" x 2¼" (29 mm x 57mm) square corner, beveled.

Lock Chassis:
Zinc plated for corrosion resistance.

Latch Bolt
Steel, ½" (12mm) throw, deadlocking on keyed and exterior functions. ¾" (19mm) throw anti-friction latch available for pairs of fire doors.

Exposed Trim:
Levers: Pressure cast zinc, plated to match finish symbols.
Roses: Solid brass.

Strike:
ANSI curved lip strike 1¼" x 4⅞" x 1³⁄₁₆" lip to center standard. Optional strikes, lip lengths and ANSI strike box available. See page 11.

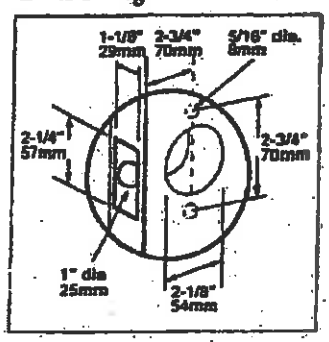
Cylinder & Keys:
6-pin Everest C123 keyway standard with two patented nickel silver keys per lock.

Keying Options:
Interchangeable core and Primus® high security cylinders. Master keying, grand master keying and construction keying.

Warranty:
Seven-year limited for all functions including Vandlgard®.

Door Preparation

Lever Designs



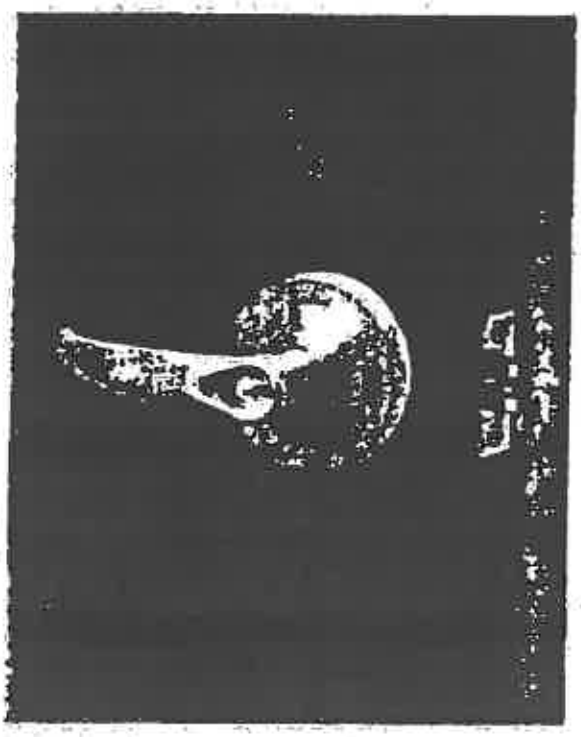
Certifications

ANSI
Meets or exceeds A156.2 Series 4000, Grade 1 strength and operational requirements. Meets A117.1 Accessibility Code.

Federal
Meets FF-H-106C Series 161.

California State Reference Code
(Formerly Title 19, California State Fire Marshal Standard)
All levers with returns comply; levers return to within ½" of door face.

UL / cUL:
All locks listed for A label single doors, 4' x 8'.
Letter F and UL symbol on latch front indicate listing.
Electrified functions are UL19X Listed for single point locking applications.
UL437 Listed locking cylinder optional: specify Primus 20-500 Series cylinder.

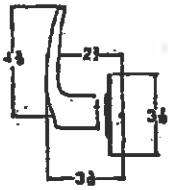


D SERIES LEVERS

Lever Designs & Finishes

ATHENS

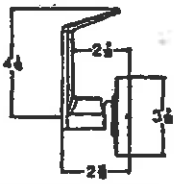
Symbol: ATH
Material: Pressure cast zinc lever; wrought brass rose
Finishes:
605, 606, 612, 613, 619, 625, 626



606

RHODES

Symbol: RHO (06)
Material: Pressure cast zinc lever; wrought brass rose
Finishes:
605, 606, 612, 613, 619, 625, 626

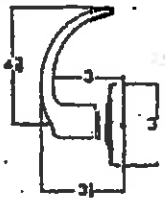


612

Lever Designs & Finishes

SPARTA

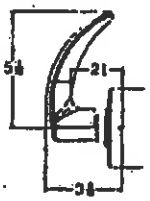
Symbol: SPA (17)
Material: Pressure cast zinc lever; wrought brass rose
Finishes:
605, 606, 612, 613, 619, 625, 626



626

OMEGA

Symbol: OME
Material: Pressure cast zinc lever; wrought brass rose
Finishes:
605, 606, 612, 613, 619, 625, 626



619

605
Bright Brass

606
Satin Brass

612
Satin Bronze

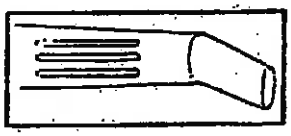
613
Oil Rubbed Bronze

619
Satin Nickel

625
Bright Chromium Plated

626
Satin Chromium Plated

8 Keyed functions available with interchangeable core options. Levers are available for full size and small format interchangeable cores.



TACTILE WARNING (KNURLING)

Change symbol designation as follows:
8AT for Athens
8RO for Rhodes
8SP for Sparta

Only outside lever is knurled unless otherwise specified.

Not available with Omega trim

Finishes
605 Bright Brass
606 Satin Brass
612 Satin Bronze
613 Oil Rubbed Bronze
619 Satin Nickel
625 Bright Chromium Plated
626 Satin Chromium Plated

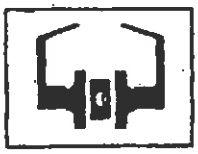
Functions

Non-Keyed Locks

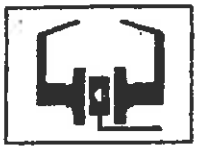
SCHLAGE ANSI

ND10S F75 — **Passage Latch**
Both levers always unlocked.

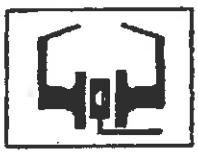
ND12D F89 — **Exit Lock**
Outside lever always fixed. Inside lever always unlocked.



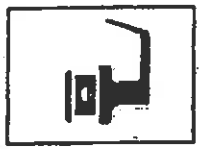
ND12DEL — **Electrically Locked (Fail Safe)**
Outside lever continuously locked electrically. Unlocked by switch or power failure. Auxiliary latch deadlocks latchbolt when door is closed. Inside lever always free for immediate exit.



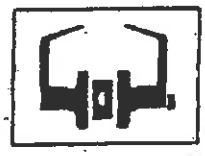
ND12DEU — **Electrically Unlocked (Fail Secure)**
Outside lever continuously locked until unlocked by electric current. Auxiliary latch deadlocks latchbolt when door is closed. Inside lever always free for immediate exit.



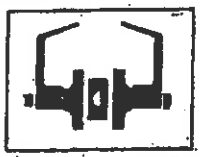
ND25D — **Exit Lock**
Blank plate outside. Inside lever always unlocked.



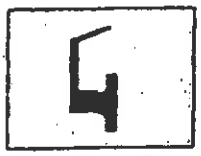
ND40S F78 — **Bath/Bedroom Privacy Lock**
Push-button locking. Can be opened from outside with small screwdriver. Turning inside lever or closing door releases button.



ND44S — **Hospital Privacy Lock**
Push-button locking. Unlocked from outside by turning emergency turn-button. Turning inside lever or closing door releases button.



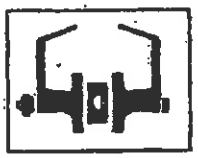
ND170 — **Single Dummy Trim**
Dummy trim for one side of door. Used for door pull or as matching inactive trim.



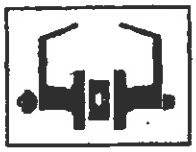
Keyed Locks

SCHLAGE ANSI

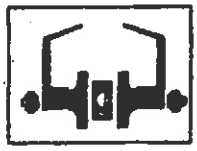
ND50PD F82 — **Entrance/Office Lock***
Push-button locking. Push-button locks outside lever until unlocked with key or by turning inside lever.



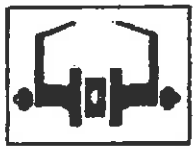
ND53PD F109 — **Entrance Lock***
Turn/push-button locking: pushing and turning button locks outside lever, requiring use of key until button is manually unlocked. Push-button locking: pushing button locks outside lever until unlocked by key or by turning inside lever.



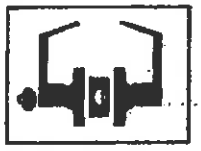
ND60PD F88 — **Vestibule/Classroom Security Lock***
Latch retracted by key from outside when outside lever is locked by key in inside lever. Inside lever is always unlocked.



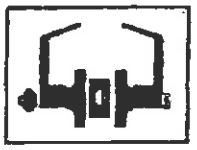
ND66PD F91 — **Store Lock*†**
Key in either lever locks or unlocks both levers.



ND70PD F84 — **Classroom Lock***
Outside lever locked and unlocked by key. Inside lever always unlocked.



ND73PD F90 — **Corridor Lock***
Outside lever locked by key outside or push-button inside. Push-button released by rotating inside lever or closing door. When outside lever is locked by key, key must be used to unlock it. Inside lever is always unlocked.



* *Available functions for small format interchangeable core.*

† *Caution: Double cylinder locks on residences and any door in any structure which is used for egress are a life safety hazard in times of emergency and their use is not recommended. Installation should be in accordance with existing codes only.*

Specifications

Handing:
Keyed functions are reversible. Non-keyed functions are not handed.

Door Thickness:
1⅜" to 1⅞" (35 mm to 48 mm) standard.
2" (51 mm) to 2½" (64 mm) optional extended inside.

Backset:
2⅜" (60 mm) standard. 2¾" (70 mm), 3¾" (95 mm) and 5" (127 mm) optional.

Front:
Steel. 1⅛" x 2¼" square corner, beveled, for 2¾" backset standard. Optional 1" square corner, 1" radius corner, and non-UL drive-in / round face. For availability with specific backsets, see page 6.

Lock Chassis:
Steel, zinc dichromate-plated for corrosion resistance.

Latch Bolt:
Brass, chrome plated, ½" throw, deadlocking on keyed and exterior functions.

Exposed Trim:
Wrought brass, bronze or stainless steel. Levers are pressure cast zinc, plated to match finish symbols.

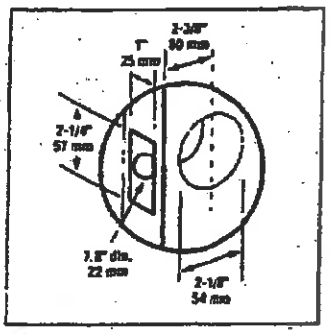
Strike:
T-strike 1⅛" x 2¾" (29 mm x 70 mm) x 1⅛" (29 mm) lip to center with box standard. Optional strikes, lip lengths and ANSI strike box available. See page 7.

Cylinder & Keys:
Commercial: 6-pin patented Everest C123 keyway standard with two nickel silver keys per lock.
Residential: 6-pin C keyway, keyed 5-pin.

Keying Options:
Interchangeable core and Primus® high security cylinders. Master keying, grand master keying, and construction keying.

Warranty:
Commercial: three-year limited.
Residential: Full mechanical lifetime.

Door Preparation



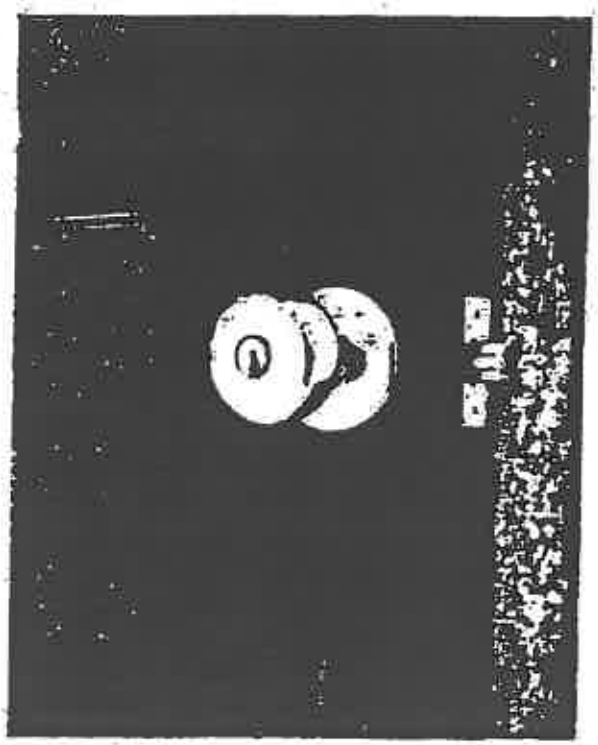
Certifications

ANSI
Meets or exceeds A156.2 Series 4000, Grade 2 strength and operational requirements.

Federal
Meets FF-H-106C.

California State Reference Code
(Formerly Title 19, California State Fire Marshal Standard)
All levers with returns comply; levers return to within ½" of door face.

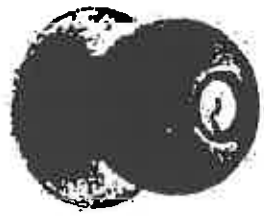
UL / ULC:
All locks listed for A label single doors, 4' x 8'.
Letter F and UL symbol on latch front indicate listing.
UL437 Listed locking cylinder optional: specify Primus 20-500 Series cylinder.



Designs & Finishes

609

GEORGIAN
Symbol: GEO
Material: Wrought brass
Finishes: 605, 606, 609, 610, 625, 626

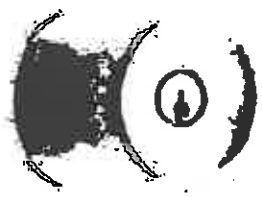


613

ORBIT
Symbol: ORB
Material: Wrought brass or bronze
Finishes: 605, 606, 609, 610, 611, 612, 613, 616, 625, 626

605

PLYMOUTH
Symbol: PLY
Material: Wrought brass, bronze, or stainless steel
Finishes: 605, 606, 609, 610, 611, 612, 613, 616, 625, 626, 629, 630



626

TULIP
Symbol: TUL
Material: Wrought brass
Finishes: 605, 606, 609, 610, 625, 626

605

LEVON
Symbol: LEV
Material: Pressure cast zinc lever; wrought brass or bronze rose
Finishes: 605, 612, 613, 626

Note: Levon available as inside trim only on deadlatch functions. Specify complete trim application and door handing when ordering with deadlatch functions.

Finishes

605	Bright Brass
606	Satin Brass
609	Antique Brass
610	Bright Brass, Blackened
611	Bright Bronze
612	Satin Bronze
613	Oil Rubbed Bronze
616	Antique Bronze
625	Bright Chromium Plated
626	Satin Chromium Plated
629	Bright Stainless Steel
630	Satin Stainless Steel

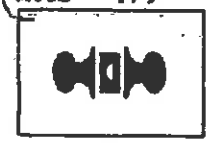
8 Keyed functions available with full size interchangeable core option for Orbit design.

Functions

ANSI A156.2 Series 4000 Grade 2

Non-Keyed Functions

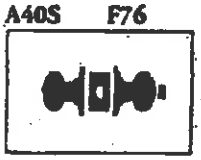
SCHLAGE ANSI
A10S F75 — **Passage Latch**
Both knobs always unlocked.



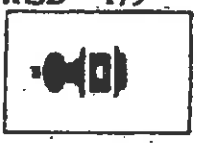
A25D — **Exit Lock**
Blank plate outside. Inside knob always unlocked. Specify door thickness, 1⅜" or 1¾".

A30D F77 — **Patio Lock**
Push-button locking. Turning inside knob or closing door releases button, preventing lock-out.

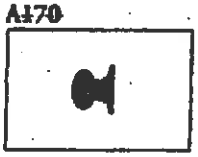
A40S F76 — **Bath/Bedroom Privacy Lock**
Push-button locking. Can be opened from outside with small screwdriver. Turning inside knob or closing door releases button.



A43D F79 — **Communicating Lock**
Turn-button in outer knob locks and unlocks knob and inside thumbturn.

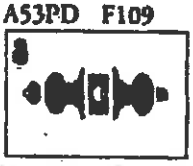


A170 — **Single Dummy Trim**
Dummy trim for one side of door. Used for door pull or as matching inactive trim.

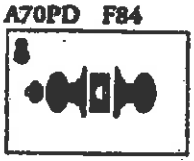


Keyed Functions

SCHLAGE ANSI
A53PD F109 — **Entrance Lock**
Turn/push-button locking: pushing and turning button locks outside knob requiring use of key until button is manually unlocked. Push-button locking: pushing button locks outside knob until unlocked by key or by turning inside knob.

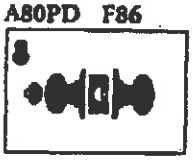


A70PD F84 — **Classroom Lock**
Outside knob locked and unlocked by key. Inside knob always unlocked.

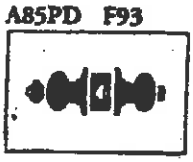


A79PD — **Communicating Lock**
Locked or unlocked by key from outside. Blank plate inside.

A80PD F86 — **Storeroom Lock**
Outside knob fixed. Entrance by key only. Inside knob always unlocked.



A85PD F93 — **Hotel/Motel Lock**
Outside knob fixed. Entrance by key only. Push-button in inside knob activates visual occupancy indicator, allowing only emergency masterkey to operate. Rotation of inside spanner-button provides lock-out feature by keeping indicator thrown.



8 Keyed functions available with full size interchangeable core option for Orbit design.

Pemko Manufacturing Company
5535 Distribution Drive
Memphis, TN 38141
Phone: (800) 824-3018
Fax: (800) 243-3656
E-mail: pemkosales@pemko.com
www.pemko.com

SECTION 08710
DOOR HARDWARE
(CONTINUOUS GEARED DOOR HINGES)

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes: Continuous Geared Door Hinges.

Specifier Note: Revise paragraph below to suit project requirements. If a reader of this section could reasonably expect to find a product or component specified in this section, but it is actually specified elsewhere, then the related section number(s) should be listed in the paragraph below. Add section numbers and titles per CSI *MasterFormat* and specifier's practice. In the absence of related sections, delete paragraph below.

B. Related Sections:

1. Division 6 Section(s): Wood Frames.
2. Division 8 Section(s): Steel Doors, Wood Doors, Sound Control Doors, Aluminum Frame Storefront Doors.
3. Division 10 Section(s): Compartments and Cubicles, Partitions.
4. Division 13 Section(s): Special Facilities, Integrated Construction, Special Structures, Special Purpose Rooms.

Specifier Note: Article below may be omitted when specifying manufacturer's proprietary products and recommended installation. Retain References Article when specifying products and installation by an industry reference standard. If retained, list standard(s) referenced in this section. Indicate issuing authority name, acronym, standard designation and title. Establish policy for indicating edition date of standard referenced. Conditions of the Contract or Division 1 References Section may establish the edition date of standards. This article does not require compliance with standard. It is a listing of all references used in this section.

1.02 REFERENCES

A. ASTM International:

1. ASTM E2074 Standard Test Method for Fire Tests of Door Assemblies, Including Positive Pressure Testing of Side-Hinged and Pivoted Swinging Door Assemblies.

B. American National Standards Institute/Builders Hardware Manufacturers Association (ANSI/BHMA):

1. ANSI/BHMA A156.18 Materials and Finishes.
2. ANSI/BHMA A156.26 Standards for Continuous Hinges.

C. American National Standards Institute/Steel Door Institute (ANSI/SDI):

1. ANSI A250.8/SDI-100 Recommended Specifications for Standard Steel Doors and Frames.

D. American National Standards Institute/Window and Door Manufacturers Association (ANSI/WDMA):

1. ANSI/WDMA I.S.1-A Architectural Wood Flush Doors.

E. Federal Government:

1. U.S. Architectural & Transportation Barriers Compliance Board. Americans with Disabilities Act (ADA), Accessibility Guidelines for Buildings and Facilities (ADAAG), 1992.
2. Federal Standard FED-STD-795-1988 (Revised 1989) Uniform Federal Accessibility Standards.

F. Underwriters Laboratories, Inc. (UL):

1. UL 10B Fire Tests of Door Assemblies.

2. UL 10C Fire Tests of D[illegible] Assemblies.
3. UL 752 Bullet Resistant Equipment.

G. International Code Council (ICC):
1. UBC 7-2 Fire Test of Door Assemblies (Positive Pressure).
2. International Building Code (IBC) Code 2000 (Positive Pressure).
3. ICC/ANSI A117.1 Accessible and Usable Buildings and Facilities.

H. British Standards (BS):
1. BS 476 Fire Tests on Building Materials and Structures.

I. National Fire Protection Association (NFPA):
1. NFPA 1 Fire Prevention Code.

Specifier Note: Article below should be restricted to statements describing design or performance requirements and functional (not dimensional) tolerances of a complete system. Limit descriptions to composite and operational properties required to link components of a system together and to interface with other systems.

1.03 SYSTEM DESCRIPTION

A. Design Requirements: Provide continuous geared door hinges which have been manufactured, fabricated and installed to meet the following design criteria:
1. Continuous geared configuration, designed to distribute loads uniformly.
2. Identical operation in each leaf, designed to reduce door opening effort.
3. UL labeled for 3 hour fire classification.
4. Durability tested to ANSI/BHMA A156.26 Grade 1, 2, 3.

Specifier Note: Article below includes submittal of relevant data to be furnished by Contractor before, during or after construction. Coordinate this article with Architect's and Contractor's duties and responsibilities in Conditions of the Contract and Division 1 Submittal Procedures Section.

1.04 SUBMITTALS

A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures Section.

B. Product Data: Submit manufacturer's product data and installation instructions.

C. Shop Drawings: Provide drawings indicating required component locations, installation interface with adjacent materials, anchorage, fastening and similar information.

D. Samples: Submit one each of manufacturer's standard selection samples.

E. Quality Assurance/Control Submittals: Submit the following:
1. Test Reports: Upon request, submit [Fire] [And] [Durability] test reports from recognized testing laboratory.
2. Certificates: Submit manufacturer's certificate that products meet or exceed specified requirements.

F. Closeout Submittals: Submit the following:
1. Warranty documents specified herein.

Specifier Note: Article below should include statements of prerequisites, standards, limitations and criteria that establish an overall level of quality for products and workmanship for this section. Coordinate article below with Division 1 Quality Assurance Section.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: Utilize an installer having demonstrated experience on projects of similar size and complexity.

Specifier Note: Paragraph below should list obligations for compliance with specific code requirements particular to this section and authority having jurisdiction. General statements to comply with a particular code are typically addressed in Conditions of the Contract and Division 1 Regulatory Requirements Section. Repetitive statements should be avoided.

B. Regulatory Requirements and Approvals: [Specify applicable requirements of regulatory agencies.].

1. [Code agency name].
    a. [Report or approval number].

C. Certifications: [Specify requirement for certifications.].

D. Field Samples: [Specify requirement for field samples.].

E. Mock-Ups: [Specify requirements for mock-up.].

1. Subject to acceptance by owner, mock-up may be retained as part of finish work.
2. If mock-up is not retained, remove and properly dispose of mock-up.

Specifier Note: Retain paragraph below if preinstallation meeting is required.

F. Preinstallation Meetings: [Specify requirements for meeting.].

Specifier Note: Article below should include specific protection and environmental conditions required during storage. Coordinate article below with Division 1 Product Requirements Section.

1.06 DELIVERY, STORAGE & HANDLING

A. General: Comply with Division 1 Product Requirement Section.

B. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

C. Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer.

Specifier Note: Coordinate article below with Conditions of the Contract and with Division 1 Closeout Submittals (Warranty) Section. Use this article to require special or extended warranty or bond covering the work of this section.

1.07 WARRANTY

A. Project Warranty: Refer to Conditions of the Contract for project warranty provisions.

B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under contract documents.

Specifier Note: Coordinate subparagraph below with manufacturer's warranty requirements.

1. Warranty Period: Warranty for life of door opening, beginning with date of substantial completion.

PART 2 PRODUCTS

Specifier Note: Retain article below for proprietary method specification. Add product attributes, performance characteristics, material standards and descriptions as applicable. Use of such phrases as "or equal" or "or approved equal" or similar phrases may cause ambiguity in specifications. Such phrases require verification (procedural, legal and regulatory) and assignment of responsibility for determining "or equal" products.

2.01 CONTINUOUS GEARED DOOR HINGES

Specifier Note: Paragraph below is an addition to CSI *SectionFormat* and a supplement to MANU-SPEC. Retain, edit or delete paragraph below to suit project requirements and specifier practice.

A. Manufacturer: Pemko Manufacturing Company.

1. Contact: PO Box 3780, 4226 Transport Street, Ventura, CA 93003; Telephone: (800) 283-9988, (805) 642-2600; Fax: (805) 642-4109; E-mail: pemkosales@pemko.com; website: www.pemko.com.

B. Proprietary Products/Systems: Continuous Geared Door Hinges, including the following:

1. Continuous Geared PemkoHinges:
    a. Material: Extruded tempered aluminum.
    b. Material Standard: 6063-T6 alloy.
    c. Configuration: Three interlocking extrusions in pinless assembly, installed to full height of door frame.
    d. Finish (ANSI/BHMA A156.18): [Clear anodized] [Dark anodized] [Gold anodized].
    e. Type: [Full mortise] [Full surface] [Half surface] [Full mortise residential: 1 3/4 inches (45 mm)] [Full

mortise residential 3/8 inches (35 mm)] [Special full mortise] [ ]de throw full mortise].

f. Length: [79 inches (2007 mm)] [83 inches (2108 mm)] [85 inches (2159 mm)] [95 inches (2413 mm)] [120 inches (3048 mm)].

g. Hinge Options: [Safety] [Short leaf flush] [Short leaf inset] [Standard] [Safety short leaf inset] [Center pivot].

h. Electrical Modifications: [Specify electrical modifications.].

i. Strength: [Standard Duty: 14 bearings each leaf for 83 inch (2108 mm) hinge, minimum door weight 280 lb (127 kg)] [Heavy Duty: 27 bearings each leaf for 83 inch (2108 mm) hinge, minimum door weight 540 lb (245 kg)].

j. Mortise Fasteners: TEK, #12 × 3/4 inch, FHUC, Phillips head screws.

k. Fire Label Certification: Comply with ASTM E2074, NFPA 1, UBC 7-2, BS 476, UL 10B, UL 10C, [90 minutes for wood doors] [3 hours for hollow metal doors].

l. Testing Standard: Tested according to ANSI/BHMA A156.26.

Specifier Note: Edit Article below to suit project requirements. If substitutions are permitted, edit text below. Add text to refer to Division 1 Project Requirements (Product Substitutions Procedures) Section.

2.02 PRODUCT SUBSTITUTIONS

A. Substitutions: No substitutions permitted.

PART 3 EXECUTION

Specifier Note: Article below is an addition to the CSI *SectionFormat* and a supplement to MANU-SPEC. Revise article below to suit project requirements and specifier's practice.

3.01 MANUFACTURER'S INSTRUCTIONS

A. Comply with the instructions and recommendations of the continuous geared door hinge manufacturer.

Specifier Note: Specify actions to physically determine that conditions are acceptable to receive primary products of the section.

3.02 EXAMINATION

A. Site Verification of Conditions:

1. Verify that site conditions are acceptable for installation of continuous geared door hinges.

a. Examine doors and frames for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction and other conditions affecting performance.

b. Ensure frame is square and plumb before installation.

c. Examine roughing-in for electrical wiring connections.

2. Do not proceed with installation of continuous geared door hinges until unacceptable conditions are corrected.

Specifier Note: Specify actions required to physically prepare the surface, area or site or to incorporate the primary products of the section.

3.03 PREPARATION

A. Wood Door Preparation: Comply with ANSI/WDMA I.S.1-A.

B. Steel Door and Frame Preparation: Drill doors and frames for hardware per manufacturer's installation instructions. Comply with ANSI A250.8/SDI-100.

Specifier Note: Coordinate article below with manufacturer's recommended installation requirements.

3.04 INSTALLATION

A. Mounting Location: Comply with the following requirements, unless otherwise indicated:

1. Steel Doors and Frames:

a. Comply with ANSI A250.8/SDI-100.

b. Ensure frames are properly sized, plumb and square.

c. [Specify standard or specific requirements.].

2. Wood Doors:

a. Comply with ANSI/WDMA I.S.1-A.

b. Ensure doors are properly sized, plumb and square.

c. [Specify standard or specific requirements.].

B. Adjust and reinforce attachment substrates as necessary for proper installation and operation.

C. Space fasteners and anchors according to manufacturer's product instructions.

Specifier Note: Specify the final actions required to prepare installed equipment or other completed work to properly function or perform.

3.05 ADJUSTING

A. Perform adjustments required to ensure that continuous geared door hinges function in compliance with manufacturer's performance criteria prior to acceptance by Owner.

1. Adjust door control devices to compensate for final operation of HVAC system and to comply with accessibility requirements.

Specifier Note: Specify the final actions required to clean installed equipment or other completed work to properly function or perform. Coordinate article below with Division 1 Execution Requirements (Cleaning) Section.

3.06 CLEANING

A. Remove any protective films and clean components as necessary following manufacturer's recommended procedures.

Specifier Note: Specify provisions for protecting work after installation but prior to acceptance by Owner. Coordinate article below with Division 1 Execution Requirements Section.

3.07 PROTECTION

A. Protect installed work from damage due to subsequent construction activity on the site.

END OF SECTION

PEMKO

ASSA ABLOY

PEMKOHINGE™ CONTINUOUS GEARED HINGES:
HALF SURFACE SAFETY HINGES:
STANDARD

TITLE:
PREPARED FOR:
PREPARED BY:
DATE:
COMMENTS:

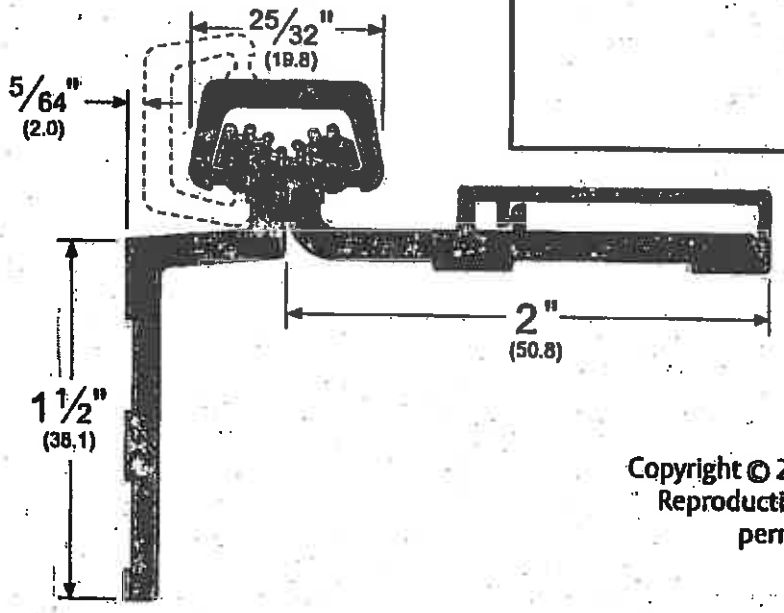
_HS_SF BHMA

AVAILABLE FINISHES: BL, C, D, PW, SN

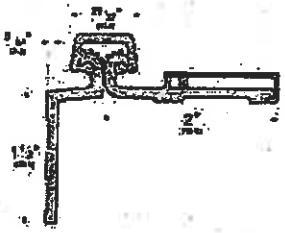
WIDTH: 2" (50.8 mm)
(between frame leaf and door leaf edge)

CAP WIDTH: 25/32" (19.8 mm)

HEIGHT: 1-1/2" (38.1 mm)
(frame edge side - leaf)



BL (Black Anodized) - special request only
C (Clear Anodized)
D (Dark Bronze Anodized)
PW (Painted White) - special request only
SN (Satin Nickel Anodized)



Enlarge Image

_HS_SF

Pemko's standard duty anodized aluminum Half Surface Safety continuous geared hinges are designed mainly for retrofit work in child care and nursing facilities and are applied to the exposed surface of the frame rabbet. Also available in heavy duty models.

- Designed for use with hollow metal frames, where the inset conforms to S.D.I. specifications for aligning doors and frames.
- Allows for adjustments in order to properly align the edge of the door to the frame.
- BL (Black Anodized) and PW (Painted White) are special finishes available upon request.
- Fasteners - Frame Portion - All fasteners are #12-24 x 7/16" FHUC, Type C, threadforming.
- Standard model: 15 fasteners required for each leaf.
- Wood screws available on request (specify on order).
- Fasteners - Door Portion - a. Thru-bolt - 1/4-20 x 1-5/8". - Standard Duty Hinges - 4 required. - b. Shoulder Bolt - 1/4-20 x 1" PCH. - Standard Duty Hinges - 4 required. - c. Pan Head Self Drilling #12 x 3/4". - Standard Duty Hinges - 6 required.
- Standard duty hinge. 6" between bearing centers.
- Standard duty hinges conform to Grade 3-150 and Grade 3-300 cycle requirements per BHMA standard ANSI/BHMA A156.26-2006.
- Aluminum continuous hinge for use on swinging type fire doors of the hollow metal, tin-clad, sheet metal and steel covered composite type rated up to 3 hours, wood covered composite type rated up to and including 1-1/2 hours. Also wood core rated up to and including 20 minutes without hose stream.
- PemkoHinge products are guaranteed for the life of the opening against defects in material or workmanship with the exception of AL, RS, standard duty and Grade 3 hinges, which carry a 10 year warranty.
- Weight bearing (per BHMA standard ANSI/BHMA A156.26-2006) for standard models: 83" and 85" = 14 bearings, door weight = 280 lbs.; 95" = 15 bearings, door weight = 320 lbs.; 120" = 20 bearings, door weight = 400 lbs.
- Width: 2" (50.8 mm) (between frame leaf and door leaf edge).
- Cap Width: 25/32" (19.8 mm).
- Height: 1-1/2" (38.1 mm) (frame edge side - leaf).

BHMA

Ratings Explained | View Finishes

☐ CHSSF	C - Clear Anodized Aluminum
☐ DHSSF	D - Dark Bronze Anodized Aluminum
☐ GHSSF	G - Gold Anodized Aluminum, (Special Order Finish)
☐ BLHSSF	BL - Black Anodized Aluminum, (Special Order Finish)
☐ PWHSSF	PW - Painted White Aluminum, (Special Order Finish)
☐ SNHSSF	SN - Satin Nickel Anodized Aluminum, (Special Order Finish)

ATTACHMENT 8

Lead-Based Paint Inspection and Settled Dust Sampling Report For Wetumka Armory

FINAL ABATEMENT REPORTS

FINAL REPORT

FOR

Wetumka Armory Lead Paint and Asbestos Remediation

22 West St. Louis
Wetumka Oklahoma 74883

BY

ABATEMENT SYSTEMS, INC.
P.O. BOX 773
BROKEN ARROW, OK. 74013
(918) 251-2504 / (800) 256-2096
Abatement2@aol.com

FINAL REPORT – WETUMKA ARMORY

TABLE OF CONTENTS

SUMMARY OF WORK – WETUMKA ARMORY

Prepared abatement area(s) and began asbestos abatement in accordance with the contract. Floor tile and mastic was removed from rooms 4, 5, 9, and 24. Carpet removal in room 23 exposed additional floor tile and mastic not included in Scope of Work or Drawings which was then removed after owner approval.

All non-friction/non-impact surfaces as noted in the contract were wet scraped, painted, and encapsulated as required. All friction/impact surfaces (floors, windows, doors & frames) were abated, painted and encapsulated as required. The Oklahoma Department of Environmental Quality (DEQ) and Marshall Environmental Management (MEM) were notified for clearance sampling.

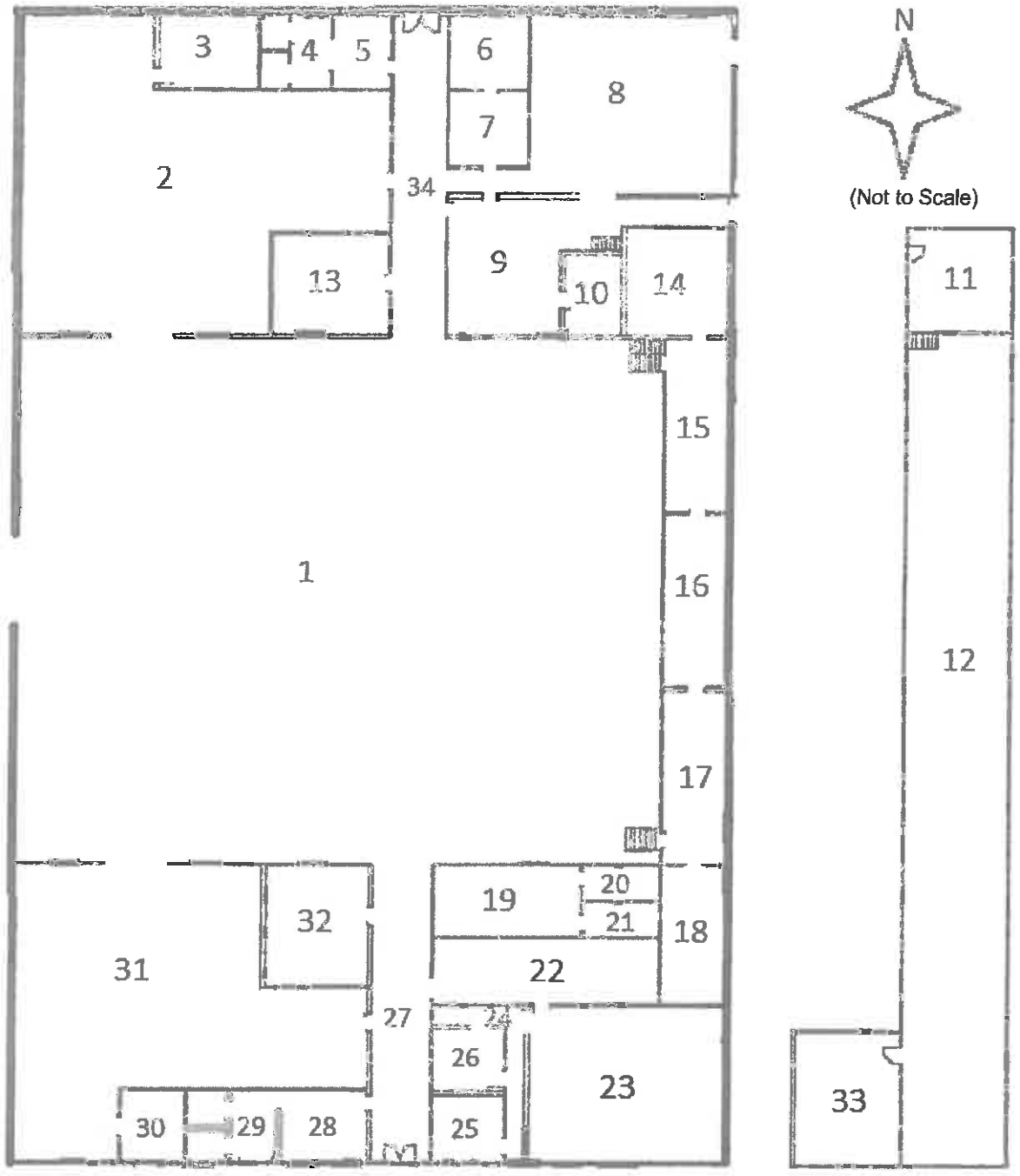
Any remaining debris inside the building DEQ determined to be trash was removed for proper disposal.

New windows and doors were installed per specifications.

The Indoor Firing Range (IFR) was prepared for abatement. During the abatement of the IFR impact area it was determined that there was sufficient lead fragments lodged in the walls and ceiling to make its removal impractical. Grout was then applied to the walls and ceiling per contract after approval by DEQ.

All building surfaces above the floors were then wiped and HEPA vacuumed prior to cleaning the floors. All window sills were wiped and HEPA vacuumed. The floors of the entire building were then HEPA vacuumed and wet washed after any remaining equipment, shelving, etc. were removed from the work area. The floors were then sealed where necessary. DEQ was then contacted for confirmation and clearance sampling. Asbestos and lead contaminated wastes were removed, as necessary, and stored securely before proper disposal.

WETUMKA ARMORY FLOOR PLAN



2033 Heritage Park Drive / Oklahoma City, OK 73120 / (405) 755-7272 / Fax (405) 755-2038

State of Oklahoma
DEQ Land Protection
Attn: Dustin Davidson
707 N. Robinson
Oklahoma City, OK 73102

Re: QuanTEM ID 227953

QuanTEM appreciates the opportunity to provide analytical testing services to you. Attached are your reports and other supporting documentation for the above referenced project.

Thank you for making QuanTEM your lab of choice. If you have any question concerning this or other reports please feel free to contact us at 800-822-1650.

We continually work to improve our service. Help us out by providing feed back on your experience at www.QuanTEM.com. Click on Service Survey and fill out the form. We look forward to hearing from you.

Respectfully,
QuanTEM Laboratories, LLC.

2033 Heritage Park Drive / Oklahoma City, OK 73120 / (405) 755-7272 / Fax (405) 755-2068

Environmental Chemistry Analysis Report

QuanTEM Set ID: 227953
Date Received: 10/10/13
Received By: Sherrie Leftwich
Date Sampled:
Time Sampled:
Analyst: CC
Date of Report: 10/11/2013

AIHA ID: 101352

Client: State of Oklahoma
DEQ Land Protection
Attn: Dustin Davidson
707 N. Robinson
Oklahoma City, OK 73102
Acct. No.: 8486

Project: Wetumka Armory
Location: Wetumka, OK
Project No.: N/A

QuanTEM ID	Client ID	Matrix	Parameter	Results	Reporting Limits	Units	Date/Time Analyzed	Method
001	D1	Wipe	Lead	<9.00	9	ug/sq. Ft.	10/11/13 14:00	W NIOSH 9100
002	D2	Wipe	Lead	<9.00	9	ug/sq. Ft.	10/11/13 14:00	W NIOSH 9100
003	D3	Wipe	Lead	<9.00	9	ug/sq. Ft.	10/11/13 14:00	W NIOSH 9100
004	D4	Wipe	Lead	<9.00	9	ug/sq. Ft.	10/11/13 14:00	W NIOSH 9100
005	D5	Wipe	Lead	<9.00	9	ug/sq. Ft.	10/11/13 14:00	W NIOSH 9100
006	D6	Wipe	Lead	<9.00	9	ug/sq. Ft.	10/11/13 14:00	W NIOSH 9100
007	D7	Wipe	Lead	<9.00	9	ug/sq. Ft.	10/11/13 14:00	W NIOSH 9100
008	D8	Wipe	Lead	18.4	9	ug/sq. Ft.	10/11/13 14:00	W NIOSH 9100
009	D9	Wipe	Lead	<9.00	9	ug/sq. Ft.	10/11/13 14:00	W NIOSH 9100
010	D10	Wipe	Lead	<9.00	9	ug/sq. Ft.	10/11/13 14:00	W NIOSH 9100

Authorized Signature: _____
Benton Miller, Analyst

Note: Sample results have not been corrected for blank values.

Supplemental Report
QAQC Results

QA ID: 11446
Test: Lead

Date: 10/11/2013
Matrix: Wipe

Lab Number: 227953
Approved By: Benton Miller
Date Approved: 10/11/2013

Notes:

Blank Data:

Type of Blank	Blank Value
FCB	0
Matrix Blank	0

Standards Data:

Standard	Low Limit	Obtained	High Limit
CCV	4.5	4.8	5.5
FCV	4.5	4.8	5.5
ICV	0.9	1	1.1
RLVS	0.144	0.196	0.216

Duplicate Data:

Recovery Data:

Sample Number	Result	Spike Level	Result + Spike	% Recovery	Dup. Result + Spike	% Dup. Recovery	% Spike RPD
MS-WI	0.000	5.000	4.707	94.2	4.201	84.0	11.4

LEAD CHAIN OF CUSTODY

Page 1 of 1

ORATORIES

EM.com

2033 Heritage Park Drive, Oklahoma City, OK 73120-7502
(800) 822-1650 • (405) 755-7272 • Fax: (405) 755-2058

LEGAL DOCUMENT - PLEASE PRINT LEGIBLY

For Lab Use Only	
Lab No	22-7953
	(Accept) Reject

Contact Information		Project Information		Report Results (☑ one box)	
	Phone: 702-5136	Project Name:	Wetumka Armory		QuanTEM Website
Brian Stanila	Cell Phone: 659-5375	Project Location:	Wetumka, OK		Other
bstanila@deq.ok.gov	E-mail: brian.stanila@deq.ok.gov	Project ID			

Name: Brian Stanila Date: 10/10/2013

RELINQUISHED BY	DATE & TIME	VIA	RECEIVED BY	DATE & TIME
	10/10/2013 15:35			10/10/13 13:35

REQUESTED SERVICES (Please ☑ the Appropriate Boxes)

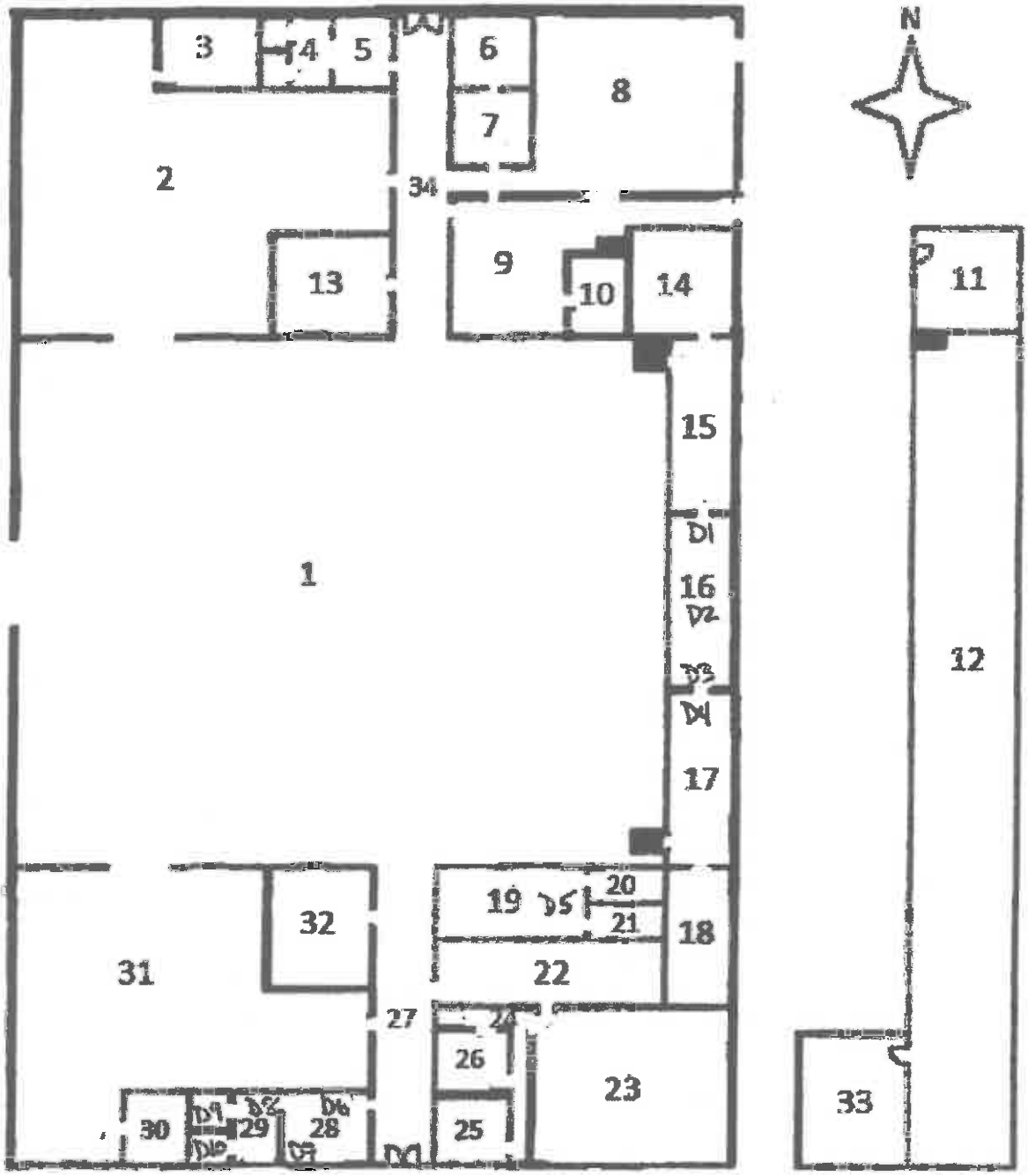
Lab #	Sample Description	Volume (Liters)	Volume Area (Length x Width)	Sample Matrix (see matrix code box)	Analysis: Pb	Units (☑ ONE box only): PPM	Wt %	mg / l	µg / ft²	µg / m³	mg / cm²
	wipe		1 ft²		X				X		

Sample Matrix Codes	
A	Soil
B	Paint Chips
C	Surface / Dust Wipes
D	Bulk Miscellaneous
E	Air Cassette

TURNAROUND TIME	
	Same Day
X	24 - Hour
	3 - Day
	5 - Day

Wetumka

Q#227953



WETUMKA ARMORY
PHOTO DOCUMENTATION

Non-ACM waste in armory room.

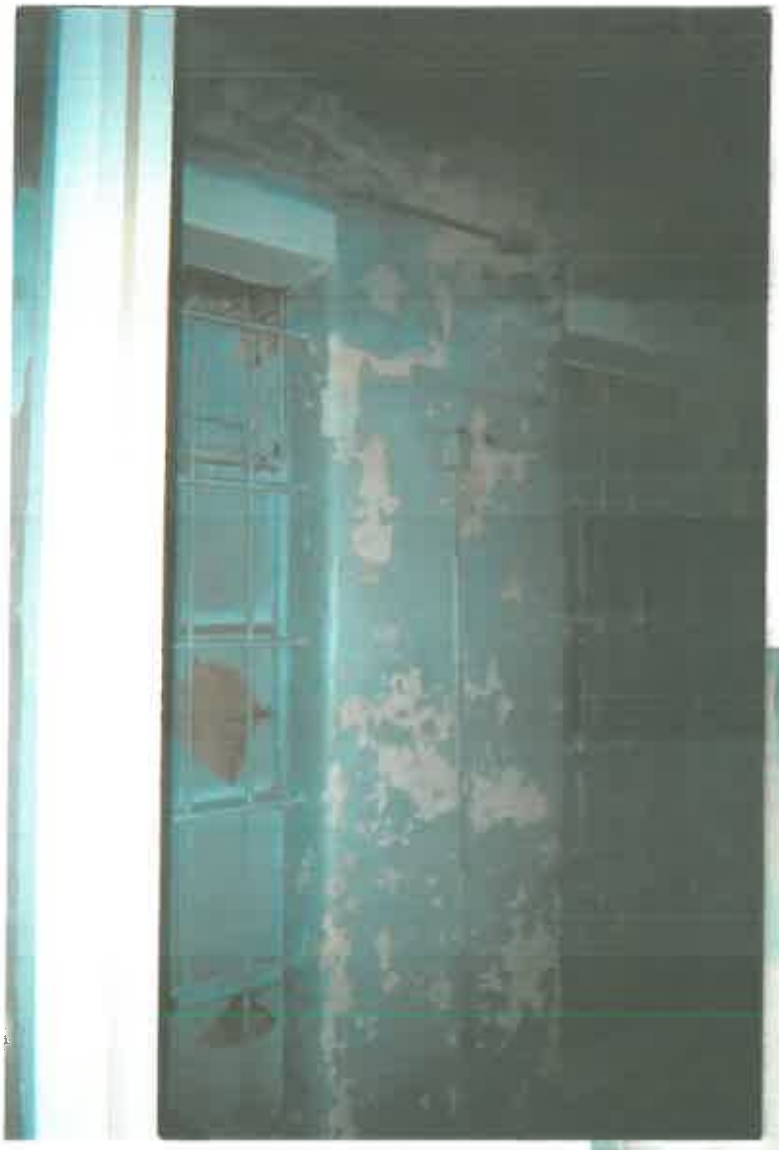
Non-ACM waste in armory room.

WETUMKA ARMORY
PHOTO DOCUMENTATION

Non-ACM waste in armory room.

Non-ACM waste in dumpster awaiting disposal.

WETUMKA ARMORY
PHOTO DOCUMENTATION



Paint peeling from wall in armory.

Paint peeling from wall in armory.

WETUMKA ARMORY
PHOTO DOCUMENTATION

Window sill in armory prior to abatement.

Window sill in armory prior to abatement.

WETUMKA ARMORY
PHOTO DOCUMENTATION

Door frame being abated.

Door frame abated and ready for encapsulation.

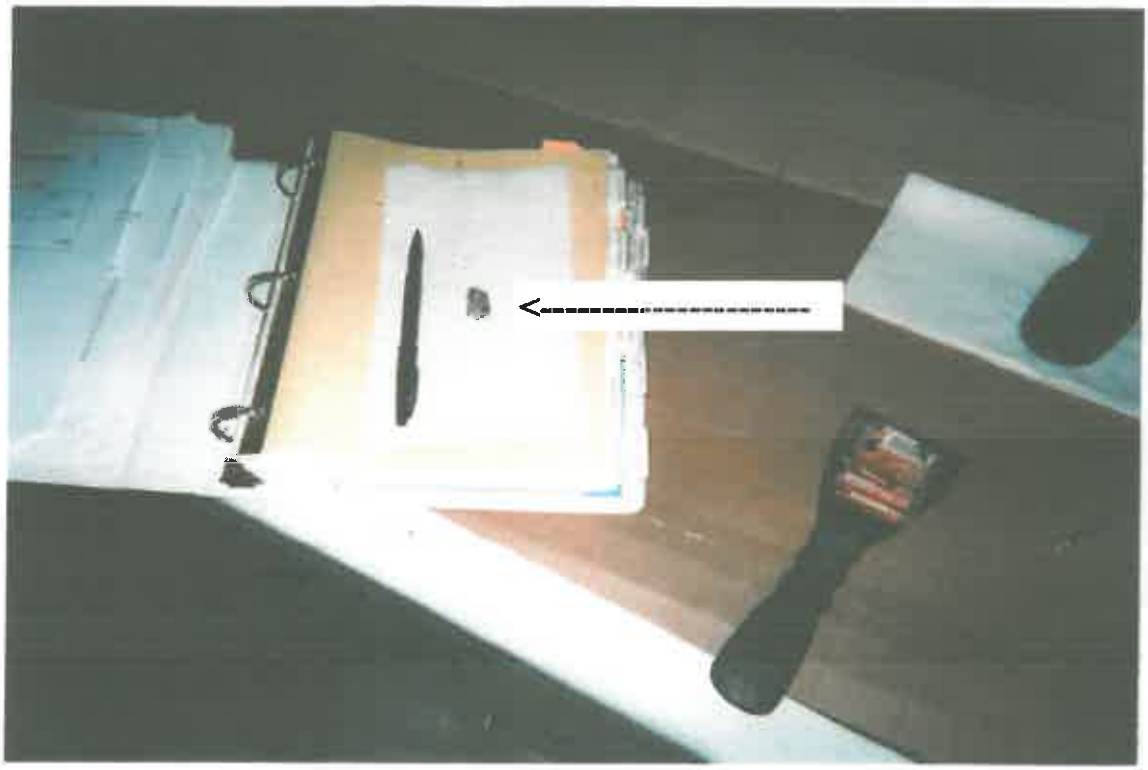
WETUMKA ARMORY
PHOTO DOCUMENTATION

Door frame being encapsulated.

Door frame encapsulated.

WETUMKA ARMORY
PHOTO DOCUMENTATION

IFR impact area - Knife point at lead fragment among hundreds of others.



IFR impact area - chunk of lead next to pencil.

WETUMKA ARMORY
PHOTO DOCUMENTATION

IFR impact area - knife point at lead fragment.

IFR impact area - knife point at lead fragment.

WETUMKA ARMORY
PHOTO DOCUMENTATION

IFR - walls being encapsulated.

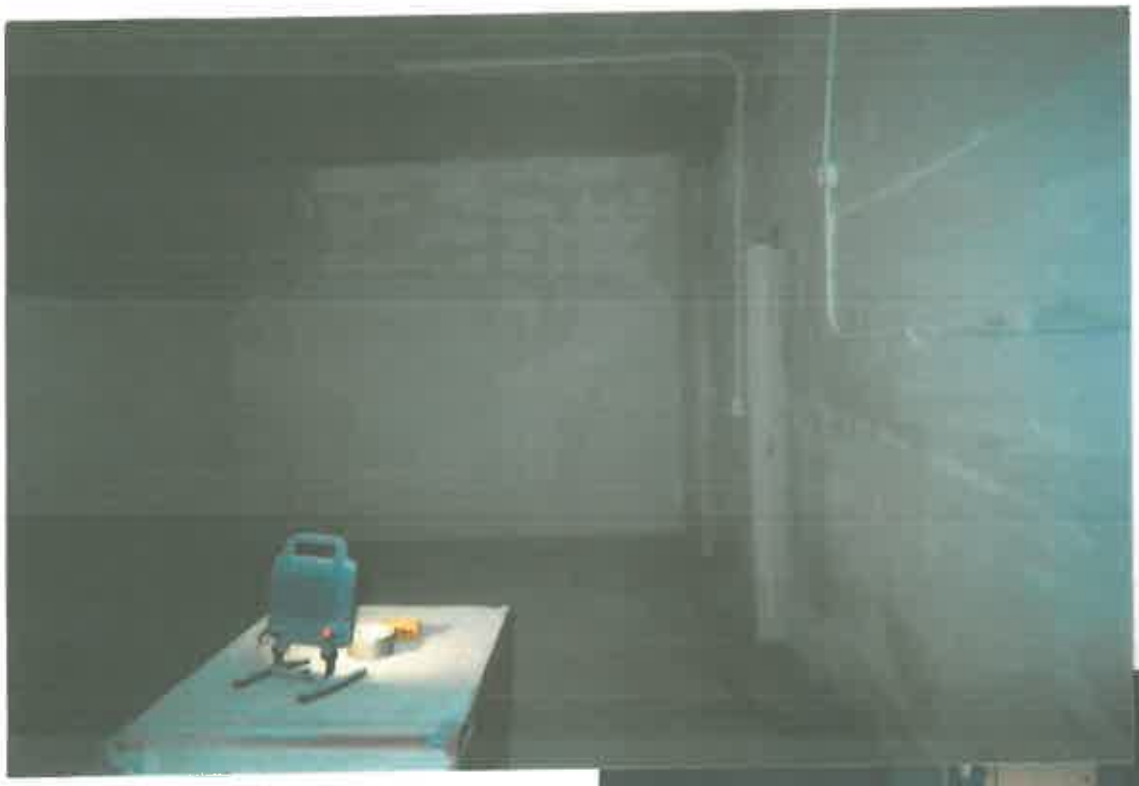
IFR - door frame being abated.

WETUMKA ARMORY
PHOTO DOCUMENTATION

IFR - abated door frame.

IFR - impact area being encapsulated with grout.

WETUMKA ARMORY
PHOTO DOCUMENTATION



IFR - impact area after encapsulation with grout.

Another door frame before abatement.

WETUMKA ARMORY
PHOTO DOCUMENTATION

Door frame being encapsulated.

Room 4 - baseboards removed.

WETUMKA ARMORY
PHOTO DOCUMENTATION

Room 4 - baseboards removed.

Room 28 - baseboards removed.

WETUMKA ARMORY
PHOTO DOCUMENTATION

Room 29 - baseboards removed.

Room 29 - baseboards removed.

WETUMKA ARMORY
PHOTO DOCUMENTATION

Garage door frames being encapsulated.

Room 5 - floor tile and mastic removed.

WETUMKA ARMORY
PHOTO DOCUMENTATION

Room 7 floor.

Room 14 floor.

WETUMKA ARMORY
PHOTO DOCUMENTATION

Room 19 floor.

Room 22 floor.

WETUMKA ARMORY
PHOTO DOCUMENTATION

Armory exterior - New doors and windows - window sills and door frame abated.

Armory exterior - New doors and windows - window sills and door frame abated.

WETUMKA ARMORY
PHOTO DOCUMENTATION

Stair railings after abatement and encapsulation.

Drill floor after cleaning.

CONFIRMATION SAMPLING

WETUMKA ARMORY

220 WEST ST. LOUIS AVENUE
WETUMKA, OKLAHOMA 74883

DECEMBER 1, 2013 | *LEAD-CONFIRMATION SAMPLING*

CERTIFIED INDUSTRIAL HYGIENE SERVICES PROVIDED FOR:

Oklahoma Department of Environmental Quality
Land Protection Division
Care Of: Dustin Davidson, Environmental Programs Specialist
Post Office Box 1677
Oklahoma City, Oklahoma 73102
405.702.5115
dustin.davidson@deq.ok.gov

CERTIFIED INDUSTRIAL HYGIENE SERVICES PROVIDED BY:

Marshall Environmental Management, Incorporated
Attention: Jamie Marshall, Senior Industrial Hygiene Associate
1601 Southwest 89th Street, Suite A-100
Oklahoma City, Oklahoma 73159
405.616.0401
marshenv@swbell.net

TABLE OF CONTENTS

WETUMKA ARMORY
LEAD-CONFIRMATION SAMPLING

CERTIFICATION

This is to certify that, Marshall Environmental Management, Incorporated (MEM) was contracted by the State of Oklahoma Construction and Properties Division, on behalf of the Oklahoma Department of Environmental Quality (ODEQ) Land Protection Division (LPD), to conduct Lead-Confirmation Sampling at the Wetumka Armory (220 West St. Louis Avenue – Wetumka, Oklahoma). The confirmation sampling was performed by a Lead-Based Paint (LBP) Inspector/Risk Assessor licensed by the ODEQ and under the direction of Dr. Charles L. Marshall Certified Industrial Hygienist (CIH) and President of MEM. The analytical data resulting from these sampling events is believed to accurately, reflect the concentrations of lead in surface dust at the time sampling was accomplished. The remainder of this report includes the Executive Summary, the Analytical Summary and the Sampling Methodology and Clearance Requirements.

OWNER INFORMATION

State of Oklahoma

CERTIFIED LEAD-BASED PAINT INSPECTOR/RISK ASSESSOR

December 1, 2013

Rachel Woods, B.S., Industrial Hygiene Associate	***Report Date***
ODEQ Certification Lead-Based Paint Inspector/Risk Assessor	*OKRASR13701*

CERTIFIED LEAD-BASED PAINT FIRM

Marshall Environmental Management, Incorporated
1601 Southwest 89th Street, Suite A-100
Oklahoma City, Oklahoma 73159
405.616.0401
marshenv@swbell.net
ODEQ Lead-Based Paint Firm Certification: OKFIRM11160

X-RAY FLUORESCE ANALYZER

Analyzer Make: *NitonXLp Spectrum Analyzer*
Analyzer Model: *#XLp 300A*
Analyzer Serial Number: *12585*
Source Date: *March 15, 2011*

EXECUTIVE SUMMARY

As part of the ODEQ LPD Site Cleanup Assistance Program and Armory Cleanup Program and for the purpose of verifying that adequate abatement (i.e. removal) measures occurred, MEM and ODEQ representatives performed the Lead-Confirmation Sampling at the Wetumka Armory. Following lead-abatement activities, performed by Abatement Systems, Inc. 48-samples were collected on June 29, 2013, by a MEM representative, from various floor, wall and ceiling surfaces within the indoor firing range (IFR) (room 12) and adjoining side room 33. Of the 48-surface samples, eight samples exceeded the Army National Guard (ARNG) and Air Force National Guard (ANG) post-abatement/pre-sealant action level, with regard to an IFR, of 200-micrograms of lead per-square-foot (200-µg/ft^2). The ***bolded data*** represents lead concentrations that exceeded the applicable clearance level. A floor plan diagram, illustrating the sampling locations, is attached with this report.

TABLE I: 07-29-13 – LEAD-CONFIRMATION SAMPLING

LAB ID	SAMPLE IDENTIFICATION	ANALYTICAL RESULT	CLEARANCE LEVEL
01	IFR – NORTH FLOOR - NE	34.0-µg/ft.^{2}	200-µg/ft.^{2}
02	IFR – NORTH FLOOR – WEST CENTER	84.6-µg/ft.^{2}	200-µg/ft.^{2}
03	IFR - NORTH FLOOR - SE	59.6-µg/ft.^{2}	200-µg/ft.^{2}
04	IFR – NW WALL – BOTTOM	<9.00-µg/ft.^{2}	200-µg/ft.^{2}
05	IFR – NW WALL – MIDDLE	<9.00-µg/ft.^{2}	200-µg/ft.^{2}
06	IFR – NW WALL – TOP	<9.00-µg/ft.^{2}	200-µg/ft.^{2}
07	IFR - NORTH WALL – BOTTOM	42.6-µg/ft.^{2}	200-µg/ft.^{2}
08	IFR – NORTH WALL – MIDDLE	<9.00-µg/ft.^{2}	200-µg/ft.^{2}
09	IFR – NORTH WALL – TOP	12.3-µg/ft.^{2}	200-µg/ft.^{2}
10	IFR – NE WALL - TOP	<9.00-µg/ft.^{2}	200-µg/ft.^{2}
11	IFR – NE WALL - MIDDLE	<9.00-µg/ft.^{2}	200-µg/ft.^{2}
12	IFR – NE WALL - BOTTOM	<9.00-µg/ft.^{2}	200-µg/ft.^{2}
13	IFR – SOUTH FLOOR - NE	108-µg/ft.^{2}	200-µg/ft.^{2}
14	**IFR – SOUTH FLOOR – WEST CENTER**	**208-µg/ft.^{2}**	**200-µg/ft.^{2}**
15	**IFR – SOUTH FLOOR - SE**	**931-µg/ft.^{2}**	**200-µg/ft.^{2}**
16	IFR – SE WALL – BOTTOM	15.5-µg/ft.^{2}	200-µg/ft.^{2}
17	IFR – SE WALL - MIDDLE	56.9-µg/ft.^{2}	200-µg/ft.^{2}
18	**IFR – SE WALL - TOP**	**1,090-µg/ft.^{2}**	**200-µg/ft.^{2}**
19	IFR – SOUTH WALL – TOP	120-µg/ft.^{2}	200-µg/ft.^{2}
20	**IFR – SOUTH WALL – BOTTOM**	**402-µg/ft.^{2}**	**200-µg/ft.^{2}**
21	IFR – SOUTH WALL – MIDDLE	192-µg/ft.^{2}	200-µg/ft.^{2}
22	IFR – SW WALL – MIDLLE	14.7-µg/ft.^{2}	200-µg/ft.^{2}
23	IFR – SW WALL – BOTTOM	<9.00-µg/ft.^{2}	200-µg/ft.^{2}
24	**IFR – SW WALL – TOP**	**2,430-µg/ft.^{2}**	**200-µg/ft.^{2}**
25	IFR – NORTH CEILING – NE	<9.00-µg/ft.^{2}	200-µg/ft.^{2}
26	IFR – NOTH CEILING – WEST CENTER	13.6-µg/ft.^{2}	200-µg/ft.^{2}
27	IFR - NORTH CEILING - SE	<9.00-µg/ft.^{2}	200-µg/ft.^{2}
28	IFR – SOUTH CEILING – NORTH CENTER	10.7-µg/ft.^{2}	200-µg/ft.^{2}
29	IFR – SOUTH CEILING – EAST CENTER	14.8-µg/ft.^{2}	200-µg/ft.^{2}
30	**IFR – SOUTH CEILING – SW**	**4,540-µg/ft.^{2}**	**200-µg/ft.^{2}**
31	ROOM 33 – FLOOR – NW	62.5-µg/ft.^{2}	200-µg/ft.^{2}
32	ROOM 33 – FLOOR – EAST	136-µg/ft.^{2}	200-µg/ft.^{2}
33	**ROOM 33 – FLOOR - SW**	**532-µg/ft.^{2}**	**200-µg/ft.^{2}**
34	ROOM 33 – NORTH WALL – TOP	<9.00-µg/ft.^{2}	200-µg/ft.^{2}
35	ROOM 33 – NORTH WALL - MIDDLE	<9.00-µg/ft.^{2}	200-µg/ft.^{2}
36	ROOM 33 – NORTH WALL – BOTTOM	12.0-µg/ft.^{2}	200-µg/ft.^{2}
37	ROOM 33 – EAST WALL – BOTTOM	14.5-µg/ft.^{2}	200-µg/ft.^{2}
38	ROOM 33 – EAST WALL – MIDDLE	46.9-µg/ft.^{2}	200-µg/ft.^{2}
39	ROOM 33 – EAST WALL – TOP	10.1-µg/ft.^{2}	200-µg/ft.^{2}
40	ROOM 33 – SOUTH WALL – TOP	152-µg/ft.^{2}	200-µg/ft.^{2}
41	ROOM 33 – SOUTH WALL – BOTTOM	122-µg/ft.^{2}	200-µg/ft.^{2}
42	ROOM 33 – SOUTH WALL - MIDDLE	96.0-µg/ft.^{2}	200-µg/ft.^{2}
43	**ROOM 33 – WEST WALL – BOTTOM**	**291-µg/ft.^{2}**	**200-µg/ft.^{2}**
44	ROOM 33 – WEST WALL – TOP	25.5-µg/ft.^{2}	200-µg/ft.^{2}
45	ROOM 33 – WEST WALL – MIDDLE	<9.00-µg/ft.^{2}	200-µg/ft.^{2}
46	ROOM 33 – CEILING – NORTH CENTER	<9.00-µg/ft.^{2}	200-µg/ft.^{2}
47	ROOM 33 – CEILING – WEST	<9.00-µg/ft.^{2}	200-µg/ft.^{2}
48	ROOM 33 – CEILING – SE	<9.00-µg/ft.^{2}	200-µg/ft.^{2}

Following supplemental abatement activities, additional surface samples were collected on August 2, 2013, by a MEM representative, from various floor, wall and ceiling surfaces within the IFR and from various floor surfaces throughout the remaining areas of the armory. Of the 120-surface samples, 8-surface samples exceeded the aforementioned action level set forth by the ARNG and ANG with regard to the IFR. In addition to this, 66-surface samples collected from areas outside the IFR exceeded the Environmental Protection Agency (EPA) post-abatement clearance level, with regard to floor surfaces, of 40-micrograms of lead per-square-foot (40-µg/ft^2).

TABLE II: 08-02-13 – LEAD-CONFIRMATION SAMPLING

LAB ID	SAMPLE IDENTIFICATION	ANALYTICAL RESULT	CLEARANCE LEVEL
A1	ROOM 2 – NW	27.5-µg/ft^2	40-µg/ft^2
A2	ROOM 2 – SOUTH	15.6-µg/ft.^{2}	40-µg/ft.^{2}
A3	ROOM 2 – EAST	12.2-µg/ft^2	40-µg/ft.^{2}
A4	ROOM 3 – NW	37.2-µg/ft.^{2}	40-µg/ft.^{2}
A5	ROOM 3 – CENTER	29.7-µg/ft^2	40-µg/ft.^{2}
A6	ROOM 3 – SE	88.4-µg/ft.^{2}	40-µg/ft.^{2}
A7	ROOM 4 – NW	118-µg/ft^2	40-µg/ft^2
A8	ROOM 4 – SW	60.8-µg/ft.^{2}	40-µg/ft.^{2}
A9	ROOM 4 – EAST	135-µg/ft^2	40-µg/ft^2
A10	ROOM 5 – NORTH	114-µg/ft.^{2}	40-µg/ft.^{2}
A11	ROOM 5 – EAST	112-µg/ft^2	40-µg/ft^2
A12	ROOM 5 – SOUTH	94.0-µg/ft.^{2}	40-µg/ft.^{2}
A13	ROOM 6 – NW	138-µg/ft^2	40-µg/ft^2
A14	ROOM 6 – NE	314-µg/ft.^{2}	40-µg/ft.^{2}
A15	ROOM 6 – SOUTH	387-µg/ft^2	40-µg/ft^2
A16	ROOM 7 – WEST	275-µg/ft.^{2}	40-µg/ft.^{2}
A17	ROOM 7 – EAST	144-µg/ft^2	40-µg/ft^2
A18	ROOM 7 – SOUTH	297-µg/ft.^{2}	40-µg/ft.^{2}
A19	ROOM 8 – NW	71.1-µg/ft^2	40-µg/ft^2
A20	ROOM 8 – EAST	49.2-µg/ft.^{2}	40-µg/ft.^{2}
A21	ROOM 8 – SOUTH	120-µg/ft^2	40-µg/ft^2
A22	ROOM 9 – NW	98.6-µg/ft.^{2}	40-µg/ft.^{2}
A23	ROOM 9 – NE	14.1-µg/ft^2	40-µg/ft^2
A24	ROOM 9 – CENTER	9.00-µg/ft.^{2}	40-µg/ft.^{2}
A25	ROOM 10 – NW	20.9-µg/ft^2	40-µg/ft^2
A26	ROOM 10 – EAST	18.4-µg/ft.^{2}	40-µg/ft.^{2}
A27	ROOM 10 – SOUTH	30.4-µg/ft^2	40-µg/ft^2
A28	ROOM 11 – NORTH	145-µg/ft.^{2}	200-µg/ft.^{2}
A29	ROOM 11 – CENTER	89.6-µg/ft^2	200-µg/ft^2
A30	ROOM 11 - SOUTH	43.5-µg/ft.^{2}	200-µg/ft.^{2}
A31	ROOM 14 – NE	18.8-µg/ft^2	40-µg/ft^2
A32	ROOM 14 – WEST	78.5-µg/ft.^{2}	40-µg/ft.^{2}
A33	ROOM 14 – SE	58.7-µg/ft^2	40-µg/ft^2
A34	ROOM 13 – NE	50.1-µg/ft.^{2}	40-µg/ft.^{2}
A35	ROOM 13 – SOUTH	34.8-µg/ft^2	40-µg/ft^2
A36	ROOM 13 – WEST	27.4-µg/ft.^{2}	40-µg/ft.^{2}
A37	ROOM 15 – NE	113-µg/ft^2	40-µg/ft^2
A38	ROOM 15 – WEST	116-µg/ft.^{2}	40-µg/ft.^{2}
A39	ROOM 15 SOUTH	51.2-µg/ft^2	40-µg/ft^2
A40	ROOM 16 – NW	79.0-µg/ft.^{2}	40-µg/ft.^{2}
A41	ROOM 16 – EAST	256-µg/ft^2	40-µg/ft^2
A42	ROOM 16 – SW	161-µg/ft.^{2}	40-µg/ft.^{2}
A43	ROOM 17 – NE	122-µg/ft^2	40-µg/ft^2
A44	ROOM 17 – WEST	269-µg/ft.^{2}	40-µg/ft.^{2}
A45	ROOM 17 – SOUTH	52.8-µg/ft^2	40-µg/ft^2
A46	ROOM 18 – NORTH	35.8-µg/ft.^{2}	40-µg/ft.^{2}
A47	ROOM 18 – WEST	23.6-µg/ft^2	40-µg/ft^2
A48	ROOM 18 – SE	137-µg/ft.^{2}	40-µg/ft.^{2}
A49	ROOM 19 – NW	143-µg/ft^2	40-µg/ft^2
A50	ROOM 19 – SOUTH	65.6-µg/ft.^{2}	40-µg/ft.^{2}
A51	ROOM 19 – NE	123-µg/ft.^{2}	40-µg/ft^2
A52	ROOM 20 – NW	63.8-µg/ft.^{2}	40-µg/ft.^{2}
A53	ROOM 20 – SOUTH	42.0-µg/ft^2	40-µg/ft^2
A54	ROOM 20 – NE	104-µg/ft.^{2}	40-µg/ft.^{2}

LAB ID	SAMPLE IDENTIFICATION	ANALYTICAL RESULT	CLEARANCE LEVEL
A55	ROOM 21 – WEST	26.0-µg/ft.²	40-µg/ft.²
A56	ROOM 21 – NORTH	62.5-µg/ft.²	40-µg/ft.²
A57	ROOM 21 – SE	79.4-µg/ft.²	40-µg/ft.²
A58	ROOM 22 – WEST	47.7-µg/ft.²	40-µg/ft.²
A59	ROOM 22 – NORTH	51.1-µg/ft.²	40-µg/ft.²
A60	ROOM 22 - SE	175-µg/ft.²	40-µg/ft.²
A61	ROOM 23 – NORTH	24.9-µg/ft.²	40-µg/ft.²
A62	ROOM 23 – EAST	31.7-µg/ft.²	40-µg/ft.²
A63	ROOM 23 – SW	22.2-µg/ft.²	40-µg/ft.²
A64	ROOM 24 – NORTH	<9.00-µg/ft.²	40-µg/ft.²
A65	ROOM 24 - NE	54.1-µg/ft.²	40-µg/ft.²
A66	ROOM 24 - SE	87.5-µg/ft.²	40-µg/ft.²
A67	ROOM 25 – NW	20.5-µg/ft.²	40-µg/ft.²
A68	ROOM 25 – EAST	29.4-µg/ft.²	40-µg/ft.²
A69	ROOM 25 – SOUTH	42.0-µg/ft.²	40-µg/ft.²
A70	ROOM 26 – SW	453-µg/ft.²	40-µg/ft.²
A71	ROOM 26 – NORTH	109-µg/ft.²	40-µg/ft.²
A72	ROOM 26 – EAST	229-µg/ft.²	40-µg/ft.²
A73	ROOM 27 – NORTH	269-µg/ft.²	40-µg/ft.²
A74	ROOM 27 - CENTER	118-µg/ft.²	40-µg/ft.²
A75	ROOM 27 – SOUTH	49.9-µg/ft.²	40-µg/ft.²
A76	ROOM 28 - NORTH	225-µg/ft.²	40-µg/ft.²
A77	ROOM 28 - SE	1,440-µg/ft.²	40-µg/ft.²
A78	ROOM 28 - SW	291-µg/ft.²	40-µg/ft.²
A79	ROOM 29 - EAST	93.0-µg/ft.²	40-µg/ft.²
A80	ROOM 29 - SW	55.9-µg/ft.²	40-µg/ft.²
A81	ROOM 29 - NW	6,210-µg/ft.²	40-µg/ft.²
A82	ROOM 30 - NW	45.8-µg/ft.²	40-µg/ft.²
A83	ROOM 30 - EAST	16.4-µg/ft.²	40-µg/ft.²
A84	ROOM 30 - SOUTH	19.3-µg/ft.²	40-µg/ft.²
A85	ROOM 31 – NORTH	50.9-µg/ft.²	40-µg/ft.²
A86	ROOM 31 – EAST	67.1-µg/ft.²	40-µg/ft.²
A87	ROOM 31 – SW	66.4-µg/ft.²	40-µg/ft.²
A88	ROOM 32 - NE	24.4-µg/ft.²	40-µg/ft.²
A89	ROOM 32 - WEST	155-µg/ft.²	40-µg/ft.²
A90	ROOM 32 - SOUTH	55.2-µg/ft.²	40-µg/ft.²
A91	ROOM 34 – NORTH	236-µg/ft.²	40-µg/ft.²
A92	ROOM 34 - CENTER	207-µg/ft.²	40-µg/ft.²
A93	ROOM 34 – SOUTH	138-µg/ft.²	40-µg/ft.²
A94	ROOM 1 – WEST – NW	19.2-µg/ft.²	40-µg/ft.²
A95	ROOM 1 – WEST – EAST	25.1-µg/ft.²	40-µg/ft.²
A96	ROOM 1 – WEST – SOUTH	17.0-µg/ft.²	40-µg/ft.²
A97	ROOM 1 – EAST – NORTH	66.7-µg/ft.²	40-µg/ft.²
A98	ROOM 1 – EAST – EAST	24.6-µg/ft.²	40-µg/ft.²
A99	ROOM 1 – EAST – SOUTH	105-µg/ft.²	40-µg/ft.²
A100	ROOM 12 – SOUTH FLOOR - NE	124-µg/ft.²	200-µg/ft.²
A101	ROOM 12 – SOUTH FLOOR - WEST	187-µg/ft.²	200-µg/ft.²
A102	ROOM 12 – SOUTH FLOOR - SE	1,250-µg/ft.²	200-µg/ft.²
A103	ROOM 12 – EAST WALL - BOTTOM	<9.00-µg/ft.²	200-µg/ft.²
A104	ROOM 12 – EAST WALL - MIDDLE	39.4-µg/ft.²	200-µg/ft.²
A105	ROOM 12 – EAST WALL - TOP	887-µg/ft.²	200-µg/ft.²
A106	ROOM 12 – SOUTH WALL - TOP	344-µg/ft.²	200-µg/ft.²
A107	ROOM 12 – SOUTH WALL - BOTTOM	344-µg/ft.²	200-µg/ft.²
A108	ROOM 12 – SOUTH WALL – MIDDLE	236-µg/ft.²	200-µg/ft.²
A109	ROOM 12 – WEST WALL – TOP	3,960-µg/ft.²	200-µg/ft.²
A110	ROOM 12 – WEST WALL – MIDDLE	32.3-µg/ft.²	200-µg/ft.²
A111	ROOM 12 – WEST WALL – BOTTOM	38.0-µg/ft.²	200-µg/ft.²
A112	ROOM 12 – SOUTH CEILING – NORTH	<9.00-µg/ft.²	200-µg/ft.²
A113	ROOM 12 – SOUTH CEILING – WEST	35.7-µg/ft.²	200-µg/ft.²
A114	ROOM 12 – SOUTH CEILING – SE	2,430-µg/ft.²	200-µg/ft.²
A115	ROOM 33 – FLOOR – EAST	117-µg/ft.²	200-µg/ft.²
A116	ROOM 33 – FLOOR – NW	122-µg/ft.²	200-µg/ft.²
A117	ROOM 33 – FLOOR – SOUTH	201-µg/ft.²	200-µg/ft.²
A118	ROOM 33 – WEST HALL - BOTTOM	12.7-µg/ft.²	200-µg/ft.²
A119	ROOM 33 – WEST HALL – MIDDLE	178-µg/ft.²	200-µg/ft.²
A120	ROOM 33 – WEST HALL - TOP	23.9-µg/ft.²	200-µg/ft.²

On August 16, 2013, additional surface sampling was conducted, by a MEM representative, throughout the entire armory. Of the 138-surface samples that were collected, none of the samples collected from various floor, wall and ceiling surfaces within the IFR and the adjoining room exceeded the appropriate action level set forth by the ARNG and ANG with regard to the IFR. However, 28-surface samples collected from floor surfaces outside the IFR exceeded the EPA post-abatement clearance level, with regard to floor surfaces, of 40-µg/ft^2.

TABLE III: 08-16-13 – LEAD-CONFIRMATION SAMPLING

LAB ID	SAMPLE IDENTIFICATION	ANALYTICAL RESULT	CLEARANCE LEVEL
B1	ROOM 3 - EAST	13.6-µg/ft^2	40-µg/ft^2
B2	**ROOM 4 – NW**	**43.7-µg/ft.^{2}**	**40-µg/ft.^{2}**
B3	ROOM 4 - SW	32.7-µg/ft^2	40-µg/ft^2
B4	**ROOM 4 – EAST**	**51.9-µg/ft.^{2}**	**40-µg/ft.^{2}**
B5	**ROOM 5 - NW**	**56.9-µg/ft^2**	**40-µg/ft^2**
B6	ROOM 5 – EAST	20.2-µg/ft.^{2}	40-µg/ft.^{2}
B7	ROOM 5 - SOUTH	24.3-µg/ft^2	40-µg/ft^2
B8	ROOM 6 – NORTH	14.7-µg/ft.^{2}	40-µg/ft.^{2}
B9	ROOM 6 - EAST	<9.00-µg/ft^2	40-µg/ft^2
B10	ROOM 6 – SW	<9.00-µg/ft.^{2}	40-µg/ft.^{2}
B11	ROOM 7 - NE	13.0-µg/ft^2	40-µg/ft^2
B12	**ROOM 7 – WEST**	**44.5-µg/ft.^{2}**	**40-µg/ft.^{2}**
B13	ROOM 7 – SOUTH	11.5-µg/ft^2	40-µg/ft^2
B14	ROOM 8 – NE	17.2-µg/ft.^{2}	40-µg/ft.^{2}
B15	ROOM 8 – WEST	11.3-µg/ft^2	40-µg/ft^2
B16	ROOM 8 – SOUTH	9.25-µg/ft.^{2}	40-µg/ft.^{2}
B17	ROOM 9 – NORTH	20.9-µg/ft^2	40-µg/ft^2
B18	ROOM 11 – NW - FLOOR	<9.00-µg/ft.^{2}	40-µg/ft.^{2}
B19	ROOM 11 - EAST	<9.00-µg/ft^2	40-µg/ft^2
B20	ROOM 11 – SW	<9.00-µg/ft.^{2}	40-µg/ft.^{2}
B21	ROOM 13 – EAST	17.9-µg/ft^2	40-µg/ft^2
B22	**ROOM 14 – NW**	**75.2-µg/ft.^{2}**	**40-µg/ft.^{2}**
B23	ROOM 14 - EAST	36.2-µg/ft^2	40-µg/ft^2
B24	**ROOM 14 – SOUTH**	**86.8-µg/ft.^{2}**	**40-µg/ft.^{2}**
B25	ROOM 15 – NORTH	38.6-µg/ft^2	40-µg/ft^2
B26	**ROOM 15 – CENTER**	**40.6-µg/ft.^{2}**	**40-µg/ft.^{2}**
B27	ROOM 15 – SOUTH	33.0-µg/ft^2	40-µg/ft^2
B28	**ROOM 16 – NORTH**	**86.9-µg/ft.^{2}**	**40-µg/ft.^{2}**
B29	**ROOM 16 – CENTER**	**112-µg/ft^2**	**40-µg/ft^2**
B30	**ROOM 16 – SOUTH**	**95.1-µg/ft.^{2}**	**40-µg/ft.^{2}**
B31	**ROOM 17 - NORTH**	**85.8-µg/ft^2**	**40-µg/ft^2**
B32	**ROOM 17 – CENTER**	**49.5-µg/ft.^{2}**	**40-µg/ft.^{2}**
B33	ROOM 17 – SOUTH	35.6-µg/ft^2	40-µg/ft^2
B34	ROOM 18 – SW	14.2-µg/ft.^{2}	40-µg/ft.^{2}
B35	**ROOM 19 - NW**	**81.2-µg/ft.^{2}**	**40-µg/ft^2**
B36	**ROOM 19 – EAST**	**62.6-µg/ft.^{2}**	**40-µg/ft.^{2}**
B37	ROOM 19 - SOUTH	30.2-µg/ft^2	40-µg/ft^2
B38	**ROOM 20 – NW**	**44.6-µg/ft.^{2}**	**40-µg/ft.^{2}**
B39	ROOM 20 - EAST	22.7-µg/ft^2	40-µg/ft^2
B40	**ROOM 22 – NW**	**50.5-µg/ft.^{2}**	**40-µg/ft.^{2}**
B41	**ROOM 20 – SOUTH**	**45.9-µg/ft^2**	**40-µg/ft^2**
B42	ROOM 21 – NW	9.24-µg/ft.^{2}	40-µg/ft.^{2}
B43	ROOM 21 – EAST	15.1-µg/ft^2	40-µg/ft^2
B44	ROOM 21 – SW	17.8-µg/ft.^{2}	40-µg/ft.^{2}
B45	**ROOM 22 – NORTH**	**116-µg/ft^2**	**40-µg/ft^2**
B46	ROOM 22 – SE	12.8-µg/ft.^{2}	40-µg/ft.^{2}
B47	**ROOM 24 - NORTH**	**62.7-µg/ft^2**	**40-µg/ft^2**
B48	ROOM 24 – CENTER	24.5-µg/ft.^{2}	40-µg/ft.^{2}
B49	ROOM 24 – SOUTH	29.8-µg/ft^2	40-µg/ft^2
B50	ROOM 25 – SW	<9.00-µg/ft.^{2}	40-µg/ft.^{2}
B51	**ROOM 26 – NW**	**94.9-µg/ft^2**	**40-µg/ft^2**
B52	ROOM 26 – EAST	30.7-µg/ft.^{2}	40-µg/ft.^{2}
B53	**ROOM 26 – SOUTH**	**45.2-µg/ft^2**	**40-µg/ft^2**
B54	ROOM 27 – NORTH	16.9-µg/ft.^{2}	40-µg/ft.^{2}
B55	ROOM 27 – CENTER	30.2-µg/ft^2	40-µg/ft^2
B56	**ROOM 27 – SOUTH**	**66.4-µg/ft.^{2}**	**40-µg/ft.^{2}**

LAB ID	SAMPLE IDENTIFICATION	ANALYTICAL RESULT	CLEARANCE LEVEL
B57	ROOM 28 – NORTH	482-µg/ft.²	40-µg/ft.²
B58	ROOM 28 – WEST	96.4-µg/ft.²	40-µg/ft.²
B59	ROOM 28 – SE	179-µg/ft.²	40-µg/ft.²
B60	ROOM 29 – EAST	50.4-µg/ft.²	40-µg/ft.²
B61	ROOM 29 – NW	222-µg/ft.²	40-µg/ft.²
B62	ROOM 29 – SW	198-µg/ft.²	40-µg/ft.²
B63	ROOM 30 – NW	18.1-µg/ft.²	40-µg/ft.²
B64	ROOM 31 – SW	22.0-µg/ft.²	40-µg/ft.²
B65	ROOM 31 – NORTH	9.97-µg/ft.²	40-µg/ft.²
B66	ROOM 31 – EAST	23.1-µg/ft.²	40-µg/ft.²
B67	ROOM 32 – NW	28.1-µg/ft.²	40-µg/ft.²
B68	ROOM 32 – EAST	31.1-µg/ft.²	40-µg/ft.²
B69	ROOM 32 – SOUTH	27.5-µg/ft.²	40-µg/ft.²
B70	ROOM 34 – NORTH	18.2-µg/ft.²	40-µg/ft.²
B71	ROOM 34 – CENTER	27.5-µg/ft.²	40-µg/ft.²
B72	ROOM 34 – SOUTH	25.0-µg/ft.²	40-µg/ft.²
B73	ROOM 1 – EAST - NW	13.0-µg/ft.²	40-µg/ft.²
B74	ROOM 1 – EAST – EAST	9.74-µg/ft.²	40-µg/ft.²
B75	ROOM 1 – EAST - SW	13.7-µg/ft.²	40-µg/ft.²
B76	ROOM 12 – NORTH FLOOR – NW	<9.00-µg/ft.²	40-µg/ft.²
B77	ROOM 12 – NORTH FLOOR – EAST	<9.00-µg/ft.²	40-µg/ft.²
B78	ROOM 12 – NORTH FLOOR – SW	<9.00-µg/ft.²	40-µg/ft.²
B79	ROOM 12 – NORTH WALL -BOTTOM	<9.00-µg/ft.²	40-µg/ft.²
B80	ROOM 12 – NORTH WALL – MIDDLE	<9.00-µg/ft.²	40-µg/ft.²
B81	ROOM 12 – NORTH WALL – TOP	<9.00-µg/ft.²	40-µg/ft.²
B82	ROOM 12 – NE WALL – BOTTOM	<9.00-µg/ft.²	40-µg/ft.²
B83	ROOM 12 – NE WALL – MIDDLE	<9.00-µg/ft.²	40-µg/ft.²
B84	ROOM 12 – NE WALL – TOP	<9.00-µg/ft.²	40-µg/ft.²
B85	ROOM 12 – NW WALL – BOTTOM	<9.00-µg/ft.²	40-µg/ft.²
B86	ROOM 12 – NW WALL – MIDDLE	<9.00-µg/ft.²	40-µg/ft.²
B87	ROOM 12 – NW WALL – TOP	<9.00-µg/ft.²	40-µg/ft.²
B88	ROOM 12 – SOUTH FLOOR – NE	<9.00-µg/ft.²	40-µg/ft.²
B89	ROOM 12 – SOUTH FLOOR - CENTER	<9.00-µg/ft.²	40-µg/ft.²
B90	ROOM 12 – SOUTH FLOOR – SW	<9.00-µg/ft.²	40-µg/ft.²
B91	ROOM 12 – SE WALL- BOTTOM	<9.00-µg/ft.²	40-µg/ft.²
B92	ROOM 12 – SE WALL- MIDDLE	<9.00-µg/ft.²	40-µg/ft.²
B93	ROOM 12 – SE WALL- TOP	<9.00-µg/ft.²	40-µg/ft.²
B94	ROOM 12 – SOUTH WALL- BOTTOM	<9.00-µg/ft.²	40-µg/ft.²
B95	ROOM 12 – SOUTH WALL- MIDDLE	<9.00-µg/ft.²	40-µg/ft.²
B96	ROOM 12 – SOUTH WALL- TOP	<9.00-µg/ft.²	40-µg/ft.²
B97	ROOM 12 – SW WALL - BOTTOM	<9.00-µg/ft.²	40-µg/ft.²
B98	ROOM 12 – SW WALL- MIDDLE	<9.00-µg/ft.²	40-µg/ft.²
B99	ROOM 12 – SW WALL- TOP	<9.00-µg/ft.²	40-µg/ft.²
B100	ROOM 12 – NORTH CEILING - NE	<9.00-µg/ft.²	40-µg/ft.²
B101	ROOM 12 – NORTH CEILING - CENTER	<9.00-µg/ft.²	40-µg/ft.²
B102	ROOM 12 – NORTH CEILING - SW	<9.00-µg/ft.²	40-µg/ft.²
B103	ROOM 12 – SOUTH CEILING - NE	<9.00-µg/ft.²	40-µg/ft.²
B104	ROOM 12 – SOUTH CEILING – CENTER	<9.00-µg/ft.²	40-µg/ft.²
B105	ROOM 12 – SOUTH CEILING – SW	<9.00-µg/ft.²	40-µg/ft.²
B106	ROOM 33 – FLOOR – NW	10.5-µg/ft.²	40-µg/ft.²
B107	ROOM 33 – FLOOR – EAST	<9.00-µg/ft.²	40-µg/ft.²
B108	ROOM 33 – FLOOR – SOUTH	9.79-µg/ft.²	40-µg/ft.²
B109	ROOM 33 – NORTH WALL – BOTTOM	<9.00-µg/ft.²	40-µg/ft.²
B110	ROOM 33 – NORTH WALL – MIDDLE	<9.00-µg/ft.²	40-µg/ft.²
B111	ROOM 33 – NORTH WALL – TOP	<9.00-µg/ft.²	40-µg/ft.²
B112	ROOM 33 – EAST WALL – BOTTOM	<9.00-µg/ft.²	40-µg/ft.²
B113	ROOM 33 – EAST WALL – MIDDLE	<9.00-µg/ft.²	40-µg/ft.²
B114	ROOM 33 – EAST WALL – TOP	<9.00-µg/ft.²	40-µg/ft.²
B115	ROOM 33 – SOUTH WALL – BOTTOM	<9.00-µg/ft.²	40-µg/ft.²
B116	ROOM 33 – SOUTH WALL – MIDDLE	<9.00-µg/ft.²	40-µg/ft.²
B117	ROOM 33 – SOUTH WALL – TOP	<9.00-µg/ft.²	40-µg/ft.²
B118	ROOM 33 – WEST WALL - BOTTOM	<9.00-µg/ft.²	40-µg/ft.²
B119	ROOM 33 – WEST WALL – MIDDLE	<9.00-µg/ft.²	40-µg/ft.²
B120	ROOM 33 – WEST WALL - TOP	<9.00-µg/ft.²	40-µg/ft.²
B121	ROOM 33 – CEILING - NW	<9.00-µg/ft.²	40-µg/ft.²
B122	ROOM 33 – CEILING – CENTER	<9.00-µg/ft.²	40-µg/ft.²

LAB ID	SAMPLE IDENTIFICATION	ANALYTICAL RESULT	CLEARANCE LEVEL
B123	ROOM 33 - CEILING - SE	<9.00-µg/ft.²	40-µg/ft.²
B124	ROOM 11 – NORTH WALL - BOTTOM	<9.00-µg/ft.²	40-µg/ft.²
B125	ROOM 11 – NORTH WALL – MIDDLE	<9.00-µg/ft.²	40-µg/ft.²
B126	ROOM 11 – NORTH WALL - TOP	<9.00-µg/ft.²	40-µg/ft.²
B127	ROOM 11 – EAST WALL - BOTTOM	<9.00-µg/ft.²	40-µg/ft.²
B128	ROOM 11 – EAST WALL – MIDDLE	<9.00-µg/ft.²	40-µg/ft.²
B129	ROOM 11 – EAST WALL - TOP	<9.00-µg/ft.²	40-µg/ft.²
B130	ROOM 11 – SOUTH WALL - BOTTOM	<9.00-µg/ft.²	40-µg/ft.²
B131	ROOM 11 – SOUTH WALL – MIDDLE	<9.00-µg/ft.²	40-µg/ft.²
B132	ROOM 11 – SOUTH WALL – TOP	<9.00-µg/ft.²	40-µg/ft.²
B133	ROOM 11 – WEST WALL - BOTTOM	<9.00-µg/ft.²	40-µg/ft.²
B134	ROOM 11 – WEST WALL - MIDDLE	<9.00-µg/ft.²	40-µg/ft.²
B135	ROOM 11 – WEST WALL - TOP	<9.00-µg/ft.²	40-µg/ft.²
B136	ROOM 11 – CEILING – NW	<9.00-µg/ft.²	40-µg/ft.²
B137	ROOM 11 – CEILING - CENTER	<9.00-µg/ft.²	40-µg/ft.²
B138	ROOM 11 – CEILING – SE	<9.00-µg/ft.²	40-µg/ft.²

Following additional abatement activities, more surface sampling was carried out on October 3, 2013, by a MEM representative. Of the 28-surface samples collected from floor surfaces outside the IFR, 10-surface samples exceeded the applicable clearance level of 40-µg/ft^2.

TABLE IV: 10-03-13 – LEAD-CONFIRMATION SAMPLING

LAB ID	SAMPLE IDENTIFICATION	ANALYTICAL RESULT	CLEARANCE LEVEL
C1	ROOM 4 – NW	10.2-µg/ft.^{2}	40-µg/ft.^{2}
C2	ROOM 4 – EAST	13.7-µg/ft.^{2}	40-µg/ft.^{2}
C3	ROOM 5 – NW	<9.00-µg/ft.^{2}	40-µg/ft.^{2}
C4	ROOM 7 – WEST	15.4-µg/ft.^{2}	40-µg/ft.^{2}
C5	ROOM 14 – NW	14.0-µg/ft.^{2}	40-µg/ft.^{2}
C6	ROOM 14 – SOUTH	15.8-µg/ft.^{2}	40-µg/ft.^{2}
C7	ROOM 15 – CENTER	19.0-µg/ft.^{2}	40-µg/ft.^{2}
C8	**ROOM 16 – NORTH**	**59.7-µg/ft.^{2}**	**40-µg/ft.^{2}**
C9	**ROOM 16 – CENTER**	**83.2-µg/ft.^{2}**	**40-µg/ft.^{2}**
C10	**ROOM 16 – SOUTH**	**149-µg/ft.^{2}**	**40-µg/ft.^{2}**
C11	**ROOM 17 – NORTH**	**136-µg/ft.^{2}**	**40-µg/ft.^{2}**
C12	ROOM 17 – CENTER	33.5-µg/ft.^{2}	40-µg/ft.^{2}
C13	ROOM 19 – NW	11.5-µg/ft.^{2}	40-µg/ft.^{2}
C14	**ROOM 19 – EAST**	**53.4-µg/ft.^{2}**	**40-µg/ft.^{2}**
C15	ROOM 20 – NW	31.1-µg/ft.^{2}	40-µg/ft.^{2}
C16	ROOM 20 – SOUTH	<9.00-µg/ft.^{2}	40-µg/ft.^{2}
C17	ROOM 22 – NW	<9.00-µg/ft.^{2}	40-µg/ft.^{2}
C18	ROOM 24 – NORTH	12.8-µg/ft.^{2}	40-µg/ft.^{2}
C19	ROOM 25 – NW	<9.00-µg/ft.^{2}	40-µg/ft.^{2}
C20	ROOM 26 – SOUTH	<9.00-µg/ft.^{2}	40-µg/ft.^{2}
C21	ROOM 27 – SOUTH	12.6-µg/ft.^{2}	40-µg/ft.^{2}
C22	**ROOM 28 – NORTH**	**57.6-µg/ft.^{2}**	**40-µg/ft.^{2}**
C23	**ROOM 28 – SW**	**91.7-µg/ft.^{2}**	**40-µg/ft.^{2}**
C24	ROOM 28 – EAST	36.6-µg/ft.^{2}	40-µg/ft.^{2}
C25	**ROOM 29 – EAST**	**43.1-µg/ft.^{2}**	**40-µg/ft.^{2}**
C26	**ROOM 29 – NW**	**61.6-µg/ft.^{2}**	**40-µg/ft.^{2}**
C27	**ROOM 29 – SW**	**312-µg/ft.^{2}**	**40-µg/ft.^{2}**
C28	ROOM 29 – CENTER	<9.00-µg/ft.^{2}	40-µg/ft.^{2}

The remaining lead-confirmation sampling was performed on October 10, 2013 by an ODEQ representative, following additional abatement activities and the application of sealant to rooms 16, 17, 19, 28 & 29. All of the samples collected from floor surfaces outside the IFR were below the respective clearance level of 40-µg/ft^2.

TABLE V: 10-10-13 – LEAD-CONFIRMATION SAMPLING

LAB ID	SAMPLE IDENTIFICATION	ANALYTICAL RESULT	CLEARANCE LEVEL
D1	ROOM 16 WIPE	<9.00-µg/ft.^{2}	40-µg/ft.^{2}
D2	ROOM 16 WIPE	<9.00-µg/ft.^{2}	40-µg/ft.^{2}
D3	ROOM 16 WIPE	<9.00-µg/ft.^{2}	40-µg/ft.^{2}
D4	ROOM 17 WIPE	<9.00-µg/ft.^{2}	40-µg/ft.^{2}
D5	ROOM 19 WIPE	<9.00-µg/ft.^{2}	40-µg/ft.^{2}
D6	ROOM 28 WIPE	<9.00-µg/ft.^{2}	40-µg/ft.^{2}
D7	ROOM 28 WIPE	<9.00-µg/ft.^{2}	40-µg/ft.^{2}
D8	ROOM 29 WIPE	18.4-µg/ft.^{2}	40-µg/ft.^{2}
D9	ROOM 29 WIPE	<9.00-µg/ft.^{2}	40-µg/ft.^{2}
D10	ROOM 29 WIPE	<9.00-µg/ft.^{2}	40-µg/ft.^{2}

SAMPLING METHODOLOGY & CLEARANCE REQUIREMENTS

The sampling collection process took place in accordance with the regulations proposed by the EPA in 40 Code of Federal Regulations (CFR) part 745. Samples of settled dust were collected by selecting a specific surface area and then by placing a template of a known dimension firmly against the surface to be sampled. Next, the area within the template was wiped in a particular pattern utilizing a certain wipe. The wipe was then placed in an approved container for transportation. All sample containers and sample locations were labeled and plotted on the associated Chain of Custody and floor plan, respectively. Lastly, the samples were submitted for analysis to an accredited laboratory.

As such, the EPA[1]states that lead concentrations in dust of $\leq$40-µg/ft^2 with regard to common floor surfaces and collected following remediation activities and prior to the application of a sealant are acceptable. In addition to this, the EPA advises that lead concentrations in dust of $\leq$250-ug/ft^2 with regard to windowsills and collected post-abatement/pre-sealant are acceptable. To conclude, the Naval Facilities Engineering Command (NAVFAC)[2] states that dust collected post abatement/pre-sealant from any horizontal surface relative to an indoor-firing-range (IFR) with lead concentrations $\leq$200-µg/ft^{2}are acceptable.

[1]*Requirements for Lead-based Paint Activities in Target Housing and Child-occupied Facilities* (40 Code of Federal Regulations [CFR] Part 745)
[2]*NAVFAC Message R 160647 Z APR 98*

APPENDIX

CHAIN OF CUSTODY FORMS& ANALYTICAL DATA

FLOOR PLAN DIAGRAM

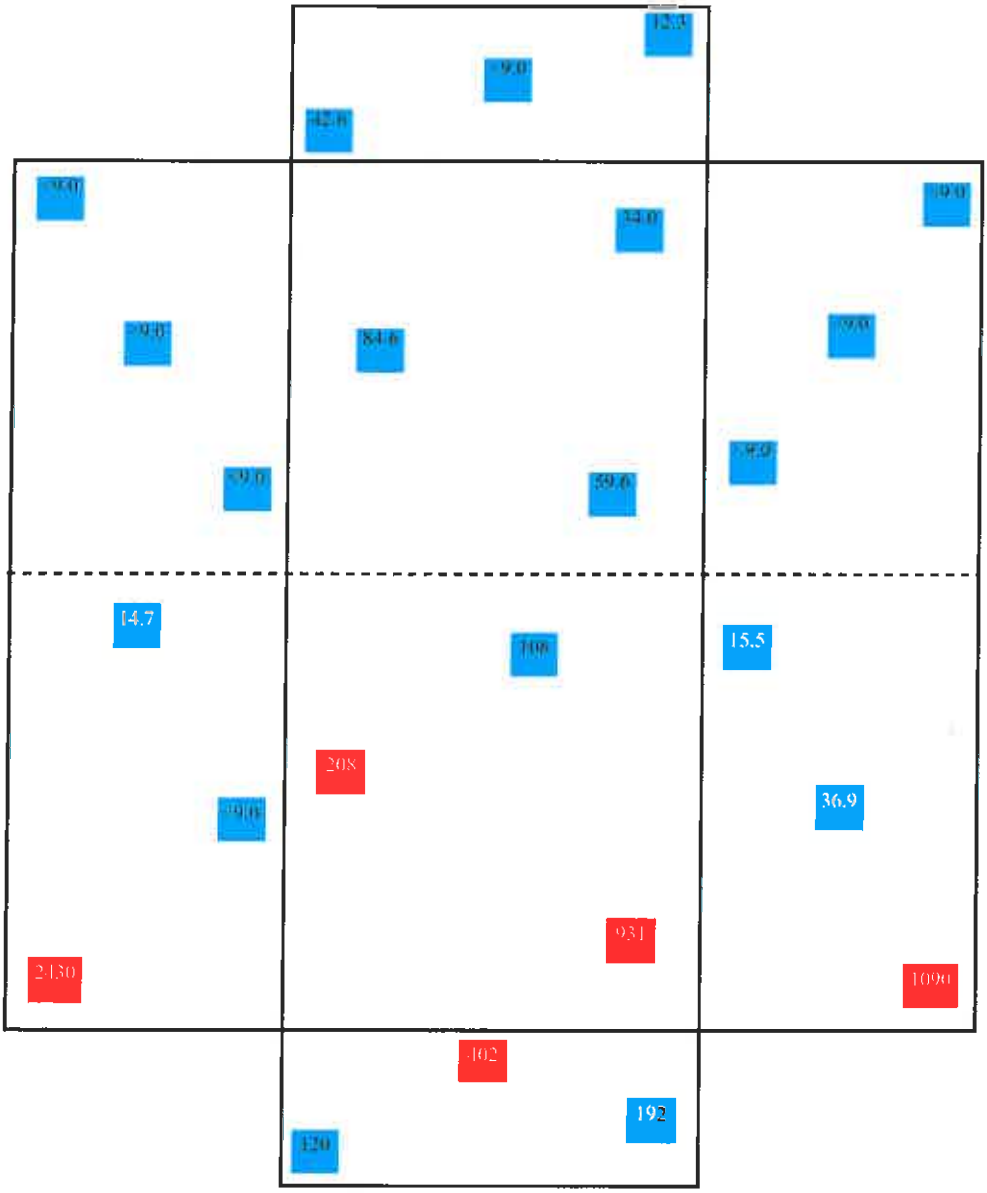
CERTIFICATES/LICENSURE

7/29/2013

Wetunka Armory

Firing Range Floor & Walls

Room 12



N

Acceptable Clearance Level Sampling Locations

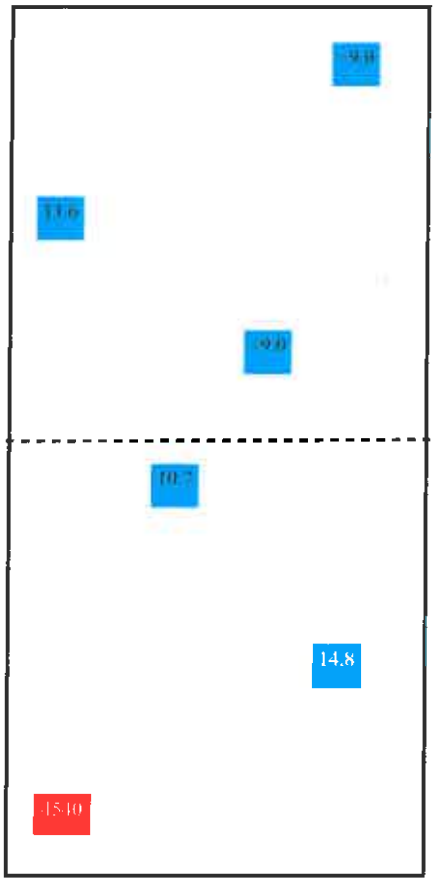
Exceeded Clearance Level Sampling Locations

7/29/2013

Wetumka Armory

Firing Range Ceiling

Room 12



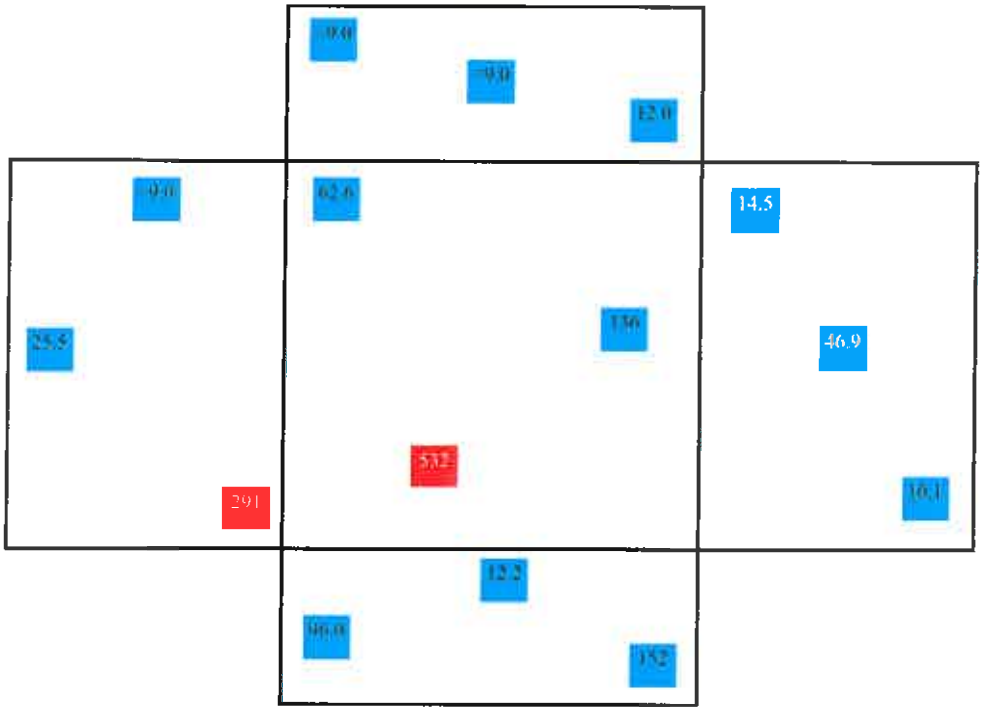
N

Acceptable Clearance Level Sampling Locations

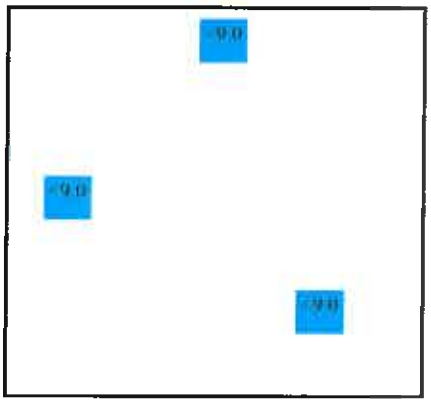
Exceeded Clearance Level Sampling Locations

7/29/2013

Wetunka Armory
Firing Range Side Room Floor & Walls
Room 33



Wetunka Armory
Firing Range Side Room Ceiling



N

Acceptable Clearance Level Sampling Locations

Exceeded Clearance Level Sampling Locations

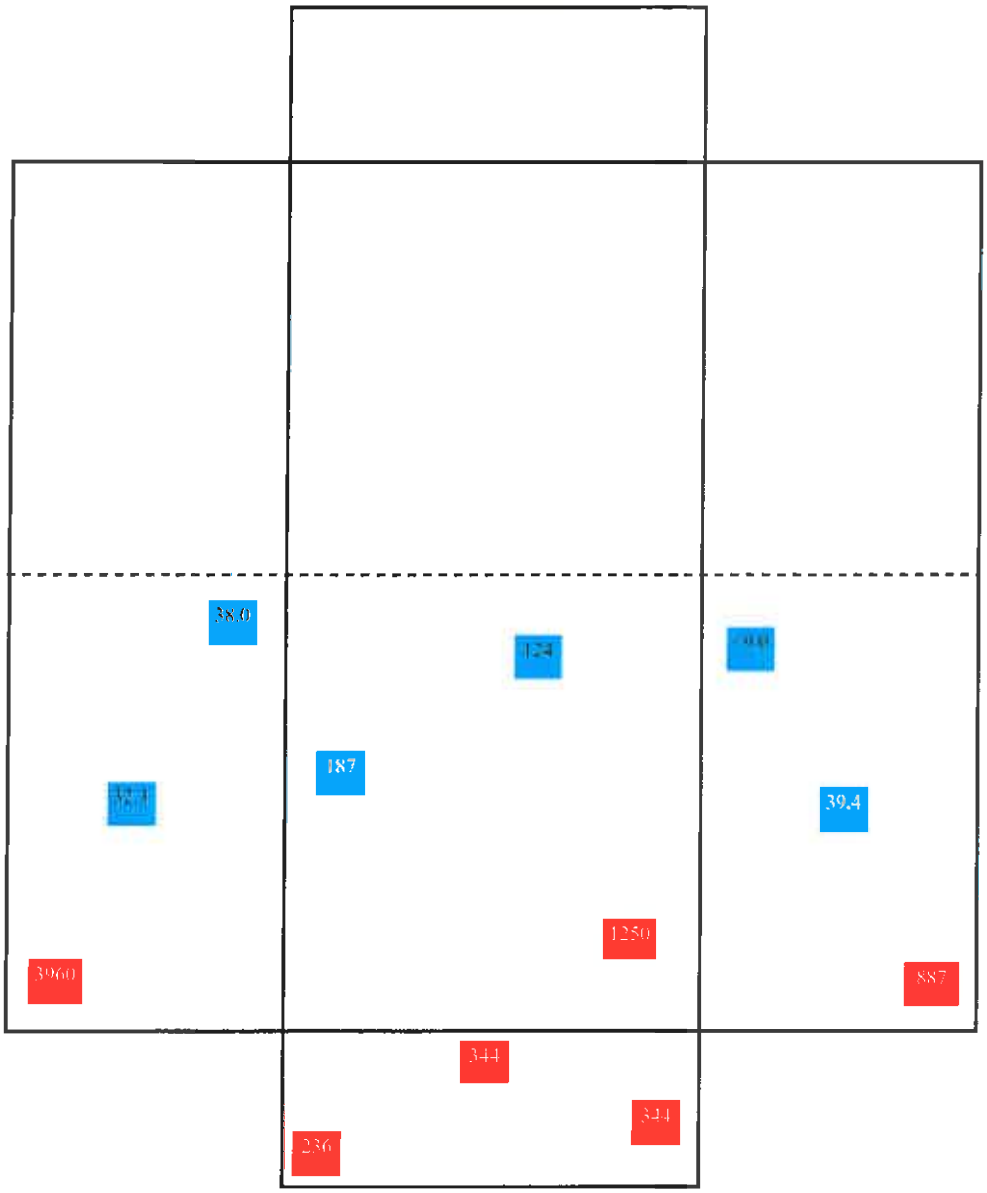
Wetumka Armory
8/2/2013

8/2/2013

Wetunka Armory

Firing Range Floor & Walls

Room 12

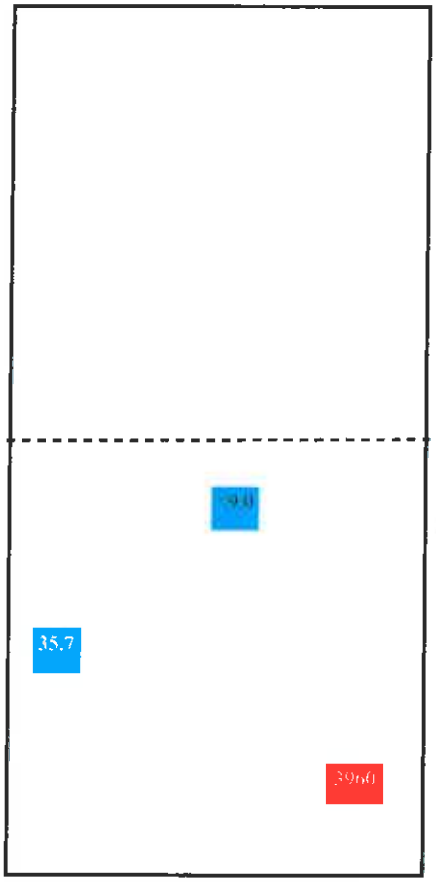


8/2/2013

Wetumka Armory

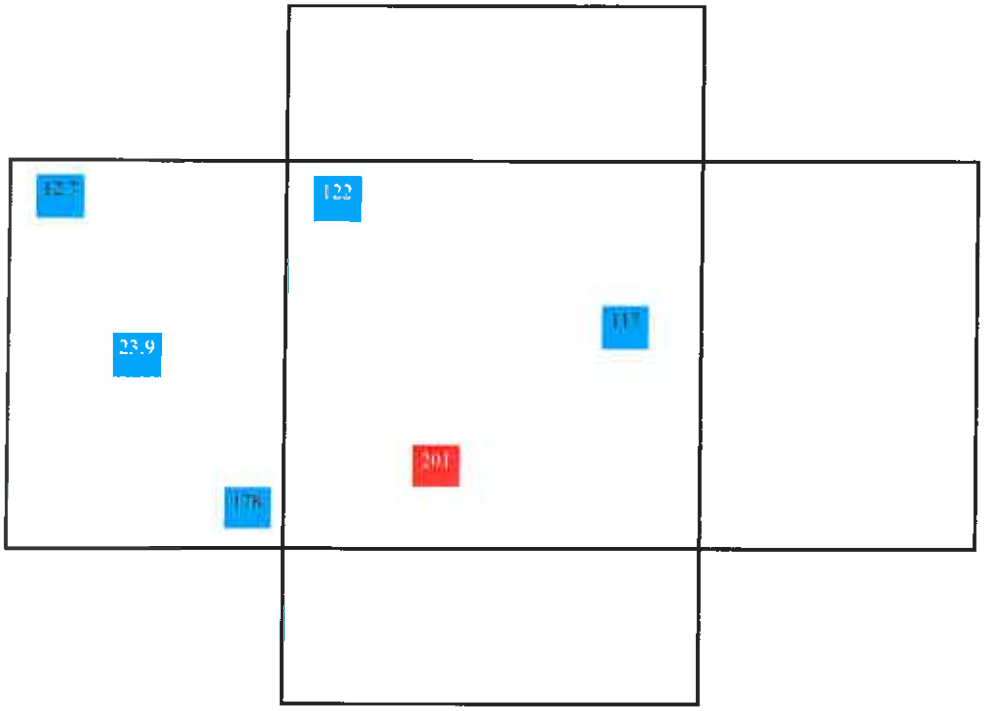
Firing Range Ceiling

Room 12

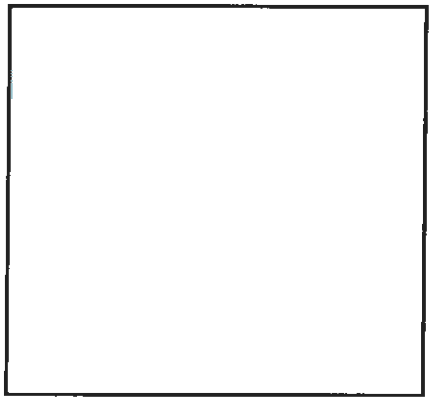


8/2/2013

Wetunka Armory
Firing Range Side Room Floor & Walls
Room 33



Wetunka Armory
Firing Range Side Room Ceiling



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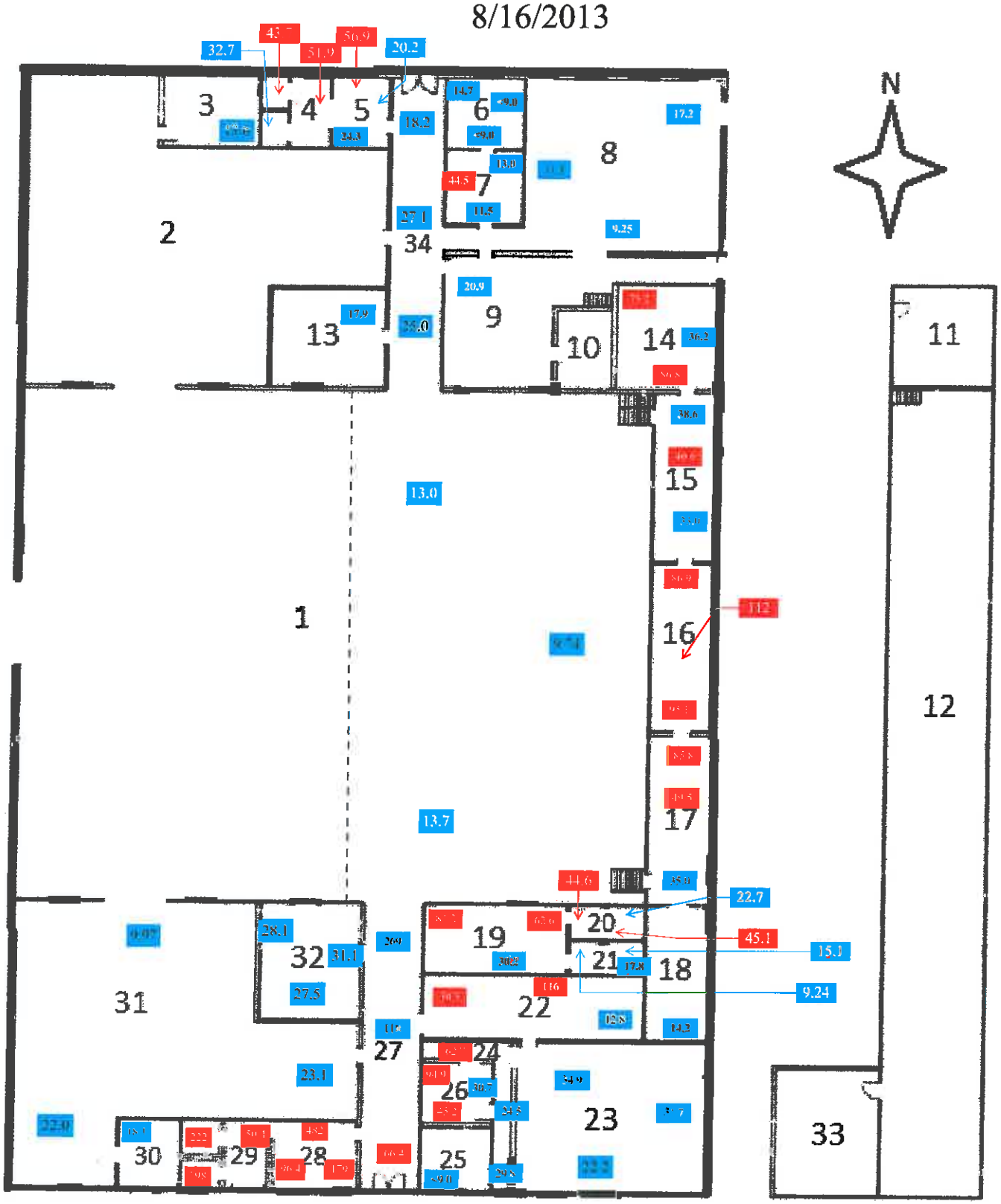
Acceptable Clearance Level Sampling Locations

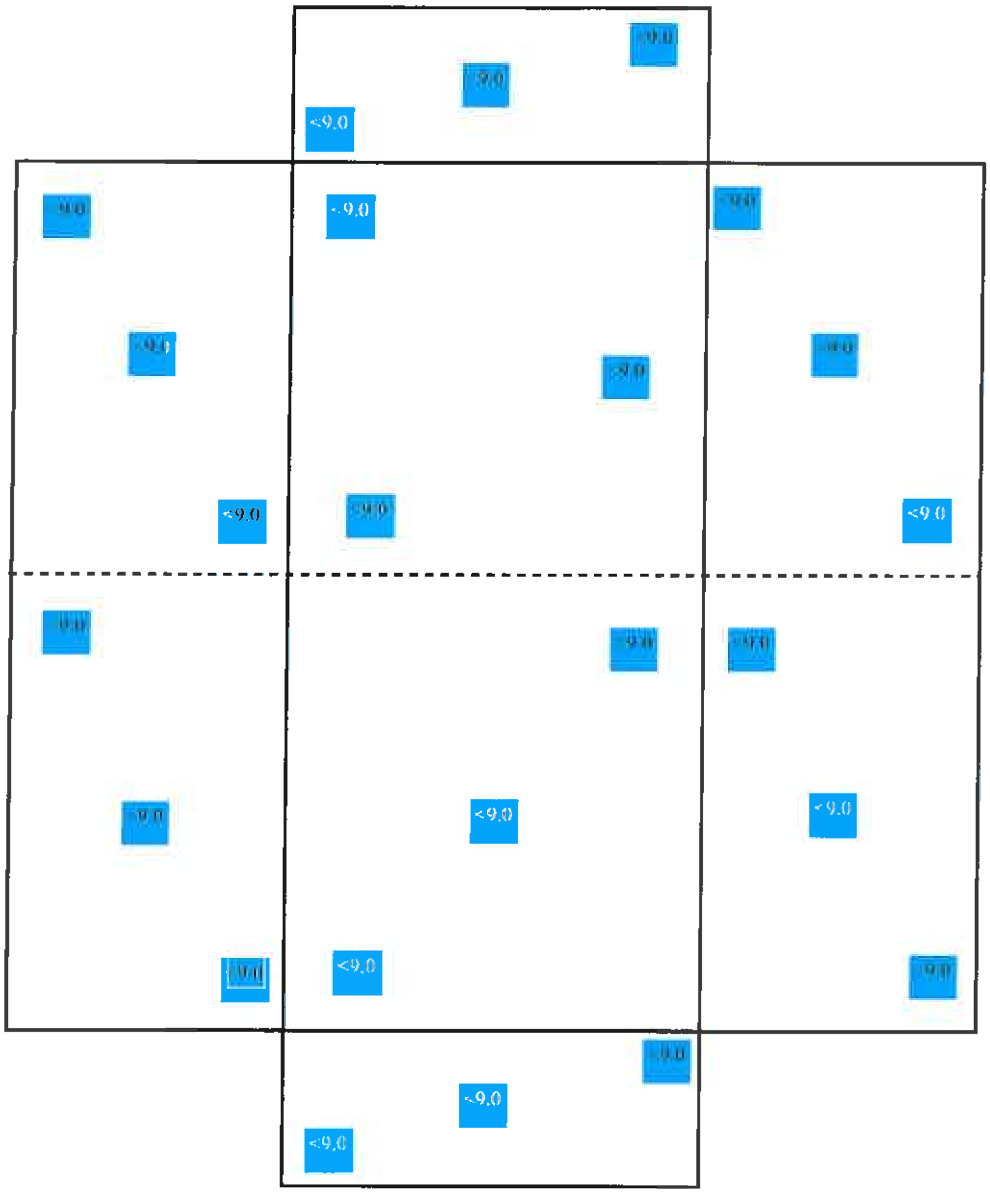
Exceeded Clearance Level Sampling Locations

Wetumka Armory
8/16/2013



8/16/2013

Wetunka Armory
Firing Range Floor & Walls
Room 12



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Acceptable Clearance Level Sampling Locations

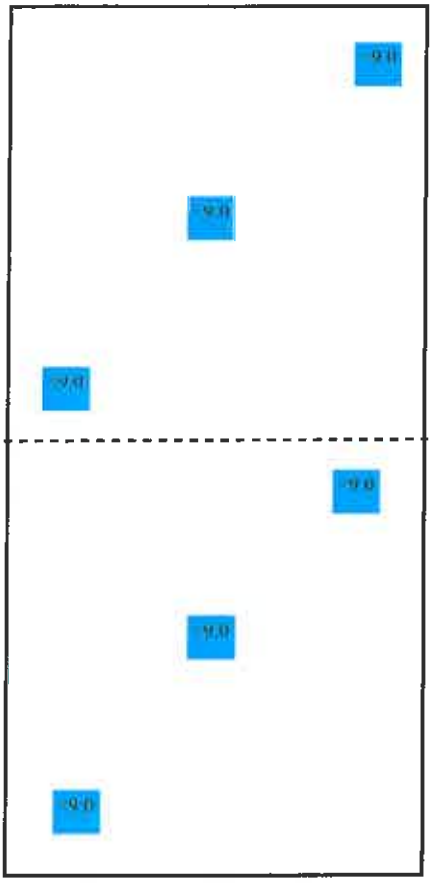
Exceeded Clearance Level Sampling Locations

8/16/2013

Wetumka Armory

Firing Range Ceiling

Room 12



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Acceptable Clearance Level Sampling Locations

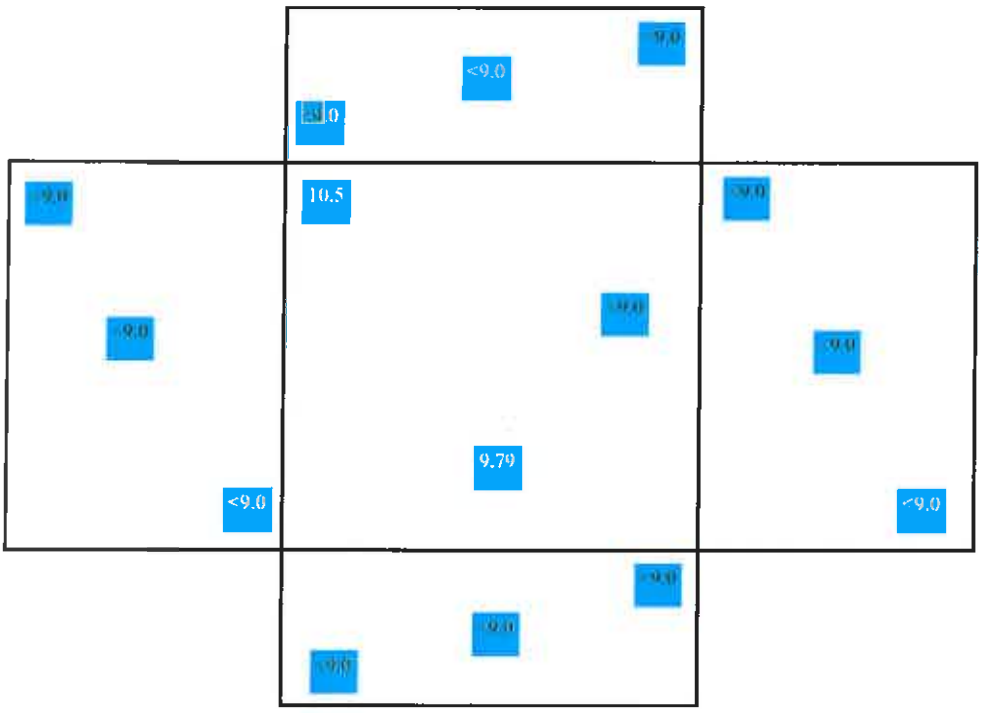
Exceeded Clearance Level Sampling Locations

8/16/2013

Wetunka Armory

Firing Range Side Room Floor & Walls

Room 33



Wetunka Armory

Firing Range Side Room Ceiling

N

Acceptable Clearance Level Sampling Locations

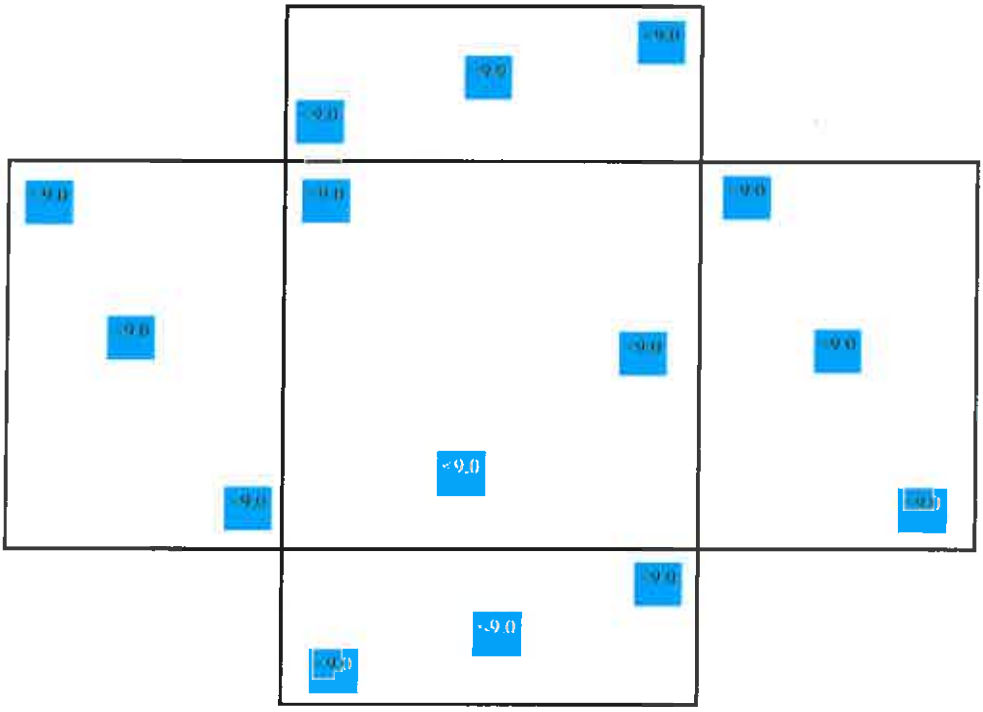
Exceeded Clearance Level Sampling Locations

8/16/2013

Wetunka Armory

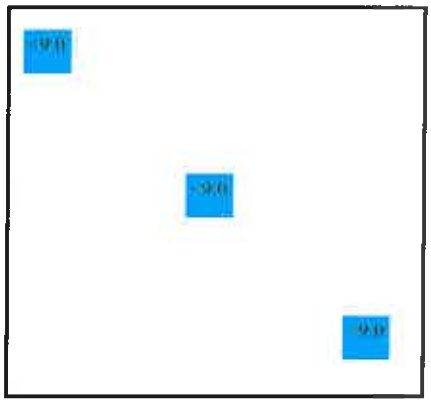
Firing Range Side Room Floor & Walls

Room 11



Wetunka Armory

Firing Range Side Room Ceiling



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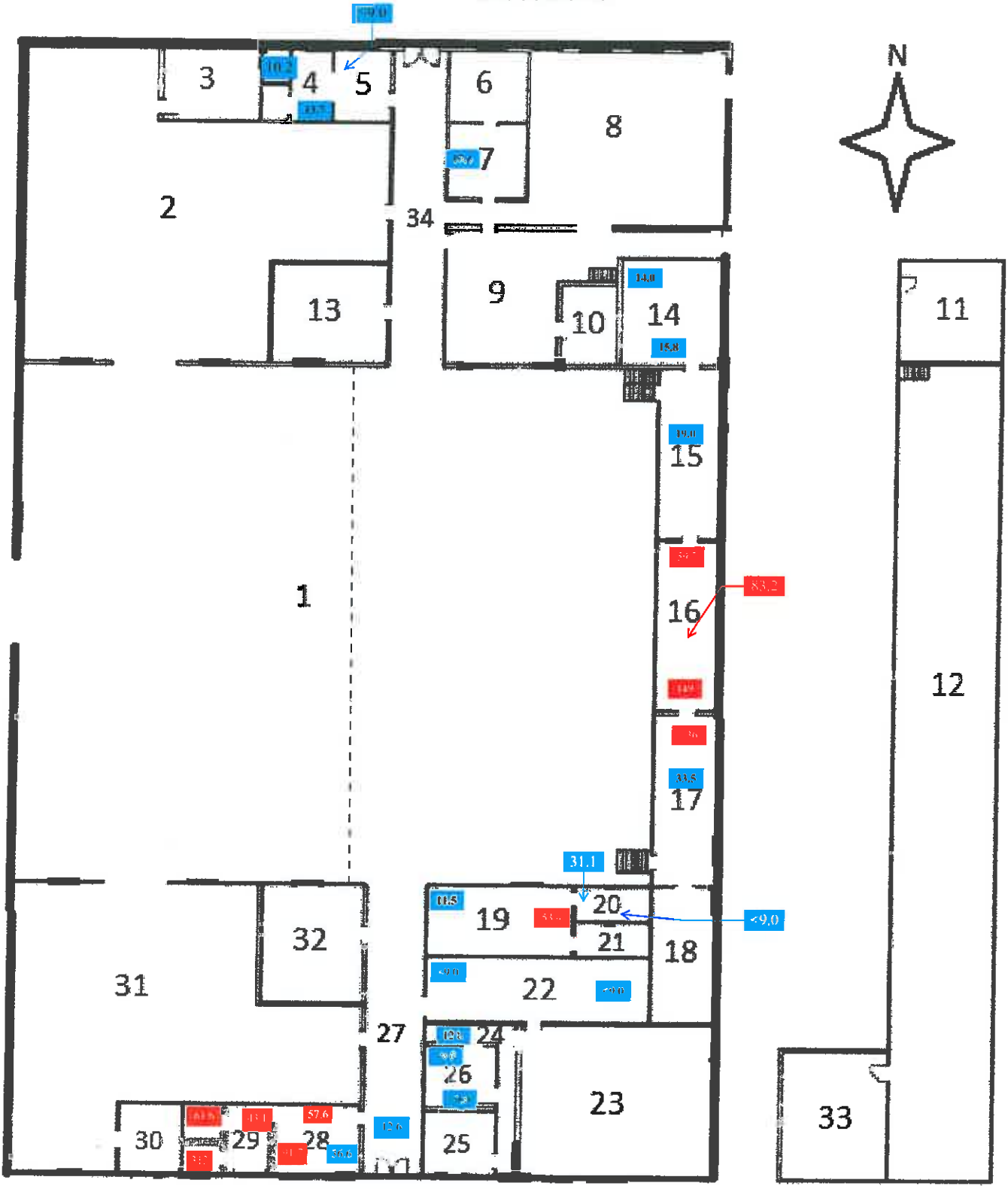
Acceptable Clearance Level Sampling Locations

Exceeded Clearance Level Sampling Locations

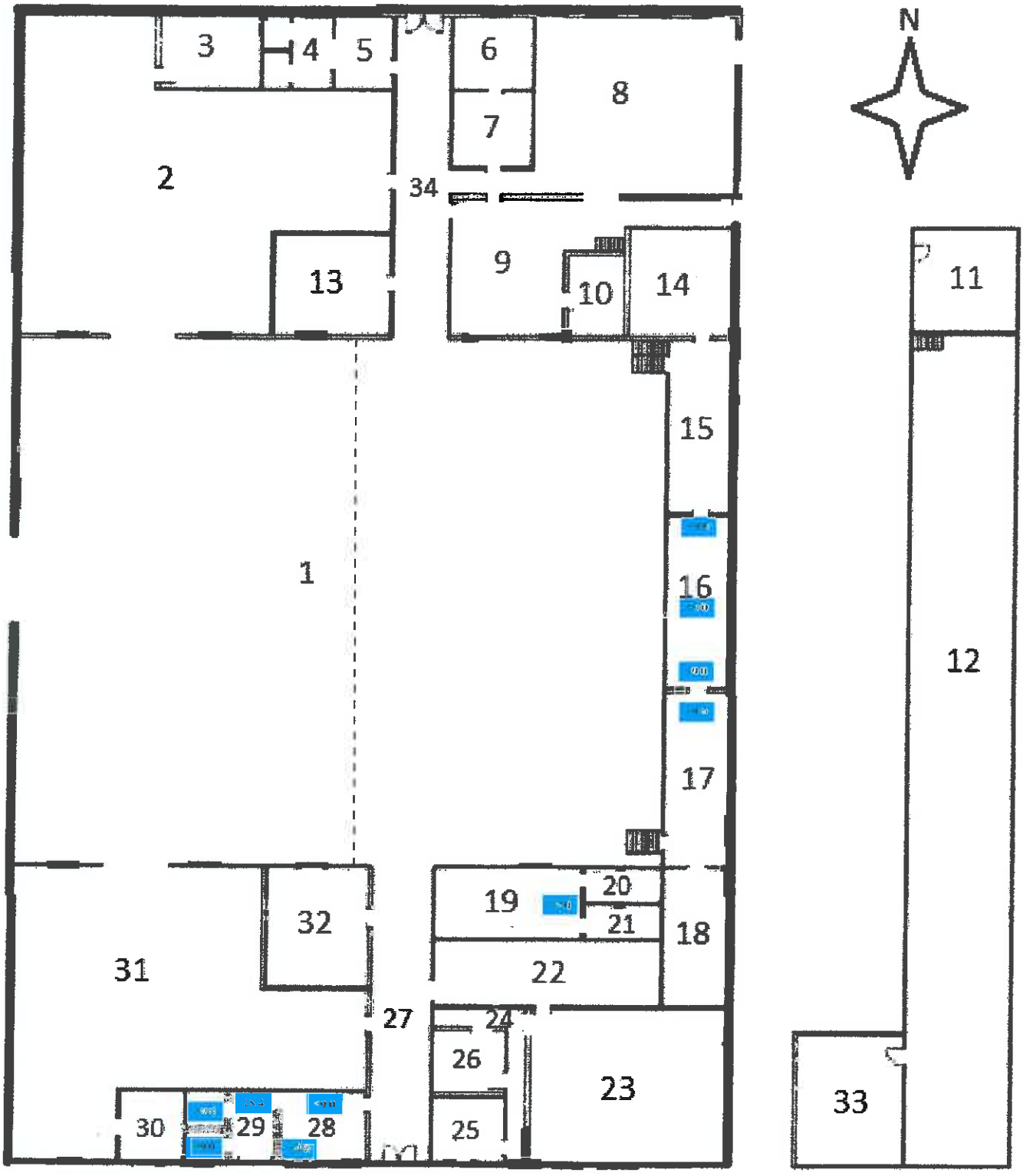
Wetumka Armory
10/3/2013



Acceptable Clearance Level Sampling Locations

Exceeded Clearance Level Sampling Locations

Wetumka Armory
10/10/2013



Acceptable Clearance Level Sampling Locations

Exceeded Clearance Level Sampling Locations