

Three – Year Asbestos Re-Inspection and Management Plan Update

Otis Memorial Elementary School
5500 Curtis Boulevard
Bourne, MA 02542

Bourne Public Schools
Bourne, Massachusetts

December 2011



FUSS & O'NEILL
EnviroScience, LLC

Fuss & O'Neill EnviroScience, LLC
50 Redfield Street, Suite 100
Boston, Massachusetts 02122

For Compliance with
EPA Asbestos Hazard Emergency Response Act (AHERA)
40 CFR Part 763



FUSS & O'NEILL
EnviroScience, LLC

January 4, 2012

Mr. Edward Donoghue
Director of Business Services
Bourne Public Schools
36 Sandwich Road
Bourne, MA 02532

RE: 2011 Three Year AHERA Management Plan Update
Otis Memorial Elementary School
5500 Curtis Boulevard, Bourne, Massachusetts
Fuss & O'Neill EnviroScience, LLC No. 20070914.A7E

Dear Mr. Donoghue:

Fuss & O'Neill EnviroScience, LLC (EnviroScience) is pleased to submit the enclosed report of the three-year AHERA asbestos re-inspection and management plan update performed at the Otis Memorial Elementary School located at 5500 Curtis Boulevard in Bourne, Massachusetts. This report is an important document that must be kept on file at the school as well as at a central location where all the Management Plans are preserved.

If you have any questions regarding this report, please do not hesitate to contact us. Thank you for this opportunity to have served your environmental needs.

Sincerely,

Robert L. May, Jr.
Vice President

Stephen W. Connelly
Senior Vice President

RLM / asn

Enclosure

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TABLE OF CONTENTS

2011 Three Year AHERA Management Plan Update Otis Memorial Elementary School

1	INTRODUCTION	1
	1.1 Background	1
	1.2 Local Education Agency (LEA) Responsibilities.....	1
	1.3 Accreditation	2
	1.4 Inspection History and Schedule.....	3
2	Three Year Re-inspection	4
	2.1 Re-inspection Procedures	4
	2.2 Limited Building Description	4
3	RE-INSPECTION REPORT.....	5
	3.1 Review of Existing Records	5
	3.2 Re-inspection Summary	5
	3.3 Newly Identified ACBM Material	5
	3.4 Physical Assessment of ACBMs.....	5
4	MANAGEMENT PLAN UPDATE.....	6
	4.1 Recommended Response Actions.....	6
	4.2 Periodic Surveillance	8
	4.3 Preventive Measures.....	8
5	EPA CERTIFICATION REQUIREMENTS.....	8

APPENDICES

APPENDIX A:	CHECKLIST FOR EXISTING RECORDS
APPENDIX B:	RE-INSPECTION FORMS
APPENDIX C:	AUGUST 2008 LIMITED INSPECTION REPORT
APPENDIX D:	PERIODIC SURVEILLANCE FORM
APPENDIX E:	PREVENTIVE MEASURES
APPENDIX F:	AHERA TRAINING CERTIFICATES
APPENDIX G:	PCB AND LEAD DOCUMENTS

1 INTRODUCTION

1.1 Background

The Clean Air Act of 1977 required the United States Environmental Protection Agency (USEPA) to develop standards to address the potential health aspects associated with adverse effects of asbestos exposure as an indoor contaminant. In October 1986 the USEPA promulgated the Asbestos Hazard Emergency Response Act (AHERA).

The AHERA regulations required that all local education agencies conduct inspections of each school building that they lease, own, or otherwise use as a school building in order to identify all locations or friable and non-friable asbestos-containing building materials (ACBM). The original inspections were required to have been completed prior to October 12, 1988.

Any building leased or acquired on or after October 12, 1988 that is to be used as a school building shall be inspected for friable and non-friable ACBM prior to use as a school building. In the event of an emergency use of a building that has not been inspected for ACBM, the building shall be inspected within 30 days after commencement of such use.

The regulatory requirements are still in full force and effect for any private or public school system, a church affiliated school of any denomination, a school dedicated to the education of children with special needs, or a charter school. In the Commonwealth of Massachusetts the Department of Labor Standards (DLS), formerly known as the Division of Occupational Safety (DOS), Asbestos and Lead Program is responsible for enforcement of the AHERA regulations.

1.2 Local Education Agency (LEA) Responsibilities

- A. The LEA is responsible for compliance with AHERA regulation 40 CFR Part 763. The following responsibilities must be adhered to (refer to above mentioned regulation for full requirements and responsibilities):
1. The LEA must designate a person to ensure that all of the AHERA requirements are properly implemented. The Designated Person must receive adequate training to perform his/her duties.
 2. The LEA must ensure that management plans are maintained in a central location as well as at each facility, and such plans and records are available for inspection or review at all times.
 3. The LEA must inform all teachers, parents of students, or legal guardians in writing at least once each school year about asbestos related activities, and the availability of the AHERA management plans for the school buildings.

4. The LEA must ensure proper accreditation for all persons who perform asbestos inspections, asbestos re-inspections, develop/update management plans, develop response actions, and/or perform required response actions including operations and maintenance activities that may disturb asbestos.
5. The LEA must provide training for all custodial and maintenance staff who regularly perform building maintenance where asbestos containing building materials (ACBM) are present. The training must be provided upon initial hire as well as updated annually.
6. The LEA must provide information (disclosure) to any workers who may perform short-term work and come in contact with asbestos in school buildings where ACBM or presumed ACBM are present.
7. The LEA must ensure that known ACBM or presumed ACBM are provided with warning labels in routine maintenance areas.
8. The LEA must ensure that periodic surveillance is performed at least once every six months, after a management plan is in effect, in all school buildings that it leases, owns, or otherwise uses that contains ACBM or presumed ACBM.
9. The LEA must ensure that once every three years, after a management plan is in effect, a re-inspection is performed in all school buildings that it leases, owns, or otherwise uses that contains ACBM or presumed ACBM.

1.3 Accreditation

A. Local Education Agency (LEA)

LEA: Bourne Public Schools
Address: 36 Sandwich Road
Bourne, Massachusetts 02532
Phone: (508)-759-0660
Fax: (508)-759-1107

B. Designated Person

Designated
Person: Mr. Edward Donoghue
Director of Business Services
Address: 36 Sandwich Road
Bourne, Massachusetts 02532

C. Asbestos Consultant Data



Firm: Fuss & O'Neill EnviroScience, LLC.
Address: 50 Redfield Street, Suite 100
Boston, Massachusetts 02122
Phone: (617) 282-4675
Fax: (617) 282-8253

D. Asbestos Inspector

Inspector: Mr. Dustin Diedricksen
Accreditation
Number: AI041867
State of
Accreditation: Massachusetts
Expiration Date: 04/26/12

E. Asbestos Management Planner:

Planner: Mr. Robert May
Accreditation
Number: AP041719
State of
Accreditation: Massachusetts
Expiration Date: 03/27/12

1.4 Inspection History and Schedule

A. Original AHERA Inspection
Management Plan

Report Date: September 1988
Prepared By: EnviroScience Consultants, Inc.
Address: Newington, Connecticut

B. Three Year Re-Inspections

1. September 1994 prepared by EnviroScience Consultants
1. August 1998 prepared by EnviroScience Consultants, Inc.
2. July 2001 prepared by EnviroScience Consultants, Inc.
3. August 2004 prepared by EnviroScience Consultants, Inc.
4. August 2007 prepared by Fuss & O'Neill EnviroScience, LLC

2 Three Year Re-inspection

2.1 Re-inspection Procedures

This three-year asbestos re-inspection was conducted in accordance with the requirements of the following regulations:

- United States Environmental Protection Agency (USEPA) Asbestos Hazard Emergency Response Act (AHERA) regulation (40 CFR Part 763, Section 763.85 (b)).

Mr. Dustin Diedricksen of Fuss & O'Neill EnviroScience, LLC (EnviroScience) performed the re-inspection on September 2, 2011. Mr. Diedricksen is an accredited Asbestos Inspector in the Commonwealth of Massachusetts (License No. AI041867). On December 12, 2011, Fuss & O'Neil EnviroScience's, John Coletti confirmed the checklist for existing records.

- A. During the re-inspection the following required tasks were performed:
1. A visual re-inspection and re-assessment of all friable known or assumed asbestos-containing building materials (ACBM).
 2. A visual re-inspection of ACBM that was previously considered non-friable to determine if the present condition of the material has made it friable.
 3. Identification and assessment of any homogeneous area that contained new friable ACBM since the last inspection or re-inspection.

Note: The limits of an AHERA inspection involve visible and accessible areas only. ACBM may exist in concealed chases, above fixed ceilings, or concealed below floors. Additionally, material such as glue associated with chalkboards and tackboards, flooring adhesives and mastics, and concealed thermal system insulation may contain asbestos, and are presumed to be present.

2.2 Limited Building Description

Otis Memorial Elementary School is a one-level concrete and masonry structure constructed in 1962. Building areas include two wings of classrooms, offices, gymnasium, kitchen, multi-purpose room and a boiler room with associated crawlspaces. The total gross area of this facility is approximately 35,160 square feet.

Two hot water boilers provide perimeter radiant heating utilizing fin-tube radiators.

No renovation or construction had been performed since the last inspection.

3 RE-INSPECTION REPORT

3.1 Review of Existing Records

An important part of this AHERA re-inspection involved checking documentation that was required to be present at the building being inspected as well as at the central location where all management plans are preserved.

Please see *Appendix A* for details of our findings.

3.2 Re-inspection Summary

The on-site portion of the re-inspection was documented on forms modeled from examples provided by the United States Environmental Protection Agency (USEPA). A single form has been created which summarizes the inventory of materials by type, location, quantity, and category. Each location of a given material type is provided an exposure assessment including friability, a previous condition assessment category consistent with AHERA rankings, a current assessment category ranking, and notes regarding the current assessment. The forms also identify any previous recommendations from last recorded three-year inspection, and current recommendations based on the re-inspection.

Any newly identified materials are also recorded and identified as newly identified materials. Note no samples were collected of materials as part of the re-inspection. Any newly identified materials are presumed to contain asbestos.

The information obtained during this re-inspection was transmitted to Mr. Robert May, an accredited Management Planner, so that response actions relative to the condition of the ACBM could be designed. Mr. May is a licensed Asbestos Management Planner in the Commonwealth of Massachusetts (License No. AP041719).

3.3 Newly Identified ACBM Material

No newly identified materials were determined and/or assumed to be ACBM.

Any suspect material encountered during renovation/demolition that is not specifically identified in this report as a non-ACM should be assumed to contain asbestos unless sample results prove otherwise. AHERA inspections do not satisfy the requirements for the U.S. EPA survey requirements for compliance with the National Emission Standards for Hazardous Air Pollutants (NESHAP). A NESHAP survey should be performed prior to renovation or other planned disturbance within a building.

3.4 Physical Assessment of ACBMs

During the inspection, suspect ACBM were separated into three USEPA categories. These categories are thermal system insulation (TSI), surfacing ACBM, and miscellaneous ACBM. TSI includes all materials used to prevent heat loss or gain or water condensation on mechanical systems. Examples of TSI are pipe insulation, boiler insulation, duct insulation, and mudded insulation on pipe fittings. Surfacing ACBM is commonly used for fireproofing, decorative, and acoustical applications. Miscellaneous materials include all ACBM not listed in TSI or surfacing, such as linoleum, vinyl asbestos flooring, and ceiling tiles.

Finally, all ACBM were quantified in linear and/or square footage depending on the nature of the material.

All ACBM identified during the inspection and still remaining in the school were reassessed using the AHERA guidelines for assessment of ACBM. The assessment categories are listed as follows:

- 1 = Damaged or significantly damaged TSI ACBM
- 2 = Damaged friable surfacing ACBM
- 3 = Significantly damaged friable surfacing ACBM
- 4 = Damaged or significantly damaged friable miscellaneous ACBM
- 5 = ACBM with potential for damage
- 6 = ACBM with potential for significant damage
- 7 = Any remaining friable ACBM or friable suspected ACBM

Material locations, assessments, and recommended response actions are listed in the Re-inspection forms located in *Appendix B*.

4 MANAGEMENT PLAN UPDATE

4.1 Recommended Response Actions

Based on the inspection report, physical walk-through inspection and existing condition of the ACBM, the following response actions are recommended:

- 1 Our inspector could not located copies of any past or present AHERA documentation at the school facility. The exceptions were the original AHERA inspection, the 1994, and the 1998 re-inspections for the school. The records of all inspections are to be maintained at the School building as well as at the Central Offices (Facilities Management).
- 1 Repair 7 SF of boiler insulation in Boiler Room
- 2 Repair damaged pipe insulation and/or mudded fittings at accessible areas throughout the school building.
- 3 Repair damaged 9'x 9' VAT located throughout school building (i.e. numerous locations).

Operations and Maintenance (O & M)

All ACBM in the school shall be managed in place in accordance with the original AHERA Operations and Maintenance (O & M) Program. The condition of such materials will be monitored until all the ACBM have been removed from the building. A successful O & M Program includes the following elements:

- a) Cleaning: All areas of the school where friable ACBM or friable suspected ACBM assumed to be ACM are present shall be cleaned at least once after the completion of the initial inspection. Additional cleaning may be necessary if the Management Planner makes a written recommendation indicating methods and frequency of such cleaning.

- b) O & M Activities: The LEA shall ensure that the procedures described below are followed to protect building occupants from any O & M activities that may disturb known or assumed ACM:
 1. Restrict entry into the area either by physically isolating or by scheduling.
 2. Post warning signs to prevent entry by unauthorized persons.
 3. Shut off or temporarily modify the air-handling system.
 4. Use proper work practices and engineering controls such as wet methods, protective clothing, HEPA-vacuums, mini enclosures/glove bags, etc., to inhibit spread of fibers.
 5. Place all asbestos debris and other contaminated materials in a sealed, leak-tight container for eventual disposal.

- c) Minor Fiber Release Episodes: The LEA shall ensure that the procedures described below are followed in the event of a minor fiber release episode (i.e., disturbance of 3 linear/square feet or less of friable ACM):
 1. Saturate the debris using wet method.
 2. Place the debris in a sealed, leak-tight container, and clean the area.
 3. Repair the area of damaged ACBM with materials such as asbestos-free spackling, plaster, insulation, etc., or seal with an encapsulant.

- d) Major Fiber Release Episode: The LEA shall ensure that the procedures described below are followed in the event of a major fiber release episode (i.e., disturbance of more than 3 linear/square feet of friable ACBM):
 1. Restrict entry into the area and post warning signs.
 2. Shut off or temporarily modify the air handling system to prevent spread of fibers to other areas of the school.
 3. The response for any major fiber release episode must be designed by persons accredited to design response actions and conducted by persons accredited to conduct response actions.
 4. The LEA shall notify the Massachusetts Department of Labor Standards (DLS), formerly known as the Division of Occupational Safety (DOS), of any major fiber release episode within twenty-four hours of its occurrence and, if necessary, provide written notification as required by applicable federal and/or state regulations.

4.2 Periodic Surveillance

At least once every six (6) months after a management plan is in place, the LEA shall conduct periodic surveillance in the school that contains ACBM or assumed to contain ACM. The person conducting periodic surveillance shall visually inspect all areas in the school that have been identified in the management plan as having ACBM. In addition, he/she shall record the date of surveillance, his/her name, and any changes in the condition of the materials, and submit the record to the LEA Designated Person for inclusion in the management plan.

Please see *Appendix C* for Periodic Surveillance Forms that may be used for conducting periodic surveillance.

4.3 Preventive Measures

The LEA shall institute appropriate preventive measures to eliminate the reasonable likelihood that the ACBM will become damaged, deteriorated, or delaminated.

Please see *Appendix D* for preventive measures designed for various types of ACM that may exist in the school.

5 EPA CERTIFICATION REQUIREMENTS

The certificates and the licenses for the individuals (Dustin Diedricksen and Robert L. May Jr.) involved in performing the re-inspection and updating the management plan are provided in *Appendix E*.



FUSS & O'NEILL
EnviroScience, LLC

APPENDIX A

CHECKLIST FOR EXISTING RECORDS

CHECKLIST FOR EXISTING RECORDS

Local Education Agency (LEA): Bourne Public Schools
36 Sandwich Road, Bourne, MA

School Building: Otis Memorial Elementary School

The following documentation is required to be present in both the LEA's Office as well as in a centralized location in the administrative office of the school. The information included in this checklist shall be verified to be present and complete as part of three year re-inspection.

DOCUMENTATION		LOCATION	
		School	LEA Office
1.	Original AHERA Inspection/Management Plan	Yes	Yes
2.	Three year Re-inspection (First)	Yes	Yes
3.	Three year Re-inspection (Second)	Yes	Yes
4.	Three year Re-inspection (Third)	Not seen	Yes
5.	Notifications to Parents/Guardians and Teachers (yearly since last re-inspection)	Not seen	No
6.	Designated Person Identified and Proper Training (person must be named and have appropriate training)	Not seen	No
7.	Designated Person Periodic Surveillance (every six months since last re-inspection)	Not seen	No
8.	Record of Awareness Training for Maintenance Staff	Not seen	No
9.	Outside Vendor Awareness Notification	Not seen	No
10.	Warning Signs and Labels (required posting in Boiler room and mechanical spaces only)	Not seen	No
11.	Record of Response Actions (includes any abatement done since last re-inspection)	Not seen	No (N\A)

Inspector: John Coletti

Date: December 12, 2011



FUSS & O'NEILL
EnviroScience, LLC

APPENDIX B

RE-INSPECTION FORM



50 Redfield St, Suite 100, Boston, MA 02122
282-8253

(617) 282-4675 Fax (617)

ASBESTOS RE-INSPECTION FORM

Inspection Date: September 2, 2011
Inspector: Dustin Diedricksen

Peebles Elementary School, Town of Bourne

ACM Type Boiler Insulation, Breeching and Hot Water Tank Insulation (TSI)

Sample # 720JH-03 A-C

ACM Inventory			Exposure Assessment				Response Action	
Location	Estimate Quantity	Material Category	Friable	Previous Conditions	Current Assessment Category	Current Assessment Description	Previous Recommendations	Current Recommendations
Boiler Room (Boiler 1), Boiler insulation	194 SF	TSI	Y	5	5	Good	Continue O&M Plan	Continue O & M plan
Boiler room (Boiler 2)		TSI	Y	1	1	Damaged (1 SF in front 5 SF around breeching remainder in good condition)	Continue O&M Plan	Repair damage. Continue O&M plan
Boiler Breeching insulation	363 SF	TSI	Y	5	5	Good	Continue O&M Plan	Continue O & M Plan
Hot water tank insulation	100 SF	TSI	Y	5	1/5	Damage 1 SF on back remainder in good condition	Continue O&M Plan	Repair damage. Continue O & M

AHERA assessment category:

- 1= Damaged or significantly damaged TSI ACBM, 2=Damaged friable surfacing ACBM, 3=Significantly damaged friable surfacing ACBM, 4=Damaged or significantly damaged friable miscellaneous ACBM, 5=ACBM with potential for damage, 6=ACBM with potential for significant damage,
- 7=Any remaining friable ACBM or friable suspected ACBM



ASBESTOS RE-INSPECTION FORM

Inspection Date: September 2, 2011
Inspector: Dustin Diedricksen

Otis Memorial Elementary School, Town of Bourne

ACM Type Mudded insulation on pipe fittings

Sample # A2

ACM Inventory			Exposure Assessment				Response Action	
Location	Estimate Quantity	Material Category	Friable	Previous Conditions	Current Assessment Category	Current Assessment Description	Previous Recommendations	Current Recommendations
Boiler room	30 Each	TSI	Y	5	1/5	Damaged fittings 2 SF (behind breeching and at tunnel entrance)	Continue O & M	Repair damage. Continue O & M
Boiler room (Behind boiler #1)	1 Total	TSI	Y	1	1	Damage 1 SF behind boiler	Repair damage continue O & M	Repair damage. Continue O & M
Pipe tunnels	300 Each	TSI	Y	5	1/5	1 Damaged fitting, remainder in good condition	Continue O+ M	Repair damage. Continue O & M
Nurses office under sink	4 Each	TSI	Y	5	5	Good	Continue O & M	Continue O & M
Kitchen (Uni-vents)	7 Each	TSI	Y	1/5	1/5	Damage 1 Fitting, remainder in good condition	Continue O & M	Repair damage. Continue O & M
Supply room near classrooms 5 and 11	1 Total	TSI	Y	5	5	Good	Continue O & M	Continue O & M

AHERA assessment category:

- 1= Damaged or significantly damaged TSI ACBM, 2=Damaged friable surfacing ACBM, 3=Significantly damaged friable surfacing ACBM,
- 4=Damaged or significantly damaged friable miscellaneous ACBM, 5=ACBM with potential for damage, 6=ACBM with potential for significant damage,
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ASBESTOS RE-INSPECTION FORM

Near crawlspace in boiler room	1 Total	TSI	Y	1	1	Damage (1 fitting)	Repair damage. Continue O & M	Repair damage. Continue O & M
Supply room across from main office	5 Each	TSI	Y	5	5	Good	Continue O & M	Continue O & M

AHERA assessment category:

- 1= Damaged or significantly damaged TSI ACBM, 2=Damaged friable surfacing ACBM, 3=Significantly damaged friable surfacing ACBM,
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ASBESTOS RE-INSPECTION FORM

Inspection Date: September 2, 2011
Inspector: Dustin Diedricksen

Otis Memorial Elementary School, Town of Bourne

ACM Type 9" X 9" Floor tiles

Sample # B1

ACM Inventory			Exposure Assessment				Response Action	
Location	Estimate Quantity	Material Category	Friable	Previous Conditions	Current Assessment Category	Current Assessment Description	Previous Recommendations	Current Recommendations
At Double Doors in Hallway Outside Clinic	820 SF	Misc.	NF	4	4	5 SF Damage near Nurse's Office	Repair damage, continue O + M	Repair damage, continue O + M
Classroom 1	750 SF	Misc.	NF	5	5	Good	Continue O + M	Continue O + M
Classroom 2	750 SF	Misc.	NF	5	5	Good	Continue O + M	Continue O + M
Classroom 3	750 SF	Misc.	NF	5	4/5	2 SF of cracked tiles, remainder in good condition	Continue O + M	Repair damage. Continue O & M
Classroom 4	750 SF	Misc.	NF	5	4/5	2 SF of cracked tiles, remainder in good condition	Continue O + M	Repair damage. Continue O & M
Classroom 5	900 SF	Misc.	NF	5	5	Good	Continue O + M	Continue O + M
Classroom 6	750 SF	Misc.	NF	5	4/5	2 SF of cracked tiles, remainder in good condition	Continue O + M	Repair damage. Continue O & M

AHERA assessment category:

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ASBESTOS RE-INSPECTION FORM

Classroom 7	750 SF	Misc.	NF	5	4/5	5 SF of cracked tiles, remainder in good condition	Continue O + M	Repair damage. Continue O & M
Classroom 8	750 SF	Misc.	NF	4/5	4/5	4 SF Damage	Repair damage. Continue O & M	Repair damage. Continue O & M
Classroom 9	750 SF	Misc.	NF	5	5	Good	Continue O + M	Continue O + M
Classroom 10	750 SF	Misc.	NF	5	5	Good	Continue O + M	Continue O + M

AHERA assessment category:

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 7=Any remaining friable ACBM or friable suspected ACBM



ASBESTOS RE-INSPECTION FORM

Inspection Date: September 2, 2011
Inspector: Dustin Diedricksen

Otis Memorial Elementary School, Town of Bourne

ACM Type 9" x 9" Floor tiles

Sample B1

ACM Inventory			Exposure Assessment				Response Action	
Location	Estimate Quantity	Material Category	Friable	Previous Conditions	Current Assessment Category	Current Assessment Description	Previous Recommendations	Current Recommendations
Classroom 11	750 SF	Misc.	NF	5	5	Good	Continue O+ M	Continue O+ M
Classroom 12	750 SF	Misc.	NF	5	4/5	3 SF cracked tiles, remainder in good condition	Continue O+ M	Repair damage, continue O& M
Classroom 13	750 SF	Misc.	NF	5	4/5	11 SF cracked tile, remainder in good condition	Continue O+ M	Repair damage, continue O& M
Classroom 14 (Library)	750 SF	Misc.	NF	5	5	Good	Continue O+ M	Continue O+ M
Classroom 15	750 SF	Misc.	NF	5	4/5	10 SF Damaged tiles, remainder in good condition	Continue O+ M	Repair damage, continue O& M
Classroom 16	750 SF	Misc.	NF	5	4/5	6 SF Damaged tiles, remainder in good condition	Continue O+ M	Repair damage, continue O& M
Classroom 17	750 SF	Misc.	NF	5	4/5	16 SF Damaged tiles, remainder in	Continue O+ M	Repair damage, continue O& M

AHERA assessment category:

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ASBESTOS RE-INSPECTION FORM

						good condition		
Classroom 18	750 SF	Misc.	NF	5	5	Good	Continue O+ M	Continue O+ M
Classroom 19	750 SF	Misc.	NF	5	4/5	3 SF cracked tiles, remainder in good condition	Continue O+ M	Repair damage, continue O& M
Principal's Office	140 SF	Misc.	NF	5	5	Good	Continue O+ M	Continue O+ M
Nurse's Office	250 SF	Misc.	NF	5	5	Good	Continue O+ M	Continue O+ M
Main Office (outside Principal's Office)	200 SF	Misc.	NF	5	5	Good	Continue O+ M	Continue O+ M

AHERA assessment category:

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ASBESTOS RE-INSPECTION FORM

Inspection Date: September 2, 2011
Inspector: Dustin Diedricksen

Otis Memorial Elementary School , Town of Bourne

ACM Type 9" X 9" Floor tiles

Sample # B1

ACM Inventory			Exposure Assessment				Response Action	
Location	Estimate Quantity	Material Category	Friable	Previous Conditions	Current Assessment Category	Current Assessment Description	Previous Recommendations	Current Recommendations
Hallway from Classroom 15 to Doors outside of restrooms	1,600 SF	Misc.	NF	5	4/5	10 SF damaged tiles, remainder in good condition	Continue O + M	Repair damage, continue O + M
Hall outside of classrooms 10-11 from fire doors to exit	320 SF	Misc.	NF	5	4/5	10 SF damaged tiles, remainder in good condition	Continue O + M	Repair damage, continue O + M
Teacher's room and supply room	600 SF	Misc.	NF	5	5	Good	Continue O + M	Good
Foyer and hall outside of Teacher's room	1,300 SF	Misc.	NF	5	5	Good	Continue O + M	Good
Cafeteria/Gym	3, 500 SF	Misc.	NF	5	4/5	15 SF damaged tiles remainder in good condition	Continue O + M	Repair damage, continue O + M

AHERA assessment category:

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ASBESTOS RE-INSPECTION FORM

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ASBESTOS RE-INSPECTION FORM

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7=Any remaining friable ACBM or friable suspected ACBM



ASBESTOS RE-INSPECTION FORM

Inspection Date: September 2, 2011
 Inspector: Dustin Diedricksen

Otis Memorial Elementary School, Town of Bourne

ACM Type Vibration Isolator Cloth

Sample # N/A

ACM Inventory			Exposure Assessment				Response Action	
Location	Estimate Quantity	Material Category	Friable	Previous Conditions	Current Assessment Category	Current Assessment Description	Previous Recommendations	Current Recommendations
Boiler #2 breeching	4 SF	Misc.	NF	5	5	Good	Continue O + M	Continue O + M
Emergency boiler room Generator intake	2 SF	Misc.	NF	5	5	Good	Continue O + M	Continue O + M

AHERA assessment category:

- 1= Damaged or significantly damaged TSI ACBM, 2=Damaged friable surfacing ACBM, 3=Significantly damaged friable surfacing ACBM,
- 4=Damaged or significantly damaged friable miscellaneous ACBM, 5=ACBM with potential for damage, 6=ACBM with potential for significant damage,
- 7=Any remaining friable ACBM or friable suspected ACBM



ASBESTOS RE-INSPECTION FORM

Inspection Date: September 2, 2011
 Bourne
 Inspector: Dustin Diedricksen

Otis Memorial Elementary School, Town of

ACM Type Wall Plaster

Sample # N/A

ACM Inventory			Exposure Assessment				Response Action	
Location	Estimate Quantity	Material Category	Friable	Previous Conditions	Current Assessment Category	Current Assessment Description	Previous Recommendations	Current Recommendations
Main Girl's restroom	15 SF	Surf.	F	5	5	Good	Continue O&M	Continue O&M
Throughout the building	Un-determined	Surf.	F	5	5	Good	Continue O&M	Continue O&M

AHERA assessment category:

- 1= Damaged or significantly damaged TSI ACBM, 2=Damaged friable surfacing ACBM, 3=Significantly damaged friable surfacing ACBM,
- 4=Damaged or significantly damaged friable miscellaneous ACBM, 5=ACBM with potential for damage, 6=ACBM with potential for significant damage,
- 7=Any remaining friable ACBM or friable suspected ACBM



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ASBESTOS RE-INSPECTION FORM

Inspection Date: September 2, 2011
Bourne
Inspector: Dustin Diedricksen

Otis Memorial Elementary School, Town of

ACM Type Fire Doors Metal Encased

Sample # N/A

ACM Inventory			Exposure Assessment				Response Action	
Location	Estimate Quantity	Material Category	Friable	Previous Conditions	Current Assessment Category	Current Assessment Description	Previous Recommendations	Current Recommendations
Entrance to boiler room	1 Door	Misc.	F	5	5	Good	Continue O & M	Continue O & M
Entrance to emergency generator room	1 Door	Misc.	F	5	5	Good	Continue O & M	Continue O & M

AHERA assessment category:

- 1= Damaged or significantly damaged TSI ACBM, 2=Damaged friable surfacing ACBM, 3=Significantly damaged friable surfacing ACBM,
- 4=Damaged or significantly damaged friable miscellaneous ACBM, 5=ACBM with potential for damage, 6=ACBM with potential for significant damage,
- 7=Any remaining friable ACBM or friable suspected ACBM



FUSS & O'NEILL
EnviroScience, LLC

APPENDIX C

PERIODIC SURVEILLANCE FORM

PERIODIC SURVEILLANCE FORM – List of ACBM Asbestos-Containing Materials

School: Otis Memorial Elementary School
 Address: 5500 Curtis Boulevard, Bourne, MA

Date(s) of Original Inspection: 1988
 Date(s) of Subsequent Re-Inspections: 1994, 1998, 2001, 2004, 2007

Periodic Inspection Date: _____ Conducted By: _____

Asbestos Containing Material	Location	Previous Condition	Present Condition	Change in Condition (Yes/No)	Quantity Damaged	Comments
Boiler insulation	Boiler room	Damaged (1 SF in front 5 SF around breeching remainder in good condition)				
Boiler breeching	Boiler room	Good				
Hot water tank insulation	Boiler room	Damage 1 SF on back remainder in good condition				
Mudded insulation on pipe fittings	Boiler room	Damaged fittings 2 SF (behind breeching and at tunnel entrance)				
Mudded insulation on pipe fittings	Boiler room (Behind boiler #1)	Damage 1 SF behind boiler				
Mudded insulation on pipe fittings	Pipe tunnels	1 Damaged fitting, remainder in good condition				
Mudded insulation on pipe fittings	Nurses office under sink	Good				
Mudded insulation on pipe fittings	Kitchen (Uni-vents)	Damage 1 Fitting, remainder in good condition				

Conditions: G = Good
 D = Damaged
 SD = Significant damage

PERIODIC SURVEILLANCE FORM – List of ACBM Asbestos-Containing Materials

School: Otis Memorial Elementary School
 Address: 5500 Curtis Boulevard, Bourne, MA

Date(s) of Original Inspection: 1988
 Date(s) of Subsequent Re-Inspections: 1994, 1998, 2001, 2004, 2007

Periodic Inspection Date: _____ Conducted By: _____

Asbestos Containing Material	Location	Previous Condition	Present Condition	Change in Condition (Yes/No)	Quantity Damaged	Comments
Mudded insulation on pipe fittings	Supply room near classrooms 5 and 11	Good				
Mudded insulation on pipe fittings	Near crawlspace in boiler room	Damage (1 fitting)				
Mudded insulation on pipe fittings	Supply room across from main office	Good				
9" X 9" Floor tiles	At Double Doors in Hallway Outside Clinic	5 SF Damage near Nurse's Office				
9" X 9" Floor tiles	Classroom 1	Good				
9" X 9" Floor tiles	Classroom 2	Good				
9" X 9" Floor tiles	Classroom 3	2 SF of cracked tiles, remainder in good condition				
9" X 9" Floor tiles	Classroom 4	2 SF of cracked tiles, remainder in good condition				
9" X 9" Floor tiles	Classroom 5	Good				
9" X 9" Floor tiles	Classroom 6	2 SF of cracked tiles, remainder in good condition				

Conditions: G = Good
 D = Damaged
 SD = Significant damage

PERIODIC SURVEILLANCE FORM – List of ACBM Asbestos-Containing Materials

School: Otis Memorial Elementary School
 Address: 5500 Curtis Boulevard, Bourne, MA

Date(s) of Original Inspection: 1988
 Date(s) of Subsequent Re-Inspections: 1994, 1998, 2001, 2004, 2007

Periodic Inspection Date: _____ Conducted By: _____

Asbestos Containing Material	Location	Previous Condition	Present Condition	Change in Condition (Yes/No)	Quantity Damaged	Comments
9" X 9" Floor tiles	Classroom 7	5 SF of cracked tiles, remainder in good condition				
9" X 9" Floor tiles	Classroom 8	4 SF Damage				
9" X 9" Floor tiles	Classroom 9	Good				
9" X 9" Floor tiles	Classroom 10	Good				
9" X 9" Floor tiles	Classroom 11	Good				
9" X 9" Floor tiles	Classroom 12	3 SF cracked tiles, remainder in good condition				
9" X 9" Floor tiles	Classroom 13	11 SF cracked tile, remainder in good condition				
9" X 9" Floor tiles	Classroom 14 (Library)	Good				
9" X 9" Floor tiles	Classroom 15	10 SF Damaged tiles, remainder in good condition				
9" X 9" Floor tiles	Classroom 16	6 SF Damaged tiles, remainder in good condition				

Conditions: G = Good
 D = Damaged
 SD = Significant damage

PERIODIC SURVEILLANCE FORM – List of ACBM Asbestos-Containing Materials

School: Otis Memorial Elementary School
 Address: 5500 Curtis Boulevard, Bourne, MA

Date(s) of Original Inspection: 1988
 Date(s) of Subsequent Re-Inspections: 1994, 1998, 2001, 2004, 2007

Periodic Inspection Date: _____ Conducted By: _____

Asbestos Containing Material	Location	Previous Condition	Present Condition	Change in Condition (Yes/No)	Quantity Damaged	Comments
9" X 9" Floor tiles	Classroom 17	16 SF Damaged tiles, remainder in good condition				
9" X 9" Floor tiles	Classroom 18	Good				
9" X 9" Floor tiles	Classroom 19	3 SF cracked tiles, remainder in good condition				
9" X 9" Floor tiles	Principal's Office	Good				
9" X 9" Floor tiles	Nurse's Office	Good				
9" X 9" Floor tiles	Main Office (outside Principal's Office)	Good				
9" X 9" Floor tiles	Hallway from Classroom 15 to Doors outside of restrooms	10 SF damaged tiles, remainder in good condition				
9" X 9" Floor tiles	Hall outside of classrooms 10-11 from fire doors to exit	10 SF damaged tiles, remainder in good condition				
9" X 9" Floor tiles	Teacher's room and supply room	Good				
9" X 9" Floor tiles	Foyer and hall outside of Teacher's room	Good				

Conditions: G = Good
 D = Damaged
 SD = Significant damage

PERIODIC SURVEILLANCE FORM – List of ACBM Asbestos-Containing Materials

School: Otis Memorial Elementary School
 Address: 5500 Curtis Boulevard, Bourne, MA

Date(s) of Original Inspection: 1988
 Date(s) of Subsequent Re-Inspections: 1994, 1998, 2001, 2004, 2007

Periodic Inspection Date: _____ Conducted By: _____

Asbestos Containing Material	Location	Previous Condition	Present Condition	Change in Condition (Yes/No)	Quantity Damaged	Comments
9" X 9" Floor tiles	Cafeteria/Gym	15 SF damaged tiles remainder in good condition				
Vibration Isolator Cloth	Boiler #2 breeching	Good				
Vibration Isolator Cloth	Emergency boiler room Generator intake	Good				
Wall Plaster	Main Girl's restroom	Good				
Wall Plaster	Throughout the building	Good				
Fire Doors Metal Encased	Entrance to boiler room	Good				
Fire Doors Metal Encased	Entrance to emergency generator room	Good				

Surveillance conducted by: _____

 (signature)

I, the LEA's Designated Person, have read and understood the findings noted above: _____

Date: _____

Conditions: G = Good
 D = Damaged
 SD = Significant damage

APPENDIX D

PREVENTIVE MEASURES

PREVENTIVE MEASURES

FOR VARIOUS ASBESTOS-CONTAINING MATERIALS

A. SURFACING MATERIALS

“Surfacing Materials” means materials in a school building that are sprayed-on, troweled-on, or otherwise applied to surfaces. These include sprayed-on fireproofing materials on structural members, ceiling and wall plasters, or other materials applied to surfaces for acoustical, fireproofing, or other purposes.

Surfacing Materials are generally considered friable and can release asbestos fibers if damaged by impact, air erosion, vibration, and/or water intrusion. The following procedures, when properly implemented, will reduce the potential for fiber release:

Sprayed-on fire-proofing

Identify the materials and post warning signs on the laid-in or glued-in ceiling tile. If the decking is not covered, place the sign on the wall.

Maintain the materials in intact state and undamaged condition. During winter, pigeons, squirrels and other rodents tend to roost in boiler/machine rooms and dislodge sprayed-on fireproofing on the decking. Prevent such possibilities.

Prevent water leakage. If the material is significantly damaged, removal is the best option. For minor damage, enclosure is a temporary solution. Encapsulation of damaged sprayed-on fireproofing material is not recommended.

Train the custodial people who are responsible for care and maintenance of surfacing materials. Please note that the repair/removal can only be performed by a licensed abatement contractor.

Ceiling plaster (note that wall plaster is non-ACM, ceiling plaster had been confirmed to contain asbestos).

Identify the materials and post warning signs.

Maintain the materials in intact state and undamaged condition. Avoid storing/stacking on/near the materials to reduce contact damage.

Prevent water leakage. If the material is significantly damaged, removal is the best option. For minor damage, repair or enclosure is a temporary solution.

Train the custodial people who are responsible for care and maintenance of surfacing materials.

B. THERMAL SYSTEM INSULATION (TSI)

“Thermal System Insulation (TSI)” means insulating materials applied to pipes, pipe fittings, boilers, breechings, tanks, ducts, or other components to prevent process heat loss or gain, water condensation, or for other purposes (e.g., fire door insulation core).

TSI is generally considered friable ACM. This means it can be easily damaged, increasing the potential for fiber release. The following procedures, when properly implemented, will reduce the potential for fiber release:

Boiler and breeching insulation

Identify the locations and label the boiler. Warning signs should be posted outside the boiler room. Reduce the likelihood of fiber release by ensuring that the insulation is not damaged. Avoid storing/stacking on/near the boiler to reduce contact damage.

Maintain the insulation in intact state and undamaged condition. Repair damaged areas as soon as possible to prevent further deterioration. If repair is not feasible due to extensive damage/deterioration, remove the material.

Train the custodial people who are responsible for care and maintenance of TSI. Please note that the repair/removal can only be performed by a licensed abatement contractor.

Pipe, pipe-fittings, tank and duct insulation

Identify the locations and label the materials. Warning signs should be posted outside of rooms that have TSI materials.

Reduce the likelihood of fiber release by ensuring that the materials are not damaged. Avoid storing/stacking near the materials to reduce contact damage.

Maintain all TSI materials in intact state and undamaged condition. Inspect the protective jackets for damage. Repair damaged areas as soon as possible to prevent further deterioration. If repair is not feasible due to extensive damage/deterioration, remove the material.

Train the custodial people who are responsible for care and maintenance of TSI. Please note that the repair/removal can only be performed by a licensed abatement contractor.

Fire door

Identify the locations and label the materials.

Since there may be a number of different types of fire doors throughout a building, fire door cores must be considered to have asbestos-containing interior insulation unless sample result prove otherwise. Prior to performing any maintenance on any door (lock change, drilling, etc.), the door should be surveyed by qualified personnel to rule out the existence of an asbestos core.

Train the custodial people who are responsible for care and maintenance of TSI. Please note that the repair/removal can only be performed by a licensed abatement contractor.

C. MISCELLANEOUS MATERIALS

“Miscellaneous Materials” are all other asbestos-containing materials in a school building that do not fall under the categories of Surfacing Materials or TSI. These include floor tiles, floor tile and carpet mastic, gypsum wallboard and joint compound, ceiling tiles, glue daubs, transite panels, laboratory counter tops, wallbase and associated glue, window caulking and glazing compounds etc. The following maintenance procedures are recommended for these materials:

Vinyl Asbestos Floor Tiles (VAT)

Vinyl Asbestos Floor Tiles (VAT) are considered non-friable, however routine maintenance procedures such as spray-buffing, burnishing, wet scrubbing, and stripping can generate asbestos fibers. Following procedures, when properly implemented, will reduce the potential of fiber release:



Do not sand, grind or abrade the tiles. Stripping of VAT should be done as infrequently as possible. When stripping becomes necessary, follow the appropriate work practices. Never perform dry stripping.

During spray-buffing or burnishing the floor, operate the machine at the lowest workable speed and use the least abrasive pad. Use a wet mop for routine cleaning whenever possible.

Routinely check whether chair and desk glides are in good condition and replace when necessary.

Worn glides can gouge the floor and cause fiber release.

Place carpets/floor mats in all entrances to reduce abrasion of floor tiles by sand and pebbles.

During winter, have parking lots and walkways swept to the extent possible to avoid the tracking of salt and ice-melting compounds into the school by the students.

Train the custodial people who are responsible for care and maintenance of VAT. Please note that the repair/removal can only be performed by a licensed abatement contractor.

Transite Panels, Laboratory Counter Tops, Window Caulking and Glazing Compounds

Reduce the likelihood of fiber release.

Maintain transite panels, lab tabletops and window caulking and glazing compounds in undamaged condition



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APPENDIX E

AHERA CERTIFICATES