

Lead in Dust and Soil Determination

New London High School
Former Firing Range on Ground Level
New London, Connecticut

Antinozzi Associates

Bridgeport, Connecticut

May 7, 2018



FUSS & O'NEILL
EnviroScience, LLC

Fuss & O'Neill EnviroScience, LLC
146 Hartford Road
Manchester, CT 06040



FUSS & O'NEILL
EnviroScience, LLC

May 7, 2018

Mr. Bill Mead, AIA
Antinozzi Associates
271 Fairfield Avenue
Bridgeport, CT 06604
Email: BMead@Antinozzi.com

RE: Lead in Dust and Soil Determination
New London High School - Former Rifle Firing Range
490 Jefferson Avenue, New London, CT
Fuss & O'Neill EnviroScience Project No. 20170858.A1E

Dear Mr. Mead:

Enclosed is the report for the lead characterization sampling and survey performed at the former rifle firing range on the ground level of the existing New London High School located at 490 Jefferson Avenue in New London, Connecticut.

The survey was performed on April 20, 2018 by a Fuss & O'Neill EnviroScience, LLC licensed inspector and included a screening for lead concentrations in settled dust on cabinets in the immediate vicinity of the firing range, lead concentrations in the sand located within the bullet/projectile catch bin located down range, and lead concentrations in residue deposited on deflector panels located above the bullet/projectile catch bin, on CMU block walls, the concrete floor and the ceiling surfaces within the firing range.

The information summarized in this document is for the above-mentioned materials only. It does not include information on other hazardous materials that may exist on the property (such as asbestos, underground storage tanks, PCB-containing ballasts, and possible mercury hazards).

If you have any questions regarding the contents of this report, please do not hesitate to contact me at (860) 646-2469, ext. 5570. Thank you for this opportunity to have served your environmental needs.

Sincerely,

Carlos Texidor
Senior Project Manager

CT/kr

146 Hartford Road
Manchester, CT
06040
† 860.646.2469
800.286.2469
f 860.533.5143

www.fando.com

California
Connecticut
Maine
Massachusetts
New Hampshire
Rhode Island

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Lead Determination New London High School – Former Rifle Firing Range Antinozzi Associates

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1 Introduction

Fuss & O'Neill EnviroScience, LLC (EnviroScience) was retained to perform a lead characterization survey of the former rifle firing range located on the ground floor underneath the auditorium of the existing New London High School at 490 Jefferson Avenue New London Connecticut. EnviroScience's Environmental Analyst Ulkens Auguste, a State of Connecticut Licensed Lead Paint Inspector, inspected these areas on April 20, 2018. Please refer to *Appendix A* for a copy of EnviroScience's certifications.

This inspection was performed in response to the proposed renovation of the building and consisted of a lead determination of painted surfaces for lead throughout the New London High School. Characterization sampling of settled dust and residue within the former rifle firing range and sampling of the sand located within the catch bin located down range was also conducted. A copy of the marked-up floor plan depicting characterization sample locations is attached as *Appendix B*.

The inspection was completed in accordance with EnviroScience's written proposal dated October 4, 2017.

2 Characterization Survey for Lead

A characterization survey of settled dust, residue, and sand within the catch bin for lead associated ammunition and firing range activities was performed in the former firing range and temporary storage area within the vicinity of the former firing range on the ground level underneath the auditorium.

For the purpose of this screen, sands within the bull/projectile catch bin and settled dust and residue on various interior walls, floor and ceiling finishes and fixtures and furnishings representing the exposed surfaces within the former firing range area and the storage within the former firing range were tested. Settled dust within the former firing range and the storage room immediately within the firing range and the sands within the catch pit were tested. The purpose of this lead determination was to identify contamination of surfaces and soils for decommissioning and decontamination of the former firing range.

The former firing range area is comprised of two individual rectangular 3-lane shooting galleries enclosed with CMU block walls, a concrete floor and a concrete ceiling deck. Acoustic ceiling tiles were observed in limited quantities on the concrete ceiling deck and upper portion of the wall located at the shooter's station. A partition wall located between the former firing range and the storage room is comprised of wall paneling and CMU block. Ceilings and floor finishings throughout the storage area adjacent to the firing range are concrete.

2.1 Results

The screen indicated consistent levels of lead above the established EPA residential regulatory limits (**for reference and comparison only; the High School is not subject to these standards**) in the sand in the bullet/projectile catch bin and consistent levels of lead above the established regulatory limits in the settled dust and residue located within the former firing range and the storage area immediately adjacent to it. The firing range is located at a High School and is not subject to the Lead Poisoning Prevention

Program. Lead was found on concrete ceilings, concrete floors, CMU block walls, metal deflector panels, metal filing cabinets and within the sand located in the catch pit located down range beneath the deflector panel.

Table 1
Catch Pit Sand Characterization Testing Results

Sample ID	Location	Reading (mg/Kg)
04202018UA-01 Soil	Lanes 1,2 and 3	200,000
04202018UA-11 Soil	Lanes 4, 5, and 6	230,000

Bold denotes analytical results above the established regulatory threshold of 400 mg/Kg. (40 CFR 745.65(c) **(for reference and comparison only; the High School is not subject to these standards)** Lead in Soils by Flame ASS (Sw 846 3050B/7000B)

Table 2
Settled Dust and Residue Wipe Testing Results

Sample ID	Substrate	Location	Result (µg/ft ²)
04202018UA-02 Wipe	Concrete Floor	Lanes 1,2 and 3	9,800
04202018UA-03 Wipe	Concrete Floor	Lanes 1,2 and 3	27,000
04202018UA-04 Wipe	Concrete Floor	Lanes 1,2 and 3	28,000
04202018UA-05 Wipe	Concrete Floor	Lanes 1,2 and 3	28,000
04202018UA-06 Wipe	Metal	Lane 1 Deflector Panel	10,000
04202018UA-07 Wipe	Metal	Lane 3 Deflector Panel	10,000
04202018UA-08 Wipe	Concrete Ceiling	Lanes 1,2 and 3	70
04202018UA-08 Wipe Duplicate	Concrete Ceiling	Lanes 1,2 and 3	30
04202018UA-09 Wipe	CMU Block Wall	Lanes 1,2 and 3 - Wall A	790
04202018UA-10 Wipe	CMU Block Wall	Lanes 1,2 and 3 - Wall B	1,100
04202018UA-12 Wipe	Concrete Floor	Lanes 4, 5, and 6	4,500
04202018UA-13 Wipe	Concrete Floor	Lanes 4, 5, and 6	17,000
04202018UA-14 Wipe	Concrete Floor	Lanes 4, 5, and 6	72,000
04202018UA-15 Wipe	Concrete Floor	Lanes 4, 5, and 6	49,000
04202018UA-16 Wipe	Metal	Lane 4 Deflector Panel	20,000
04202018UA-17 Wipe	Metal	Lane 6 Deflector Panel	16,000
04202018UA-18 Wipe	Concrete Ceiling	Lanes 4, 5, and 6	66
04202018UA-19 Wipe	CMU Block Wall	Lanes 4,5 and 6 - Wall C	1,300
04202018UA-20 Wipe	CMU Block Wall	Lanes 4,5 and 6 - Wall D	1,600
04202018UA-21 Wipe	Concrete Floor	Entry at Top of Steps	480
04202018UA-22 Wipe	Metal	Top of Filing Cabinet	680
04202018UA-23 Wipe	N/A	Field Blank	< 10

Bold denotes wipe analytical results above the regulatory threshold of 40 µg/ ft² Floors (carpeted and uncarpeted) **(for reference and comparison only; the High School is not subject to these standards)**

Lead in Dust by Flame AAS (SW 846 3050B/7000B)

Collection of the wipe samples and soil samples was performed in accordance with the protocol outlined in the attached document: Testing Procedures and Equipment (*Appendix C*). Field QA/QC sampling

was comprised of duplicate wipe sample and a field blank submitted with the primary characterization wipe samples.

Please see *Appendix D* for the lead wipe and lead in soil laboratory reports and chain of custody forms.

2.2 Conclusion

The lead determination of the former firing range indicated that levels of lead are present above the established Federal Lead and State of Connecticut Standards for residential properties threshold of 40 micrograms per square foot ($\mu\text{g}/\text{ft}^2$) in settled dust on horizontal surfaces and in residues deposited on ceiling and walls within the former firing range shooting galleries and the adjacent storage room. These standards are being used for comparison purposes only; the High School is not obligated to these standards. However, this standard should be used for decontamination purposes.

Characterization samples for the soils/sand located within the bullet/projectile catch pit were also reported above the established (Federal and State of Connecticut) threshold of 400 part per million (ppm) with reported concentrations of 200,000 and 230,000 parts per million for the two soil samples collected.

Based on the reported concentrations of lead within the wipe samples collected from the concrete ceiling, concrete floor, CMU block wall and deflection panel, EnviroScience recommends a TCLP testing of the waste streams applicable to any demolition of the concrete floor, concrete ceiling and CMU block walls. Metal components within the former firing range, determined to be coated with lead containing dust, residue, or lead-based paint scheduled to be removed must be cleaned prior to going to a recycling facility that is permitted to handle lead. Concrete floors, concrete ceilings, and CMU block wall surfaces to remain in place following the completion of the proposed renovation and demolition are to be properly decontaminated, inspected, and sampled to confirm the completion of the decontamination.

EnviroScience recommends the former firing range area remain locked and no one should be allowed inside the firing range or any items removed from the former firing range until it can be decontaminated and cleared for occupancy. The heating, ventilation, and air conditioning (HVAC) inside the former firing range should be turned off and confirmed it is a closed loop system that services the firing range only. Further evaluation of the HVAC system in the former firing range is recommended prior to disposal of the system. There is the possibility lead dust has been tracked outside of the firing range into the storage area and beyond outside of the firing range.

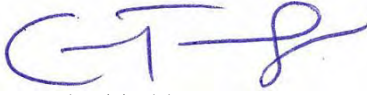
Disclaimer: The information contained in this report concerning the presence or absence of lead contaminated materials or lead paint does not constitute a comprehensive lead inspection under Connecticut regulations, Section 19a-111-1 to 11. The surfaces tested represent only a portion of those surfaces that would be tested to determine whether the premises are in compliance with Connecticut regulations.

The Contractor shall be aware that OSHA has not established a level of lead in a material below which 29 CFR 1926.62 does not apply. The Contractor shall comply with exposure assessment criteria, interim

worker protection, and other requirements of the regulation as necessary to protect workers and building occupants.

Report prepared by Environmental Technician Kim Rinard.

Reviewed by:



Carlos Texidor
Senior Project Manager



Robert L. May Jr
President

Appendix A

Fuss & O'Neill EnviroScience Certifications



Dear ULKENS AUGUSTE,

Attached you will find your validated certificate for the coming year. Should you have any questions about your certificate renewal, please do not hesitate to write or call:

Department of Public Health
P.O. Box 340308
M.S.#12MQA
Hartford, CT 06134-0308
(860) 509-7603
opl.c.dph@ct.gov
www.ct.gov/dph/license

Sincerely,



RAUL PINO, MD, MPH, COMMISSIONER
DEPARTMENT OF PUBLIC HEALTH

1001901-0001007-0000001 of 0000001-C01-a1d00101-1774-01004

EMPLOYER'S COPY
STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH

NAME
ULKENS AUGUSTE

CERTIFICATE NO. 002234

PROFESSION
LEAD INSPECTOR RISK ASSESSOR

CURRENT THROUGH
09/30/18

VALIDATION NO.
03-627251

SIGNATURE 

COMMISSIONER

INSTRUCTIONS:

1. Detach and sign each of the cards on this form
2. Display the large card in a prominent place in your office or place of business.
3. The wallet card is for you to carry on your person. If you do not wish to carry the wallet card, place it in a secure place.
4. The employer's copy is for persons who must demonstrate current licensure/certification in order to retain employment or privileges. The employer's card is to be presented to the employer and kept by them as a part of your personnel file. Only one copy of this card can be supplied to you.

STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH

PURSUANT TO THE PROVISIONS OF THE GENERAL STATUTES OF CONNECTICUT
THE INDIVIDUAL NAMED BELOW IS CERTIFIED
BY THIS DEPARTMENT AS A
LEAD INSPECTOR RISK ASSESSOR

NAME
ULKENS AUGUSTE

CERTIFICATE NO.
002234

CURRENT THROUGH
09/30/18

VALIDATION NO.
03-627251

SIGNATURE 

COMMISSIONER

SIGNATURE 

COMMISSIONER

WALLET CARD
STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH

NAME
ULKENS AUGUSTE

CERTIFICATE NO. 002234

PROFESSION
LEAD INSPECTOR RISK ASSESSOR

CURRENT THROUGH
09/30/18

VALIDATION NO.
03-627251

SIGNATURE 

COMMISSIONER

CERT#: L-600-927

**CHEMSCOPE TRAINING DIVISION
LEAD INSPECTOR/RISK ASSESSOR REFRESHER
8 HOUR TRAINING CERTIFICATE**

Ulkens Auguste

146 Hartford Road, Manchester CT

Has attended an 8hour course on the subject discipline on
2/5/2018 & 2/6/2018 and has passed a written examination.

The above individual has successfully completed the above training course approved in accordance with the Department of Public Health Standards established pursuant to Section 20-477 of the Connecticut General Statutes.

Course topics include all required topics of State of Connecticut DPH and EPA.

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representations (U.S.C. 1001 and 15 U.S.C. 2615), I certify that this training complies with all applicable requirements of Title IV of TSCA, 40 CFR part 745 and any other applicable Federal, State or local requirements.

Examination Score: 80%
Exam Date: 2/6/2018
Expiration Date: 2/6/2019



Ronald D. Arena
Training Manager

Chem Scope, Inc.
15 Moulthrop Street
North Haven CT 06473
Phone: 203.865.5605
www.chem-scope.com

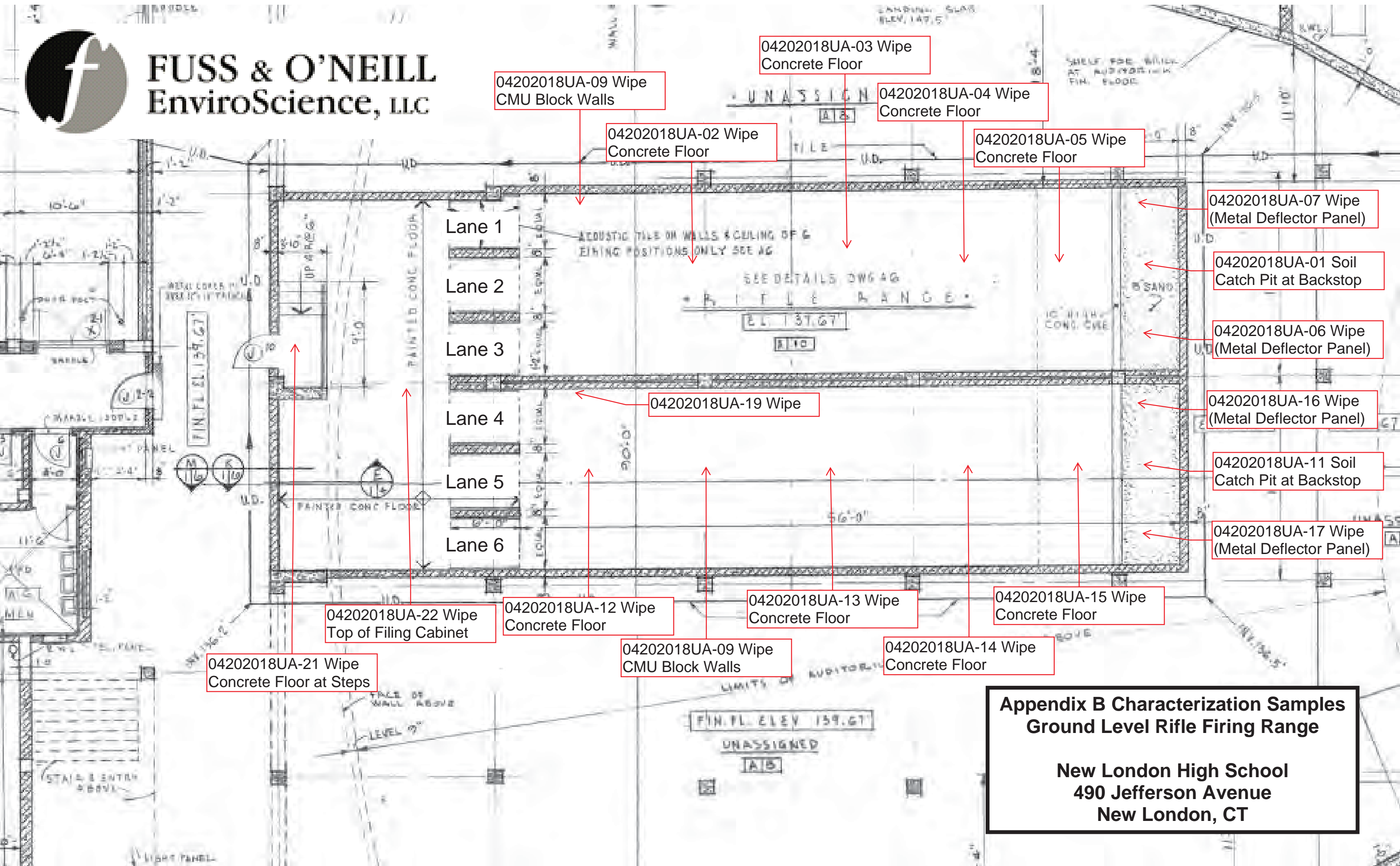
Appendix B

Floor Plan Identifying the Areas Inspected





FUSS & O'NEILL
EnviroScience, LLC



04202018UA-03 Wipe
Concrete Floor

04202018UA-09 Wipe
CMU Block Walls

04202018UA-04 Wipe
Concrete Floor

04202018UA-02 Wipe
Concrete Floor

04202018UA-05 Wipe
Concrete Floor

04202018UA-07 Wipe
(Metal Deflector Panel)

04202018UA-01 Soil
Catch Pit at Backstop

04202018UA-06 Wipe
(Metal Deflector Panel)

04202018UA-16 Wipe
(Metal Deflector Panel)

04202018UA-11 Soil
Catch Pit at Backstop

04202018UA-17 Wipe
(Metal Deflector Panel)

04202018UA-19 Wipe

04202018UA-22 Wipe
Top of Filing Cabinet

04202018UA-12 Wipe
Concrete Floor

04202018UA-13 Wipe
Concrete Floor

04202018UA-15 Wipe
Concrete Floor

04202018UA-21 Wipe
Concrete Floor at Steps

04202018UA-09 Wipe
CMU Block Walls

04202018UA-14 Wipe
Concrete Floor

**Appendix B Characterization Samples
Ground Level Rifle Firing Range**

**New London High School
490 Jefferson Avenue
New London, CT**

Appendix C

Lead Paint Testing Procedures and Equipment



STANDARD OPERATING PROCEDURES LEAD-BASED PAINT LIMITED SCREENINGS

TESTING PROCEDURES AND EQUIPMENT

The U. S. Department of Housing and Urban Development (HUD) "Guidelines for the Evaluation and Control of Lead Hazards in Housing, September 1997," were consulted for this lead paint screening. HUD has been the agency at the federal level with responsibility for the establishment of national lead-based paint standards for testing and abatement. The HUD document will be referenced as the Guidelines in this document. The HUD Guidelines are specific to child occupied dwelling units or target housing and are not wholly applicable to limited screenings. Additionally, most New England States have regulations and standards with regard to lead paint testing and abatement in child occupied facilities. EnviroScience shall consult these regulations and standards prior to beginning testing. Some states have reporting requirements if certain threshold values for lead paint are found and certain conditions exist. EnviroScience reports any specific testing results required by State laws as licensed inspectors and consultants in these circumstances.

This lead evaluation was a Lead Based Paint Limited Screening. Both the proposed scope of work and the final report will note this type of evaluation was done. A Lead Paint Limited Screening is performed in order to determine through representative testing the lead paint history of a property. However, conclusions about untested areas cannot be reliably determined based on the limited testing that was done. Comprehensive inspections involve testing of representative components in each and every room of a building. A Lead Based Paint Limited Screening is conducted in representative locations and not necessarily every room. The intent is to collect a sufficient number of readings using field instrumentation to characterize a given component or surface. Representative components are classified as testing combinations. The age and use of the functional space, component type, and substrate type are used to characterize a testing combination for purposes of a Lead Based Paint Limited Screening. Considering age of the structure inspectors determine original dates of construction and any major renovations to the original building. Interior spaces where major renovation has occurred are also treated as separate spaces. A functional space is a room or group of rooms used for similar purposes where painting is presumed to be uniform.

Inspectors perform Lead Based Paint Limited Screening on representative components ensuring randomization in the selection of components. EnviroScience utilizes a protocol of a minimum of three (3) rooms with similar building components and surfaces are comprehensively tested similar to inspections for HUD compliance or state regulated inspections. (For example, living room, kitchen, and a bedroom may be comprehensively tested in a 6-room apartment). In this protocol specific unique components are tested in any other locations in the dwelling. Inspectors shall record readings utilizing portable field instrumentation.

Conclusions in a Lead Based Paint Limited Screening are made based on consistent findings in the limited number of readings collected for a given testing combination. Inspectors conduct more readings if trends or similar findings are not found during such a limited screening process. In reporting findings and use in cost estimating, EnviroScience shall use limited screening information to extrapolate (or presume) that the untested areas have similar paint history as to those areas where limited screenings were conducted. (For example if in the three locations tested, all window sashes

contained threshold values of lead paint above HUD or other State regulatory levels, then EnviroScience would detail in the report that all such components in the dwelling should be presumed to contain lead paint or recommend them to be tested further).

Lead-based paint surfaces and components were identified by utilizing on-site x-ray fluorescence (XRF) instruments. Fuss & O'Neill EnviroScience, LLC owns and maintains XRFs for testing for lead-based paint. These instruments are four Radiation Monitoring Devices LPA-1 (RMD). Each of these instruments is operated in accordance with state and federal and manufacturer standards on the use of the instruments. State and federal protocols provide, with the exception of wall surfaces, one reading with the instrument on a representative component in each room, i.e., baseboard, chair rail, etc., as sufficient to establish the lead paint classification of all the representatives of that component type in a room. In the case of walls, because of the large spacial areas involved and the variability in lead content in paint over such large areas, the federal and state governments want a reading on each wall surface in a room. Therefore, representative testing is not permitted for walls.

The federal government has developed Performance Characteristic Sheets (PCS) for each of the types of instruments cited above. Each instrument must be calibrated in accordance with these PCSs on a 1.0-milligram lead standard. Each of EnviroScience's instruments has one of these standards assigned to it. Some of the standards were purchased directly from the government and the others from the manufacturers of the instruments.

Each of the instruments has federal government-determined positive and negative ranges for the definition of lead-based paint. XRF results are classified using either the threshold or the inconclusive range. For the threshold, results are classified as positive if they are greater than or equal to the threshold and negative if they are less than the threshold. There is no inconclusive classification when using the threshold. For the inconclusive range, results are classified as positive if they are greater than the upper limit of the inconclusive range and negative if they are less than the lower limit of the inconclusive range. The ranges for each of the types of instruments and their various operating modes are as follows:

Radiation Monitoring Device LPA Analyzer 1

30-Second Standard Mode Reading Description	Substrate	Threshold (mg/cm²)
Results corrected for substrate bias on metal substrate only.	Brick	1.0
	Concrete	1.0
	Drywall	1.0
	Metal	0.9
	Plaster	1.0
	Wood	1.0

Quick Mode Reading Description	Substrate	Threshold (mg/cm²)	Inconclusive Range (mg/cm²)
Readings not corrected for substrate bias on any substrate.	Brick	1.0	None
	Concrete	1.0	None
	Drywall	1.0	None
	Metal	1.0	None
	Plaster	1.0	None
	Wood	1.0	None

If a reading falls in the inconclusive range, either the lead inspector should be authorized by the client to take a paint chip sample to determine whether the final result is either positive or negative after laboratory analysis, or the result can be categorized as suspect positive and treated accordingly. If it is not confirmed with laboratory analysis, it cannot be assumed to be negative for toxic levels of lead. If it is assumed to be positive, it can either be abated as a positive if the condition of the surface and/or location of the component requires this treatment under Connecticut and/or HUD regulations, or it can be managed in place as a positive component in accordance with the requirements of Connecticut and HUD regulations.

Prior to the start of any testing, a sketch of the building is drawn, and side designations are given to help identify exactly where readings were taken. Drawings depicting the room-numbering scheme are located on the cover page(s) for the building(s) inspected. Each side of the building was labeled A, B, C, or D. The wall "A" side of the unit is generally the side of primary entrance into a dwelling, and this room is always Room 1. Areas in the units include rooms, hallways, and closets. Areas are numbered in a clockwise fashion as building construction allows. This allows the inspector to indicate which substrate surface was tested. The condition of the surface is described by a check mark in the appropriate column, under the heading "condition of surface" on the testing form.

When more than one surface type was present on a side, the component tested was indicated with a number. If two windows were present on a building side, they were numbered left to right. Closet shelves and shelf supports were numbered top to bottom.

It is understood that the room layouts presented in the report are in conformance with the conditions that exist at the time the testing is performed. EnviroScience avoids labeling a room solely by its current functional use (i.e., living room, bedroom, etc.) since this use can change over time. Similarly, room layouts can change dramatically as dwellings are renovated and additions are built, incorporating existing rooms, or existing interior walls are moved or eliminated altogether.

Appendix D

Lead Wipe and Lead in Soil Laboratory Reports and Chain of Custody Forms





FUSS & O'NEILL
EnviroScience, LLC

www.fando.com

146 Hartford Road, Manchester, CT 06040

(860) 646-2469 Fax (860) 649-6883



SAMPLE LOG FOR LEAD WIPES

Sheet 1-2

Project Name: New London High School

Project No. 20170858.A1E

Date: 4/20/2018

Site Address: 490 Jefferson Ave, New London, CT

Location: Ground Level Shooting Range

Project Manager: Carlos Texidor

Sample ID Number	Sample Location/Building	Surface		Result (ug/ft)	Lab Number
		Component	Sq. Ft		
04202018UA-02 wipe	Shooting range - lane 1,2 &3	Concrete floor	1		
04202018UA-03 wipe	Shooting range - lane 1,2 &3	Concrete floor	1		
04202018UA-04 wipe	Shooting range - lane 1,2 &3	Concrete floor	1		
04202018UA-05 wipe	Shooting range - lane 1,2 &3	Concrete floor	1		
04202018UA-06 wipe	Shooting range - lane 1,2 &3- Deflector panel	Metal	1		
04202018UA-07 wipe	Shooting range - lane 1,2 &3- Deflector panel	Metal	1		
04202018UA-08 wipe	Shooting range - lane 1,2 &3- Ceiling	Concrete	1		
04202018UA-08 wipe- Dup	Shooting range - lane 1,2 &3- Ceiling	Concrete	1		
04202018UA-09 wipe	Shooting range - lane 1,2 &3 A-wall	CMU	1		
04202018UA-10 wipe	Shooting range - lane 1,2 &3 B-wall	CMU	1		
04202018UA-12 wipe	Shooting range - lane 4,5 &6	Concrete floor	1		
04202018UA-13 wipe	Shooting range - lane 4,5 &6	Concrete floor	1		
04202018UA-14 wipe	Shooting range - lane 4,5 &6	Concrete floor	1		
04202018UA-15 wipe	Shooting range - lane 4,5 &6	Concrete floor	1		
04202018UA-16 wipe	Shooting range - lane 4,5 &6 Deflector panel	Metal	1		
04202018UA-17 wipe	Shooting range - lane 4,5 &6 Deflector panel	Metal	1		
04202018UA-18 wipe	Shooting range - lane 4,5 &6- Ceiling	Concrete	1		
04202018UA-19 wipe	Shooting range - lane 4,5 &6 C-wall	CMU	1		
04202018UA-20 wipe	Shooting range - lane 4,5 &6 D-wall	CMU	1		
04202018UA-21 wipe	Shooting range- entry @ top of stairs	Concrete	1		
04202018UA-22 wipe	Shooting range- top of filing cabinet @ entrv to lane 4.5&6	Metal	1		
04202018UA-23 wipe	Field blank	N/A	N/A		

RECEIVED
 EMSL ANALYTICAL INC.
 CARLE PLACE, NY
 2018 APR 24 A 9:27

061807755

Pb - [Signature] 4/30/18

OrderID: 061807755

Fuss & O'Neill EnviroScience EMSL Customer No. ENVI54



FUSS & O'NEILL
EnviroScience, LLC

Page 2-2
www.fando.com

146 Hartford Road, Manchester, CT 06040

(860) 646-2469 Fax (860) 649-6883

Analysis Method: EPA-SW-846-3050 (MOD.)
Wipe Media ASTM Non ASTM

Turnaround Time 5 - Day

Based on the turnaround time indicated above, analyses are due to Fuss & O'Neill EnviroScience on or before this date: 4/27/2018. Please call the Fuss & O'Neill EnviroScience laboratory at 860-646-2469 if analyses will be late.

Fax Results To: Fuss & O'Neill EnviroScience Laboratory at 888-838-1160

Special Instructions: _____

Samples Collected By: Ulkens Auguste Date: 04/20/18 Time: AM

Samples Sent By: _____ Date: _____ Time: _____

Samples Received By: CPA Date: 4/24/18 Time: 9:07am

Shipped To: EMSL (State) NY Other _____

Method of Shipment: Fed Ex. UPS Overnight UPS Ground Other _____

061807755

RECEIVED
EHSL ANALYTICAL, INC.
CARLE PLACE, NY
2018 APR 24 A 9:27

Pb - Am 4/30/18

**EMSL Analytical, Inc.**

528 Mineola Avenue, Carle Place, NY 11514

Phone/Fax: (516) 997-7251 / (516) 997-7528

<http://www.EMSL.com>carleplacelab@emsl.com

EMSL Order:	061807755
CustomerID:	ENVI54
CustomerPO:	20170858.A1E
ProjectID:	

Attn: **Carlos Texidor**
Fuss & O'Neill EnviroScience, LLC
146 Hartford Road
Manchester, CT 06040

Phone: (860) 646-2469
 Fax: (888) 838-1160
 Received: 04/24/18 9:27 AM
 Collected: 4/20/2018

Project: **New London High School, 490 Jefferson Ave, New London, CT, Project No: 20170858.A1E, Ground Level Shooting Range**

Test Report: Lead in Dust by Flame AAS (SW 846 3050B/7000B)*

<i>Client Sample Description</i>	<i>Lab ID</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Area Sampled</i>	<i>Lead Concentration</i>
04202018UA-02 wipe Site: Shooting Range-lane 1, 2 & 3 Desc: Concrete Floor	061807755-0001	4/20/2018	4/30/2018	144 in ²	9800 µg/ft ²
04202018UA-03 wipe Site: Shooting Range-lane 1, 2 & 3 Desc: Concrete Floor	061807755-0002	4/20/2018	4/30/2018	144 in ²	27000 µg/ft ²
04202018UA-04wipe Site: Shooting Range-lane 1, 2 & 3 Desc: Concrete Floor	061807755-0003	4/20/2018	4/30/2018	144 in ²	28000 µg/ft ²
04202018UA-05 wipe Site: Shooting Range-lane 1, 2 & 3 Desc: Concrete Floor	061807755-0004	4/20/2018	4/30/2018	144 in ²	28000 µg/ft ²
04202018UA-06 wipe Site: Shooting Range-lane 1, 2 & 3-Deflector Panel Desc: Metal	061807755-0005	4/20/2018	4/30/2018	144 in ²	10000 µg/ft ²
04202018UA-07 wipe Site: Shooting Range-lane 1, 2 & 3-Deflector Panel Desc: Metal	061807755-0006	4/20/2018	4/30/2018	144 in ²	10000 µg/ft ²
04202018UA-08 wipe Site: Shooting Range-lane 1,2 & 3-Ceiling Desc: Concrete	061807755-0007	4/20/2018	4/30/2018	144 in ²	70 µg/ft ²
04202018UA-08wipe-DUP Site: Shooting Range-lane 1,2 & 3-Ceiling Desc: Concrete	061807755-0008	4/20/2018	4/30/2018	144 in ²	30 µg/ft ²
04202018UA-09 wipe Site: Shooting Range-lane 1,2 & 3-A-wall Desc: CMU	061807755-0009	4/20/2018	4/30/2018	144 in ²	790 µg/ft ²
04202018UA-10 wipe Site: Shooting Range-lane 1,2 & 3-B-wall Desc: CMU	061807755-0010	4/20/2018	4/30/2018	144 in ²	1100 µg/ft ²

Michelle McGowan, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. Carle Place, NY Lab ID 102344 is accredited by the AIHA LAP, LLC in the Environmental Lead accred. program for Lead in Dust, CT PH-0249, NYS ELAP 11469, CA 2339

Initial report from 04/30/2018 12:59:27

**EMSL Analytical, Inc.**

528 Mineola Avenue, Carle Place, NY 11514

Phone/Fax: (516) 997-7251 / (516) 997-7528

<http://www.EMSL.com>carleplacelab@emsl.com

EMSL Order:	061807755
CustomerID:	ENVI54
CustomerPO:	20170858.A1E
ProjectID:	

Attn: **Carlos Texidor**
Fuss & O'Neill EnviroScience, LLC
146 Hartford Road
Manchester, CT 06040

Phone: (860) 646-2469
 Fax: (888) 838-1160
 Received: 04/24/18 9:27 AM
 Collected: 4/20/2018

Project: **New London High School, 490 Jefferson Ave, New London, CT, Project No: 20170858.A1E, Ground Level Shooting Range**

Test Report: Lead in Dust by Flame AAS (SW 846 3050B/7000B)*

<i>Client Sample Description</i>	<i>Lab ID</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Area Sampled</i>	<i>Lead Concentration</i>
04202018UA-12 wipe Site: Shooting Range-lane 4, 5 & 6 Desc: Concrete Floor	061807755-0011	4/20/2018	4/30/2018	144 in ²	4500 µg/ft ²
04202018UA-13 wipe Site: Shooting Range-lane 4, 5 & 6 Desc: Concrete Floor	061807755-0012	4/20/2018	4/30/2018	144 in ²	17000 µg/ft ²
04202018UA-14 wipe Site: Shooting Range-lane 4, 5 & 6 Desc: Concrete Floor	061807755-0013	4/20/2018	4/30/2018	144 in ²	72000 µg/ft ²
04202018UA-15 wipe Site: Shooting Range-lane 4, 5 & 6 Desc: Concrete Floor	061807755-0014	4/20/2018	4/30/2018	144 in ²	49000 µg/ft ²
04202018UA-16 wipe Site: Shooting Range-lane 4, 5 & 6-Deflector Panel Desc: Metal	061807755-0015	4/20/2018	4/30/2018	144 in ²	20000 µg/ft ²
04202018UA-17 wipe Site: Shooting Range-lane 4, 5 & 6-Deflector Panel Desc: Metal	061807755-0016	4/20/2018	4/30/2018	144 in ²	16000 µg/ft ²
04202018UA-18 wipe Site: Shooting Range-lane 4, 5 & 6-Ceiling Desc: Concrete	061807755-0017	4/20/2018	4/30/2018	144 in ²	66 µg/ft ²
04202018UA-19 wipe Site: Shooting Range-lane 4, 5 & 6-C-wall Desc: CMU	061807755-0018	4/20/2018	4/30/2018	144 in ²	1300 µg/ft ²
04202018UA-20 wipe Site: Shooting Range-lane 4, 5 & 6-D-wall Desc: CMU	061807755-0019	4/20/2018	4/30/2018	144 in ²	1600 µg/ft ²
04202018UA-21 wipe Site: Shooting Range-entry @ top of stairs Desc: Concrete	061807755-0020	4/20/2018	4/30/2018	144 in ²	480 µg/ft ²
04202018UA-22 wipe Site: Shooting Range-top of filing cabinet @ entry to lane 4, 5 & 6 Desc: Metal	061807755-0021	4/20/2018	4/30/2018	144 in ²	680 µg/ft ²

Michelle McGowan, Laboratory Manager
or other approved signatory

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EMSL Order: 061807755
 CustomerID: ENVI54
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 ProjectID:


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146 Hartford Road
Manchester, CT 06040

Phone: (860) 646-2469
 Fax: (888) 838-1160
 Received: 04/24/18 9:27 AM
 Collected: 4/20/2018

Project: **New London High School, 490 Jefferson Ave, New London, CT, Project No: 20170858.A1E, Ground Level Shooting Range**

Test Report: Lead in Dust by Flame AAS (SW 846 3050B/7000B)*

<i>Client Sample Description</i>	<i>Lab ID</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Area Sampled</i>	<i>Lead Concentration</i>
04202018UA-23 wipe Site: Field Blank	061807755-0022	4/20/2018	4/30/2018	n/a	<10 µg/wipe


 Michelle McGowan, Laboratory Manager
 or other approved signatory

*Analysis following Lead in Dust by EMSL SOP/ Determination of Environmental Lead by FLAA. Reporting limit is 10 ug/wipe. ug/wipe = ug/ft2 x area sampled in ft2. Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities (such as volume sampled) or analytical method limitations. Samples received in good condition unless otherwise noted. The lab is not responsible for data reported in µg/ft² which is dependent on the area provided by non-lab personnel. The test results contained within this report meet the requirements of NELAC unless otherwise noted. "<" (less than) results signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements unless specifically indicated otherwise. Definitions of modifications are available upon request.

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Initial report from 04/30/2018 12:59:27



FUSS & O'NEILL
EnviroScience, LLC

061807588

www.fando.com

146 Hartford Road, Manchester, CT 06040

(860) 646-2469 Fax (860) 649-6883

SAMPLE LOG FOR LEAD SOIL

Sheet No. 1 of 1

Project Name: New London High School
Building: Ground Level Shooting Range

Project Number: 20170858.A1E
Project Manager: Carlos Texidor

Sample ID Number	Sample Location/Building	Soil Condition	Result (%)
04202018UA-01Soil	Catch pit from shooting range - lane 1,2 &3	Loose soil	
04202018UA-11Soil	Catch pit from shooting range - lane 4,5 &6	Loose soil	

RECEIVED
EMSL ANALYTICAL, INC.
CARLE PLACE, NY
2018 APR 24 A 9:26

Analysis Method: EPA-SW-846-3050-7420 ^(NY) Turnaround Time 5 Days ^(NY)

Date: _____ Time: _____
Date: _____ Time: _____

Based on the turnaround time indicated above, analyses are due to Fuss & O'Neill EnviroScience on or before this date: 4/27/2018. Please call the Fuss & O'Neill EnviroScience laboratory at 860-646-2469 if analyses will be late.

Fax Results To: Fuss & O'Neill EnviroScience Laboratory at 888-838-1160

Special Instructions: _____

Samples Collected By: U. Auguste ^(NY) Date: 4/20/2018 Time: AM
Samples Rec'd/Sent By: _____ Date: / Time: /
Samples Received By: Katherine Viau Date: 4/20/18 Time: 9:26 AM

Shipped To: EMSL (State) NY _____ Other _____
Method of Shipment: Fed Ex. UPS Overnight UPS Ground Other _____

(SEE NEXT PAGE FOR DIAGRAM)

Fb - Auguste 4/28/18



EMSL Analytical, Inc.

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<http://www.EMSL.com> carleplacelab@emsl.com

EMSL Order: 061807588
 CustomerID: ENVI54
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Attn: **Carlos Texidor**
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146 Hartford Road
Manchester, CT 06040

Phone: (860) 646-2469
 Fax: (888) 838-1160
 Received: 04/24/18 9:26 AM
 Collected: 4/20/2018

Project: **New London High School, Ground Level Shooting Range, Project :20170858.A1E**

Test Report: Lead in Soils by Flame AAS (SW 846 3050B/7000B)*

<i>Client Sample Description</i>	<i>Lab ID</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Lead Concentration</i>
04202018UA-01Soil	061807588-0001	4/20/2018	4/28/2018	200000 mg/Kg
Site: Catch Pit from Shooting Range - Lane 1, 2 & 3				
04202018UA-11Soil	061807588-0002	4/20/2018	4/28/2018	230000 mg/Kg
Site: Catch Pit from Shooting Range - Lane 4, 5 & 6				

Michelle McGowan, Laboratory Manager
 or other approved signatory

*Analysis following Lead in Soil/Solids by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 40 mg/kg based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. Results reported based on dry weight. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements unless specifically indicated otherwise. Definitions of modifications are available upon request.

Samples analyzed by EMSL Analytical, Inc. Carle Place, NY Lab ID 102344 is accredited by the AIHA LAP, LLC in the Environmental Lead accred. program for Lead in Soil, CT PH-0249, NYS ELAP 11469, CA 2339

Initial report from 04/28/2018 11:59:10