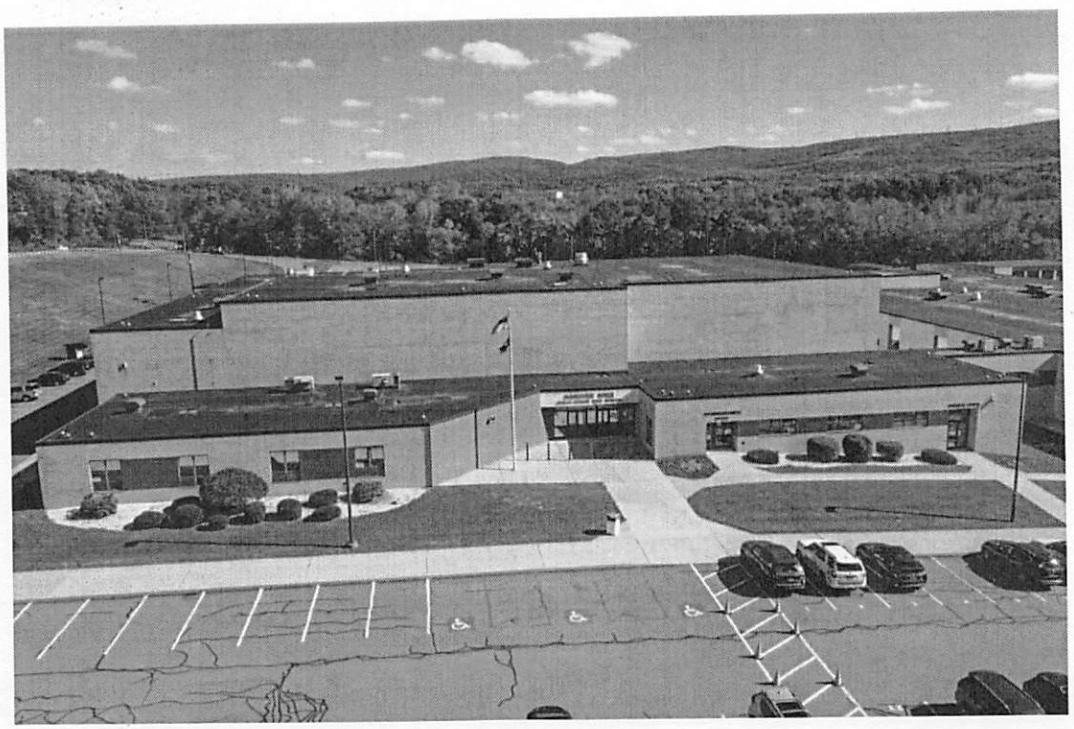
Indoor Air Quality (IAQ) - Mold Report

Hanover Junior-Senior High School
1600 San Souci Pkwy
Hanover, PA, 18706



ENVIRONMENTAL ABATEMENT ASSOCIATES, INC.

April 10th, 2024

CONTENTS

Indoor Air Quality Inspection / Testing Report

Hanover High School
1600 San Souci Pkwy
Hanover, PA, 18706

INDOOR AIR QUALITY INSPECTION / TESTING REPORT

Prepared for:

Brandon Holgren

For the properties known as:

1600 San Souci Pkwy
Hanover, PA, 18706

This Indoor Air Quality Inspection / Testing report prepared by Environmental Abatement Associates, Inc. is based on information supplied by the client and on conditions readily observable or measurable on the date of this study. Any inspection and/or testing conducted by Environmental Abatement Associates, Inc. is not meant to determine whether a building is safe or unsafe for occupants in regards to indoor air quality. Interior building conditions vary constantly, therefore the findings and results presented in this report should be considered relative to and representative of the conditions that existed at the time of the inspection and testing. The results and recommendations presented herein should not be relied upon exclusively for the prevention of all possible illnesses, injuries or losses. These services are a supplement to, and not a substitute for, the client's responsibility for protecting the health and safety of employees, students, residents and others and for complying with applicable laws and regulations. Environmental Abatement Associates, Inc. warrants that its work is performed in a competent and professional manner. No other warranties are expressed or implied.

1.0 INTRODUCTION AND BACKGROUND

Personnel of ENVIRONMENTAL ABATEMENT ASSOCIATES, INC. (EAA) were on site Thursday, March 28th 2024 at 1600 San Souci, Hanover, Pennsylvania to conduct an Indoor Air Quality (IAQ) inspection and testing. The inspection and testing was conducted at the request of Brandon Holgren

2.0 EVALUATION STRATEGY

The general strategy employed in this evaluation was to:

1. CONDUCT A VISUAL INSPECTION IN DESIGNATED AREAS.
2. CONDUCT MOLD AIR SAMPLING IN DESIGNATED AREAS.
3. PROVIDE A REPORT OF FINDINGS AND RECOMMENDATIONS.

A visual inspection was conducted in designated areas. The inspection was not intended to be an intensive and detailed inspection, but rather an overview of the conditions that may cause poor indoor air quality. The condition of walls, floor, ceilings, etc. were examined for mold growth and any potential problems that could initiate mold growth were noted.

A total of four (4) mold air the samples were collected on interior of buildings using Allergenco-D sampling cassettes manufactured by Environmental Monitoring Systems and a high volume air sampling pump. One (1) air sample was also collected outside the back door in order to establish a background to be used when interpreting the results of the indoor air samples. Per manufacturer recommendations, each air sample was collected at a flow rate of fifteen (15) liters of air per minute (L/M) for a period of five (5) minutes.

Air samples were logged, labeled and shipped overnight to EMSL Analytical, Inc.,an American Industrial Hygiene Association (AIHA) accredited microbiology laboratory, for analysis by microscopic examination.

AIR CONTAMINANT STANDARDS AND GUIDELINES

In parts per million (ppm)

MEASURED PARAMETER	OSHA PEL Occupational Safety and Health- Permissible Exposure Limits	ACGIH TLV American Conference of Governmental Industrial Hygienists- Threshold Limit Values		NIOSH REL National Institute for Occupational Safety and Health- Recommended Exposure Limits				ASHRAE American Society of Heating, Refrigerating and Air-Conditioning Engineers
	TWA (8) Total Weighted Average	TWA (8) Total Weighted Average	STEL Short Term Exposure Limits	TWA (8) Total Weighted Average	STEL Short Term Exposure Limits	C Ceiling Recommended Exposure Limits	IDLH Immediately Dangerous to Life and Health	RECOMMENDATIONS
Carbon Monoxide	50	25	-	35	-	200	1,200	Maximum allowable concentration for indoor living spaces is 9 ppm
Carbon Dioxide	5,000	5,000	30,000	5,000	30,000	-	40,000	< 700 ppm above outdoor level indicates adequate ventilation
Temperature								68 ^{O}F - 75 ^{O}F (winter) 73 ^{O}F - 79 ^{O}F (summer)
Relative Humidity								30% – 60%

DATA TABLE I

Temperature, Relative Humidity, Carbon Dioxide and Carbon Monoxide Readings

Test No.	Floor	Location	Test Time	Temperature (°F)	Relative Humidity (%)	Carbon Dioxide (PPM)	Carbon Monoxide (PPM)	Comments
1	0	Bay Door 17 (Baseline)	8:15	40	40	531	7	Air sample # 5603532
2	1	Cafeteria	8:22	68	38	1038	7	Air sample # 5603813
3	1	Gym Hallway	8:29	70	39	627	7	Air sample # 5603591
4	1	Room A20	8:37	68	38	728	7	Air sample # 5288201
5	1	Hallway A30	8:44	70	38	659	7	Air sample # 5603469

3.0 DISCUSSION AND CONCLUSIONS

Molds are part of the natural environment and are simple, microscopic organisms whose purpose is to break down dead materials. Molds can be found on plants, dry leaves, and about every other organic material. Mold spores are lightweight and are spread by air currents. If spores land on a suitable surface, they will begin to grow. In order to thrive, mold requires four things to grow: water, organic materials, oxygen, and a temperature between 40-90 degrees Fahrenheit.

To stop the growth of mold, find and stop the moisture source. Mold spores will not grow if moisture is not present.

1. Aspergillus Penicillium

a. Aspergillus species are filamentous fungi that are commonly found in soil, decaying, vegetation, seeds and grains where they thrive as saprophytes. Aspergillus species can occasionally be harmful to humans. In humans, Aspergillus fumigatus is the most common and life-threatening airborne opportunistic fungal pathogen, which is particularly important among immunocompromised hosts. Inhaling Aspergillus fumigatus spores(condia) into the lungs may cause multiple diseases, which depend on theimmunological status of the host in humans. These diseases include invasive pulmonaryaspergillosis, aspergilloma, and different forms of hypersensitivity, pneumonitis, andallergic bronchopulmonary aspergillosis (ABPA).

2. Cladosporium

a. Most kinds of Cladosporium are not dangerous to humans, but sometimes they may lead to allergies, or they may worsen asthma. In worse cases, Cladosporium may lead to infections. In most cases if you open some windows or install a heat recovery ventilator (HRV). These measures will help stop new mold from forming, but will not kill active Cladosporium spores already there. For that you will need a non-toxic registered fungicide such as Concrobium.

3. Basidiospores

a. Inhalation of basidiospores can have health effects ranging from pneumonia-like symptoms to cryptococcus meningitis if the infection isn't treated before it spreads to the brain. The list of environments in which this class of molds thrives is extensive. Sources range from old fruit to damp acrylic painted walls. Detection of Basidiospores at levels higher than 5,000 count per cubic meter are considered problematic.

4. Ascospores

a. This group contains potential opportunistic pathogens, toxin producers, and allergens depending on the genus and species. Ascospores do present a human health risk but few have been reported to cause disease.

All sample locations came back with very low numbers

These findings indicate that mold remediation is not needed.

Respectfully Submitted,

Russ Bigus, M.S., Biology
Professor of Microbiology

Mold Air Sample Analysis Results

EAA
Environmental Abatement Associates, Inc.

OrderID: 182401343

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Microbiology Chain of Custody Form

EMSL Order Number / Lab Use Only

18240 1343

EMSL Analytical, Inc.
5221 Militia Hill Rd
Plymouth Meeting, PA 19462
PHONE: (610) 828-3102
EMAIL: plymouthmeetinglab@emsl.co

If Bill-To is the same as Report-To leave this section blank. Third-party billing requires written authorization

Customer Information		Billing Information	
Customer ID:		Billing ID:	
Company Name:	Environmental Abatement Associates, Inc.	Company Name:	Environmental Abatement Associates, Inc.
Contact Name:	Christopher Tsioles	Billing Contact:	Christopher Tsioles
Street Address:	239 Schuyler avenue suite 125B	Street Address:	239 Schuyler avenue suite 125B
City, State, Zip:	KINGSTON PA 18704	City, State, Zip:	KINGSTON PA 18704
Country:	US	Country:	US
Phone:	570-283-0500	Phone:	570-283-0500
Email(s) for Report:	eaawdt@verizon.net	Email(s) for Invoice:	

Project Information

Project Name/No:	24-12.1 Hanover Jr/Sr High School
Purchase Order:	
EMSL LIMS Project ID: (If applicable, EMSL will provide)	
State Samples Collected:	PA
Zip Code Samples Collected::	17331
State of Connecticut (CT) must select project location:	☐ Commercial (Taxable) ☐ Residential (Non-taxable)
Sampled By Name:	Christopher Tsioles
Sampled By Signature:	
No of Samples in Shipment	5

Sterile, Sodium Thiosulfate Preserved Bottle Used: ☐ | Biocide Used in Source (specify)

Public Water Supply Samples: ☐ | Note: All results may automatically be reported to DOH if required by State.

Turn-Around-Time (TAT) Please call ahead for large projects and/or turnaround times 6 Hours or Less. *32 Hour TAT available for select tests only* samples must be submitted by 11.30am.

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 32* Hour ☑ 48 Hour ☐ 72 Hour ☐ 96 Hour ☐ 1 Week ☐ 2 Week

MICROBIOLOGY TEST CODES

M001 Air-O-Cell
M174 MoldSnap
M030 Micro 5
M032 Allergenco-D
M041 Fungal Direct Examination
M169 Pollen ID & Enumeration
M280 Dust Characterization Level-1
M281 Dust Characterization Level-2
M005 Viable Fungi-Air Samples (Genus ID & Count)
M006 Viable Fungi-Air Samples (Includes *Penicillium, Aspergillus, Cladosporium, Stachybotrys* Species ID & Count)
M007 Culturable Fungi-Surface Samples (Genus ID & Count)
M008 Culturable Fungi-Surface Samples (Includes *Penicillium, Aspergillus, Cladosporium, Stachybotrys* Species ID & Count)
M009 Bacteria Culture Gram Stain & Count
M010 Bacteria Count & ID - 3 Most Prominent
M011 Bacteria Count & ID - 5 Most Prominent

M012 *Pseudomonas aeruginosa* (P/A***)
M024 *Pseudomonas aeruginosa* (MFT*)
M015 Heterotrophic Plate Count
M017 Total Coliform & *E. Coli* (Colilert P/A***)
M018 Total Coliform & *E. Coli* (MFT*)
M114 Total Coliform & *E. Coli Enumeration (Colilert MPN**)*
M019 Fecal Coliform (MFT*)
M020 Fecal *Streptococcus* (MFT*)
M029 *Enterococci* (MFT*)
M129 *Enterococci* (Enterolert P/A***)
M180 Real Time qPCR-ERMI 36 Panel
M025 Sewage Screen - Water (MFT*)

M115 Sewage Screen - Water (P/A***)
M116 Sewage Screen - Water (MPN**)
M117 Sewage Screen - Swab (P/A***)
M013 Sewage Screen - Swab (MFT*)
M730 *Methicillin-resistant Staph. aureus* (MRSA)
M031 Rapid-growing non-TB *Mycobacteria* Detection & Enumeration
M014 Endotoxin Analysis
M044 Group Allergen (Cat, Dog, Cockroach, Dust Mite)
M095 Bacteroides
Other - See Analytical Price Guide for Test Code
Legionella Analysis Please use EMSL *Legionella* COC

*MFT= Membrane Filtration Technique
**MPN = Most Probable Number
***P/A = Presence/Absence

Sample #	Sample Location/Description	Sample Type (Matrix)	Potable / Non-Potable (Only for Water)	Test Code	Volume/Area	Date / Time Collected	Temperature (Lab Use Only)
Example: Sample 1	Kitchen	Water	Potable	M017	1,000 ml	1/1/2021 3:30pm	
5603295	By Door 17	Air		M001	1,500 ml	3/28/24 8:20 AM	
5603813	Cafeteria	Air		M001	1,500 ml	3/28/24 8:27 AM	
5603591	Gym Hallway	Air		M001	1,500 ml	3/28/24 8:34 AM	
5288201	Room A20	Air		M001	1,500 ml	3/28/24 8:42 AM	
5603469	Hallway by A30	Air		M001	1,500 ml	3/28/24 8:49 AM	

Special Instructions and/or Regulatory Requirements (Sample Specifications, Processing Methods, Limits of Detection, etc.)

EMSL Fed Ex

Method of Shipment:		Sample Condition Upon Receipt:	
Relinquished by: Christopher Tsioles	Date/Time: 3/28/24	Received by:	Date/Time: 3/29/24
Relinquished by:	Date/Time:	Received by:	Date/Time: 1:30 PM

Controlled Document - COC-34 Micro R13 03/02/2021

☐ AGREE TO ELECTRONIC SIGNATURE (By checking, I consent to signing this Chain of Custody document by electronic signature.)

EMSL Analytical, Inc.

5221 Militia Hill Road Plymouth Meeting, PA 19462
Tel/Fax: (610) 828-3102 / (610) 828-3122
http://www.EMSL.com / plymouthmeetinglab@emsl.com

EMSL Order: 182401343
Customer ID: ENVA55
Customer PO:
Project ID:

Attention: Christopher Tsioles
Environmental Abatement Associates, Inc.
239 Schuyler avenue suite 125B
KINGSTON, PA 18704

Phone: (570) 283-0500
Fax: (570) 283-0577
Collected Date: 03/28/2024
Received Date: 03/29/2024
Analyzed Date: 04/02/2024

Project: 24-12.1 HANOVER JR/SR HIGH SCHOOL

Test Report: Allergenco-D(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number:	182401343-0001			182401343-0002			182401343-0003		
Client Sample ID:	5603295			5603813			5603591		
Volume (L):	1500			1500			1500		
Sample Location:	BY DOOR 17			CAFETERIA			GYM HALLWAY		
Spore Types	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	16	35	8	-	-	-	-	-	-
Aspergillus/Penicillium++	-	-	-	1	2	50	-	-	-
Basidiospores	115(181)	395	90.4	1	2	50	4	9	100
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	3	7	1.6	-	-	-	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Total Fungi	**200**	**437**	**100**	**2**	**4**	**100**	**4**	**9**	**100**
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	2	-	-	2	-	-	2	-
Analyt. Sensitivity 300x	-	<1*	-	-	<1*	-	-	<1*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	1	-	-	1	-	-	2	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.
† Due to method stopping rules, extrapolated raw counts are reported in parenthesis.

Kevin Ream, Laboratory Manager
or other Approved Signatory

No discernable field blank was submitted with this group of samples.

Samples analyzed by EMSL Analytical, Inc. Plymouth Meeting, PA AIHA LAP, LLC-EMLAP Accredited #178659

Initial report from: 04/02/2024 10:12 AM

For information on the fungi listed in this report, please visit the Resources section at www.emsl.com

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Lab Sample Number:	182401343-0004			182401343-0005		
Client Sample ID:	5288201			5603469		
Volume (L):	1500			1500		
Sample Location:	ROOM A20			HALLWAY BY A30		
Spore Types	**Raw Count†**	**Count/m³**	**% of Total**	**Raw Count†**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-
Aspergillus/Penicillium++	-	-	-	3	7	63.6
Basidiospores	2	4	100	2	4	36.4
Bipolaris++	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-
Cladosporium	-	-	-	-	-	-
Curvularia	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-
Rust	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-
Total Fungi	**2**	**4**	**100**	**5**	**11**	**100**
Hyphal Fragment	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-
Pollen	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	2	-	-	2	-
Analyt. Sensitivity 300x	-	<1*	-	-	<1*	-
Skin Fragments (1-4)	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-
Background (1-5)	-	1	-	-	1	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.
† Due to method stopping rules, extrapolated raw counts are reported in parenthesis.

Kevin Ream, Laboratory Manager
or other Approved Signatory

No discernable field blank was submitted with this group of samples.

Samples analyzed by EMSL Analytical, Inc. Plymouth Meeting, PA AIHA LAP, LLC-EMLAP Accredited #178659

Initial report from: 04/02/2024 10:12 AM

For information on the fungi listed in this report, please visit the Resources section at www.emsl.com

Accreditations

AIHA Laboratory Accreditation Programs, LLC

acknowledges that

EMSL Analytical, Inc.

5221 Militia Rd., Plymouth Meeting, PA 19462

Laboratory ID: LAP-178659

along with all premises from which key activities are performed, as listed above, has fulfilled the requirements of the AIHA Laboratory Accreditation Programs (AIHA LAP), LLC accreditation to the ISO/IEC 17025:2017 international standard, General Requirements for the Competence of Testing and Calibration Laboratories in the following:

LABORATORY ACCREDITATION PROGRAMS

☑	**INDUSTRIAL HYGIENE**	Accreditation Expires: September 01, 2023
☐	**ENVIRONMENTAL LEAD**	Accreditation Expires:
☑	**ENVIRONMENTAL MICROBIOLOGY**	Accreditation Expires: September 01, 2023
☐	**FOOD**	Accreditation Expires:
☐	**UNIQUE SCOPES**	Accreditation Expires:

Specific Field(s) of Testing (FoT)/Method(s) within each Accreditation Program for which the above named laboratory maintains accreditation is outlined on the attached Scope of Accreditation. Continued accreditation is contingent upon successful on-going compliance with ISO/IEC 17025:2017 and AIHA LAP, LLC requirements. This certificate is not valid without the attached Scope of Accreditation. Please review the AIHA LAP, LLC website (www.aihaaccreditedlabs.org) for the most current Scope.

Cheryl O. Morton

Cheryl O Morton
Managing Director, AIHA Laboratory Accreditation Programs, LLC

Revision19.1: 07/28/2021

Date Issued: 08/31/2021

AIHA
Laboratory Accreditation Programs, LLC

AIHA Laboratory Accreditation Programs, LLC
SCOPE OF ACCREDITATION

EMSL Analytical, Inc.
5221 Militia Rd., Plymouth Meeting, PA 19462

Laboratory ID: LAP-178659
Issue Date: 08/31/2021

The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or withdrawal of accreditation.

Environmental Microbiology Laboratory Accreditation Program (EMLAP)

Initial Accreditation Date: 09/01/2019

EMLAP Scope Category	Field of Testing (FOT)	Component, parameter or characteristic tested	Method	Method Description *(for internal methods only)*
Fungal	Air - Direct Examination	Spore Trap	MICRO-SOP-201	Standard Operating Procedure for the Analysis of Airborne Fungal Spores, Hyphal Fragments, Pollen, Insect Fragments, Skin Fragments and Fibrous Particulate by Optical Microscopy of Spore Trap Samples
Fungal	Bulk - Direct Examination	Bulks (liquid or solid)	MICRO-SOP-200	Standard Operating Procedure for the Microscopic Examination of Fungal Spores, Fungal Structures, Hyphae, Pollen, Insect Fragments, and Fibrous Particulate from Surface Samples
Fungal	Surface - Direct Examination	Swab or Tape Lift	MICRO-SOP-200	Standard Operating Procedure for the Microscopic Examination of Fungal Spores, Fungal Structures, Hyphae, Pollen, Insect Fragments, and Fibrous Particulate from Surface Samples

A complete listing of currently accredited EMLAP laboratories is available on the AIHA LAP, LLC website at: *http://www.aihaaccreditedlabs.org*

Indoor Air Quality (IAQ) - Mold Report

Hanover Memorial Elementary School
80 W. Saint Mary's Rd.
Hanover, PA, 18706

ENVIRONMENTAL ABATEMENT ASSOCIATES, INC.

April 10th, 2024

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Indoor Air Quality Inspection / Testing Report

Hanover Memorial Elementary School
80 W. Saint Mary's Rd.
Hanover, PA, 18706

INDOOR AIR QUALITY INSPECTION / TESTING REPORT

Prepared for:

Brandon Holgren

For the properties known as:

80 W. Saint Mary's Rd.
Hanover, PA, 18706

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1.0 INTRODUCTION AND BACKGROUND

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A visual inspection was conducted in designated areas. The inspection was not intended to be an intensive and detailed inspection, but rather an overview of the conditions that may cause poor indoor air quality. The condition of walls, floor, ceilings, etc. were examined for mold growth and any potential problems that could initiate mold growth were noted.

A total of four (4) mold air the samples were collected on interior of buildings using Allergenco-D sampling cassettes manufactured by Environmental Monitoring Systems and a high volume air sampling pump. One (1) air sample was also collected outside the back door in order to establish a background to be used when interpreting the results of the indoor air samples. Per manufacturer recommendations, each air sample was collected at a flow rate of fifteen (15) liters of air per minute (L/M) for a period of five (5) minutes.

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In parts per million (ppm)

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Carbon Monoxide	50	25	-	35	-	200	1,200	Maximum allowable concentration for indoor living spaces is 9 ppm
Carbon Dioxide	5,000	5,000	30,000	5,000	30,000	-	40,000	< 700 ppm above outdoor level indicates adequate ventilation
Temperature								68 ^{O}F - 75 ^{O}F (winter) 73 ^{O}F - 79 ^{O}F (summer)
Relative Humidity								30% – 60%

DATA TABLE I
Temperature, Relative Humidity, Carbon Dioxide and Carbon Monoxide Readings

Test No.	Floor	Location	Test Time	Temperature (°F)	Relative Humidity (%)	Carbon Dioxide (PPM)	Carbon Monoxide (PPM)	Comments
1	0	Front Door (Baseline)	10:58	72	35	727	7	Air sample # 5603859
2	1	Auditorium	11:05	73	34	722	7	Air sample # 5603288
3	1	Cafeteria	11:13	74	32	594	7	Air sample # 5603691
4	3	Hallway Room C10	11:22	72	38	602	7	Air sample # 5603871
5	2	Hallway Room B9	11:29	72	31	633	7	Air sample # 5603624

3.0 DISCUSSION AND CONCLUSIONS

Molds are part of the natural environment and are simple, microscopic organisms whose purpose is to break down dead materials. Molds can be found on plants, dry leaves, and about every other organic material. Mold spores are lightweight and are spread by air currents. If spores land on a suitable surface, they will begin to grow. In order to thrive, mold requires four things to grow: water, organic materials, oxygen, and a temperature between 40-90 degrees Fahrenheit.

To stop the growth of mold, find and stop the moisture source. Mold spores will not grow if moisture is not present.

1. Aspergillus Penicillium

a. Aspergillus species are filamentous fungi that are commonly found in soil, decaying, vegetation, seeds and grains where they thrive as saprophytes. Aspergillus species can occasionally be harmful to humans. In humans, Aspergillus fumigatus is the most common and life-threatening airborne opportunistic fungal pathogen, which is particularly important among immunocompromised hosts. Inhaling Aspergillus fumigatus spores(condia) into the lungs may cause multiple diseases, which depend on theimmunological status of the host in humans. These diseases include invasive pulmonaryaspergillosis, aspergilloma, and different forms of hypersensitivity, pneumonitis, andallergic bronchopulmonary aspergillosis (ABPA).

2. Cladosporium

a. Most kinds of Cladosporium are not dangerous to humans, but sometimes they may lead to allergies, or they may worsen asthma. In worse cases, Cladosporium may lead to infections. In most cases if you open some windows or install a heat recovery ventilator (HRV). These measures will help stop new mold from forming, but will not kill active Cladosporium spores already there. For that you will need a non-toxic registered fungicide such as Concrobium.

3. Basidiospores

a. Inhalation of basidiospores can have health effects ranging from pneumonia-like symptoms to cryptococcus meningitis if the infection isn't treated before it spreads to the brain. The list of environments in which this class of molds thrives is extensive. Sources range from old fruit to damp acrylic painted walls. Detection of Basidiospores at levels higher than 5,000 count per cubic meter are considered problematic.

4. Ascospores

a. This group contains potential opportunistic pathogens, toxin producers, and allergens depending on the genus and species. Ascospores do present a human health risk but few have been reported to cause disease.

All sample locations came back with very low numbers

These findings indicate that mold remediation is not needed.

Respectfully Submitted,

Russ Bigus, M.S., Biology
Professor of Microbiology

Mold Air Sample Analysis Results

EAA
Environmental Abatement Associates, Inc.

OrderID: 182401345

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Microbiology Chain of Custody Form

EMSL Order Number / Lab Use Only

182401345

EMSL Analytical, Inc.
5221 Militia Hill Rd
Plymouth Meeting, PA 19462
PHONE: (610) 828-3102
EMAIL: plymouthmeetinglab@emsl.co

If Bill-To is the same as Report-To leave this section blank. Third-party billing requires written authorization

Customer Information

Customer ID:	
Company Name:	Environmental Abatement Associates, Inc.
Contact Name:	Christopher Tsioles
Street Address:	239 Schuyler avenue suite 125B
City, State, Zip:	KINGSTON PA 18704
Country:	US
Phone:	570-283-0500
Email(s) for Report:	eaawdt@verizon.net

Billing Information

Billing ID:	
Company Name:	Environmental Abatement Associates, Inc.
Billing Contact:	Christopher Tsioles
Street Address:	239 Schuyler avenue suite 125B
City, State, Zip:	KINGSTON PA 18704
Country:	US
Phone:	570-283-0500
Email(s) for Invoice:	

Project Information

Project Name/No: 24-12.4 Hanover [redacted] Memorial Elementary

Purchase Order:

EMSL LIMS Project ID: (If applicable, EMSL will provide)

State Samples Collected: PA

Zip Code Samples Collected:: 17331

State of Connecticut (CT) must select project location. ☐ Commercial (Taxable) ☐ Residential (Non-taxable)

Sampled By Name: Christopher Tsioles

Sampled By Signature:

No of Samples in Shipment: 5

Sterile, Sodium Thiosulfate Preserved Bottle Used: ☐ Biocide Used in Source (specify)

Public Water Supply Samples: ☐ Note: All results may automatically be reported to DOH if required by State.

Turn-Around-Time (TAT) Please call ahead for large projects and/or turnaround times 6 Hours or Less. *32 Hour TAT available for select tests only; samples must be submitted by 11:30am

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 32* Hour ☑ 48 Hour ☐ 72 Hour ☐ 96 Hour ☐ 1 Week ☐ 2 Week

MICROBIOLOGY TEST CODES

M001 Air-O-Cell	M174 MoldSnap
M030 Micro 5	M032 Allergenco-D

M041 Fungal Direct Examination
M169 Pollen ID & Enumeration
M280 Dust Characterization Level-1
M281 Dust Characterization Level-2
M005 Viable Fungi-Air Samples (Genus ID & Count)
M006 Viable Fungi-Air Samples (Includes *Penicillium, Aspergillus, Cladosporium, Stachybotrys* Species ID & Count)
M007 Culturable Fungi-Surface Samples (Genus ID & Count)
M008 Culturable Fungi-Surface Samples (Includes *Penicillium, Aspergillus, Cladosporium, Stachybotrys* Species ID & Count)
M009 Bacteria Culture Gram Stain & Count
M010 Bacteria Count & ID - 3 Most Prominent
M011 Bacteria Count & ID - 5 Most Prominent

M012 *Pseudomonas aeruginosa* (P/A***)
M024 *Pseudomonas aeruginosa* (MFT*)
M015 Heterotrophic Plate Count
M017 Total Coliform & *E. Coli* (Colilert P/A***)
M018 Total Coliform & *E. Coli* (MFT*)
M114 Total Coliform & *E. Coli Enumeration (Colilert MPN**)*
M019 Fecal Coliform (MFT*)
M020 Fecal *Streptococcus* (MFT*)
M029 *Enterococci* (MFT*)
M129 *Enterococci* (Enterolert P/A***)
M180 Real Time qPCR-ERM 36 Panel
M025 Sewage Screen - Water (MFT*)

M115 Sewage Screen - Water (P/A***)
M116 Sewage Screen - Water (MPN**)
M117 Sewage Screen - Swab (P/A***)
M013 Sewage Screen - Swab (MFT*)
M730 *Methicillin-resistant Staph. aureus* (MRSA)
M031 Rapid-growing non-TB *Mycobacteria* Detection & Enumeration
M014 Endotoxin Analysis
M044 Group Allergen (Cat, Dog, Cockroach, Dust Mite)
M095 Bacteroides
Other - See Analytical Price Guide for Test Code
Legionella Analysis Please use EMSL *Legionella* COC

*MFT= Membrane Filtration Technique
**MPN = Most Probable Number
***P/A = Presence/Absence

Sample #	Sample Location/Description	Sample Type (Matrix)	Potable / Non-Potable (Only for Water)	Test Code	Volume/Area	Date / Time Collected	Temperature (Lab Use Only)
Example: Sample 1	Kitchen	Water	Potable	M017	1,000 ml	1/1/2021 3:30pm	
5603859	Front Door	Air		M001	1,500 ml	3/28/24 11:03 AM	
5603288	Auditorium	Air		M001	1,500 ml	3/28/24 11:10 AM	
5603691	Cafeteria	Air		M001	1,500 ml	3/28/24 11:18 AM	
5283871	Hallway Rm C10	Air		M001	1,500 ml	3/28/24 11:27 AM	
5603624	Hallway Rm B9	Air		M001	1,500 ml	3/28/24 11:34 AM	

Special Instructions and/or Regulatory Requirements (Sample Specifications, Processing Methods, Limits of Detection, etc.)

EMSL Fed. Ex

Method of Shipment:		Sample Condition Upon Receipt:	
Relinquished by: Christopher Tsioles	Date/Time: 3/28/24	Received by:	Date/Time 3/29/24
Relinquished by:	Date/Time:	Received by:	Date/Time 130PM

Controlled Document - COC-34 Micro R13 03/02/2021

☐ AGREE TO ELECTRONIC SIGNATURE (By checking, I consent to signing this Chain of Custody document by electronic signature.)

EMSL Analytical, Inc.

5221 Militia Hill Road Plymouth Meeting, PA 19462
Tel/Fax: (610) 828-3102 / (610) 828-3122
http://www.EMSL.com / plymouthmeetinglab@emsl.com

EMSL Order: 182401345
Customer ID: ENVA55
Customer PO:
Project ID:

Attention: Christopher Tsioles
Environmental Abatement Associates, Inc.
239 Schuyler avenue suite 125B
KINGSTON, PA 18704

Phone: (570) 283-0500
Fax: (570) 283-0577
Collected Date: 03/28/2024
Received Date: 03/29/2024
Analyzed Date: 04/02/2024

Project: 21-12.4 HANOVER MEMORIAL ELEMENTARY

Test Report: Allergenco-D(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number:	182401345-0001			182401345-0002			182401345-0003		
Client Sample ID:	5603859			5603288			5603691		
Volume (L):	1500			1500			1500		
Sample Location:	FRONT DOOR			AUDITORIUM			CAFETERIA		
Spore Types	**Raw Count†**	**Count/m³**	**% of Total**	**Raw Count†**	**Count/m³**	**% of Total**	**Raw Count†**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	1	<1*	0.2	-	-	-	-	-	-
Ascospores	11	24	8.9	-	-	-	-	-	-
Aspergillus/Penicillium++	-	-	-	-	-	-	-	-	-
Basidiospores	101(111)	242	89.7	4	9	93.1	2	4	100
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	4	3*	1.1	-	-	-	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	1	<1*	6.9	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Total Fungi	**127**	**269**	**100**	**5**	**9**	**100**	**2**	**4**	**100**
Hyphal Fragment	-	-	-	1	2	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	1	2	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	2	-	-	2	-	-	2	-
Analyt. Sensitivity 300x	-	<1*	-	-	<1*	-	-	<1*	-
Skin Fragments (1-4)	-	1	-	-	2	-	-	2	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	2	-	-	1	-	-	1	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.
† Due to method stopping rules, extrapolated raw counts are reported in parenthesis.

Kevin Ream, Laboratory Manager
or other Approved Signatory

No discernable field blank was submitted with this group of samples.

Initial report from: 04/02/2024 03:57 PM

For information on the fungi listed in this report, please visit the Resources section at www.emsl.com

EMSL Analytical, Inc.

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Phone: (570) 283-0500
Fax: (570) 283-0577
Collected Date: 03/28/2024
Received Date: 03/29/2024
Analyzed Date: 04/02/2024

Project: 21-12.4 HANOVER MEMORIAL ELEMENTARY

Test Report: Allergenco-D(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

	182401345-0004			182401345-0005		
Lab Sample Number:						
Client Sample ID:	5283871			5603624		
Volume (L):	1500			1500		
Sample Location:	HALLWAY RM C10			HALLWAY RM B9		
Spore Types	**Raw Count†**	**Count/m³**	**% of Total**	**Raw Count†**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-
Aspergillus/Penicillium++	2	4	28.6	-	-	-
Basidiospores	5	10	71.4	3	7	100
Bipolaris++	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-
Cladosporium	-	-	-	-	-	-
Curvularia	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-
Rust	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-
Total Fungi	**7**	**14**	**100**	**3**	**7**	**100**
Hyphal Fragment	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-
Pollen	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	2	-	-	2	-
Analyt. Sensitivity 300x	-	<1*	-	-	<1*	-
Skin Fragments (1-4)	-	2	-	-	2	-
Fibrous Particulate (1-4)	-	1	-	-	1	-
Background (1-5)	-	1	-	-	1	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.
† Due to method stopping rules, extrapolated raw counts are reported in parenthesis.

Kevin Ream, Laboratory Manager
or other Approved Signatory

No discernable field blank was submitted with this group of samples.

Samples analyzed by EMSL Analytical, Inc. Plymouth Meeting, PA AIHA LAP, LLC-EMLAP Accredited #178659

Initial report from: 04/02/2024 03:57 PM

For information on the fungi listed in this report, please visit the Resources section at www.emsl.com

Accreditations

AIHA Laboratory Accreditation Programs, LLC

acknowledges that

EMSL Analytical, Inc.

5221 Militia Rd., Plymouth Meeting, PA 19462

Laboratory ID: LAP-178659

along with all premises from which key activities are performed, as listed above, has fulfilled the requirements of the AIHA Laboratory Accreditation Programs (AIHA LAP), LLC accreditation to the ISO/IEC 17025:2017 international standard, General Requirements for the Competence of Testing and Calibration Laboratories in the following:

LABORATORY ACCREDITATION PROGRAMS

☑	**INDUSTRIAL HYGIENE**	Accreditation Expires: September 01, 2023
☐	**ENVIRONMENTAL LEAD**	Accreditation Expires:
☑	**ENVIRONMENTAL MICROBIOLOGY**	Accreditation Expires: September 01, 2023
☐	**FOOD**	Accreditation Expires:
☐	**UNIQUE SCOPES**	Accreditation Expires:

Specific Field(s) of Testing (FoT)/Method(s) within each Accreditation Program for which the above named laboratory maintains accreditation is outlined on the attached Scope of Accreditation. Continued accreditation is contingent upon successful on-going compliance with ISO/IEC 17025:2017 and AIHA LAP, LLC requirements. This certificate is not valid without the attached Scope of Accreditation. Please review the AIHA LAP, LLC website (www.aihaaccreditedlabs.org) for the most current Scope.

Cheryl O. Morton

Cheryl O Morton
Managing Director, AIHA Laboratory Accreditation Programs, LLC

Revision19.1: 07/28/2021

Date Issued: 08/31/2021

AIHA
Laboratory Accreditation Programs, LLC

AIHA Laboratory Accreditation Programs, LLC
SCOPE OF ACCREDITATION

EMSL Analytical, Inc.
5221 Militia Rd., Plymouth Meeting, PA 19462

Laboratory ID: LAP-178659
Issue Date: 08/31/2021

The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or withdrawal of accreditation.

Environmental Microbiology Laboratory Accreditation Program (EMLAP)

Initial Accreditation Date: 09/01/2019

EMLAP Scope Category	Field of Testing (FOT)	Component, parameter or characteristic tested	Method	Method Description *(for internal methods only)*
Fungal	Air - Direct Examination	Spore Trap	MICRO-SOP-201	Standard Operating Procedure for the Analysis of Airborne Fungal Spores, Hyphal Fragments, Pollen, Insect Fragments, Skin Fragments and Fibrous Particulate by Optical Microscopy of Spore Trap Samples
Fungal	Bulk - Direct Examination	Bulks (liquid or solid)	MICRO-SOP-200	Standard Operating Procedure for the Microscopic Examination of Fungal Spores, Fungal Structures, Hyphae, Pollen, Insect Fragments, and Fibrous Particulate from Surface Samples
Fungal	Surface - Direct Examination	Swab or Tape Lift	MICRO-SOP-200	Standard Operating Procedure for the Microscopic Examination of Fungal Spores, Fungal Structures, Hyphae, Pollen, Insect Fragments, and Fibrous Particulate from Surface Samples

A complete listing of currently accredited EMLAP laboratories is available on the AIHA LAP, LLC website at: *http://www.aihaaccreditedlabs.org*

Indoor Air Quality (IAQ) - Mold Report

Hanover Lee Park Elementary School
99 Lee Park Ave.
Hanover, PA, 18706

ENVIRONMENTAL ABATEMENT ASSOCIATES, INC.

April 10th, 2024

CONTENTS

Indoor Air Quality Inspection / Testing Report

Hanover Lee Park Elementary School
99 Lee Park Ave.
Hanover, PA, 18706

APPENDIX

MOLD AIR SAMPLE ANALYSIS RESULTS
ACCREDITATIONS

INDOOR AIR QUALITY INSPECTION / TESTING REPORT

Prepared for:

Brandon Holgren

For the properties known as:

99 Lee Park Ave.
Hanover, PA, 18706

This Indoor Air Quality Inspection / Testing report prepared by Environmental Abatement Associates, Inc. is based on information supplied by the client and on conditions readily observable or measurable on the date of this study. Any inspection and/or testing conducted by Environmental Abatement Associates, Inc. is not meant to determine whether a building is safe or unsafe for occupants in regards to indoor air quality. Interior building conditions vary constantly, therefore the findings and results presented in this report should be considered relative to and representative of the conditions that existed at the time of the inspection and testing. The results and recommendations presented herein should not be relied upon exclusively for the prevention of all possible illnesses, injuries or losses. These services are a supplement to, and not a substitute for, the client's responsibility for protecting the health and safety of employees, students, residents and others and for complying with applicable laws and regulations. Environmental Abatement Associates, Inc. warrants that its work is performed in a competent and professional manner. No other warranties are expressed or implied.

1.0 INTRODUCTION AND BACKGROUND

Personnel of ENVIRONMENTAL ABATEMENT ASSOCIATES, INC. (EAA) were on site Thursday, April 4th 2024 at 99 Lee Park Ave., Hanover, Pennsylvania to conduct an Indoor Air Quality (IAQ) inspection and testing. The inspection and testing was conducted at the request of Brandon Holgren

2.0 EVALUATION STRATEGY

The general strategy employed in this evaluation was to:

1. CONDUCT A VISUAL INSPECTION IN DESIGNATED AREAS.
2. CONDUCT MOLD AIR SAMPLING IN DESIGNATED AREAS.
3. PROVIDE A REPORT OF FINDINGS AND RECOMMENDATIONS.

A visual inspection was conducted in designated areas. The inspection was not intended to be an intensive and detailed inspection, but rather an overview of the conditions that may cause poor indoor air quality. The condition of walls, floor, ceilings, etc. were examined for mold growth and any potential problems that could initiate mold growth were noted.

A total of four (4) mold air the samples were collected on interior of buildings using Allergenco-D sampling cassettes manufactured by Environmental Monitoring Systems and a high volume air sampling pump. One (1) air sample was also collected outside the back door in order to establish a background to be used when interpreting the results of the indoor air samples. Per manufacturer recommendations, each air sample was collected at a flow rate of fifteen (15) liters of air per minute (L/M) for a period of five (5) minutes.

Air samples were logged, labeled and shipped overnight to EMSL Analytical, Inc.,an American Industrial Hygiene Association (AIHA) accredited microbiology laboratory, for analysis by microscopic examination.

AIR CONTAMINANT STANDARDS AND GUIDELINES

In parts per million (ppm)

MEASURED PARAMETER	OSHA PEL Occupational Safety and Health- Permissible Exposure Limits	ACGIH TLV American Conference of Governmental Industrial Hygienists- Threshold Limit Values		NIOSH REL National Institute for Occupational Safety and Health- Recommended Exposure Limits				ASHRAE American Society of Heating, Refrigerating and Air-Conditioning Engineers
	TWA (8) Total Weighted Average	TWA (8) Total Weighted Average	STEL Short Term Exposure Limits	TWA (8) Total Weighted Average	STEL Short Term Exposure Limits	C Ceiling Recommended Exposure Limits	IDLH Immediately Dangerous to Life and Health	RECOMMENDATIONS
Carbon Monoxide	50	25	-	35	-	200	1,200	Maximum allowable concentration for indoor living spaces is 9 ppm
Carbon Dioxide	5,000	5,000	30,000	5,000	30,000	-	40,000	< 700 ppm above outdoor level indicates adequate ventilation
Temperature								68 ^{O}F - 75 ^{O}F (winter) 73 ^{O}F - 79 ^{O}F (summer)
Relative Humidity								30% – 60%

DATA TABLE I
Temperature, Relative Humidity, Carbon Dioxide and Carbon Monoxide Readings

Test No.	Floor	Location	Test Time	Temperature (°F)	Relative Humidity (%)	Carbon Dioxide (PPM)	Carbon Monoxide (PPM)	Comments
1	0	Front Door (Baseline)	7:05	37	44	645	7	Air sample # 5603613
2	1	Auditorium	7:11	65	38	661	7	Air sample # 56033562
3	1	Room B2	7:17	68	35	681	7	Air sample # 5603517
4	2	Library	7:23	68	36	733	7	Air sample # 5603604
5	3	Hallway C9	7:32	70	33	1249	7	Air sample # 5603546

3.0 DISCUSSION AND CONCLUSIONS

Molds are part of the natural environment and are simple, microscopic organisms whose purpose is to break down dead materials. Molds can be found on plants, dry leaves, and about every other organic material. Mold spores are lightweight and are spread by air currents. If spores land on a suitable surface, they will begin to grow. In order to thrive, mold requires four things to grow: water, organic materials, oxygen, and a temperature between 40-90 degrees Fahrenheit.

To stop the growth of mold, find and stop the moisture source. Mold spores will not grow if moisture is not present.

1. Aspergillus Penicillium

a. Aspergillus species are filamentous fungi that are commonly found in soil, decaying, vegetation, seeds and grains where they thrive as saprophytes. Aspergillus species can occasionally be harmful to humans. In humans, Aspergillus fumigatus is the most common and life-threatening airborne opportunistic fungal pathogen, which is particularly important among immunocompromised hosts. Inhaling Aspergillus fumigatus spores(condia) into the lungs may cause multiple diseases, which depend on theimmunological status of the host in humans. These diseases include invasive pulmonaryaspergillosis, aspergilloma, and different forms of hypersensitivity, pneumonitis, andallergic bronchopulmonary aspergillosis (ABPA).

2. Cladosporium

a. Most kinds of Cladosporium are not dangerous to humans, but sometimes they may lead to allergies, or they may worsen asthma. In worse cases, Cladosporium may lead to infections. In most cases if you open some windows or install a heat recovery ventilator (HRV). These measures will help stop new mold from forming, but will not kill active Cladosporium spores already there. For that you will need a non-toxic registered fungicide such as Concrobium.

3. Basidiospores

a. Inhalation of basidiospores can have health effects ranging from pneumonia-like symptoms to cryptococcus meningitis if the infection isn't treated before it spreads to the brain. The list of environments in which this class of molds thrives is extensive. Sources range from old fruit to damp acrylic painted walls. Detection of Basidiospores at levels higher than 5,000 count per cubic meter are considered problematic.

4. Ascospores

a. This group contains potential opportunistic pathogens, toxin producers, and allergens depending on the genus and species. Ascospores do present a human health risk but few have been reported to cause disease.

All sample locations came back with very low numbers

These findings indicate that mold remediation is not needed.

Respectfully Submitted,

Russ Bigus, M.S., Biology
Professor of Microbiology

Mold Air Sample Analysis Results

EAA
Environmental Abatement Associates, Inc.

OrderID: 182401440

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If Bill-To is the same as Report-To leave this section blank. Third-party billing requires written authorization.

Customer Information

Customer ID:	
Company Name:	Environmental Abatement Associates, Inc.
Contact Name:	Christopher Tsioles
Street Address:	239 Schuyler avenue suite 125B
City, State, Zip:	KINGSTON PA 18704 Country: US
Phone:	570-283-0500
Email(s) for Report:	eaawdt@verizon.net

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Phone:	570-283-0500
Email(s) for Invoice:	

Project Information

Project Name/No: 24-12.3 Lee Park Elementary

Purchase Order:

EMSL LIMS Project ID. (If applicable, EMSL will provide)

State Samples Collected: PA

Zip Code Samples Collected:: 17331

State of Connecticut (CT) must select project location: ☐ Commercial (Taxable) ☐ Residential (Non-taxable)

Sampled By Name: Christopher Tsioles

Sampled By Signature:

No. of Samples in Shipment: 5

Sterile, Sodium Thiosulfate Preserved Bottle Used: ☐ Biocide Used in Source (specify)

Public Water Supply Samples: ☐ Note: All results may automatically be reported to DOH if required by State.

Turn-Around-Time (TAT) Please call ahead for large projects and/or turnaround times 6 Hours or Less. *32 Hour TAT available for select tests only; samples must be submitted by 11:30am.

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M030 Micro 5
M041 Fungal Direct Examination
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M280 Dust Characterization Level-1
M281 Dust Characterization Level-2
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M006 Viable Fungi-Air Samples (Includes *Penicillium, Aspergillus, Cladosporium, Stachybotrys* Species ID & Count)
M007 Culturable Fungi-Surface Samples (Genus ID & Count)
M008 Culturable Fungi-Surface Samples (Includes *Penicillium, Aspergillus, Cladosporium, Stachybotrys* Species ID & Count)
M009 Bacteria Culture Gram Stain & Count
M010 Bacteria Count & ID - 3 Most Prominent
M011 Bacteria Count & ID - 5 Most Prominent
M174 MoldSnap
M032 Allergenco-D
M012 *Pseudomonas aeruginosa* (P/A***)
M024 *Pseudomonas aeruginosa* (MFT*)
M015 Heterotrophic Plate Count
M017 Total Coliform & *E. Coli* (Colilert P/A***)
M018 Total Coliform & *E. Coli* (MFT*)
M114 Total Coliform & *E. Coli Enumeration (Colilert MPN**)*
M019 Fecal Coliform (MFT*)
M020 Fecal *Streptococcus* (MFT*)
M029 *Enterococci* (MFT*)
M129 *Enterococci* (Enterolert P/A***)
M180 Real Time qPCR-ERMI 36 Panel
M025 Sewage Screen - Water (MFT*)
M115 Sewage Screen - Water (P/A***)
M116 Sewage Screen - Water (MPN**)
M117 Sewage Screen - Swab (P/A***)
M013 Sewage Screen - Swab (MFT*)
M730 *Methicillin-resistant Staph. aureus* (MRSA)
M031 Rapid-growing non-TB *Mycobacteria* Detection & Enumeration
M014 Endotoxin Analysis
M044 Group Allergen (Cat, Dog, Cockroach, Dust Mite)
M095 Bacteroides
Other - See Analytical Price Guide for Test Code
Legionella Analysis Please use EMSL *Legionella* COC

*MFT= Membrane Filtration Technique
**MPN = Most Probable Number
***P/A = Presence/Absence

Sample #	Sample Location/Description	Sample Type (Matrix)	Potable / Non-Potable (Only for Water)	Test Code	Volume/Area	Date / Time Collected	Temperature (Lab Use Only)
Example: Sample 1	Kitchen	Water	Potable	M017	1,000 ml	1/1/2021 3:30pm	
5603613	Front Door (baseline)	Air		M001	1,500 ml	4/4/24 7:10 AM	
5603562	Cafeteria	Air		M001	1,500 ml	4/4/24 7:16 AM	
5603517	Room B-2	Air		M001	1,500 ml	4/4/24 7:22 AM	
5603604	Library	Air		M001	1,500 ml	4/4/24 7:28 AM	
5603546	Hallway C9	Air		M001	1,500 ml	4/4/24 7:37 AM	

Special Instructions and/or Regulatory Requirements (Sample Specifications, Processing Methods, Limits of Detection, etc.)

Method of Shipment:

Sample Condition Upon Receipt:

Relinquished by: Christopher Tsioles — Date/Time: 4/4/24 8:26 AM

Received by: Dawneya Nicholson — Date/Time: 4-5-24 1pm

Relinquished by: — Date/Time:

Received by: — Date/Time

Controlled Document - COC-34 Micro R13 03/02/2021

☐ AGREE TO ELECTRONIC SIGNATURE (By checking, I consent to signing this Chain of Custody document by electronic signature.)

EMSL Analytical, Inc.

5221 Militia Hill Road Plymouth Meeting, PA 19462
Tel/Fax: (610) 828-3102 / (610) 828-3122
http://www.EMSL.com / plymouthmeetinglab@emsl.com

EMSL Order: 182401440
Customer ID: ENVA55
Customer PO:
Project ID:

Attention: Christopher Tsioles
Environmental Abatement Associates, Inc.
239 Schuyler avenue suite 125B
KINGSTON, PA 18704

Phone: (570) 283-0500
Fax: (570) 283-0577
Collected Date: 04/04/2024
Received Date: 04/05/2024
Analyzed Date: 04/09/2024

Project: 24-12.3 LEE PARK ELEMENTARY

Test Report: Allergenco-D(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number:	182401440-0001			182401440-0002			182401440-0003		
Client Sample ID:	5603613			5603562			5603517		
Volume (L):	1500			1500			1500		
Sample Location:	FRONT DOOR (BASELINE)			CAFETERIA			ROOM B-2		
Spore Types	**Raw Count†**	**Count/m³**	**% of Total**	**Raw Count†**	**Count/m³**	**% of Total**	**Raw Count†**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	23	49	13	4	8	14.3	-	-	-
Aspergillus/Penicillium++	-	-	-	3	6	10.7	-	-	-
Basidiospores	107(155)	327	87	20	42	75	-	-	-
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	-	-	-	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Total Fungi	**178**	**376**	**100**	**27**	**56**	**100**	-	**No Trace**	-
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	2	-	-	2	-	-	2	-
Analyt. Sensitivity 300x	-	<1*	-	-	<1*	-	-	<1*	-
Skin Fragments (1-4)	-	1	-	-	2	-	-	-	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	-	-
Background (1-5)	-	1	-	-	1	-	-	-	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.
† Due to method stopping rules, extrapolated raw counts are reported in parenthesis.

Kevin Ream, Laboratory Manager
or other Approved Signatory

No discernable field blank was submitted with this group of samples.

Samples analyzed by EMSL Analytical, Inc. Plymouth Meeting, PA AIHA LAP, LLC-EMLAP Accredited #178659

Initial report from: 04/09/2024 01:10 PM

For information on the fungi listed in this report, please visit the Resources section at www.emsl.com

EMSL Analytical, Inc.

5221 Militia Hill Road Plymouth Meeting, PA 19462
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EMSL Order: 182401440
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KINGSTON, PA 18704

Phone: (570) 283-0500
Fax: (570) 283-0577
Collected Date: 04/04/2024
Received Date: 04/05/2024
Analyzed Date: 04/09/2024

Project: 24-12.3 LEE PARK ELEMENTARY

Test Report: Allergenco-D(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number:	182401440-0004			182401440-0005		
Client Sample ID:	5603604			5603546		
Volume (L):	1500			1500		
Sample Location:	LIBRARY			HALLWAY C9		
Spore Types	**Raw Count†**	**Count/m³**	**% of Total**	**Raw Count†**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-
Ascospores	-	-	-	1	2	8
Aspergillus/Penicillium++	-	-	-	-	-	-
Basidiospores	1	2	100	11	23	92
Bipolaris++	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-
Cladosporium	-	-	-	-	-	-
Curvularia	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-
Rust	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-
Total Fungi	**1**	**2**	**100**	**12**	**25**	**100**
Hyphal Fragment	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-
Pollen	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	2	-	-	2	-
Analyt. Sensitivity 300x	-	<1*	-	-	<1*	-
Skin Fragments (1-4)	-	1	-	-	2	-
Fibrous Particulate (1-4)	-	1	-	-	1	-
Background (1-5)	-	1	-	-	1	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.
† Due to method stopping rules, extrapolated raw counts are reported in parenthesis.

Kevin Ream, Laboratory Manager
or other Approved Signatory

No discernable field blank was submitted with this group of samples.

Samples analyzed by EMSL Analytical, Inc. Plymouth Meeting, PA AIHA LAP, LLC-EMLAP Accredited #178659

Initial report from: 04/09/2024 01:10 PM

For information on the fungi listed in this report, please visit the Resources section at www.emsl.com

Accreditations

AIHA Laboratory Accreditation Programs, LLC

acknowledges that

EMSL Analytical, Inc.

5221 Militia Rd., Plymouth Meeting, PA 19462

Laboratory ID: LAP-178659

along with all premises from which key activities are performed, as listed above, has fulfilled the requirements of the AIHA Laboratory Accreditation Programs (AIHA LAP), LLC accreditation to the ISO/IEC 17025:2017 international standard, General Requirements for the Competence of Testing and Calibration Laboratories in the following:

LABORATORY ACCREDITATION PROGRAMS

☑	**INDUSTRIAL HYGIENE**	Accreditation Expires: September 01, 2023
☐	**ENVIRONMENTAL LEAD**	Accreditation Expires:
☑	**ENVIRONMENTAL MICROBIOLOGY**	Accreditation Expires: September 01, 2023
☐	**FOOD**	Accreditation Expires:
☐	**UNIQUE SCOPES**	Accreditation Expires:

Specific Field(s) of Testing (FoT)/Method(s) within each Accreditation Program for which the above named laboratory maintains accreditation is outlined on the attached Scope of Accreditation. Continued accreditation is contingent upon successful on-going compliance with ISO/IEC 17025:2017 and AIHA LAP, LLC requirements. This certificate is not valid without the attached Scope of Accreditation. Please review the AIHA LAP, LLC website (www.aihaaccreditedlabs.org) for the most current Scope.

Cheryl O. Morton

Cheryl O Morton
Managing Director, AIHA Laboratory Accreditation Programs, LLC

Revision19.1: 07/28/2021

Date Issued: 08/31/2021

AIHA
Laboratory Accreditation Programs, LLC

AIHA Laboratory Accreditation Programs, LLC
SCOPE OF ACCREDITATION

EMSL Analytical, Inc.
5221 Militia Rd., Plymouth Meeting, PA 19462

Laboratory ID: LAP-178659
Issue Date: 08/31/2021

The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or withdrawal of accreditation.

Environmental Microbiology Laboratory Accreditation Program (EMLAP)

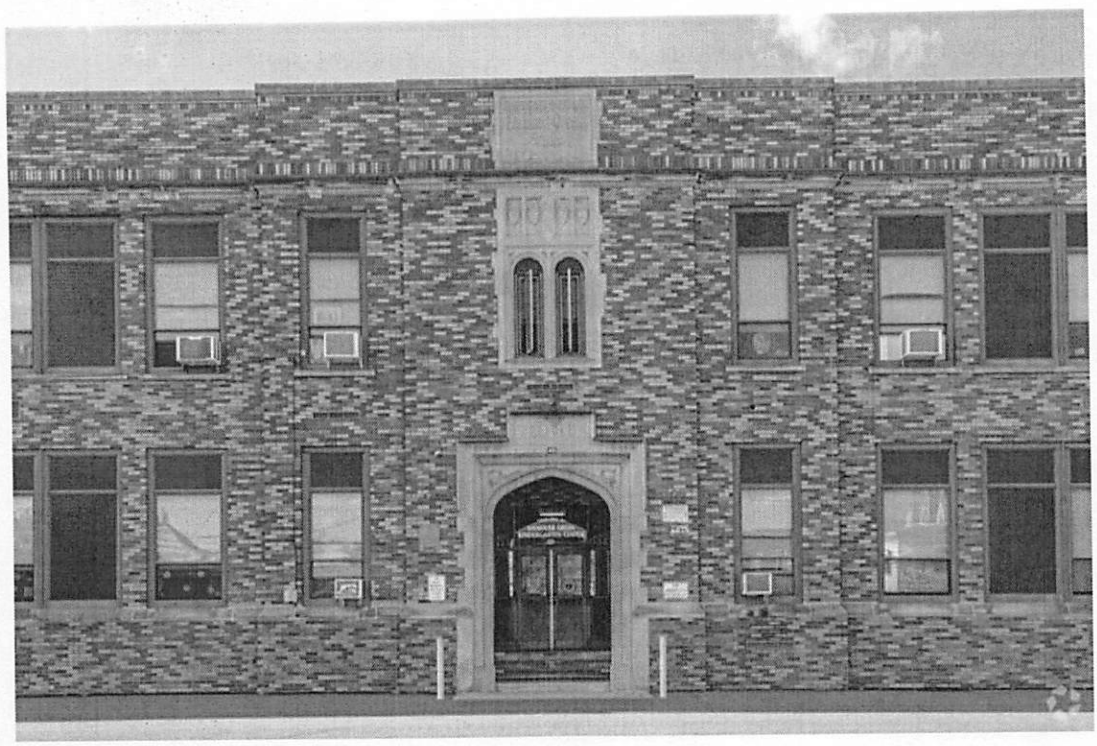
Initial Accreditation Date: 09/01/2019

EMLAP Scope Category	Field of Testing (FOT)	Component, parameter or characteristic tested	Method	Method Description *(for internal methods only)*
Fungal	Air - Direct Examination	Spore Trap	MICRO-SOP-201	Standard Operating Procedure for the Analysis of Airborne Fungal Spores, Hyphal Fragments, Pollen, Insect Fragments, Skin Fragments and Fibrous Particulate by Optical Microscopy of Spore Trap Samples
Fungal	Bulk - Direct Examination	Bulks (liquid or solid)	MICRO-SOP-200	Standard Operating Procedure for the Microscopic Examination of Fungal Spores, Fungal Structures, Hyphae, Pollen, Insect Fragments, and Fibrous Particulate from Surface Samples
Fungal	Surface - Direct Examination	Swab or Tape Lift	MICRO-SOP-200	Standard Operating Procedure for the Microscopic Examination of Fungal Spores, Fungal Structures, Hyphae, Pollen, Insect Fragments, and Fibrous Particulate from Surface Samples

A complete listing of currently accredited EMLAP laboratories is available on the AIHA LAP, LLC website at: *http://www.aihaaccreditedlabs.org*

Indoor Air Quality (IAQ) - Mold Report

Hanover Green Elementary School
561 Main Rd.
Hanover, PA, 18706



ENVIRONMENTAL ABATEMENT ASSOCIATES, INC.

April 10th, 2024

CONTENTS

Indoor Air Quality Inspection / Testing Report

Hanover Green Elementary School
651 Main Rd.
Hanover, PA, 18706

INDOOR AIR QUALITY INSPECTION / TESTING REPORT

Prepared for:

Brandon Holgren

For the properties known as:

651 Main Rd
Hanover, PA, 18706

This Indoor Air Quality Inspection / Testing report prepared by Environmental Abatement Associates, Inc. is based on information supplied by the client and on conditions readily observable or measurable on the date of this study. Any inspection and/or testing conducted by Environmental Abatement Associates, Inc. is not meant to determine whether a building is safe or unsafe for occupants in regards to indoor air quality. Interior building conditions vary constantly, therefore the findings and results presented in this report should be considered relative to and representative of the conditions that existed at the time of the inspection and testing. The results and recommendations presented herein should not be relied upon exclusively for the prevention of all possible illnesses, injuries or losses. These services are a supplement to, and not a substitute for, the client's responsibility for protecting the health and safety of employees, students, residents and others and for complying with applicable laws and regulations. Environmental Abatement Associates, Inc. warrants that its work is performed in a competent and professional manner. No other warranties are expressed or implied.

1.0 INTRODUCTION AND BACKGROUND

Personnel of ENVIRONMENTAL ABATEMENT ASSOCIATES, INC. (EAA) were on site Thursday, March 28th 2024 at 651 Main Rd., Hanover, Pennsylvania to conduct an Indoor Air Quality (IAQ) inspection and testing. The inspection and testing was conducted at the request of Brandon Holgren

2.0 EVALUATION STRATEGY

The general strategy employed in this evaluation was to:

1. CONDUCT A VISUAL INSPECTION IN DESIGNATED AREAS.
2. CONDUCT MOLD AIR SAMPLING IN DESIGNATED AREAS.
3. PROVIDE A REPORT OF FINDINGS AND RECOMMENDATIONS.

A visual inspection was conducted in designated areas. The inspection was not intended to be an intensive and detailed inspection, but rather an overview of the conditions that may cause poor indoor air quality. The condition of walls, floor, ceilings, etc. were examined for mold growth and any potential problems that could initiate mold growth were noted.

A total of four (4) mold air the samples were collected on interior of buildings using Allergenco-D sampling cassettes manufactured by Environmental Monitoring Systems and a high volume air sampling pump. One (1) air sample was also collected outside the back door in order to establish a background to be used when interpreting the results of the indoor air samples. Per manufacturer recommendations, each air sample was collected at a flow rate of fifteen (15) liters of air per minute (L/M) for a period of five (5) minutes.

Air samples were logged, labeled and shipped overnight to EMSL Analytical, Inc.,an American Industrial Hygiene Association (AIHA) accredited microbiology laboratory, for analysis by microscopic examination.

AIR CONTAMINANT STANDARDS AND GUIDELINES

In parts per million (ppm)

MEASURED PARAMETER	OSHA PEL Occupational Safety and Health- Permissible Exposure Limits	ACGIH TLV American Conference of Governmental Industrial Hygienists- Threshold Limit Values		NIOSH REL National Institute for Occupational Safety and Health- Recommended Exposure Limits				ASHRAE American Society of Heating, Refrigerating and Air-Conditioning Engineers
	TWA (8) Total Weighted Average	TWA (8) Total Weighted Average	STEL Short Term Exposure Limits	TWA (8) Total Weighted Average	STEL Short Term Exposure Limits	C Ceiling Recommended Exposure Limits	IDLH Immediately Dangerous to Life and Health	RECOMMENDATIONS
Carbon Monoxide	50	25	-	35	-	200	1,200	Maximum allowable concentration for indoor living spaces is 9 ppm
Carbon Dioxide	5,000	5,000	30,000	5,000	30,000	-	40,000	< 700 ppm above outdoor level indicates adequate ventilation
Temperature								68 ^{O}F - 75 ^{O}F (winter) 73 ^{O}F - 79 ^{O}F (summer)
Relative Humidity								30% – 60%

DATA TABLE I
Temperature, Relative Humidity, Carbon Dioxide and Carbon Monoxide Readings

Test No.	Floor	Location	Test Time	Temperature (°F)	Relative Humidity (%)	Carbon Dioxide (PPM)	Carbon Monoxide (PPM)	Comments
1	0	Front Door (Baseline)	9:04	43	34	980	7	Air sample # 5603810
2	1	Cafeteria	9:14	69	33	638	7	Air sample # 5603543
3	B1	Basement	9:22	71	35	664	7	Air sample # 5603702
4	2	Room B14	9:31	70	34	626	7	Air sample # 5603463
5	1	Room A1	9:39	70	34	702	7	Air sample # 5603611

3.0 DISCUSSION AND CONCLUSIONS

Molds are part of the natural environment and are simple, microscopic organisms whose purpose is to break down dead materials. Molds can be found on plants, dry leaves, and about every other organic material. Mold spores are lightweight and are spread by air currents. If spores land on a suitable surface, they will begin to grow. In order to thrive, mold requires four things to grow: water, organic materials, oxygen, and a temperature between 40-90 degrees Fahrenheit.

To stop the growth of mold, find and stop the moisture source. Mold spores will not grow if moisture is not present.

1. Aspergillus Penicillium

a. Aspergillus species are filamentous fungi that are commonly found in soil, decaying, vegetation, seeds and grains where they thrive as saprophytes. Aspergillus species can occasionally be harmful to humans. In humans, Aspergillus fumigatus is the most common and life-threatening airborne opportunistic fungal pathogen, which is particularly important among immunocompromised hosts. Inhaling Aspergillus fumigatus spores(condia) into the lungs may cause multiple diseases, which depend on theimmunological status of the host in humans. These diseases include invasive pulmonaryaspergillosis, aspergilloma, and different forms of hypersensitivity, pneumonitis, andallergic bronchopulmonary aspergillosis (ABPA).

2. Cladosporium

a. Most kinds of Cladosporium are not dangerous to humans, but sometimes they may lead to allergies, or they may worsen asthma. In worse cases, Cladosporium may lead to infections. In most cases if you open some windows or install a heat recovery ventilator (HRV). These measures will help stop new mold from forming, but will not kill active Cladosporium spores already there. For that you will need a non-toxic registered fungicide such as Concrobium.

3. Basidiospores

a. Inhalation of basidiospores can have health effects ranging from pneumonia-like symptoms to cryptococcus meningitis if the infection isn't treated before it spreads to the brain. The list of environments in which this class of molds thrives is extensive. Sources range from old fruit to damp acrylic painted walls. Detection of Basidiospores at levels higher than 5,000 count per cubic meter are considered problematic.

4. Ascospores

a. This group contains potential opportunistic pathogens, toxin producers, and allergens depending on the genus and species. Ascospores do present a human health risk but few have been reported to cause disease.

All sample locations came back with very low numbers

These findings indicate that mold remediation is not needed.

Respectfully Submitted,

Russ Bigus, M.S., Biology
Professor of Microbiology

Mold Air Sample Analysis Results

EAA
Environmental Abatement Associates, Inc.

OrderID: 182401340

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Microbiology Chain of Custody Form

EMSL Order Number / Lab Use Only

18240 1340

EMSL Analytical, Inc.
5221 Militia Hill Rd
Plymouth Meeting, PA 19462
PHONE: (610) 828-3102
EMAIL: plymouthmeetinglab@emsl.co

If Bill-To is the same as Report-To leave this section blank. Third-party billing requires written authorization.

Customer Information		Billing Information	
Customer ID:		Billing ID:	
Company Name:	Environmental Abatement Associates, Inc.	Company Name:	Environmental Abatement Associates, Inc.
Contact Name:	Christopher Tsioles	Billing Contact:	Christopher Tsioles
Street Address:	239 Schuyler avenue suite 125B	Street Address:	239 Schuyler avenue suite 125B
City, State, Zip:	KINGSTON PA 18704	City, State, Zip:	KINGSTON PA 18704
Country:	US	Country:	US
Phone:	570-283-0500	Phone:	570-283-0500
Email(s) for Report:	eaawdt@verizon.net	Email(s) for Invoice:	

Project Information

Project Name/No: 24-12.2 Hanover Greenville Elementary

Purchase Order:

EMSL LIMS Project ID: (If applicable, EMSL will provide)

State Samples Collected: PA

Zip Code Samples Collected: 17331

State of Connecticut (CT) must select project location: ☐ Commercial (Taxable) ☐ Residential (Non-taxable)

Sampled By Name: Christopher Tsioles

Sampled By Signature:

No. of Samples in Shipment: 5

Sterile, Sodium Thiosulfate Preserved Bottle Used: ☐ Biocide Used in Source (specify)

Public Water Supply Samples: ☐ Note: All results may automatically be reported to DOH if required by State.

Turn-Around-Time (TAT) Please call ahead for large projects and/or turnaround times 6 Hours or Less. *32 Hour TAT available for select tests only; samples must be submitted by 11:30am.

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 32* Hour ☑ 48 Hour ☐ 72 Hour ☐ 96 Hour ☐ 1 Week ☐ 2 Week

MICROBIOLOGY TEST CODES

M001 Air-O-Cell	M174 MoldSnap	M012 *Pseudomonas aeruginosa* (P/A***)	M115 Sewage Screen - Water (P/A***)
M030 Micro 5	M032 Allergenco-D	M024 *Pseudomonas aeruginosa* (MFT*)	M116 Sewage Screen - Water (MPN**)
M041 Fungal Direct Examination		M015 Heterotrophic Plate Count	M117 Sewage Screen - Swab (P/A***)
M169 Pollen ID & Enumeration		M017 Total Coliform & *E. Coli* (Colilert P/A***)	M013 Sewage Screen - Swab (MFT*)
M280 Dust Characterization Level-1		M018 Total Coliform & *E. Coli* (MFT*)	M730 *Methicillin-resistant Staph. aureus* (MRSA)
M281 Dust Characterization Level-2		M114 Total Coliform & *E. Coli* Enumeration (Colilert MPN**)	M031 Rapid-growing non-TB *Mycobacteria* Detection & Enumeration
M005 Viable Fungi-Air Samples (Genus ID & Count)		M019 Fecal Coliform (MFT*)	M014 Endotoxin Analysis
M006 Viable Fungi-Air Samples (Includes *Penicillium, Aspergillus, Cladosporium, Stachybotrys* Species ID & Count)		M020 Fecal *Streptococcus* (MFT*)	M044 Group Allergen (Cat, Dog, Cockroach, Dust Mite)
M007 Culturable Fungi-Surface Samples (Genus ID & Count)		M029 *Enterococci* (MFT*)	M095 Bacteroides
M008 Culturable Fungi-Surface Samples (Includes *Penicillium, Aspergillus, Cladosporium, Stachybotrys* Species ID & Count)		M129 *Enterococci* (Enterolert P/A***)	Other - See Analytical Price Guide for Test Code
M009 Bactena Culture Gram Stain & Count		M180 Real Time qPCR-ERMI 36 Panel	*Legionella Analysis* Please use EMSL *Legionella* COC
M010 Bacteria Count & ID - 3 Most Prominent		M025 Sewage Screen - Water (MFT*)	
M011 Bacteria Count & ID - 5 Most Prominent			

*MFT= Membrane Filtration Technique
**MPN = Most Probable Number
***P/A = Presence/Absence

Sample #	Sample Location/Description	Sample Type (Matrix)	Potable / Non-Potable (Only for Water)	Test Code	Volume/Area	Date / Time Collected	Temperature (Lab Use Only)
Example: -Sample 1	Kitchen	Water	Potable	M017	1,000 ml	1/1/2021 3:30pm	
5603810	Front Door	Air		M001	1,500 ml	3/28/24 9:04 AM	
5603543	Cafeteria	Air		M001	1,500 ml	3/28/24 9:14 AM	
5603702	Basement	Air		M001	1,500 ml	3/28/24 9:22 AM	
5283463	Room B14	Air		M001	1,500 ml	3/28/24 9:31 AM	
5603611	Room A1	Air		M001	1,500 ml	3/28/24 9:39 AM	

Special Instructions and/or Regulatory Requirements (Sample Specifications, Processing Methods, Limits of Detection, etc.)

EMSL Fed Ex

Method of Shipment:		Sample Condition Upon Receipt:	
Relinquished by: Christopher Tsioles	Date/Time: 3/28/24	Received by:	Date/Time: 3/29/24 1:30PM
Relinquished by:	Date/Time:	Received by:	Date/Time

Controlled Document - COC-34 Micro R13 03/02/2021

☐ AGREE TO ELECTRONIC SIGNATURE (By checking, I consent to signing this Chain of Custody document by electronic signature.)

EMSL Analytical, Inc.

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Tel/Fax: (610) 828-3102 / (610) 828-3122
http://www.EMSL.com / plymouthmeetinglab@emsl.com

EMSL Order: 182401340
Customer ID: ENVA55
Customer PO:
Project ID:

Attention: Christopher Tsioles
Environmental Abatement Associates, Inc.
239 Schuyler avenue suite 125B
KINGSTON, PA 18704

Phone: (570) 283-0500
Fax: (570) 283-0577
Collected Date: 03/28/2024
Received Date: 03/29/2024
Analyzed Date: 04/02/2024

Project: 24-12.2 HANOVER GREENVILLE ELEMENTARY

Test Report: Allergenco-D(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number:	182401340-0001			182401340-0002			182401340-0003		
Client Sample ID:	5603810			5603543			5603702		
Volume (L):	1500			1500			1500		
Sample Location:	FRONT DOOR			CAFETERIA			BASEMENT		
Spore Types	**Raw Count†**	**Count/m³**	**% of Total**	**Raw Count†**	**Count/m³**	**% of Total**	**Raw Count†**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	1	2	0.6	-	-	-	-	-	-
Aspergillus/Penicillium++	-	-	-	-	-	-	-	-	-
Basidiospores	106(146)	319	99.4	6	10	100	11	24	100
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	-	-	-	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Total Fungi	**147**	**321**	**100**	**6**	**10**	**100**	**11**	**24**	**100**
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	5	3*	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	2	-	-	2	-	-	2	-
Analyt. Sensitivity 300x	-	<1*	-	-	<1*	-	-	<1*	-
Skin Fragments (1-4)	-	1	-	-	2	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	1	-	-	1	-	-	2	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.
† Due to method stopping rules, extrapolated raw counts are reported in parenthesis.

Kevin Ream, Laboratory Manager
or other Approved Signatory

No discernable field blank was submitted with this group of samples.

Initial report from: 04/02/2024 10:12 AM

For information on the fungi listed in this report, please visit the Resources section at www.emsl.com

EMSL Analytical, Inc.

5221 Militia Hill Road Plymouth Meeting, PA 19462
Tel/Fax: (610) 828-3102 / (610) 828-3122
http://www.EMSL.com / plymouthmeetinglab@emsl.com

EMSL Order: 182401340
Customer ID: ENVA55
Customer PO:
Project ID:

Attention: Christopher Tsioles
Environmental Abatement Associates, Inc.
239 Schuyler avenue suite 125B
KINGSTON, PA 18704

Phone: (570) 283-0500
Fax: (570) 283-0577
Collected Date: 03/28/2024
Received Date: 03/29/2024
Analyzed Date: 04/02/2024

Project: 24-12.2 HANOVER GREENVILLE ELEMENTARY

Test Report: Allergenco-D(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number:	182401340-0004			182401340-0005		
Client Sample ID:	5283463			5603611		
Volume (L):	1500			1500		
Sample Location:	ROOM B14			ROOM A1		
Spore Types	**Raw Count†**	**Count/m³**	**% of Total**	**Raw Count†**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-
Aspergillus/Penicillium++	-	-	-	-	-	-
Basidiospores	7	20	100	11	24	100
Bipolaris++	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-
Cladosporium	-	-	-	-	-	-
Curvularia	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-
Rust	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-
Total Fungi	**7**	**20**	**100**	**11**	**24**	**100**
Hyphal Fragment	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-
Pollen	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	2	-	-	2	-
Analyt. Sensitivity 300x	-	<1*	-	-	<1*	-
Skin Fragments (1-4)	-	2	-	-	2	-
Fibrous Particulate (1-4)	-	1	-	-	1	-
Background (1-5)	-	1	-	-	1	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.
† Due to method stopping rules, extrapolated raw counts are reported in parenthesis.

Kevin Ream, Laboratory Manager
or other Approved Signatory

No discernable field blank was submitted with this group of samples.

Samples analyzed by EMSL Analytical, Inc. Plymouth Meeting, PA AIHA LAP, LLC-EMLAP Accredited #178659

Initial report from: 04/02/2024 10:12 AM

For information on the fungi listed in this report, please visit the Resources section at www.emsl.com

Accreditations

AIHA Laboratory Accreditation Programs, LLC

acknowledges that

EMSL Analytical, Inc.

5221 Militia Rd., Plymouth Meeting, PA 19462

Laboratory ID: LAP-178659

along with all premises from which key activities are performed, as listed above, has fulfilled the requirements of the AIHA Laboratory Accreditation Programs (AIHA LAP), LLC accreditation to the ISO/IEC 17025:2017 international standard, General Requirements for the Competence of Testing and Calibration Laboratories in the following:

LABORATORY ACCREDITATION PROGRAMS

☑	**INDUSTRIAL HYGIENE**	Accreditation Expires: September 01, 2023
☐	**ENVIRONMENTAL LEAD**	Accreditation Expires:
☑	**ENVIRONMENTAL MICROBIOLOGY**	Accreditation Expires: September 01, 2023
☐	**FOOD**	Accreditation Expires:
☐	**UNIQUE SCOPES**	Accreditation Expires:

Specific Field(s) of Testing (FoT)/Method(s) within each Accreditation Program for which the above named laboratory maintains accreditation is outlined on the attached Scope of Accreditation. Continued accreditation is contingent upon successful on-going compliance with ISO/IEC 17025:2017 and AIHA LAP, LLC requirements. This certificate is not valid without the attached Scope of Accreditation. Please review the AIHA LAP, LLC website (www.aihaaccreditedlabs.org) for the most current Scope.

Cheryl O. Morton

Cheryl O Morton
Managing Director, AIHA Laboratory Accreditation Programs, LLC

Revision19.1: 07/28/2021

Date Issued: 08/31/2021

AIHA
Laboratory Accreditation Programs, LLC

AIHA Laboratory Accreditation Programs, LLC
SCOPE OF ACCREDITATION

EMSL Analytical, Inc.
5221 Militia Rd., Plymouth Meeting, PA 19462

Laboratory ID: LAP-178659
Issue Date: 08/31/2021

The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or withdrawal of accreditation.

Environmental Microbiology Laboratory Accreditation Program (EMLAP)

Initial Accreditation Date: 09/01/2019

EMLAP Scope Category	Field of Testing (FOT)	Component, parameter or characteristic tested	Method	Method Description *(for internal methods only)*
Fungal	Air - Direct Examination	Spore Trap	MICRO-SOP-201	Standard Operating Procedure for the Analysis of Airborne Fungal Spores, Hyphal Fragments, Pollen, Insect Fragments, Skin Fragments and Fibrous Particulate by Optical Microscopy of Spore Trap Samples
Fungal	Bulk - Direct Examination	Bulks (liquid or solid)	MICRO-SOP-200	Standard Operating Procedure for the Microscopic Examination of Fungal Spores, Fungal Structures, Hyphae, Pollen, Insect Fragments, and Fibrous Particulate from Surface Samples
Fungal	Surface - Direct Examination	Swab or Tape Lift	MICRO-SOP-200	Standard Operating Procedure for the Microscopic Examination of Fungal Spores, Fungal Structures, Hyphae, Pollen, Insect Fragments, and Fibrous Particulate from Surface Samples

A complete listing of currently accredited EMLAP laboratories is available on the AIHA LAP, LLC website at: *http://www.aihaaccreditedlabs.org*

Indoor Air Quality (IAQ) - Mold Report

Hanover Lyndwood Elementary School
2 Colley St.
Hanover, PA, 18706

ENVIRONMENTAL ABATEMENT ASSOCIATES, INC.

April 10th, 2024

CONTENTS

Indoor Air Quality Inspection / Testing Report

Hanover Lyndwood Elementary School
2 Colley St.
Hanover, PA, 18706

INDOOR AIR QUALITY INSPECTION / TESTING REPORT

Prepared for:

Brandon Holgren

For the properties known as:

2 Colley St.
Hanover, PA, 18706

This Indoor Air Quality Inspection / Testing report prepared by Environmental Abatement Associates, Inc. is based on information supplied by the client and on conditions readily observable or measurable on the date of this study. Any inspection and/or testing conducted by Environmental Abatement Associates, Inc. is not meant to determine whether a building is safe or unsafe for occupants in regards to indoor air quality. Interior building conditions vary constantly, therefore the findings and results presented in this report should be considered relative to and representative of the conditions that existed at the time of the inspection and testing. The results and recommendations presented herein should not be relied upon exclusively for the prevention of all possible illnesses, injuries or losses. These services are a supplement to, and not a substitute for, the client's responsibility for protecting the health and safety of employees, students, residents and others and for complying with applicable laws and regulations. Environmental Abatement Associates, Inc. warrants that its work is performed in a competent and professional manner. No other warranties are expressed or implied.

1.0 INTRODUCTION AND BACKGROUND

Personnel of ENVIRONMENTAL ABATEMENT ASSOCIATES, INC. (EAA) were on site Thursday, March 28th 2024 at 2 Colley St., Hanover, Pennsylvania to conduct an Indoor Air Quality (IAQ) inspection and testing. The inspection and testing was conducted at the request of Brandon Holgren

2.0 EVALUATION STRATEGY

The general strategy employed in this evaluation was to:

1. CONDUCT A VISUAL INSPECTION IN DESIGNATED AREAS.
2. CONDUCT MOLD AIR SAMPLING IN DESIGNATED AREAS.
3. PROVIDE A REPORT OF FINDINGS AND RECOMMENDATIONS.

A visual inspection was conducted in designated areas. The inspection was not intended to be an intensive and detailed inspection, but rather an overview of the conditions that may cause poor indoor air quality. The condition of walls, floor, ceilings, etc. were examined for mold growth and any potential problems that could initiate mold growth were noted.

A total of four (4) mold air the samples were collected on interior of buildings using Allergenco-D sampling cassettes manufactured by Environmental Monitoring Systems and a high volume air sampling pump. One (1) air sample was also collected outside the back door in order to establish a background to be used when interpreting the results of the indoor air samples. Per manufacturer recommendations, each air sample was collected at a flow rate of fifteen (15) liters of air per minute (L/M) for a period of five (5) minutes.

Air samples were logged, labeled and shipped overnight to EMSL Analytical, Inc.,an American Industrial Hygiene Association (AIHA) accredited microbiology laboratory, for analysis by microscopic examination.

AIR CONTAMINANT STANDARDS AND GUIDELINES

In parts per million (ppm)

MEASURED PARAMETER	OSHA PEL Occupational Safety and Health- Permissible Exposure Limits	ACGIH TLV American Conference of Governmental Industrial Hygienists- Threshold Limit Values		NIOSH REL National Institute for Occupational Safety and Health- Recommended Exposure Limits				ASHRAE American Society of Heating, Refrigerating and Air-Conditioning Engineers
	TWA (8) Total Weighted Average	TWA (8) Total Weighted Average	STEL Short Term Exposure Limits	TWA (8) Total Weighted Average	STEL Short Term Exposure Limits	C Ceiling Recommended Exposure Limits	IDLH Immediately Dangerous to Life and Health	RECOMMENDATIONS
Carbon Monoxide	50	25	-	35	-	200	1,200	Maximum allowable concentration for indoor living spaces is 9 ppm
Carbon Dioxide	5,000	5,000	30,000	5,000	30,000	-	40,000	< 700 ppm above outdoor level indicates adequate ventilation
Temperature								68 ^{O}F - 75 ^{O}F (winter) 73 ^{O}F - 79 ^{O}F (summer)
Relative Humidity								30% – 60%

DATA TABLE I
Temperature, Relative Humidity, Carbon Dioxide and Carbon Monoxide Readings

Test No.	Floor	Location	Test Time	Temperature (°F)	Relative Humidity (%)	Carbon Dioxide (PPM)	Carbon Monoxide (PPM)	Comments
1	0	Front Door (Baseline)	10:01	65	36	533	7	Air sample # 5603320
2	2	Girls Bathroom	10:18	73	35	1229	7	Air sample # 5603509
3	2	Hallway Room B8	10:27	72	35	601	7	Air sample # 5603329
4	1	Hallway Room A7	10:34	71	37	1032	7	Air sample # 5603706
5	1	Hallway Room A5	10:40	71	35	854	7	Air sample # 5603319

3.0 DISCUSSION AND CONCLUSIONS

Molds are part of the natural environment and are simple, microscopic organisms whose purpose is to break down dead materials. Molds can be found on plants, dry leaves, and about every other organic material. Mold spores are lightweight and are spread by air currents. If spores land on a suitable surface, they will begin to grow. In order to thrive, mold requires four things to grow: water, organic materials, oxygen, and a temperature between 40-90 degrees Fahrenheit.

To stop the growth of mold, find and stop the moisture source. Mold spores will not grow if moisture is not present.

1. Aspergillus Penicillium

a. Aspergillus species are filamentous fungi that are commonly found in soil, decaying, vegetation, seeds and grains where they thrive as saprophytes. Aspergillus species can occasionally be harmful to humans. In humans, Aspergillus fumigatus is the most common and life-threatening airborne opportunistic fungal pathogen, which is particularly important among immunocompromised hosts. Inhaling Aspergillus fumigatus spores(condia) into the lungs may cause multiple diseases, which depend on theimmunological status of the host in humans. These diseases include invasive pulmonaryaspergillosis, aspergilloma, and different forms of hypersensitivity, pneumonitis, andallergic bronchopulmonary aspergillosis (ABPA).

2. Cladosporium

a. Most kinds of Cladosporium are not dangerous to humans, but sometimes they may lead to allergies, or they may worsen asthma. In worse cases, Cladosporium may lead to infections. In most cases if you open some windows or install a heat recovery ventilator (HRV). These measures will help stop new mold from forming, but will not kill active Cladosporium spores already there. For that you will need a non-toxic registered fungicide such as Concrobium.

3. Basidiospores

a. Inhalation of basidiospores can have health effects ranging from pneumonia-like symptoms to cryptococcus meningitis if the infection isn't treated before it spreads to the brain. The list of environments in which this class of molds thrives is extensive. Sources range from old fruit to damp acrylic painted walls. Detection of Basidiospores at levels higher than 5,000 count per cubic meter are considered problematic.

4. Ascospores

a. This group contains potential opportunistic pathogens, toxin producers, and allergens depending on the genus and species. Ascospores do present a human health risk but few have been reported to cause disease.

All sample locations came back with very low numbers

These findings indicate that mold remediation is not needed.

Respectfully Submitted,

Russ Bigus, M.S., Biology
Professor of Microbiology

Mold Air Sample Analysis Results

EAA
Environmental Abatement Associates, Inc.

OrderID: 182401344

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Microbiology Chain of Custody Form

EMSL Order Number / Lab Use Only

18240 1344

EMSL Analytical, Inc.
5221 Militia Hill Rd
Plymouth Meeting, PA 19462
PHONE: (610) 828-3102
EMAIL: plymouthmeetinglab@emsl.co

If Bill-To is the same as Report-To leave this section blank. Third-party billing requires written authorization.

Customer Information

Customer ID:	
Company Name:	Environmental Abatement Associates, Inc.
Contact Name:	Christopher Tsioles
Street Address:	239 Schuyler avenue suite 125B
City, State, Zip:	KINGSTON PA 18704
Country:	US
Phone:	570-283-0500
Email(s) for Report:	eaawdt@verizon.net

Billing Information

Billing ID.	
Company Name:	Environmental Abatement Associates, Inc.
Billing Contact:	Christopher Tsioles
Street Address:	239 Schuyler avenue suite 125B
City, State, Zip:	KINGSTON PA 18704
Country:	US
Phone:	570-283-0500
Email(s) for Invoice:	

Project Information

Project Name/No: 24-12.4 Hanover Lynnwood Elementary

Purchase Order:

EMSL LIMS Project ID: (If applicable, EMSL will provide)

State Samples Collected: PA

Zip Code Samples Collected:: 17331

State of Connecticut (CT) must select project location: ☐ Commercial (Taxable) ☐ Residential (Non-taxable)

Sampled By Name: Christopher Tsioles

Sampled By Signature:

No. of Samples in Shipment: 5

Sterile, Sodium Thiosulfate Preserved Bottle Used: ☐ Biocide Used in Source (specify)

Public Water Supply Samples: ☐ Note: All results may automatically be reported to DOH if required by State.

Turn-Around-Time (TAT) Please call ahead for large projects and/or turnaround times 6 Hours or Less. *32 Hour TAT available for select tests only; samples must be submitted by 11:30am

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 32* Hour ☑ 48 Hour ☐ 72 Hour ☐ 96 Hour ☐ 1 Week ☐ 2 Week

MICROBIOLOGY TEST CODES

M001 Air-O-Cell | M174 MoldSnap
M030 Micro 5 | M032 Allergenco-D
M041 Fungal Direct Examination
M169 Pollen ID & Enumeration
M280 Dust Characterization Level-1
M281 Dust Characterization Level-2
M005 Viable Fungi-Air Samples (Genus ID & Count)
M006 Viable Fungi-Air Samples (Includes *Penicillum, Aspergillus, Cladosporium, Stachybotrys* Species ID & Count)
M007 Culturable Fungi-Surface Samples (Genus ID & Count)
M008 Culturable Fungi-Surface Samples (Includes *Penicillum, Aspergillus, Cladosporium, Stachybotrys* Species ID & Count)
M009 Bacteria Culture Gram Stain & Count
M010 Bacteria Count & ID - 3 Most Prominent
M011 Bacteria Count & ID - 5 Most Prominent

M012 *Pseudomonas aeruginosa* (P/A***)
M024 *Pseudomonas aeruginosa* (MFT*)
M015 Heterotrophic Plate Count
M017 Total Coliform & *E. Coli* (Colilert P/A***)
M018 Total Coliform & *E. Coli* (MFT*)
M114 Total Coliform & *E. Coli* Enumeration (Colilert MPN**)
M019 Fecal Coliform (MFT*)
M020 Fecal *Streptococcus* (MFT*)
M029 *Enterococci* (MFT*)
M129 *Enterococci* (Enterolert P/A***)
M180 Real Time qPCR-ERMI 36 Panel
M025 Sewage Screen - Water (MFT*)

M115 Sewage Screen - Water (P/A***)
M116 Sewage Screen - Water (MPN**)
M117 Sewage Screen - Swab (P/A***)
M013 Sewage Screen - Swab (MFT*)
M730 *Methicillin-resistant Staph. aureus* (MRSA)
M031 Rapid-growing non-TB *Mycobacteria* Detection & Enumeration
M014 Endotoxin Analysis
M044 Group Allergen (Cat, Dog, Cockroach, Dust Mite)
M095 Bacteroides
Other - See Analytical Price Guide for Test Code
Legionella Analysis Please use EMSL *Legionella* COC

*MFT= Membrane Filtration Technique
**MPN = Most Probable Number
***P/A = Presence/Absence

Sample #	Sample Location/Description	Sample Type (Matrix)	Potable / Non-Potable (Only for Water)	Test Code	Volume/Area	Date / Time Collected	Temperature (Lab Use Only)
Example: Sample 1	Kitchen	Water	Potable	M017	1,000 ml	1/1/2021 3:30pm	
5603320	Front Door	Air		M001	1,500 ml	3/28/24 10:06 AM	
5603509	Girls Bathroom	Air		M001	1,500 ml	3/28/24 10:23 AM	
5603329	Hallway Rm B8	Air		M001	1,500 ml	3/28/24 10:32 AM	
5283706	Hallway Rm A7	Air		M001	1,500 ml	3/28/24 10:39 AM	
5603319	Hallway Rm A5	Air		M001	1,500 ml	3/28/24 10:45 AM	

Special Instructions and/or Regulatory Requirements (Sample Specifications, Processing Methods, Limits of Detection, etc.)

EMSL Fed Ex.

Method of Shipment:		Sample Condition Upon Receipt:	
Relinquished by: Christopher Tsioles	Date/Time: 3/28/24	Received by:	Date/Time 3/29/24 1:30pm
Relinquished by:	Date/Time	Received by:	Date/Time

Controlled Document - COC-34 Micro R13 03/02/2021

☐ AGREE TO ELECTRONIC SIGNATURE (By checking, I consent to signing this Chain of Custody document by electronic signature.)

EMSL Analytical, Inc.

5221 Militia Hill Road Plymouth Meeting, PA 19462
Tel/Fax: (610) 828-3102 / (610) 828-3122
http://www.EMSL.com / plymouthmeetinglab@emsl.com

EMSL Order: 182401344
Customer ID: ENVA55
Customer PO:
Project ID:

Attention: Christopher Tsioles
Environmental Abatement Associates, Inc.
239 Schuyler avenue suite 125B
KINGSTON, PA 18704

Phone: (570) 283-0500
Fax: (570) 283-0577
Collected Date: 03/28/2024
Received Date: 03/29/2024
Analyzed Date: 04/02/2024

Project: 24-12.4 HANOVER LYNNWOOD ELEMENTARY

Test Report: Allergenco-D(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number:	182401344-0001			182401344-0002			182401344-0003		
Client Sample ID:	5603320			5603509			5603329		
Volume (L):	1500			1500			1500		
Sample Location:	FRONT DOOR			GIRLS BATHROOM			HALLWAY RM B8		
Spore Types	**Raw Count†**	**Count/m³**	**% of Total**	**Raw Count†**	**Count/m³**	**% of Total**	**Raw Count†**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	11	24	8.3	-	-	-	-	-	-
Aspergillus/Penicillium++	-	-	-	-	-	-	-	-	-
Basidiospores	111(122)	266	91.7	6	10	83.3	16	35	100
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	-	-	-	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	1	2	16.7	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Total Fungi	**133**	**290**	**100**	**7**	**12**	**100**	**16**	**35**	**100**
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	2	-	-	2	-	-	2	-
Analyt. Sensitivity 300x	-	<1*	-	-	<1*	-	-	<1*	-
Skin Fragments (1-4)	-	1	-	-	2	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	1	-	-	1	-	-	1	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.
† Due to method stopping rules, extrapolated raw counts are reported in parenthesis.

Kevin Ream, Laboratory Manager
or other Approved Signatory

No discernable field blank was submitted with this group of samples.

Samples analyzed by EMSL Analytical, Inc. Plymouth Meeting, PA AIHA LAP, LLC-EMLAP Accredited #178659

Initial report from: 04/02/2024 11:18 AM

For information on the fungi listed in this report, please visit the Resources section at www.emsl.com

EMSL Analytical, Inc.

5221 Militia Hill Road Plymouth Meeting, PA 19462
Tel/Fax: (610) 828-3102 / (610) 828-3122
http://www.EMSL.com / plymouthmeetinglab@emsl.com

EMSL Order: 182401344
Customer ID: ENVA55
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Project ID:

Attention: Christopher Tsioles
Environmental Abatement Associates, Inc.
239 Schuyler avenue suite 125B
KINGSTON, PA 18704

Phone: (570) 283-0500
Fax: (570) 283-0577
Collected Date: 03/28/2024
Received Date: 03/29/2024
Analyzed Date: 04/02/2024

Project: 24-12.4 HANOVER LYNNWOOD ELEMENTARY

Test Report: Allergenco-D(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number:	182401344-0004			182401344-0005		
Client Sample ID:	5283706			5603319		
Volume (L):	1500			1500		
Sample Location:	HALLWAY RM A7			HALLWAY RM A5		
Spore Types	**Raw Count†**	**Count/m³**	**% of Total**	**Raw Count†**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-
Ascospores	1	2	18.2	-	-	-
Aspergillus/Penicillium++	-	-	-	-	-	-
Basidiospores	4	9	81.8	24	52	100
Bipolaris++	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-
Cladosporium	-	-	-	-	-	-
Curvularia	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-
Rust	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-
Total Fungi	**5**	**11**	**100**	**24**	**52**	**100**
Hyphal Fragment	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-
Pollen	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	2	-	-	2	-
Analyt. Sensitivity 300x	-	<1*	-	-	<1*	-
Skin Fragments (1-4)	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-
Background (1-5)	-	1	-	-	1	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.
† Due to method stopping rules, extrapolated raw counts are reported in parenthesis.

No discernable field blank was submitted with this group of samples.

Kevin Ream, Laboratory Manager
or other Approved Signatory

Initial report from: 04/02/2024 11:18 AM

For information on the fungi listed in this report, please visit the Resources section at www.emsl.com

Accreditations

AIHA Laboratory Accreditation Programs, LLC

acknowledges that

EMSL Analytical, Inc.

5221 Militia Rd., Plymouth Meeting, PA 19462

Laboratory ID: LAP-178659

along with all premises from which key activities are performed, as listed above, has fulfilled the requirements of the AIHA Laboratory Accreditation Programs (AIHA LAP), LLC accreditation to the ISO/IEC 17025:2017 international standard, General Requirements for the Competence of Testing and Calibration Laboratories in the following:

LABORATORY ACCREDITATION PROGRAMS

☑	**INDUSTRIAL HYGIENE**	Accreditation Expires: September 01, 2023
☐	**ENVIRONMENTAL LEAD**	Accreditation Expires:
☑	**ENVIRONMENTAL MICROBIOLOGY**	Accreditation Expires: September 01, 2023
☐	**FOOD**	Accreditation Expires:
☐	**UNIQUE SCOPES**	Accreditation Expires:

Specific Field(s) of Testing (FoT)/Method(s) within each Accreditation Program for which the above named laboratory maintains accreditation is outlined on the attached Scope of Accreditation. Continued accreditation is contingent upon successful on-going compliance with ISO/IEC 17025:2017 and AIHA LAP, LLC requirements. This certificate is not valid without the attached Scope of Accreditation. Please review the AIHA LAP, LLC website (www.aihaaccreditedlabs.org) for the most current Scope.

Cheryl O. Morton

Cheryl O Morton
Managing Director, AIHA Laboratory Accreditation Programs, LLC

Revision19.1: 07/28/2021

Date Issued: 08/31/2021

AIHA
Laboratory Accreditation Programs, LLC

AIHA Laboratory Accreditation Programs, LLC
SCOPE OF ACCREDITATION

EMSL Analytical, Inc.
5221 Militia Rd., Plymouth Meeting, PA 19462

Laboratory ID: LAP-178659
Issue Date: 08/31/2021

The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or withdrawal of accreditation.

Environmental Microbiology Laboratory Accreditation Program (EMLAP)

Initial Accreditation Date: 09/01/2019

EMLAP Scope Category	Field of Testing (FOT)	Component, parameter or characteristic tested	Method	Method Description *(for internal methods only)*
Fungal	Air - Direct Examination	Spore Trap	MICRO-SOP-201	Standard Operating Procedure for the Analysis of Airborne Fungal Spores, Hyphal Fragments, Pollen, Insect Fragments, Skin Fragments and Fibrous Particulate by Optical Microscopy of Spore Trap Samples
Fungal	Bulk - Direct Examination	Bulks (liquid or solid)	MICRO-SOP-200	Standard Operating Procedure for the Microscopic Examination of Fungal Spores, Fungal Structures, Hyphae, Pollen, Insect Fragments, and Fibrous Particulate from Surface Samples
Fungal	Surface - Direct Examination	Swab or Tape Lift	MICRO-SOP-200	Standard Operating Procedure for the Microscopic Examination of Fungal Spores, Fungal Structures, Hyphae, Pollen, Insect Fragments, and Fibrous Particulate from Surface Samples

A complete listing of currently accredited EMLAP laboratories is available on the AIHA LAP, LLC website at: *http://www.aihaaccreditedlabs.org*