

**Former National Guard Armory  
Oklahoma City SW 44th Street, Oklahoma**

**Remediation Final Report**



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



# The Oklahoma Department of Environmental Quality (DEQ) is pleased to present the City of Oklahoma City with the Final Remediation Report for the former Oklahoma City SW 44th Street 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 Oklahoma City SW 44th Street 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 contractor's completed the following activities:

- Asbestos inspection, including:
  - Asbestos containing Thermal System Insulation (TSI), roof drain insulation, water tank insulation, mastic, and vibration isolation gaskets.
- Asbestos abatement, including:
  - Removal of TSI, roof drain insulation, water tank insulation, mastic, and vibration isolation gaskets.

## 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 containing LBP
  - Removal and replacement of doors containing LBP
- Lead contaminated sand removal, including:
  - Removal and replacement of concrete cap and lead contaminated sand in Drill Room.
- Lead dust abatement, including:
  - HEPA vacuuming and wet washing of floors in the building
- Proper disposal of associated waste



Additional copies of this report can be found at <http://www.deq.state.ok.us/lpdnew/scapIndex.htm> and DEQ Central Records at 707 N Robinson Oklahoma City, Oklahoma 73101.



This publication is issued by the Oklahoma Department of Environmental Quality authorized by Steven A. Thompson, Executive Director. Copies have been prepared at a cost of \$0.053 each. Copies have been deposited with the Publications Clearinghouse of the Oklahoma Department of Libraries. cmullins\LPDI\Armories\_SCAP\ArmoryReports\OklahomaCity44thStArmory\_9/2012.

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



## LEASE AGREEMENT

2831-101

23293

In the interest of the National Defense and in consideration of One Dollar (\$1.00) and other good and valuable considerations, The City of Oklahoma City, a municipal corporation, hereinafter known as Lessor, hereby leases and lets unto the State of Oklahoma, a sovereign State of the United States of America, hereinafter known as Lessee, a tract of land 600' East and West and 363' North and South in Moore's Heights Addition to Oklahoma City, Oklahoma County, Oklahoma, more particularly described as follows, to-wit:

All of Block 2, including the alley therein which has never been used by the public, 45th Street between Blocks 2 and 7 which has never been used by the public, and the North 13' of Lots 1 to 24 inclusive of Block 7, all in Moore's Heights Addition to Oklahoma City, Oklahoma County, Oklahoma, containing five (5) acres more or less.

for the purpose of erecting an armory thereon for the use of the Oklahoma National Guard and for such other purposes as may be permitted by Title 44, Oklahoma Statutes, 1961, Sec. 232.1 to 232.7.

To have and to hold for a term of 50 years from the date hereof, with an option in lessee to renew this lease for an additional period of 50 years at the end of the primary term hereof upon the same terms and conditions herein contained, excepting this option, and upon payment of \$1.00.

This lease is made and entered into upon the understanding that the property leased hereby and all improvements and fixtures placed thereon shall revert to the lessor at the end of the primary term if the above said option to renew is not exercised by lessee and at the end of the secondary term, if said option is exercised. It is further agreed and understood that at any time the State of Oklahoma abandons the above described property for armory purposes, the same shall revert to lessor together with all improvements and fixtures placed thereon.

WITNESS the hands and seals of the parties hereto on the 28

2831 PG 102

ATTEST:

Quinn Spier  
City Clerk

THE CITY OF OKLAHOMA CITY  
A Municipal Corporation

By James T. Dorech  
Mayor

ACCEPTED:

Mark Young  
Adjutant General

STATE OF OKLAHOMA

APPROVED:

Howard E. Green  
Governor

STATE OF OKLAHOMA )  
COUNTY OF OKLAHOMA ) SS:

Before me, the undersigned, a Notary Public in and for said County and State on this 26th day of November, 1962, personally appeared James N. Noyes, to me known to be the identical person who subscribed the name of the maker thereof to the foregoing instrument as its Mayor and acknowledged to me that he executed the same as his free and voluntary act and deed and as the free and voluntary act and deed of such municipal corporation, for the uses and purposes therein set forth.  
Given under my hand and seal of office the day and year last above written.



James N. Noyes  
Notary Public

My commission expires the 15th day of January, 1963

APPROVED as to form and legality this 27th day of November, 1962.

Charles E. Halley  
Charles E. Halley  
Assistant Municipal Counselor

APPROVED by the Board of Park Commissioners this 27th day of November, 1962:

Donald Meyer  
Secretary

W. J. Henderson  
Chairman

STATE OF OKLAHOMA, OKLAHOMA COUNTY, SS: THIS INSTRUMENT WAS FILED FOR RECORD ON PAGE 101  
THE 30 DAY OF Nov, 1962, AT 11:00 O'CLOCK AM AND DULY RECORDED.  
JOB MATTOX, COUNTY CLERK      FEE 1.00 BY Deputy



STATE OF OKLAHOMA  
MILITARY DEPARTMENT  
3501 MILITARY CIRCLE  
OKLAHOMA CITY, OKLAHOMA 73111-4398  
405-228-5000 DSN 628-5000

October 25, 2010

Mr. James D. Couch  
City Manager, Oklahoma City  
200 North Walker  
Oklahoma City, OK 73102

RE: 44<sup>th</sup> Street lease Termination

Dear Mr. Couch:

The Adjutant General of the Oklahoma National Guard has determined the 44<sup>th</sup> Street Armory to be excess to the needs of our organization, and is requesting to terminate this lease between the City of Oklahoma City and the Oklahoma Military Department.

The Oklahoma National Guard intends to vacate this facility no later than the 31<sup>st</sup> of December, 2010 and desires this date to be the expiration of the lease. After this date, the Oklahoma National Guard will no longer have utilities or property on the property.

The transfer of the 44<sup>th</sup> Street Armory from the Oklahoma National Guard to the City of Oklahoma City may require an environmental hazard assessment and remediation work to be undertaken by the Oklahoma Department of Environmental Quality (DEQ).

We have always had a great relationship with Oklahoma City and we look forward to continuing it as such. I will look for your response to this lease termination. I have enclosed a copy of this lease for your review.

If you require additional information on this matter, please contact our Real Property Attorney, Amber Corbin, at 405-228-5652.

Sincerely,

A handwritten signature in cursive script that reads "Lisa Smith".

Lisa Smith  
State Resource Manager  
Oklahoma Military Department

cc: Colonel (Ret) John S. Richard



20120929011340690  
09/28/2012 12:18:22 PM  
Bk:RE12043 Pg:1227 Pgs:3 NOTICE  
State of Oklahoma  
County of Oklahoma  
Oklahoma County Clerk  
Carolynn Gaudill

**NOTICE OF REMEDIATION  
FORMER 44<sup>th</sup> STREET ARMORY  
OKLAHOMA CITY, 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 April 29, 2011, indicated that there was asbestos, lead-based paint, and lead dust in the building.

**AFFECTED PROPERTY:** The Affected Property is the former 44th Street Armory located at 2222 SW 44th Street, Oklahoma County, Oklahoma City, Oklahoma, 73119.

The legal description is as follows:

All of Block 2, including the alley therein which has never been used by the public, 45<sup>th</sup> Street between Blocks 2 and 7 which has never been used by the public; and the North 13' of Lots 1 and 24 inclusive of Block 7; all in Moore's Heights Addition to Oklahoma City, Oklahoma County, Oklahoma, containing five (5) acres more or less

**REMEDY:** Remediation activities (Remedy) at the Affected Property included abatement of asbestos, lead-based paint and dust. The remedy was completed on August 8, 2012.

For more detailed information please refer to *Former National Guard 44<sup>th</sup> Street Armory, Oklahoma City, 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.

**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.

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.

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

9-26-12  
Date

ACKNOWLEDGMENT

STATE OF OKLAHOMA  
COUNTY OF OKLAHOMA

Before me, a Notary Public, in and for said County and State, on this 26<sup>th</sup> day of Sept, 20 12, personally appeared Steven 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:

7-17, 20 14  
#02011624

Mary Johnson  
Notary Public



20120928011340690  
Filing Fee: \$17.00  
Doc. Stamps: \$ .00  
09/28/2012 12:18:22 PM  
NOTICE





## **MAINTENANCE PLAN**

**MAINTENANCE PLAN  
FORMER OKLAHOMA CITY SW 44<sup>TH</sup> STREET ARMORY  
OKLAHOMA CITY, OKLAHOMA**

The Armory located at 2222 SW 44<sup>th</sup> Street, Oklahoma City, 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 March 31, 2011, 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 August 10, 2012. 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. All painted walls in Room 39 were scrapped and encapsulated with lead-based paint encapsulant. These surfaces need to be re-encapsulated if lead-based paint encapsulant shows signs of deterioration, damage, or flaking. See Attachment 2 for Oklahoma City SW 44<sup>th</sup> Street 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 there is 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) 702-5115.

Sincerely,



Dustin Davidson  
Environmental Programs Specialist  
DEQ Land Protection Division  
Site Cleanup Assistance Program

# ATTACHMENT 1

## Land use Restrictions

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

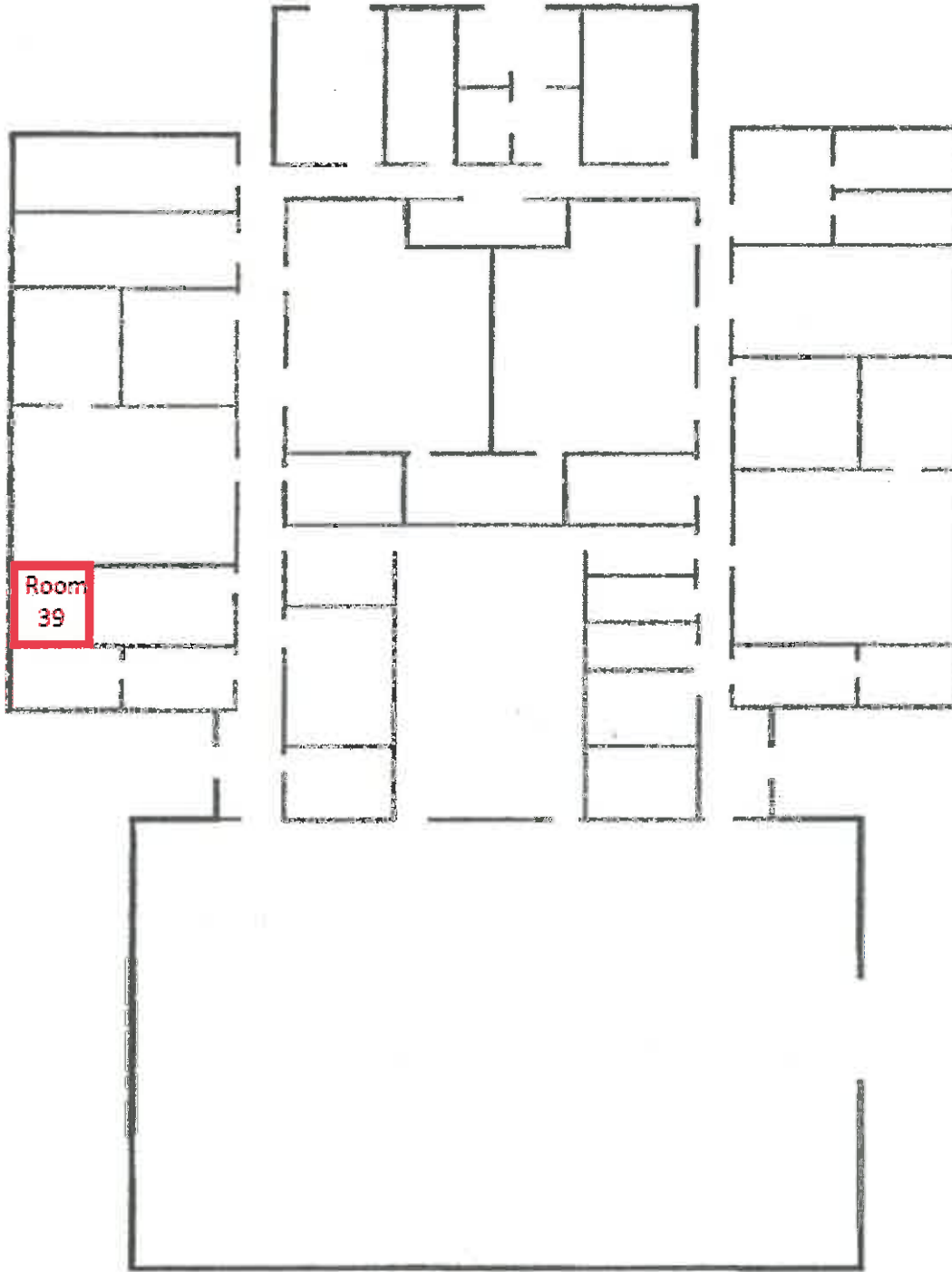
- a. No residential use of the property by children age 6 or under. Residential use is defined as having a child present at the Affected Property for more than sixteen (16) hours a day in excess of 30 days per year.

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

# **ATTACHMENT 2**

## **Madill Armory Floor Plan Map**

# OKC 44<sup>th</sup> St Armory



Room  
39

*Not to scale  
Floor plan approximate*

## ATTACHMENT 3

### DEQ Approved Sealants and Encapsulants List

#### *Acrylic Sealant approved by DEQ*

KM-669 Acrylic

#### *Lead-Based Paint Encapsulants approved by DEQ*

<b>Encapsulant Manufacturer Product(s)</b>	<b>Encapsulant</b>
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



## ASBESTOS SURVEY REPORT

NATIONAL GUARD ARMORY  
2222 SW 44<sup>TH</sup> STREET  
OKLAHOMA CITY, OKLAHOMA

Enercon Project Number – ENMISC2176

April 29, 2011

Prepared for:

Oklahoma Department of Environmental Quality  
Land Protection Division  
PO Box 1677  
Oklahoma City, Oklahoma 73101-1677  
Attention: Mr. Dustin Davidson

Prepared By:  
Enercon Services, Inc.  
6525 North Meridian, Suite 400  
Oklahoma City, Oklahoma 73116



Inspected By:

Marshall L. Branscum  
AHERA Asbestos Inspector OK-159162

Reviewed By:

Emmett W. Muenker  
AHERA Asbestos Management Planner OK-MP130435

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Table 2 Bulk Material Samples & Laboratory Analytical Results

### APPENDICES

A - Oklahoma Inspector and Management Planner Licenses

B - Site Layouts with Sample and Asbestos Locations

C - Laboratory Reports of Analyses/Chain of Custody

**ASBESTOS SURVEY REPORT**

**NATIONAL GUARD ARMORY  
2222 SW 44<sup>TH</sup> STREET  
OKLAHOMA CITY, OKLAHOMA**

**Executive Summary**

An asbestos survey of the National Guard Armory, 2222 SW 44<sup>th</sup> Street, Oklahoma City, Oklahoma was conducted on December 28-30, 2010, January 5-6, with additional samples collected on April 18 & 29, 2011. The armory consisted of a single building with a large drill room, three rooms located inside the drill room, plus 48 rooms located east of the drill room. During the survey, a total of 77 bulk samples were collected from 29 homogeneous areas. A summary of the asbestos-containing building materials (ACBMs) is provided below.

**Summary of Asbestos-Containing Building Materials**

<b>MATERIAL CATEGORY</b>	<b>MATERIAL DESCRIPTION</b>	<b>TOTAL APPROXIMATE AMOUNT</b>
FRIABLE	Water Storage Tank Insulation	100 SF
	Domestic Water Fitting Insulation	65 EA
	Roof Drain Pan Insulation	1 EA
	Roof Drain Fitting Insulation	1 EA
CATEGORY I NON-FRIABLE	Black Mastic	4,865 SF
	Brown Mastic on I-Beam	25 LF
CATEGORY II NON-FRIABLE	Vibration Isolation Gaskets	100 LF

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

**Recommended actions for planned renovation:**

Prepare specifications for abatement of friable and non-friable asbestos materials that would be disturbed during renovation activities; solicit bids; award contract and complete abatement.

**Recommended actions prior to planned demolition:**

Prepare specifications for abatement of all friable asbestos materials; solicit bids; award contract and complete abatement.

**Recommended actions for continued operation without removal of all asbestos in the building:**

Prepare and implement an Asbestos Management Plan to manage the asbestos in place. This is to include Asbestos Awareness Training for maintenance and custodial personnel.

## **ASBESTOS SURVEY REPORT**

**NATIONAL GUARD ARMORY**  
2222 SW 44<sup>TH</sup> STREET  
OKLAHOMA CITY, OKLAHOMA

### **1.0 INTRODUCTION**

An asbestos survey of the National Guard Armory, 2222 SW 44<sup>th</sup> Street, Oklahoma City, Oklahoma was conducted on December 28-30, 2010 and January 5-6, 2011. Additional samples were collected on April 18 & 29, 2011. The armory consisted of a single building with a large drill room, three rooms located inside the drill room, and 48 rooms located east of the drill room along a two corridors. During the survey, a total of 77 bulk samples were collected from 29 homogeneous areas. The inspection was performed by Marshall Branscum, AHERA Inspector OK-159162. Appendix A contains a copy of his Inspector License.

The purpose of the asbestos survey was to locate, identify, and quantify asbestos containing building materials (ACBMs) present in the facility. The asbestos survey was requested by the Oklahoma Department of Environmental Quality.

### **2.0 SURVEY PROCEDURES**

The survey consisted of visual examination of building components and insulating materials to identify those suspected to contain asbestos. Asbestos-containing materials are divided into three basic groups: Thermal System Insulation (TSI), Surfacing Materials (SM) and Miscellaneous Materials (MM). TSI consists of insulating materials, mastics or sealants used to reduce heat loss or gain on mechanical systems such as piping, ducts, air handlers, boilers, flues, heat exchangers, etc. SM includes materials applied to surfaces other than mechanical systems for purposes such as fireproofing, acoustical insulation and aesthetic finishes. MM are all other materials not included in the other two categories, and include materials such as floor tiles, adhesives, gaskets, caulking compounds and asbestos-cement piping/panels (Transite<sup>®</sup>).

Non-friable ACBM is categorized as either Category I or Category II non-friable material. Category I non-friable ACBM includes packings, gaskets, resilient floor coverings, and asphalt roofing products. Category II non-friable ACBM includes any other non-friable material.

The protocols outlined in the Asbestos Hazard Emergency Response Act (AHERA) were used for this survey, except that some confirmation samples were collected from otherwise non-suspect materials. The survey included all building materials that were suspected to contain asbestos, with the exception of the roofing components. Samples were analyzed by QuanTEM Laboratories, an analytical laboratory accredited under the National Voluntary Laboratory Accreditation Program (NVLAP). The analytical method used was Polarized Light Microscopy (PLM) with dispersion staining, as prescribed by the AHERA regulation. It is a method for positive identification of asbestos fibers. Materials determined to contain more than one percent asbestos by laboratory analysis are considered asbestos-containing materials.

The numbering system used for sample identification consisted of three separate components, a facility identifier, a homogeneous area (materials appearing alike in their color, texture and function) number and a sample number.

The rooms in the building were not all identified with room numbers, therefore an arbitrary number was assigned to each room for referencing the locations of samples and asbestos-containing materials identified during the survey. These arbitrary room numbers are used throughout this report and the room locations are shown on the building layouts in Appendix B.

### 3.0 SURVEY RESULTS

A total of 77 bulk samples were collected from 29 areas of homogeneous materials during the survey. Appendix B contains site layouts with sample and asbestos locations. Appendix C contains the laboratory reports of analyses/chains of custody.

A summary of asbestos containing building materials, including categorization and quantities, is presented in Table 1. Table 2 provides a summary of the bulk material samples collected, the general location of the materials sampled, the approximate quantity of asbestos-containing materials present in each homogeneous area and the laboratory analytical results.

**Table 1  
Summary of Asbestos Containing Building Materials**

<b>MATERIAL CATEGORY</b>	<b>MATERIAL DESCRIPTION</b>	<b>TOTAL APPROXIMATE AMOUNT</b>
FRIABLE	Water Storage Tank Insulation	100 SF
	Domestic Water Fitting Insulation	65 EA
	Roof Drain Pan Insulation	1 EA
	Roof Drain Fitting Insulation	1 EA
CATEGORY I NON-FRIABLE	Black Mastic	4,865 SF
	Brown Mastic on I-Beam	25 LF
CATEGORY II NON-FRIABLE	Vibration Isolation Gaskets	100 LF

SF=Square Feet; LF=Linear Feet



**Table 2  
Bulk Material Samples & Laboratory Analytical Results**

SAMPLE ID	DESCRIPTION & LOCATION	APPROX. AMOUNT	ASBESTOS TYPE/ PERCENT
SW-01-01,02	<b>Water Tank Insulation, Room 7</b>	100 SF	35% Amosite 35% Chrysotile
SW-02-01,02,03,04	<b>Domestic Water Fitting Insulation</b>	65 EA	4% Amosite
SW-03-01,02	2' x 4' White Ceiling Tiles, Rooms 9 & 34	NQ	None Detected
SW-04-01,02	2' x 4' White Ceiling Tiles, Rooms 9 & 22	NQ	None Detected
SW-05-01,02	White Gypsum Board, Rooms 7 & 15	NQ	None Detected
SW-06-01 <sup>3</sup>	Gray Plaster, Room 7	NQ	None Detected
SW-07-01 <sup>3</sup>	Gray Plaster/Black Mastic/Yellow Insulation, Room 7	NQ	None Detected
SW-08-01,02	White Gypsum Board, Rooms 15 & 30	NQ	None Detected
SW-09-01	<b>Roof Drain Pan Insulation, Room 36</b>	1 EA	3% Amosite
SW-09-02	<b>Roof Drain Fitting Insulation, Room 36</b>	1 EA	2% Amosite
SW-10-01 <sup>3</sup>	Brown Roof Insulation, Room 46	NQ	None Detected
SW-11-01	<b>Vibration Isolation Gasket, Room 46</b>	100 LF	40% Chrysotile
SW-12-01,02	Gray Floor Tile/Yellow Mastic, Rooms 5 & 21	NQ	None Detected
SW-13-01	Cream Floor Tiles/Orange & Yellow Mastic, Room 36	-	None Detected
SW-13-02	<b>Black Mastic beneath Cream Floor Tiles, Rooms 11 &amp; 50</b>	465 SF	3% Chrysotile
SW-14-01,02	Gray Floor Tile/Orange & Yellow Mastic, Rooms 36 & 40	NQ	None Detected
SW-15-01,02,03 <sup>4</sup>	White Ceiling Texture, Rooms 7 and 23	NQ	None Detected
SW-16-01,02,03,04, 05,06,07	White Wall Texture, Rooms 5, 6, 21, 43, 44 & 50	NQ	None Detected
SW-17-01,02,03	White Wall Texture, Rooms 5 & 23	NQ	None Detected
SW-18-01,02,03	White Wall Texture, Rooms 9 & 14	NQ	None Detected
SW-19-01 <sup>4</sup>	White Ceiling Texture, Room 5	NQ	None Detected
SW-20-01,02,03	White Wall Texture, Room 14	NQ	None Detected
SW-21-01A/B,02,03,04,05,06 <sup>1</sup>	White Wall Texture, Room 26 & 29	NQ	None Detected
SW-22-01,02,03	White Wall Texture, Rooms 27 & 28	NQ	None Detected
SW-23-01,02,03,04A/B,05,06,07	White Joint Compound, Rooms 5, 14, 22, 27, 29, 44 & 56	-	None Detected
SW 23-04	<b>Brown Mastic on I-Beam, Room 5</b>	25 LF	3% Chrysotile
SW-24-01,02 <sup>2</sup>	Beige Floor Tiles, Rooms 26-29	-	None Detected
SW-24-01,02	<b>Black Mastic beneath Floor Tiles, Rooms 26-29</b>	1,130 SF	7% Chrysotile
SW-25-01,02,03	Tan Plaster, Rooms 35 & 48	NQ	None Detected
SW-26-01 <sup>3</sup>	Tan Sound Proofing Material, Room 1	NQ	None Detected
SW-27-01,02	Window Glazing, Room 1	NQ	< 1% Chrysotile
SW-28-01,02,03	Gray/Tan/White Floor Tiles	-	None Detected
SW-28-01,02,03	<b>Black Mastic beneath Gray/Tan/White Floor Tiles, Rooms 31-34, 38, 39, 43-45</b>	3,070 SF	6% Chrysotile

SF=Square Feet; LF=Linear Feet; EA = Each; NQ=Not Quantified

**Table Notes:**

1. Homogeneous Area SW-21 was initially defined as wall texture located in Rooms 26 and 29. Initial sampling resulted in a single sample with 2% Chrysotile in Room 26. Due to only one sample with a regulated level of asbestos, the HA was redefined separately between the two rooms. Additional samples were collected from these two rooms, with no regulated levels of asbestos indicated. One of the samples was collected immediately adjacent to the single sample that contained asbestos in the original set of samples did not contain asbestos. It was therefore concluded that the original sample had been contaminated as it could not be duplicated and the laboratory had discarded the original sample.
2. Homogeneous Area SW24 was defined as joint compound on drywall throughout the building. One of the I-beams sampled in the south corridor (Room 5) had a layer of ACM brown mastic over the joint compound. None of the joint compound samples contained regulated levels of asbestos.
3. Single samples were collected solely for confirmation of non-suspect materials
4. HA-15 and HA-19 are the same material; HA-19 should have been labeled as the fourth sample in HA15 instead of being labeled as a separate homogeneous area.

#### 4.0 CONCLUSIONS & RECOMMENDATIONS

The asbestos-containing building materials present consisted of both friable and non-friable materials.

##### Friable Asbestos-containing Materials:

- Domestic Water Fitting Insulation: Approximately 65 fittings in good to poor condition were present above ceilings and inside walls/chases.
- Roof Drain Pan and Fitting Insulation: One pan and one fitting in good condition was present above the ceiling Room 36
- Water Storage Tank Insulation: Approximately 100 SF of insulation in good condition was present on the water tank in Room 7.
- Vibration Isolation Gaskets: Approximately 100 LF of woven asbestos gasket material in good condition was present in Room 46.

The locations of these materials are shown on the Layouts in Appendix B.

##### Non-friable Asbestos-containing Materials:

- Black Floor Tile Mastic: Approximately 4,865 SF of asbestos-containing black mastic was present beneath various colors of non-asbestos floor tiles in Rooms 11, 26-29, 31-34, 38, 39, 43-45, and a portion of Room 50. The location of these materials is shown on the Layout in Appendix B.
- Brown Mastic on I-Beam: Approximately 25 LF of brown mastic in good condition was present on one I-beam in Room 5.

Recommendations for Friable Asbestos-containing Materials: The following recommendations are made for addressing friable materials. Disturbance of these materials is regulated by the Oklahoma Department of Labor.

1. Planned renovation and maintenance activities that could disturb friable asbestos: Prepare specifications for abatement that would be disturbed during renovation activities; solicit bids; award contract and complete abatement.
2. Planned demolition: Prepare specifications for abatement of all friable asbestos materials; solicit bids; award contract and complete abatement.
3. Continued operation without abatement of remaining asbestos: Prepare and implement an Asbestos Management Plan to manage the asbestos in place. This is to include Asbestos Awareness Training for maintenance and custodial personnel.

Recommendations for Non-friable Asbestos-containing Materials: The only non-friable asbestos present was black floor tile mastic located beneath non-asbestos floor tiles and some brown mastic on an I-beam. These materials containing asbestos are not regulated unless they are disturbed in a manner that renders them friable; however, removal must be done by workers who

are properly trained to remove them. The following actions are recommended for addressing non-friable materials:

1. Planned renovation: Prepare specifications for abatement of non-friable asbestos materials that would be disturbed during renovation activities; solicit bids; award contract and complete abatement.
2. Planned demolition: Non-friable materials present may remain in place during demolition activities and may be disposed as ordinary demolition/construction waste.
3. Continued operation without abatement of remaining asbestos: Prepare and implement an Asbestos Management Plan to manage the asbestos in place. This is to include Asbestos Awareness Training for maintenance and custodial personnel.

## APPENDIX A

FEE: \$225.00

**Oklahoma Department of Labor**



**Marshal Branscum**

has filed in the office of the Commissioner of Labor 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. **OK159162.**

*Lloyd L. Fields*

LLOYD L. FIELDS  
Commissioner of Labor

December 02, 2010

*Date of Issuance*

**EXPIRES: December 01, 2011**



**Oklahoma Department of Labor**



FEE: \$500.00

**Emmett Muenker**

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

**AHERA MANAGEMENT PLANNER**

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. **OK-MP130435**.

*Mark Costello*

MARK COSTELLO  
Commissioner of Labor

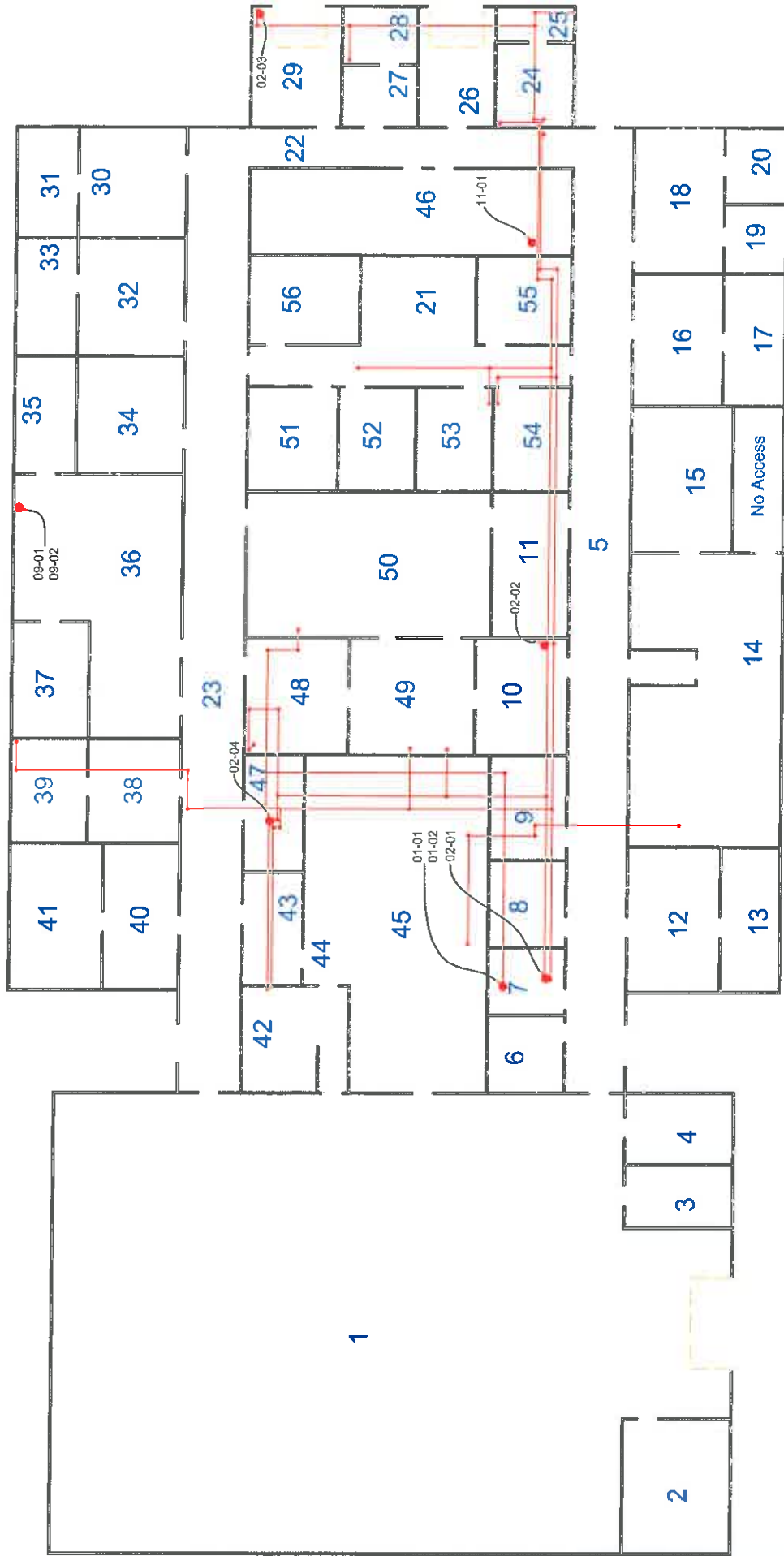
March 14, 2011

*Date of Issuance*

**EXPIRES: March 04, 2012**



## APPENDIX B



**Figure 1**  
**Thermal System Insulation**

Drawn by: R.B

Rev. 42611



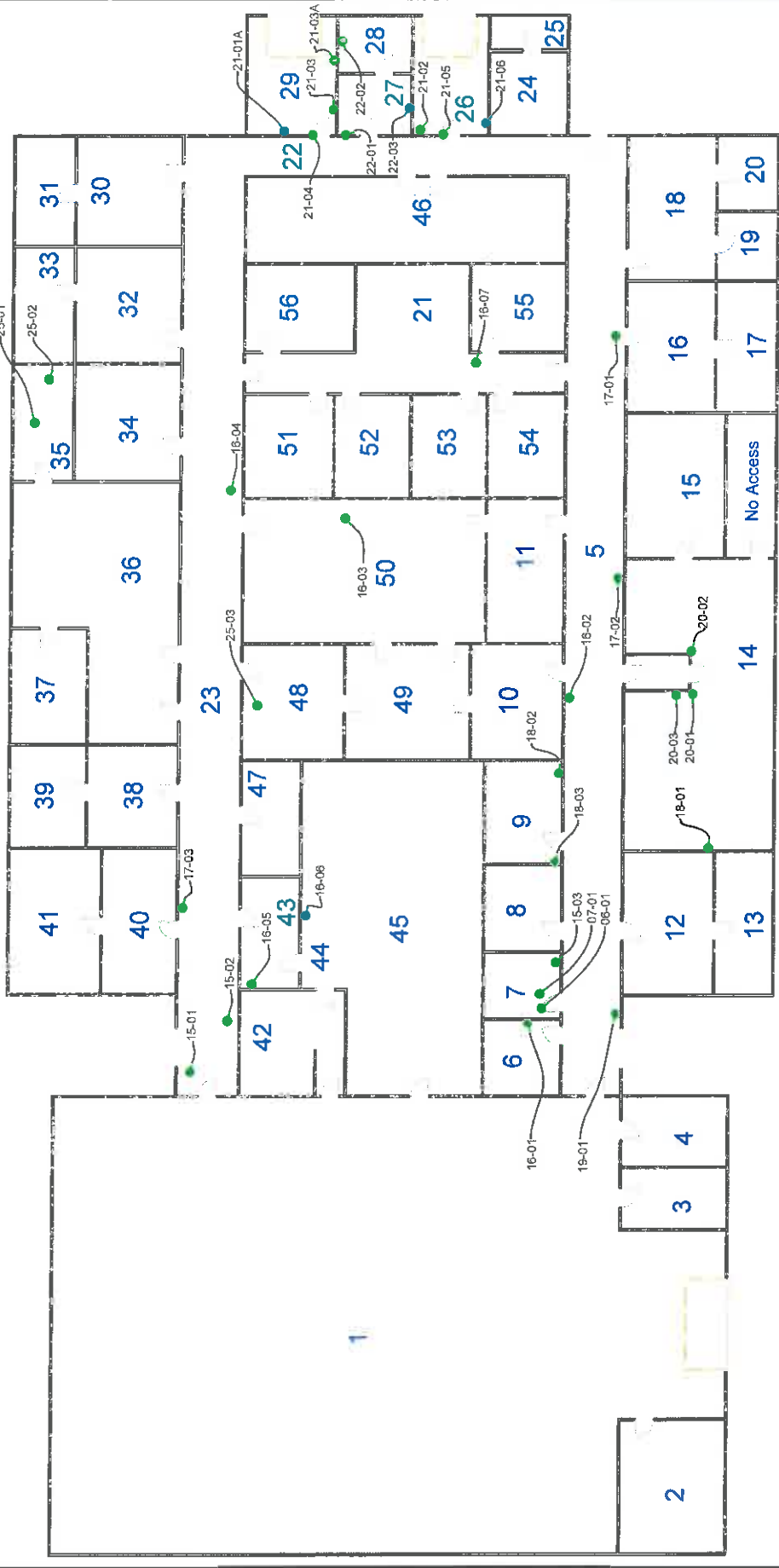
Not to Scale

**Legend:**

- Vibration Isolation Gasket (ACM) = 100 LF
- Asbestos Fittings = 65
- Water Tank Insulation (ACM) = 100 SF
- Roofing Drain Pan = (ACM) 1 EA.
- Roofing Drain Pan Fitting (ACM) = 1 EA.

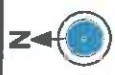
**Oklahoma Department of Environmental Quality**  
SW 44th Street Armory

2222 SW 44th Street  
Oklahoma City, Oklahoma



**Oklahoma Department of Environmental Quality**  
 SW 44th Street Armory  
 2222 SW 44th Street  
 Oklahoma City, Oklahoma

**Legend:**  
 ● Positive ACM Sample Location  
 ● Negative Sample Location

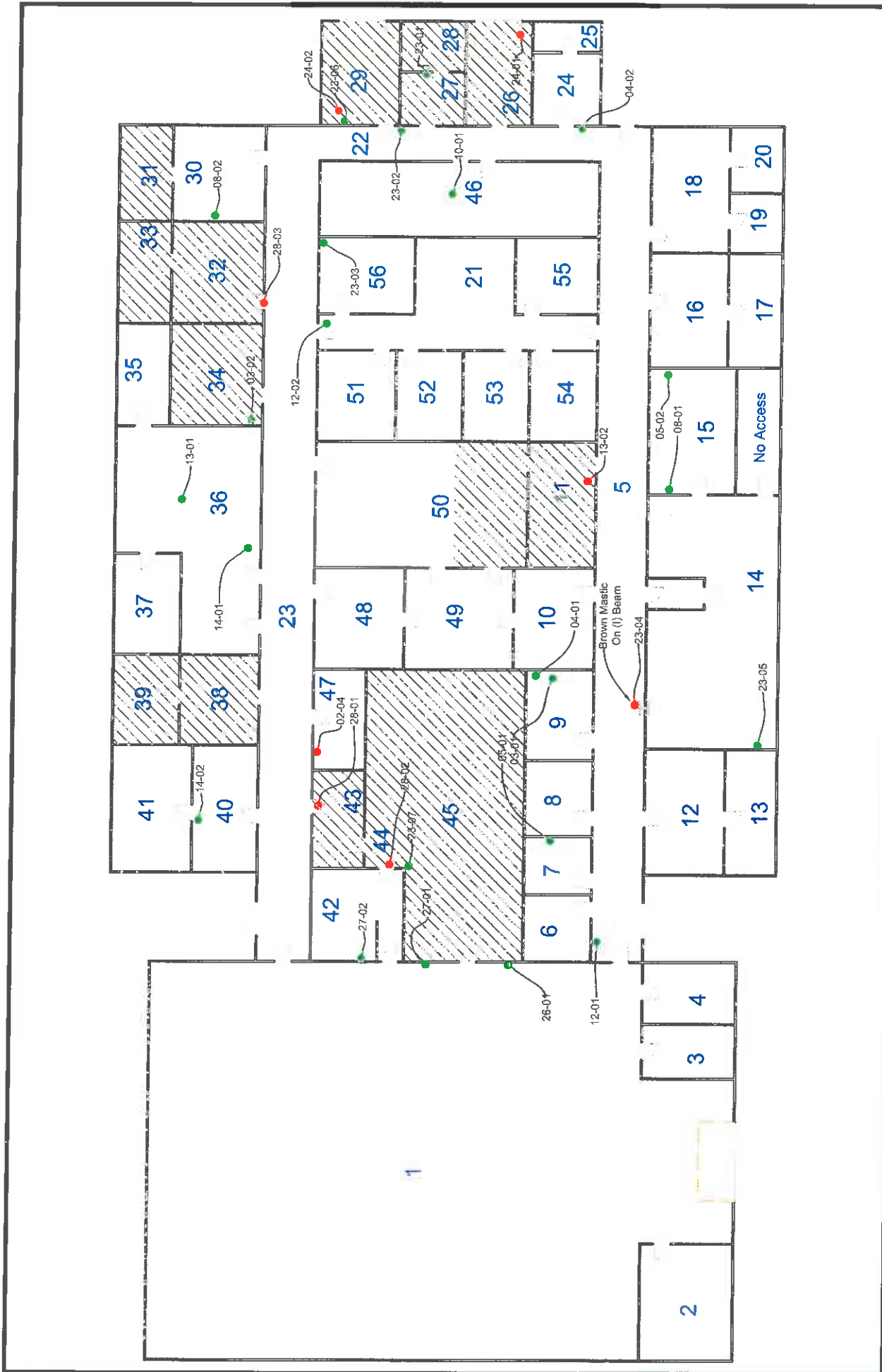


Not to Scale



**Figure 2**  
**Surfacing Materials**

Drawn by: R.B



**Oklahoma Department of Environmental Quality**  
 SW 44th Street Armory  
 2222 SW 44th Street  
 Oklahoma City, Oklahoma

**Legend:**  
 ● Positive ACM Sample Location  
 ● Negative Sample Location  
 Brown Mastic on Beam = 1 @ 25 LF  
 ACM Mastic Beneath Floor Tile = 4,435 SF



Not to Scale

**ENERCON**  
**Figure 3**  
**Miscellaneous Materials**  
 Drawn by: R.B

## APPENDIX C



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

### Polarized Light Microscopy Asbestos Analysis Report

Quantem Lab No. 190701	Client:	Enercon Services, Inc.
Account Number: A845		6525 N. Meridian, Suite 400
		Oklahoma City, OK 73116
Date Received: 01/03/2011		
Received By: Sherrie Leftwich	Project:	Armory SW 44th St.
Date Analyzed: 01/04/2011	Project Location:	SW 44th Street
Analyzed By: Sandy Baker	Project Number:	ENMISC2176
Methodology: EPA/600/R-93/116		

Quantem Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
001	SW-01-01	Homogeneous	Gray Insulation	Asbestos Present Amosite 35	NA	CaCO3 Binder
002	SW-01-02	Homogeneous	Gray Insulation	Asbestos Present Chrysotile 35 Amosite 4	NA	CaCO3 Binder
003	SW-02-01	Homogeneous	Beige Insulation	Asbestos Present Amosite 2	Cellulose 10 Glass Fiber 40	CaCO3 Binder
004	SW-02-02	Homogeneous	Beige Insulation	Asbestos Present Amosite 3	Glass Fiber 40	CaCO3 Binder
005	SW-02-03	Homogeneous	Beige Insulation	Asbestos Present Amosite 3	Glass Fiber 40	CaCO3 Binder
006	SW-02-04	Homogeneous	Beige Insulation	Asbestos Present Amosite 4	Cellulose 10 Glass Fiber 40	CaCO3 Binder

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

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**Polarized Light Microscopy Asbestos Analysis Report**

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Date Analyzed: 01/04/2011	Project: Armory SW 44th St.
Analyzed By: Sandy Baker	Project Location: SW 44th Street
Methodology: EPA/600/R-93/116	Project Number: ENMISC2176

Quantem Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
007	SW-03-01	Homogeneous	White Ceiling Tile	Asbestos Not Present	Cellulose 30 Glass Fiber 30	Perlite Binder Paint
008	SW-03-02	Homogeneous	White Ceiling Tile	Asbestos Not Present	Cellulose 30 Glass Fiber 30	Perlite Binder Paint
009	SW-04-01	Homogeneous	White Ceiling Tile	Asbestos Not Present	Cellulose 30 Glass Fiber 30	Perlite Binder Paint
010	SW-04-02	Homogeneous	White Ceiling Tile	Asbestos Not Present	Cellulose 30 Glass Fiber 30	Perlite Binder Paint
011	SW-05-01	Homogeneous	White Sheetrock	Asbestos Not Present	Cellulose 30	Gypsum CaCO3
012	SW-05-02	Homogeneous	White Sheetrock	Asbestos Not Present	Cellulose 30	Gypsum CaCO3

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Date Analyzed: 01/04/2011	Project Number:	ENMISC2176
Analyzed By: Sandy Baker		
Methodology: EPA/600/R-93/116		

Quantem Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
013	SW-06-01	Homogeneous	Light Gray Plaster	Asbestos Not Present	Cellulose <1	Quartz CaCO3
014	SW-07-01	Layered	Light Gray Plaster	Asbestos Not Present	NA	Quartz CaCO3
014a		Layered	Black Mastic	Asbestos Not Present	Cellulose <1 Glass Fiber <1	Tar
014b		Layered	Yellow Insulation	Asbestos Not Present	Glass Fiber 95	Binder
015	SW-08-01	Homogeneous	White Sheetrock	Asbestos Not Present	Cellulose 35	Gypsum CaCO3
016	SW-08-02	Layered	White Texture	Asbestos Not Present	NA	CaCO3 Paint

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Analyzed By: Sandy Baker	Project Location:	SW 44th Street
Methodology: EPA/600/R-93/116	Project Number:	ENMISC2176

QuantEM Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
016a		Layered	White Sheetrock	Asbestos Not Present	Cellulose 33	Gypsum CaCO3
017	SW-09-01	Homogeneous	Beige Insulation	Asbestos Present Amosite 3	Cellulose 10 Glass Fiber 40	CaCO3 Binder
018	SW-09-02	Homogeneous	Beige Insulation	Asbestos Present Amosite 2	Glass Fiber 35	CaCO3 Binder
019	SW-10-01	Homogeneous	Brown Insulation	Asbestos Not Present	Cellulose 55 Glass Fiber 5	Perlite Binder
020	SW-11-01	Homogeneous	Gray Insulation	Asbestos Present Chrysotile 40	Synthetic 40	Binder
021	SW-12-01	Layered	Gray Floor Tile	Asbestos Not Present	NA	Vinyl Quartz

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Analyzed By: Sandy Baker	Project Location:	SW 44th Street
Methodology: EPA/600/R-93/116	Project Number:	ENMISC2176

Quantem Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
021a		Layered	Yellow Mastic	Asbestos Not Present	NA	Glue
022	SW-12-02	Layered	Gray Floor Tile	Asbestos Not Present	NA	Vinyl Quartz
022a		Layered	Yellow Mastic	Asbestos Not Present	Cellulose <1	Glue
023	SW-13-01	Layered	Cream Floor Tile	Asbestos Not Present	NA	Vinyl Quartz
023a		Layered	Orange Mastic	Asbestos Not Present	Cellulose 2	Glue
024	SW-13-02	Layered	Cream Floor Tile	Asbestos Not Present	NA	Vinyl Quartz

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Date Analyzed: 01/04/2011	Project: Armory SW 44th St.
Analyzed By: Sandy Baker	Project Location: SW 44th Street
Methodology: EPA/600/R-93/116	Project Number: ENMISC2176

Quantem Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
024a		Layered	Yellow/Black Mastic	Asbestos Present Chrysotile 3	Cellulose 7	Glue Tar
025	SW-14-01	Layered	Gray Floor Tile	Asbestos Not Present	NA	Vinyl Quartz
025a		Layered	Orange Mastic	Asbestos Not Present	Cellulose 4	Glue
026	SW-14-02	Layered	Light Gray Floor Tile	Asbestos Not Present	NA	Vinyl Quartz
026a		Layered	Yellow Mastic	Asbestos Not Present	Cellulose <1	Glue
027	SW-15-01	Homogeneous	White Ceiling Texture	Asbestos Not Present	NA	CaCO3 Paint

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Date Analyzed: 01/04/2011	Project Location:	SW 44th Street
Analyzed By: Sandy Baker	Project Number:	ENMISC2176
Methodology: EPA/600/R-93/116		

Quantem Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
028	SW-15-02	Homogeneous	White Ceiling Texture	Asbestos Not Present	NA	CaCO3 Paint
029	SW-15-03	Homogeneous	White Ceiling Texture	Asbestos Not Present	Cellulose 5	CaCO3 Paint
030	SW-16-01	Homogeneous	White Texture	Asbestos Not Present	NA	CaCO3 Binder
031	SW-16-02	Homogeneous	White Texture	Asbestos Not Present	NA	CaCO3 Paint
032	SW-16-03	Homogeneous	White Texture	Asbestos Not Present	NA	CaCO3 Paint
033	SW-16-04	Homogeneous	White Texture	Asbestos Not Present	NA	CaCO3 Paint

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Analyzed By: Sandy Baker	Project Number:	ENMISC2176
Methodology: EPA/600/R-93/116		

Quantem Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
034	SW-16-05	Homogeneous	White Texture	Asbestos Not Present	NA	CaCO3 Paint
035	SW-16-06	Homogeneous	White Texture	Asbestos Not Present	NA	CaCO3 Paint
036	SW-16-07	Homogeneous	White Texture	Asbestos Not Present	NA	CaCO3 Paint
037	SW-17-01	Homogeneous	White Texture	Asbestos Not Present	NA	CaCO3 Paint
038	SW-17-02	Homogeneous	White Texture	Asbestos Not Present	NA	CaCO3 Paint
039	SW-17-03	Homogeneous	White Texture	Asbestos Not Present	NA	CaCO3 Paint

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**Polarized Light Microscopy Asbestos Analysis Report**

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Date Analyzed: 01/04/2011	Project: Armory SW 44th St.
Analyzed By: Sandy Baker	Project Location: SW 44th Street
Methodology: EPA/600/R-93/116	Project Number: ENMISC2176

Quantem Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
040	SW-18-01	Homogeneous	White Texture	Asbestos Not Present	Cellulose <1	CaCO3 Paint
041	SW-18-02	Homogeneous	White Texture	Asbestos Not Present	Glass Fiber <1	CaCO3 Paint
042	SW-19-01	Homogeneous	White Ceiling Texture	Asbestos Not Present	Cellulose 4	CaCO3 Paint
043	SW-20-01	Homogeneous	White Texture	Asbestos Not Present	Cellulose <1	CaCO3 Binder
044	SW-21-01	Homogeneous	White Texture	Asbestos Present Chrysotile 2	NA	CaCO3 Paint
045	SW-21-02	Homogeneous	White Texture	Asbestos Present Chrysotile <1	Cellulose <1	CaCO3 Paint

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Analyzed By: Sandy Baker	Project Number:	ENMISC2176
Methodology: EPA/600/R-93/116		

QuantEM Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
046	SW-22-01	Homogeneous	White Texture	Asbestos Not Present	NA	CaCO3 Paint
047	SW-22-02	Homogeneous	White Texture	Asbestos Not Present	NA	CaCO3 Paint
048	SW-23-01	Homogeneous	White Joint Compound	Asbestos Not Present	NA	CaCO3 Binder
049	SW-23-02	Homogeneous	White Joint Compound	Asbestos Not Present	NA	CaCO3 Paint
050	SW-23-03	Homogeneous	White Joint Compound	Asbestos Not Present	NA	CaCO3 Paint
051	SW-23-04	Layered	White Joint Compound	Asbestos Not Present	NA	CaCO3 Paint

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Methodology: EPA/600/R-93/116		

QuantEM Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
051a		Layered	Brown Mastic	Asbestos Present Chrysotile 3	NA	Glue
052	SW-23-05	Homogeneous	White Joint Compound	Asbestos Not Present	NA	CaCO3 Paint
053	SW-23-06	Homogeneous	White Joint Compound	Asbestos Present Chrysotile <1	Cellulose <1	CaCO3 Paint
054	SW-23-07	Homogeneous	White Joint Compound	Asbestos Not Present	NA	CaCO3 Paint
055	SW-24-01	Layered	Beige Floor Tile	Asbestos Not Present	NA	Vinyl Quartz
055a		Layered	Black Mastic	Asbestos Present Chrysotile 6	Cellulose 2	Tar

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Analyzed By: Sandy Baker	Project Location:	SW 44th Street
Methodology: EPA/600/R-93/116	Project Number:	ENMISC2176

QuanTEM Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
056	SW-24-02	Layered	Beige Floor Tile	Asbestos Not Present	NA	Vinyl Quartz
056a		Layered	Black Mastic	Asbestos Present Chrysotile 7	Cellulose <1	Tar
057	SW-25-01	Homogeneous	Tan Plaster	Asbestos Not Present	Cellulose <1	Quartz CaCO3
058	SW-25-02	Homogeneous	Tan Plaster	Asbestos Not Present	NA	Quartz CaCO3
059	SW-25-03	Homogeneous	Tan Plaster	Asbestos Not Present	Cellulose <1	Quartz CaCO3
060	SW-26-01	Homogeneous	Tan Insulation	Asbestos Not Present	Cellulose 85	Binder Paint

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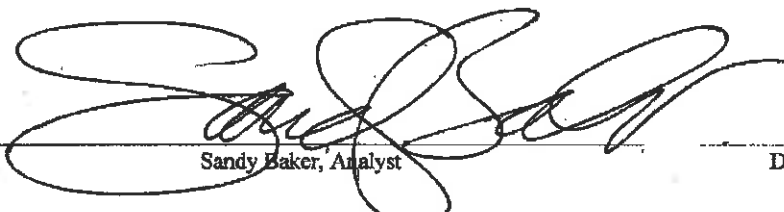


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Methodology: EPA/600/R-93/116		

Quantem Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
061	SW-27-01	Homogeneous	Gray Window Glazing	Asbestos Not Present	NA	CaCO3 Paint
062	SW-27-02	Homogeneous	Brown/White Window Glazing	Asbestos Present Chrysotile <1	NA	CaCO3 Paint

  
 \_\_\_\_\_  
 Sandy Baker, Analyst

1/4/2011  
 \_\_\_\_\_  
 Date of Report

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

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 (800) 622-1650 • (405) 755-7272 • Fax: (405) 755-2058

**LEGAL DOCUMENT - PLEASE PRINT LEGIBLY**

Company: *Enron Services*      Project Name: *Amory SW 44th Street*  
 Contact: *Bill Muenker / Marshall Branson*      Project Location: *SW 44th Street*  
 Account #: \_\_\_\_\_      Project ID: *ENMISC 2176*

Sampled By: *Marshall Branson*      Date: *12-28-02*  
 Relinquished By: *Marshall Branson*      Date & Time: *12-30-02 12:30 PM*  
 Received By: *Steph Wick*      Date & Time: *12/30/02 3:30*

Requested Services (Please Check the Appropriate Boxes)		PLM	TEM	TEM	Turnaround Time
<input checked="" type="checkbox"/>	Bulk Analysis (EPA 600/R-93/116)	<input type="checkbox"/>	Air - AHERA	<input type="checkbox"/>	Rush
<input type="checkbox"/>	400 Point Count	<input type="checkbox"/>	Air - NIOSH 7402	<input type="checkbox"/>	Same Day
<input type="checkbox"/>	1000 Point Count	<input type="checkbox"/>	Air - ISO 10317	<input type="checkbox"/>	24 - Hour
<input type="checkbox"/>	Gravimetric Preparation	<input type="checkbox"/>	Drinking Water - EPA 100.2	<input type="checkbox"/>	3 - Day
<input type="checkbox"/>	Particle ID	<input type="checkbox"/>	Waste Water - EPA 600/4-83-043	<input type="checkbox"/>	5 - Day

No.	Sample ID (Character Mass)	EL To Be Analyzed	Description	Volume / Area (if applicable)	Comments / Notes
1	SW-01-01	<input checked="" type="checkbox"/>	Gray		Rm 29
2	-01-02	<input type="checkbox"/>	White		Rm 29
3	-02-01	<input type="checkbox"/>	White		Rm 29
4	-02-02	<input type="checkbox"/>	White		Rm 29
5	-02-03	<input type="checkbox"/>	White		Rm 20A - Loose Material
6	-02-04	<input type="checkbox"/>	White		Rm 34
7	-03-01	<input type="checkbox"/>	White		Small Pattern
8	-03-02	<input type="checkbox"/>	White		" "
9	-04-01	<input type="checkbox"/>	White		Large Pattern
10	-04-02	<input checked="" type="checkbox"/>	White		" "

SATURDAY SAMPLE DELIVERY - CALL TO SCHEDULE • Use this address for Saturday Delivery only: 4230 N. Sames Fe Ave., Oklahoma City, OK 73108-8017 • Mark Package "Hold for Saturday Pickup"



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Lab No. 190701  
 (For Lab Use Only)  
 Accept  Reject

Project Information		Project Name:	Project Location:		
Company: <u>Emerson</u>		<u>EAM15C2176</u>	<u>Amory Sew Sept</u>		
No.	Sample ID (18 Character Max)	Color	Description	Volume / Area (if applicable)	Comments / Notes
11	<u>SW-05-01</u>	<u>White</u>	<u>Sheetrock - Above Ceiling</u>		
12	<u>↓ - 05-02</u>	<u>↓</u>	<u>↓</u>		
13	<u>SW-06-01</u>	<u>White</u>	<u>Plaster - Rm 29</u>		
14	<u>SW-07-01</u>	<u>Black</u>	<u>Insulation</u>		
15	<u>SW-08-01</u>	<u>White</u>	<u>Sheetrock below ceiling</u>		
16	<u>-08-02</u>	<u>↓</u>	<u>↓</u>		
17	<u>-09-01</u>	<u>White</u>	<u>Drain Pan Elbow Insulation</u>		
18	<u>-09-02</u>	<u>↓</u>	<u>Drain Pan Insulation</u>		
19	<u>-10-01</u>	<u>Brown</u>	<u>Roofing Material - Air Handler Rm</u>		
20	<u>-11-01</u>	<u>Gray</u>	<u>VIBS Air Handler Rm</u>		
21	<u>-12-01</u>	<u>Gray "</u>	<u>12" X 12" Floor Tile - Yellow Mesh</u>		
22	<u>-12-02</u>	<u>"</u>	<u>"</u>		
23	<u>-13-01</u>	<u>Dirty White</u>	<u>12" X 12" Floor Tile Yellow Mesh</u>		
24	<u>-13-02</u>	<u>↓</u>	<u>↓</u>		
25	<u>-14-01</u>	<u>Light Gray</u>	<u>12" X 12" Floor Tile - Mesh</u>		
26	<u>-14-02</u>	<u>↓</u>	<u>↓</u>		
27	<u>-15-01</u>	<u>White</u>	<u>Popcorn CT</u>		
28	<u>-15-02</u>	<u>↓</u>	<u>↓</u>		
29	<u>-15-03</u>	<u>↓</u>	<u>↓</u>		
30	<u>↓ -16-01</u>	<u>White</u>	<u>Wall Texture - Flat Blown On</u>		



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Page 3 of 4  
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 Lab No. 190701  
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Project Information		Project Name	Project Location
Company: <u>EMERCON</u>		<u>EMRISX 2176</u>	<u>Armory SW 99th</u>
No.	Sample ID (or Characterization)	Color	Description
			Volume / Area (as applicable)
			Comments / Notes
31	<u>SW-16-02</u>	<u>White</u>	<u>Wall Texture - Flat - Blank On</u>
32	<u>16-03</u>		
33	<u>16-04</u>		
34	<u>16-05</u>		
35	<u>16-06</u>		
36	<u>16-07</u>		
37	<u>16-01</u>	<u>White</u>	<u>Wall Texture Drippy</u>
38	<u>17-02</u>		
39	<u>17-03</u>		
40	<u>18-01</u>	<u>White</u>	<u>Wall Texture Spray / Overspray</u>
41	<u>18-02</u>		
42	<u>19-01</u>		<u>Ceiling Texture</u>
43	<u>20-01</u>		<u>Wall Texture</u>
44	<u>21-01</u>	<u>White</u>	<u>Wall Texture - Flat</u>
45	<u>21-02</u>		
46	<u>22-01</u>	<u>White/Gray</u>	<u>Wall Texture - Translucent</u>
47	<u>22-02</u>		
48	<u>23-01</u>	<u>White</u>	<u>Joint Compound</u>
49	<u>23-02</u>		
50	<u>23-03</u>		



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For Lab Use Only  
 Lab No. 190701  
 Accept  Reject

Project Information		Project Name	Project Location		
Company <u>E NELSON</u>		<u>ENMISX 2176</u>	<u>Army SW 494A</u>		
No	Sample ID (6 character Max)	Color	Description	Volume / Area (as applicable)	Comments / Notes
51	50-23-04	White	Joint Compound		
52	-23-05	↓	↓		
53	-23-06	↓	↓		
54	-23-07	↓	↓		
55	24-01	White	Floor Tile - Black Mastic		
56	24-02	↓	↓		
57	25-01	White/Tan	Sand Plaster - Concrete Ceiling		
58	25-02	↓	↓		
59	25-03	↓	↓		
60	26-01	Tan	Seam Proofing - Drill Rm		
61	27-01	White	Window Caulking - Fish Bay Windows		
62	27-02	↓	↓		
63					
64					
65					
66					
67					
68					
69					
70					

EA



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

### Polarized Light Microscopy Asbestos Analysis Report

QuantEM Lab No. 190824	Client:	Enercon Services, Inc.
Account Number: A845		6525 N. Meridian, Suite 400
		Oklahoma City, OK 73116
Date Received: 01/05/2011		
Received By: Sherrie Leftwich		
Date Analyzed: 01/06/2011	Project:	SW 44th Armory
Analyzed By: Joe Melton	Project Location:	N/A
Methodology: EPA/600/R-93/116	Project Number:	ENMISC2176

QuantEM Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
001	SW-23-04A	Homogeneous	Gray Caulk	Asbestos Not Present	NA	Paint CaCO3 Inert
002	SW-23-04B	Homogeneous	Gray Caulk	Asbestos Not Present	NA	Paint CaCO3 Inert

  
 Joe Melton, Analyst

1/6/2011  
 Date of Report

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

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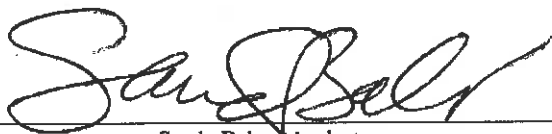


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### Polarized Light Microscopy Asbestos Analysis Report

QuanTEM Lab No. 190900	Client:	Enercon Services, Inc.
Account Number: A845		6525 N. Meridian, Suite 400
		Oklahoma City, OK 73116
Date Received: 01/07/2011		
Received By: Sherrie Leftwich	Project:	SW 44th Armory
Date Analyzed: 01/10/2011	Project Location:	SW 44th Armory
Analyzed By: Sandy Baker	Project Number:	ENMISC 2176
Methodology: EPA/600/R-93/116		

QuanTEM Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
001	SW-28-01	Layered	Yellow Mastic	Asbestos Not Present	NA	Glue
001a		Layered	Gray Floor Tile	Asbestos Not Present	NA	Vinyl Quartz
001b		Layered	Black Mastic	Asbestos Present Chrysotile 6	NA	Tar

  
 Sandy Baker, Analyst

1/10/2011  
 Date of Report

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

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**Polarized Light Microscopy Asbestos Analysis Report**

QuantEM Lab No. 194200	Client: Enercon Services, Inc.
Account Number: A845	6525 N. Meridian, Suite 400
	Oklahoma City, OK 73116
Date Received: 04/18/2011	
Received By: CeCelia Van Eck	
Date Analyzed: 04/20/2011	Project: SW 44th Armory
Analyzed By: Gayle Ooten	Project Location: N/A
Methodology: EPA/600/R-93/116	Project Number: N/A

QuantEM Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
001	SW-18-03	Homogeneous	White Wall Texture	Asbestos Not Present	NA	CaCO3 Paint
002	SW-20-02	Homogeneous	White Wall Texture	Asbestos Not Present	NA	CaCO3 Paint
003	SW-20-03	Homogeneous	White Wall Texture	Asbestos Not Present	Cellulose	<1 CaCO3 Paint
004	SW-21-03	Homogeneous	White Wall Texture	Asbestos Not Present	NA	CaCO3 Paint
005	SW-21-04	Homogeneous	White Wall Texture	Asbestos Not Present	Cellulose	5 CaCO3 Paint
006	SW-21-05	Homogeneous	White Wall Texture	Asbestos Not Present	Cellulose	2 CaCO3 Paint

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

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### Polarized Light Microscopy Asbestos Analysis Report

QuantEM Lab No. 194200	Client: Enercon Services, Inc.
Account Number: A845	6525 N. Meridian, Suite 400
	Oklahoma City, OK 73116
Date Received: 04/18/2011	
Received By: CeCelia Van Eck	
Date Analyzed: 04/20/2011	Project: SW 44th Armory
Analyzed By: Gayle Ooten	Project Location: N/A
Methodology: EPA/600/R-93/116	Project Number: N/A

QuantEM Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
007	SW-21-06	Homogeneous	White Wall Texture	Asbestos Present Chrysotile <1	Cellulose	2 CaCO3 Paint
008	SW-22-03	Homogeneous	White Wall Texture	Asbestos Not Present	NA	CaCO3 Paint
009	SW-28-02	Layered	Yellow Mastic	Asbestos Not Present	Synthetic	<1 Glue
009a		Layered	White Floor Tile	Asbestos Not Present	NA	Vinyl CaCO3
009b		Layered	Black Mastic	Asbestos Present Chrysotile 5	NA	Tar
010	SW-28-03	Layered	Tan Floor Tile	Asbestos Not Present	NA	Vinyl CaCO3

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

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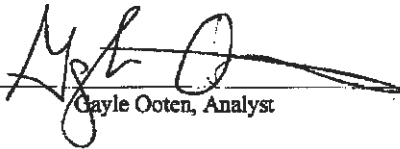


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**Polarized Light Microscopy Asbestos Analysis Report**

QuantEM Lab No. 194200	Client:	Enercon Services, Inc.
Account Number: A845		6525 N. Meridian, Suite 400
		Oklahoma City, OK 73116
Date Received: 04/18/2011		
Received By: CeCelia Van Eck		
Date Analyzed: 04/20/2011	Project:	SW 44th Armory
Analyzed By: Gayle Ooten	Project Location:	N/A
Methodology: EPA/600/R-93/116	Project Number:	N/A

QuantEM Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
010a		Layered	Black Mastic	Asbestos Present Chrysotile 2	NA	Tar

  
Gayle Ooten, Analyst

4/20/2011  
Date of Report

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

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 Lab No. 194200  
 Accept  Reject  
 Report Results  (one box)  (two boxes)  
 QuantEM Website  Other

**Contact Information**  
 Company: Emerson Services, Inc  
 Contact: Marshall Branscum  
 Account #: \_\_\_\_\_  
 Project Name: SW 44th Army  
 Project Location: \_\_\_\_\_  
 Project ID: \_\_\_\_\_

**Relinquished By**  
 Name: Marshall Branscum Date: \_\_\_\_\_  
 RECEIVED BY: IA DATE & TIME: \_\_\_\_\_  
4:20 PM / 4:55 pm Head  
Cecelia Brisk 4/18/11 4:58

**REQUESTED SERVICES (Please check the appropriate boxes)**

PLM	PLM	TEM	TEM	TEM	TURNAROUND TIME
<input checked="" type="checkbox"/> Bulk Analysis (EPA 600/R-93/116)	<input type="checkbox"/> Vermiculite Artic Insulation (EPA 600/R-04/004)	<input type="checkbox"/> Air-AHERA	<input type="checkbox"/> Bulk Presence / Absence EPA600/R-93/116	<input type="checkbox"/> Rush	
<input type="checkbox"/> 400 Point Count	<input type="checkbox"/> Other	<input type="checkbox"/> Air-NIOSH 7402	<input type="checkbox"/> Bulk-Quantitative (weight%) - Chotfield	<input type="checkbox"/> Same Day	
<input type="checkbox"/> 1000 Point Count		<input type="checkbox"/> Air-ISO 10312	<input type="checkbox"/> Dust-Presence / Absence	<input checked="" type="checkbox"/> 24 - Hour	
<input type="checkbox"/> Gravimetric Preparation	<input type="checkbox"/> PCM	<input type="checkbox"/> Drinking Water- EPA 100.2	<input type="checkbox"/> Dust-Quantitative (fibers/sq.cm) - ASTM D5755	<input type="checkbox"/> 3 - Day	
<input type="checkbox"/> Particle ID	<input type="checkbox"/> NIOSH 7400	<input type="checkbox"/> Waste Water- EPA 600/4-83-043	<input type="checkbox"/> Other	<input type="checkbox"/> 5 - Day	

No.	Sample ID (10 Characters Max)	To Be Analyzed	Color	Description	Volume / Area (as applicable)	Comments / Notes
1	SW-18-03	<input checked="" type="checkbox"/>	Grey	wall texture		
2	SW-20-02	<input type="checkbox"/>	white	wall texture		
3	SW-20-03	<input type="checkbox"/>	white	↓ wall texture		
4	SW-21-03	<input type="checkbox"/>		↓ wall texture		
5	↓ -04	<input type="checkbox"/>		↓		
6	↓ -08	<input type="checkbox"/>		↓		
7	↓ -06	<input type="checkbox"/>		↓		
8	SW-22-03	<input type="checkbox"/>		wall texture		
9	SW-28-02	<input type="checkbox"/>		Floor Tile - Mosaic		
10	SW-28-03	<input checked="" type="checkbox"/>		↓		




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### Polarized Light Microscopy Asbestos Analysis Report

Quantem Lab No. 194624	Client:	Enercon Services, Inc.
Account Number: A845		6525 N. Meridian, Suite 400
		Oklahoma City, OK 73116
Date Received: 04/29/2011		
Received By: CeCelia Van Eck		
Date Analyzed: 04/29/2011	Project:	SW 44th Armory
Analyzed By: Teeia Moore	Project Location:	2222 SW 44th Street
Methodology: EPA/600/R-93/116	Project Number:	ENMISC2176

Quantem Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
001	SW-21-01A	Homogeneous	White Paint	Asbestos Not Present	NA	Paint
002	SW-21-03A	Homogeneous	White Paint	Asbestos Not Present	NA	Paint

  
Teeia Moore, Analyst

4/29/2011  
Date of Report

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

Quantem is a NVLAP accredited TEM and PLM laboratory (Lab Code: 101959-0). This report relates only to the specific items tested. NVLAP accreditation applies only to analysis performed utilizing EPA/600/M4-82-020 and EPA/600/R-93/116 methods. This report may not be used to claim product endorsement by NVLAP or any other agency of the US Government. This report may not be reproduced except in full, without the written approval of the laboratory.





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## LEGAL DOCUMENT - PLEASE PRINT LEGIBLY

Company: *Ericson Services, Inc.*  
 Contact: *Marshall Branson*  
 Account #: \_\_\_\_\_  
 Project Name: *SW 44th Army*  
 Project Location: *2222 SW 44th Street*  
 Project ID: *EMMISC2176*

For Lab Use Only  
 Lab No. *194624*  
 Accept  Reject  
 Report Results (in one box)  
 QuantEM Website  
 Other \_\_\_\_\_

Relinquished By: *Marshall Branson* Date: *4-29-11*  
 Date & Time: *4-29-11 10:53*  
 Received By: *Cecilia Van Eck*  
 Date & Time: *4/29/11 10:53*

No.	Sample ID (10 Characters Max)	To Be Analyzed	Color	Description	Volume / Area (as applicable)	Comments / Notes	REQUESTED SERVICES (Please check the appropriate boxes)			
							PLM	TEM	TEM	TURNAROUND TIME
1	<i>SW-21-01A</i>	<input checked="" type="checkbox"/>	<i>White</i>	<i>Wall Texture (Room 29)</i>			<input checked="" type="checkbox"/> Bulk Analysis (EPA 600/P-93/116)	<input type="checkbox"/> Bulk - Presence / Absence EPA600/R-93/116	<input type="checkbox"/> Rush	
2	<i>SW-21-02A</i>	<input checked="" type="checkbox"/>	<i>White</i>	<i>Wall Texture (Room 29)</i>			<input checked="" type="checkbox"/> 400 Point Count	<input type="checkbox"/> Bulk - Quantitative (weight%) - Chatfield	<input type="checkbox"/> Same Day	
3		<input type="checkbox"/>					<input type="checkbox"/> 1000 Point Count	<input type="checkbox"/> Dust - Presence / Absence	<input checked="" type="checkbox"/> 24 - Hour	
4		<input type="checkbox"/>					<input type="checkbox"/> Gravimetric Preparation	<input type="checkbox"/> Dust - Quantitative (fibers/sq.cm) - ASTM D5755	<input type="checkbox"/> 3 - Day	
5		<input type="checkbox"/>					<input type="checkbox"/> Particle ID	<input type="checkbox"/> Other	<input type="checkbox"/> 5 - Day	
6		<input type="checkbox"/>								
7		<input type="checkbox"/>								
8		<input type="checkbox"/>								
9		<input type="checkbox"/>								
10		<input type="checkbox"/>								

NO you Pt. Count if samples are back @ 1% or greater

# SURVEY AND ASSESSMENT FOR LEAD IN PAINT AND SETTLED DUST

NATIONAL GUARD ARMORY  
2222 SW 44<sup>th</sup> Street  
OKLAHOMA CITY, OKLAHOMA 73119

*ENERCON Project Number ENMISC2176*  
**March 31, 2011**

Oklahoma Department of Environmental Quality  
Land Protection Division  
PO Box 1677  
Oklahoma City, Oklahoma 73101-1677  
Attention: Mr. Dustin Davidson



**Enercon Services, Inc.**  
6525 North Meridian Avenue, Suite 400  
Oklahoma City, Oklahoma 73116  
Phone: (405) 722-7693  
Fax: (405) 722-7694



**Prepared By :**

A handwritten signature in blue ink, which appears to read "Marshall L. Branscum".

Marshall L. Branscum  
Environmental Scientist  
LBP Inspector, OKINSR13415

**Reviewed By :**

A handwritten signature in black ink, which appears to read "Emmett W. Muenker".

Emmett W. Muenker  
Senior Project Manager  
LBP Risk Assessor, OKRASR11260

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2.0 METHODOLOGY .....		<b>1</b>
3.0 RESULTS.....		<b>2</b>
3.1 Lead-Based Paint.....		<b>2</b>
3.2 Dust Wipe Samples.....		<b>4</b>

**APPENDICES**

Appendix A	Building Layouts with LBP and Lead Dust Contamination Locations
Appendix B	Photographic Record of Representative Building Components with LBP
Appendix C	Dust Wipe Laboratory Report and Chain of Custody
Appendix D	XRF Data Spreadsheets
Appendix E	XRF Performance Characteristics Sheets
Appendix F	Lead-Based Paint Inspector, Risk Assessor, and Firm Licenses

## EXECUTIVE SUMMARY

Enercon Services, Inc. (ENERCON) has completed a Survey and Assessment for Lead in Paint and Settled Dust (Survey) at the SW 44<sup>th</sup> National Guard Armory, 2222 SW 44<sup>th</sup> Street, Oklahoma City, Oklahoma. The survey was conducted on December 22 and 23, 2010 by Mr. Marshall Branscum and Mr. Doug Whitmer, both of ENERCON.

The Survey and Assessment included non-destructive sampling of representative paint surfaces in the armory using an X-ray Fluorescence (XRF) Analyzer and dust wipe samples. Dust wipe samples were collected from the floor in each room using EPA/HUD wipe sampling protocols.

The results of XRF sampling indicated the following:

- Interior: The following components were coated with LPB: Four doors and door frames at Rooms 12, 14, 15 and 16; two door frames only at Room 1 and 11; one door only at Room 18; a concrete block wall and a wood wall in Room 39 (Sides A and D). The doors and door frames with LPB were associated with rooms off the south corridor.
- Exterior: One white trim board on Side B was coated with LPB.

The results of wipe samples collected from the floors revealed:

- Lead dust contamination was present in three rooms (Rooms 2, 4, and 35).

## 1.0 INTRODUCTION

Enercon Services, Inc. (ENERCON) has completed a Survey and Assessment for Lead in Paint and Settled Dust (Survey) at the SW 44<sup>th</sup> National Guard Armory, 2222 SW 44<sup>th</sup> Street, Oklahoma City, Oklahoma. The inspection was conducted on December 22 and 23, 2010 by Mr. Marshall Branscum and Mr. Doug Whitmer, both of ENERCON.

The SW 44<sup>th</sup> National Guard Armory was constructed on a concrete slab-on-grade foundation with flat roofs covered with tar and gravel. The walls were constructed of brick and concrete block. The building contained a large drill room with three additional rooms located within the drill room and 48 additional rooms located east of the drill room along a two corridors. Building layouts are included in Appendix A.

The Survey was performed to identify the locations, condition and estimated quantities of Lead-Based Paint (LBP) and lead-laden settled dust in the Armory.

## 2.0 METHODOLOGY

Areas included in the scope of work were described and visually confirmed by Mr. Dustin Davidson of ODEQ. Visual inspection was performed in all rooms and the exterior of the building. The purpose of the visual inspection was to identify similar painted surfaces so that representative XRF readings could be taken. These surfaces were determined by differentiating them by color, component, room and building. Readings of painted surfaces were then obtained.

The survey included visual observations, photographic documentation (Appendix B), dust wipe samples (Appendix C), and x-ray fluorescence (XRF) measurements of suspect Lead-Based Paint (LBP) (Appendix D). XRF readings were obtained for each building component type in each room and on each side of the building exterior. One dust wipe sample was obtained in each room except for the drill room, where three samples were obtained.

The criterion used for determination of the presence of LBP on painted surfaces was the EPA threshold for XRF readings as equal to or greater than 1.0 milligram per square centimeter ( $\text{mg}/\text{cm}^2$ ).

The criteria used for dust wipe samples based upon sampling according to the EPA/HUD criteria for wipe samples and laboratory analysis where the lead concentration is equal to or greater than 40.0 micrograms per square foot ( $\mu\text{g}/\text{ft}^2$ ).

The presence of LBP was determined using a Niton Model XLp-703A XRF (X-Ray Fluorescence) Analyzer, Serial Number 10713. At power-up, the unit performed routine internal calibration and operational checks. It was then checked for reading accuracy using a 1.0  $\text{mg}/\text{cm}^2$  standard paint chip supplied by the manufacturer by a series of three measurements of the standard paint chip. This calibration was done immediately prior to use, at least every four hours of operation and prior to shut down each day of use. The Performance Characteristic Sheet for the XLp-703A is provided in Appendix E of this report. The location, component, substrate, color and other relevant information

regarding the sample was entered into the XRF using the touchpad on the instrument as each measurement was made. Upon completion of the measurements, the data was downloaded into an Excel spreadsheet using software provided by the analyzer manufacturer. The Excel spreadsheet is provided in Appendix D of this report. Some corrections of the downloaded data were made due to obvious keypad entry errors. Due to the sensitivity of the proximity sensor on the XRF, a number of null readings resulted, particularly when attempting to sample rough or uneven painted surfaces. These readings were not deleted from the spreadsheet in order to maintain the continuity of the sample numbers.

Each room was given an arbitrary number on a building floor plan. The walls of the rooms were designated by letters with street address side labeled as "Side A," and the remaining sides denoted as B, C and D following a clockwise pattern.

The actual number of XRF measurements completed was dependent upon the different painted components and colors of paint present. The XRF instrument measures all layers of paint present at the sampling location. Therefore, the XRF instrument returns a positive reading even through layers of non-lead paint that have been applied, when a layer of LBP exists on the component.

The condition of painted surfaces sampled was recorded during the survey and is discussed in the Results Section below.

### **3.0 RESULTS**

#### **3.1 Lead-Based Paint**

A total of 415 XRF samples were collected, including calibration and null readings. Figure 1 in Appendix A shows the location of painted components with LBP. Tables 1, 2, and 3 provide a summary of building components with LBP as identified by XRF sampling along with their locations and sizes. The painted surfaces sampled during the survey ranged from intact to poor condition. Painted surfaces sampled during the survey ranged from fair to intact condition. Representative photographs were taken of components where positive readings ( $1.0 \text{ mg/cm}^2$  or greater) were obtained and are provided in Appendix B.

The results of XRF sampling indicated the following building components were coated with LBP:

##### **Interior Components:**

- Four metal doors and frames, Rooms 12, 14, 15 and 16 all on Side A.
- Two metal door frames, Rooms 1, Side B, and Room 11, Side C.
- One metal door, Room 18, Side A.
- One concrete black wall and one wood wall, Room 39 – Sides A and D

##### **Exterior Components:**

- One white wood trim board, Side B

**Table 1 –Lead-Based Paint Locations (XRF)  
Doors and Door Frames**

<b>Identified Lead-Based Paint (Color/Description)</b>	<b>Lead Content (mg/cm<sup>2</sup>)</b>	<b>Location</b>	<b>Size of Door/Frame</b>
Gray Door Frame	1.9	Room 14, Side A	36" x 84"
Gray Door	1.7	Room 14, Side A	36" x 84"
White Door	1.6	Room 12, Side A	36" x 84"
Blue Door Frame	1.0	Room 12, Side A	36" x 84"
Brown Door Frame	1.2	*Room (1) 5, Side D	36" x 84"
Brown Door	1.7	*Room (15) 5, Side C	36" x 84"
Brown Door Frame	1.7	*Room (15) 5, Side C	36" x 84"
Brown Door	2.1	*Room (16) 5, Side C	36" x 84"
Brown Door Frame	1.9	*Room (16) 5, Side C	36" x 84"
Brown Door	1.7	*Room (18) 5, Side C	36" x 84"
Brown Door Frame	1.8	*Room (11) 5, Side A	36" x 84"

\*Number in parentheses is the room number that identifies the specific door with LBP as the sampling was done from the corridor side (Room 5)

**Table 2 –Lead-Based Paint Locations (XRF)  
Window Frames**

<b>Identified Lead-Based Paint (Color/Description)</b>	<b>Lead Content (mg/cm<sup>2</sup>)</b>	<b>Location</b>	<b>Size of Window</b>
NONE	N/A	N/A	N/A

**Table 3 –Lead-Based Paint (XRF)  
Other Surfaces/Components**

Identified Lead-Based Paint (Color)	Lead Content (mg/cm <sup>2</sup> )	Location	Surface/Components
Blue	1.8	Room 39, Side A	Wall (Concrete Block)
Blue	1.1	Room 39, Side D	Wall (Wood)
White	1.1	Exterior, Side B	Trim Board (Wood)

### 3.2 Dust Wipe Samples

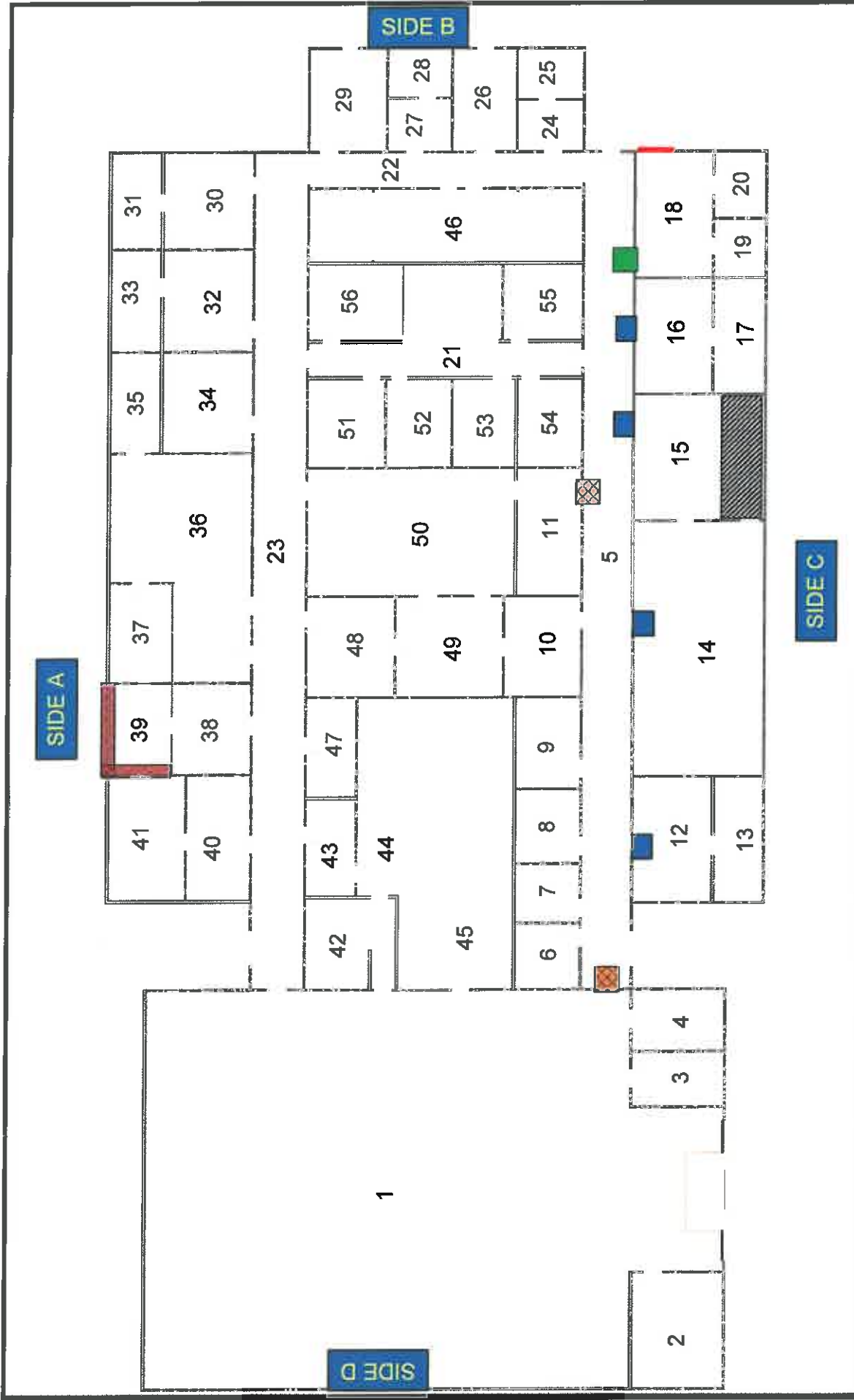
Dust wipe samples were obtained following the EPA/HUD protocol. A template measuring one square foot was used to provide a known sampling area. Concentrations of 40.0 µg/ft<sup>2</sup> or greater are considered contaminated, in accordance with HUD and EPA guidelines. One dust wipe sample was obtained in each room except for the drill room, where three samples were collected. A total of 58 wipe samples were collected. Laboratory results from the dust wipe samples are presented in Appendix C. It should be noted that the vault room on the south side of the building was locked at the time of the lead dust wipe sampling. Therefore, the south vault room was not included in the lead dust wipe sampling survey. Three rooms had lead dust contamination above the threshold. The locations determined by laboratory analysis to be contaminated by lead dust are listed in Table 4 and shown on Figure 2 in Appendix A.

**Table 4 – Positive Dust Wipe Locations**

Sample Number	Lead Content (µg/ft <sup>2</sup> )	Location	Square Footage of Positive Location
SW-02	118.09	Room 2	398 SF
SW-04	55.72	Room 4	207 SF
SW-35	104.96	Room 35	295 SF



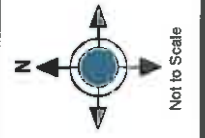
## **APPENDIX A**



**ENERCON**

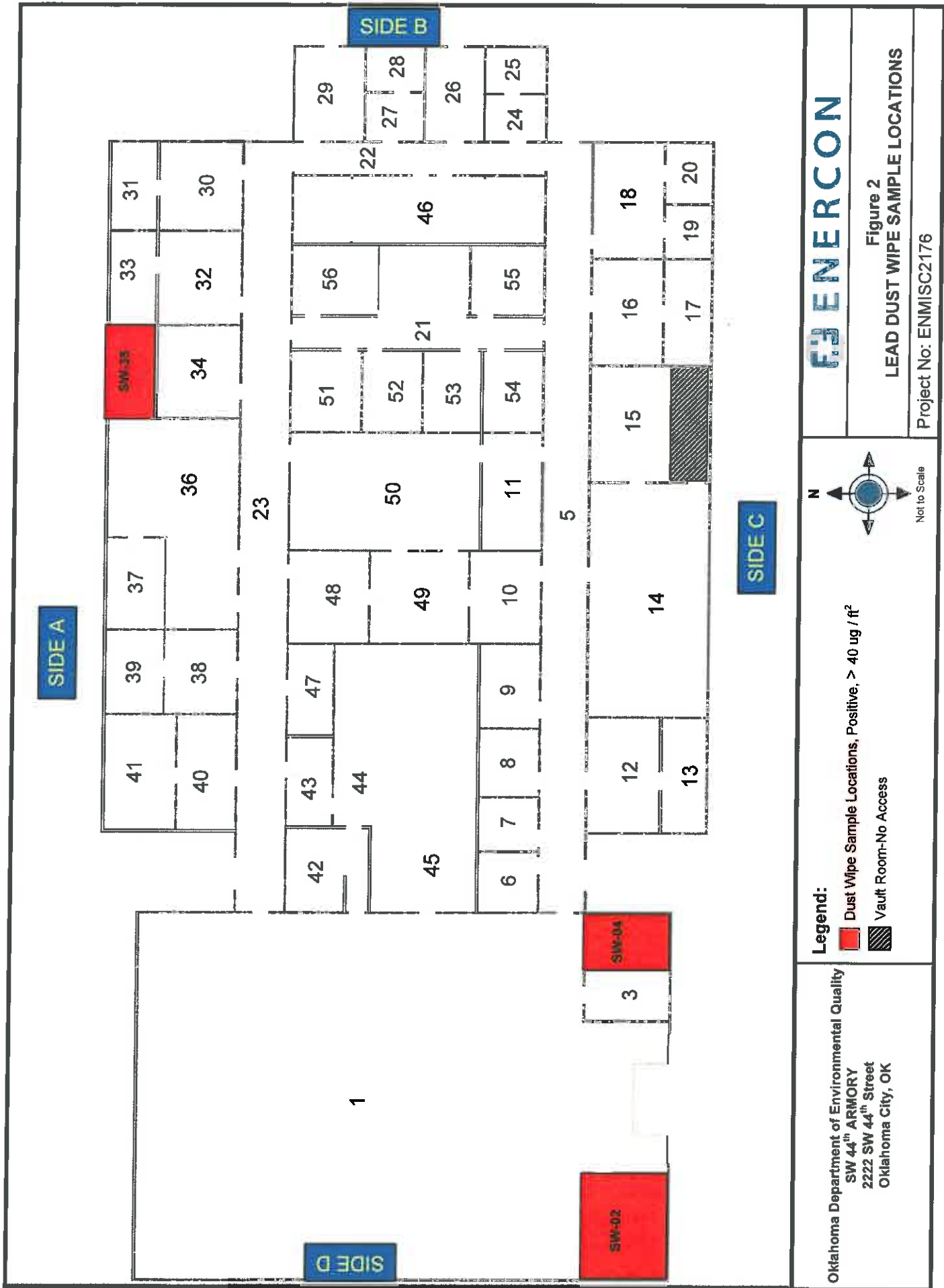
Figure 1  
**LEAD-BASED PAINT LOCATIONS**

Project No: ENMISC2176



- Legend:**
- Door and Frame - LBP
  - Door Only - LBP
  - Walls - LBP
  - Trim Board - LBP
  - Vault Not Accessible

Oklahoma Department of Environmental Quality  
 SW 44<sup>th</sup> ARMORY  
 2222 SW 44<sup>th</sup> Street  
 Oklahoma City, OK

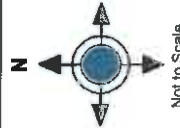


SIDE A

SIDE B

SIDE C

SIDE D



Not to Scale

## **APPENDIX B**

**PHOTOGRAPHIC RECORD**

**Project No: ENMISC2176**

**Project Name: SW 44<sup>th</sup> NATIONAL GUARD ARMORY**



**Photo #1: Gray painted door and door frame Room 14 - LBP.**



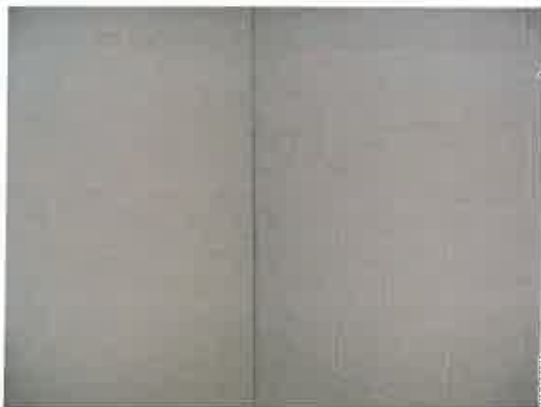
**Photo #2: Blue door frame and white door Room 12 - LBP.**



**Photo #3: Brown door frame Room 5 (1) - LBP.**



**Photo # 4: Typical brown door and door frame - LBP.**



**Photo # 5: Blue concrete block and wood wall Room 39 - LBP.**



**Photo # 6: White painted trim board above window - LBP.**

## **APPENDIX C**



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

## Environmental Chemistry Analysis Report

**Quantem Set ID:** 190819  
**Date Received:** 01/05/11  
**Received By:** Sherric Leftwich  
**Date Sampled:**  
**Time Sampled:**  
**Analyst:** BM  
**Date of Report:** 1/6/2011

**Client:** Enercon Services, Inc.  
 6525 N. Meridian, Suite 400  
 Oklahoma City, OK 73116

**Acct. No.:** A845

**Project:** SW 44th Armory

**Location:** SW 44th/Penn

**Project No.:** ENMISC2176

AIHA ID: 101352

Quantem ID	Client ID	Matrix	Parameter	Results	Reporting Limits	Units	Date/Time Analyzed	Method
001	SW-01	Wipe	Lead	35.80	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
002	SW-01A	Wipe	Lead	<16.00	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
003	SW-01B	Wipe	Lead	18.32	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
004	SW-02	Wipe	Lead	118.09	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
005	SW-03	Wipe	Lead	32.78	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
006	SW-04	Wipe	Lead	55.72	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
007	SW-05	Wipe	Lead	<16.00	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
008	SW-06	Wipe	Lead	<16.00	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
009	SW-07	Wipe	Lead	33.41	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
010	SW-08	Wipe	Lead	<16.00	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
011	SW-09	Wipe	Lead	<16.00	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100

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

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



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**Project No.:** ENMISC2176

AIHA ID: 101352

QuanTEM ID	Client ID	Matrix	Parameter	Results	Reporting Limits	Units	Date/Time Analyzed	Method
012	SW-10	Wipe	Lead	<16.00	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
013	SW-11	Wipe	Lead	<16.00	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
014	SW-12	Wipe	Lead	<16.00	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
015	SW-13	Wipe	Lead	<16.00	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
016	SW-14	Wipe	Lead	<16.00	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
017	SW-15	Wipe	Lead	<16.00	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
018	SW-16	Wipe	Lead	<16.00	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
019	SW-17	Wipe	Lead	<16.00	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
020	SW-18	Wipe	Lead	<16.00	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
021	SW-19	Wipe	Lead	<16.00	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
022	SW-20	Wipe	Lead	<16.00	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100

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023	SW-21	Wipe	Lead	<16.00	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
024	SW-22	Wipe	Lead	<16.00	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
025	SW-23	Wipe	Lead	<16.00	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
026	SW-24	Wipe	Lead	<16.00	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
027	SW-25	Wipe	Lead	<16.00	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
028	SW-26	Wipe	Lead	16.69	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
029	SW-27	Wipe	Lead	<16.00	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
030	SW-28	Wipe	Lead	<16.00	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
031	SW-29	Wipe	Lead	<16.00	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
032	SW-30	Wipe	Lead	<16.00	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
033	SW-31	Wipe	Lead	<16.00	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100

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**Location:** SW 44th/Penn  
**Project No.:** ENMISC2176

AIHA ID: 101352

QuantEM ID	Client ID	Matrix	Parameter	Results	Reporting Limits	Units	Date/Time Analyzed	Method
034	SW-32	Wipe	Lead	37.15	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
035	SW-33	Wipe	Lead	19.21	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
036	SW-34	Wipe	Lead	<16.00	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
037	SW-35	Wipe	Lead	104.96	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
038	SW-36	Wipe	Lead	<16.00	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
039	SW-37	Wipe	Lead	33.13	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
040	SW-38	Wipe	Lead	<16.00	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
041	SW-39	Wipe	Lead	<16.00	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
042	SW-40	Wipe	Lead	<16.00	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
043	SW-41	Wipe	Lead	<16.00	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
044	SW-42	Wipe	Lead	<16.00	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100

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**Acct. No.:** A845

**Project:** SW 44th Armory

**Location:** SW 44th/Penn

**Project No.:** ENMISC2176

AIHA ID: 101352

QuanTEM ID	Client ID	Matrix	Parameter	Results	Reporting Limits	Units	Date/Time Analyzed	Method
045	SW-43	Wipe	Lead	<16.00	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
046	SW-44	Wipe	Lead	<16.00	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
047	SW-45	Wipe	Lead	<16.00	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
048	SW-46	Wipe	Lead	<16.00	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
049	SW-47	Wipe	Lead	29.52	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
050	SW-48	Wipe	Lead	<16.00	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
051	SW-49	Wipe	Lead	<16.00	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
052	SW-50	Wipe	Lead	30.01	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
053	SW-51	Wipe	Lead	<16.00	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
054	SW-52	Wipe	Lead	<16.00	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
055	SW-53	Wipe	Lead	<16.00	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100

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

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Date Received: 01/05/11  
Received By: Sherrie Leftwich  
Date Sampled:  
Time Sampled:  
Analyst: BM  
Date of Report: 1/6/2011

Client: Enercon Services, Inc.  
6525 N. Meridian, Suite 400  
Oklahoma City, OK 73116

Acct. No.: A845

Project: SW 44th Armory

Location: SW 44th/Penn

Project No.: ENMISC2176

AIHA ID: 101352

QuanTEM ID	Client ID	Matrix	Parameter	Results	Reporting Limits	Units	Date/Time Analyzed	Method
056	SW-54	Wipe	Lead	<16.00	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
057	SW-55	Wipe	Lead	<16.00	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100
058	SW-56	Wipe	Lead	<16.00	16.00	ug/sq. Ft.	01/06/11 15:00	EPA 3051 / NIOSH 9100

Authorized Signature: 

Benton Miller, Analyst

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

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



# Lead Chain-of-Custody

2033 Heritage Park Drive, Oklahoma City, OK 73120-7502  
 (800) 822-1860 (405) 755-7272 Fax: (405) 755-2058  
 www.quantem.com

The Box for Lab Use Only  
 Lab No. 180-190819  
 Accept  Reject

Company Name: Emerson Project Name: SW 44th Army  
 Project Location: \_\_\_\_\_ Project Number: EMMSC 2176

Sample Number	Sample Description	Volume of Area	Sample Matrix	Analysis	Units Requested	Sample Matrix Codes
46 SW-44		14 in <sup>2</sup>		A	mg / cm <sup>2</sup>	A - Soil
47 -45					ug / cu ft	B - Paint Chips
48 -46					ug / sq ft	C - Surface / Dust Wipes
49 -47					mg / lb	D - Bulk Miscellaneous
50 -48					mg / kg	E - Air Cassette
51 -49					%	F - Other (SPECIFY)
52 -50					PPM	
53 -51						
54 -52						
55 -53						
56 -54						
57 -55						
58 V-56						

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TURNAROUND TIME

Same Day   
 24 Hour   
 3-Day   
 5-day

CONTACT INFORMATION

Name: Marshall Blanscum  
 Phone: \_\_\_\_\_  
 Report Results VIA (CHOOSE ONE):  
 FAX: \_\_\_\_\_  
 Quantem Website  
 E-Mail: \_\_\_\_\_

Handled by: Michelle Brusa Date/TIME: 3:55pm VIA: Hand Rec'd by: Steph Date/TIME: 3:15  
 Rec'd by: Steph Date/TIME: 3:15 Sampled By: 1-51 MCB

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



# Lead Chain-of-Custody

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 (800) 822-1850 (405) 756-7272 Fax: (405) 756-2058  
 www.quantem.com

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 Lab No. 190819  
 Account Request

Company Name: Enercon Services, Inc. Project Name: SW 4th Army  
 Project Location: SW 4th / Penn Project Number: ENMISCZ176  
 Acct.#:

Sample Number	Sample Description	Volume of Area	Sample Matrix	Analysis	Units Requested	Sample Matrix Codes	TURNAROUND TIME
1	SW-01	144.2		X	1 / 0.5	A - Soil	Same Day
2	-01A				2 / 0.5	B - Paint Chips	X 24 Hour
3	-01B				3 / 0.5	C - Surface / Dust Wipes	3-Day
4	-02				4 / 0.5	D - Bulk Miscellaneous	5-day
5	-03				5 / 0.5	E - Air Cassette	
6	-04				6 / 0.5	F - Other (SPECIFY)	
7	-05				7 / 0.5		
8	-06				8 / 0.5		
9	-07				9 / 0.5		
10	-08				10 / 0.5		
11	-09				11 / 0.5		
12	-10				12 / 0.5		
13	-11				13 / 0.5		
14	-12				14 / 0.5		
15	-13				15 / 0.5		

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**CONTACT INFORMATION**  
 Name: Marshall Branscum  
 Phones: 405-722-7693  
 Report Results VIA (CHOOSE ONE)  
 FAX  
 Quantem Website  
 E-Mail

Requested by: Marshall Branscum Date: 15-11 3:55 PM  
 Analyzed by: S. Price Date: 15-11 3:55 PM  
 Sampled by: MB Date: 15-11 MB

Saturday FedEx Shipping - CALL TO SCHEDULE  
 Use this address for Saturday FedEx only: 4220 N. Santa Fe Ave., Oklahoma City, OK 73105-8317  
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# Lead Chain-of-Custody

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 (800) 822-1650 (405) 755-7272 Fax: (405) 755-2058  
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Company Name: Earlson Acct #: \_\_\_\_\_ Project Name: SW 44th Army

Project Location: \_\_\_\_\_ Project Number: EMMISC 2176

Sample Number	Sample Description	Volume of Area	Sample Matrix	Analysis	Units Requested	Sample Matrix Codes	Turnaround Time
16 SW-14		144 sq ft	C	X	mg / sq ft	A - Soil	Same Day
17 -15					mg / sq ft	B - Paint Chips	124 Hour
18 -16					mg / sq ft	C - Surface / Dust Wipes	3-Day
19 -17					mg / sq ft	D - Bulk Miscellaneous	5-day
20 -18					mg / sq ft	E - Air Cassette	
21 -19					mg / sq ft	F - Other (SPECIFY)	
22 -20							
23 -21							
24 -22							
25 -23							
26 -24							
27 -25							
28 -26							
29 -27							
30 -28							

CONTACT INFORMATION  
 Name: Marshall  
1501 SW  
 Phone: \_\_\_\_\_  
 Report Results VIA (CHOOSE ONE):  
 FAX: \_\_\_\_\_  
 Quantem WebSite  
 E-Mail: \_\_\_\_\_

Reviewed by: Marshall Date: 3-5-11  
 Analyzed by: Stefanie Date: 1-5-11  
 Sampled By: MLB

Saturday FedEx Shipping - CALL TO SCHEDULE  
 Use this address for Saturday FedEx only: 4220 N. Santa Fe Ave., Oklahoma City, OK 73105-6517  
 Mark Package HOLD FOR SATURDAY PICKUP



**Lead Chain-of-Custody**  
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 (800) 922-1650 (405) 755-7272 Fax: (405) 755-2058  
 www.quantem.com

This Box for Lab Use Only  
 Lab No. 190819  
 Accept  Reject

Company Name: Enwcon Acct #: \_\_\_\_\_ Project Name: Sw 44th Army

Project Location: \_\_\_\_\_ Project Number: ENMISC 2176

Sample Number	Sample Description	Volume of Area	Sample Matrix	Analysis	Units Requested	Sample Matrix Codes	TURNAROUND TIME
31							
32							
33							
34							
35							
36							
37							
38							
39							
40							
41							
42							
43							
44							
45							

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

**CONTACT INFORMATION**  
 Name: Marshall Branxum  
 Phone: \_\_\_\_\_  
 Report Results VIA (CHOOSE ONE)  
 FAX  
 Quantem WebSite  
 E-Mail

Prepared by: Marshall Branxum Date/Time: 1-5-11 3:55 PM  
 Reviewed by: S. P. ... Date/Time: 1-5-11 3:55 PM  
 Sampled By: MSA MB

**Saturday FedEx Shipping - CALL TO SCHEDULE**  
 Use this address for Saturday FedEx only: 4220 N. Santa Fe Ave., Oklahoma City, OK 73105-8517  
 Mark Package 'HOLD FOR SATURDAY PICKUP'



## **APPENDIX D**

Reading Time	Site	Room	Site Component	Color	Condition	Substrate	Results	PbC	PbL	PbK
1	12/22/2010 11:39	SW 44th ARMORY	CALIBRATE				Negative	0.9	0.9	0.5
2	12/22/2010 11:40	SW 44th ARMORY	CALIBRATE				Positive	1.1	1.1	0.7
3	12/22/2010 11:44	SW 44th ARMORY	CALIBRATE				Positive	?	?	0.5
4	12/22/2010 12:00	SW 44th ARMORY	ROOM 20				Negative	0.01	0.01	-0.4
5	12/22/2010 12:00	SW 44th ARMORY	ROOM 20		Fair	Metal	Negative	0.08	0.08	-0.2
6	12/22/2010 12:01	SW 44th ARMORY	ROOM 20		Fair	Glass	Negative	0	0	-1
7	12/22/2010 12:01	SW 44th ARMORY	ROOM 20		Intact	Metal	Negative	-0.9	0.02	-0.9
8	12/22/2010 12:02	SW 44th ARMORY	ROOM 20		Intact	Concrete Block	Negative	0.02	0.02	-0.2
9	12/22/2010 12:03	SW 44th ARMORY	ROOM 20		Fair	Wood	Negative	0	0	0.4
10	12/22/2010 12:04	SW 44th ARMORY	ROOM 19		Intact	Metal	Negative	0.03	0.03	-0.1
11	12/22/2010 12:05	SW 44th ARMORY	ROOM 19		Intact	Metal	Negative	0.26	0.26	-0.2
12	12/22/2010 12:06	SW 44th ARMORY	ROOM 18		Fair	Metal	Negative	0.13	0.13	-0.6
13	12/22/2010 12:06	SW 44th ARMORY	ROOM 18		Intact	Metal	Negative	0.09	0.09	-0.1
14	12/22/2010 12:08	SW 44th ARMORY	ROOM 18		Fair	Metal	Negative	0	0	0.07
15	12/22/2010 12:08	SW 44th ARMORY	ROOM 18		Intact	Concrete Block	Null	0	0	0.25
16	12/22/2010 12:09	SW 44th ARMORY	ROOM 18		Intact	Concrete Block	Negative	0.02	0.02	-0.1
17	12/22/2010 12:10	SW 44th ARMORY	ROOM 17		Intact	Drywall	Negative	0.02	0.02	-0.3
18	12/22/2010 12:11	SW 44th ARMORY	ROOM 17		Intact	Concrete Block	Negative	0.06	0.06	0.13
19	12/22/2010 12:12	SW 44th ARMORY	ROOM 17		Intact	Brick	Negative	0.14	0.14	-0.3
20	12/22/2010 12:13	SW 44th ARMORY	ROOM 16		Intact	Metal	Negative	0.21	0.21	-0.4
21	12/22/2010 12:13	SW 44th ARMORY	ROOM 16		Intact	Wood	Negative	0.11	0.11	-0.7
22	12/22/2010 12:14	SW 44th ARMORY	ROOM 16		Intact	Drywall	Negative	0.07	0.07	0.3
23	12/22/2010 12:14	SW 44th ARMORY	ROOM 16		Intact	Drywall	Negative	0.02	0.02	0.03
24	12/22/2010 12:15	SW 44th ARMORY	ROOM 16		Intact	Drywall	Negative	0	0	0.4
25	12/22/2010 12:16	SW 44th ARMORY	ROOM 16		Intact	Brick	Negative	0.07	0.07	0.08
26	12/22/2010 12:16	SW 44th ARMORY	ROOM 16		Intact	Concrete	Negative	0.01	0.01	-0.1
27	12/22/2010 12:18	SW 44th ARMORY	ROOM 15		Intact	Metal	Negative	0.4	0.4	0.5
28	12/22/2010 12:19	SW 44th ARMORY	ROOM 15		Intact	Metal	Negative	0.19	0.19	0
29	12/22/2010 12:19	SW 44th ARMORY	ROOM 15		Intact	Drywall	Negative	0	0	-0.4
30	12/22/2010 12:19	SW 44th ARMORY	ROOM 15		Intact	Drywall	Null	0.01	0.01	-0.1
31	12/22/2010 12:20	SW 44th ARMORY	ROOM 15		Intact	Drywall	Negative	0.03	0.03	0.08
32	12/22/2010 12:20	SW 44th ARMORY	ROOM 15		Intact	Brick	Negative	0	0	0.08
33	12/22/2010 12:21	SW 44th ARMORY	ROOM 15		Intact	Drywall	Negative	0.09	0.09	0.03
34	12/22/2010 12:21	SW 44th ARMORY	ROOM 15		Intact	Metal	Negative	0	0	0.07
35	12/22/2010 12:22	SW 44th ARMORY	ROOM 14		Intact	Metal	Positive	1.9	1.9	1.4
36	12/22/2010 12:23	SW 44th ARMORY	ROOM 14		Intact	Metal	Null	0.8	0.8	0.5
37	12/22/2010 12:24	SW 44th ARMORY	ROOM 14		Intact	Metal	Null	0.8	0.8	0.9
38	12/22/2010 12:24	SW 44th ARMORY	ROOM 14		Intact	Metal	Positive	1.7	1.7	1.5
39	12/22/2010 12:25	SW 44th ARMORY	ROOM 14		Intact	Drywall	Negative	0.04	0.04	0.16
40	12/22/2010 12:25	SW 44th ARMORY	ROOM 14		Intact	Metal	Negative	0	0	-0.2
41	12/22/2010 12:26	SW 44th ARMORY	ROOM 14		Intact	Metal	Negative	0	0	-0.7

Reading Time	Site	Room	Side Component	Color	Condition	Substrate	Results	PbC	PbL	PbK		
42	12/22/2010 12:27	SW 44th ARMORY	ROOM 14	B	Wall	Beige	Intact	Brick	Negative	0.03	0.03	-0.4
43	12/22/2010 12:28	SW 44th ARMORY	ROOM 14	C	Wall	Beige	Intact	Concrete Block	Negative	0.06	0.06	0.14
44	12/22/2010 12:29	SW 44th ARMORY	ROOM 14	D	Pass Through Window	Stained	Intact	Wood	Negative	0	0	0.16
45	12/22/2010 12:35	SW 44th ARMORY	ROOM 13	A	Door Frame	White	Intact	Metal	Negative	0.28	0.28	0.3
46	12/22/2010 12:36	SW 44th ARMORY	ROOM 13	A	Door	White	Intact	Metal	Null	0.9	0.9	0.9
47	12/22/2010 12:37	SW 44th ARMORY	ROOM 13	A	Door	White	Intact	Metal	Negative	0.6	0.6	0.08
48	12/22/2010 12:38	SW 44th ARMORY	ROOM 13	A	Wall	White	Intact	Drywall	Negative	0	0	0.11
49	12/22/2010 12:38	SW 44th ARMORY	ROOM 13	B	Wall	Blue	Intact	Drywall	Null	0	0	0.3
50	12/22/2010 12:39	SW 44th ARMORY	ROOM 13	C	Wall	Blue	Intact	Concrete Block	Negative	0.01	0.01	0.4
51	12/22/2010 12:40	SW 44th ARMORY	ROOM 13	D	Wall	White	Intact	Concrete Block	Null	0.02	0.02	0.5
52	12/22/2010 12:40	SW 44th ARMORY	ROOM 13	D	Wall	White	Intact	Concrete Block	Negative	0.02	0.02	0.04
53	12/22/2010 12:41	SW 44th ARMORY	ROOM 12	A	Door Frame	Blue	Intact	Metal	Null	1.1	1.1	0.7
54	12/22/2010 12:46	SW 44th ARMORY	ROOM 12	A	Door Frame	Blue	Intact	Metal	Positive	1	1	0.5
55	12/22/2010 12:46	SW 44th ARMORY	ROOM 12	A	Door	White	Fair	Metal	Positive	1.0	1.6	0.9
56	12/22/2010 12:50	SW 44th ARMORY	ROOM 12	A	Wall	Blue	Intact	Drywall	Negative	0.01	0.01	-0.1
57	12/22/2010 12:50	SW 44th ARMORY	ROOM 12	B	Wall	Blue	Intact	Drywall	Negative	0.05	0.05	0.6
58	12/22/2010 12:51	SW 44th ARMORY	ROOM 12	C	Wall	Blue	Intact	Drywall	Negative	0	0	0.28
59	12/22/2010 12:51	SW 44th ARMORY	ROOM 12	D	Wall	Blue	Intact	Concrete Block	Negative	0.01	0.01	0.23
60	12/22/2010 12:52	SW 44th ARMORY	ROOM 12	C	Door Frame	White	Intact	Metal	Negative	0.4	0.4	-0.2
61	12/22/2010 12:56	SW 44th ARMORY	ROOM 5	A	Wall	Beige	Intact	Drywall	Negative	0	0	-0.1
62	12/22/2010 12:58	SW 44th ARMORY	ROOM 5	C	Wall	Beige	Intact	Drywall	Negative	0	0	0.22
63	12/22/2010 12:58	SW 44th ARMORY	ROOM 5	D	Wall	Beige	Intact	Drywall	Negative	0	0	0.14
64	12/22/2010 13:00	SW 44th ARMORY	ROOM 5 (1)	D	Door Frame	Brown	Intact	Metal	Positive	1.2	1.2	1
65	12/22/2010 13:01	SW 44th ARMORY	ROOM 5	D	Door	Brown	Intact	Metal	Negative	0	0	0.18
66	12/22/2010 13:02	SW 44th ARMORY	ROOM 5	B	Wall	Beige	Intact	Drywall	Negative	0	0	0.03
67	12/22/2010 13:03	SW 44th ARMORY	ROOM 5	B	Door Frame	Brown	Intact	Metal	Null	0.04	0.04	0.14
68	12/22/2010 13:03	SW 44th ARMORY	ROOM 5	B	Door Frame	Brown	Intact	Metal	Negative	0.04	0.04	0.3
69	12/22/2010 13:03	SW 44th ARMORY	ROOM 5	B	Door	Brown	Intact	Metal	Negative	0	0	0.05
70	12/22/2010 13:04	SW 44th ARMORY	ROOM 5	C	Door Frame	Brown	Intact	Metal	Negative	0.09	0.09	-0.1
71	12/22/2010 13:04	SW 44th ARMORY	ROOM 5	C	Door	Brown	Intact	Wood	Negative	0.03	0.03	-0.4
72	12/22/2010 13:05	SW 44th ARMORY	ROOM 5	C	Door Frame	Brown	Intact	Metal	Negative	0.4	0.4	0.3
73	12/22/2010 13:06	SW 44th ARMORY	ROOM 5	C	Door	Brown	Intact	Metal	Null	1	1	0.9
74	12/22/2010 13:06	SW 44th ARMORY	ROOM 5 (15)	C	Door	Brown	Intact	Metal	Positive	1.7	1.7	1.6
75	12/22/2010 13:08	SW 44th ARMORY	ROOM 5 (15)	C	Door Frame	Brown	Intact	Metal	Positive	1.7	1.7	1.6
76	12/22/2010 13:08	SW 44th ARMORY	ROOM 5	C	Door	Brown	Intact	Metal	Negative	0.5	0.5	0.12
77	12/22/2010 13:09	SW 44th ARMORY	ROOM 5	C	Door Frame	Brown	Intact	Metal	Negative	0.19	0.19	-0.4
78	12/22/2010 13:11	SW 44th ARMORY	ROOM 5	C	Door	Brown	Intact	Metal	Null	0.9	0.9	0.4
79	12/22/2010 13:11	SW 44th ARMORY	ROOM 5 (16)	C	Door	Brown	Intact	Metal	Positive	2.1	2.1	1.8
80	12/22/2010 13:13	SW 44th ARMORY	ROOM 5 (16)	C	Door Frame	Brown	Intact	Metal	Null	1.3	1.3	0.7
81	12/22/2010 13:13	SW 44th ARMORY	ROOM 5 (16)	C	Door Frame	Brown	Intact	Metal	Positive	1.9	1.9	1.3
82	12/22/2010 13:14	SW 44th ARMORY	ROOM 5	C	Door	Brown	Intact	Metal	Null	1	1	0.9



Reading	Time	Site	Room	Side Component	Color	Condition	Substrate	Results	PbC	PbL	PbK
83	12/22/2010 13:14	SW 44th Armory	ROOM 5	C Door	Brown	Intact	Metal	Null	0.7	0.7	-0.1
84	12/22/2010 13:16	SW 44th Armory	ROOM 5	C Door	Brown	Intact	Metal	Null	1	1	0.7
85	12/22/2010 13:16	SW 44th Armory	ROOM 5	C Door	Brown	Intact	Metal	Null	0.9	0.9	0.8
86	12/22/2010 13:17	SW 44th Armory	ROOM 5	C Door	Brown	Intact	Metal	Null	0.6	0.6	0.12
87	12/22/2010 13:18	SW 44th Armory	ROOM 5 (16)	C Door	Brown	Intact	Metal	Positive	1.7	1.7	1.2
88	12/22/2010 13:18	SW 44th Armory	ROOM 5	A Door Frame	Brown	Intact	Metal	Negative	0	0	-0.1
89	12/22/2010 13:19	SW 44th Armory	ROOM 5	A Door	Brown	Intact	Metal	Negative	0	0	-0.4
90	12/22/2010 13:19	SW 44th Armory	ROOM 5	A Door Frame	Brown	Intact	Metal	Negative	0	0	0.06
91	12/22/2010 13:19	SW 44th Armory	ROOM 5	A Door	Brown	Intact	Metal	Negative	0	0	-0.1
92	12/22/2010 13:20	SW 44th Armory	ROOM 5 (11)	A Door Frame	Brown	Intact	Metal	Positive	1.3	1.3	1.1
93	12/22/2010 13:21	SW 44th Armory	ROOM 5	A Door	Brown	Intact	Metal	Null	0.6	0.6	-0.3
94	12/22/2010 13:21	SW 44th Armory	ROOM 5	A Door	Brown	Intact	Metal	Null	0.8	0.8	0.4
95	12/22/2010 13:22	SW 44th Armory	ROOM 5	A Door Frame	Brown	Intact	Metal	Negative	0.7	0.7	0.5
96	12/22/2010 13:22	SW 44th Armory	ROOM 5	A Door	Brown	Intact	Metal	Negative	0.4	0.4	0.5
97	12/22/2010 13:33	SW 44th Armory	ROOM 6	C Door Frame	Gray	Intact	Metal	Negative	0	0	-0.5
98	12/22/2010 13:33	SW 44th Armory	ROOM 6	C Door	Gray	Intact	Metal	Negative	0	0	-0.4
99	12/22/2010 13:34	SW 44th Armory	ROOM 6	C Wall	Blue	Intact	Drywall	Negative	0	0	0.4
100	12/22/2010 13:34	SW 44th Armory	ROOM 6	A Wall	Blue	Intact	Drywall	Negative	0	0	-0
101	12/22/2010 13:36	SW 44th Armory	ROOM 7	C Door Frame	Gray	Intact	Metal	Null	0	0	-0
102	12/22/2010 13:37	SW 44th Armory	ROOM 7	C Door Frame	Gray	Intact	Metal	Null	0	0	0.19
103	12/22/2010 13:37	SW 44th Armory	ROOM 7	C Door Frame	Gray	Intact	Metal	Negative	0	0	-0.6
104	12/22/2010 13:38	SW 44th Armory	ROOM 7	C Door	Gray	Intact	Metal	Negative	0	0	-0.4
105	12/22/2010 13:39	SW 44th Armory	ROOM 7	C Wall	White	Intact	Drywall	Negative	0.01	0.01	-0.2
106	12/22/2010 13:40	SW 44th Armory	ROOM 7	A Air Handler	White	Intact	Metal	Negative	0	0	-0.2
107	12/22/2010 13:40	SW 44th Armory	ROOM 8	C Door Frame	Gray	Intact	Metal	Negative	0	0	0.21
108	12/22/2010 13:41	SW 44th Armory	ROOM 8	A Wall	Blue	Intact	Drywall	Negative	0	0	-0.2
109	12/22/2010 13:41	SW 44th Armory	ROOM 8	B Wall	Blue	Intact	Drywall	Negative	0	0	-0.1
110	12/22/2010 13:42	SW 44th Armory	ROOM 9	C Door Frame	Blue	Intact	Metal	Negative	0	0	-0
111	12/22/2010 13:43	SW 44th Armory	ROOM 9	C Wall	Blue	Intact	Drywall	Negative	0	0	-0.2
112	12/22/2010 13:47	SW 44th Armory	ROOM 9	D Wall	Blue	Intact	Drywall	Negative	0.5	0.5	1.1
113	12/22/2010 13:47	SW 44th Armory	ROOM 9	C I-Beam	Red	Fair	Metal	Null	0.4	0.4	2.3
114	12/22/2010 13:48	SW 44th Armory	ROOM 9	C I-Beam	Red	Fair	Metal	Null	1.1	1.1	1
115	12/22/2010 13:49	SW 44th Armory	ROOM 9	C I-Beam	Red	Fair	Metal	Null	0.7	0.7	0.29
116	12/22/2010 14:03	SW 44th Armory	ROOM 9	C I-Beam	Red	Fair	Metal	Negative	0	0	-0.1
117	12/22/2010 14:04	SW 44th Armory	ROOM 10	C Door Frame	Gray	Intact	Metal	Negative	0	0	0.01
118	12/22/2010 14:04	SW 44th Armory	ROOM 10	C Door	Gray	Intact	Metal	Negative	0	0	0.27
119	12/22/2010 14:05	SW 44th Armory	ROOM 10	C Wall	Blue	Intact	Drywall	Negative	0	0	-0.1
120	12/22/2010 14:05	SW 44th Armory	ROOM 10	D Wall	Blue	Intact	Drywall	Negative	0	0	-0.2
121	12/22/2010 14:07	SW 44th Armory	ROOM 10	B Wall	Blue	Intact	Drywall	Negative	0	0	0.12
122	12/22/2010 14:08	SW 44th Armory	ROOM 49	B Door	Stained	Intact	Wood	Negative	0	0	0.26
123	12/22/2010 14:09	SW 44th Armory	ROOM 49	B Wall	Blue	Intact	Drywall	Negative	0	0	-0.3

Reading	Time	Site	Room	Side	Component	Color	Condition	Substrate	Results	PbC	PbL	PbK
124	12/22/2010 14:10	SW 44th ARMORY	ROOM 49	C	Wall	Blue	Intact	Drywall	Null	0	0	0.03
125	12/22/2010 14:11	SW 44th ARMORY	ROOM 49	C	Wall	Blue	Intact	Drywall	Negative	0	0	0.23
126	12/22/2010 14:13	SW 44th ARMORY	ROOM 48	A	Door Frame	Brown	Intact	Metal	Negative	0.04	0.04	0.11
127	12/22/2010 14:13	SW 44th ARMORY	ROOM 48	A	Door	Blue	Intact	Metal	Negative	0.05	0.05	0.16
128	12/22/2010 14:14	SW 44th ARMORY	ROOM 48	A	Wall	Blue	Intact	Drywall	Negative	0.07	0.07	0.4
129	12/22/2010 14:15	SW 44th ARMORY	ROOM 48	B	Wall	Blue	Intact	Drywall	Negative	0.02	0.02	0.3
130	12/22/2010 14:15	SW 44th ARMORY	ROOM 48		Ceiling	Blue	Intact	Drywall	Null	0.03	0.03	0.5
131	12/22/2010 14:16	SW 44th ARMORY	ROOM 48		Ceiling	Blue	Intact	Drywall	Null	0.09	0.09	0.2
132	12/22/2010 14:17	SW 44th ARMORY	ROOM 48		Ceiling	Blue	Intact	Drywall	Negative	0.03	0.03	0.6
133	12/22/2010 14:20	SW 44th ARMORY	ROOM 11	C	Wall	Blue	Intact	Drywall	Negative	0	0	0.17
134	12/22/2010 14:21	SW 44th ARMORY	ROOM 11	A	Wall	Blue	Intact	Drywall	Null	0	0	0.4
135	12/22/2010 14:21	SW 44th ARMORY	ROOM 11	A	Wall	Blue	Intact	Drywall	Null	0.04	0.04	0.02
136	12/22/2010 14:21	SW 44th ARMORY	ROOM 11	A	Wall	Blue	Intact	Drywall	Null	0	0	0.07
137	12/22/2010 14:21	SW 44th ARMORY	ROOM 11	A	Wall	Blue	Intact	Drywall	Null	0	0	-0.7
138	12/22/2010 14:22	SW 44th ARMORY	ROOM 11	A	Wall	Blue	Intact	Drywall	Null	0	0	-0.1
139	12/22/2010 14:22	SW 44th ARMORY	ROOM 11	A	Wall	Blue	Intact	Drywall	Negative	0	0	0.4
140	12/22/2010 14:23	SW 44th ARMORY	ROOM 50	A	Door Frame	Blue	Intact	Metal	Null	0	0	0.13
141	12/22/2010 14:24	SW 44th ARMORY	ROOM 50	A	Door Frame	Blue	Intact	Metal	Negative	0.01	0.01	-0.5
142	12/22/2010 14:24	SW 44th ARMORY	ROOM 50	A	Door	Blue	Intact	Metal	Negative	0.08	0.08	0.4
143	12/22/2010 14:25	SW 44th ARMORY	ROOM 50	A	Wall	Blue	Intact	Drywall	Negative	0	0	0.3
144	12/22/2010 14:26	SW 44th ARMORY	ROOM 50	D	Wall	Blue	Intact	Drywall	Negative	0	0	0.13
145	12/22/2010 14:28	SW 44th ARMORY	ROOM 54	A	Wall	Green	Intact	Drywall	Negative	0	0	0.17
146	12/22/2010 14:28	SW 44th ARMORY	ROOM 54	C	Wall	Green	Intact	Drywall	Negative	0	0	0.27
147	12/22/2010 14:30	SW 44th ARMORY	ROOM 53	B	Wall	Blue	Intact	Drywall	Null	0.04	0.04	0.4
148	12/22/2010 14:30	SW 44th ARMORY	ROOM 53	B	Wall	Blue	Intact	Drywall	Null	0	0	0.02
149	12/22/2010 14:30	SW 44th ARMORY	ROOM 53	B	Wall	Blue	Intact	Drywall	Negative	0	0	0.28
150	12/22/2010 14:31	SW 44th ARMORY	ROOM 53	D	Wall	Blue	Intact	Drywall	Negative	0	0	0.29
151	12/22/2010 14:33	SW 44th ARMORY	ROOM 52	A	Wall	Blue	Intact	Drywall	Negative	0.5	0	0.5
152	12/22/2010 14:33	SW 44th ARMORY	ROOM 52	C	Wall	Blue	Intact	Drywall	Negative	0	0	0.15
153	12/22/2010 14:35	SW 44th ARMORY	ROOM 51	B	Wall	Blue	Intact	Drywall	Negative	0	0	0.27
154	12/22/2010 14:36	SW 44th ARMORY	ROOM 51	D	Wall	Blue	Intact	Drywall	Negative	0	0	0.26
155	12/22/2010 14:37	SW 44th ARMORY	ROOM 56	A	Wall	Blue	Intact	Drywall	Negative	0	0	0.4
156	12/22/2010 14:38	SW 44th ARMORY	ROOM 56	C	Wall	Blue	Intact	Drywall	Null	0	0	1
157	12/22/2010 14:38	SW 44th ARMORY	ROOM 56	C	Wall	Blue	Intact	Drywall	Negative	0	0	0.4
158	12/22/2010 14:40	SW 44th ARMORY	ROOM 55	B	Wall	Blue	Intact	Drywall	Null	0.01	0.01	0.4
159	12/22/2010 14:40	SW 44th ARMORY	ROOM 55	B	Wall	Blue	Intact	Drywall	Negative	0	0	0.24
160	12/22/2010 14:41	SW 44th ARMORY	ROOM 55	D	Wall	Blue	Intact	Drywall	Null	0	0	0.5
161	12/22/2010 14:41	SW 44th ARMORY	ROOM 55	D	Wall	Blue	Intact	Drywall	Negative	0	0	0.19
162	12/22/2010 14:43	SW 44th ARMORY	ROOM 21	C	Door Frame	Gray	Intact	Metal	Negative	0.21	0.21	0.5
163	12/22/2010 14:44	SW 44th ARMORY	ROOM 21	C	Door	Gray	Intact	Metal	Negative	0.17	0.17	0.25
164	12/22/2010 14:45	SW 44th ARMORY	ROOM 21	C	Wall	Blue	Intact	Drywall	Negative	0	0	0.29



Reading	Time	Site	Room	Side Component	Color	Condition	Substrate	Results	PbC	PbL	PbK
165	12/22/2010 14:46	SW 44th ARMORY	ROOM 21	B Wall	Blue	Intact	Drywall	Negative	0	0	0.28
166	12/22/2010 14:49	SW 44th ARMORY	ROOM 21	B Wall	Blue	Intact	Concrete Block	Null	0.04	0.04	0.8
167	12/22/2010 14:49	SW 44th ARMORY	ROOM 21	B Wall	Blue	Intact	Concrete Block	Negative	0.03	0.03	0.6
168	12/22/2010 14:50	SW 44th ARMORY	ROOM 21	A Door Frame	Gray	Intact	Metal	Negative	0	0	-0.3
169	12/22/2010 14:51	SW 44th ARMORY	ROOM 21	A Door	Gray	Intact	Metal	Negative	0.13	0.13	-0.2
170	12/22/2010 15:01	SW 44th ARMORY	ROOM 25	D Door Frame	Brown	Intact	Wood	Negative	0	0	0.5
171	12/22/2010 15:03	SW 44th ARMORY	ROOM 25	C Wall	White	Intact	Concrete Block	Null	0	0	0.4
172	12/22/2010 15:03	SW 44th ARMORY	ROOM 25	C Wall	White	Intact	Concrete Block	Negative	0.01	0.01	0.4
173	12/22/2010 15:04	SW 44th ARMORY	ROOM 25	C Wall	Tan/Blue	Intact	Concrete Block	Negative	0.04	0.04	0.28
174	12/22/2010 15:05	SW 44th ARMORY	ROOM 25	A Wall	White	Intact	Drywall	Negative	0	0	0.3
175	12/22/2010 15:06	SW 44th ARMORY	ROOM 24	D Door Frame	Gray	Intact	Metal	Negative	0.01	0.01	-0.1
176	12/22/2010 15:07	SW 44th ARMORY	ROOM 24	D Door	Gray	Intact	Metal	Negative	0.05	0.05	0.5
177	12/22/2010 15:08	SW 44th ARMORY	ROOM 24	C Wall	White	Intact	Concrete Block	Negative	0.01	0.01	0.6
178	12/22/2010 15:09	SW 44th ARMORY	ROOM 24	A Wall	White	Intact	Drywall	Negative	0	0	0.4
179	12/22/2010 15:11	SW 44th ARMORY	ROOM 26	D Door Frame	Gray	Intact	Metal	Negative	0.02	0.02	-0.2
180	12/22/2010 15:12	SW 44th ARMORY	ROOM 26	D Door	Blue	Intact	Metal	Negative	0.04	0.04	-0
181	12/22/2010 15:12	SW 44th ARMORY	ROOM 26	D Wall	Yellow	Poor	Drywall	Negative	0.1	0.1	0.5
182	12/22/2010 15:13	SW 44th ARMORY	ROOM 26	A Wall	Yellow	Poor	Drywall	Negative	0.02	0.02	0.5
183	12/22/2010 15:14	SW 44th ARMORY	ROOM 26	B Wall	Yellow	Intact	Concrete Block	Negative	0.03	0.03	0.5
184	12/22/2010 15:15	SW 44th ARMORY	ROOM 26	C Wall	White	Intact	Wood	Negative	0.02	0.02	0.5
185	12/22/2010 15:16	SW 44th ARMORY	ROOM 26	A I-Beam Support	Red	Intact	Metal	Negative	0.21	0.21	0.8
186	12/22/2010 15:16	SW 44th ARMORY	ROOM 26	B Roll Door	Gray	Fair	Metal	Negative	0.11	0.11	0.21
187	12/22/2010 15:18	SW 44th ARMORY	ROOM 28	A Wall	Beige	Intact	Drywall	Negative	0.01	0.01	0.16
188	12/22/2010 15:19	SW 44th ARMORY	ROOM 28	C Wall	Beige	Intact	Drywall	Negative	0.04	0.04	0.15
189	12/22/2010 15:20	SW 44th ARMORY	ROOM 27	D Door Frame	Gray	Intact	Metal	Negative	0.18	0.18	0.17
190	12/22/2010 15:21	SW 44th ARMORY	ROOM 27	D Wall	Blue	Intact	Drywall	Negative	0.05	0.05	0.01
191	12/22/2010 15:21	SW 44th ARMORY	ROOM 27	B Wall	Blue	Intact	Drywall	Negative	0	0	-0.3
192	12/22/2010 15:23	SW 44th ARMORY	ROOM 29	D Door Frame	Gray	Intact	Metal	Negative	0.11	0.11	0.13
193	12/22/2010 15:23	SW 44th ARMORY	ROOM 29	D Door	Gray	Intact	Metal	Negative	0.14	0.14	-0.1
194	12/22/2010 15:24	SW 44th ARMORY	ROOM 29	D Wall	White	Intact	Drywall	Negative	0.04	0.04	-0.2
195	12/22/2010 15:25	SW 44th ARMORY	ROOM 29	A Wall	White	Intact	Concrete Block	Negative	0.07	0.07	0.2
196	12/22/2010 15:25	SW 44th ARMORY	ROOM 29	B Roll Door Guide	Gray	Poor	Metal	Negative	0.07	0.07	0.16
197	12/22/2010 15:26	SW 44th ARMORY	ROOM 29	B Roll Door	Gray	Poor	Metal	Negative	0.06	0.06	0.02
198	12/22/2010 15:28	SW 44th ARMORY	ROOM 46	B Door Frame	Brown	Intact	Metal	Negative	0.05	0.05	0.01
199	12/22/2010 15:29	SW 44th ARMORY	ROOM 46	B Door	Brown	Intact	Metal	Negative	0.1	0.1	-0.4
200	12/22/2010 15:30	SW 44th ARMORY	ROOM 46	A Wall	Blue	Intact	Concrete Block	Negative	0.02	0.02	0.7
201	12/22/2010 15:31	SW 44th ARMORY	ROOM 46	C Wall	Blue	Intact	Concrete Block	Negative	0.02	0.02	0.6
202	12/22/2010 15:33	SW 44th ARMORY	ROOM 22	B Wall	Beige	Intact	Concrete Block	Negative	0.01	0.01	0.09
203	12/22/2010 15:34	SW 44th ARMORY	ROOM 22	D Wall	Beige	Intact	Drywall	Negative	0	0	0.26
204	12/22/2010 15:36	SW 44th ARMORY	ROOM 22	B Door Frame	Brown	Intact	Drywall	Null	0.11	0.11	-0.6
205	12/22/2010 15:36	SW 44th ARMORY	ROOM 22	B Door	Brown	Intact	Metal	Negative	0.08	0.08	0.16

Reading Time	Site	Room	Star Component	Color	Condition	Substrate	Results	PbC	PbL	PbK
206	12/22/2010 15:37	SW 44th ARMORY ROOM 22	B Door Frame	Brown	Intact	Metal	Negative	0.15	0.15	0.4
207	12/22/2010 15:38	SW 44th ARMORY ROOM 22	D Door	Brown	Intact	Metal	Negative	-0.3	0.17	-0.3
208	12/22/2010 15:38	SW 44th ARMORY ROOM 22	B Door	Brown	Intact	Metal	Null	0.21	0.21	0.4
209	12/22/2010 15:39	SW 44th ARMORY ROOM 22	B Door	Brown	Intact	Metal	Negative	0.06	0.06	0.5
210	12/22/2010 15:40	SW 44th ARMORY ROOM 31	C Door Frame	Blue	Intact	Wood	Negative	0.01	0.01	0.06
211	12/22/2010 15:41	SW 44th ARMORY ROOM 31	C Door	Blue	Intact	Wood	Negative	0.01	0.01	-0.2
212	12/22/2010 15:41	SW 44th ARMORY ROOM 31	C Wall	White	Intact	Drywall	Negative	0	0	0.1
213	12/22/2010 15:42	SW 44th ARMORY ROOM 31	A Wall	White	Intact	Concrete Block	Null	0.09	0.09	0.03
214	12/22/2010 15:42	SW 44th ARMORY ROOM 31	A Wall	White	Intact	Concrete Block	Null	0.03	0.03	0.7
215	12/22/2010 15:43	SW 44th ARMORY ROOM 31	A Wall	White	Intact	Concrete Block	Null	0.05	0.05	0.5
216	12/22/2010 15:44	SW 44th ARMORY ROOM 31	A Wall	White	Intact	Concrete Block	Negative	0.09	0.09	0.29
217	12/22/2010 15:46	SW 44th ARMORY ROOM 30	A Wall	Blue	Intact	Drywall	Negative	0.01	0.01	0.3
218	12/22/2010 15:46	SW 44th ARMORY ROOM 30	C Door Frame	Gray	Intact	Metal	Negative	0.05	0.05	0.02
219	12/22/2010 15:47	SW 44th ARMORY ROOM 30	C Door	Gray	Intact	Metal	Negative	0.14	0.14	-0.1
220	12/22/2010 15:48	SW 44th ARMORY ROOM 30	B Wall	Blue	Intact	Concrete Block	Negative	0.05	0.05	0.06
221	12/22/2010 15:49	SW 44th ARMORY ROOM 30	Floor Symbol	White	Intact	Concrete	Negative	0	0	0.16
222	12/22/2010 15:50	SW 44th ARMORY ROOM 32	C Door Frame	Gray	Fair	Metal	Negative	0.09	0.09	-0.3
223	12/22/2010 15:51	SW 44th ARMORY ROOM 32	C Door	Gray	Fair	Metal	Negative	0.11	0.11	-0.2
224	12/22/2010 15:53	SW 44th ARMORY ROOM 32	A Wall	Blue	Intact	Drywall	Negative	0	0	0.25
225	12/22/2010 15:54	SW 44th ARMORY ROOM 33	C Door Frame	Blue	Intact	Wood	Negative	0	0	-0
226	12/22/2010 15:55	SW 44th ARMORY ROOM 33	D Wall	Blue	Intact	Brick	Negative	0.05	0.05	0.4
227	12/22/2010 15:55	SW 44th ARMORY ROOM 33	A Wall	Blue	Intact	Concrete Block	Null	0.06	0.06	0.4
228	12/22/2010 15:56	SW 44th ARMORY ROOM 33	A Wall	Blue	Intact	Concrete Block	Null	0.03	0.03	0.9
229	12/22/2010 15:57	SW 44th ARMORY ROOM 33	A Wall	Blue	Intact	Concrete Block	Null	0.08	0.08	0.9
230	12/22/2010 15:57	SW 44th ARMORY ROOM 33	A Wall	Blue	Intact	Concrete Block	Negative	0.11	0.11	0.6
231	12/22/2010 15:58	SW 44th ARMORY ROOM 33	B Wall	Blue	Intact	Drywall	Negative	0	0	0.29
232	12/22/2010 16:04	SW 44th ARMORY CALIBRATE					Null	1	1	0.8
233	12/22/2010 16:06	SW 44th ARMORY CALIBRATE					Negative	1	1	0.8
234	12/22/2010 16:06	SW 44th ARMORY CALIBRATE					Null	0.9	0.9	0.8
235	12/22/2010 16:07	SW 44th ARMORY CALIBRATE					Negative	1	1	0.8
236	12/22/2010 16:09	SW 44th ARMORY CALIBRATE					Null	1	1	0.6
237	12/22/2010 16:09	SW 44th ARMORY CALIBRATE					Null	0.9	0.9	0.4
238	12/22/2010 16:14	SW 44th ARMORY CALIBRATE					Positive	1	1	0.8
239	12/22/2010 16:17	SW 44th ARMORY ROOM 34	C Door Frame	Gray	Fair	Metal	Null	0.2	0.2	0.02
240	12/22/2010 16:17	SW 44th ARMORY ROOM 34	C Door Frame	Gray	Fair	Metal	Negative	0.04	0.04	0.3
241	12/22/2010 16:18	SW 44th ARMORY ROOM 34	C Door	Gray	Fair	Metal	Null	0.03	0.03	-0.6
242	12/22/2010 16:18	SW 44th ARMORY ROOM 34	C Door	Gray	Fair	Metal	Negative	0.04	0.04	0.14
243	12/22/2010 16:19	SW 44th ARMORY ROOM 34	C Wall	Blue	Intact	Drywall	Null	0.01	0.01	0.4
244	12/22/2010 16:19	SW 44th ARMORY ROOM 34	C Wall	Blue	Intact	Drywall	Null	0	0	1
245	12/22/2010 16:19	SW 44th ARMORY ROOM 34	C Wall	Blue	Intact	Drywall	Null	0.01	0.01	0.08
246	12/22/2010 16:20	SW 44th ARMORY ROOM 34	C Wall	Blue	Intact	Drywall	Negative	-0	-0	0.01



Reading	Time	Site	Room	Side Component	Color	Condition	Substrate	Results	PbC	PbL	PbK
247	12/22/2010 16:21	SW 44th Armory	ROOM 34	A Wall	Blue	Intact	Brick	Null	0	0	0.9
248	12/22/2010 16:21	SW 44th Armory	ROOM 34	A Wall	Blue	Intact	Brick	Negative	0	0	0.9
249	12/22/2010 16:25	SW 44th Armory	ROOM 35	A Wall	White	Intact	Concrete Block	Negative	0.03	0.03	0.3
250	12/22/2010 16:25	SW 44th Armory	ROOM 35	C Wall	White	Intact	Brick	Negative	0.02	0.02	0.4
251	12/22/2010 16:26	SW 44th Armory	ROOM 35	D Wall	Yellow	Intact	Brick	Negative	0.01	0.01	0.06
252	12/22/2010 16:27	SW 44th Armory	ROOM 37	C Wall	White	Intact	Wood	Null	0	0	0.16
253	12/22/2010 16:28	SW 44th Armory	ROOM 37	C Wall	White	Intact	Wood	Negative	0	0	0.18
254	12/22/2010 16:28	SW 44th Armory	ROOM 37	B Wall	White	Intact	Concrete Block	Null	0.01	0.01	0.6
255	12/22/2010 16:29	SW 44th Armory	ROOM 37	B Wall	White	Intact	Concrete Block	Negative	0.02	0.02	0.5
256	12/22/2010 16:30	SW 44th Armory	ROOM 36	D Wall	White	Intact	Drywall	Null	0.07	0.07	-0
257	12/22/2010 16:30	SW 44th Armory	ROOM 36	D Wall	White	Intact	Drywall	Negative	-0.4	0.03	-0.4
258	12/22/2010 16:31	SW 44th Armory	ROOM 36	B Wall	White	Intact	Drywall	Negative	0	0	0.4
259	12/22/2010 16:32	SW 44th Armory	ROOM 36	C Cabinet	Black	Fair	Wood	Negative	0	0	0.22
260	12/22/2010 16:33	SW 44th Armory	ROOM 36	C Door Frame	Gray	Intact	Metal	Negative	0.07	0.07	0.3
261	12/22/2010 16:33	SW 44th Armory	ROOM 36	C Door	Gray	Intact	Metal	Negative	0.06	0.06	0.4
262	12/22/2010 16:34	SW 44th Armory	ROOM 39	C Door Frame	Blue	Intact	Metal	Negative	0.24	0.24	-0.3
263	12/22/2010 16:35	SW 44th Armory	ROOM 39	C Door	Blue	Intact	Metal	Negative	0.11	0.11	-0.2
264	12/22/2010 16:35	SW 44th Armory	ROOM 39	A Wall	Blue	Intact	Concrete Block	Null	1.2	1.2	1.6
265	12/22/2010 16:36	SW 44th Armory	ROOM 39	A Wall	Blue	Intact	Concrete Block	Null	1.5	1.5	1.6
266	12/22/2010 16:36	SW 44th Armory	ROOM 39	A Wall	Blue	Intact	Concrete Block	Positive	1.8	1.8	2
267	12/22/2010 16:37	SW 44th Armory	ROOM 39	B Wall	Blue	Intact	Drywall	Null	0.9	0.9	1.1
268	12/22/2010 16:38	SW 44th Armory	ROOM 39	B Wall	Blue	Intact	Drywall	Null	1	1	0.9
269	12/22/2010 16:42	SW 44th Armory	ROOM 39	B Wall	Blue	Intact	Drywall	Negative	0.9	0.9	1.1
270	12/22/2010 16:47	SW 44th Armory	CALIBRATE					Negative	0.9	0.9	0.7
271	12/22/2010 16:48	SW 44th Armory	CALIBRATE					Positive	1.2	1.2	0.8
272	12/22/2010 16:52	SW 44th Armory	CALIBRATE					Positive	1	1	0.7
273	12/23/2010 8:42										
274	12/23/2010 9:02	SW 44th Armory	CALIBRATE					Negative	1.18	0.14	0
275	12/23/2010 9:06	SW 44th Armory	CALIBRATE					Negative	0.9	0.9	0.7
276	12/23/2010 9:10	SW 44th Armory	CALIBRATE					Positive	1	1	0.7
277	12/23/2010 9:10	SW 44th Armory	CALIBRATE					Null	1	1	0.7
278	12/23/2010 9:11	SW 44th Armory	ROOM 39	Ceiling	White	Intact	Metal	Positive	1.1	1.1	0.8
279	12/23/2010 9:27	SW 44th Armory	ROOM 39	Ceiling	White	Intact	Metal	Null	0.9	0.9	0.6
280	12/23/2010 9:27	SW 44th Armory	ROOM 39	Ceiling	White	Intact	Metal	Null	0.05	0.05	0.28
281	12/23/2010 9:27	SW 44th Armory	ROOM 39	Ceiling	White	Intact	Metal	Null	0.02	0.02	0.26
282	12/23/2010 9:27	SW 44th Armory	ROOM 39	Ceiling	White	Intact	Metal	Null	0.02	0.02	0.4
283	12/23/2010 9:28	SW 44th Armory	ROOM 39	Ceiling	White	Intact	Metal	Null	0.03	0.03	0.3
284	12/23/2010 9:28	SW 44th Armory	ROOM 39	Bar Joist	White	Intact	Metal	Negative	0.02	0.02	0.27
285	12/23/2010 9:28	SW 44th Armory	ROOM 39	Bar Joist	White	Intact	Metal	Null	0.01	0.01	0.3
286	12/23/2010 9:30	SW 44th Armory	ROOM 39	Wall	Blue	Intact	Wood	Negative	0.01	0.01	0.4
287	12/23/2010 9:34	SW 44th Armory	ROOM 39	D Wall	Blue	Intact	Wood	Positive	0.17	0.6	0.17
					Blue		Wood	Positive	1.1	1.1	0.22



Reading	Time	Site	Room	Side Component	Color	Condition	Substrate	Results	PbC	PbL	PbK
288	12/23/2010 9:36	SW 44th Armory	ROOM 38	C Door Frame	Gray	Intact	Metal	Null	0.01	0.01	0.5
289	12/23/2010 9:36	SW 44th Armory	ROOM 38	C Door Frame	Gray	Intact	Metal	Negative	0.03	0.03	0.5
290	12/23/2010 9:37	SW 44th Armory	ROOM 38	C Door	Gray	Intact	Metal	Negative	0.3	0.16	0.3
291	12/23/2010 9:37	SW 44th Armory	ROOM 38	C Wall	Blue	Intact	Drywall	Negative	0.11	0.04	0.11
292	12/23/2010 9:38	SW 44th Armory	ROOM 38	A Wall	Blue	Intact	Drywall	Negative	0.1	0.5	0.1
293	12/23/2010 9:39	SW 44th Armory	ROOM 41	C Door Frame	Black	Intact	Metal	Negative	0.17	0.17	0.6
294	12/23/2010 9:39	SW 44th Armory	ROOM 41	C Door	Blue	Intact	Metal	Negative	0.3	0.3	0.5
295	12/23/2010 9:40	SW 44th Armory	ROOM 41	D Wall	Blue	Intact	Concrete Block	Negative	0.15	0.11	0.15
296	12/23/2010 9:40	SW 44th Armory	ROOM 41	A Wall	Blue	Intact	Concrete Block	Negative	0.03	0.03	0.07
297	12/23/2010 9:41	SW 44th Armory	ROOM 41	C Wall	Blue	Intact	Drywall	Negative	0.04	0.05	0.04
298	12/23/2010 9:42	SW 44th Armory	ROOM 40	C Door Frame	Gray	Intact	Metal	Negative	0.14	0.14	0.6
299	12/23/2010 9:43	SW 44th Armory	ROOM 40	C Door	Gray	Intact	Metal	Negative	0.11	0.11	0.6
300	12/23/2010 9:43	SW 44th Armory	ROOM 40	C Wall	Blue	Intact	Drywall	Negative	0.07	0.12	0.07
301	12/23/2010 9:44	SW 44th Armory	ROOM 40	D Wall	Blue	Intact	Concrete Block	Negative	0.03	0.03	0.17
302	12/23/2010 9:46	SW 44th Armory	ROOM 43	A Door Frame	Gray	Intact	Metal	Negative	0	0	0.5
303	12/23/2010 9:46	SW 44th Armory	ROOM 43	A Door	Gray	Intact	Metal	Negative	0	0	0.5
304	12/23/2010 9:47	SW 44th Armory	ROOM 43	A Wall	Blue	Intact	Drywall	Negative	0	0	0.04
305	12/23/2010 9:47	SW 44th Armory	ROOM 43	C Wall	Blue	Intact	Drywall	Negative	0	0	0.05
306	12/23/2010 9:49	SW 44th Armory	ROOM 47	A Door Frame	Gray	Intact	Metal	Negative	0	0	0.4
307	12/23/2010 9:49	SW 44th Armory	ROOM 47	A Door	Gray	Intact	Metal	Negative	0	0	0.6
308	12/23/2010 9:49	SW 44th Armory	ROOM 47	B Wall	Blue	Intact	Drywall	Negative	0.02	0.02	0.02
309	12/23/2010 9:50	SW 44th Armory	ROOM 47	D Wall	Blue	Intact	Drywall	Negative	0	0	0
310	12/23/2010 9:52	SW 44th Armory	ROOM 23	D Door Frame	Brown	Intact	Metal	Negative	0.04	0.04	0.5
311	12/23/2010 9:52	SW 44th Armory	ROOM 23	D Door	Brown	Intact	Metal	Negative	0.05	0.05	0.4
312	12/23/2010 9:53	SW 44th Armory	ROOM 23	D Wall	Beige	Intact	Drywall	Negative	0	0	0.06
313	12/23/2010 9:53	SW 44th Armory	ROOM 23	A Window Casing	Brown	Intact	Metal	Negative	0	0	0.4
314	12/23/2010 9:54	SW 44th Armory	ROOM 23	A Wall	Beige	Intact	Drywall	Negative	0.16	0.03	0.16
315	12/23/2010 9:54	SW 44th Armory	ROOM 23	C Wall	Beige	Intact	Drywall	Negative	0	0	0.07
316	12/23/2010 9:55	SW 44th Armory	ROOM 23	C Door Frame	Brown	Intact	Metal	Negative	0	0	0.6
317	12/23/2010 9:55	SW 44th Armory	ROOM 23	C Door	Brown	Intact	Metal	Negative	0.01	0.01	0.4
318	12/23/2010 9:56	SW 44th Armory	ROOM 23	A Door Frame	Brown	Intact	Metal	Negative	0.4	0.23	0.4
319	12/23/2010 9:57	SW 44th Armory	ROOM 23	A Door	Brown	Intact	Metal	Negative	0.11	0.11	0.5
320	12/23/2010 9:57	SW 44th Armory	ROOM 23	A Door Frame	Brown	Intact	Metal	Negative	0.01	0.01	0.15
321	12/23/2010 9:57	SW 44th Armory	ROOM 23	A Door	Brown	Intact	Metal	Negative	0.01	0.01	0.22
322	12/23/2010 9:58	SW 44th Armory	ROOM 23	C Door Frame	Brown	Intact	Metal	Negative	0.5	0.15	0.5
323	12/23/2010 9:58	SW 44th Armory	ROOM 23	C Door	Brown	Intact	Metal	Negative	0.15	0.1	0.15
324	12/23/2010 9:59	SW 44th Armory	ROOM 23	B Door Frame	Brown	Intact	Metal	Negative	0.02	0.02	0.4
325	12/23/2010 10:00	SW 44th Armory	ROOM 23	B Door	Brown	Intact	Metal	Negative	0	0	0.4
326	12/23/2010 10:02	SW 44th Armory	ROOM 44/45	D Door Frame	Gray	Intact	Metal	Negative	0.02	0.02	0.7
327	12/23/2010 10:02	SW 44th Armory	ROOM 44/45	D Door	Gray	Intact	Metal	Negative	0.12	0.12	0.5
328	12/23/2010 10:03	SW 44th Armory	ROOM 44/45	D Wall	Blue	Intact	Concrete Block	Negative	0.02	0.02	0.03

Reading	Time	Sits	Room	Side Component	Color	Condition	Substrate	Results	PbC	PbL	PbK
329	12/23/2010 10:03	SW 44th ARMORY	ROOM 44/45	A Wall	Blue	Intact	Drywall	Negative	0	0	0.02
330	12/23/2010 10:04	SW 44th ARMORY	ROOM 44/45	C Wall	Blue	Intact	Drywall	Negative	0.04	0.04	0.04
331	12/23/2010 10:05	SW 44th ARMORY	ROOM 42	D Door Frame	Gray	Intact	Metal	Negative	0.04	0.04	0.7
332	12/23/2010 10:05	SW 44th ARMORY	ROOM 42	D Door	Gray	Intact	Metal	Negative	0.09	0.09	0.5
333	12/23/2010 10:06	SW 44th ARMORY	ROOM 42	D Wall	Blue	Intact	Concrete Block	Negative	0.02	0.02	0.02
334	12/23/2010 10:06	SW 44th ARMORY	ROOM 42	A Wall	Blue	Intact	Drywall	Negative	0	0	0.14
335	12/23/2010 10:07	SW 44th ARMORY	ROOM 42	D Pass Through Counter	Gray	Intact	Wood	Negative	0	0	0
336	12/23/2010 10:29	SW 44th ARMORY	ROOM 39	A Wall Above Ceiling	Beige	Intact	Metal	Negative	0.19	0.09	0.19
337	12/23/2010 10:31	SW 44th ARMORY	ROOM 4	A Door Frame	Gray	Intact	Metal	Negative	0	0	0.6
338	12/23/2010 10:32	SW 44th ARMORY	ROOM 4	A Door	Gray	Intact	Metal	Negative	0	0	0.3
339	12/23/2010 10:32	SW 44th ARMORY	ROOM 4	A Wall	Peach	Intact	Concrete Block	Negative	0	0	-0.1
340	12/23/2010 10:32	SW 44th ARMORY	ROOM 4	C Wall	Peach	Intact	Concrete Block	Negative	0.02	0.02	0.21
341	12/23/2010 10:34	SW 44th ARMORY	ROOM 3	A Door Frame	Gray	Intact	Metal	Negative	0	0	0.3
342	12/23/2010 10:35	SW 44th ARMORY	ROOM 3	A Door	Gray	Intact	Metal	Negative	0	0	0.4
343	12/23/2010 10:35	SW 44th ARMORY	ROOM 3	A Wall	Gray	Intact	Concrete Block	Negative	0	0	0.16
344	12/23/2010 10:35	SW 44th ARMORY	ROOM 3	B Wall	Gray	Intact	Concrete Block	Negative	0	0	0.02
345	12/23/2010 10:37	SW 44th ARMORY	ROOM 2	B Door Frame	Gray	Intact	Metal	Null	0	0	0.5
346	12/23/2010 10:37	SW 44th ARMORY	ROOM 2	B Door Frame	Gray	Intact	Metal	Negative	0	0	0.5
347	12/23/2010 10:38	SW 44th ARMORY	ROOM 2	B Door	Gray	Intact	Metal	Negative	0	0	0.6
348	12/23/2010 10:38	SW 44th ARMORY	ROOM 2	C Wall	White	Intact	Concrete Block	Negative	0.02	0.02	0.14
349	12/23/2010 10:38	SW 44th ARMORY	ROOM 2	D Wall	Beige	Intact	Concrete Block	Negative	0	0	-0
350	12/23/2010 10:43	SW 44th ARMORY	ROOM 1	C Door Frame	Gray	Intact	Metal	Negative	0	0	0.5
351	12/23/2010 10:43	SW 44th ARMORY	ROOM 1	C Door	Gray	Intact	Metal	Negative	0	0	0.6
352	12/23/2010 10:44	SW 44th ARMORY	ROOM 1	C Wall	Blue	Intact	Concrete Block	Negative	0.02	0.02	0.02
353	12/23/2010 10:45	SW 44th ARMORY	ROOM 1	C Roll Door	White	Intact	Metal	Negative	0	0	0.5
354	12/23/2010 10:45	SW 44th ARMORY	ROOM 1	D Wall	Blue	Intact	Concrete Block	Negative	0.09	0.11	0.09
355	12/23/2010 10:46	SW 44th ARMORY	ROOM 1	D Wall	Red	Intact	Concrete Block	Negative	0.01	0.01	0.03
356	12/23/2010 10:46	SW 44th ARMORY	ROOM 1	A Wall	Blue	Intact	Concrete Block	Negative	0	0.07	0
357	12/23/2010 10:47	SW 44th ARMORY	ROOM 1	A Wall	Red	Intact	Concrete Block	Negative	0.05	0.05	0.09
358	12/23/2010 10:47	SW 44th ARMORY	ROOM 1	B Wall	Blue	Intact	Concrete Block	Negative	0.03	0.03	0.18
359	12/23/2010 10:48	SW 44th ARMORY	ROOM 1	B Door Frame	Gray	Intact	Metal	Negative	0.09	0.09	0.4
360	12/23/2010 10:48	SW 44th ARMORY	ROOM 1	B Door	Gray	Intact	Metal	Null	0.05	0.05	0.4
361	12/23/2010 10:48	SW 44th ARMORY	ROOM 1	B Door	Gray	Intact	Metal	Null	0.02	0.02	0.29
362	12/23/2010 10:49	SW 44th ARMORY	ROOM 1	B Door	Gray	Intact	Metal	Negative	0.01	0.01	0.3
363	12/23/2010 10:49	SW 44th ARMORY	ROOM 1	B Door Frame	Gray	Intact	Metal	Negative	0.01	0.01	0.6
364	12/23/2010 10:50	SW 44th ARMORY	ROOM 1	B Door	Gray	Intact	Metal	Negative	0.14	0.14	0.5
365	12/23/2010 10:50	SW 44th ARMORY	ROOM 1	B Counter	Blue	Intact	Drywall	Negative	0.08	0.02	0.08
366	12/23/2010 10:51	SW 44th ARMORY	ROOM 1	D Wall	White	Intact	Concrete Block	Negative	0	0	0.02
367	12/23/2010 10:53	SW 44th ARMORY	ROOM 1	B Wall	White	Intact	Concrete Block	Negative	0	0.07	0
368	12/23/2010 10:54	SW 44th ARMORY	ROOM 1	B Window Frame	White	Intact	Metal	Negative	0.02	0.02	0.12
369	12/23/2010 10:55	SW 44th ARMORY	ROOM 1	B Window Frame	White	Intact	Metal	Negative	0.02	0.02	0.11



Reading Time	Site	Room	Side Component	Color	Condition	Substrate	Results	PbC	PbL	PbK
370	12/23/2010 10:56	SW 44th ARMORY ROOM 1	B Window Frame	White	Intact	Metal	Negative	0.06	0.06	0.09
371	12/23/2010 11:39	SW 44th ARMORY EXTERIOR	A Window Frame	Gray	Intact	Metal	Null	0.8	1.1	0.8
372	12/23/2010 11:40	SW 44th ARMORY EXTERIOR	A Window Frame	Gray	Intact	Metal	Negative	0.4	0.4	0.6
373	12/23/2010 11:41	SW 44th ARMORY EXTERIOR	A Window Frame	Gray	Intact	Metal	Negative	0.5	0.5	0.6
374	12/23/2010 11:42	SW 44th ARMORY EXTERIOR	A Wall	White	Intact	Concrete	Negative	0.22	0.6	0.22
375	12/23/2010 11:42	SW 44th ARMORY EXTERIOR	A Canopy Ceiling	White	Intact	Concrete	Null	0	0	0.2
376	12/23/2010 11:43	SW 44th ARMORY EXTERIOR	A Canopy Ceiling	White	Intact	Concrete	Null	0	0	0.15
377	12/23/2010 11:43	SW 44th ARMORY EXTERIOR	A Canopy Ceiling	White	Intact	Concrete	Negative	0.01	0.01	-0.1
378	12/23/2010 11:44	SW 44th ARMORY EXTERIOR	A Window Frame	Gray	Fair	Metal	Negative	0.01	0.01	0.27
379	12/23/2010 11:45	SW 44th ARMORY EXTERIOR	A Flag Pole	Gray	Fair	Metal	Null	0.27	0.27	0.6
380	12/23/2010 11:45	SW 44th ARMORY EXTERIOR	A Flag Pole	Gray	Fair	Metal	Negative	0.15	0.15	0.8
381	12/23/2010 11:46	SW 44th ARMORY EXTERIOR	A Ground Paint	Red	Poor	Concrete	Null	0	0	-0.1
382	12/23/2010 11:46	SW 44th ARMORY EXTERIOR	A Ground Paint	Red	Poor	Concrete	Negative	0	0	-0.1
383	12/23/2010 11:48	SW 44th ARMORY EXTERIOR	B Door Frame	Gray	Intact	Metal	Negative	0.8	0.8	0.8
384	12/23/2010 11:48	SW 44th ARMORY EXTERIOR	B Door	Gray	Intact	Metal	Null	0	0	0.12
385	12/23/2010 11:48	SW 44th ARMORY EXTERIOR	B Door	Gray	Intact	Metal	Negative	0	0	0.3
386	12/23/2010 11:49	SW 44th ARMORY EXTERIOR	B Trim board	White	Intact	Wood	Null	1.2	1.2	0.18
387	12/23/2010 11:49	SW 44th ARMORY EXTERIOR	B Trim board	White	Intact	Wood	Null	1.1	1.1	0.18
388	12/23/2010 11:51	SW 44th ARMORY EXTERIOR	B Trim board	White	Intact	Wood	Positive	1.1	1.1	0.16
389	12/23/2010 11:54	SW 44th ARMORY EXTERIOR	D Wall	White	Intact	Concrete	Negative	0.06	0.5	0.06
390	12/23/2010 11:55	SW 44th ARMORY EXTERIOR	C Wall	White	Intact	Concrete	Negative	0.6	0.6	0.17
391	12/23/2010 11:55	SW 44th ARMORY EXTERIOR	C Curb	White	Poor	Concrete	Negative	0	0	0.01
392	12/23/2010 11:56	SW 44th ARMORY EXTERIOR	C Garage Door Frame	Brown	Fair	Metal	Negative	0.11	0.11	0.7
393	12/23/2010 11:57	SW 44th ARMORY EXTERIOR	C Window Frame	Gray	Intact	Metal	Negative	0.6	0.9	0.6
394	12/23/2010 11:58	SW 44th ARMORY EXTERIOR	C Porch Wall	White	Intact	Concrete	Null	1.5	1.5	-0.1
395	12/23/2010 11:58	SW 44th ARMORY EXTERIOR	C Porch Wall	White	Intact	Concrete	Negative	0.4	1.4	0.4
396	12/23/2010 11:59	SW 44th ARMORY EXTERIOR	C Window Sill	White	Intact	Concrete	Negative	0	0	-0.1
397	12/23/2010 12:00	SW 44th ARMORY EXTERIOR	B Door Frame	Brown	Intact	Metal	Null	0.6	1.5	0.6
398	12/23/2010 12:01	SW 44th ARMORY EXTERIOR	B Door Frame	Brown	Intact	Metal	Null	0.5	1.1	0.5
399	12/23/2010 12:01	SW 44th ARMORY EXTERIOR	B Door Frame	Brown	Intact	Metal	Null	0.5	1.2	0.5
400	12/23/2010 12:02	SW 44th ARMORY EXTERIOR	B Door	Brown	Intact	Metal	Negative	0.6	1.2	0.6
401	12/23/2010 12:03	SW 44th ARMORY EXTERIOR	B Door Frame	Brown	Intact	Metal	Negative	0	0	0.4
402	12/23/2010 12:04	SW 44th ARMORY EXTERIOR	B Garage Door	Brown	Intact	Metal	Negative	0.6	0.6	0.6
403	12/23/2010 12:05	SW 44th ARMORY EXTERIOR	B Garage Door	White	Poor	Metal	Negative	0.03	0.03	0.1
404	12/23/2010 12:05	SW 44th ARMORY EXTERIOR	B Garage Door Frame	White	Fair	Metal	Negative	0.4	0.4	0.7
405	12/23/2010 12:05	SW 44th ARMORY EXTERIOR	B Garage Door Top	White	Fair	Metal	Null	0.04	0.04	0.4
406	12/23/2010 12:06	SW 44th ARMORY EXTERIOR	B Garage Door Top	White	Fair	Metal	Negative	0.11	0.11	0.6
407	12/23/2010 12:07	SW 44th ARMORY EXTERIOR	B Modified Bollard	White	Poor	Metal	Negative	0.17	0.17	0.5
408	12/23/2010 12:20	SW 44th ARMORY EXTERIOR	B Trim Board Window	White/red	Fair	Wood	Null	0.9	0.9	0.22
409	12/23/2010 12:20	SW 44th ARMORY EXTERIOR	B Trim Board Window	White/red	Fair	Wood	Null	0.9	0.9	0.24
410	12/23/2010 12:23	SW 44th ARMORY EXTERIOR	B Trim Board Window	White/red	Fair	Wood	Null	0.9	0.9	0.2

SW 44th National Guard Armory  
 2222 SW 44th Street

Lead-Based Paint Inspection

Inspector: Marshall Branscum  
 December 22 and 23, 2010

Reading	Time	Site	Room	Side Component	Color	Condition	Substrate	Results	PbC	PbL	PbK
411	12/23/2010 12:24	SW 44th ARMORY	EXTERIOR	B	White/red	Fair	Wood	Negative	0.19	0.6	0.19
412	12/23/2010 13:11	SW 44th ARMORY	CALIBRATE					Null	0.9	0.9	0.7
413	12/23/2010 13:13	SW 44th ARMORY	CALIBRATE					Positive	1.1	1.1	0.7
414	12/23/2010 13:17	SW 44th ARMORY	CALIBRATE					Positive	1	1	0.7
415	12/23/2010 13:18	SW 44th ARMORY	CALIBRATE					Positive	1.1	1.1	0.7

## **APPENDIX E**

## Performance Characteristic Sheet

EFFECTIVE DATE: September 24, 2004

EDITION NO.: 1

### MANUFACTURER AND MODEL:

Make: Niton LLC

Tested Model: XLp 300

Source:  $^{109}\text{Cd}$ 

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<sup>2</sup> (inclusive)

The calibration of the XRF instrument should be checked using the paint film nearest 1.0 mg/cm<sup>2</sup> in the NIST Standard Reference Material (SRM) used (e.g., for NIST SRM 2579, use the 1.02 mg/cm<sup>2</sup> 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 not needed for:

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

#### INCONCLUSIVE RANGE OR THRESHOLD:

K+L MODE READING DESCRIPTION	SUBSTRATE	THRESHOLD (mg/cm <sup>2</sup> )
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)						
Substrate	All Data			Median for laboratory-measured lead levels (mg/cm <sup>2</sup> )		
	25 <sup>th</sup> Percentile	Median	75 <sup>th</sup> 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**

# Department of Environmental Quality

This is to Certify That

## ENERCON SVC INC

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

### FIRM

Certification #: OKFIRM11152

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

# Department of Environmental Quality

This is to Certify That

**MARSHALL BRANSCUM**

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

**INSPECTOR**

Certification #: OKINSR13415

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



# Department of Environmental Quality

This is to Certify That

**EMMETT MUENKER**

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

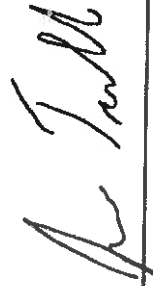
## INSPECTOR/RISK ASSESSOR

Certification #: OKRASR11260

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

## SCOPES OF WORK

## STATEMENT OF WORK

For

### Remediation of Lead and Asbestos Contamination at the Oklahoma City SW 44<sup>th</sup> Street 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 Oklahoma City, Oklahoma. This statement of work (SOW) describes the abatement of lead-based paint, remediation of lead contaminated dust, and removal and proper disposal of asbestos containing material. 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 Oklahoma City SW 44<sup>th</sup> Street Armory is attached for review (Attachment 1).

The building is located at 2222 SW 44<sup>th</sup> Street, Oklahoma City, Oklahoma 73119. 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 thirty (30) calendar 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.
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. Contractor shall not cause damage to building structures, property, walls, fixtures, etc. during remediation/abatement process. If damage is caused to these items, contractor is responsible for repairing the damage.
  - d. Coordination of work areas shall be scheduled with DEQ.
  - e. 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;
- Posses a current lead-based paint firm license and have a certified lead-based paint supervisor in order to perform lead-based paint abatement;
- Posses a current Oklahoma Department of Labor (ODOL) Asbestos Abatement Contractor License or have a licensed sub-contractor 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;

**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;

## SEQUENCE OF EVENTS

The remediation of the building shall be as follows:

1. First – The asbestos and lead-based paint abatement shall be completed.
2. Second – Enercon Services shall be contacted to confirm all non friable asbestos has been appropriately removed and DEQ shall be contacted to confirm all lead-based paint abatement has been appropriately performed.
3. Third – The lead contaminated sand shall be removed and all floors of the entire building shall be cleaned.
4. Fourth – DEQ shall be contacted to perform third party confirmation sampling to confirm (IFR) and all floors have been appropriately remediated.

## ASBESTOS ABATEMENT INSTRUCTIONS

- Non-friable and/or non-regulated ACM shall be removed as described in the instructions listed below. See Specification for Removal of Non-Friable Asbestos (**Attachment 2**)
  - **Floor Tile and Mastic**
    - **Remove** floor tile and mastic from room locations listed in the Asbestos Inspection Report. Office rooms 14, 15, and 16 contain carpet that must be removed prior to floor tile and mastic removal.
    - **There is a total of 4,435 ft<sup>2</sup> of floor tile and mastic that shall be removed from the building. See attached floor plan map in Asbestos Inspection Report for locations of asbestos containing floor tile mastic.**
- Friable ACM shall be removed as described in the attached Asbestos Abatement Project Design (**Attachment 2**).
- For more details see the attached Oklahoma City SW 44<sup>th</sup> Street Armory Asbestos Inspection Report with floor plan map showing locations of ACM (**Attachment 2**).
- Once Asbestos Abatement is complete, Enercon Services shall be contacted to confirm abatement has been appropriately performed and all asbestos has been removed.

# LEAD-BASED PAINT ABATEMENT INSTRUCTIONS

See Survey and Assessment for Lead in Paint and Settled Dust  
Report for details (Attachment 5)

## 1. Non-Friction and Non-Impact Surfaces

- 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 4). 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 5);
  - All walls in Room 39
  - The painted brick wall in Room 3
  - The white trim boards over windows on exterior side B of the building
- Deteriorated paint removed from building surface will be properly disposed.

## 2. Friction and Impact Surfaces

### Doors and Frames

- A Door-Scope of Work with map, door measurements, and specific details on abatement requirements for each door is attached (Attachment 6);
- Doors will be replaced with pre-hung Steelcraft Commercial Replacement Door Units (Specifications Attached) or equivalent;
- 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;

### b. Interior Doors

- Interior doors will be replaced with non-galvannealed, 18 gage, honeycomb core insulated doors;
- Hinges: As manufactured by Hagar or approved equal – Plain Bearing – Standard Weight 1279, 4 ½ X 4 ½ (Specification 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. 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**

See Lead-Based Paint Inspection and Settled Dust  
Sampling Report for details (Attachment 5)

### **1. Drill Floor**

The Drill Floor at the Oklahoma City SW 44<sup>th</sup> Street Armory is a room where the Oklahoma Military Department would target practice with weapons. The Drill Floor is to be cleaned by removal of all lead contaminated dust, lead contaminated sand under concrete slab, and other lead contaminated materials.

- **Pre-remediation Preparation**

- To ensure cross contamination does not occur, use engineering controls such as:
  - Sealing openings to Drill Floor with 6 mil poly sheeting to contain dust inside Drill Floor;
  - Creating a containment area around concrete entombed sand pit and using negative air equipment prior to start of removal process.
  - Covering floor of area outside Drill Floor with 6 mil poly sheeting to make sure not to track lead dust into clean areas;
  - Securing Drill Floor at the end of the work day. At no time shall the Drill Floor be accessible for unauthorized entry without the contractor present;
- When inside Drill Floor wear appropriate personal protective equipment (See Attachment 3).

- **Water Removal**

- 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.

- **Pre-remediation Removal**

- The Drill Floor contains a large sand pit that is covered in concrete. The sand pit is approximately 11'4" Wide by 70'3" Long. Contractor is to field verify these measurements. The sand pit is approximately 16 inches deep and the top 5 inches of the sand pit is concrete.
  - Concrete slab over former sand trap will be removed and properly disposed. Any sand attached to underside of concrete pieces will be removed from concrete and disposed with bullet trap sand.
  - Once concrete and sand has been removed, bullet trap shall be HEPA vacuumed and wet washed.
  - Once cleaned, the bullet trap shall be back filled with compacted sand fill to make the new 4-inch concrete slab flush with existing slab. Specifications and details of concrete slab replacement are attached (**Attachment 7**).
- The bullet trap sand shall be placed in sealed drums and disposed as hazardous waste.

- **Remediation**

- HEPA vacuum and wet wash walls, floor, 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 DEQ. The Contractor shall provide DEQ a minimum of five (5) calendar days prior notice to perform sampling. See Section C (Confirmation and Clearance Sampling) for contact information;
- Post remediation sampling is required to confirm the Drill Floor has been remediated to 40 micrograms per square foot (ug/SF);
  - Areas above 40 ug/SF shall be re-cleaned and re-tested until results are at or below 40 ug/SF;
- Once the IFR has been remediated to 40 ug/SF, seal the floor with appropriate sealant;
  - Floor will be sealed with KM-669 Acrylic Sealer or equivalent. Specifications attached (**Attachment 4**);

## 2. Remaining Building

### Lead Dust Remediation (See Attachment 5)

- 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. Only areas with elevated levels of lead dust, areas near the Drill Floor, and areas where lead-based paint abatement was performed will have clearance samples taken. Other areas will be visually inspected to make sure all floors are appropriately cleaned;
  - Remove dust from all equipment, shelving, trash, etc, and remove these items from room before remediation 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 some 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 DEQ to perform 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 C (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;

## 3. Disposal of Materials

### Hazardous Waste

- Lead contaminated sand shall be disposed as hazardous waste;
- Lead contaminated dust from the cleaning of the Drill Floor shall be disposed as hazardous waste;
- Wash water filters shall be disposed as hazardous waste;
- Mop heads, towels, brushes, wipes, and other cleaning supplies used in the Drill Floor 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 samples taken by DEQ.
- DEQ will be responsible for taking all post remediation samples.
- DEQ shall be notified five (5) days prior to each sampling event.
- Contact Information:           DEQ  
  Contact: Dustin Davidson  
  Phone: (405) 702-5115
- The third-party sampling shall not be included in the contractors base bid;
- All post remediation sampling done outside the indoor firing range will be performed after all initial abatement, remediation, and cleaning is complete.

## 5. FINAL REPORT

- Write final report and submit to DEQ;
- Final report shall include:
  - A detailed summary of work including any warranties and data;
  - copy of post remediation sampling report;
  - waste manifests (if any); and
  - photo documentation of work;
    - Photo documentation of work will have color digital photos with captions describing photo;
- Final report will be submitted in a bound hard copy and electronically on disc.

**OWNER REPRESENTATIVE**

**Owner's Representative:**

Dustin Davidson  
Oklahoma Department of Environmental Quality  
Land Protection Division  
707 N. Robinson  
Oklahoma City, OK 73102

**Phone Numbers:**

(405) 702-5115 (Office)

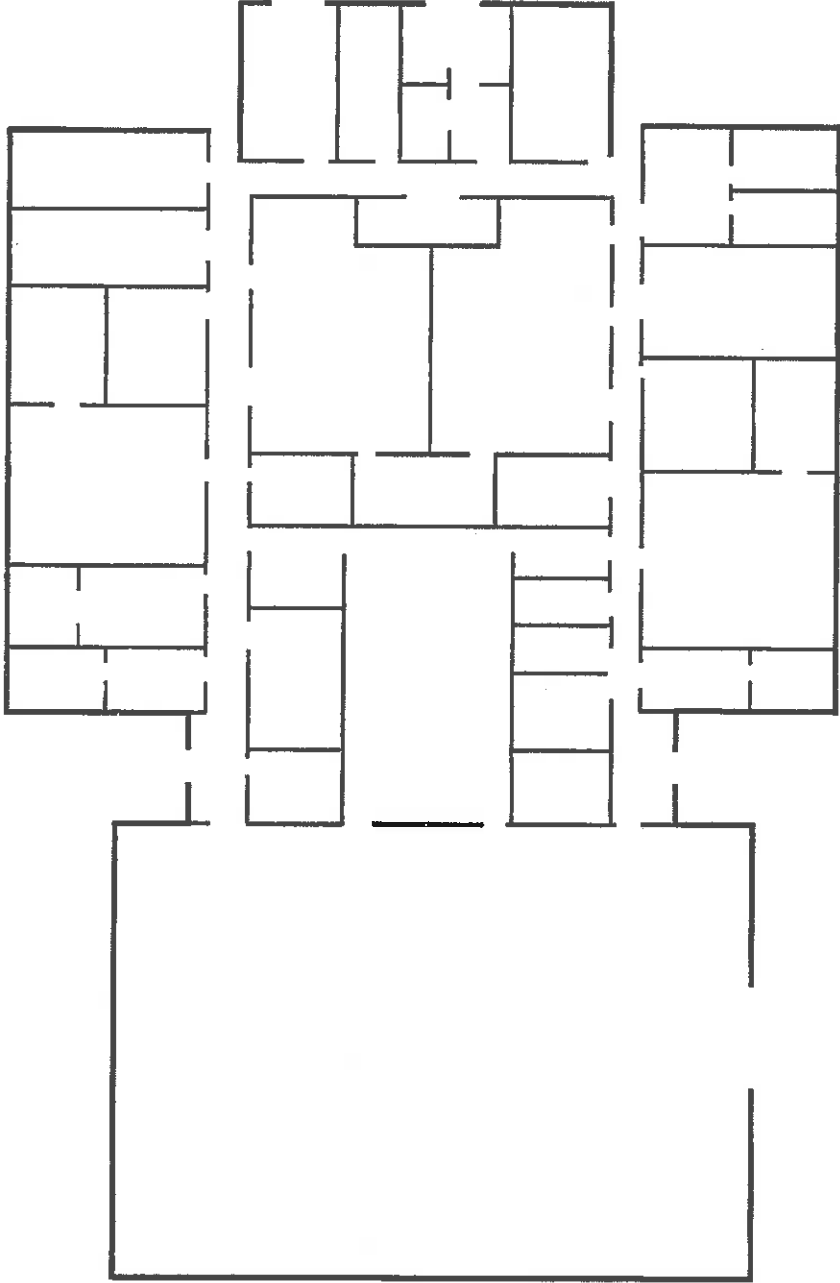
(405) 702-5101 (Fax)

E-Mail: [Dustin.Davidson@deq.ok.gov](mailto:Dustin.Davidson@deq.ok.gov)

**ATTACHMENT 1**

**Oklahoma City SW 44<sup>th</sup> Street Armory Floor Plan Map**

**OKC 44<sup>th</sup> St Armory**



*Not to scale  
Floor plan approximate*

**ATTACHMENT 2**

**Oklahoma City SW 44<sup>th</sup> Street Armory Asbestos Inspection  
Report**

**Oklahoma City SW 44<sup>th</sup> Street Armory Specification for  
Removal of Non-Friable Asbestos**

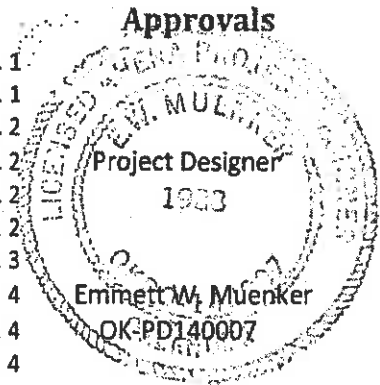
**Oklahoma City SW 44<sup>th</sup> Street Armory Asbestos Project  
Design**



**SPECIFICATION FOR  
REMOVAL OF NON-FRIABLE ASBESTOS  
SW 44<sup>th</sup> STREET ARMORY**

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**PART 1-GENERAL**

**1.1 SCOPE OF WORK**

The work identified herein includes the removal and disposal of non-friable, asbestos-containing materials (ACM) by means that do not render them friable. The work noted in this Section is the special controls required by regulatory agencies having jurisdiction over such work. Most of the controls pertain to Contractor employees and site visitors' personal health and safety from exposure to asbestos fibers. The requirements will be monitored throughout each job by the asbestos project designer or his representative functioning as the Owner's Technical Representative.

- A. Procedures for floor tiles and adhesive removal are stated in Paragraph 3.6. Their locations are shown on Figure 1. There is approximately 4,435 square feet of ACM black mastic beneath non-asbestos floor tiles to be removed.

- B. Paragraph 3.7, Transite Removal, does not apply to this facility.
- C. There is approximately 25 linear feet of non-friable brown mastic on an I-beam located in the south office area corridor to be removed when authorized by the contract documents. The procedures for mastic removal are stated in Paragraph 3.6 to be modified as appropriate for the unique location of this material. The location of the I-beam with the ACM brown mastic is shown on Figure 1.

### 1.2 SEQUENCE OF WORK

- A. The work shall be conducted in a single phase. The work should be done prior to or following completion abatement of friable asbestos materials in the building. This work is not subject to inspections by the Oklahoma Department of Labor nor is it subject to the federal NESHAP regulations when manual removal procedures are used.

### 1.3 REGULATORY COMPLIANCE

- A. U.S. Department of Labor, OSHA Asbestos Regulations, Code of Federal Regulations Title 29, Part 1926, Section 1101. (29 CFR 1926.1101)
- B. U.S. EPA regulations for Asbestos-containing Materials in Schools, Code of Federal Regulations Title 40 Part 763. (40 CFR 763)
- C. The Contractor will keep copies of the above regulations available for reference at the work site.
- D. Other state and local ordinances, regulations, or rules pertaining to asbestos including its storage, transportation, and disposal.
- E. Where any conflicts exist between these specifications and regulations published by federal or state agencies which govern abatement, transportation and disposal of non-friable asbestos-containing materials, the more restrictive shall govern.

### 1.4 NOTIFICATIONS

No regulatory notifications required. The Contractor is to coordinate the work with the Owner's Asbestos Consultant. The Contractor shall notify The Owner's Asbestos Consultant a minimum of five working days in advance of mobilization on site.

### 1.5 SUBMITTALS

- A. Pre-work submittals: At least five (5) days prior to beginning asbestos abatement work, the contractor shall submit copies of the following information to the Owner's Technical Representative.

1. The name of the asbestos supervisor to be used on the project.
  2. A statement signed by an officer of the Contractor's firm, that all workers employed for the abatement of non-friable asbestos materials:
    - a. Have completed AHERA worker or supervisor training or 8-OSHA training on removal of resilient floor coverings and adhesives.
    - b. Have had a medical examination within the previous year and are medically qualified to wear a respirator.
    - c. Have been fitted for the model and size respirator they will use on the job within the previous year.
  3. A project schedule indicating planned work hours, work days and project start and completion dates.
  4. Documentation of an initial or negative exposure assessment indicating the breathing area fiber concentrations expected during removal of the materials and the PPE required during the work. Personal air monitoring will be required for two full work shifts if such assessment is not provided.
- C. During-work submittals:
1. If an exposure assessment is not provided, the Contractor shall conduct an initial exposure assessment and provide personal air monitoring results identifying worker name, work activity, PPE use, and TWA exposure level, in accordance with OSHA regulation 29 CFR 1926.1101.
  2. Copies of any inspection reports, consultation reports or other written project correspondence with any regulatory agency or The Owner's Asbestos Consultant.
- C. Post-work submittals: Within 15 days of completion of asbestos abatement, the contractor shall submit copies of the following documents to The Owner's Asbestos Consultant.
1. Copies of the waste disposal manifests confirming disposal at an authorized waste disposal facility.
  2. Any outstanding during-work submittals.
- D. Final payment to the contractor will not be authorized until all work is satisfactorily completed and the submittals have been provided to The Owner's Asbestos Consultant.

## 1.6 DEFINITIONS

The following definitions are adopted by reference. If statutory definitions are duplicated, the more stringent definition will apply.

- A. 29 CFR 1926.1101 (b)
- B. 40 CFR 61.141

**PART 2-PRODUCTS**

Not used.

**PART 3-EXECUTION****3.1 WORKER PROTECTION**

- A. Provide workers with personally issued and marked respiratory equipment approved by NIOSH and suitable for the asbestos exposure level in the work area, according to OSHA Standard 29 CFR 1926.1101. Where respirators with disposable filters are employed, provide sufficient filters for replacement as required by the worker or applicable regulation. Full beards, "mutton chop" sideburns, or any other facial hair that interferes with proper fit or use of respirators will not be allowed. Removal of non-friable asbestos shall begin with air-purifying respirators and their use will be continued until a statistically-significant negative exposure assessment is produced.
- B. Provide workers exposed to airborne concentrations of asbestos which exceed the levels prescribed in OSHA standard CFR 1926.1101 with sufficient sets of protective full-body clothing. Such clothing shall consist of full-body coveralls and headgear.
- C. Pursuant to OSHA requirements, the Contractor will provide an annual medical examination for each worker assigned to a project under this contract.
  1. The medical examinations will include, at a minimum, a posterior and anterior chest x-ray, pulmonary function tests (FVC and FEV), and a general health history.
  2. No medical additional examination is required of any employee, if adequate records show that an employee has been examined in accordance with this paragraph within the past one year period.
  3. Any employee found to have been exposed without proper protection at any time to airborne concentrations of asbestos fibers in excess of the limits prescribed in OSHA Standard 29 CFR 1926.1101 shall be notified in writing of the exposure as soon as practical but not later than five days of the finding. The employee shall also be timely notified of the corrective action being taken.
  4. The Contractor shall maintain records of these examinations for each worker, and upon request, provide them for review by the employee, Owner, Owner's Representative, OSHA officials, and State Inspectors as appropriate.

**3.2 EQUIPMENT REMOVAL PROCEDURES**

- A. Clean external surfaces of contaminated containers and equipment thoroughly by wet wiping before moving such items to uncontaminated areas.

**3.3 DECONTAMINATION ENCLOSURE SYSTEMS:**

- A. Not Required

### 3.4 CONTAINMENT FACILITIES

- A. Unless otherwise specified, ventilated isolation barriers and decontamination facilities will not be required for all separate work areas where only non-friable asbestos-containing materials are removed or encapsulated, as long as these materials are removed essentially-intact using wet procedures. Where portions of the building are occupied during the work, critical barriers shall be installed between the work areas and the occupied portions of the building.
- B. The Contractor will post warning signs or install asbestos barrier tape around the perimeter of the entire work area, specifically at any entrance to the work area, and at any other location specified by The Owner's Asbestos Consultant. The signs shall meet the specifications outlined in OSHA Standard 29 CFR 1926.200 and 29 CFR 1926.1101(k)(7).
- C. The Contractor will restrict access to the work area to authorized individuals only. The work area will be secured at all times when contractor personnel are not present to control entry.

### 3.5 PREPARATION OF ASBESTOS ABATEMENT WORK AREA

- A. Remove movable objects from work areas to a temporary location within the building. Where carpeting is installed over floor coverings, the carpeting may be removed prior to or concurrently with the removal of the floor tiles.
- B. For removal of adhesive, protect walls and fixed objects within the work area and enclose with minimum 4-mil plastic sheeting sealed with tape, or protect with 36-inch high splash guards.
- C. Maintain emergency and fire exits from the work areas, or establish alternative exits in compliance with applicable fire codes.

### 3.6 ASBESTOS FLOOR TILES AND ADHESIVE REMOVAL

- A. Floor tiles shall be removed using the following procedures:
  - 1. The entire floor surface shall be wetted with surfactant-amended water. Floor tiles may not be removed dry.
  - 2. The tiles shall be removed by manual methods using a scraper or spade. Power chippers or grinders are not permitted.
  - 3. The tile shall be placed in minimum of 6-mil unlabeled plastic bags, preferably black opaque. They shall not be placed in asbestos disposal bags. The bags shall not be overfilled which promotes the tile tearing through the plastic.
  - 4. The bagged tiles shall be disposed in a sanitary landfill or construction debris landfill that accepts non-friable asbestos waste. Landfill disposal receipts are required in paragraph 1.5 C1 of this section.

B. Floor tile adhesive shall be removed by the following procedures:

1. A low-odor, non-flammable, non-toxic mastic/adhesive remover shall be mopped onto the floor. Using a broom, squeegee or scrub brush, the solvent shall be agitated into the mastic/adhesive. The material may be worked onto additional areas until it reaches a tarry consistency at which point it shall be scraped up and bagged.
2. Repeat as necessary until the mastic/adhesive is removed.
3. A final cleaning with wiping rags shall be conducted. Used rags shall be placed in 6-mil unmarked plastic bags and disposed as non-friable asbestos waste.
4. No sanding, grinding or abrading of floors where asbestos-containing mastic/adhesive remains shall be permitted.

### 3.7 ASBESTOS-CEMENT (TRANSITE) MATERIAL REMOVAL

Transite materials shall be removed using the following procedures:

- A. Asbestos barrier tape is to be installed around the area of work to demarcate the regulated area.
- B. The Contractor shall place a drop cloth on the ground along the exterior the building and on the floor inside the drill room in the area where the roofing panels are to be removed to catch any breakage that may occur during removal of the panels. The drop cloths are to be moved as necessary to cover the surfaces beneath the active removal area during removal of the panels.
- C. The Contractor shall use boom lifts or other similar equipment to access the roof panels for removal. The material is to be wetted prior to removal, removed from the structural members intact, lowered to the ground and placed in a poly-lined dumpster for transport to the disposal landfill.
- D. Care is to be taken during removal to prevent breakage of the panels during removal and handling, as the panels are to be removed intact to maintain their classification as non-friable material.
- E. The Contractor shall ensure that the area is left clean and tidy following removal of the roof.
- F. Clearance air sampling is not required for wet removal of Transite outdoors.

### 3.8 ASBESTOS-CONTAINING CAULK AND WINDOW GLAZING

A. Caulk and window glazing shall be removed using the following procedures:

1. A poly drop cloth shall be placed beneath the area where the caulk/glazing is to be removed.
2. Loose caulk/glazing shall be removed using a HEPA-filtered vacuum.
3. The caulk/glazing that is not loose shall be wetted and removed using manual means. The material is to be kept wet while scraping or brushing. The area of removal is to be damp wiped following removal.
4. The removed material shall be placed in a 6-mil minimum unlabeled opaque plastic contractor trash bags and sealed with duct tape for disposal. The bagged material shall be disposed in a sanitary landfill or construction debris landfill that accepts non-

friable asbestos waste. Landfill disposal receipts are required in paragraph 1.5 C1 of this section.

5. The Owner's Asbestos Consultant shall inspect the areas of removal following completion of the work.
6. The work area is to be left clean and tidy following removal of the caulk/glazing.
7. Clearance sampling is not required for removal of three linear feet or less of this material indoors or any amount outdoors.

### 3.9 PERSONAL PROTECTIVE EQUIPMENT/AIR MONITORING

- A. Air sampling for OSHA compliance is the Contractor's responsibility by statute. This section deals only with the air monitoring requirements of the Contractor in performing employee exposure assessments. Industrial hygiene samples for quality assurance and clearance tests are not required to be done by the contractor, but will be conducted by the Owner's Asbestos Consultant as deemed appropriate.
- B. Samples of airborne asbestos concentrations shall be collected with air sampling pumps on 25-mm cellulose ester membrane filters of 0.8 micrometer porosity mounted in an open-face filter holder. Pumps shall be calibrated before each sampling period and a record of this calibration entered in the air sampling log.
- C. Unless a negative exposure assessment (NEA) has been performed and is available on site, work shall commence in full-body suits and half-face air purifying respirators, and continuous breathing zone air monitoring shall be conducted from start to completion of the non-friable material removal, disturbance, or repair operation. Twenty-five percent (25%) of the workers, with a minimum of 2 workers, shall be monitored each work shift. Any sampling device shall not exceed eight (8) hours (real time) of operation with any one filter. At times, a lesser real time may be required for a particular cassette. Sampling may be discontinued at such time as an NEA is completed for the work task and work may proceed without full-body suits and respirators. A minimum of two full work shifts is considered sufficient for an exposure assessment.
- D. Sampling devices shall be located within the breathing zone of personnel, including those removing, bagging, and loading-out bagged waste.
- E. All laboratory determinations of airborne concentrations of asbestos fibers shall be made by the membrane filter method using phase contrast illumination and 400-450x magnification, according to NIOSH 7400. Analysts shall be successful participants in the AIHA Proficiency Analytical Testing program or be individually registered and proficient participants through the AIHA Asbestos Analyst Registry.
- F. If any air sample collected in the breathing zone exceeds 0.1 fibers/cc, the Contractor will immediately discontinue all work until the cause is identified and corrected. Work will resume in air purifying respirators and full-body protective coveralls.

### 3.10 CLEAN-UP

- A. After completing the asbestos work the areas shall be cleaned up as follows:
- B. Remove waste containers, and equipment from the work area.
- C. When a visual inspection by the Owner's Asbestos Consultant determines that the areas are free of visible accumulations of asbestos material and debris, the contractor shall remove the splash guards and his equipment, signs, barrier tape, etc., from the area and PCM clearance sampling will be conducted by the Owner's Asbestos Consultant.
- D. Following receipt of satisfactory clearance sample results, the work area released for unrestricted worker access.

### 3.11 CLEARANCE TESTING

- A. The Owner's Asbestos Consultant will collect and analyze five 1,200 liter PCM air samples where non-friable asbestos has been removed unless otherwise stated in Paragraphs 3.7 -3.8.

### 3.12 DISPOSAL OF NON-FRIABLE ASBESTOS WASTE/CONTAMINATED MATERIALS

- A. As the work progresses, and to prevent exceeding available storage capacity on site, remove sealed bags of waste/contaminated materials and dispose of such bags at a disposal site meeting EPA and state requirements for non-regulated ACM.

FIGURE(S) – NON-FRIABLE MATERIAL LOCATIONS - SEE FOLLOWING PAGE(S)





**ASBESTOS ABATEMENT PROJECT DESIGN  
PIPING ABATEMENT – GLOVE-BAG  
SW 44<sup>TH</sup> STREET ARMORY  
OKLAHOMA CITY, OKLAHOMA**

- A. **INTRODUCTION:** This Project Design was prepared by Enercon Services, Inc., in order to provide a prudent course of action for handling of asbestos abatement of piping in the SW 44th Street Armory. Protocols to be used are to protect abatement workers from exposure to airborne asbestos fibers during the work being performed.
- B. **PROJECT INFORMATION:**
1. Project Name: Asbestos Abatement, SW 44<sup>th</sup> Street Armory
  2. Description of Work/Occupancy: The work addressed herein involves abatement of fitting insulation on domestic water piping, a hot water storage tank, a vibration isolation gasket, a roof drain pan and roof drain fitting in the SW 44<sup>th</sup> Street Armory. The facility is not occupied.
  3. Project Type: Renovation.
  4. Abatement Contractor: To be determined by bid.
  5. Industrial Hygiene/Air Monitoring Firm: Enercon Services, Inc.
  6. Analytical Laboratory: Enercon Services, Inc., AIHA PAT Laboratory 151368.
- C. **REGULATORY COMPLIANCE:** The specific governing regulations affecting this work include, but are not limited to, 29 CFR 1926.1101 (OSHA Construction Industry Asbestos Standard), 29 CFR 1910.134 (OSHA Respiratory Protection), 40 CFR 61, Subpart M (Asbestos NESHAP) and OAC 380:50 (Oklahoma Rules for Abatement of Friable Asbestos). Waste transport and disposal is to be performed by an Oklahoma-licensed asbestos waste transporter with a waste disposal manifest/chain of custody signed by the receiving landfill. DOT Class 9 placards are to be displayed during transportation of asbestos waste.
- D. **WORK SEQUENCING/SCHEDULING:** The work in the SW 44th Street Armory is to be done in a single phase. The work is to be scheduled by the abatement contractor in coordination with Enercon Services and the Department of Environmental Quality. The work is planned for 10-hour work shifts on weekdays during normal work hours.
- E. **EGRESS AND FIRE PROTECTION:** In the event emergency evacuation is necessary, the primary exit will be to exit the work area through the decon and out nearest exit to the outside of the building. There are multiple secondary exits available through critical barriers at exterior doors. Workers will be briefed on the available exit paths, emergency procedures and the assembly point at the beginning of the work shift. No special fire protection measures are required. One 10#ABC fire extinguisher will be placed inside the work area, one will be set inside the hot water tank mini-containment, one set at the decon and one outside the loadout. The glove-bag work area extinguisher will be kept in the vicinity of the work crew during glove-bagging.
- F. **MATERIALS TO BE ABATED:**
1. Description: The material to be abated is fitting insulation on piping, a hot water storage tank, a vibration isolation gasket, and a roof drain pan and fitting.
  2. Amount, Location and Type of Asbestos-Containing Materials (ACM): There are approximately 65 fittings, 100 SF of insulation on the hot water storage tank, 100 LF of vibration isolation gasket and a roof drain pan and fitting to be abated. The fitting insulation contains 2-4% Chrysotile, the hot water

tank contains 35% Chrysotile and 35% Amosite, the gasket contains 40% Chrysotile and the roof drain pan and fitting contain 2-3% Chrysotile. The laboratory report is attached.

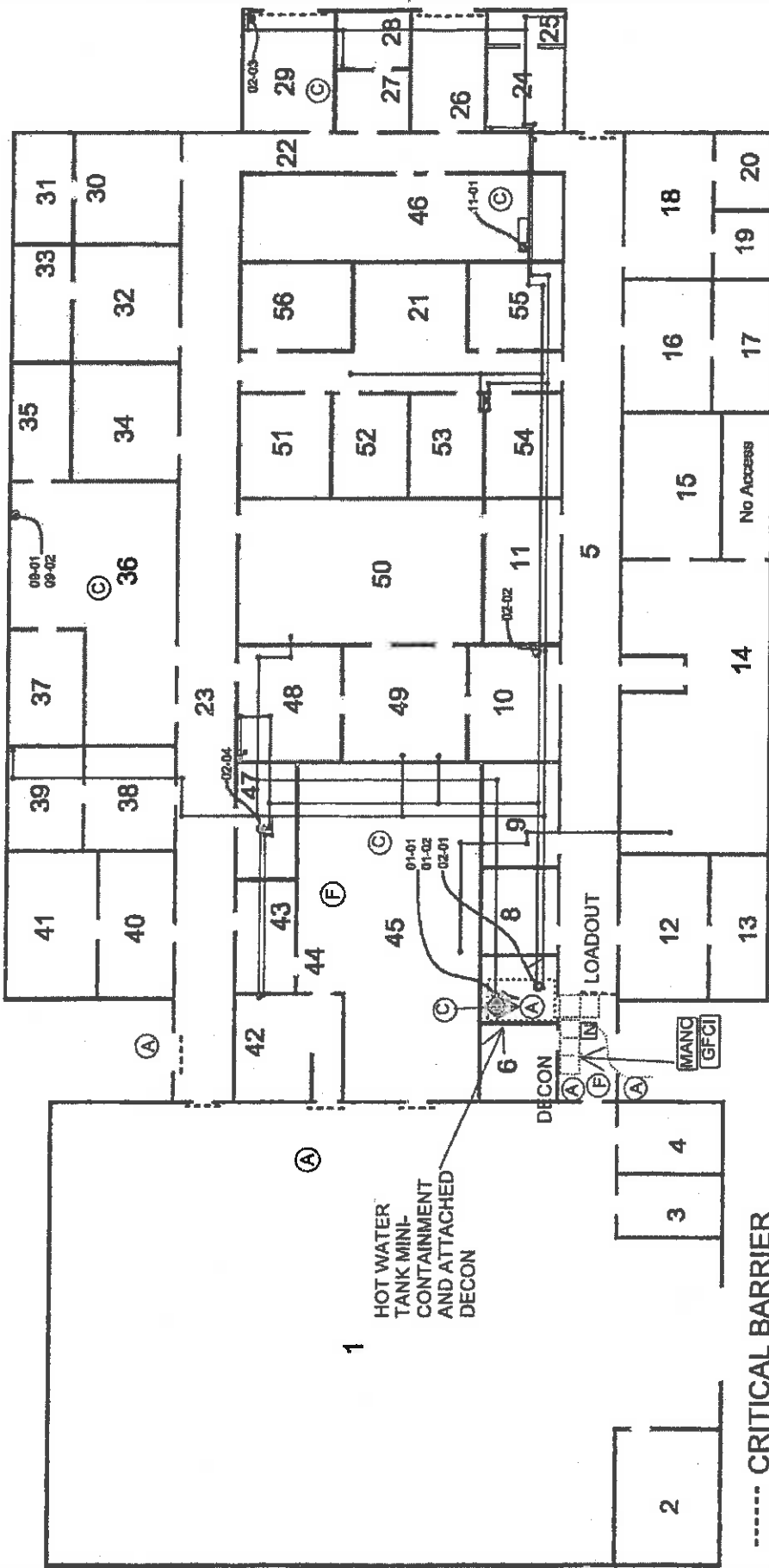
No contaminated soils are to be abated under this Project Design.

- G. ASBESTOS ABATEMENT METHODS:** The fittings and roof drain pan insulation will be removed within critical barriers using glove-bag procedures and an attached decon. The vibration isolation gasket will be removed within the glove-bag work area using wet procedures and a drop cloth. Poly drop cloths will be placed on the floor beneath the piping during glove-bag abatement. The hot water storage tank insulation will be removed within a mini-containment under negative pressure with an attached decon and loadout. The decon and loadout used for the mini-containment will also be used for the glove-bag work area. The abatement of the hot water tank will be done first, followed by glove-bagging. Bagged waste may be stored temporarily on a drop cloth inside the glove-bag work area awaiting loadout. At the end of the work shift or when sufficient waste has accumulated for loadout, the waste will be removed from the work area through the loadout and loaded into a poly-lined disposal trailer/van.
- H. ASBESTOS AIR MONITORING/RESPIRATORY PROTECTION:** Full-body protective clothing and full-face APR with HEPA-cartridges will be worn during installation of glove-bags and during all abatement, except that abatement in the mini-containment will begin in PAPR, with downgrading as indicated by air monitoring. No PPE will be needed for setup of the decon/loadout and mini-containment. Full-body protective clothing and half-face APR may be worn during handling and load-out of the double-bagged waste. Setup of decon/loadout and installation of critical barriers may be done unprotected. No background air samples will be collected. Personal air samples will be collected on a minimum of two workers or 25%, whichever is greater, during work requiring respiratory protection. One area air monitor will be placed inside the glove-bag work area while abatement is in progress and it will be moved to remain in the vicinity of the work crew. One area monitor will be located inside the mini-containment. One area air monitor will be set outside the clean room of the decon and one will be placed along the loadout path during load-out. Five 1,200-liter PCM clearance samples will be collected inside the mini-containment following the visual inspection and lockdown of the abated hot water tank. Five 1,200 liter PCM clearance samples will be collected in the glove-bag work area following the visual inspection in that work area.
- I. LABORATORY CERTIFICATIONS:** The laboratory to be used for analysis of personal and area asbestos air samples is Enercon Services, Inc., AIHA PAT Laboratory 151368. All air samples will be collected by an experienced Asbestos Air Monitoring Technician qualified to collect and analyze air samples in Oklahoma.
- J. CONTAINMENT METHODS:** Critical barriers and a drop cloth beneath the piping and roof drain during glove-bagging will be used. Rolling scaffolding or ladders will be used to as necessary to access the piping. The hot water storage tank will be abated using gross removal procedures in a negative-pressure mini-containment. A manometer will be used to monitor negative pressure inside the mini-containment. Workers will be briefed by the supervisor regarding relevant safety issues associated with the work at the beginning of each work shift. Asbestos barrier tape will be used as necessary to demarcate the regulated area. All electrical circuits within arm's reach of the glove-bags will be shut off and locked out/tagged out. Power for the decon shower, temporary work lighting, HEPA-vacuums, and AFD for the decon will be supplied through a GFCI-board or pigtails.
- K. DECONTAMINATION SYSTEM:** An attached worker decontamination facility will be used for the mini-containment, for glove-bagging and removal of the vibration isolation gasket. The location of the decon will be in the south hallway at the entrance to the room where the hot water tank is located and attached to the mini-containment. The dirty room of the decon will be connected to the mini-containment and to the glove-bag work area with a critical barrier across the hallway. An AFD will be connected to the mini-containment to provide negative pressure inside the mini-containment. The AFD will be exhausted outside the building and the exhaust will be monitored.



**NOTES:**

1. GLOVE-BAG ALL FITTINGS; DECON ATTACHED TO GLOVE-BAG WORK AREA
2. CRITICAL BARRIERS AT EXTERIOR OPENINGS & DROP CLOTHS
3. MINI-CONTAINMENT WITH ATTACHED DECON FOR WATER TANK ABATEMENT
4. FIVE PCM CLEARANCE SAMPLES FOR GLOVE-BAG AND VIG ABATEMENT
5. FIVE PCM CLEARANCE SAMPLES FOR MINI-CONTAINMENT



- CRITICAL BARRIER
- MINI-CONTAINMENT
- POP-UP
- HOT WATER TANK
- VIBRATION ISOL. GASKET

**Oklahoma Department of Environmental Quality**  
 SW 44th Street Armory  
 2222 SW 44th Street  
 Oklahoma City, Oklahoma



**Legend:**  
 Vibration Isolation Gasket (ACM) = 100 LF  
 Asbestos Filings = 65  
 Water Tank Insulation (ACM) = 100 SF  
 Roofing Drain Pan = (ACM) 1 EA.  
 Roofing Drain Pan Fitting (ACM) = 1 EA.

**EJENERCON**  
**FRIABLE ASBESTOS ABATEMENT**

Not to Scale



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

**Polarized Light Microscopy Asbestos Analysis Report**

QuantEM Lab No. 190701	Client:	Emerson Services, Inc.
Account Number: A845		6525 N. Meridian, Suite 400
		Oklahoma City, OK 73116
Date Received: 01/03/2011	Project:	Armory SW 44th St.
Received By: Sherrie Leftwich	Project Location:	SW 44th Street
Date Analyzed: 01/04/2011	Project Number:	ENMISC2176
Analyzed By: Sandy Baker		
Methodology: EPA/600/R-93/116		

QuantEM Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
001	SW-01-01	Homogeneous	Gray Insulation	Asbestos Present Amosite 35	NA	CaCO3 Binder
002	SW-01-02	Homogeneous	Gray Insulation	Asbestos Present Chrysotile 35 Amosite 4	NA	CaCO3 Binder
003	SW-02-01	Homogeneous	Beige Insulation	Asbestos Present Amosite 2	Cellulose 10 Glass Fiber 40	CaCO3 Binder
004	SW-02-02	Homogeneous	Beige Insulation	Asbestos Present Amosite 3	Glass Fiber 40	CaCO3 Binder
005	SW-02-03	Homogeneous	Beige Insulation	Asbestos Present Amosite 3	Glass Fiber 40	CaCO3 Binder
006	SW-02-04	Homogeneous	Beige Insulation	Asbestos Present Amosite 4	Cellulose 10 Glass Fiber 40	CaCO3 Binder

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

QuantEM is a NVLAP accredited TEM and PLM laboratory (Lab Code: 101959-0). This report relates only to the specific items tested. NVLAP accreditation applies only to analysis performed utilizing EPA/600/M4-82-020 and EPA/600/R-93/116 methods. This report may not be used to claim product endorsement by NVLAP or any other agency of the US Government. This report may not be reproduced except in full, without the written approval of the laboratory.



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### Polarized Light Microscopy Asbestos Analysis Report

QuantEM Lab No. 190701	Client:	Enercon Services, Inc.
Account Number: A845		6525 N. Meridian, Suite 400 Oklahoma City, OK 73116
Date Received: 01/03/2011		
Received By: Sherrie Leftwich	Project:	Armory SW 44th St.
Date Analyzed: 01/04/2011	Project Location:	SW 44th Street
Analyzed By: Sandy Baker	Project Number:	ENMISC2176
Methodology: EPA/600/R-93/116		

QuantEM Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
007	SW-03-01	Homogeneous	White Ceiling Tile	Asbestos Not Present	Cellulose 30 Glass Fiber 30	Perlite Binder Paint
008	SW-03-02	Homogeneous	White Ceiling Tile	Asbestos Not Present	Cellulose 30 Glass Fiber 30	Perlite Binder Paint
009	SW-04-01	Homogeneous	White Ceiling Tile	Asbestos Not Present	Cellulose 30 Glass Fiber 30	Perlite Binder Paint
010	SW-04-02	Homogeneous	White Ceiling Tile	Asbestos Not Present	Cellulose 30 Glass Fiber 30	Perlite Binder Paint
011	SW-05-01	Homogeneous	White Sheetrock	Asbestos Not Present	Cellulose 30	Gypsum CaCO3
012	SW-05-02	Homogeneous	White Sheetrock	Asbestos Not Present	Cellulose 30	Gypsum CaCO3

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

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### Polarized Light Microscopy Asbestos Analysis Report

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Received By: Sherrie Leftwich	Project Location:	SW 44th Street
Date Analyzed: 01/04/2011	Project Number:	ENMISC2176
Analyzed By: Sandy Baker		
Methodology: EPA/600/R-93/116		

Quantem Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
013	SW-06-01	Homogeneous	Light Gray Plaster	Asbestos Not Present	Cellulose <1	Quartz CaCO3
014	SW-07-01	Layered	Light Gray Plaster	Asbestos Not Present	NA	Quartz CaCO3
014a		Layered	Black Mastic	Asbestos Not Present	Cellulose <1 Glass Fiber <1	Tar
014b		Layered	Yellow Insulation	Asbestos Not Present	Glass Fiber 95	Binder
015	SW-08-01	Homogeneous	White Sheetrock	Asbestos Not Present	Cellulose 35	Gypsum CaCO3
016	SW-08-02	Layered	White Texture	Asbestos Not Present	NA	CaCO3 Paint

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

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Date Analyzed: 01/04/2011	Project Location:	SW 44th Street
Analyzed By: Sandy Baker	Project Number:	ENMISC2176
Methodology: EPA/600/R-93/116		

QuantEM Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
016a		Layered	White Sheetrock	Asbestos Not Present	Cellulose 33	Gypsum CaCO3
017	SW-09-01	Homogeneous	Beige Insulation	Asbestos Present Amosite 3	Cellulose 10 Glass Fiber 40	CaCO3 Binder
018	SW-09-02	Homogeneous	Beige Insulation	Asbestos Present Amosite 2	Glass Fiber 35	CaCO3 Binder
019	SW-10-01	Homogeneous	Brown Insulation	Asbestos Not Present	Cellulose 55 Glass Fiber 5	Perlite Binder
020	SW-11-01	Homogeneous	Gray Insulation	Asbestos Present Chrysotile 40	Synthetic 40	Binder
021	SW-12-01	Layered	Gray Floor Tile	Asbestos Not Present	NA	Vinyl Quartz

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

QuantEM is a NVLAP accredited TEM and PLM laboratory (Lab Code: 101959-0). This report relates only to the specific items tested. NVLAP accreditation applies only to analysis performed utilizing EPA/600/M4-82-020 and EPA/600/R-93/116 methods. This report may not be used to claim product endorsement by NVLAP or any other agency of the US Government. This report may not be reproduced except in full, without the written approval of the laboratory.

Project Design Review Form

Oklahoma Department of Labor  
 Asbestos Division  
 3017 N. Stiles, Oklahoma City, OK 73105  
 Phone - 405.521.6464 Fax - 405.521.6025

Project Name: DEQ SW 44th St Armory  
 Project No: 11-6639 Date: 06-08-11  
 Project Designer: Bill Hunker

Jun. 10. 2011 10:51 AM

No. 2864 P. 2

Approved: X  
 Disapproved:

ITEM	ACCEPTED	REJECTED	COMMENTS
1. A statement that DOI Abatement of Friable Materials Rule apply.	X		Oklahoma Department of Labor (Title 40 Sections 451-457) OAC 380:50 Abatement of Friable Materials Rules 29 CFR 1928 Construction Industry Standards
2. Sequencing and phasing of work.	X		One Phase Two task
3. Identification of means of egress and a fire protection plan and a diagram for emergency escape routes, and fire extinguisher placements.	X		1 abc 10lbs fire extinguisher shall be provided for each 3000 sq of work area. Workers will be trained in the use of fire extinguishers, emergency egress plans, basic fire safety, and emergency reporting procedures prior to work beginning.
4. The quantity, type, percentage with bulk analysis unless presumed and a diagrammed location of asbestos materials to be abated.	X		Approximately 65 fittings, 100sf of insulation on the hot water tank, 100 sf of vibration isolation gasket and a roof drains and fittings to be abated Material contains 2-40% chrysotile asbestos.
5. Abatement methods, and techniques, and numbers of containments, glove bags or mini-containments.	X		Task One hot water tank To be completed as a mini NPC 380:50-17 Task Two Filling, roof drain, and vibration isolation gasket To be completed under glovebag procedure. 380:50-13
6. Details of personal and area air monitoring samples.	X		At least 2 Personal samples or 25% of the work force. 1 sample in the work area. 1 sample from the outside clean room 1 sample at load-out during load-out activities. 1 sample at neg-air discharge.
7. Numbers and locations of Clean Test samples and type of analysis to be employed.	X		5 clearance samples shall follow OAC 380:50-11-2 5 clearance samples to be analyzed using PCM.
8. Numbers, capacities, a diagram to identify locations, and discharge points, if any, of negative air machines.	X		1 Neg-air at decon (equipment room) and one inside the mini containment vented externally
9. Details of project containment(s), glove bag or mini-containments, including drawings. Details shall include all applicable subchapters, including but not limited to scaffolding and live electric isolation.	X		Critical barriers and warning signs Lock out all power ( and within arm reach of any glovebag) and HVAC entering into containment. All power must be supply through GFCI, install lockout and decon
10. Details of decontamination system(s).	X		Attached decon 380:50-15-7, 8 and 12
11. The extent to which asbestos-contaminated soils, if any, must be removed, and the sampling methods of determining the efficacy of such removal.		N/A	
12. Special materials or methods required to protect objects in the work area should be detailed, (plywood over carpeting or hardwood floors to prevent damage from scaffolds and/or falling materials.		N/A	
13. Any variances from the Abatement of Friable Asbestos Materials Rules.		N/A	

Department of Labor reserves the right to require additional engineering or environmental controls consistent with the Abatement of Friable Asbestos Materials Rules which may be necessary because of discrepancies between the project design and field conditions, or from unanticipated changes in field conditions.

REVIEWED BY: Bill Hunker DATE: 6-8-11

REVIEWED BY: Bill Hunker DATE: 6/9/11

## **ATTACHMENT 3**

### **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 4).

### 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 2-1 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, 5<sup>th</sup> Edition**

Occupational Safety and Health Administration, Department of Labor Section III

**ATTACHMENT 4**

**DEQ Approved Lead-Based Paint Encapsulants List**

**Sealant and Encapsulant Specifications**



## Lead-Based Paint Encapsulants approved by DEQ

<b>Encapsulant Manufacturer</b>	<b>Encapsulant Product(s)</b>
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](http://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.

**Limited Warranty:** The statements made on this bulletin, product labels or by any of our agents concerning this material are given for information only. They are believed to be true and accurate and are intended to provide a guide to approved construction practices and materials. As workmanship, weather, construction equipment, quality of other materials and other variables affecting results are all beyond our control, Kelly-Moore Paint Company, Inc., does not make nor does it authorize any agent or representative to make any warranty of MERCHANTABILITY OR FITNESS for any purpose or any other warranty, guarantee or representation, expressed or implied, concerning this material except that it conforms to Kelly-Moore's quality control standards. Any liability whatsoever of Kelly-Moore Paint Company, Inc. to the buyer or user of this product is limited to the purchaser's cost of the product itself.

**SEE MATERIAL SAFETY DATA SHEETS FOR  
FULL SAFETY PRECAUTIONS.**

**KM-669 IS FOR PROFESSIONAL USE ONLY**

**KM-659 IS FOR INDUSTRIAL USE ONLY**

**KEEP AWAY FROM CHILDREN**

**KELLY-MOORE PAINT COMPANY INC. • 987 COMMERCIAL ST. • SAN CARLOS, CA 94070**  
**Technical Assistance 1-888-MR-PAINT [www.kellymoore.com](http://www.kellymoore.com)**

5.04

# MATERIAL SAFETY DATA SHEET

## For Coatings, Resins & Related Materials

### Section I

Manufactured For:  
Address:

Kelly-Moore Paints  
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	Occup. Exposure Limits		Vapor Pressure	
			OSHA PEL	ACGIH TLV	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.

**ATTACHMENT 5**

**Lead-Based Paint Inspection and  
Settled Dust Sampling Report  
For  
Oklahoma City SW 44<sup>th</sup> Street Armory**

## **ATTACHMENT 6**

### **Door Scope of Work Including Measurements and Specifications**

# **Oklahoma City SW 44<sup>th</sup> Street 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 an 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 door frame. Replace door with pre-hung door unit. Original frame will be painted with a neutral colored primer.  
Door Measurements – 3' X 7'
2. Remove door. Remove all paint from door frame. Replace door with pre-hung door unit. Original frame will be painted with a neutral colored primer.  
Door Measurements – 3' X 7'
3. Remove door. Remove all paint from door frame. Replace door with pre-hung door unit. Original frame will be painted with a neutral colored primer.  
Door Measurements – 3' X 7'
4. Remove door. Remove all paint from door frame. Replace door with pre-hung door unit. Original frame will be painted with a neutral colored primer.  
Door Measurements – 3' X 7'
5. Remove door. Remove all paint from door frame. Replace door with pre-hung door unit. Original frame will be painted with a neutral colored primer.  
Door Measurements – 3' X 7'
6. Remove door. Remove all paint from door frame. Replace door with pre-hung door unit. Original frame will be painted with a neutral colored primer.  
Door Measurements – 3' X 7'
7. Remove door. Remove all paint from door frame. Replace door with pre-hung door unit. Original frame will be painted with a neutral colored primer.  
Door Measurements – 3' X 7'

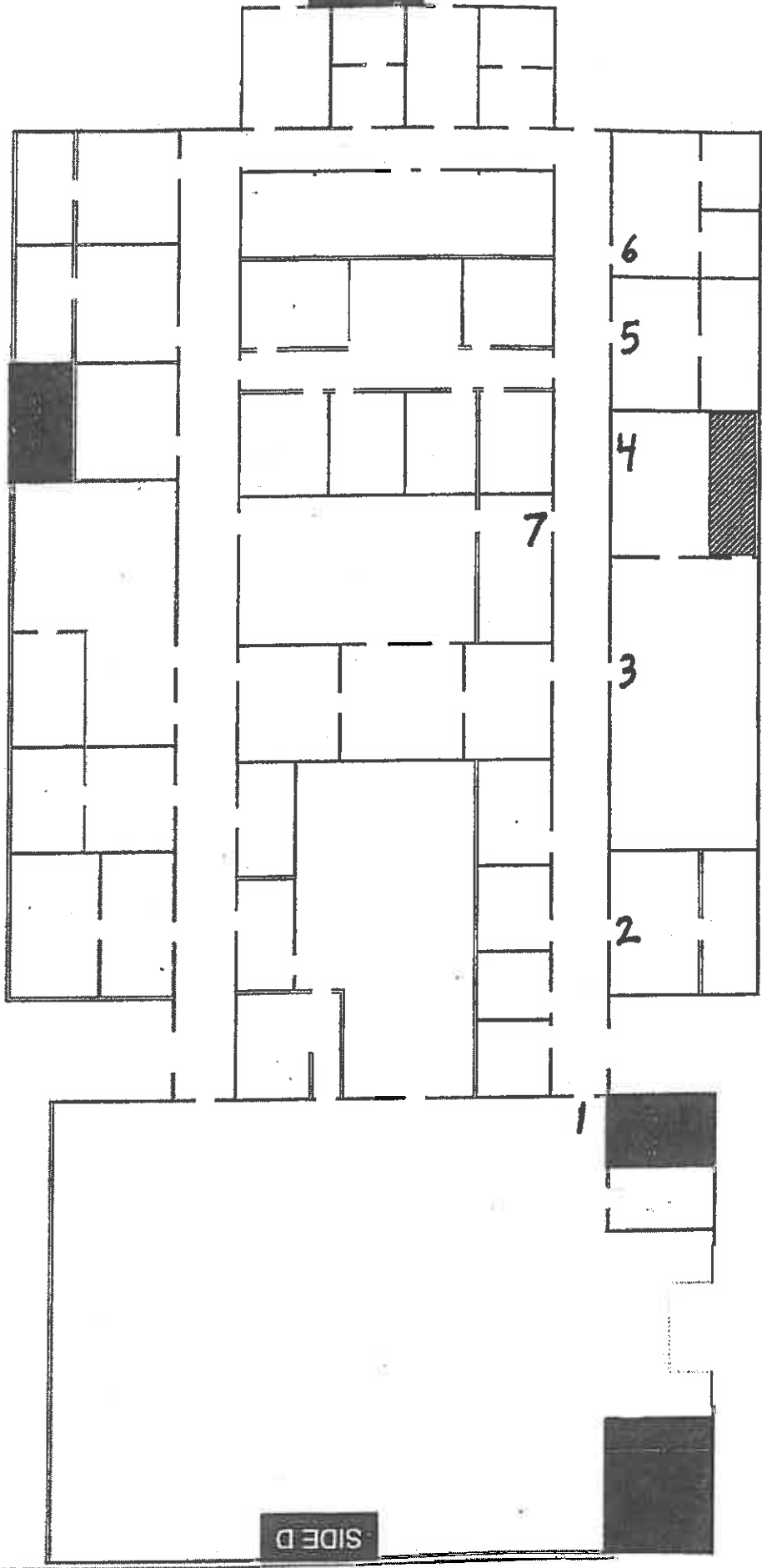


SIDE B

SIDE A

SIDE C

SIDE D



6

5

4

7

3

2

1

## 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 caulk 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.
  1. **Acceptable Ratios:**

	<u>Minimum</u>	<u>Maximum</u>
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 band of sealant under and along all sides of all exterior thresholds.

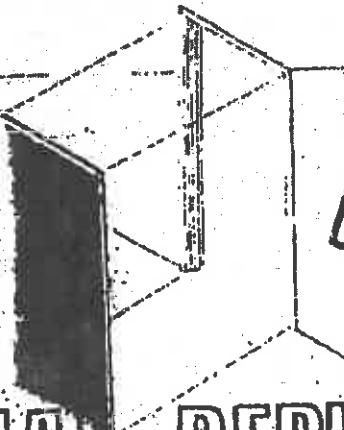
END OF SECTION 07920

Install a pre-hung



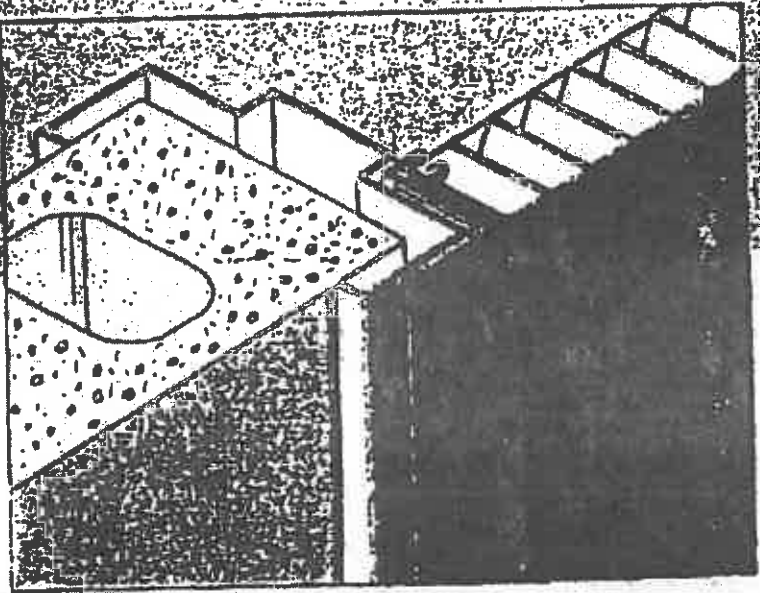
# COMMERCIAL REPLACEMENT DOOR UNIT

**UL LISTED**  
 1½ HR (B) LABEL  
 can be used in existing  
 non-listed or listed  
 steel frame.

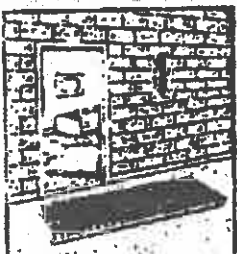


New beauty  
 and security  
 for worn out doors.

The Steelcraft Commercial Replacement Unit is the only product of its kind specifically designed for the rehab market. Fits these nominal sizes: 2868, 3068, 3668, 3888, 4088, 2870, 3070, 3670, 3870, 4070 single, and 5468, 5068, 5470 and 6070 double doors.

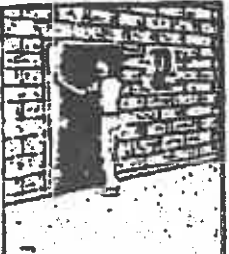


- Does not require removal of existing frame.
- Fits an "out-of-square" opening.
- Works with grouted or non-grouted frames.
- Installs quickly and easily.
- Includes rugged steel adapter frame.
- Permits door swing to be changed without major rework.
- Fills opening without re-mortaring and filling hardware cutouts.
- Can be installed in existing steel or wood frame.
- Provides additional security.



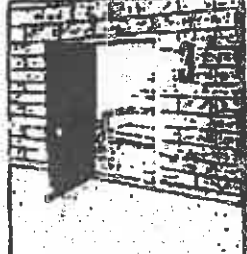
**QUICK**

1. Remove old door, hardware, sill and any other item(s) projecting into opening.



**'N EASY**

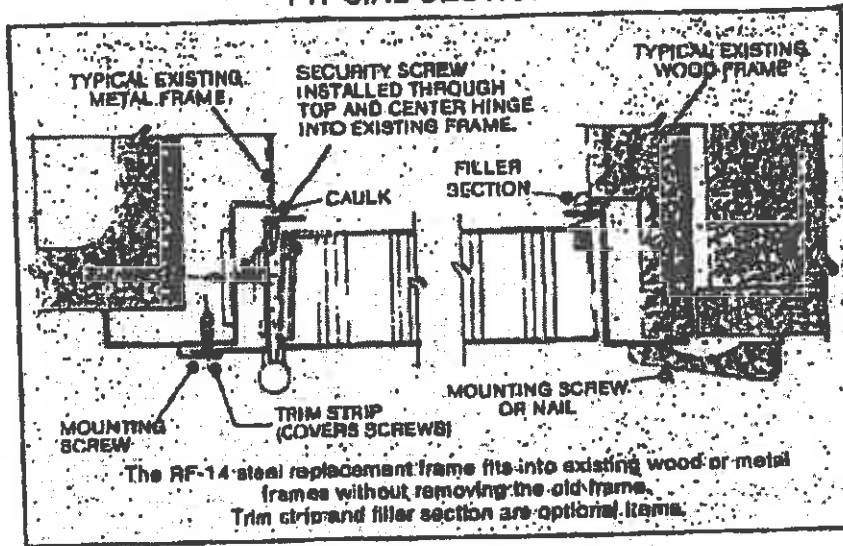
2. Set pre-hung unit into frame opening. Install mounting screws through face, cut bending and install security screws.



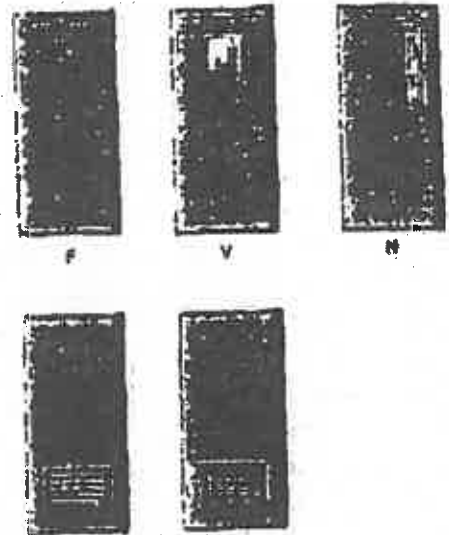
**INSTALLATION**

3. Mount hardware as required. Paint.

**TYPICAL SECTION**



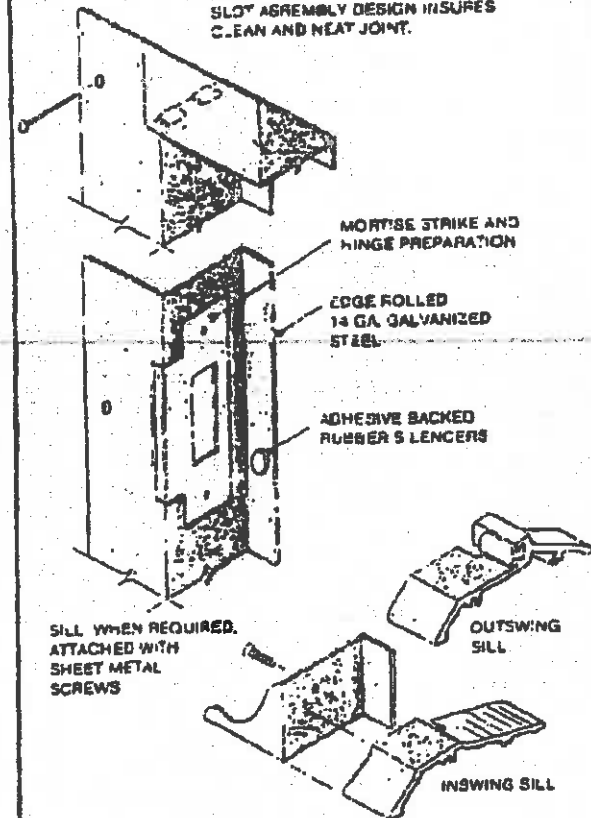
**DESIGNS AND FINISHES AVA**



**LOUVERS**

**FRAME DETAIL**

KNOCKED DOWN CORNER CONSTRUCTION. FAST AND EASY TAB AND SLOT ASSEMBLY DESIGN INSURES CLEAN AND NEAT JOINT.



FRAME IS FURNISHED WITHOUT SILL AS STANDARD. AN OPTIONAL INSWING OR OUTSWING SILL IS AVAILABLE. WEATHERSTRIPPING ALSO IS AVAILABLE AS AN OPTION.

**SPECIFICATIONS**

Commercial Replacement Unit shall be supplied as a complete unit, consisting of 18 ga. door (RL-18) and 14 ga. frame (RF-14).

\*Single openings shall be pre-hung, ready for quick and easy installation. Double openings shall be supplied as separate units (frame and two door leaves) not pre-hung.

Doors shall conform to the following:

Doors shall be as manufactured by Steelcraft, Cincinnati, Ohio, and designated as RL-18 (1/4" 18 ga. steel).

Doors shall be fabricated from cold rolled steel.

Doors shall have 1/4" bevel in 2" on hinge and lock edges.

Doors shall have vertical mechanical interlocking seams on hinge and lock edges with wide edge seam.

Doors shall be provided with top and bottom inverted steel channels spotwelded within the door.

Doors shall be reinforced, stiffened and sound deadened with fiberglass and trichloroethylene completely filling the inside of the door and laminated to the inside faces of panels.

Doors shall be mortised and adequately reinforced for all hardware.

Doors shall be phosphatized and receive one coat of baked-on prime paint.

Frames shall conform to the following:

Frames shall be as manufactured by Steelcraft, Cincinnati, Ohio, and designated as RF-14 (14 ga.).

Frames shall be accurately formed from galvanized steel.

Frames shall be furnished knocked down (KD). Corners shall have tabs for secure and easy interlocking of jamba to head at each corner.

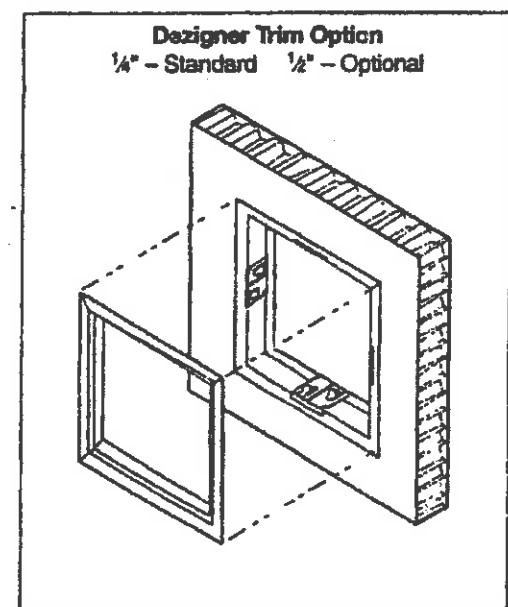
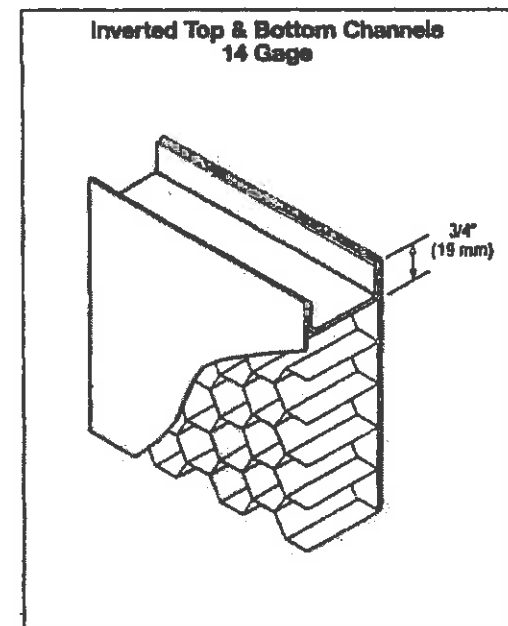
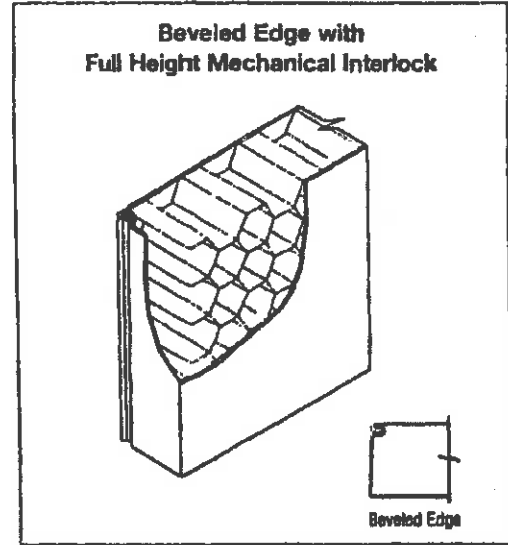
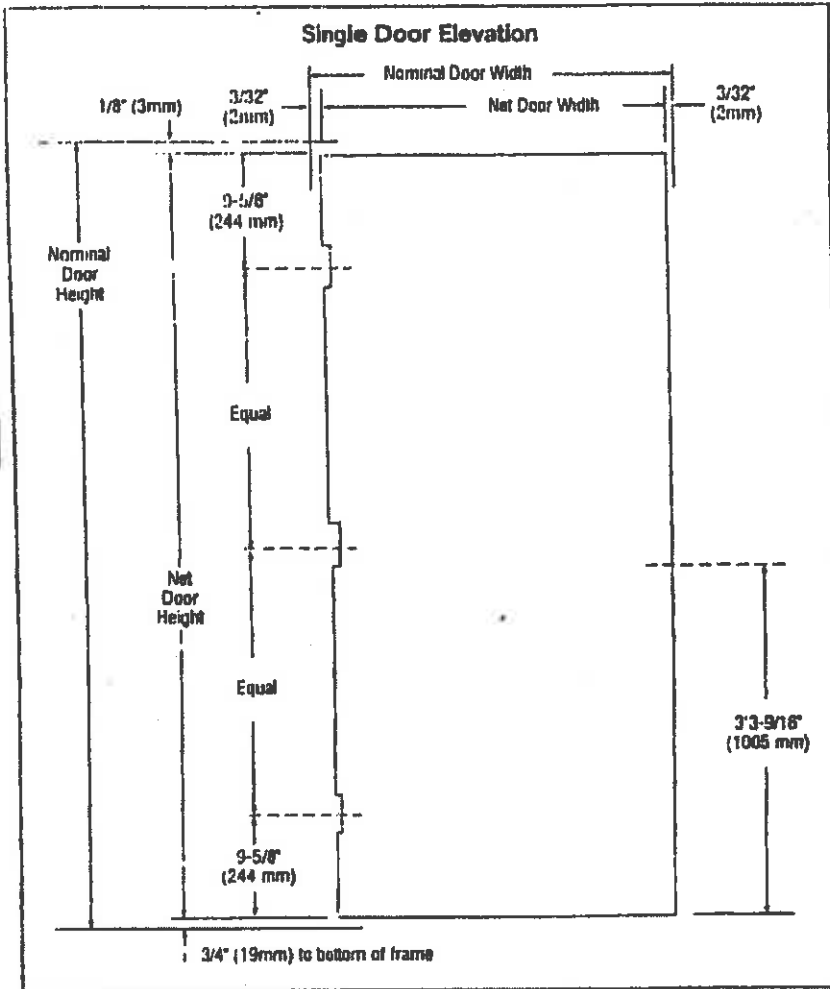
Frames shall be adequately reinforced for all hardware.

Frames shall be supplied with adhesive backed rubber gumpers; three per strike jamb, two per double door frame head.

Frames shall be phosphatized and receive one coat of baked-on prime paint.

\*Single openings are designed to be pre-hung and installed. Units are supplied KD for pre-hanging at job site or by distributor.

OCT 24 2008



### CONSTRUCTION NOTES:

- Doors are  $1\frac{3}{4}"$  (45mm) thick.
- Door opening size maximum:  
Single door opening size  $4'0" \times 10'0"$  (1219mm x 3048mm)  
Double door opening size  $8'0" \times 10'0"$  (2438mm x 3048mm)
- Standard operating clearances (installed in frame):  
Head =  $1/8"$  (3mm) to bottom of head or transom panel  
Hinge and lock side =  $3/32"$  (2mm) to rabbet on jamb
- 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.
- 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  $3/8"$  (9mm) lower.
- Glass lites with Designer® 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 ANSV/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.*

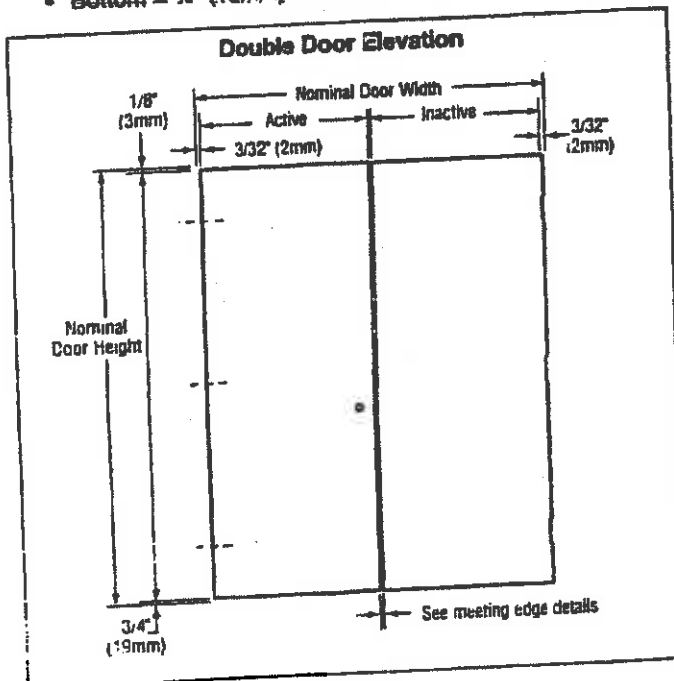
Series	Level	Model	Description	Edge Construction
L18	2	1	Full Flush	Full height, visible mechanical interlocked edge
LF18	2	2	Seamless	L-Series with epoxy filled edge seams
LW18	2	2	Seamless	L-Series with welded edge seams
L10	3	1	Full Flush	Full height, visible mechanical interlocked edge
LF10	3	2	Seamless	L-Series with epoxy filled edge seams
LW10	3	2	Seamless	L-Series with welded edge seams

## DOUBLE DOOR APPLICATIONS:

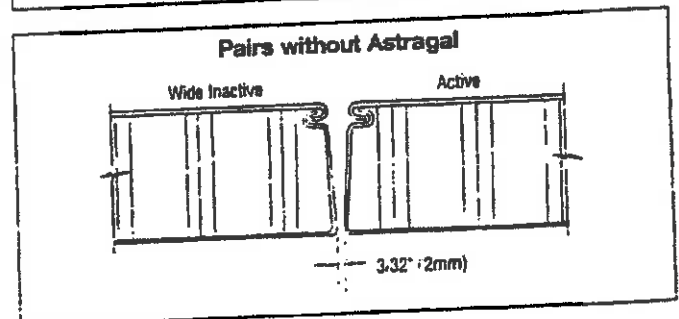
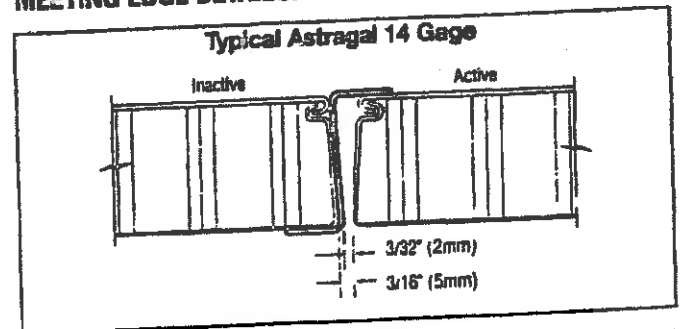
L-Series doors are available in double door elevations, with active and inactive leaves and an overlapping astragal.

- Standard operating clearances (*installed in frame*):
  - Head = 1/8" (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 = 3/4" (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.

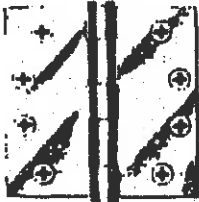


## MEETING EDGE DETAILS:





### Five Knuckle



#### Plain Bearing - Standard Weight

For use on medium weight doors or doors requiring low frequency service

- 1191** Brass with Stainless Steel pin  
- ANSI A2133
- Stainless Steel with Stainless Steel pin  
- ANSI A5133

- 1279** Steel with Steel pin  
- ANSI A8133

- Non-rising removable pin with button tip and plug
- With door closer use ball bearing hinge

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
2 x 2	51 x 51	0.083	4	-	3/4 x 8
2 1/2 x 2 1/2	64 x 64	0.089	6	-	3/4 x 8
3 x 3	76 x 76	0.097	6	-	1 x 9
3 1/2 x 3 1/2	89 x 89	0.119	6	1/2 x 10-24	1 x 9
4 x 4	102 x 102	0.129	8	1/2 x 12-24	1 1/4 x 12
4 1/2 x 4	114 x 102	0.134	8	1/2 x 12-24	1 1/4 x 12
4 1/2 x 4 1/2	114 x 114	0.134	8	1/2 x 12-24	1 1/4 x 12
5 x 4	127 x 102	0.145	8	1/2 x 12-24	1 1/4 x 12
5 x 4 1/2	127 x 114	0.145	8	1/2 x 12-24	1 1/4 x 12
5 x 5	127 x 127	0.145	8	1/2 x 12-24	1 1/4 x 12
6 x 4 1/2	152 x 114	0.160	10	1/2 x 1/4-20	1 1/2 x 14
6 x 5	152 x 127	0.160	10	1/2 x 1/4-20	1 1/2 x 14
6 x 6	152 x 152	0.160	10	1/2 x 1/4-20	1 1/2 x 14

### Five Knuckle



#### Plain Bearing - Standard Weight - Wide Throw

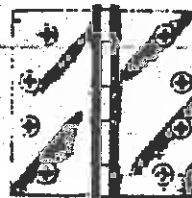
For use on medium weight doors or doors requiring low frequency service

- 1191** Wide Throw  
Brass with Stainless Steel pin  
- ANSI A2133
- Stainless Steel with Stainless Steel pin  
- ANSI A5133

- 1279** Wide Throw  
Steel with Steel pin  
- ANSI A8133

- Non-rising removable pin with button tip and plug
- With door closer use ball bearing hinge

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
3 1/2 x 5	89 x 127	0.119	6	1/2 x 10-24	1 x 9
3 1/2 x 6	89 x 152	0.119	6	1/2 x 10-24	1 x 9
4 x 5	102 x 127	0.129	8	1/2 x 12-24	1 1/4 x 12
4 x 6	102 x 152	0.129	8	1/2 x 12-24	1 1/4 x 12
4 x 7	102 x 178	0.129	8	1/2 x 12-24	1 1/4 x 12
4 1/2 x 5	114 x 127	0.134	8	1/2 x 12-24	1 1/4 x 12
4 1/2 x 6	114 x 152	0.134	8	1/2 x 12-24	1 1/4 x 12
4 1/2 x 7	114 x 178	0.134	8	1/2 x 12-24	1 1/4 x 12
4 1/2 x 8	114 x 203	0.134	8	1/2 x 12-24	1 1/4 x 12
5 x 6	127 x 152	0.145	8	1/2 x 12-24	1 1/4 x 12
5 x 7	127 x 178	0.145	8	1/2 x 12-24	1 1/4 x 12
5 x 8	127 x 203	0.145	8	1/2 x 12-24	1 1/4 x 12



#### Concealed Bearing - Standard Weight

For use on medium weight doors or doors requiring medium frequency service

- CB1191** Stainless Steel with Stainless Steel pin  
- ANSI A5112

- Non-rising removable pin with button tip and plug
- Only available with SecureCoat® Lifetime finish (US3C)
- Specify machine screws

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
3 1/2 x 3 1/2	89 x 89	0.119	6	-	1 x 9
4 x 4	102 x 102	0.129	8	-	1 1/4 x 12
4 1/2 x 4	114 x 102	0.134	8	-	1 1/4 x 12
4 1/2 x 4 1/2	114 x 114	0.134	8	-	1 1/4 x 12
5 x 4	127 x 102	0.145	8	-	1 1/4 x 12
5 x 4 1/2	127 x 114	0.145	8	-	1 1/4 x 12
5 x 5	127 x 127	0.145	8	-	1 1/4 x 12
6 x 4 1/2	152 x 114	0.160	10	-	1 1/2 x 14
6 x 5	152 x 127	0.160	10	-	1 1/2 x 14
6 x 6	152 x 152	0.160	10	-	1 1/2 x 14





**Vinyl Seals**

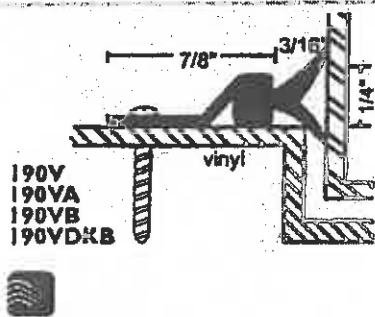
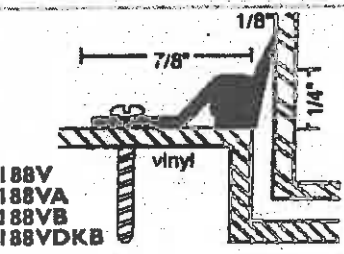
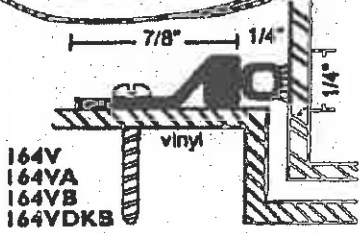
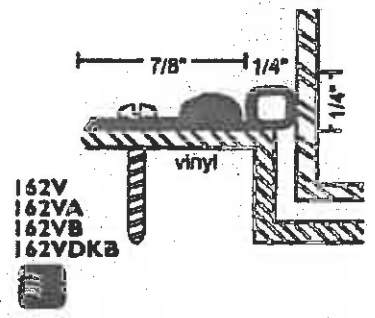
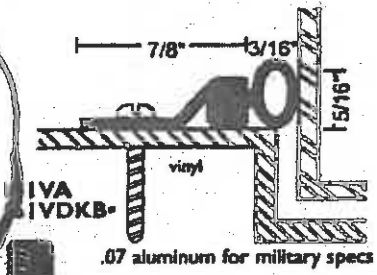
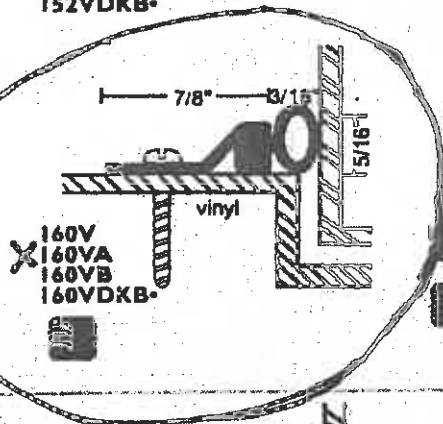
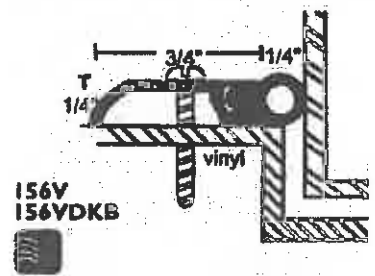
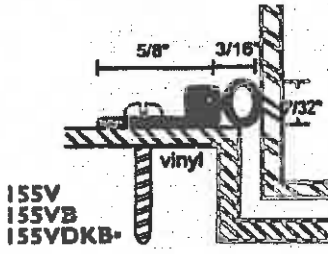
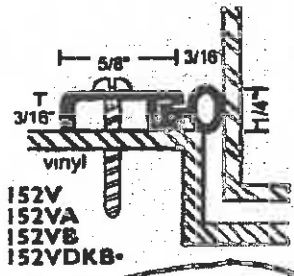
**Properties:**

- 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

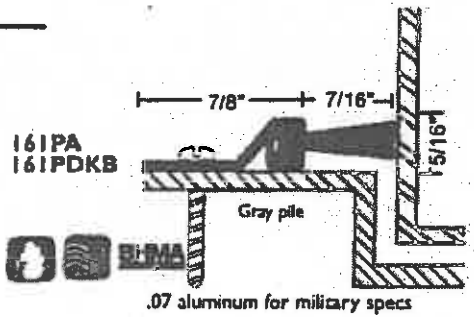
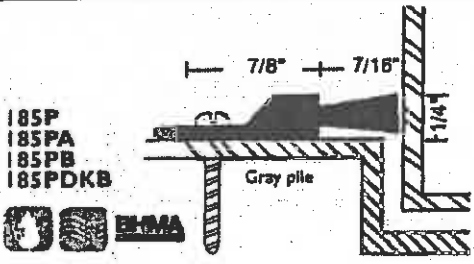
#6 x 3/4" Stainless Steel Sheet Metal Screws furnished  
 Screw holes slotted for adjustment

 All vinyl seals this section

A - clear  
 B - gold  
 DKB - dark bronze  
 no suffix - mill  
 Vinyl is gray  
 (exception: ~vinyl is black)



**Pile Seals**





**Saddle Thresholds**

All thresholds this page

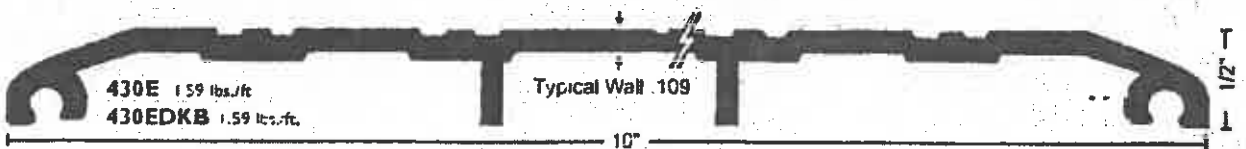
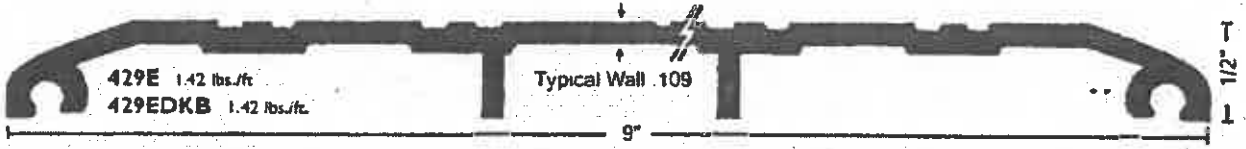
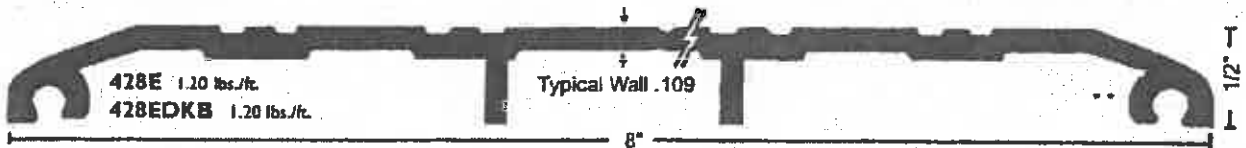
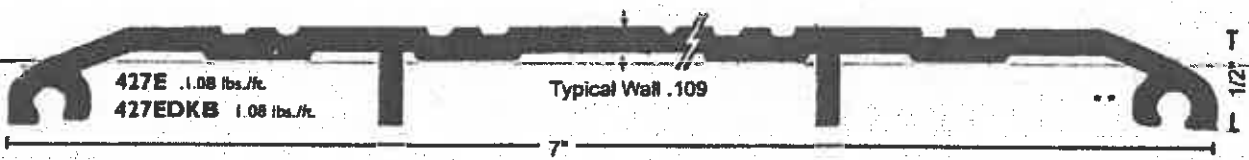
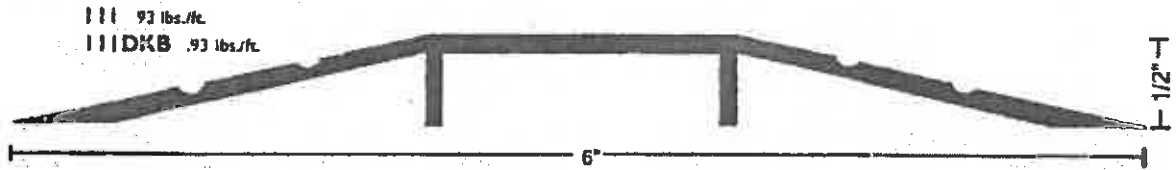
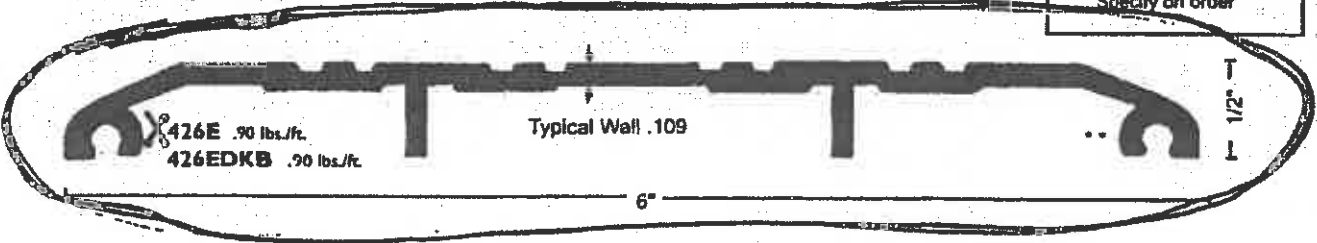
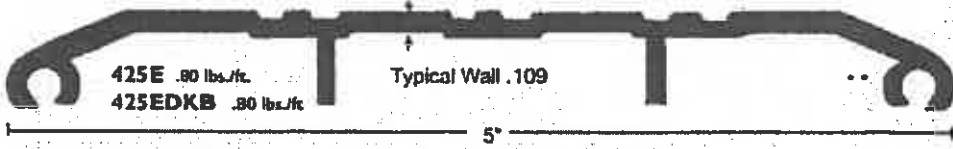
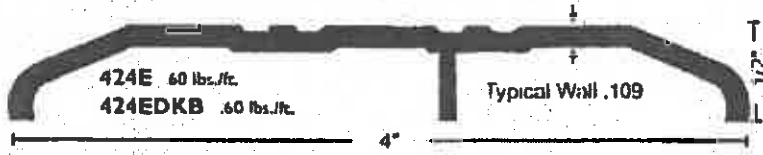
**MATERIALS & FINISHES**

- Aluminum mill finish
- DKB - Aluminum dark bronze finish

Sip 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:

1 $\frac{1}{8}$ " to 2 $\frac{1}{8}$ " (41mm-54mm) standard including Vandgard® functions.

See accessories (Page 12) for spacers required for 1 $\frac{1}{8}$ " doors.

### Backsets:

2 $\frac{3}{8}$ " (70mm) standard. 2 $\frac{1}{8}$ ", 3 $\frac{1}{4}$ " and 5" (60mm, 95mm, 127mm) optional.

### Faceplates:

Brass, bronze or stainless steel. 1 $\frac{1}{8}$ " x 2 $\frac{1}{4}$ " (29mm x 57mm) square corner, beveled.

### Lock Chassis:

Zinc plated for corrosion resistance.

### Latch Bolt:

Steel,  $\frac{1}{2}$ " (12mm) throw, deadlocking on keyed and exterior functions.  $\frac{3}{4}$ " (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.

### Strikes:

ANSI curved lip strike 1 $\frac{1}{4}$ " x 4 $\frac{3}{8}$ " x 1 $\frac{3}{16}$ " 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:

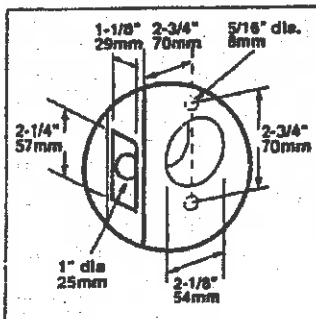
Interchangeable core and Primus® high security cylinders. Master keying, grand master keying and construction keying.

### Warranty:

Seven-year limited for all functions including Vandgard®.

## 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  $\frac{1}{2}$ " 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.



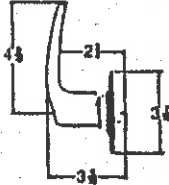
# D SERIES LEVERS

## Lever Designs & Finishes



### ATHENS

Symbol: ATH  
Material: Pressure cast zinc lever; wrought brass rose  
Finishes  
605, 606, 612, 613, 619, 625, 626



608

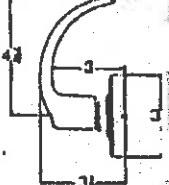


## Lever Designs & Finishes



### SPARTA

Symbol: SPA (17)  
Material: Pressure cast zinc lever; wrought brass rose  
Finishes  
605, 606, 612, 613, 619, 625, 626

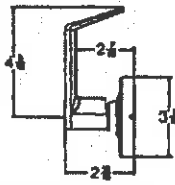


628



### RHODES

Symbol: RHO (06)  
Material: Pressure cast zinc lever; wrought brass rose  
Finishes  
605, 606, 612, 613, 619, 625, 626

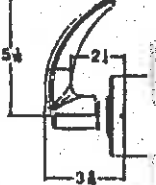


612



### OMEGA

Symbol: OME  
Material: Pressure cast zinc lever; wrought brass rose  
Finishes  
605, 606, 612, 613, 619, 625, 626



619



605  
Bright Brass



608  
Satin Brass



612  
Satin Bronze



613  
Oil Rubbed  
Bronze



619  
Satin Nickel



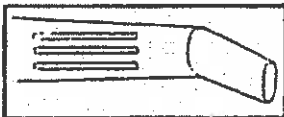
625  
Bright Chromium  
Plated



628  
Satin Chromium  
Plated



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
- 608 Satin Brass
- 612 Satin Bronze
- 613 Oil Rubbed Bronze
- 619 Satin Nickel
- 625 Bright Chromium Plated
- 628 Satin Chromium Plated

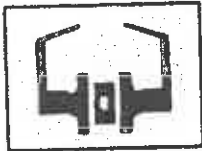
## Functions

### Non-Keyed Locks

SCHLAGE ANSI

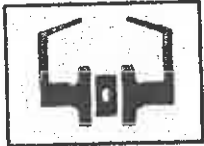
ND10S F75

**Passage Latch**  
Both levers always unlocked.



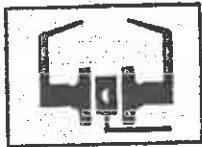
ND12D F89

**Exit Lock**  
Outside lever always fixed. Inside lever always unlocked.



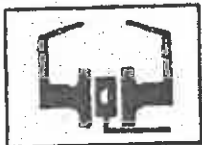
ND12DEL

**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.



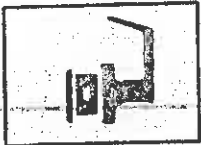
ND12DEU

**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.



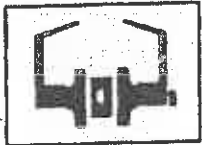
ND25D

**Exit Lock**  
Blank plate outside. Inside lever always unlocked.



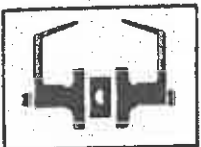
ND40S F76

**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.

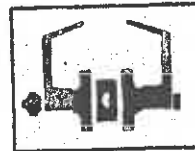


### Keyed Locks

SCHLAGE ANSI

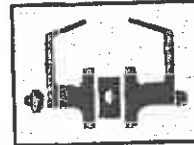
ND50PD F82

**Entrance/Office Lock\***  
Push-button locking. Push-button locks outside lever until unlocked with key or by turning inside lever.



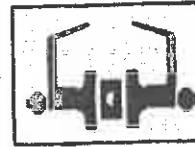
ND53PD F109

**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.



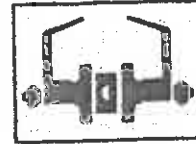
ND60PD F88

**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.



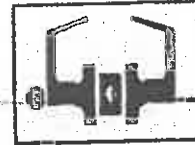
ND68PD F91

**Store Lock\*†**  
Key in either lever locks or unlocks both levers.



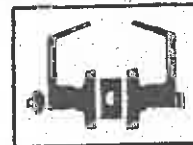
ND70PD F84

**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.



OCT 24 2008

\* 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:

1 3/8" to 1 3/4" (35 mm to 48 mm) standard.  
2" (51 mm) to 2 1/2" (64 mm) optional extended inside.

### Backsets:

2 3/4" (60 mm) standard. 2 3/4" (70 mm), 3 3/4" (95 mm) and 5" (127 mm) optional.

### Front:

Steel. 1 1/4" x 2 1/4" square corner, beveled, for 2 3/4" 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 Bolts:

Brass, chrome plated, 1/2" 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 1 1/4" x 2 3/4" (29 mm x 70 mm) x 1 1/8" (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.

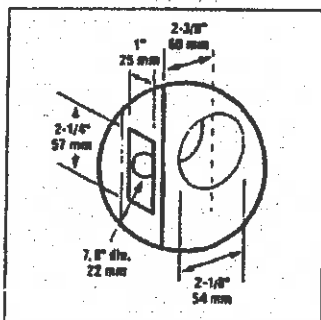
### Keying Options:

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 1/2" 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*



**GEORGIAN**

Symbol: GEO  
Material: Wrought brass  
Finishes: 605, 606,  
609, 610,  
625, 626

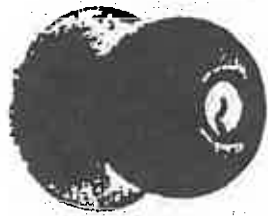
609



**LEVON**

Symbol: LEV  
Material: Pressure cast  
zinc lever; wrought brass  
or bronze rose  
Finishes: 605, 612,  
613, 626

605



**ORBIT**

Symbol: ORB  
Material: Wrought brass  
or bronze  
Finishes: 605, 606, 609,  
610, 611, 612, 613,  
616, 625, 626

613



*Note: Levon available as  
inside trim only on deadlatch  
functions. Specify complete  
trim application and door  
handing when ordering with  
deadlatch functions.*

**Finishes**

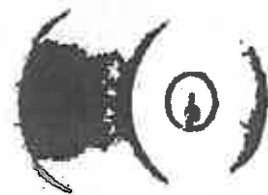
- 605 Bright Brass
- 606 Satin Brass
- 609 Antique Brass
- 610 Bright Brass, Blackened
- 611 Bright Bronze
- 612 Satin Bronze
- 613 Oil Rubbed Bronze
- 616 Antique Bronze
- 625 Bright Chromium Plated
- 626 Satin Chromium Plated
- 629 Bright Stainless Steel
- 630 Satin Stainless Steel



**PLYMOUTH**

Symbol: PLY  
Material: Wrought brass,  
bronze, or stainless steel  
Finishes: 605, 606, 609, 610,  
611, 612, 613, 616, 625,  
626, 629, 630

605



**TULIP**

Symbol: TUL  
Material: Wrought brass  
Finishes: 605, 606,  
609, 610,  
625, 626

626



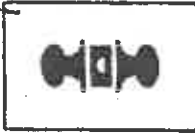
Keyed functions available with full size interchangeable core option for Orbit design.

**Functions**

ANSI A156.2 Series 4000 Grade 2

**Non-Keyed Functions**

SCHLAGE  
**A10S**      ANSI  
**F75**



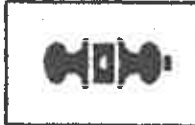
**Passage Latch**  
Both knobs always unlocked.

**A25D**



**Exit Lock**  
Blank plate outside. Inside knob always unlocked. Specify door thickness, 1 3/8" or 1 3/4".

**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.

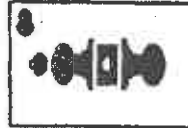
**Keyed Functions**

SCHLAGE      ANSI  
**A53PD**      **F109**



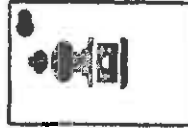
**Entrance Lock**  
Turn/push-button locking: pushing and turning button locks outside knob requiring use of key until button is manually unlocked. Push-button locking: pushing button locks outside knob until unlocked by key or by turning inside knob.

**A70PD**      **F84**



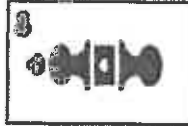
**Classroom Lock**  
Outside knob locked and unlocked by key. Inside knob always unlocked.

**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.

Keyed functions available with full size interchangeable core option for Orbit design.



**ATTACHMENT 7**

**Specifications for Replacement of Concrete**

## SECTION 03300 - CAST-IN-PLACE CONCRETE

### PART 1 - GENERAL

#### 1.1 SECTION REQUIREMENTS

- A. Submittals: Product Data and concrete mix designs.
- B. Comply with ASTM C 94; ACI 301, "Specifications for Structural Concrete for Buildings"; ACI 117, "Specifications for Tolerance for Construction and Materials"; and CRSI's "Manual of Standard Practice."

### PART 2 - PRODUCTS

#### 2.1 MATERIALS

- A. Deformed Reinforcing Bars: ASTM A 615/A 615M, Grade 60 (Grade 420).
- B. Plain Steel Wire: ASTM A 82, as drawn.
- C. Steel Welded-Wire Fabric: ASTM A 185, flat sheets not rolls, free of surface rust or galvanized.
- D. Portland Cement: ASTM C 150, Type I or II.
- E. Fly Ash: ASTM C 618, Type C or F.
- F. Aggregates: ASTM C 33, uniformly graded.
- G. Joint-Filler Strips: ASTM D 1751, cellulosic fiber, or ASTM D 1752, cork.
- H. Repair Topping: Factory-packaged, Portland or blended hydraulic cement-based, polymer-modified, self-leveling traffic-bearing topping with minimum 28-day compressive strength of 5700 psi (39 MPa).

#### 2.2 MIXES

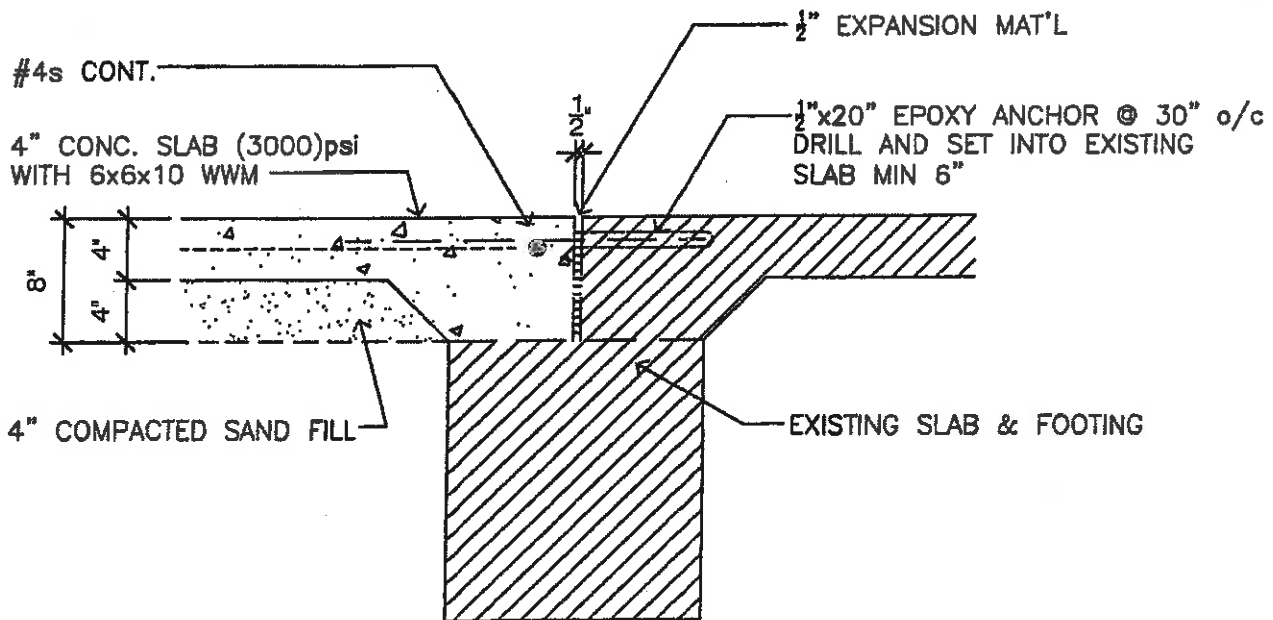
- A. Proportion normal-weight concrete mixes to provide the following properties:
  - 1. Compressive Strength: 3000 psi (20.7 MPa) at 28 days.
  - 2. Slump Limit: 4 inches (100 mm) at point of placement.
  - 3. Air Content: 5 percent for concrete exposed to freezing and thawing.

### PART 3 - EXECUTION

#### 3.1 CONCRETING

- A. Refer to Foundation Detail "A."
- B. Construct formwork and maintain tolerances and surface irregularities within ACI 117 limits of Class A for concrete exposed to view and Class C for other concrete surfaces.
- C. Accurately position, support, and secure reinforcement.
- D. Install construction, isolation, and control joints where required. Install full-depth joint-filler strips at isolation joints.
- E. Place concrete in a continuous operation and consolidate using mechanical vibrating equipment.
- F. Protect concrete from physical damage, premature drying, and reduced strength due to hot or cold weather during mixing, placing, and curing.
- G. Formed Surface Finish: Smooth-formed finish for concrete exposed to view, coated, or covered by waterproofing or other direct-applied material; rough-formed finish elsewhere.
- H. Slab Finishes: Troweled finish for floor surfaces and floors to receive floor coverings, paint, or other thin film-finish coatings.
- I. Uniformly spread 25 lb/100 sq. ft. (1.5 kg/sq. m) of dampened slip-resistant aggregate over initially floated surfaces; tamp, and float. Expose non-slip aggregate after curing.
- J. Cure formed surfaces by moist curing for at least seven days.
- K. Begin curing unformed concrete after finishing. Keep concrete continuously moist for at least seven days.
- L. Protect concrete from damage. Repair surface defects in concrete and slabs.
- M. Repair slabs not meeting surface tolerances by grinding high areas and by applying a repair underlayment to low areas receiving floor coverings and a repair topping to low areas to remain exposed.

END OF SECTION 03300



1

# FOUNDATION DETAIL

SCALE: 1" = 1'-0"

## **FINAL ABATEMENT REPORTS**

# **FINAL REPORT**

**FOR**

**SW 44<sup>TH</sup> STREET ARMORY**

**2222 SW 44<sup>TH</sup> STREET  
OKLAHOMA CITY, OKLAHOMA 73119**

**BY**

**ABATEMENT SYSTEMS, INC.  
P.O. BOX 773  
BROKEN ARROW, OK. 74013  
(918) 251-2504 / (800) 256-2096  
Abatement2@aol.com**

# **TABLE OF CONTENTS**

**SUMMARY OF WORK**

**POST REMEDIATION SAMPLING REPORT**

**WASTE MANIFESTS**

**PHOTO DOCUMENTATION OF WORK**

## SUMMARY OF WORK – 44<sup>th</sup> STREET ARMORY

Prepared abatement area(s) and began asbestos abatement in accordance with the contract. The hot water storage tank insulation was abated followed by the thermal systems insulation fittings, the roof drain pan insulation, and the vibration isolation damper. The hot water storage tank, the TSI fittings, the roof drain pan and the vibration isolation damper were then “locked down” before being reinsulated with non-asbestos containing insulation. Carpeting, floor tile, and mastic were abated and flooring HEPA vacuumed and sealed.

Walls, shelving and other equipment were HEPA vacuumed and wet wiped to remove any lead dust before abating lead-paint and floors. The lead-paint was abated and then HEPA vacuumed and sealed. All floors were then HEPA vacuumed and cleaned.

Lead contaminated sand in the sand pit was then uncovered, removed and stored securely prior to disposal. Sand pit was then abated, refilled with clean sand, compacted and resealed with new concrete.

Asbestos and lead contaminated wastes were removed, as necessary, and stored securely before proper disposal.



**EAST OAK LANDFILL**  
 3201 Mosley Rd  
 Oklahoma City, OK

(405) 427-1112 Fax: (405) 427-1139

**MESHAPS ADMINISTRATOR**  
 Air Quality Control (405) 702-4100  
 ODEQ - Oklahoma City, Oklahoma  
 707 N. Robinson, OKC, OK 73104

**MANIFEST # 9265**

**NON-HAZARDOUS MANIFEST**

GENERATOR: State of OK - DCS  
 ADDRESS: 2222 SW 44th  
 CITY/ST: OKC/OK

I.D.# \_\_\_\_\_  
 SITE LOCATION: 44th St & Broadway  
 PHONE: (918) 774-2023

Description of Waste Materials	WMA Profile Approval #	Quantity	Units
--------------------------------	------------------------	----------	-------

<u>Bag Acn</u>	<u>E016998</u>	<u>6YD</u>	<u>57</u>
----------------	----------------	------------	-----------

I hereby certify that the above-described materials are not hazardous wastes as defined by 40 CFR Part 261. Have been fully and accurately described, classified and packaged, and are in proper condition for transportation according to applicable regulations.

Matt G. Olson  
 Generator Authorized Agent Name (Print)

[Signature]  
 Signature

6-21-12  
 Shipment Date

**TRANSPORTER**

TRANSPORTER NAME: Abatement 573 DRIVER NAME (Print): \_\_\_\_\_  
 ADDRESS: PO Box 773 TRUCK NUMBER: 161442 Tag # 594398  
 CITY/ST: Broken Arrow OK 74013 PHONE # (918) 251-2504

I hereby acknowledge receipt of the above-described materials was received from the generator listed above and delivered to the disposal facility listed below without incident.

[Signature]  
 Driver Signature

\_\_\_\_\_  
 Shipment Date

[Signature]  
 Driver Signature

\_\_\_\_\_  
 Delivery Date

**DISPOSAL FACILITY**

SITE NAME: East Oak Recycling and Disposal Facility  
 ADDRESS: 3201 Mosley Road, Oklahoma City, OK 73141

PHONE NUMBER: (405) 427-1112  
 PERMIT # 3555036

I hereby acknowledge receipt of the above-described materials.

Ticket # 508384

Patrice Mikels  
 Name of Authorized Agent (Print)

[Signature]  
 Signature

6/21/12  
 Receipt Date

D-Drum       C-Carton       B-Bag       P-Pounds       Y-Yards       O-Other



Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

774817874

SCFPW 3/8/2012

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number

0MP300102161

2. Page 1 of 1

3. Emergency Response Phone

(800) 439-9718

4. Manifest Tracking Number

005563861 FLE

5. Generator's Name and Mailing Address

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name

7. Transporter 2 Company Name

U.S. EPA ID Number

OKP000022085

U.S. EPA ID Number

OKP0000430376

8. Designated Facility Name and Site Address

Clear Harbor Lane Mountain, N.C. 2 miles east of I-85 north of I-40 US Highway 211-4-462

9a. HM and 9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))

10. Containers

No.

Type

11. Total Quantity

12. Unit Wt./Vol.

13. Waste Codes

1

CM

25

Y

2008

HAZARDOUS WASTE, SOLID, NOS., (LEAD, P)

GENERATOR

14. Special Handling Instructions and Additional Information

CHRT 25994

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

16. International Shipments  Import to U.S.  Export from U.S.

Signature: Theresa Moyers for DEP ORCA 12

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name

Transporter 2 Printed/Typed Name

Signature

Signature

Month Day Year

10/13/12

18. Discrepancy

18a. Discrepancy Indication Space

Quantity

Type

Residue

Partial Rejection

Full Rejection

18b. Alternate Facility (or Generator)

Manifest Reference Number:

U.S. EPA ID Number

Facility's Phone:

18c. Signature of Alternate Facility (or Generator)

Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1. 2. 3. 4.

20. Designated Facility Owner or Operator. Certification of receipt of hazardous materials covered by the manifest (as noted in item 18)

Printed/Typed Name: Cindy Bradford

Signature

Signature: Cindy Bradford

Month Day Year

12/5/12

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)



Water tank - abated



Water tank - reinsulated



Abated fittings



Abated fittings



Fittings reinsulated

Fittings reinsulated





New fitting insulation





**Floor tile and mastic removed**



**Floor tile removed**



Door frame LBP removed



Door frame after  
abatement and sealed



**Sand pit before abatement**



**Concrete layer of sand pit**





**Sand pit removal**



**Stored and covered sand prior to disposal**



Clean sand pit



New concrete  
prep work



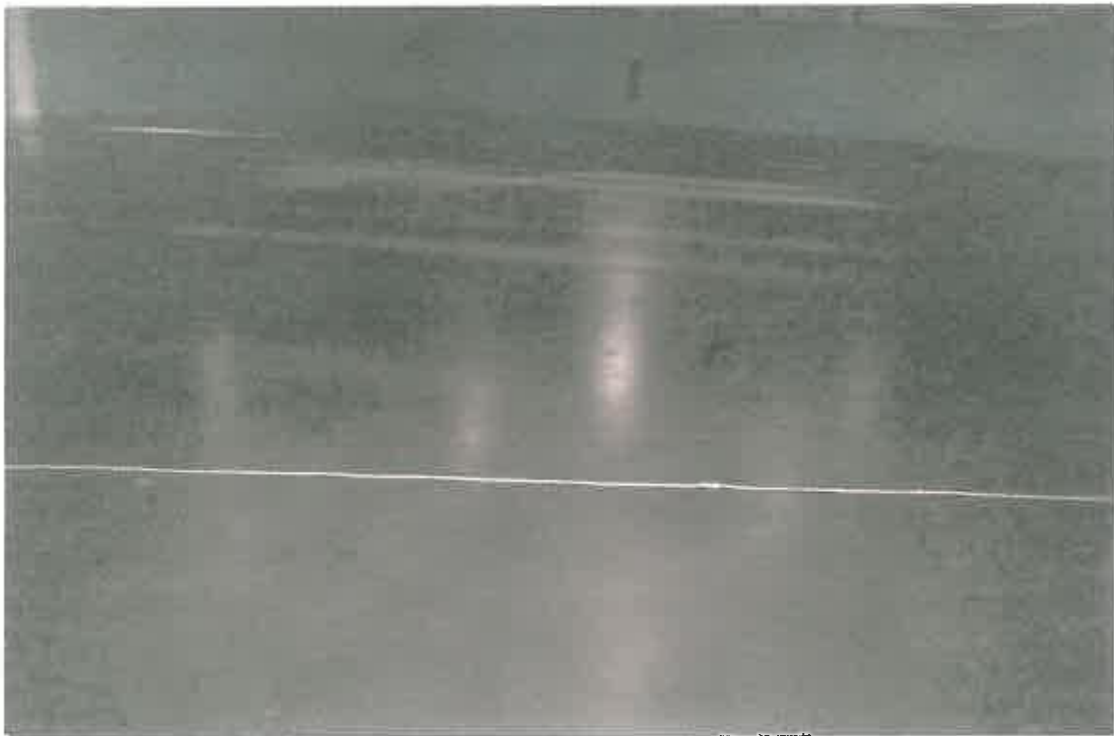
Clean sand and expansion joint



New concrete



**New concrete cap - final**



**Clean drill floor**



**Clean floors - office/classroom area**



**Removal of loose and peeling paint - wall**

## CONFIRMATION SAMPLING

## CONFIRMATION SAMPLING RESULTS

The Department of Environmental Quality (DEQ) personnel sampled the Oklahoma City SW 44<sup>th</sup> Street Armory for lead dust to confirm room floors were below the Housing and Urban Development (HUD) standard of 40 micrograms per square foot ( $\mu\text{g}/\text{ft}^2$ ) for child occupied facilities after all lead-based paint and lead dust abatement was complete. After each sampling event, the areas that had sample results above  $40 \mu\text{g}/\text{ft}^2$  were cleaned again and sampled again by DEQ personnel. Below is a summary of the sample events and results.

On July 16, 2012, DEQ personnel sampled the floors of the office section of the building (all of the building except the Drill Room) where lead-based paint abatement was completed, where lead dust was elevated before abatement was performed, and rooms that open to the Drill Room. Below is a summary of the results. Sample results are attached (**Attachment 1**).

- Five samples were above  $40 \mu\text{g}/\text{ft}^2$ .
  - Sample #2            Result =  $100 \mu\text{g}/\text{ft}^2$
  - Sample #4            Result =  $43.1 \mu\text{g}/\text{ft}^2$
  - Sample #8            Result =  $42.1 \mu\text{g}/\text{ft}^2$
  - Sample #13           Result =  $42.4 \mu\text{g}/\text{ft}^2$
  - Sample #14           Result =  $174 \mu\text{g}/\text{ft}^2$

On July 20, 2012, DEQ personnel sampled the floor of the Drill Room including the three rooms built inside the Drill Room. Below is a summary of the results. Sample results are attached (**Attachment 2**).

- Nine of the thirteen samples taken were above  $40 \mu\text{g}/\text{ft}^2$ .
- DEQ decided the entire Drill Room and associated rooms required additional lead dust abatement.

On July 30, 2012, DEQ personnel re-sampled the Drill Room and associated rooms and sampled the locations of the office section of the building where the previous sample had failed. Below is a summary of the results. Sample results are attached (**Attachment 3**).

- Two samples in the Drill Room were above 40  $\mu\text{g}/\text{ft}^2$ 
  - Sample #8            Result = 42.5  $\mu\text{g}/\text{ft}^2$
  - Sample #12          Result = 78.8  $\mu\text{g}/\text{ft}^2$
- One sample in the office section of the building was above 40  $\mu\text{g}/\text{ft}^2$ 
  - Sample #16          Result = 84.7

On August 9, 2012, DEQ personnel sampled the locations where the previous samples had failed. Below is a summary of the results. Sample results are attached (**Attachment 3**).

- All three samples were below 40  $\mu\text{g}/\text{ft}^2$



**ATTACHMENT 1**

**JULY 16, 2012 SAMPLE RESULTS**



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

## Environmental Chemistry Analysis Report

**QuantEM Set ID:** 210412  
**Date Received:** 07/17/12  
**Received By:** Sherrie Leftwich  
**Date Sampled:**  
**Time Sampled:**  
**Analyst:** BA  
**Date of Report:** 7/18/2012

**Client:** State of Oklahoma  
 DEQ Land Protection  
 Attn: Dustin Davidson  
 707 N. Robinson  
 Oklahoma City, OK 73102  
**Acct. No.:** B486  
**Project:** OKC 44th Street Armory  
**Location:** Oklahoma City, OK  
**Project No.:** N/A

AIHA ID: 101352

QuantEM ID	Client ID	Matrix	Parameter	Results	Reporting Limits	Units	Date/Time Analyzed	Method
001	1	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/17/12 21:15	W NIOSH 9100
002	2	Wipe	Lead	100.0	16	ug/sq. Ft.	07/17/12 21:15	W NIOSH 9100
003	3	Wipe	Lead	39.9	16	ug/sq. Ft.	07/17/12 21:15	W NIOSH 9100
004	4	Wipe	Lead	43.1	16	ug/sq. Ft.	07/17/12 21:15	W NIOSH 9100
005	5	Wipe	Lead	29.9	16	ug/sq. Ft.	07/17/12 21:15	W NIOSH 9100
006	6	Wipe	Lead	35.2	16	ug/sq. Ft.	07/17/12 21:15	W NIOSH 9100
007	7	Wipe	Lead	28.9	16	ug/sq. Ft.	07/17/12 21:15	W NIOSH 9100
008	8	Wipe	Lead	42.1	16	ug/sq. Ft.	07/17/12 21:15	W NIOSH 9100
009	9	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/17/12 21:15	W NIOSH 9100
010	10	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/17/12 21:15	W NIOSH 9100
011	11	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/17/12 21:15	W NIOSH 9100
012	12	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/17/12 21:15	W NIOSH 9100
013	13	Wipe	Lead	42.4	16	ug/sq. Ft.	07/17/12 21:15	W NIOSH 9100
014	14	Wipe	Lead	174	16	ug/sq. Ft.	07/17/12 21:15	W NIOSH 9100
015	15	Wipe	Lead	17.1	16	ug/sq. Ft.	07/17/12 21:15	W NIOSH 9100
016	16	Wipe	Lead	26.1	16	ug/sq. Ft.	07/17/12 21:15	W NIOSH 9100

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

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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:** 210412  
**Date Received:** 07/17/12  
**Received By:** Sherrie Leftwich  
**Date Sampled:**  
**Time Sampled:**  
**Analyst:** BA  
**Date of Report:** 7/18/2012

**Client:** State of Oklahoma  
DEQ Land Protection  
Attn: Dustin Davidson  
707 N. Robinson  
Oklahoma City, OK 73102  
**Acct. No.:** B486  
**Project:** OKC 44th Street Armory  
**Location:** Oklahoma City, OK  
**Project No.:** N/A

AIHA ID: 101352

QuanTEM ID	Client ID	Matrix	Parameter	Results	Reporting Limits	Units	Date/Time Analyzed	Method
------------	-----------	--------	-----------	---------	------------------	-------	--------------------	--------

Authorized Signature: \_\_\_\_\_

  
Bonnie Allen, Analyst

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

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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: 10171  
Test: Lead

Date: 7/17/2012  
Matrix: Wipe

Lab Number: 210412  
Approved By: Bonnie Allen  
Date Approved: 7/18/2012

**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	5.5
FCV	4.5	5.3	5.5
ICV	0.9	1	1.1
RLVS	0.256	0.312	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	5.147	5.400	104.9	5.119	99.5	5.3
MS-W1	0.000	5.178	5.119	98.9	5.473	105.7	6.7

Authorized Signature: \_\_\_\_\_



Bonnie Allen, Analyst



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. 210412

Accept  Reject

Report Results:  One box

QuantEM Website

Other

Contact Information		Project Information	
Company: <u>DEQ</u>	Phone: <u>405-702-5115</u>	Project Name: <u>OKC 44th Street Artery</u>	
Contact: <u>Dustin Davidson</u>	Cell Phone: <u>405-317-4292</u>	Project Location: <u>Oklahoma City, OK</u>	
Account #: _____	E-mail: <u>dustin.davidson@deq.ok.gov</u>	Project ID: _____	
Sampled By: _____	Name: <u>Dustin Davidson</u>	Date: <u>7/16/12</u>	

RELINQUISHED BY: <u>Dan Damba</u>	DATE & TIME: <u>7/17/12 12:52</u>	VIA: _____	RECEIVED BY: <u>J. Mueller</u>	DATE & TIME: <u>7/17/12 12:58</u>
-----------------------------------	-----------------------------------	------------	--------------------------------	-----------------------------------

No.	Sample ID (10 Characters Max)	Sample Description	Volume (Liters)	Volume Area (Length x Width)	Sample Matrix (see matrix code box)	Analysis						Sample Matrix Codes
						Analysis	Units	mg/l	µg/ft <sup>2</sup>	µg/m <sup>3</sup>	mg/cm <sup>2</sup>	
1					Pb							A
2				12" X 12"	C							B
3												C
4												D
5												E
6												
7												
8												
9												
10												
11												
12												

TURNAROUND TIME	
Same Day	
24 - Hour	<input checked="" type="checkbox"/>
3 - Day	
5 - Day	



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	Accept	Reject
Lab No. 210412		
Report Results <input checked="" type="checkbox"/> one box	QuantEM Website	
Other		

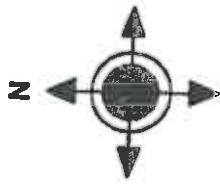
Contact Information		Project Information	
Company: DEQ	Phone: 405-702-5115	Project Name: OKC 44th Street Armory	Project ID:
Contact: Dustin Davidson	Cell Phone: 405-317-4292	Project Location: OKlahoma City, OK	
Account #:	E-mail:		

Sampled By: Dustin Davidson	Date: 7/16/12
RELINQUISHED BY: Dustin Davidson	DATE & TIME: 7/17/12 12:52
	VIA: Staff
	RECEIVED BY: Staff
	DATE & TIME: 7/17/12 12:58

REQUESTED SERVICES (Please  the Appropriate Boxes)

No.	Sample ID (10 Characters Max)	Sample Description	Volume (Liters)	Volume Area (Length x Width)	Sample Matrix (see matrix code box)	Analysis	Units ( <input checked="" type="checkbox"/> ONE box only)					Sample Matrix Codes
							Pb	mg / l	µg / ft <sup>2</sup>	µg / m <sup>3</sup>	mg / cm <sup>2</sup>	
1	13			12" X 12"	C			X				A
2	14											B
3	15											C
4	16											D
5												E
6												
7												
8												
9												
10												
11												
12												

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



Not to Scale

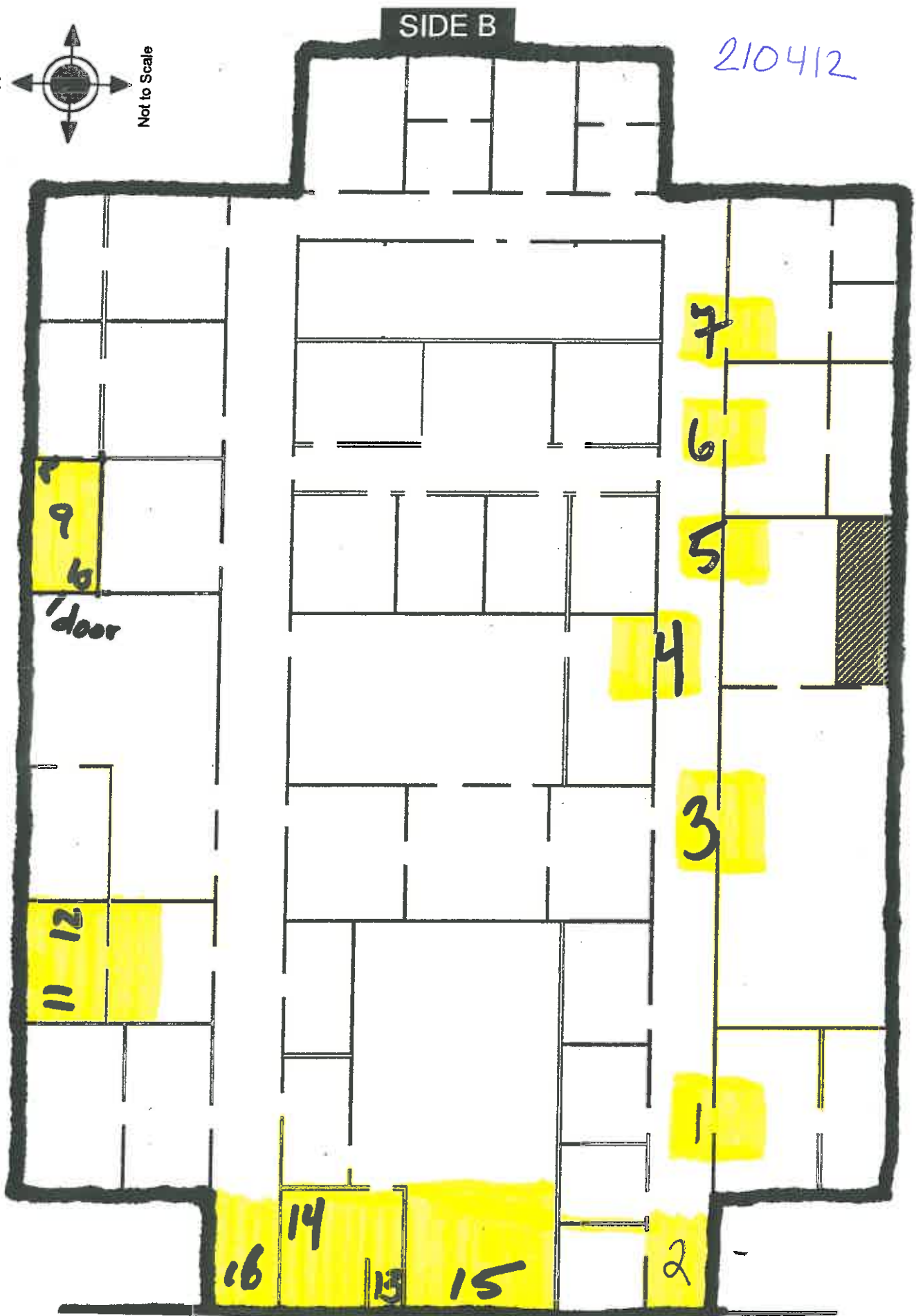
SIDE B

210412

SIDE A

SIDE C

SIDE D



**ATTACHMENT 2**

**JULY 20, 2012 SAMPLE RESULTS**





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

## Environmental Chemistry Analysis Report

Quantem Set ID: 210552  
Date Received: 07/20/12  
Received By: Sherrie Leftwich  
Date Sampled:  
Time Sampled:  
Analyst: BM  
Date of Report: 7/23/2012

Client: State of Oklahoma  
DEQ Land Protection  
Attn: Dustin Davidson  
707 N. Robinson  
Oklahoma City, OK 73102  
Acct. No.: B486  
Project: OKC SW 44th Street  
Location: N/A  
Project No.: N/A

AIHA ID: 101352

Quantem ID	Client ID	Matrix	Parameter	Results	Reporting Limits	Units	Date/Time Analyzed	Method
001	1	Wipe	Lead	24.4	16	ug/sq. Ft.	07/23/12 9:00	W NIOSH 9100
002	2	Wipe	Lead	41.3	16	ug/sq. Ft.	07/23/12 9:00	W NIOSH 9100
003	3	Wipe	Lead	82.1	16	ug/sq. Ft.	07/23/12 9:00	W NIOSH 9100
004	4	Wipe	Lead	49.1	16	ug/sq. Ft.	07/23/12 9:00	W NIOSH 9100
005	5	Wipe	Lead	55.2	16	ug/sq. Ft.	07/23/12 9:00	W NIOSH 9100
006	6	Wipe	Lead	27.0	16	ug/sq. Ft.	07/23/12 9:00	W NIOSH 9100
007	7	Wipe	Lead	49.6	16	ug/sq. Ft.	07/23/12 9:00	W NIOSH 9100
008	8	Wipe	Lead	63.8	16	ug/sq. Ft.	07/23/12 9:00	W NIOSH 9100
009	9	Wipe	Lead	56.4	16	ug/sq. Ft.	07/23/12 9:00	W NIOSH 9100
010	10	Wipe	Lead	17.0	16	ug/sq. Ft.	07/23/12 9:00	W NIOSH 9100
011	11	Wipe	Lead	121	16	ug/sq. Ft.	07/23/12 9:00	W NIOSH 9100
012	12	Wipe	Lead	40.0	16	ug/sq. Ft.	07/23/12 9:00	W NIOSH 9100
013	13	Wipe	Lead	94.5	16	ug/sq. Ft.	07/23/12 9:00	W NIOSH 9100

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

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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:** 210552  
**Date Received:** 07/20/12  
**Received By:** Sherrie Leftwich  
**Date Sampled:**  
**Time Sampled:**  
**Analyst:** BM  
**Date of Report:** 7/23/2012

**Client:** State of Oklahoma  
DEQ Land Protection  
Attn: Dustin Davidson  
707 N. Robinson  
Oklahoma City, OK 73102  
**Acct. No.:** B486  
**Project:** OKC SW 44th Street  
**Location:** N/A  
**Project No.:** N/A

AIHA ID: 101352

QuanTEM ID	Client ID	Matrix	Parameter	Results	Reporting Limits	Units	Date/Time Analyzed	Method
------------	-----------	--------	-----------	---------	------------------	-------	--------------------	--------

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: 10183  
Test: Lead

Date: 7/23/2012  
Matrix: Wipe

Lab Number: 210552  
Approved By: Benton Miller  
Date Approved: 7/23/2012

Notes:

**Blank Data:**

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

**Standards Data:**

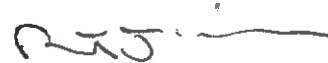
Standard	Low Limit	Obtained	High Limit
CCV	4.5	5.2	5.5
FCV	4.5	5.1	5.5
ICV	0.9	1.1	1.1
RLVS	0.256	0.34	0.384

**Duplicate Data:**

**Recovery Data:**

Sample Number	Result	Spike Level	Result + Spike	% Recovery	Dup. Result + Spike	% Dup. Recovery	% Spike RPD
MS-W2	0.000	5.188	5.442	104.9	5.571	107.4	2.3
MS-W1	0.000	5.209	5.639	108.2	5.720	109.8	1.4

Authorized Signature: \_\_\_\_\_



Benton Miller, Analyst



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# 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

Contact Information		Project Information	
Company: <b>DEA</b>	Phone: <b>405-702-5115</b>	Project Name: <b>OKC SW 44th Street</b>	Report Results: <input checked="" type="checkbox"/> One box
Contact: <b>Dustin Davidson</b>	Cell Phone: <b>405-377-4292</b>	Project Location:	QuantEM Website
Account #:	E-mail: <b>davidson@yemail.com</b>	Project ID:	Other
Sampled By: <b>Dustin Davidson</b>	Date: <b>7/20/12</b>	For Lab Use Only	
RELINQUISHED BY: <b>Dustin Davidson</b>	DATE & TIME: <b>7/20/12 12:02</b>	Accept <input checked="" type="radio"/>	Reject <input type="radio"/>
	VIA	DATE & TIME: <b>7-20-12</b>	
	<b>Dust off</b>	RECEIVED BY: <b>[Signature]</b>	

### REQUESTED SERVICES (Please check the Appropriate Boxes)

No.	Sample ID (10 Characters Max)	Sample Description	Volume (Liters)	Volume Area (Length x Width)	Sample Matrix (see matrix code box)	Analysis					Sample Matrix Codes
						PPM	mg/l	µg/ft <sup>2</sup>	µg/m <sup>3</sup>	mg/cm <sup>2</sup>	
1					Pb						A
2				12" x 12"	C			X			B
3											C
4											D
5											E
6											
7											
8											
9											
10											
11											
12											

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



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# LEAD CHAIN OF CUSTODY

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 (800) 822-1650 • (405) 755-7272 • Fax: (405) 755-2058

## LEGAL DOCUMENT - PLEASE PRINT LEGIBLY

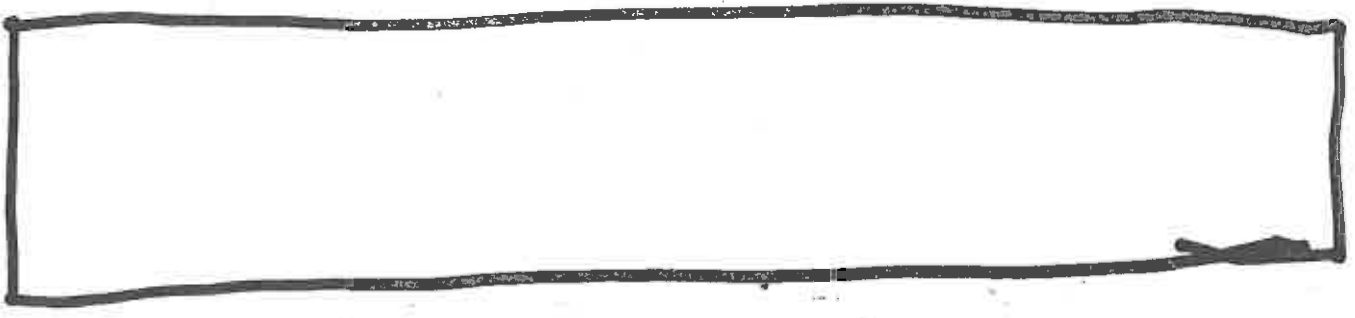
Contact Information:		Project Information:	
Company: <b>D.E.Q.</b>	Phone: <b>405-702-5115</b>	Project Name: <b>OKC SW 94th Street</b>	Report Results: <input checked="" type="checkbox"/> One box
Contact: <b>Dustin Davidson</b>	Cell Phone: <b>405-317-4292</b>	Project Location:	QuantEM Website
Account #:	E-mail:	Project ID:	Other

Sampled By: <b>Dustin Davidson</b>	Name: <b>Dustin Davidson</b>	Date: <b>7/20/12</b>
RELINQUISHED BY: <b>Dustin Davidson</b>	DATE & TIME: <b>7/20/12 12:00</b>	VIA: <b>Drop off</b>
	RECEIVED BY: <b>S. Leffewich</b>	DATE & TIME: <b>7/20/12 12:15</b>

No.	Sample ID (10 Characters Max)	Sample Description	Volume (Liters)	Volume Area (Length x Width)	Sample Matrix (see matrix code box)	Analysis					Sample Matrix Codes	
						Pb	PPM	Wt %	mg / l	µg / ft <sup>2</sup>		µg / m <sup>2</sup>
1	13			12" X 12"	C	X						A
2												B
3												C
4												D
5												E
6												
7												
8												
9												
10												
11												
12												

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

8



9

10

11

13

12

1

2

7

3

4

5

6

**ATTACHMENT 3**

**JULY 30, 2012 SAMPLE RESULTS**



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

## Environmental Chemistry Analysis Report

**Quantem Set ID:** 210911  
**Date Received:** 07/30/12  
**Received By:** Sherrie Leftwich  
**Date Sampled:**  
**Time Sampled:**  
**Analyst:** BM  
**Date of Report:** 7/31/2012

**Client:** State of Oklahoma  
 DEQ Land Protection  
 Attn: Dustin Davidson  
 707 N. Robinson  
 Oklahoma City, OK 73102  
**Acct. No.:** B486  
**Project:** OKC 44th Armory  
**Location:** OKC, OK  
**Project No.:** N/A

AIHA ID: 101352

Quantem ID	Client ID	Matrix	Parameter	Results	Reporting Limits	Units	Date/Time Analyzed	Method
001	1	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/31/12 13:15	W NIOSH 9100
002	2	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/31/12 13:15	W NIOSH 9100
003	3	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/31/12 13:15	W NIOSH 9100
004	4	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/31/12 13:15	W NIOSH 9100
005	5	Wipe	Lead	20.4	16	ug/sq. Ft.	07/31/12 13:15	W NIOSH 9100
006	6	Wipe	Lead	40.0	16	ug/sq. Ft.	07/31/12 13:15	W NIOSH 9100
007	7	Wipe	Lead	16.5	16	ug/sq. Ft.	07/31/12 13:15	W NIOSH 9100
008	8	Wipe	Lead	42.5	16	ug/sq. Ft.	07/31/12 13:15	W NIOSH 9100
009	9	Wipe	Lead	26.6	16	ug/sq. Ft.	07/31/12 13:15	W NIOSH 9100
010	10	Wipe	Lead	34.1	16	ug/sq. Ft.	07/31/12 13:15	W NIOSH 9100
011	11	Wipe	Lead	30.7	16	ug/sq. Ft.	07/31/12 13:15	W NIOSH 9100
012	12	Wipe	Lead	78.8	16	ug/sq. Ft.	07/31/12 13:15	W NIOSH 9100
013	13	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/31/12 13:15	W NIOSH 9100
014	14	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/31/12 13:15	W NIOSH 9100
015	15	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/31/12 13:15	W NIOSH 9100
016	16	Wipe	Lead	84.7	16	ug/sq. Ft.	07/31/12 13:15	W NIOSH 9100
017	17	Wipe	Lead	<16.0	16	ug/sq. Ft.	07/31/12 13:15	W NIOSH 9100

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

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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:** 210911  
**Date Received:** 07/30/12  
**Received By:** Sherrie Leftwich  
**Date Sampled:**  
**Time Sampled:**  
**Analyst:** BM  
**Date of Report:** 7/31/2012

**Client:** State of Oklahoma  
DEQ Land Protection  
Attn: Dustin Davidson  
707 N. Robinson  
Oklahoma City, OK 73102  
**Acct. No.:** B486  
**Project:** OKC 44th Armory  
**Location:** OKC, OK  
**Project No.:** N/A

AIHA ID: 101352

Quantem ID	Client ID	Matrix	Parameter	Results	Reporting Limits	Units	Date/Time Analyzed	Method
018	18	Wipe	Lead	17.6	16	ug/sq. Ft.	07/31/12 13:15	W NIOSH 9100
019	19	Wipe	Lead	27.2	16	ug/sq. Ft.	07/31/12 13:15	W NIOSH 9100

Authorized Signature:   
Bonnie Allen, 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: 10211  
Test: Lead

Date: 7/31/2012  
Matrix: Wipe

Lab Number: 210911  
Approved By: Bonnie Allen  
Date Approved: 7/31/2012

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	5.1	5.5
ICV	0.9	1	1.1
RLVS	0.256	0.343	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	5.157	5.774	112.0	5.920	114.8	2.5
MS-W1	0.000	5.147	5.889	114.4	5.802	112.7	1.5

Authorized Signature: \_\_\_\_\_

  
Bonnie Allen, Analyst



# LEAD CHAIN OF CUSTODY

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For Lab Use Only  
 Lab No. 210911  
 Accept  Reject  
 Report Results:  One box  
**Quantem Website**  
 Other \_\_\_\_\_

Company: DEQ Project Name: OKC 44th Armory  
 Contact: Rebecca Marfurt Project Location: OKC, OK  
 Account #: \_\_\_\_\_ Project ID: \_\_\_\_\_  
 Name: Rebecca Marfurt Date: 7/30/12  
 Phone: 402-5112  
 Cell Phone: 213-4058  
 E-mail: rebecca.marfurt@dep.ok.gov

RELINQUISHED BY: Rebecca Marfurt DATE & TIME: 7/30/12  
Rebecca Marfurt DATE & TIME: 7/30/12 1:30  
 RECEIVED BY: S. C. Hoach

REQUESTED SERVICES (Please  the Appropriate Boxes)

No.	Sample ID (10 Characters Max)	Sample Description	Volume (Liters)	Volume Area (Length x Width)	Sample Matrix (see matrix code box)	Analysis						Sample Matrix Codes
						PPM	mg / l	mg / ft <sup>2</sup>	µg / m <sup>2</sup>	mg / cm <sup>2</sup>	Units ( <input checked="" type="checkbox"/> ONE box only)	
1					Pb							A
2				12" x 12"	C							B
3												C
4												D
5												E
6												
7												
8												
9												
10												
11												
12												

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



# LEAD CHAIN OF CUSTODY

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## LEGAL DOCUMENT - PLEASE PRINT LEGIBLY

For Lab Use Only  
 Lab No. 210911  Accept  Reject  
 Report Results  one box  
 Quantem Website  
 Other \_\_\_\_\_

Contact Information		Project Information	
Company: <u>DELO</u>	Phone: <u>702-5112</u>	Project Name: <u>OKC 44th St Armaty</u>	Project ID: _____
Contact: <u>Rebecca Marfurt</u>	Cell Phone: <u>213-4058</u>	Project Location: <u>OKC OK</u>	Project ID: _____
Account #: _____	E-mail: <u>rebecca.marfurt@delo.com</u>	Project ID: _____	Project ID: _____
Sampled By: <u>Rebecca Marfurt</u>	Date: <u>7/30/12</u>	Project ID: _____	Project ID: _____

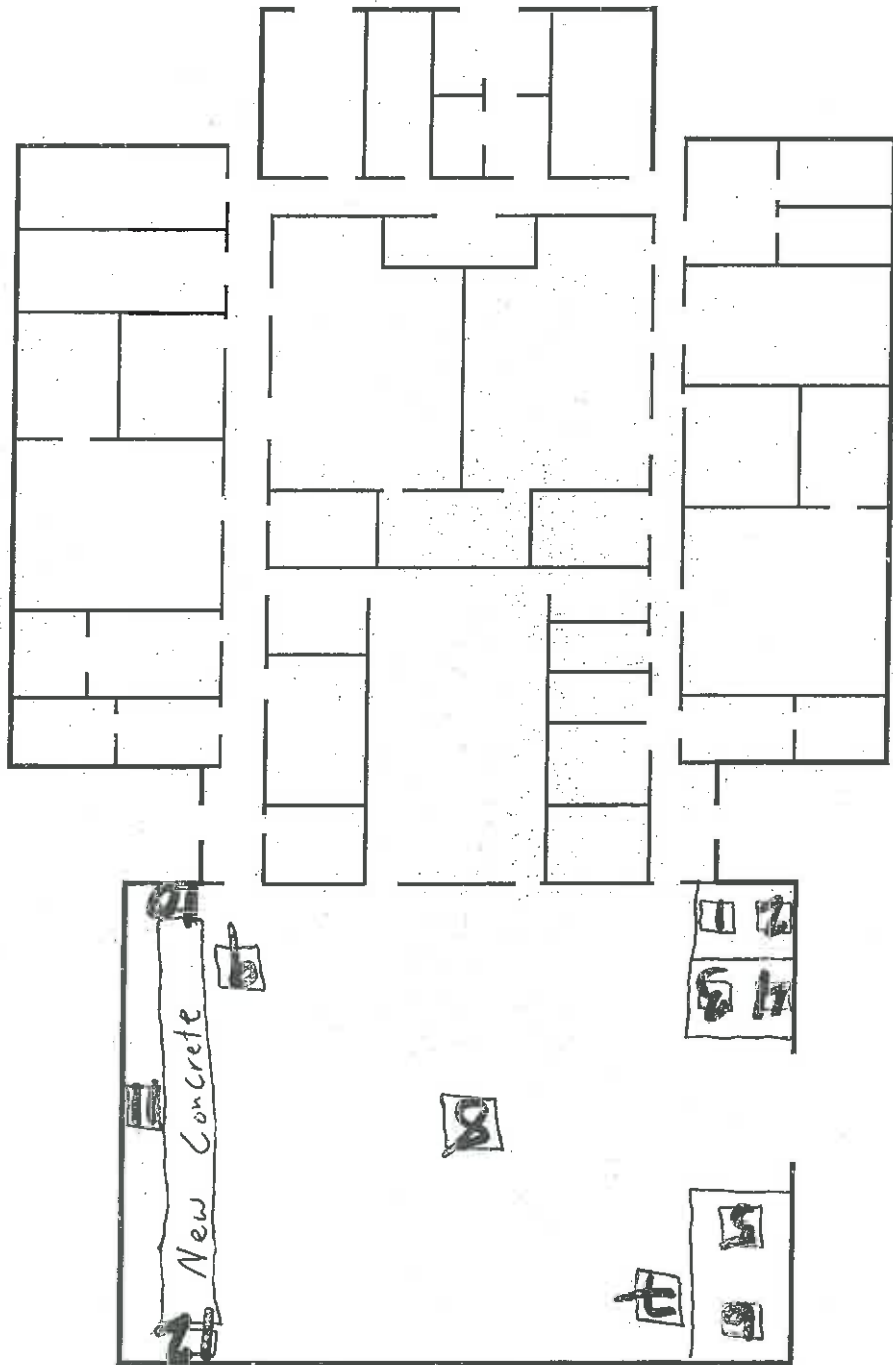
RELINQUISHED BY: <u>Rebecca Marfurt</u>	DATE & TIME: <u>7/30/12 1:20</u>	RECEIVED BY: _____	DATE & TIME: _____
---	----------------------------------	--------------------	--------------------

No.	Sample ID (10 Characters Max)	Sample Description	Volume (Liters)	Volume Area (Length x Width)	Sample Matrix (see matrix code box)	Analysis					Sample Matrix Codes	
						Pb	mg / l	mg / ft <sup>2</sup>	µg / m <sup>2</sup>	mg / cm <sup>2</sup>		
1	13											
2	14											
3	15											
4	16											
5	17											
6	18											
7	19											
8												
9												
10												
11												
12												

TURNAROUND TIME	
Same Day	
24 - Hour	<input checked="" type="checkbox"/>
3 - Day	
5 - Day	

210911

OKC 44<sup>th</sup> St Armory



Not to scale  
Floor plan approximate

210911

Drill  
Floor

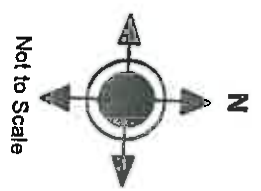
Drill  
Floor

SIDE D

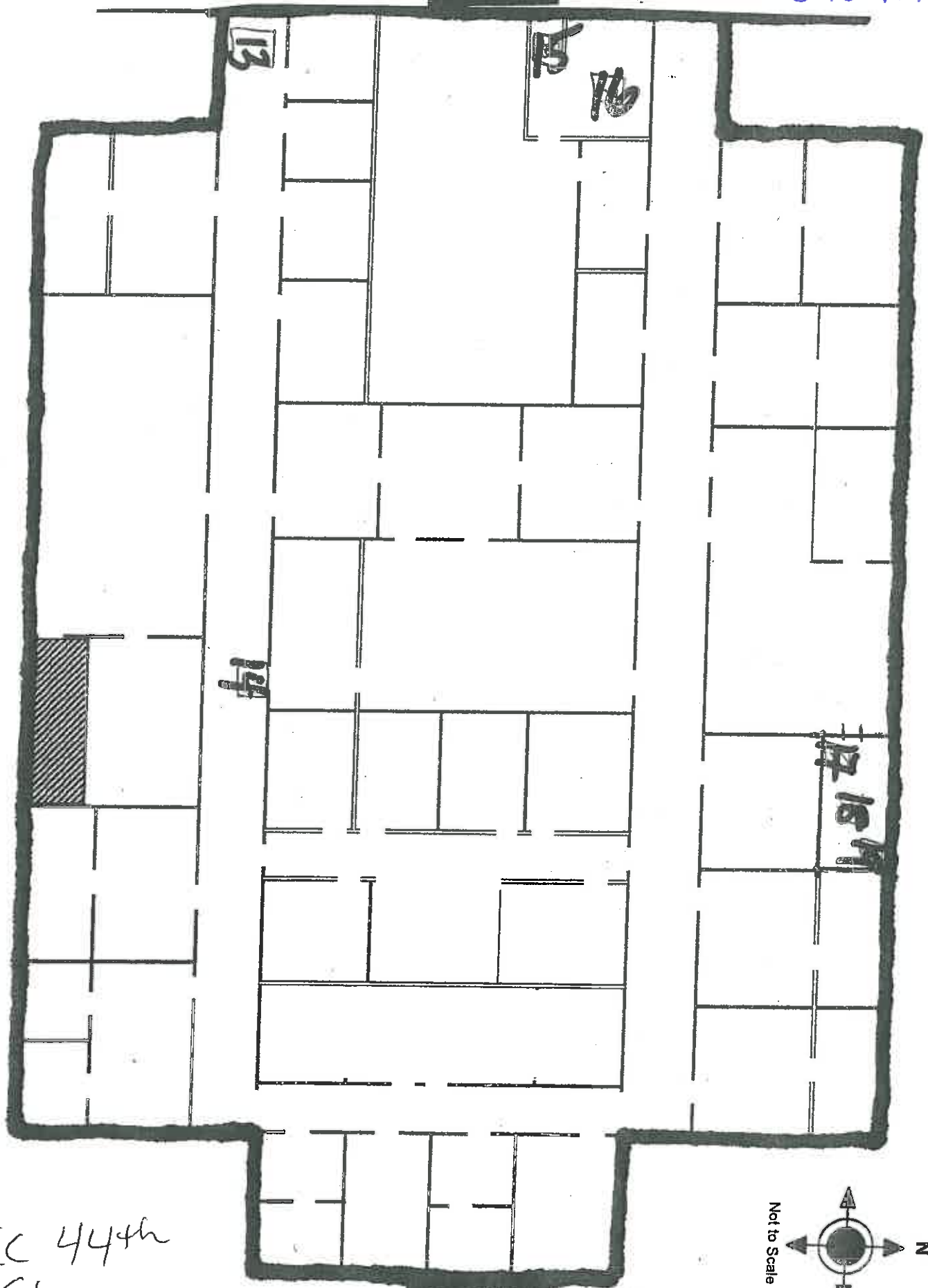
SIDE A

SIDE C

SIDE B



OKC 44th  
St



**ATTACHMENT 4**

**AUGUST 9, 2012 SAMPLE RESULTS**



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


# Environmental Chemistry Analysis Report

**QuanTEM Set ID:** 211312  
**Date Received:** 08/10/12  
**Received By:** Barbara Holder  
**Date Sampled:**  
**Time Sampled:**  
**Analyst:** BM  
**Date of Report:** 8/10/2012

**Client:** State of Oklahoma  
DEQ Land Protection  
Attn: Dustin Davidson  
707 N. Robinson  
Oklahoma City, OK 73102  
**Acct. No.:** B486  
**Project:** OKC 44th Street  
**Location:** OKC, OK  
**Project No.:** N/A

AIHA ID: 101352

QuanTEM ID	Client ID	Matrix	Parameter	Results	Reporting Limits	Units	Date/Time Analyzed	Method
001	1	Wipe	Lead	25.7	16	ug/sq. Ft.	08/10/12 13:30	W NIOSH 9100
002	2	Wipe	Lead	<16.0	16	ug/sq. Ft.	08/10/12 13:30	W NIOSH 9100
003	3	Wipe	Lead	<16.0	16	ug/sq. Ft.	08/10/12 13:30	W NIOSH 9100
004	4	Wipe	Lead	<16.0	16	ug/sq. Ft.	08/10/12 13:30	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: 10230  
Test: Lead

Date: 8/10/2012  
Matrix: Wipe

Lab Number: 211312  
Approved By: Benton Miller  
Date Approved: 8/10/2012

**Notes:**

**Blank Data:**

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

**Standards Data:**

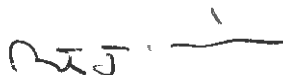
Standard	Low Limit	Obtained	High Limit
CCV	4.5	5.1	5.5
FCV	4.5	5	5.5
ICV	0.9	0.9	1.1
RLVS	0.256	0.351	0.384

**Duplicate Data:**

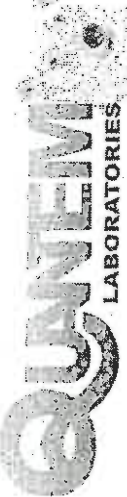
**Recovery Data:**

Sample Number	Result	Spike Level	Result + Spike	% Recovery	Dup. Result + Spike	% Dup. Recovery	% Spike RPD
MS-W1	0.000	5.178	5.663	109.4	5.426	104.8	4.3

Authorized Signature: \_\_\_\_\_



Benton Miller, Analyst



**LEAD 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

**LEGAL DOCUMENT - PLEASE PRINT LEGIBLY**

Contact Information		Project Information	
Company: <u>DEQ</u>	Phone:	Project Name: <u>OKC 44th Street</u>	Report Results: <input checked="" type="checkbox"/> one box
Contact:	Cell Phone:	Project Location: <u>OKC, OK</u>	QuantEM Website
Account #:	E-mail:	Project ID:	Other: <u>email</u>
Sampled By: <u>Dustin Davidson</u>	Name: <u>Dustin Davidson</u>	Date: <u>8/19/12</u>	

RELINQUISHED BY: <u>Pete Paha</u>	DATE & TIME: <u>8/19/12 4:58</u>	VIA:	RECEIVED BY: <u>J. Mueller</u>	DATE & TIME: <u>8/19/12 4:30</u>
-----------------------------------	----------------------------------	------	--------------------------------	----------------------------------

REQUESTED SERVICES (Please <input checked="" type="checkbox"/> the Appropriate Boxes)												
No.	Sample ID (10 Characters Max)	Sample Description	Volume (Liters)	Volume Area (Length x Width)	Sample Matrix (see matrix code box)	Pb	Analysis	Units ( <input checked="" type="checkbox"/> ONE box only)	mg / l	µg / ft <sup>2</sup>	µg / m <sup>3</sup>	mg / cm <sup>2</sup>
1	<u>1-4</u>			<u>12" X 12"</u>	<u>CX</u>					<u>X</u>		
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												

TURNAROUND TIME	
<input checked="" type="checkbox"/>	Same Day
<input type="checkbox"/>	24 - Hour
<input type="checkbox"/>	3 - Day
<input type="checkbox"/>	5 - Day

211312

