Asbestos Abatement Project Monitoring Closeout Report

Bourne High School, James F. Peebles Elementary School and Otis Memorial Elementary School

July 14 – August 25, 2015

Bourne Public Schools

Bourne, Massachusetts

October 2015



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



October 2, 2015

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

RE: Asbestos Abatement Project Monitoring Bourne High School, James F. Peebles Elementary School and Otis Memorial Elementary School Bourne, Massachusetts Fuss & O'Neill EnviroScience Project No. 20121141.B4E

Dear Mr. Donoghue:

Enclosed please find the asbestos abatement project monitoring closeout report for the project completed at the Bourne High School, the James F. Peebles Elementary School and the Otis Memorial Elementary School located in Bourne, Massachusetts. Abatement occurred from July 14, 2015 to August 25, 2014. The building owner should obtain the Waste Shipment Records (WSR) from the Asbestos Abatement Contractor in post-abatement closeout documents when available, but no later than 45 calendar days from when the waste was removed from the project site.

Additionally, this report is important documentation that must be placed with the Asbestos Hazard Emergency Response Act (AHERA) Management Plan that was generated for the Bourne High School, James F. Peebles Elementary, and Otis Memorial Elementary School. A copy should be placed at each school, as well as the central location where the Asbestos Management Plans are stored.

If you should have any questions regarding the enclosed report, please do not hesitate to contact me at (617)282-4675 extension 4703. Thank you for this opportunity to have served your environmental needs.

Sincerely,

Dustin A. Diedricksen Project Manager

DD/amf

Enclosure



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1 Introduction

Fuss & O'Neill EnviroScience, LLC (EnviroScience) was retained to provide asbestos abatement project monitoring services at the Bourne High School, the James F. Peebles Elementary School, and the Otis Memorial Elementary School (the "Site"). The scope of services were performed in accordance with our written agreement dated May 6, 2015 and is subject to the general terms and conditions of the agreement and the limitations included in *Appendix A*. Asbestos abatement was necessary due to ongoing renovations and improvements at each Site building. Asbestos abatement work occurred from July 14 through July 22, 2015 at Bourne High School, through August 24, 2015 at Otis Memorial Elementary School, and through August 25, 2015 at James F. Peebles Elementary School. Please refer to *Appendix B* for the EnviroScience staff Commonwealth of Massachusetts Department of Labor Standards (MADLS) asbestos certifications and United States Environmental Protection (EPA) accreditations.

Mr. Dustin Diedricksen of EnviroScience prepared two Asbestos Abatement Work Plans (AWP) for the work. Mr. Diedricksen is a MADLS-certified Project Designer. Please refer to *Appendix B* for a copy of the project designer state certification and EPA accreditation and *Appendix C* for copies of the Asbestos Abatement Work Plans. The Asbestos Abatement Contractor who performed the work at all three schools was Allstate Asbestos Abatement of Lowell, Massachusetts (Allstate).

2 Scope of Work

Type of Material	Estimated Quantity	Location
	Bourne High School	
9" x 9" Floor Tile	8,390 SF	1 st & 2 nd Floors C-Wing & 1 st Floor Boy's & Girl's Bathrooms
Ot	is Memorial Elementary School	
9" x 9" Floor Tile	70 SF	Rooms 6, 7, 10, 12, 15, & Main Office
	Peebles Elementary School	
Window Glazing Compound	6 Window Panes	Cafeteria Kitchen, Cafeteria Kitchen Bathroom, & Room 5

The abatement scope of work included the removal and disposal of the following ACM:

SF = Square Feet

1



3 Discussion

The asbestos abatement projects were conducted at Bourne High School, Otis Memorial Elementary School, and Peebles Elementary School on the following dates:

- Bourne High School began on July 14, 2015 and was completed on July 22, 2015;
- Otis Memorial Elementary School was performed on August 24, 2015; and
- Peebles Elementary was performed on August 25, 2015.

EnviroScience was on-site throughout the abatement projects to document work practices, to conduct visual inspections, and to collect and analyze air samples. Negative pressure enclosures (NPEs) were established in accordance with procedures detailed in the project design, and included erection of protective barriers to isolate the work areas from the rest of the building. Negative pressure was established inside the work areas relative to the outside spaces.

Prior to the beginning of abatement activities, EnviroScience conducted a pre-commencement inspection ted in each work area. This was to document that work area preparations were performed in accordance with the AWP, as well as federal, state, and local regulations.

Upon commencement of abatement activities, area air samples were collected for analysis utilizing Phase Contrast Microscopy (PCM) and National Institute of Occupational Safety and Health Method 7400. These air samples were collected at various locations, such as the entrance to the worker decontamination facility, outside NPE barriers, and at the negative air pressure filtration unit exhaust. These air samples were collected and analyzed to monitor the air quality outside the NPE during asbestos abatement. This was performed to assess the air quality at the Site during the abatement project. Please refer to *Appendix D* for copies of the PCM Area Air Monitoring Worksheets.

EnviroScience analyzed PCM air samples on-site by an Asbestos Project Monitor who is currently listed on the Asbestos Analysts Registry (AAR) that is maintained by the American Industrial Hygiene Association (AIHA).

During removal activities, progress inspections were conducted inside the work areas to assess work progress and work practices and procedures utilized by Allstate. Work was completed by MADLScertified Asbestos Workers using wet-removal methods. Allstate recorded a daily log of the Asbestos Workers and Supervisors who conducted asbestos abatement on the project.

Following the completion of abatement, EnviroScience performed a final visual inspection in each work area to comply with federal and state asbestos regulations. Final visual inspections were conducted to verify that the work areas met the "no visible suspect debris" criteria prior to conducting final clearance air sampling. Refer to *Appendix E* for copies of the Final Visual Inspection Forms



Following the completion of final cleaning and work area encapsulation, aggressive final clearance air sampling was performed inside the work areas to comply with state and federal regulatory requirements. In compliance with AHERA and MADLS regulations, air samples were analyzed by PCM or Transmission Electron Microscopy (TEM), based on quantity of asbestos-containing materials (ACM) that were abated. Refer to *Appendix D* for copies of the PCM Area Air Monitoring Worksheets and *Appendix F* for copies of the TEM Air Samples Laboratory Report.

4 Conclusion

All work areas successfully passed pre-sealant visual inspections prior to work area encapsulation by the Abatement Contractor. Following encapsulation, aggressive final clearance air sampling was conducted in accordance with the MADLS and MassDEP requirements. All work areas successfully passed final clearance air sampling. Air clearance samples collected utilizing PCM indicated airborne fiber concentrations were below the AHERA and MADLS re-occupancy standard of 0.010 fibers per cubic centimeter of air (f/cc). Air clearance samples collected utilizing TEM were reported to be below the AHERA and MADLS re-occupancy standard of 70 structures per square millimeter (s/mm²).

PCM air samples were analyzed on-site by a trained EnviroScience Asbestos Project Monitor listed on the AAR maintained by the AIHA.

TEM analysis was performed by EMSL Analytical, Inc. of Woburn, Massachusetts, a Massachusetts-certified asbestos laboratory.

Report prepared by Environmental Technician, Robert Mallett.

Reviewed by:

Dustin A. Diedricksen Project Manager

Finithy Mong

Timothy M. Downey Senior Project Manager



Appendix A

Limitations





APPENDIX A

Bourne Public Schools Bourne, Massachusetts

- This environmental report has been prepared for the exclusive use of the Bourne Public Schools and is subject to, and is issued in connection with the general terms and conditions of the original Agreement and all of its provisions. Any use or reliance upon information provided in this report, without the specific written authorization of the Client and Fuss & O'Neill EnviroScience, LLC, (EnviroScience) shall be at the User's individual risk.
- 2. EnviroScience has obtained and relied upon information from multiple sources to form certain conclusions regarding likely environmental issues at and in the vicinity of the subject property in conducting this inspection. Except as otherwise noted, no attempt has been made to verify the accuracy or completeness of such information or verify compliance by any party with federal, state or local laws or regulations.
- 3. EnviroScience has obtained and relied upon laboratory analytical results in conducting the scope of work. This information was used to compare sample results to existing federal and state regulations for re-occupancy levels following asbestos abatement. EnviroScience has not performed an independent review of the reliability of this laboratory data.
- 4. The observations and conclusions presented in this report are limited by the scope of services outlined in our original Agreement May 6, 2015, which reflects schedule and budgetary constraints imposed by the Client. Furthermore, the scope of services has been conducted in accordance with generally accepted environmental practices. No other warranty, expressed or implied, is made.
- 5. The conclusions presented in this report are based solely upon information gathered by EnviroScience to date. Should further environmental or other relevant information be discovered at a later date, the Client should immediately bring the information to EnviroScience's attention. Based upon an evaluation and assessment of relevant information, EnviroScience may modify the report and its conclusions.



Appendix B

Fuss & O'Neill EnviroScience State Asbestos Certifications and EPA Accreditations







This is to certify that





has completed the requisite training, and has passed an examination for Asbestos Designer Refresher reaccreditation

pursuant to Title II of the Toxic Substance Control Act, 15 U.S.C. 2646

INSTITUTE FOR ENVIRONMENTAL EDUCATION

16 Upton Drive, Wilmington, MA 01887 Telephone 978,658.5272

www.ieetrains.com

Training Director

Wentigh

Examination Date July 17, 2015 July 17, 2016

Expiration Date

Institute for Environmental Education, Inc. 16 Upton Drive Wilmington, MA 01887

Course Location

15-0299-128-208040 Certificate Number

Course Dates

July 17, 2015





CERTIFICATE OF ACHIEVEMENT

This certifies that

Michael Coffey

has successfully completed the

8-Hour Asbestos Project Monitor Refresher Training Course

conducted by

West Springfield, MA 01089 73 William Franks Drive (413) 781-0070 Cardno ATC

Oversit Worsch

Regional Training Manager Gregory Morsch

PMR-1987

Expiration Date August 11, 2016 August 11, 2015 Date of Course

Principal Instructor: Tom Dion

Certificate Number

August 11, 2015 Examination Date



Appendix C

Asbestos Abatement Work Plans





May 18, 2015

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

Re: Asbestos Abatement Work Plan Bourne High School & Otis Memorial Elementary School Bourne, Massachusetts Fuss & O'Neill EnviroScience, LLC. No. 20121141.B4E

Dear Mr. Donoghue:

Attached please find the Asbestos Abatement Work Plan for conducting summer asbestos abatement at the Bourne High School and the Otis Memorial Elementary School located in Bourne, Massachusetts.

The Asbestos Abatement Contractor is required to complete and submit an asbestos notification form. The form must be submitted to the Commonwealth of Massachusetts Department of Environmental Protection (MassDEP) and to the Commonwealth of Massachusetts Department of Labor Standards (MADLS).

Should you have any questions regarding this procedure, please do not hesitate to call me at (617) 282-4675, extension 4703.

Sincerely,

50 Redfield Street Suite 100 Boston, MA 02122 t 617.282.4675 f 617.282.8253

Dustin A. Diedricksen Project Manager

DAD/amf

www.fando.com

Connecticut Massachusetts Rhode Island South Carolina Attachments

1



<u>WORK PLAN</u> <u>FOR REMOVAL AND DISPOSAL</u> <u>OF ASBESTOS-CONTAINING MATERIALS</u> BOURNE HIGH SCHOOL AND OTIS MEMORIAL ELEMENTARY SCHOOL <u>BOURNE, MASSACHUSETTS</u>

BACKGROUND

- A. Asbestos abatement activities shall include repair and/or removal of floor tile and associated mastics/adhesives at the Bourne High School located at 75 Waterhouse Road in Bourne Massacusetts and the Otis Elementary School located at 5500 Curtis Boulevard, Bourne, Massachusetts.
- B. Abatement activities are anticipated to occur in July 2015. A Massachusetts-licensed Asbestos Abatement Contractor (the "Contractor") will conduct the asbestos abatement work.
- C. Abatement activities will occur while the school is not operational (i.e., during summer vacation).

DESCRIPTION OF WORK

- A. The scope of abatement work shall include removal of asbestos-containing vinyl floor tile at the aforementioned schools. Note that the associated mastics/adhesives are non-asbestos; however, selective removal of mastics/adhesvies as asbestos-containing waste material (ACWM) may be required to prepare the floor surface for floor tile replacement.
- B. Asbestos abatement activities are being performed in accordance with the United States Environmental Protection Agency (EPA), National Emission Standards for Hazardous Air Pollutants (NESHAP), Commonwealth of Massachusetts Department of Labor Standards (MADLS), and EPA Asbestos Hazard Emergency Response Act (AHERA) requirements prior to renovation or demolition work that would otherwise disturb or impact asbestoscontaining material(s) (ACM).
- C. Work shall be performed by a Commonwealth of Massachusetts Department of Labor Standards (MADLS)-licensed Contractor with certified Asbestos Workers and Supervisor(s). Training shall be in accordance with MADLS Regulation 453 CMR 6.00.
- D. The Town of Bourne (the "Owner") shall retain the services of Fuss & O'Neill EnviroScience, LLC (EnviroScience), or other consulting firm at their discretion, who shall be responsible for providing project monitoring, final visual inspection, and final clearance air sampling services. Final clearance air samples shall be conducted using phase contrast microscopy (PCM) or transmission electron microscopy (TEM) as required.



- E. Interior asbestos abatement shall be performed (as appropriate) within negative pressure enclosures (NPEs) as established herein.
- F. The following table summarizes the locations of work at each school and includes estimated ACM quantities to be repaired/removed.

Asbestos- Containing Material	Location	Estimated Quantity	Recommended Repair/Removal Method
		Bourne High Sch	ool
9" x 9" Vinyl Floor Tile	Classroom 11C	924 SF	
9" x 9" Vinyl Floor Tile	Classroom 13C	864 SF	The Contractor shall remove and dispose
9" x 9" Vinyl Floor Tile	Classroom 15C	783 SF	ACM within a NPE.
9" x 9" Vinyl Floor Tile	1 st Floor C- Wing Storage Room	168 SF	
9" x 9" Vinyl Floor Tile	Classroom 20C	756 SF	
9" x 9" Vinyl Floor Tile	Classroom 21C	783 SF	
9" x 9" Vinyl Floor Tile	Classroom 22C	1,107 SF	
9" x 9" Vinyl Floor Tile	Classroom 23C	864 SF	The Contractor shall remove and dispose ACM within a NPE.
9" x 9" Vinyl Floor Tile	Classroom 24C	1,188 SF	
9" x 9" Vinyl Floor Tile	Classroom 25C	783 SF	
9" x 9" Vinyl Floor Tile	2 nd Floor C- Wing Storage Room	75 SF	
	Otis M	Aemorial Elementa	ary School
9" x 9" Vinyl Floor Tile	Classroom 6	3 SF	The Contractor shall remove and dispose damaged ACM within a NPE.
9" x 9" Vinyl Floor Tile	Classroom 7	8 SF	The Contractor shall remove and dispose damaged ACM within a NPE.
9" x 9" Vinyl Floor Tile	Classroom 10	10 SF	The Contractor shall remove and dispose damaged ACM within a NPE.
9" x 9" Vinyl Floor Tile	Classroom 12	5 SF	The Contractor shall remove and dispose damaged ACM within a NPE.

Scope of Work



Asbestos- Containing Material	Location	Estimated Quantity	Recommended Repair/Removal Method
9" x 9" Vinyl Floor Tile	Classroom 15	25 SF	The Contractor shall remove and dispose damaged ACM within a NPE.
9" x 9" Vinyl Floor Tile	Foyer and Hallway Outside of Teacher's Room	20 SF	The Contractor shall remove and dispose damaged ACM within a NPE.

SF = Square Feet

WORK PROCEDURES

- A. The Contractor shall file a notification to the Commonwealth of Massachusetts Department of Environmental Protection (MassDEP) Bureau of Waste Prevention (BWP) on standard form BWP AQ 06 "Notification Prior to Construction or Demolition" and submit form ANF-001 to MassDEP and MADLS for asbestos abatement work notification.
- B. Workers work will utilize disposable clothing and varied personal protective equipment (PPE) as required to the work task including respiratory protection as required by selection chart established in Occupational Safety and Health Administration (OSHA) Title 29 CFR, Part 1926.1101 and MADLS Regulation 453 CMR, Part 6.00.
- C. The Contractor shall perform personal exposure monitoring of workers as required by OSHA Title 29 CFR, Part 1926.1101. Personal air exposure monitoring, at a minimum, shall include monitoring for twenty-five percent (25%) of the on-site work personnel, or a minimum of two (2) workers per work shift.
- D. Ensure no electrical equipment is energized during decontamination work and electrical power shall be obtained from external power source from the Work Areas or with proper Ground Fault Circuit Interrupter (GFCI) protection. The Contractor shall be responsible for the electrical work; this work must be performed by a Massachusetts-licensed electrician. Observe all OSHA lock out tag out procedures.

WORK AREA PREPARATIONS

- A. Deactivate and/or isolate heating, ventilating, and air conditioning (HVAC) systems or zones to prevent contamination and fiber dispersal to other areas of the school. During the work, vents within the Work Area shall be "sealed" with duct tape and 2 layers of six (6)-mil thickness polyethylene (poly) sheeting.
- B. The Contractor shall be responsible for removing moveable objects remaining within the Work Area. The Contractor shall pre-clean moveable objects within the proposed Work Areas using high-efficiency particulate air (HEPA)-filtered vacuum equipment and/or wet-cleaning methods as appropriate, and remove such objects from Work Area to a temporary storage location.



- C. After HEPA-vacuum cleaning, cover fixed walls with 2 layers of four (4)-mil minimum thickness poly sheeting. Where fixed walls are not used, two layers of 6-mil poly sheeting shall be applied to a rigid framework of wood, metal, or PVC. Where floor tile/mastic is not being abated, cover the floor with 2 layers of 6-mil poly sheeting. Where ceiling materials are not being abated, cover ceilings with 4-mil poly sheeting in accordance with revised MassDEP regulations (310 CMR, Part 7.15(7)(c)(6)). All overlaps shall be sealed with tape and spray adhesive.
- D. Pursuant to MassDEP Regulation 310 CMR, Part 7.15(7)(c)(4), large openings such as open doorways, elevator doors, and passageways shall be first sealed with solid construction materials, such as plywood over studding, which shall constitute the outermost boundary of the asbestos work area. All cracks, seams and openings in such solid construction materials shall be caulked or otherwise sealed, so as to prevent the movement of asbestos fibers out of the work area.
- E. Asbestos-cement laboratory fume hood ductwork is present with cabinetry. Care should be excercised if cabinetry will be disturbed. Ductwork shall be covered with 2 layers of 6-mil poly sheeting if exposed.
- F. Create pressure differential to obtain a minimum of four air changes per hour within the Work Areas by use of acceptable HEPA-filtered Work Area ventilation units (HWAVUs) rated for at least 1,000 cubic feet per minute (CFM). At least one 1,000 CFM HWAVU shall be used in each NPE.
- G. Pre-clean fixed objects within the Work Areas, using HEPA-filtered vacuum equipment and/or wetcleaning methods as appropriate, and enclose with 6-mil poly sheeting sealed with duct tape.
- H. Clean the proposed Work Areas using HEPA-filtered vacuum equipment or wet cleaning methods as appropriate. Do not use methods that raise dust, such as dry sweeping or vacuuming with equipment that is not equipped with HEPA filters.
- I. Post asbestos warning signs in accordance with OSHA Title 29 CFR, Part 1926.1101 at all approaches to the Work Area. Signs shall be conspicuously posted to permit a person to read signs and take precautionary measures to avoid exposure to airborne asbestos fiber concentrations.
- J. Occupied areas and/or building space not within the Work Areas shall be separated from asbestos abatement Work Areas by means of airtight barriers.
- K. The Contractor and the Asbestos Project Monitor shall visually inspect barriers several times daily to assure effective seal; defects shall be repaired immediately.

DECONTAMINATION SYSTEM

A. The Contractor shall establish a three-chambered decontamination facility (decon) contiguous to the negative pressure enclosure. The decon shall consist of an equipment room, a shower room, and a clean room, in series. The only access between contaminated and uncontaminated areas shall be through the decon. If it is not feasible to construct the decon contiguous to the NPE, the Contractor shall establish a remote decon in close proximity. A single change-out unit may be utilized (with a remote decon) for



each mini-enclosure containment that will be established at the Otis Memorial Elementary School to abate lifting/damaged asbestos-containing floor tile.

- B. Access between the decon chambers shall be through double-flap curtain openings.
- C. Occupied areas and/or building space not within the abatement Work Areas shall be separated from asbestos abatement Work Areas by means of airtight barriers.
- D. Construct the decontamination system with wood or metal framing, 3/8-inch sheathing and cover both sides with 2 layers of 6-mil poly sheeting, sealed with spray glue and taped at the joints. Caulk joints watertight at floor, walls, and ceiling.
- E. The Contractor shall visually inspect work area barriers several times daily to assure effective seal. The Contractor shall immediately repair defects.

ASBESTOS REMOVAL PROCEDURE - INTERIOR

- A. The Contractor shall have a competent and qualified designated person on the project at all times during the project to ensure establishing a proper enclosure system, and proper work practices are followed, throughout the project.
- B. Clean all movable objects within the proposed Work Areas using HEPA-filtered vacuum equipment and/or wet cleaning methods as appropriate, and remove such objects from Work Areas to a temporary location (if necessary).
- C. Clean all fixed objects within the Work Areas; using HEPA-filtered vacuum equipment and/or wetcleaning methods as appropriate, and enclose with a minimum of 6-mil poly sheeting sealed with tape. (Examples include electronic equipment).
- D. Spray asbestos materials with amended water using airless spray equipment or apply approved removal encapsulant to reduce the release of fibers during abatement activities. Fill disposal containers as removal proceeds. Seal filled containers and clean containers before removal to wash area. Wet clean each container thoroughly, double bag, and apply proper labels before moving to a holding area. Ensure that workers do not enter from uncontaminated areas into the washroom or the Work Area.
- E. After completion of removal work, all surfaces from which asbestos has been removed shall be cleaned using HEPA-filtered vacuum equipment and wet-wiped, or cleaned by an equivalent method, to remove visible material (wire brushes are not permitted). During this work, the surfaces being cleaned shall be kept wet.
- F. If at any time during asbestos abatement, should the Owner's on-site Asbestos Project Monitor suspect areas outside the Work Area are contaminated, they shall stop all abatement work until the Contractor takes steps to decontaminate these areas and eliminate causes of such contamination. Unprotected individuals shall be prohibited from entering contaminated areas until air sampling and visual inspections certify decontamination.



- G. Remove and containerize all visible accumulations of ACM and/or asbestos-containing waste material(s) (ACWM).
- H. Sealed disposal containers, and all equipment used in the Work Area, shall be included in the cleanup and shall be removed from Work Areas. Asbestos waste shall be placed in 6-mil poly disposal bags, outside of bags shall be cleaned and they shall be placed in a second disposal bag (double-bagged) before removal from the Work Area. Clean all surfaces with HEPA-filtered vacuum equipment before wet cleaning all surfaces within Work Area.
- I. The Owner's on-site Project Monitor shall conduct a post-abatement visual inspection with the critical barriers and door and window coverings in place. If visible accumulations or any suspect asbestos-containing dust or debris are identified in the Work Area, the Contractor shall repeat the cleaning until the area is in compliance. This shall be conducted solely at the Contractor's expense. The visual inspection will detect incomplete work, damage caused by the abatement activity, and inadequate cleanup of the Work Area. In addition, the on-site Project Monitor shall conduct a post-abatement visual inspection after the Contractor dismantles the work area barriers to confirm that no visible, suspect debris became trapped behind critical barriers (e.g., behind radiators, etc.) during abatement.

ASBESTOS REMOVAL PROCEDURE - FLOORING AND MASTICS

- A. Prior to beginning the removal of any resilient floor covering, remove all movable objects from the Work Area. The Contractor shall remove all layers of floor tile and associated underlayments.
- B. Before using wet methods to remove resilient flooring, seal openings and penetrations in the floor to prevent water leakage.
- C. Debris and Waste
 - 1. Whole floor tiles shall be removed and stacked in boxes or wrapped in felt and then placed in labeled disposal bags. At the Contractor's option, floor tiles may be placed directly into durable leak-tight containers and/or fiber drums.
 - 2. Shovel broken floor tiles and debris into nylon-reinforced bags; these bags shall be placed in a disposal bag or placed directly into leak-tight drums.
 - 3. Place bagged waste in a second disposal bag during decontamination and dispose as asbestos waste.
- D. After completion of floor tile removal, the Contractor shall remove non-ACM mastics/adhesives as necessary for proper floor tile replacement. Mastics/adhesives shall be disposed as ACWM.
- E. After completion of all resilient flooring removal work, the Contractor shall conduct final cleaning.

DISPOSAL OF WASTE

A. The disposal of ACM and/or ACWM, supplies, rags, disposable clothing, respirator cartridges, etc., shall be completed in accordance with MassDEP and EPA regulations.



- B. Disposal approvals shall be obtained prior to start of asbestos removal activities.
- C. A copy of approved disposal authorization shall be provided to the Owner and Owner's Authorized Representative prior to ACM and/or ACWM leaving the Site.
- D. Copies of all Waste Shipment Records (WSRs) shall be provided to the Owner no later than 35 calendar days from when the waste was removed from the Site. WSRs shall be signed by the landfill operator upon receipt, and the quantity of asbestos debris leaving the work site and arriving at the landfill shall be acknowledged.
- E. All wash water and shower water shall be collected and filtered through a five-micron filter before discharge.
- F. All asbestos debris shall be transported in covered/sealed vans, boxes, or dumpsters that are physically isolated from the driver by an airtight barrier. All vehicles must be properly licensed to meet Commonwealth of Massachusetts DOT requirements.

END OF PLAN

Work Plan Prepared by:

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

Project Designer: Dustin A. Diedricksen Asbestos Designer Certification No. AD000037



July 27, 2015 Revised September 4, 2015

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

Re: Asbestos Abatement Work Plan James F. Peebles Elementary School Bourne, Massachusetts Fuss & O'Neill EnviroScience, LLC No. 20121141.B4E

Dear Mr. Donoghue:

Attached please find the Asbestos Abatement Work Plan for conducting summer asbestos abatement at the James F. Peebles Elementary School located at 70 Trowbridge Road in Bourne, Massachusetts.

The Asbestos Abatement Contractor is required to complete and submit an asbestos notification form. The form must be submitted to the Commonwealth of Massachusetts Department of Environmental Protection (MassDEP) and to the Commonwealth of Massachusetts Department of Labor Standards (MADLS).

If you should have any questions regarding this procedure or this work plan, please do not hesitate to call me at (617) 282-4675, extension 4703.

Sincerely,

Dustin A. Diedricksen Project Manager

DD/amf

www.fando.com

f 617.282.8253

50 Redfield Street

Suite 100 Boston, MA

02122 t 617.282.4675

Connecticut Massachusetts Rhode Island South Carolina



<u>WORK PLAN</u> <u>FOR REMOVAL AND DISPOSAL</u> <u>OF ASBESTOS-CONTAINING MATERIALS</u> JAMES F. PEEBLES ELEMENTARY SCHOOL <u>BOURNE, MASSACHUSETTS</u>

BACKGROUND

- A. Asbestos abatement activities shall include window glazing removal associated with broken window-pane replacement to occur at the James F. Peebles Elementary School located at 70 Trowbridge Road in Bourne Massachusetts (the "Site").
- B. Abatement activities are anticipated to occur in August 2015. A Massachusetts-licensed Asbestos Abatement Contractor (the "Contractor") will conduct the asbestos abatement work.
- C. Abatement activities will occur while the school is not operational (i.e., during summer vacation).

DESCRIPTION OF WORK

- A. The scope of abatement work shall include removal of asbestos-containing window glazing at the Site.
- B. Asbestos abatement activities will be performed in accordance with the United States Environmental Protection Agency (EPA), National Emission Standards for Hazardous Air Pollutants (NESHAP), Commonwealth of Massachusetts Department of Labor Standards (MADLS), and EPA Asbestos Hazard Emergency Response Act (AHERA) requirements prior to renovation or demolition work that would otherwise disturb or impact asbestoscontaining material(s) (ACM).
- C. Work shall be performed by a Commonwealth of Massachusetts Department of Labor Standards (MADLS)-licensed Contractor with certified Asbestos Workers and Supervisor(s). Training shall be in accordance with MADLS Regulation 453 CMR 6.00.
- D. Bourne Public Schools (the "Owner") shall retain the services of Fuss & O'Neill EnviroScience, LLC (EnviroScience) who shall be responsible for providing project monitoring, final visual inspection, and final clearance air sampling services (if applicable). Final clearance air samples shall be conducted using phase contrast microscopy (PCM) or transmission electron microscopy (TEM) as required.
- E. Exterior asbestos abatement shall be performed (as appropriate) as established herein.
- F. The following table summarizes the ACM removal locations and estimated quantities:



Asbestos- Containing Material	Location	Estimated Quantity	Recommended Repair/Removal Method
Window Glazing	Rooms 1, 3, 4, 7, 8, & Kitchen Bathroom (at Broken Panes)	125 LF (10 Windows)	Contractor Shall Remove & Dispose ACM from Exterior to Facilitate Window Repairs. Exterior Protections & Interior Critical Barriers Shall be Established.

Scope of Work

LF = Linear Feet

WORK PROCEDURES

- A. The Contractor shall file an asbestos notification to the Commonwealth of Massachusetts Department of Environmental Protection (MassDEP) Bureau of Waste Prevention (BWP) on standard form BWP AQ 06 "Notification Prior to Construction or Demolition" and submit form BWP-AQ-04 - ANF-001 to MassDEP and MADLS for asbestos abatement work notification.
- B. Workers work will utilize disposable clothing and varied personal protective equipment (PPE) as required to the work task including respiratory protection as required by selection chart established in Occupational Safety and Health Administration (OSHA) Title 29 CFR, Part 1926.1101 and MADLS Regulation 453 CMR, Part 6.00.
- C. The Contractor shall perform personal exposure monitoring of workers as required by OSHA Title 29 CFR, Part 1926.1101. Personal air exposure monitoring, at a minimum, shall include monitoring for twenty-five percent (25%) of the on-site work personnel, or a minimum of two (2) workers per work shift.
- D. Ensure no electrical equipment is energized during decontamination work and electrical power shall be obtained from external power source from the work areas or with proper Ground Fault Circuit Interrupter (GFCI) protection. The Contractor shall be responsible for the electrical work; this work must be performed by a Commonwealth of Massachusetts-licensed electrician. Observe all OSHA lock out - tag out procedures.



WORK AREA PREPARATIONS

- A. Seal off all openings (e.g., windows, doors, ventilation openings, drains, grilles, diffuser grates, etc.) with two layers of polyethylene (poly) sheeting (minimum 6-mil thickness) sealed securely with tape. Doorways and openings that will not be used for passage during work must be sealed with critical barriers as required for separation of work area and occupied areas.
- B. Heating, ventilating, and air conditioning (HVAC) systems shall remain deactivated during removal activities. During the work, vents within the work area shall be sealed with duct tape and two layers of 6-mil poly sheeting.
- C. Post asbestos warning signs in accordance with OSHA Title 29 CFR, Part 1926.1101 at all approaches to the work area. Warning signs shall be conspicuously posted to permit a person to read signs and take precautionary measures to avoid asbestos exposure.
- D. Maintain emergency and fire exits from the work area, or establish alternative exits satisfactory to fire officials.
- E. Pre-clean floors and all horizontal surfaces (e.g., window sills, etc.) within work areas. Windows shall be sealed as critical barriers with two layers of 6-mil poly sheeting after appropriate pre-cleaning (as determined by Asbestos Project Monitor).

DECONTAMINATION SYSTEM

- A. The Contractor shall establish a three-chambered remote decontamination facility (decon). The decon shall consist of an equipment room, a shower room, and a clean room, in-series.
- B. Access between the decon chambers shall be through double-flap curtain openings.
- C. Occupied areas and/or building space outside the abatement work areas shall be separated from asbestos abatement work areas by means of rigid and airtight barriers.
- D. Construct the decontamination system with wood or metal framing, 3/8-inch sheathing and cover both sides with a two layers of 6-mil poly sheeting, completely sealed with spray adhesive or taped at the joints. Caulk joints watertight at floor, walls, and ceiling.
- E. The Contractor shall visually inspect work area barriers several times daily to assure effective seal. The Contractor shall immediately repair defects.

ASBESTOS REMOVAL PROCEDURE

- A. The Contractor shall have a competent and qualified designated person on the project at all times during the project to ensure establishing a proper enclosure system, and proper work practices are followed, throughout the project.
- B. Spray asbestos materials with amended water to reduce the fiber release during abatement activities. Fill disposal bags as removal proceeds; then double-bag, and apply proper labels for disposal.



- C. After completion of removal work, all surfaces from which asbestos has been removed shall be cleaned using HEPA-filtered vacuum equipment and wet-wiped, or cleaned by an equivalent method, to remove visible material (wire brushes are not permitted). During this work, the surfaces being cleaned shall be kept wet.
- D. Should the Owner's on-site Asbestos Project Monitor suspect areas outside the Work Area are contaminated during asbestos abatement, they shall stop all abatement work until the Contractor takes steps to decontaminate these areas, and eliminate causes of such contamination. Unprotected individuals shall be prohibited from entering contaminated areas until air sampling and visual inspections certify decontamination.
- E. Remove and containerize all visible ACM accumulations and/or asbestos-containing waste material(s) (ACWM).
- F. Sealed disposal containers/bags, and all equipment used in the work area, shall be included in the cleanup, and shall be removed from the work areas. Asbestos waste shall be placed in 6-mil poly disposal bags, outside of bags shall be cleaned, and they shall be placed in a second disposal bag (double-bagged) before removal from the work area. Clean all surfaces with HEPA-filtered vacuum equipment before wet-cleaning all surfaces within the work area.
- G. The Owner's on-site Project Monitor shall conduct a post-abatement visual inspection with the critical barriers and window coverings in-place. If visible accumulations or any suspect asbestos-containing dust or debris are identified in the work area, the Contractor shall repeat the cleaning until the area is in compliance. This shall be conducted solely at the Contractor's expense. The visual inspection will detect incomplete work, damage caused by the abatement activity, and inadequate cleanup of each work area. In addition, the on-site Project Monitor shall conduct a post-abatement visual inspection after the Contractor dismantles the work area barriers to confirm that no visible, suspect debris became trapped behind critical barriers during abatement.

DISPOSAL OF WASTE

- A. The disposal of ACM and/or ACWM, supplies, rags, disposable clothing, used PPE, unfiltered water used in removal or decontamination, etc., shall be completed in accordance with MassDEP and EPA regulations.
- B. Disposal approvals shall be obtained prior to start of asbestos removal activities.
- C. A copy of approved disposal authorization shall be provided to the Owner and Owner's Authorized Representative prior to ACM and/or ACWM leaving the Site.
- D. Copies of all Waste Shipment Records (WSRs) shall be provided to the Owner no later than 35 calendar days from when the waste was removed from the Site. WSRs shall be signed by the landfill operator upon receipt, and the quantity of asbestos debris leaving the work site and arriving at the landfill shall be acknowledged.



- E. All wash water and shower water shall be collected and filtered through a five-micron filter before discharge.
- F. All asbestos debris shall be transported in covered/sealed vans, boxes, or dumpsters that are physically isolated from the driver by an airtight barrier. All vehicles must be properly licensed to meet Commonwealth of Massachusetts DOT requirements.

END OF PLAN

Work Plan Prepared by:

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

Project Designer: Dustin A. Diedricksen Asbestos Designer Certification No. AD000037



Appendix D

PCM Area Air Monitoring Worksheets



FU En	JSS & O'NEII wiroScience, L	LC				Area A For As	ir Mot bestos	nitorin Field	ıg Worl Analys	sis	Form 7400 Edition Se Supersede:	0-05 ptember 2014 s previous edition:
50 Redfield Street, Su	<u>ute 100, Boston, MA 02122 (6</u>	17) 282-4675				۰, ^۱						
Project Name:	Bourne High school & Otis M	emorial Elemer	1tary Schoo		Pr	oject Numb	er:	0121141.B	Æ	Sampler Name:	Mike (Coffey
					Pr	oject Manag	ger: Du	stin Diedric	ksen	Sample Date: _	07/14	4/15
Building Name/Numb	er: Bou	rne High Schoo			Ro	tometer Nu	imber:	10141		Analyst Name:	Mike C	offev
Site Address:	Bourn	e, Ma			Ro	tometer Cal	l. Date:	2/2	0/15	Analysis Date:	07/14/15	A A R #: 04/
Work Area:	2nd Floor				Mi	croscope N	umber:	10	0229	Reviewed By:	CT /1 T / 10	12120000 - JTV
Sample ID	Sample	Activity	Sample	Time	Sample	Ŧ	ow Rate (LI	M	Total		Come	
(#-Initials-Date)	Location	Code*	On	Off	Minutes	Pre	Post	Ave	Liters	(Fibers/Fields)	Elhon / mm 2	En /
FB1-MC-0714	Field Blank									<5.5/100	<7	T-IDCIS/ CC
FB2-MC-0714	Field Blank		Submi	it at least 2	blanks or	10% of the r	number of sa	amples		<5.5/100	<7	
01-MC-0714	Room 22 C	-	1003	1 / 1 5		1						
00 MC 0714	MOOIII 22 C	-	CODT	1415	252	J	4.9	4.95	1247	03/100	<7	< 0.0012
0Z-MC-0/14	2 nd Floor Hallway	1	1005	1416	251	5	5	J	1255	05/100	<7	< 0.0020
03-MC-0714	Room 24 C	1	1008	1417	249	5	5.2	5.1	1270	06/100	<7	< 0.0023
04-MC-0714	2 nd Floor Hallway	1	1013	1418	245	5	5	J	1225	05/100	<7	< 0.0020
	Duplicate Count											
Reference Method: NIOSH 7 Sample Type: 25 mm 3 piece (CONCENTRATION (Fibers)	400 Issue 2, 8/15/94 Limit of De 0.8µ mixed cellulose ester PCM Air A /mm²) = <u>(SAMPLE fibers/field) - (F</u> (0.00785 m	tection: 0.055 fib Ionitor <u>NANK fibers/fic</u> 1m ² /field)	ers/field eld)			IC OCB Decon	De O	Inside Conta utside Critica contaminatio	inment Il Barrier on Facility		*Project Ac Code 1 Bac 2 Set 3 Du	zivity Code: Type zkground -Up ring
CONCENTRATION (fibers/	(cc) = <u>(SAMPLE fibers/field)</u> – <u>(BLA</u> (0.00785 mm/field) x	NK fibers/field) liters x 1000 cc/l	<u>x (385) mm²</u> iter	/filter		Ra 1 (5-20 fiber 2 (>20-50 Fib 3 (>50 Fiber	nge s/100 fields) ers/100 fields) s/100 fields)	Intra La 0.3 0.2 0.2	ab Sr Inter I 4 0. 8 0. 7 0.	<u>_ab Sr</u> 57 52 43	4 Cle 5 En 6 Per 7 Oth	arance vironmental sonal
											1 ~ ~ ~	ICI



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treet, Suite 100.	FUSS Enviro
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For Asbestos Field Analysis Area Air Monitoring Worksheet

Form 7400-05 Edition September 2014 Supersedes previous editions

Building Name/Nun Site Address:	iber: Bou Bourn	me High Scho e, Ma	01			tometer Nu	mber:	101415	/15	Analyst Name:	07/15/15	Coffey
Work Area:	2 nd Floor- B Wing				Mi	croscope Ni	umber:	100	229	Reviewed By:	CT [CT] 10	
Sample ID Number	Sample Location	Activity Code*	Sample	e Time	Sample Duration	Flo	ow Rate (LP	M)	Total Volume	Fiber Count	Conc	centration
FB1-MC-0715	Field Blank					1 AC	TOSC	AVE	FICTO	<5.5/100	Fibers/mm ²	Hibers/cc
FB2-MC-0715	Field Blank		Subm	ut at least 2	2 blanks or 1	10% of the n	umber of sa	mples		<5.5/100	<7	
01-MC-0715	Room 25 C	1	0940	1430	290	5	5	5	1450	09/100	11.5	0.0030
02-MC-0715	OWA Room 25 C	1	0941	1431	290	5	5	5	1450	07/100	8.9	0.0024
03-MC-0715	Room 23 C	1	0942	1432	290	σ	4.9	4.95	1436	<5.5/100	<7	< 0.0019
04-MC-0715	OWA Room 20 C	7	0943	1433	290	л	4.7	4.85	1407	<5.5/100	<7	< 0.0019
05-MC-0715	OWA Room 23 C	1	0944	1434	290	5	5.2	5.1	1479	<5.5/100	<7	< 0.0018
06-MC-0715	OWA Room 21 C	1	1440	1650	130	10	10	10	1300	<5.5/100	<7	< 0.0021
07-MC-0715	OWA Room 20 C	1	1441	1651	130	10	10	10	1300	<5.5/100	<7	< 0.0021
08-MC-0715	OWA Room 24 C	1	1442	1652	130	10	10.1	10.05	1307	5.5/100	7	0.0022
09-MC-0715	OWA Room 25 C	1	1443	1653	130	10	10	10	1300	06/100	7.6	0.0023
10-MC-0715	Room 25 C	1	1444	1654	130	10	9.8	9.9	1287	<5.5/100	<7	< 0.0021
01-MC-0715	Duplicate Count									11/100	14	0.0037
leference Method: NIOSI ample Type: 25 mm 3 pie ONCENTRATION (Fib	1 7400 Issue 2, 8/15/94 Limit of De ce 0.8μ mixed cellulose ester PCM Air l rrs/mm ²) = <u>(SAMPLE fibers/field) – (</u> (0.00785 n	tection: 0.055 fi Ionitor <u>8LANK fibers/f</u> um²/field)	bers/field ield)			IC OCB Decon	I Ou Dec	nside Contair Itside Critical ontamination	Barrier 1 Facility		*Project A Code 2 Sc 3 D	Activity Code: Type ackground er-Up er-Up
ONCENTRATION (fbe	rs/cc) = <u>(SAMPLE fibers/field) – (BL</u> (0.00785 mm/field) x	<u> NK fibers/field</u> liters x 1000 cc/	<u>) x (385) mr</u> 'liter	1²/filter		Rar 1 (5-20 fiber 2 (>20-50 Fibe	nge s/100 fields)	Intra Lab	Sr Inter L	ab Sr 57	4 C 5 E	learance nvironmental ersonal
						3 (>50 Fiber	s/100 fields)	0.27	0	2		

194	 2	2

USS & O'NEILL nviroScience, LLC

For Asbestos Field Analysis Area Air Monitoring Worksheet

Form 7400-05 Edition September 2014 Supersedes previous editions

50 Redfield Street, S	uite 100, Boston, MA 02122 (6)	17) 282-4675				5						
Project Name:	Bourne High school & Otis Me	morial Eleme	ntary School		Proj	ject Numbe	ur2	0121141.B4		Sampler Name:	Mike	Coffey
Building Name/Num	ber:Bour	ne High Schoo			Proj	ject Manago ometer Nur	er: <u>Dus</u>	tin Diedrick	sen	Sample Date:	07/1	6/15
Site Address:	Bourne	, Ma			Rot	ometer Cal	Date:	00/0	/1	Analysi Ivanic.		
Work Area:	2 nd Floor- B Wing				Mic	roscope Nu	umber:	100	229	Reviewed By:	CT /01 /10	10010 - 101
Sample ID	Sample	Activity	Sample	Time	Sample	۲ı,	W Rate /T D		Total		0	
(#-Initials-Date)	Location	Code*	On	Off	Duration	Pre	Post	Ave	Volume Liters	(Fibers/Fields)	Fibere/mm2	Fibers / cc
FB1-MC-0716	Field Blank									<5.5/100	<7	
FB2-MC-0716	Field Blank			t at least 2	2 Dianks of 1	0% of the n	umber of sa	mples		<5.5/100	<7	
01-MC-0716	Room 24 C	1	0930	1300	210	6.5	6.3	6.4	1344	06/100	7.6	0.0022
02-MC-0716	Room 23 C	1	0931	1301	210	6.5	6.5	6.5	1365	<5.5/100	7>	< 0.0020
03-MC-0716	OWA RM 21 C	1	0932	1302	210	6.5	6.7	6.6	1386	<5.5/100	<7	< 0.0020
04-MC-0716	OWA RM 23 C	Ъ	0933	1303	210	6.5	6.5	6.5	1365	<5.5/100	<7	< 0.0020
05-MC-0716	OWA RM 25 C	1	0934	1304	210	6.5	6.4	6.45	1355	<5.5/100	<7	< 0.0020
06-MC-0716	Room 21 C	1	1310	1320	130	10	10	10	1300	07/100	8.9	0.0026
07-MC-0716	Room 25 C	1	1311	1321	130	10	9.9	9.95	1294	06/100	7.6	0.0023
08-MC-0716	OWA RM 21 C	1	1312	1322	130	10	10	10	1300	7.5/100	9.6	0.0028
09-MC-0716	OWA RM 23 C	1	1313	1323	130	10	10	10	1300	6.5/100	8.3	0.0025
10-MC-0716	OWA RM 25 C	1	1314	1324	130	10	10.1	10.05	1300	07/100	8.9	0.0026
01-MC-0716	Duplicate Count									<5.5/100	<7	0.0020
Reference Method: NIOSH	7400 Issue 2, 8/15/94 Limit of Det	ection: 0.055 fi	bers/field			IC		nside Contair	ument		*Project Ac	ctivity Code:
					Γ	10	-	TISICE COLUMN	mient		TUNCTI	curry code.

CONCENTRATION (fibers/cc) = <u>(SAMPLE fibers/field) = (BLANK fibers/field) x (385) mm²/filter</u> (0.00785 mm/field) x liters x 1000 cc/liter

CONCENTRATION (Fibers/mm²) = (<u>SAMPLE fibers/field</u>) = (<u>BLANK fibers/field</u>) (0.00785 mm²/field)

Sample Type: 25 mm 3 piece 0.8µ mixed cellulose ester PCM Air Monitor

2 (>20

7	6	თ	4	3	2	1	Code	*Proje
Other	Personal	Environmental	Clearance	During	Set-Up	Background	Туре	ct Activity Code:

Range	Intra Lab Sr	Inter Lab Sr
20 fibers/100 fields)	0.34	0.57
-50 Fibers/100 fields)	0.28	0.52
50 Fibers/100 fields)	0.27	0.43

	Decontamination Fa	Outside Critical Ba	TITTTO CONTRACTOR
	cility	nier	TTC

Decon IC OCB nside Co

CONCENTRATION (fibe	Reference Method: NIOSI Sample Type: 25 mm 3 pie CONCENTRATION (Fib	04-MC-0718	10-MC-0718	09-MC-0718	08-MC-0718	07-MC-0718	06-MC-0718	05-MC-0718	04-MC-0718	03-MC-0718	02-MC-0718	01-MC-0718	FB2-MC-0718	FB1-MC-0718	(#-Initials-Date)	Sample ID Number	Work Area:	Site Address:	Building Name/Num		Project Name:	50 Redfield Street,	EF
rs/cc) = (SAMPLE fibers/field) - (BL/(0.00785 mm/field) x	4 7400 Issue 2, 8/15/94 Limit of De ce 0.8µ mixed cellulose ester PCM Air A ers/mm ²) = <u>(SAMPLE fibers/field) – (1</u> (0.00785 m	Duplicate Count	OWA Room 22 C	OWA Room 24 C	OWA Room 25 C	OWA Room 23 C	OWA Room 21 C	OWA Room 23 C	OWA Room 20 C	Room 23 C	OWA Room 25 C	Room 21 C	Field Blank	Field Blank	LOCATOLI	Sample	2 nd Floor- B Wing	Bourn	iber: Bou		Bourne High school & Otis M	Suite 100, Boston, MA 02122 (6	USS & O'NEII nviroScience, L
<u>.NK fibers/fiel</u> liters x 1000 cc,	tection: 0.055 f Ionitor <u>3LANK fibers/1</u> nm²/field)		1	1	1	1	1	1	1	1	1	1			Couc	Activity		e, Ma	ne High Scho		emorial Eleme	17) 282-4675	C L
<u>1) x (385) mr</u> /liter	ibers/field <u>field)</u>		1224	1223	1222	1211	1210	0734	0733	0732	0731	0730	IIIII	c.1	On	Sample			ol		entary Schoo		
1²/filter			1519	1518	1517	1516	1515	1204	1203	1202	1201	1200	nt at reast 2		Off	e Time							
[]			185	185	185	185	185	270	270	270	270	270	DIANKS OF 1		Minutes	Sample Duration	Mic	Rot	Rot	Pro	Pro		F
Ra 1 (5-20 fibe 2 (>20-50 Fib 3 (>50 Fibe	IC OCB Decon		8	8	8	8	8	6.5	6.5	6.5	6.5	6.5	0% of the r		Pre	F	roscope N	ometer Cal	ometer Nu	ject Manag	ject Numb		or As
nge rs/100 fields) ers/100 fields) rs/100 fields)	Delo		8	8.1	8	7.9	8	6.4	6.5	6.5	6.6	6.5	number of sa		Post	ow Rate (LI	umber:	l. Date:	mber:	ger: Du	er:2		ir Mor bestos
Intra La 0.34 0.28 0.27	Inside Contai utside Critica contaminatio		8	8.05	8	7.95	8	6.45	6.5	6.5	6.55	6.5	umples		Ave	M)	100	2/20	101415	<u>stin Diedric</u> l	0121141.B4		utorin Field
b Sr Inter I 0. 0.	nment Barrier n Facility		1480	1489	1480	1471	1480	1742	1755	1755	1769	1755			Liters	Total Volume	1229)/15		tsen	F		g Work Analys
Lab Sr 57 43		07/100	<5.5/100	<5.5/100	<5.5/100	<5.5/100	07/100	06/100	09/100	08/100	07/100	08/100	<5.5/100	<5.5/100	(Fibers/Fields)	Fiber Count	Reviewed By:	Analysis Date:	Analyst Name:	Sample Date: _	Sampler Name		rsheet
4 C	*Project A Code 1 B: 2 Se 3 D	8.9	<7	<7	<7	<7	8.9	7.6	11.5	10.2	8.9	10.2	<7	<7	Fibers/mm ²	Conc		07/18/15	Mike (07/1	Mike		Form 74(Edition S Supersed
learance nvironmental ersonal ther	Verivity Code: Type ackground zt-Up uring	0.0020	< 0.0018	< 0.0018	< 0.0018	< 0.0018	0.0023	0.0017	0.0025	0.0022	0.0019	0.0022			Fibers/cc	entration		AAR#: 9467	Coffey	18/15	Coffey		00-05 September 2014 es previous editions

50 Bod Fold Street	USS & O'NEIL	C L			Ĩ	rea A or As	ir Mot bestos	nitorin. Field	g Work Analys	is	Form 7400 Edition Se Supersede	0-05 ptember 2014 s previous editions
50 Redfield Street	, <u>Suite 100, Boston, MA 02122 (61</u>	17) 282-4675										
Project Name:	Bourne High school & Otis Me	morial Elemer	1tary School		Pro	ect Numb	en	0121141.B4	E	Sampler Name:	Mike (Coffey
Building Name/Nu	mber:Bour	ne High Schoo			Proj	ject Manag ometer Nu	mber:	stin Diedrick 101415	tsen	Sample Date:	07/11 Mike (9/15
Site Address:	Bourne	, Ma			Rot	ometer Cal	. Date:	2/20)/15	Analysis Date:	07/19/15	AAR#: 0467
Work Area:	2 nd Floor- B Wing				Mic	roscope N	umber:	100	229	Reviewed By:		
Sample ID Number	Sample	Activity	Sample	Time	Sample Duration	FI	ow Rate (L)	PM)	Total Volume	Fiber Count	Conce	intration
(#-Initials-Date)	LOCATION	Cone	On	Off	Minutes	Pre	Post	Ave	Liters	(Fibers/Fields)	Fibers/mm ²	Fibers/cc
FB1-MC-0719	Field Blank			-						<5.5/100	<7	
FB2-MC-0719	Field Blank			t at least 2	blanks or 1	0% of the n	number of s	amples		<5.5/100	<7	
01-MC-0719	OWA Decon	1	0715	1158	283	6.5	6.5	6.5	1840	<5.5/100	<7	< 0.0015
02-MC-0719	OWA Room 25 C	1	0716	1159	283	6.5	6.5	6.5	1840	<5.5/100	<7	< 0.0015
03-MC-0719	OWA Room 24 C	1	0717	1200	283	6.5	6.5	6.5	1840	<5.5/100	<7	< 0.0015
04-MC-0719	OWA Room 22 C	1	0718	1201	283	6.5	6.4	6.45	1825	<5.5/100	<7	< 0.0015
05-MC-0719	OWA Room 23 C	1	0719	1202	283	6.5	6.5	6.5	1840	<5.5/100	<7	< 0.0015
06-MC-0719	OWA Decon	1	1210	1530	200	6.5	6.5	6.5	1300	<5.5/100	<7	< 0.0021
07-MC-0719	OWA Room 23 C	1	1211	1531	200	6.5	6.5	6.5	1300	<5.5/100	<7	< 0.0021
08-MC-0719	OWA Room 25 C	1	1212	1532	200	6.5	6.7	6.6	1320	<5.5/100	<7	< 0.0021
09-MC-0719	OWA Room 24 C	1	1213	1533	200	6.5	6.5	6.5	1300	<5.5/100	<7	< 0.0021
10-MC-0719	OWA Room 22 C	1	1214	1534	200	6.5	6.6	6.55	1310	<5.5/100	<7	< 0.0021
01-MC-0719	Duplicate Count									<5.5/100	<7	< 0.0021
Reference Method: NIOS	5H 7400 Issue 2, 8/15/94 Limit of Det	ection: 0.055 fil	oers/field			IC		Inside Contai	ament		*Project Ac	tivity Code:
2000 Sample Type: 25 mm 3 pt 2000 CENTRATION (Fil	ece 0.8μ mixed cellulose ester PCM Air M bers/mm²) = (SAMPLE fibers/field) – (B	onitor LANK fibers/fi	eldi		TT	Decon	De	contamination	n Facility		1 Bac	1 ype ckground
CINCLIN INTINITION INTI	DCIS/IIIIII = (SAINIFLE IIDCIS/IICIG) = (D)	A V HDPts/11	PIC			-					2	11

CONCENTRATION (fibers/cc) = <u>(SAMPLE fibers/field) - (BLANK fibers/field) x (385) mm²/filter</u> (0.00785 mm/field) x liters x 1000 cc/liter

(0.00785 mm²/field)

Other	7
Personal	6
Environmental	5
Clearance	4
During	3
Set-Up	2
Background	1-1
Туре	Code
ct Activity Code:	*Projec

Range 1 (5-20 fibers/100 fields) 2 (>20-50 Fibers/100 fields) 3 (>50 Fibers/100 fields) Intra Lab Sr 0.34 0.28 0.27 Inter Lab Sr 0.57 0.52 0.43

ET	USS & O'NEII nviroScience, 11	с Т			E	Area Ai or Asl	ir Mon pestos	itoring Field	g Work Analys	sheet	Form 740 Edition Sc Supersede	10-05 eptember 2014 % previous editions
50 Redfield Street, \$	uite 100, Boston, MA 02122 (6	17) 282-4675										
Project Name:	Bourne High school & Otis Me	morial Elemen	tary School		Pro	ject Numbe	er:2()121141.B4H		Sampler Name:	Mike	Coffey
					Pro	ject Manag	er: Dus	tin Diedrick	sen	Sample Date:	07/2	0/15
Building Name/Num	ber: Bour	ne High Schoo	1		Rot	ometer Nu	mber:	101415		Analyst Name: _	Mike (offey
Site Address:	Bourne	, Ma			Rot	ometer Cal	. Date:	2/20,	/15	Analysis Date: _	07/20/15	AAR#:9467
Work Area:	nd & 1 st Floor- B & C Wing				Mic	roscope Nu	umber:	1002	229	Reviewed By:		
Sample ID Number	Sample	Activity	Sample	Time	Sample	Flo	ow Rate (LP	M)	Total	Fiber Count	Conc	entration
(#-Initials-Date)	Location	Code⁺	On	Off	Minutes	Pre	Post	Ave	Liters	(Fibers/Fields)	Fibers/mm ²	Fibers/cc
FB1-MC-0720	Field Blank									<5.5/100	<7	
FB2-MC-0720	Field Blank		Submi	t at least 2	blanks or 1	0% of the n	umber of sa	mples		<5.5/100	<7	
01-MC-0720	OWA Room 21 C	1	0800	1258	298	4.5	4.5	4.5	1341	<5.5/100	<7	< 0.0020
02-MC-0720	OWA Room 25 C	1	0801	1259	298	4.5	4.3	4.4	1311	<5.5/100	<7	< 0.0020
03-MC-0720	OWA Room 24 C	1	0802	1300	298	4.5	4.5	4.5	1341	<5.5/100	<7	< 0.0020
04-MC-0720	OWA Room 15 C	1	0803	1301	298	4.5	4.6	4.55	1356	<5.5/100	<7	< 0.0020
05-MC-0720	OWA Room 12 C	1	0804	1302	298	4.5	4.5	4.5	1341	<5.5/100	<7	< 0.0020
02-MC-0720	Duplicate Count									<5.5/100	<7	<0.0020
Reference Method: NIOSH	I 7400 Issue 2, 8/15/94 Limit of Det	rection: 0.055 fib	oers/field			IC		nside Contain	iment		*Project A	ctivity Code:
Sample Type: 25 mm 3 pier CONCENTRATION (Fibe	:e 0.8µ mixed cellulose ester PCM Air N :rs/mm²) = <u>(SAMPLE fibers/field) – (B</u> (0.00785 m	lonitor <u>LANK fibers/fi</u> m²/field)	eld)			Decon	Dec	ontamination	Facility		$\frac{1}{2}$ Se	1 ype ackground t-Up
CONCENTRATION (fibe	(s/cc) = (SAMPLE fibers/field) - (BLA)	NK fibers/field)	x (385) mm ²	/filter		Rat 1 (5-20 fiber	nge s/100 fields)	Intra Lab 0.34	Sr Inter L	ab Sr 17	4 Cl 5 Er	learance ivironmental
	(U.WU (OO 111111) INEINA) A	Iters X TOOO CC/ I	iter			2 (>20-50 Fiber 3 (>50 Fiber	ers/100 fields) s/100 fields)	0.28	0.5	ω N	6 Pe	rsonal

Personal Other

EF	USS & O'NEIL nviroScience, 11	Ϋ́, Υ				Area A For As	ir Mor bestos	nitoring Field	g Work Analys	sheet	Form 7400 Edition Se Supersedes	0-05 ptember 2014 s previous editions
50 Redfield Street, S	Suite 100, Boston, MA 02122 (61	7) 282-4675									ſ	
Project Name:	Bourne High school & Otis Me	morial Elemer	1tary Schoo		Pro	oject Numb	er: 2	0121141.B4]	ГЛ	Sampler Name:	Mike (Coffey
					Pro	oject Manag	rer: Dus	tin Diedrick	tsen	Sample Date: _	07/2	1/15
Building Name/Num	ber: Bourr	1e High Schoo	0]		Ro	tometer Nu	mber:	101415		Analyst Name:	Mike C	offev
Site Address:	Bourne	Ma			Ro	tometer Cal	. Date:	2/20	/15	Analysis Date:	07/21/15	AAR#: 9467
Work Area:	1st Floor-C Wing				Mi	croscope N	umber:	100	229	Reviewed By:		
Sample ID Number	Sample	Activity	Sample	Time	Sample	F	ow Rate (LI	M)	Total	Fiber Count	Conce	intration
(#-Initials-Date)	Location	Code	On	Off	Minutes	Pre	Post	Ave	Liters	(Fibers/Fields)	Fibers/mm ²	Fibers/cc
FB1-MC-0721	Field Blank									<5.5/100	<7	
FB2-MC-0721	Field Blank		Supu	it at least 2	blanks or	10% of the r	number of sa	umples		<5.5/100	<7	
01-MC-0721	OWA Room 14 C	1	0830	1615	465	4	4	4	1860	11/100	14	0.0029
02-MC-0721	OWA Room 14 C	1	0832	1615	463	4	4	4	1852	<5.5/100	<7	< 0.0015
03-MC-0721	OWA Room 15 C	1	0833	1615	462	4	4.1	4.05	1871	06/100	7.6	0.0016
04-MC-0721	OWA Decon	1	0834	1616	462	4	4	4	1848	<5.5/100	7>	< 0.0015
05-MC-0721	OWA Decon	1	0835	1616	461	4	3.9	3.95	1821	<5.5/100	<7	< 0.0015
	0											
05-MC-0721	Duplicate Count									<5.5/100	<7	< 0.0015
Reference Method: NIOSH	7400 Issue 2 8/15/94 Limit of Det	ortion: 0.055 61	hore / field		7						*D	
Sample Type: 25 mm 3 piec	e 0.8µ mixed cellulose ester PCM Air M	onitor	-			OCB		utside Critical	Barrier		Code Root	Type
CONCENTRATION (Fibe	rs/mm^2 = (SAMPLE fibers/field) – (B) (0.00785 mr	_ANK_fibers/fi n²/field)	<u>eld)</u>			Decon	De	contamination	n Facility		1 Dao 2 Set 3 Du	ring
CONCENTRATION (fiber	s/cc) = (<u>SAMPLE fibers/field</u>) – (<u>BLA</u>) (0.00785 mm/field) x l	<u>NK fibers/field)</u> iters x 1000 cc/l	l <u>x (385) mm</u> liter	2/filter		Ra 1 (5-20 fiber 2 />20-50 Eib	nge rs/100 fields) ers/100 fielde)	Intra Lat	o Sr Inter L	ab Sr 7	5 En	vironmental
					_	2 (>20-50 Fiber 3 (>50 Fiber	ers/100 tielas) rs/100 fields)	0.28	0.5	ώΣ	6 Per 7 Otl	her

5 Environmental 6 Personal 7 Other

FU Er	JSS & O'NEII nviroScience, L	C L			I	Area A	ir Mon bestos	utoring Field	g Work Analys	sheet	Form 7400 Edition Se Supersedet)-05 ptember 2014 \$ previous editions
50 Redfield Street, St	<u>uite 100, Boston, MA 02122 (6</u>	17) 282-4675										
Project Name:	Bourne High school & Otis Me	emorial Elemer	<u>ıtary Schoo</u> l		Pro	ject Numb	er:2()121141.B4I		Sampler Name:	Mike (offey
					Pro	ject Manag	er: Dus	tin Diedrick	sen	Sample Date:	07/22	2/15
Building Name/Numb	er: Bour	ne High Schoo	0]		Rot	ometer Nu	mber:	101415		Analyst Name:	Mike C	offev
Site Address:	Bourne	e, Ma			Rot	ometer Cal	. Date:	2/20	/15	Analysis Date:	07/22/15	AAR#: 0467
Work Area: 1st Floor-	C Wing & Men and Woman Bath	room (B Wing)			Mic	roscope Ni	umber:	100	229	Reviewed By:		
Sample ID Number	Sample	Activity	Sample	Time	Sample	Fl	ow Rate (LP	M)	Total	Fiber Count	Conce	ntration
(#-Initials-Date)		Cour	On	Off	Minutes	Pre	Post	Ave	Liters	(Fibers/Fields)	Fibers/mm ²	Fibers/cc
FB1-MC-0722	Field Blank									<5.5/100	<7	
FB2-MC-0722	Field Blank		Submi	t at least 2	blanks or 1	0% of the n	umber of sa	mples		<5.5/100	<7	
01-MC-0722	Woman's Room	4	1424	1551	87	14.9	14.9	14.9	1296	10/100	13	0.0038
02-MC-0722	Woman's Room	4	1424	1551	87	14.9	14.9	14.9	1296	09/100	11.5	0.0034
. 03-MC-0722	Woman's Room	4	1424	1552	88	14.9	14.9	14.9	1311	06/100	7.6	0.0022
04-MC-0722	Woman's Room	4	1425	1552	87	14.9	14.9	14.9	1296	12/100	15.3	0.0045
05-MC-0722	Woman's Room	4	1425	1552	87	14.9	14.9	14.9	1296	<5.5/100	<7	< 0.0021
06-MC-0722	Men's Room	4	1429	1555	86	14.9	14.9	14.9	1281	<5.5/100	<7	< 0.0021
07-MC-0722	Men's Room	4	1429	1555	98	14.9	14.9	14.9	1281	<5.5/100	<7	< 0.0021
08-MC-0722	Men's Room	4	1430	1555	85	14.9	14.9	14.9	1267	<5.5/100	<7	< 0.0021
09-MC-0722	Men's Room	4	1430	1556	85	14.9	14.9	14.9	1267	<5.5/100	<7	< 0.0021
10-MC-0722	Men's Room	4	1430	1556	85	14.9	14.9	14.9	1267	<5.5/100	<7	< 0.0021
03-MC-0722	Duplicate Count									<5.5/100	<7	< 0.0021
Reference Method: NIOSH 7 Sample Type: 25 mm 3 piece CONCENTRATION (Fibers	400 Issue 2, 8/15/94 Limit of Det 0.8μ mixed cellulose ester PCM Air M /mm ²) = <u>(SAMPLE fibers/field) – (B</u> (0.00785 m	ection: 0.055 fib lonitor <u>LANK fibers/fit</u> m²/field)	ers/field			IC OCB Decon	Dec	nside Contain Itside Critical ontamination	ment Barrier Facility		*Project Ac Code 1 Bac 2 Set- 3 Du	tivity Code: Type kground Up
CONCENTRATION (fibers)	(cc) = <u>(SAMPLE_fibers/field)</u> – (BLA (0.00785 mm/field) x	<u>NK fibers/field)</u> liters x 1000 cc/l	<u>x (385) mm²</u> iter	/filter		Ran 1 (5-20 fibers 2 (>20-50 Fibers 3 (>50 Fibers	ige s/100 fields) srs/100 fields) s/100 fields)	Intra Lab 0.34 0.28 0.27	Sr Inter La 0.57 0.52 0.43	3 Ib Sr	4 Cle 5 Env 6 Per	arance /ironmental sonal
												ICI

FI En	JSS & O'NEII wiroScience, L	EC T			I	Area A For As	ir Mon bestos	itoring Field	g Work Analys	sheet	Form 7400 Edition Se Supersede)-05 ptember 2014 ; previous edition
50 Redfield Street, Su	<u>uite 100, Boston, MA 02122 (6</u>	17) 282-4675						,	و			
Project Name:	Bourne High school & Otis M	emorial Eleme	ntary School		Pro	ject Numb	er:2()121141.B4F		Sampler Name:	Mike (Coffey
Building Name/Numb	er:Bour	ne High Schoo	ol		Pro	ject Manag ometer Nu	mber:	<u>tin Diedrick:</u> 101415	sen	Sample Date:	07/22	2/15
Site Address:	Bourne	e, Ma			Rot	ometer Cal	. Date:	2/20/	/15	Analysis Data:	07/00/1E	
Work Area: <u>1st Floor-(</u>	C Wing & Men and Woman Bath	room (B Wing	(r)		Mic	roscope N	umber:	1002	29	Reviewed By:	CI /22/10	AAK#: 92
Sample ID Number	Sample	Activity	Sample '	Time	Sample	F	ow Rate (LP)	M)	Total	Fiber Count	Conce	ntration
(#-Initials-Date)	Location	Code*	On	Off	Minutes	Pre	Post	Ave	v olume Liters	(Fibers/Fields)	Fibers /mm2	Elhour /a
FB1-MC-0722	Field Blank									<5.5/100	<7 <7	T TOCTS / CO
FB2-MC-0722	Field Blank		Submit	t at least 2	blanks or 1	0% of the n	umber of sar	nples		<5.5/100	<7	
01-MC-0722	OWA Room 14 C	1	0830	1615	465	4	4	4	1860	<5.5/100	<>	<0.0015
02-MC-0722	OWA Room 14 C	1	0832	1615	463	4	4	4	1852	<5.5/100	<7	<0.0015
03-MC-0722	OWA Room 15 C	1	0833	1615	462	4	4.1	4.05	1871	07/100	8.9	0 0010
04-MC-0722	OWA Decon	1	0834	1616	462	4	4	4	1848	<5.5/100	<7	<0.0010
05-MC-0722	OWA Decon	_	0835	1616	161	-	,					CT00.0~
		-	CON	0101	401	4	3.9	3.95	1821	08/100	10.2	0.0022
ference Method: NIOSH 7: nple Type: 25 mm 3 niece (400 Issue 2, 8/15/94 Limit of Det 0 811 mixed cellulose actest DCM A: M	ection: 0.055 fil	bers/field		T]	IC	O III	Iside Containr	nent		*Project Act	ivity Code:
NCENTRATION (Fibers)	$(mm^2) = (SAMPLE fibers/field) - (B)$	onitor <u>LANK fibers/fi</u> m²/field)	<u>eld)</u>			Decon	Decc	ontamination	Facility		1 Bac 2 Set-	l ype kground Up
NCENTRATION (fibers/	cc) = (SAMPLE fibers/field) - (BLA)	NK fibers/field)) <u>x (385) mm²/</u>	filter		Ran 1 (5-20 fibers	ge s/100 fields)	Intra Lab	Sr Inter La	b Sr	-4 Clea	trance
	(0.00785 mm/field) x 1	iters x 1000 cc/1	liter			1 (5-20 Tiber) 2 (>20-50 Fiber) 3 (>50 Fiber)	s/100 tields) rs/100 fields) s/100 fields)	0.34 0.28 0.27	0.5		5Env6Pers7Oth	irronmental ional er

EnviroScience, LLC	FUSS & O'NEILL

Area Air Monitoring Worksheet For Asbestos Field Analysis

Form 7400-05 Edition September 2014 Supersedes previous editions

	5
) Redfield
	Street, Street
	Suite
	100,
	Boston,
	MA (
	02122 (
	617)
	282-4675
1	

Project Name:	<u>Bournc High school & Otis Me</u>	<u>morial Elemer</u>	11ary Schoo	,	– Proj	ect Numbe ect Manage	in 20	1 <u>121141.B4H</u> hin Diedrick		Sampler Name: Sample Date:		<u>offey</u> /15
Building Name/Numl	ber: Oti	s Elementary			Roto	ometer Nur	nber:	101415		Analyst Name:	Mike Co	offey
Work Area:	Room 15	<u>, 1714</u>			Mic	roscope Nu	mber	1002 I	229	Reviewed By:	<u> </u>	
Sample ID Number	Sample	Activity	Sample	Time	Sample	H	ow Rate (LP	M)	Total	Fiber Count	Conce	Itration
(#-Initials-Date)	Location	Code*	On	Off	Minutes	Pre	Post	Ave	Liters	(Fibers/Fields)	Fibers/mm ²	Fibers/cc
FB1-MC-0827	Field Blank									<5.5/100	<7	
FB2-MC-0827	Field Blank		angin	nt at icast 2	Dianks of 10	J% of the n	umber of sa	mpies		<5.5/100	۲> ۲	
01-MC-0827	Room 15	4	1530	1710	100	13	12.9	12.95	1295	<5.5/100	<7	<0.0021
02-MC-0827	Room 15	4	1530	1711	101	13	13	13	1313	<5.5/100	<7	< 0.0021
03-MC-0827	Room 15	4	1531	1711	100	15	14.9	14.95	1495	<5.5/100	<7	<0.0018
04-MC-0827	Room 15	4	1531	1711	100	15	14.8	14.9	1490	<5.5/100	<7	<0.0018
05-MC-0827	Room 15	4	1531	1712	101	15	15	15	1515	<5.5/100	<7	<0.0018
02-MC-0827	Duplicate Count									<5.5/100	<7	< 0.0021

Sample Type: 25 mm 3 piece 0.8µ mixed cellulose ester PCM Air Monitor CONCENTRATION (Fibers/mm²) = (<u>SAMPLE fibers/field</u>) – (<u>BLANK fibers/field</u>) (0.00785 mm²/field)

CONCENTRATION (fibers/cc) = <u>(SAMPLE fibers/field) - (BLANK fibers/field) x (385) mm²/filter</u> (0.00785 mm/field) x liters x 1000 cc/liter

Decon Decontamination Facility

OCB ō Inside Containment Outside Critical Barrier

*Project Activity Code: Code Type 1 Background Code 0 4 Ċ, J During Clearance Environmental Set-Up Personal

Other

Range 1 (5-20 fibers/100 fields) 2 (>20-50 Fibers/100 fields) 3 (>50 Fibers/100 fields) Intra Lab Sr 0.34 0.28 0.27 Inter Lab : 0.57 0.52

FI E	USS & O'NEI nviroScience, 1	LC			FA	rea Ai or Ast	ir Mon Destos	itoring Field	g Work Analys	sheet is	Form 7400 Edition Se Supersedes)-05 ptember 2014 ; previous editions
50 Redfield Street, S	uite 100, Boston, MA 02122 (617) 282-4675										
Project Name:	Bourne High school & Otis N	<u> 1emorial Elemen</u>	tary Schoo		Proj	ect Numb	er:2(0121141.B4]	[1]	Sampler Name	Mike (Coffey
Building Name/Num	ber:()tis Elementary			Rote	ometer Nu	mber:	101415		Analyst Name: _	Mike C	offey
Site Address:	Bour	ne, Ma			Rote	ometer Cal	. Date:	2/20	/15	Analysis Date: _	08/27/15	AAR#: 9467
Work Area:	Main Office				Mic	roscope Ni	umber:	100	229	Reviewed By:		
Sample ID Number	Sample	Activity	Sample	Time	Sample Duration	Ę	ow Rate (LP	M)	'l'otal Volume	Fiber Count	Conce	intration
(#-Initials-Date)			On	Off	Minutes	Pre	Post	Ave	Liters	(+ iDCI9/ 1 iCida)	l'ibers/mm ²	Fibers/cc
FB1-MC-0827	Field Blank									<5.5/100	<7	
FB2-MC-0827	Field Blank		mane	if at least 2	Dianks of 1	0% of the n	umber of sa	mples		<5.5/100	<7	
01-MC-0827	Main Office	4	1105	1240	95	13	13	13	1235	12/100	15.27	0.0048
02-MC-0827	Main Office	4	1105	1240	95	13	13	13	1235	10/100	12.74	0.0040
03-MC-0827	Main Office	4	1106	1241	95	13	13	13	1235	09/100	11.46	0.0036
04-MC-0827	Main Office	4	1106	1241	95	15	15	15	1425	13/100	16.56	0.0045
05-MC-0827	Main Office	4	1106	1241	95	15	15	15	1425	11/100	14.01	0.0038
01-MC-0827	Duplicate Count									10/100	12.74	0.0040
Reference Method: NIOSE		Detertion: 0.055 fi	have / Field		٦	7					*Project A	tivity Code
Sample Type: 25 mm 3 piec	te 0.8μ mixed cellulose ester PCM Air	Monitor				OCB	20	utside Critica	Barrier		Code	Type

CONCENTRATION (fibers/cc) = <u>(SAMPL: fibers/field)</u> – <u>(BLANK fibers/field)</u> <u>x</u> (385) mm²/filter (0.00785 mm/field) x liters x 1000 cc/liter

Range 1 (5-20 fibers/100 fields) 2 (>20-50 Fibers/100 fields) 3 (>50 Fibers/100 fields) Decon Decontamination Facility Intra Lab Sr 0.34 0.28 0.27 Inter Lab Sr 0.57 0.52 0.43

. packground 2 Set-Up 3 During 4 Clearance 5 Environmental 6 Personal 7 Other

CONCENTRATION (Fibers/mm²) = (<u>SAMPLE fibers/field</u>) = (<u>BLANK fibers/field</u>) (0.00785 mm²/field)

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For Asbestos Field Analysis Area Air Monitoring Worksheet

Form 7400-05 Edition September 2014 Supersedes previous editions

50 Redfield Street,
Suite 100
, Boston,
MA 02:
122 (617
) 282-4675

Project Name:	Bourne High school & Otis M	emorial Elemen	ntary School		– Proj	ect Numbe ect Manaor	n 20	<u>1121141.B4F</u> hin Diedrick		Sampler Name: Sample Date	08/27	<u>`offey</u>
Building Name/Nun	1ber0	is Elementary			Roto	ometer Nur	nber:	101415		Analyst Name:	Mike C	offey
Site Address:	Bourn	e, Ma			Rote	ometer Cal.	Date:	2/20	/15	Analysis Date: _	08/27/15	AAR#: 9467
Work Area:	Room 12				Mic	roscope Nu	mber:	1002	229	Reviewed By:		
Sample ID Number	Sample	Activity	Sample	Time	Sample Duration	Flo	w Rate (LP	M)	Total Volume	Fiber Count	Conce	ntration
(#-Initials-Date)	Location	Code	On	Off	Minutes	Pre	Post	Ave	Liters	(Fibers/ Fields)	Fibers/mm ²	Fibers/cc
FB1-MC-0827	Field Blank									<5.5/100	7>	
FB2-MC-0827	Field Blank		tutone	nt at least 2	Dianks of 10	J% OF the ht	imber of sa	mpies		<5.5/100	<7	
01-MC-0827	Room 12	4	1245	1422	97	13	13	13	1261	<5.5/100	<7	< 0.0022
02-MC-0827	Room 12	4	1245	1422	97	13	13	13	1261	<5.5/100	<7	< 0.0022
03-MC-0827	Room 12	4	1245	1423	98	15	15	15	1470	<5.5/100	<7	<0.0019
04-MC-0827	Room 12	4	1246	1423	97	15	15	15	1455	<5.5/100	<7	< 0.0019
05-MC-0827	Room 12	4	1246	1423	97	15	15	15	1455	<5.5/100	<7	<0.0019
01-MC-0827	Duplicate Count									<5.5/100	<7	< 0.0022

CONCENTRATION (Fibers/mm²) = (<u>SAMPLE fibers/field</u>) – (<u>BLANK fibers/field</u>) (0.00785 mm²/field)

CONCENTRATION (fibers/cc) = <u>(SAMPLE fibers/field) = (BLANK fibers/field) x (385) mm²/filter</u> (0.00785 mm/field) x liters x 1000 cc/liter

Range 1 (5-20 fibers/100 fields) 2 (>20-50 Fibers/100 fields) 3 (>50 Fibers/100 fields)

Intra Lab Sr 0.34 0.28 0.27

Inter Lab Sr 0.57 0.52 0.43

5

Other

Environmental Personal

Set-Up During Clearance

Decon

Decontamination Facility Inside Containment Outside Critical Barrier

Code

Type Background

*Project Activity Code:

OCB IC

Sample Type: 25 mm 3 piece 0.8µ mixed cellulose ester PCM Air Monitor

.7



Appendix E

Final Visual Inspection Forms



Date:7/20/15	Removal DE	ncapsulation		
PROJECT NAME:	Bourne H	ligh School & Ot	is Memorial Elemen	tary School
BUILDING:	Bourne Hig	gh School	Project No.	: 20121411 B4
SITE ADDRESS:		Во	urne, Ma	
WORK AREA:	2 ⁿ	^d Floor B-Wing]	1 Press
CONTRACTOR:	Allstate	Asbestos Abate	ement	
Neg. Pressure E	nclosure 🛛 Mini-Enclo	sure Glove	bag D Other (De	scribe Below)
MATERIALS ABATE	D IN THIS SPECIFIC WO	RK AREA		
9 x 9 Floor Tile	QTY: 555	16		QTY:
	QTY:			QTY:
	QTY:			
	QTY:			QTY:
	QTY:			
SUSPECT ACM RE	MAINING IN THIS WORK	AREA NOT SPE	CIFIED FOR REMOV	A
	QTY:			ΟΤΥ
	QTY:			
⊒′Floor ゴDuct Work ⊈′Fixtures	☐ Horizontal Surfaces ☐ Vertical Surfaces ☐ Enclosed Items	2 Pipes 12 Pipes 12 Decon Ur Dr Waste Lo	nat fall. Strike throu Mee nit Cor ad Out I Oth	igh N/A. chanical Equipment ntractor's Equipment er:
FIELD OBSERVATIO	NS CSS-FE Enclusife			
hochs	30C191C199C193C	124C12FC15) 2nd Floor (-1	Ling storage RM.
AIR CLEARANCE:	□ PCM (# of Samples	=)		Uvisual Only
CKNOWLEDGEMEN	T			••••••••••••••••••••••••••••••••••••••
acknowledge that I nviroScience Inspe	inspected this work are ector:	ea on this day.	Mille Golly Signa	
have read and und	erstand these results			
contractor's Supervi	SOR: ZUK Salon	<u>+</u>		
	ERINIE	0	CICNAT	

FUSS & O' Baytrospier	NEILL oe, LLC	Final Visua	I Inspection Form
Date:7/22/15	🛛 🛱 Removal 🛛 Encapsu	lation	e 🗆 Repair 🗖 Cleanup
PROJECT NAME:	Bourne High Sch	nool & Otis Memorial El	ementary School
BUILDING:	Bourne High Sch	ool Projec	t No.: 20121411.B4E
SITE ADDRESS:		Bourne, Ma	
WORK AREA:	1 st Floor	C-Wing	D Pass
CONTRACTOR:	Allstate Asbes	tos Abatement	🗆 Fail
□ Neg. Pressure	Enclosure 🛛 Mini-Enclosure	□ Glovebag □ Other	r (Describe Below)
MATERIALS ABAT	ED IN THIS SPECIFIC WORK AR	M	
9 x 9 Floor Tile	QTY: 2743 Sf		QTY:
	QTY:		QTY:
Suspect ACM R	EMAINING IN THIS WORK AREA	NOT SPECIFIED FOR RI	EMOVAL
	QTY:		QTY:
	QTY:	1	
Instructions: Che 位 Floor 던 Duct Work	eck surfaces that pass. Circle s ☑ Horizontal Surfaces ☑ Vertical Surfaces ☑	urfaces that fail. Strike Pipes E Decon Unit C	through N/A. ゴ Mechanical Equipment ゴ Contractor's Equipment
□⁄Fixtures	년 Enclosed Items	Waste Load Out	Other:
FIELD OBSERVATI	ONS		
<u>1 Negative Air</u> <u>Roonis II</u>	Pressure Enclosure CII3CIISCI 2 1 St Flo	or C-Wing Staage	ham
AIR CLEARANCE:	□ PCM (# of Samples=) 🗆 TEM	년 Visual Only
ACKNOWLEDGEME	NT		
I acknowledge that EnviroScience Insp	I inspected this work area on the pector: <u>Mike Coster</u>	his day. Mixe	Glber
have read and up			SIGNATURE
Contractor's Super	visor: <u>Calc Scalong</u> Printed		SIGNATURE

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- ⁻	

FUSS & O'NEILL EnviroScience, uc

Final Visual Inspection Form

			As	sbestos Abatemen	
Date: 7/22/15	- 🛛 Removal 🛛 Encapsu	lation DE	nclosure 🛛 R	epair 🛛 Cleanup	
PROJECT NAME:	V	Vorcester Public	c Schools		
BUILDING:	Bourne High Sch	ool	Project No.:	20121141,045	
SITE ADDRESS:		Bourne, I	Ma		
WORK AREA:	BOYS & Girl's Barthram	CIAFFICET Site	Entrance	⊠ Pass	
CONTRACTOR:	Allstate Asbes	tos Abatement		□ Fail	
Diffueg. Pressure	Enclosure D Mini-Enclosure	Glovebag	Other (Describ	e Below) D None	
MATERIALS ABAT	ED IN THIS SPECIFIC WORK AR	EA			
9"x 9" FLOOT	ile QTY: 95sf			QTY:	
	QTY:			QTY:	
	QTY:			QTY:	
	QTY:			QTY:	
	QTY:			QTY:	
SUSPECT ACM R	EMAINING IN THIS WORK AREA	NOT SPECIFIED	FOR REMOVAL		
	QTY:			QTY:	
	QTY:			QTY:	
SURFACES INSPEC	TED				
Instructions: Che	ck surfaces that pass. Circle s	urfaces that fail.	Strike through I	N/A.	
□ Horizontal Surfaces ▲ Pipes □ Mechanical Equipment □ Duct Work □ Vertical Surfaces □ Decon Unit □ Contractor's Equipment □ Fixtures □ Decon Unit □ Contractor's Equipment					
FIELD OBSERVATIO					
TWO Negutive	pressure enclosures	in each be	ethran		
AIR CLEARANCE:	☑ ∕PCM (# of Samples=) 🗆 TEN	1] Visual Only	
ACKNOWLEDGEME	NT		· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	
l acknowledge that EnviroScience Insp	I inspected this work area on th ector:	iis day. {	March	4	
have read and und	derstand these results			F	
Contractor's Super	lisor.				
	PRINTED		SIGNATURE		

FUSS & Envirosc	O'NEILL cience, uc	Spection Form Asbestos Abatement
Date: 8/24/15	Removal Encapsulation Enclosure	Repair 🗆 Cleanup
PROJECT NAME:	BOUTOR High School 2) Otis Menusciul Sloppology	
BUILDING:	Otis Mentrial Generatica Project No.	2012/11/1 AUE
SITE ADDRESS:		- I dulation By
WORK AREA:	ROOM 12,15 DOUTSIDE Main Office	t Pass
CONTRACTOR:	All State Abutement	□ Fail
🗆 Neg. Pressure	Enclosure Mini-Enclosure Glovebag Other (Descr	ibe Below) 🗆 None
MATERIALS ABATE	ED IN THIS SPECIFIC WORK AREA	
9'x 9" FLOOR	THE QTY SOLF	
· · · · · · · · · · · · · · · · · · ·		
	QTY	QTY
SUSPECT ACM R	EMAINING IN THIS WORK AREA NOT SPECIFIED FOR REMOVAL	
	QTY	
SURFACES INSPECT	TED	
Instructions: Ch	neck surfaces that pass. Circle surfaces that fail. Strike throug	h N/Δ
Floor	V Horizontal Surfaces X Pines 1-Mach	opical Equipment
Duct Work	Vertical Surfaces	anical Equipment
Fixtures	Enclosed Items	
FIELD OBSERVATIO		
Standard	Containment with Negative an pressive	<u>e</u>
AIR CLEARANCE:	□ PCM (# of Samples=) □ TEM	Visual Only
Acknowledgemen		
I acknowledge tha	It I inspected this work area on this day.	AA.
EnviroScience Ins	pector:VILL CAREE///////////////////////////////	Hul
have read and ur	PRINTED SIGNATU	
Contract de O	The stand these results.	
Contractor's Super	rvisor: <u>Lak JOUIURD</u>	
	PRINTED SIGNATU	RES

C:\Users\jhand\Desktop\Bay Path\Asbestos Final Visual Inspection.docx

FUSS &	O'NEILL			Final V	/isual Ins	pection Form
					4	sbestos Abatement
Date: 8/25/15	Removal		Encapsulati	on 🗆 En	closure n R	epair 🗆 Cleanup
PROJECT NAME:	Barno Hud	n.Srl	TOK-IM	IS MONAGE	ficil Alenion	
BUILDING:	Peobles	-lem	anter	IS VERIO	Project No.:	MONUL RUE
SITE ADDRESS:						TOURITIETL_
WORK AREA:	Exterior					th Pass
CONTRACTOR:	All Stort	e Al	patement		,,,,,,,	\square Fail
Discourse Neg. Pressure	Enclosure 🗆 N	lini-E	nclosure 🛛	Glovebag	Other (Descrit	De Below) MNone
MATERIALS ABATE	D IN THIS SPECI	FIC W	ORK AREA			
Window Glaz		QTY	6 Windel	<u></u>		QTY
		QTY	POWes			
						:
						QTY
		QTY				QTY
SUSPECT ACM R	EMAINING IN THIS	WOR	K AREA NOT		REMOVAL	
		QTY		ZILOINED I OK	TEMOVAL	
SURFACES INSPECT	ED					
Instructions: Ch	eck surfaces the	at nas	s Circle surf	aces that fail	Strike through	
th. F loor		Surfa				<u>N/A.</u>
Duct Work		face				nical Equipment
√Fixtures	S Enclosed It	ome		on Unit		ctor's Equipment
			¢⊐ vva		X Other:	
FIELD UBSERVATIONS						
Stantal Conformation WAAN REGUTE CUT Pressere						
Critical barriers in place, Paly on actual (Trater - RE						
CHINES Darners In prace. Boly on gran's CINERAR DEGENCE.						
AIR CLEARANCE:	□ PCM (# o	f Sam	ples=)		Λ	
ACKNOWLEDGEMENT						
EnviroScience Inst	pector:	N V		J A	MIVO (2	Phy
		<u>νη</u> Ε		f -1	VILLE U	Pr
Lhave read and up	derstand these	PF	(INTED		SIGNATUR	E 'J
Contractoria O		resul	7 11-5		STAT	
Contractor's Super	visor: <u>Car</u>		DONIOND		Show C	
		PR	RINTED	/	SIGNATUR	E

RUSS & OB EnviroSeien		end in All	ial Visual Ins	pection Form		
Date:8/24/15	N Removal		tis Memorial Elementa	ncepail Li Cleanup		
PROJECT NAME:	Bourr	ie High School & U		201211 <u>4</u> 1 RAF		
BUILDING:	Utis Elen			20121141.D4L		
SITE ADDRESS:						
WORK AREA:	A II -		ement	□ Fass □ ₽ Fail		
CONTRACTOR:				ribe Below)		
⊠ Neg. Pressure						
MATERIALS ABAT	EDINA HIS SREGIRIO	2 CE		lotty.		
9" x 9" Floor Tile		3 3 7				
	QTY:					
	QTY:					
	QTY:					
	QTY:					
SUSPECT ACME	REMAINING IN THIS V	VORKCAREACNOTAS	RECIFIED FOR REMOV			
	QTY:					
	QTY:			QTY:		
SURFACES INSPECTED						
Instructions: Check surfaces that pass. Circle surfaces that fail. Strike through N/A.						
□⁄Floor	🗹 Horizontal Sur	faces 🖾 Pipes	⊠′ Mec	hanical Equipment		
∫⊠∕ Duct Work	☑ Vertical Surface	es 12 Decon	Unit 🖾 Con	tractor's Equipment		
₽ Fixtures	⊠ Enclosed Item	s 📮 Waste	Load Out D Othe	er:		
FIELD OBSERVAT	TIONS					
1 mini-par	There with no	contrile our near	5.0			
- min ent	LUNTE WITH THE	Janve and press				
Flocrtile Wi	is heresed with	a forch and	repaire as a	While		
Curldment 11	uthout and bra	akage ct-tu +	ile.			
	, , , , ,					
AIR CLEARANCE:	: □ PCM (# of Sa	amples=)		□ Visual Only		
ACKNOWLEDGE	AENT			an Antonio antonio		
I acknowledge th	at I inspected this w	ork area on this day				
EnviroScience In	spector:IUI(Ge (cffeg	< VINCe (splet_		
	V	PRINTED 1	SIGNA	TÚRE '		
I have read and understand these results.						
I have read and t Contractor's Sup	understand these res	sults.				

ff hussian	NEILL Bo, sig			leual Insp A	Bection Form
Date:8/24/15	□ Removal	Encapsula	ation 🗆 Ei	nclosure 🗆 R	epair 🛛 Cleanup
PROJECT NAME:	Bour	ne High Scho	ool & Otis Mem	norial Elementary	/ School
BUILDING:	Otis Eler	mentary Sch	nool	Project No.:	20121141.B4E
SITE ADDRESS:			Bourne,	Ма	
WORK AREA:		Classro	oom 7		E Pass
CONTRACTOR:	Alls	state Asbesto	os Abatement		🗆 Fail
☑ Neg. Pressure	Enclosure D'Mini-E	Enclosure [□ Glovebag	Other (Descrite)	be Below) □ None
MATERIALSTAL	ted in Athle Specific	e Workcare		and the second second	
9" x 9" Floor Tile	QTY:	8 SF			QTY:
	QTY:				QTY:
	QTY:				QTY:
	QTY:				QTY:
	QTY:				QTY:
SUSPECT ACM T	EMAINING IN THIS V	ORKAREA	NOTSPECIFIEI	DEOR REMOVAL	
	QTY:				QTY:
	QTY:				QTY:
SURFACES INSPE	CTED eck surfaces that pa	ss. Circle su	urfaces that fail	. Strike through	N/A
☑ Floor	Horizontal Surf	aces 🕅 F	Pipes	PI Mecha	nical Equipment
团 Duct Work	U Vertical Surface	es 🗹	Decon Unit		ctor's Equipment
↓ ↓ ↓ Fixtures		5 BV	Vaste Load Ou	ut 🖾 Other:	
FIELD OBSERVAT	IONS				
3 Seperate	Mini-enclosure	rs aland	3 differen-	t choos in	
Classram -	7. Each offer	· Crosseen	uno Att	ILLIA 3 SF CF	f-tile.
ling tile ille	s hould in IIV.	trop a	- 7 Original		1
1001 The was heated with torch and perhoved as a tuil					
Comparent without and deterior ation in the process of remaining.					
AIR CLEARANCE:	PCM (# of Sar	mples=) 🗆 TE	M	⊡ <i>X</i> isual Only
ACKNOWLEDGEM	ENT				and a state of the
I acknowledge tha EnviroScience Ins	it I inspected this wo	rk area on the $2(1+e^{1})$	is day.	Mille G	they
L have read and u			J	SIGNATUR	
Contractor's Suno		uits.			
	F	PRINTED		SIGNATUF	RE

f PUSS & O Davirossia			FinalA	/isual ins:	pection Form spestos Abatement	
Date:8/24/15	⊠ Removal	Encapsul	ation 🗆 E	nclosure 🗆 Re	epair 🛛 Cleanup	
PROJECT NAME:	Bour	ne High Sch	ool & Otis Mer	morial Elementary	/ School	
BUILDING:	Otis Eler	mentary Scl	nool	Project No.:	20121141.B4E	
SITE ADDRESS:			Bourne,	Ма		
WORK AREA:		Classro	om 10		D-Pass	
CONTRACTOR:	Alls	state Asbest	os Abatement		🗆 Fail	
□⁄Neg. Pressure	Enclosure D'Mini-E	Enclosure	□ Glovebag	Other (Descrit	be Below) □ None	
MATERIALSTABA	TEDINATHIS SPECIFIC	o Work Ar				
9" x 9" Floor Tile	QTY:	10 SF			QTY:	
	QTY:				QTY:	
	QTY:				QTY:	
	QTY:				QTY:	
	QTY:				QTY:	
SUSPECT ACM I	EMAINING IN THUS V	ORK AREA	Not Specifie	DFOR REMOVAL		
	QTY:	l			QTY:	
	QTY:				QTY:	
SURFACES INSPECTED						
Instructions: Ch	Instructions: Check surfaces that pass. Circle surfaces that fail. Strike through N/A.					
¹ □ ² Floor	Yd Horizontal Surf	aces 🖾 I	Pipes	🗹 Mecha	nical Equipment	
Duct Work	D Vertical Surface	es 먼(Decon Unit	🗹 Contra	ctor's Equipment	
Fixtures	D Enclosed Items	; ⊡⁄\	Vaste Load O	ut Other:		
FIELD OBSERVATIONS						
4 Seperate	Mini-enclosure	s With	negative	Cur exhaus	t. There	
Were 4 ser	percute Ciffus	througha	+ clossicon	MIC WHU	less then	
3 st of do	maged file.					
All floor tile is nos remarked by hereing it and remaining it as a whole						
Condenen w/out any pricalcage offile.						
AIR CLEARANCE:	□ PCM (# of Sar	nples=) 🗆 TE	EM I	t yisual Only	
ACKNOWLEDGEM	ENT		91 - A. Marine and			
I acknowledge that	at I inspected this wo	rk area on th	iis day.			
EnviroScience Ins	pector:///	PRINTED	+ $($	VIVC (of by SIGNATUR	RE	
I have read and u	nderstand these resu	ults.	9		\bigcirc	
Contractor's Supe	ervisor: Zar Sa					
	F			SIGNATUR	RE	



Appendix F

TEM Air Sample Laboratory Reports and Chain-of-Custody Forms





EMSL Analytical, Inc. 7 Constitution Way, Suite 107, Woburn, MA 01801 Phone/Fax: (781) 933-8411 / (781) 933-8412 http://www.EMSL.com bostonlab@emsl.com

EMSL Order:131504100CustomerID:ENVI54CustomerPO:20121141.B4EProjectID:

Attn:	Dustin Diedricksen	Phone:	(860) 646-2469
	Fuss & O'Neill EnviroScience, LLC	Fax:	(888) 838-1160
	146 Hartford Road	Received:	07/21/15 9:33 AM
	Menchecter CT 00040	Analysis Date:	7/22/2015
	Manchester, CT 00040	Collected:	7/20/2015

Project: 20121141.B4E / Bourne High School & Otis Memoiral Elementary School, Bourne, MA / Bourne High School 2nd Floor - B Wing

Test Report: Asbestos Fiber Analysis by Transmission Electron Microscopy (TEM) Performed by EPA 40 CFR Part 763 Appendix A to Subpart E

		Volume	Area Analyzed	Non	Asbestos	# Structu	res	Analytical Sensitivity	Asbe Concen	stos tration
Sample	Location	(Liters)	(<i>mm</i> ²)	Asb	Type(s)	$\geq 0.5\mu < 5\mu$	≥5 µ	(S/cc)	(<i>S/mm</i> ²)	(S/cc)
01-MC-0720-TEM 131504100-0001	Room 25 C - Clearance	1440.00	0.0650	0	None Dete	ected		0.0041	<15.00	<0.0041
02-MC-0720-TEM 131504100-0002	Room 23 C - Clearance	1503.00	0.0520	0	None Dete	ected		0.0049	<19.00	<0.0049
03-MC-0720-TEM 131504100-0003	Room 20 C - Clearance	1546.00	0.0520	0	None Dete	ected		0.0048	<19.00	<0.0048
04-MC-0720-TEM 131504100-0004	Room 22 C - Clearance	1476.00	0.0650	0	None Dete	ected		0.0040	<15.00	<0.0040
05-MC-0720-TEM 131504100-0005	Room 24 C - Clearance	1404.00	0.0650	0	None Dete	ected		0.0042	<15.00	<0.0042
06-MC-0720-TEM	2nd Floor Hallway - B Wing - Clearance	1454.00			Not Analyz	zed				
07-MC-0720-TEM 131504100-0007	2nd Floor Hallway - B Wing - Clearance	1224.00			Not Analyz	zed				
08-MC-0720-TEM	2nd Floor Hallway - B Wing - Clearance	1427.00			Not Analyz	zed				
131504100-0008										
09-MC-0720-TEM	2nd Floor Hallway - B Wing - Clearance	1208.00			Not Analyz	zed				
131504100-0009										
10-MC-0720-TEM 131504100-0010	2nd Floor Hallway - B Wing - Clearance	1408.00			Not Analyz	zed				

Analyst(s)

Alexander Maxinoski (5)

PA

Steve Grise, Laboratory Manager or other approved signatory

EMSL maintains liability limited to cost of analysis. 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 or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. Results reported in both structures/cm3 and structures/mm2 are dependent on the volume of air sampled and measured by non-laboratory personnel are not the responsibility of EMSL and are not covered by the laboratory's NVLAP accreditation. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request.

Samples analyzed by EMSL Analytical, Inc. Woburn, MA NVLAP Lab Code 101147-0, CT PH-0315, MA AA000188, RI AAL-107T3 and VT AL998919

Initial report from 07/22/2015 07:35:25



Attn: Dustin Diedricksen Phone: (860) 646-2469 Fuss & O'Neill EnviroScience, LLC Fax: (888) 838-1160 146 Hartford Road Received: 07/21/15 9:33 AM Manchester, CT 06040 Collected: 7/22/2015

Project: 20121141.B4E / Bourne High School & Otis Memoiral Elementary School, Bourne, MA / Bourne High School 2nd Floor - B Wing

Test Report: Asbestos Fiber Analysis by Transmission Electron Microscopy (TEM) Performed by EPA 40 CFR Part 763 Appendix A to Subpart E

		Volume	Area Analyzed	Non	Asbestos	# Structures	Analytical Sensitivity	Asbes Concent	stos ration
Sample	Location	(Liters)	(<i>mm</i> ²)	Asb	Type(s)	$\geq 0.5\mu < 5\mu \geq 5\mu$	(S/cc)	(S/mm^2)	(S/cc)
BI-MC-0720-TEM 131504100-0011	Blank - Open In				Not Analyz	zed			
BO-MC-0720- TEM 131504100-0012	Blank - Open Out				Not Analyz	zed			
BU-MC-0720- TEM 131504100-0013	Blank - Unopened				Not Analyz	zed			

Analyst(s)

Alexander Maxinoski (5)

P.A

Steve Grise, Laboratory Manager or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. Woburn, MA NVLAP Lab Code 101147-0, CT PH-0315, MA AA000188, RI AAL-107T3 and VT AL998919

Initial report from 07/22/2015 07:35:25

<u>ц</u>	13
TEM A	150
HER	410
A Air (0
Sampling	
Chain-	
of-Custody	

50 Redfield Street, Suite 100, Boston, MA 02122 (617) 282-4675

FUSS & O'NEILL EnviroScience, LLC

roject Name:	Bourne High School & Oris	Memorial Ele	mentary School		Project Nur	nber:		20121141.F	34E	
uilding Name/Number:	Bourne H	gh School			Project Mar	nager.	D	ustin Diedri	icksen	
te Address:	Bourr	e, Ma			Rotometer	Number		101415		
ork Area:	2 nd Floor	- B Wing			Rotometer	Cal. Date		2/20/15		
Sample ID Number				Sample	Time	Sample		Flow Rate		Total
(#-Initials-Date-TEM)	Sample Location	0/1	Project Activity	On	Off	(Min.)	Pre	Post	Average	(Liters)
01-MC-0720-TEM	Room 25 C	1	Clearance	1330	1610	160	6	6	6	1440
02-MC-0720-TEM	Room 23 C	Т	Clearance	1331	1610	159	9.5	9.4	9.45	1503
03-MC-0720-TEM	Room 20 C	1	Clearance	1333	1610	157	9.9	8.6	9,85	1546
04-MC-0720-TEM	Room 22 C	I	Clearance	1334	1611	157	9.5	9.3	9,4	1476
05-MC-0720-TEM	Room 24 C	I	Clearance	1335	1611	156	9	9	6	1404
06-MC-0720-TEM	2 nd Floor Hallway-B Wing	0	Clearance	1339	1613	153	9.5	9.5	9,5	1454
07-MC-0720-TEM	2 nd Floor Hallway-B Wing	0	Clearance	1340	1613	153	8	8	8	1224
08-MC-0720-TEM	2 rd Floor Hallway-B Wing	0	Clearance	1342	1613	151	9.5	9.4	9,45	1427
09-MC-0720-TEM	2 nd Floor Hallway-B Wing	0	Clearance	1343	1614	151	8	8	8	1208
10-MC-0720-TEM	2nd Floor Hallway-B Wing	0	Clearance	1345	1614	149	9.5	9,4	9,45	1408
BI-MC-0720-TEM	Blank - Open In	1	Clearance							
BO-MC-07020-TEM	Blank - Open Out	0	Clearance							
BU-MC-0720-TEM	Blank - Unopened	I	Clearance							
nalysis Method: TEM AHE	RA						I	urnaround	Time	24 hrs
ease call EnviroScience at (61	7) 282-4675 if analyses will not be c	ompleted for	requested t/a/t listed abc	WC.						
mail Results to:	Ddiedricksen @fai	ndo.com		Do Not M	ail Hard Copy	Report		FA	X Results to	: 888-838-1

OrderID: 131504100

led & 795050065137

Shipped To: 🛛 EMSL

Samples Collected by:

Mike Coffey C Other_

Date:

7/20/15

__ Samples Sent by:

MC

Date:

7/20/15

Time

pm

JUL 21 2015

By

11 9:33

Page 1 Of

1



EMSL Analytical, Inc. 7 Constitution Way, Suite 107, Woburn, MA 01801 Phone/Fax: (781) 933-8411 / (781) 933-8412 http://www.EMSL.com bostonlab@emsl.com

EMSL Order:131504178CustomerID:ENVI54CustomerPO:20121141.B4EProjectID:

Attn:	Dustin Diedricksen	Phone:	(860) 646-2469
	Fuss & O'Neill EnviroScience, LLC	Fax:	(888) 838-1160
	1/6 Hartford Road	Received:	07/23/15 9:10 AM
	Manahastar CT 06040	Analysis Date:	7/24/2015
	Manchester, CT 06040	Collected:	7/22/2015

Project: 20121141.B4E / Bourne High School & Otis Memorial Elementary School, Bourne, MA / Bourne High School - 1st Floor - C Wing

Test Report: Asbestos Fiber Analysis by Transmission Electron Microscopy (TEM) Performed by EPA 40 CFR Part 763 Appendix A to Subpart E

		Volume	Area Analvzed	Non	Asbestos	# Structur	es	Analytical Sensitivity	Asbe Concent	stos tration
Sample	Location	(Liters)	(<i>mm</i> ²)	Asb	Type(s)	$\geq 0.5\mu < 5\mu$	≥5 µ	(S/cc)	(<i>S/mm</i> ²)	(S/cc)
01-MC-0722-TEM 131504178-0001	Inside - Clearance	1493.00	0.0520	0	None Dete	cted		0.0050	<19.00	<0.0050
02-MC-0722-TEM 131504178-0002	Inside - Clearance	1485.00	0.0520	0	None Dete	cted		0.0050	<19.00	<0.0050
03-MC-0722-TEM 131504178-0003	Inside - Clearance	1477.00	0.0650	0	None Dete	cted		0.0040	<15.00	<0.0040
04-MC-0722-TEM 131504178-0004	Inside - Clearance	1320.00	0.0650	0	None Dete	cted		0.0045	<15.00	<0.0045
05-MC-0722-TEM 131504178-0005	Inside - Clearance	1485.00	0.0520	0	None Dete	cted		0.0050	<19.00	<0.0050
06-MC-0722-TEM 131504178-0006	Outside - Clearance	1486.00			Not Analyz	ed				
07-MC-0722-TEM 131504178-0007	Outside - Clearance	1494.00			Not Analyz	ed				
08-MC-0722-TEM 131504178-0008	Outside - Clearance	1336.00			Not Analyz	ed				
09-MC-0722-TEM 131504178-0009	Outside - Clearance	1494.00			Not Analyz	ed				
10-MC-0722-TEM 131504178-0010	Outside - Clearance	1494.00			Not Analyz	ed				
11-MC-0722-TEM 131504178-0011	Blank - Open In				Not Analyz	ed				
12-MC-0722-TEM 131504178-0012	Blank - Open Out				Not Analyz	ed				

Analyst(s)

Alexander Maxinoski (5)

PA

Steve Grise, Laboratory Manager or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. Woburn, MA NVLAP Lab Code 101147-0, CT PH-0315, MA AA000188, RI AAL-107T3 and VT AL998919

Initial report from 07/24/2015 08:16:14



Attn: Dus Fus 146 Man	tin Diedricksen s & O'Neill EnviroScience, LLC Hartford Road nchester, CT 06040	Phone: Fax: Received: Analysis Date: Collected:	(860) 646-2469 (888) 838-1160 07/23/15 9:10 AM 7/24/2015 7/22/2015
		Collected.	1/22/2013

Project: 20121141.B4E / Bourne High School & Otis Memorial Elementary School, Bourne, MA / Bourne High School - 1st Floor - C Wing

Test Report: Asbestos Fiber Analysis by Transmission Electron Microscopy (TEM) Performed by EPA 40 CFR Part 763 Appendix A to Subpart E

		Volume	Area	Non	Ashestos	# Structur	es	Analytical Sansitivity	Asbes	tos
Sample	Location	(Liters)	Analyzea (mm²)	Asb	Type(s)	$\geq 0.5\mu < 5\mu$	≥5µ	(S/cc)	(S/mm²)	(S/cc)
13-MC-0722-TEM	Blank - Unopened				Not Analy	/zed				
131504178-0013										

Analyst(s)

Alexander Maxinoski (5)

PA

Steve Grise, Laboratory Manager or other approved signatory

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31504178



TEM AHERA Air Sampling Chain-of-Custody

50 Redfield Street, Suite 100, Boston, MA 02122 (617) 282-4675

Building Name/Number:	Bourn	e High School			Project Man	ager	I	ustin Diedr	icksen	
Site Address:	Во	sume, Ma			Rotometer I	Vumber.		101415		
Work Area:	1# H	oor- C Wing			Rotometer (al. Date:		2/20/1	5	
Sample ID Number				Sample	e Time	Sample		Flow Rate		Total
(#-Initials-Date-TEM)	Sample Location	0/1	Project Activity	On	Off	(Min.)	Pre	Post	Average	(Liters)
01-MC-0722-TEM	Inside	1	Clearance	1129	1314	165	6	9.1	9.05	1493
02-MC-0722-TEM	Inside	-	Clearance	1129	1314	165	6	6	9	1485
03-MC-0722-TEM	Inside	1	Clearance	1130	1315	165	6	8,9	8.95	1477
04-MC-0722-TEM	Inside	-	Clearance	1130	1315	165	8	8	80	1320
05-MC-0722-TEM	Inside		Clearance	1130	1315	165	6	6	9	1485
06-MC-0722-TEM	Outside	0	Clearance	1135	1321	166	9	8.9	8.95	1486
07-MC-0722-TEM	Outside	0	Clearance	1135	1321	166	9	6	9	1494
08-MC-0722-THM	Outside	0	Clearance	1135	1322	167	8	8	8	1336
09-MC-0722-TEM	Outside	0	Clearance	1136	1322	166	6	6	9	1494
10-MC-0722-TEM	Outside	0	Clearance	1136	1322	166	6	9	9	1494
BI-MC-0722-115M	Blank - Open In	-	Clearance		Statistics	A A A A A A A A A A A A A A A A A A A		and the second se	A and a second	7 20 F
BO-MC-0722-TEM	Blank - Open Out	0	Clearance	Sec. 1. Particular				14 mm should be		
BU-MC-0722-TEM	Blank - Unopened	1	Clearance		and the second s	and the second se				1.1.1 -
Analysis Method: 'TEM AH Please call EnviroScience at (6	FRA 17) 282-4675 if analyses will not b	or completed for	requested t/a/t listed al	Sove.				umaround	Time	24 hrs
Email Results to:	Ddiedricksen (a	fando.com		Do Not M	ail Hard Copy	Report		FA	X Results to	: 888-838-1160
Special Instructions:										

OrderID: 131504178

Method of Shipment: 🖾 Fed Ex

□ Lab Drop Off □ Other

9:00

0

Shipped To: 🛛 EMSL Samples Collected by:

Mike Coffey

Date

7/22/15 Samples Sent by:

MC

Date:

7/22/

E G E I V E G

C Other

Page 1 Of

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