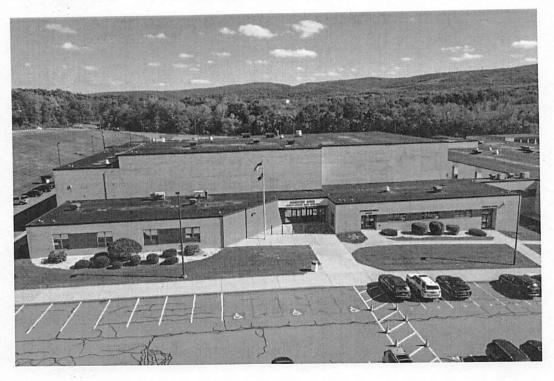
# Indoor Air Quality (IAQ) - Mold Report

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



ENVIRONMENTAL ABATEMENT ASSOCIATES, INC.

April 10th, 2024

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# **Indoor Air Quality Inspection / Testing Report**

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

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#### **APPENDIX**

MOLD AIR SAMPLE ANALYSIS RESULTS ACCREDITATIONS

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# INDOOR AIR QUALITY INSPECTION / TESTING REPORT

## Prepared for:

## Brandon Holgren

For the properties known as: 1600 San Souci Pkwy Hanover, PA, 18706

Testing report prepared by Inspection / Quality Indoor Air This 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 Environmental and for complying with applicable laws and regulations. Abatement Associates, Inc. warrants that its work is performed in a competent and professional manner. No other warranties are expressed or implied.

#### INTRODUCTION AND BACKGROUND 1.0

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

#### **EVALUATION STRATEGY** 2.0

The general strategy employed in this evaluation was to:

- 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.

collected on were air the samples mold four (4) total of Α sampling Allergenco-D using of buildings interior by Environmental Monitoring Systems and cassettes manufactured air sample was pump. One (1) sampling volume air high establish a background to in order to collected outside the back door indoor air the results of when interpreting the used he sample was manufacturer recommendations. each air 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	OSHA PEL Occupational Safety and Health- Permissible Exposure Limits	American C Governmen Hygienists	H TLV onference of tal Industrial - Threshold Values	National I	nstitute for Occi	SH REL upational Safety and Exposure Limits	ASHRAE American Society of Heating, Refrigerating and Air-Conditioning Engineers	
PARAMETER	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 °F - 75 °F (winter) 73 °F - 79 °F (summer)
Relative Humidity								30% – 60%

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

						<del></del>	
Floor	Location	Test Time	Temperature (°F)	Relative Humidity (%)	Carbon Dioxide (PPM)	Carbon Monoxide (PPM)	Comments
0	Bay Door 17 (Baseline)	8:15	40	40	531	7	Air sample # 5603532
1	Cafeteria	8:22	68	38	1038	7	Air sample # 5603813
1	Gym Hallway	8:29	70	39	627	7	Air sample # 5603591
1	Room A20	8:37	68	38	728	7	Air sample # 5288201
1	Hallway A30	8:44	70	38	659	7	Air sample # 5603469
						1	
			<del>                                     </del>				
	0 1 1	0 Bay Door 17 (Baseline)  1 Cafeteria  1 Gym Hallway  1 Room A20	0 Bay Door 17 (Baseline) 8:15 1 Cafeteria 8:22 1 Gym Hallway 8:29 1 Room A20 8:37	Floor         Location         Time         (°F)           0         Bay Door 17 (Baseline)         8:15         40           1         Cafeteria         8:22         68           1         Gym Hallway         8:29         70           1         Room A20         8:37         68	Floor         Location         Test Time         Temperature (°F)         Humidity (%)           0         Bay Door 17 (Baseline)         8:15         40         40           1         Cafeteria         8:22         68         38           1         Gym Hallway         8:29         70         39           1         Room A20         8:37         68         38	Floor         Location         Test Time         Temperature (°F)         Humidity (%)         Dioxide (PPM)           0         Bay Door 17 (Baseline)         8:15         40         40         531           1         Cafeteria         8:22         68         38         1038           1         Gym Hallway         8:29         70         39         627           1         Room A20         8:37         68         38         728	Floor         Location         Test Time         Temperature (°F)         Humidity (%)         Dioxide (PPM)         Monoxide (PPM)           0         Bay Door 17 (Baseline)         8:15         40         40         531         7           1         Cafeteria         8:22         68         38         1038         7           1         Gym Hallway         8:29         70         39         627         7           1         Room A20         8:37         68         38         728         7

### 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 theirmunological 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**

# OrderID: 182401343 EMSL

Customer Information

# Microbiology Chain of Custody Form EMSL Order Number / Lab Use Only

EMBL Analytical, Inc. 5221 Militia Hill Rd

Plymouth Meeting, PA 19462

182401343 PHONE: (610) 828-3102 EMSL ANALYTICAL, INC. EMAIL: plymouthmeetinglab@emsl.co lank. Third-party billing requires written authorization #811-To is the same as Report-To leave this sect Billing ID: Customer ID: Company Name: Environmental Abatement Associates, Inc. Company Name: Environmental Abatement Associates, Inc. Billing Information Billing Contact: **Christopher Tsioles** Contact Name **Christopher Tsioles** Street Address: 239 Schuyler avenue suite 125B Street Address: 239 Schuyler avenue suite 125B Country: US City, State, Zip: 18704 PA KINGSTON 18704 Country: US City, State, Zip: KINGSTON Phone: 570-283-0500 570-283-0500 Email(s) for invoice:

BB (e) Ior Report	awdt@verizon.net			11								
			Pro	ject informatio	n		ID web	2000				
Project 24-12.1 Har	over Jr/Sr High School						Purch Order	:		at Ingothers		
MSL LIMS Project ID: Lapplicable, EMSL will		State Samples Collected:	PA	Zip Code Samples Collected::	173	331	State of Connec	ticut (CT) m clai (Taxab)		ential (Non-taxable)		
Sampled By Name:	stanbar Tajalas		Ampled By Signature: No of Samples in Shipment									
	stopher Tsioles											
Sterile, S	odium Thiosulfato Preserved Bottle Us	<del> =</del>	tetes All s	ed in Source (s	matic	lly he reported	to DOH if required	by State.				
	Public Water Supply Sampl Turn-Around-Time		Youse call abox	ed for large projects an	Vor turnan	ound times 6 Hours or I	ess. "32 Hour TAT available	e for select tests	orly samples must	be submitted by 11.30am.		
3 Hour	6 Hour 24 Hour	32° Hou				72 Hour	96 Hour	L_	1 Week	2 Week		
				SIOLOGY TEST		<u> </u>	M115 Sewage	Screen - Wa	ter (P/A***)			
	M174 MoldSnap			eeruginosa (P/A			M116 Sewage			}		
	M032 Allergenco-D			aeruginosa (MF Mate Count	17)		M117 Sewage			ł		
M041 Fungal Direct Exemina		M015 Hete		nate Count & E. Coli (Coblei	t P/A***	١	M013 Sewage					
M169 Pollen ID & Enumeration				& E. Coli (MFT*)		,	M730 Methicille			MRSA)		
M280 Dust Characterization				& E. Coli Enume		Colifert MPN**)	M031 Rapid-91	T-non grievo	B Mycobacteric	Detection &		
M281 Dust Characterization I M005 Viable Fungi-Air Samp		M019 Fec				<b>-</b> . •	Enumeration		·			
	les (Includes Penicillum, Aspergallus,	M020 Fec	al Streptoc	occus (MFT*)				M014 Endotoxin Analysis				
Cladosportum, Stachybolrys	Species ID & Count)	M029 Enl	erococci (N	(FT°)			M044 Group Allergen (Cat, Dog, Cockroach, Dust Mite)					
M007 Culturable Fungi-Surfa	ice Samples (Genus ID & Count)			interolent P/A***)			M095 Bacteroi			10-10		
MODS Cuitorable Funci-Surfa	M008 Culturable Fungi-Surface Samples (Includes <i>Penicilium</i> , Aspergillus, Cladosporum, Stachybotrys Species ID & Count)			:R-ERMI 36 Pan n - Water (MFT)				e Guide for Tes se use EMSL <i>L</i>				
M009 Bacteria Culture Gren		*MFT= Membrane Filtration Technique										
M010 Bacteria Count & ID -		**MPN = Most Probable Number										
M011 Bacteria Count & ID -		•••P/A = Presence/Absence										
Sample #	Sample Location/Description	Sample Type (Matrix) Potable (Or Water				Test Code	Volume/Area Date /		ne Callected	Temperature (Lab Use Only)		
Example: Sample 1	Kitchen	,w	ater	Potable		M017	1,000 ml	1/1/202	21 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 m	3/28/24	8:42 AM			
5603469	Hallway by A30	Air				M001	1,500 m	3/28/24	8:49 AM	1 4 Tr		
			<u> </u>				la de la companya de	de de la		· · ·		
	Special Instructions and/or Re	egulatory Re	equirement	s (Sample Speci	ncauons	, Processing Me	mods, Limits of Dete	auon, exc.)	Engel 6	· /e ,		
Method of Shapment.			!		Sample	Condition Upon	Receipt:		EMBL F	YU [ X		
Relinquished by: Chris	topher Tsioles	Date/Tim	1e:3/28	/24	Receiv	ed by Um	Mm		Date/Time	19/24		
Relinquished by:		Date/Tim			Received by:				Date/Time	32000		

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.'s Laboratory Terms and Conditions are incorporated into this Chain of Custody by reference in their entirety. Submission of samples to EMSL Analytical, Inc.



## 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

Attention: Christopher Tsioles

Environmental Abatement Associates, Inc.

239 Schuyler avenue suite 125B

KINGSTON, PA 18704

EMSL Order: 182401343 Customer ID: ENVA55

Customer PO: Project ID:

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: Client Sample ID: Volume (L): Sample Location:	182401343-0001 5603295 1500 BY DOOR 17			182401343-0002 5603813 1500 CAFETERIA			182401343-0003 5603591 1500 GYM HALLWAY		
Spore Types	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total
Alternaria (Ulocladium)					• 414			•	
Ascospores	16	35	8			-	-		
Aspergillus/Penicillium++				1	2	50	•		400
Basidiospores	115(181)	395	90.4	1	2	50	4	9	100
Bipolaris++						•	•		•
Chaetomium++		Anna Paris de la Constantina del Constantina de la Constantina de			-	-			
Cladosporium	3	7	1.6	- 1					
Curvularia		The second			-			-	-
Epicoccum				es une ment		•	•	•	
Annual Commission of Commission Commission (Commission Commission		RESERVE	S GALLES COM	-	-		-	-	-
Fusarium++							•		•
Ganoderma		Mark Printers	1	-		-	-	-	
Myxomycetes++									•
Pithomyces++		•	AULIE MEE	_		-	-	-	-
Rust				and the second				•	
Scopulariopsis/Microascus	•					-	_	-	-
Stachybotrys/Memnoniella									
Unidentifiable Spores			•				-		-
Zygomycetes			400	2	4	100	4	9	100
Total Fungi	200	437	100	2		100	-		-
Hyphal Fragment	-			adunary money					
Insect Fragment						E MANUEL AND SE	-		
Pollen			-		2	nd School artists		2	
Analyt. Sensitivity 600x		2			<1*		-	<1*	-
Analyt. Sensitivity 300x	-	<1*		Training to the last of the la	1		5900000000	1	-
Skin Fragments (1-4)	•	1	•			•		1	a land the same of
Fibrous Particulate (1-4)		1						2	
Background (1-5)		1	-	-		•		4	

++ 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.

Muni Com

Kevin Ream, Laboratory Manager or other Approved Signatory

EMSL Analytical, Inc. maintains liability limited to cost of analysis. Interpretation and use of lest results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. EMSL Analytical, Inc. bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody, Samples are within quality control criteria and met method specifications unless otherwise noted. Skin Fragment and Fibrous Particulate ratings are based on the percent of non-fungal material they represent: 1 (1-25%), 2 (26-50%), 3 (51-75%), or 4 (76-100%), Background ratings are based on the total area covered by non-fungal particulate: 1 (1-25%), 2 (26-50%), 3 (51-75%), or 5 (100%; overloaded). High levels of background particulate can obscure spores and other particulates, leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. \*\*\* Denotes particles found at 300X. \*\*\* Denotes not detected. Due to method stopping rules, raw counts >= 100 are extrapolated based on the percentage analyzed.

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

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



## EMSL Analytical, Inc.

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Lab Sample Number: Client Sample ID: Volume (L): Sample Location:	182401343-0004 5288201 1500 ROOM A20		182401343-0005 5603469 1500 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		- 110			•	•		
Curvularia					-	-		
Epicoccum				NEW TEN				
Fusarium++					-	-		
Ganoderma								
Myxomycetes++	•			-		-		
Pithomyces++								
Rust				-		-		
Scopulariopsis/Microascus								
Stachybotrys/Memnoniella					-	-		
Unidentifiable Spores								
Zygomycetes			-	-		-		
Total Fungi	2	4	100	5	11	100		
Hyphal Fragment	IN THE RESERVE	Semon record	to a linear state of the state of	-	-	-		
Insect Fragment	est and the							
Pollen				-	-	-		
Analyt. Sensitivity 600x		2		Maga-Duras	2	Althoras - William		
Analyt. Sensitivity 300x		<1*		-	<1*	-		
Skin Fragments (1-4)	SERVICE CONTRA	1		Market Landson	1	diam's sound		
Fibrous Particulate (1-4)		1			1			
Background (1-5)	BONG GREEN CO.			A PROPERTY OF THE PARTY OF	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.

Muni Cun

Kevin Ream, Laboratory Manager or other Approved Signatory

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

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

# **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
$\overline{\Box}$	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.

Chervl O Morton

Managing Director, AIHA Laboratory Accreditation Programs, LLC

Cheryl O. Charton

Revision19.1: 07/28/2021

Date Issued: 08/31/2021



# 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: <a href="http://www.aihaaccreditedlabs.org">http://www.aihaaccreditedlabs.org</a>

Effective: 07/29/2021

Revision: 7.1 Page 1 of 1

# 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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#### **APPENDIX**

MOLD AIR SAMPLE ANALYSIS RESULTS ACCREDITATIONS

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# INDOOR AIR QUALITY INSPECTION / TESTING REPORT

#### Prepared for:

## Brandon Holgren

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

Quality Inspection / Testing report prepared This Indoor Air 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 80 W. Saint Mary's 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.

collected on mold air the samples were (4) of four Α total sampling Allergenco-D using interior of buildings **Environmental Monitoring** and **Systems** cassettes manufactured by pump. One (1) air sample was sampling volume air hiah a background to in order to establish collected outside the back door when interpreting the results of the indoor air be used manufacturer recommendations, sample was each air samples. Per 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	OSHA PEL Occupational Safety and Health- Permissible Exposure Limits	American C Governmen Hygienists	H TLV onference of tal Industrial - Threshold Values	National I	nstitute for Occ	SH REL upational Safety ar d Exposure Limits	ASHRAE  American Society of Heating, Refrigerating and Air-Conditioning Engineers	
PARAMETER	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 °F - 75 °F (winter) 73 °F - 79 °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, and allergic 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 nontoxic 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

# OrderID: 182401345 EMSL ANALYTICAL, INC.

## Microbiology Chain of Custody Form

EMSL Order Number / Lab Use Only

182401345

EMOL Analytical, Inc. 5221 Militia Hill Rd

If 881-To is the same as Report-To feave this section blank. There-party billing requires written authorization

Plymouth Meeting, PA 19462

PHONE: (610) 828-3102 EMAIL: plymouthmeetinglab@emsl.co

Customer ID: Company Name. Environmental Abatement Associates, Inc. Environmental Abatement Associates, Inc. Company Name. Billing Contact: **Christopher Tsioles** Contact Name. Christopher Tsioles Street Address: 239 Schuyler avenue suite 125B Street Address: 239 Schuyler avenue suite 125B 18704 Country: US Country: US City, State, Zip KINGSTON Customer City, State, Zip: 18704 KINGSTON Phone: 570-283-0500 Phone: 570-283-0500 Email(s) for Invoice: Email(s) for Report: eaawdt@verizon.net Project Information Purchase Project Name/No: 24-12.4 Hanover Lands America McMerial element any State of Connecticut (CT) must select project location. EMSL LIMS Project ID: Samples PA Commercial (Taxable) Residential (Non-taxable) Collected: Collected:: No of Samples Sampled By Signature: Sampled By Name Christopher Tsioles Biocide Used in Source (specify) Sterile, Sodium Thiosulfate Preserved Bottle Used: Note: All results may automatically be reported to DOH if required by State. Public Water Supply Samples: Ploase call should for large projects ancier turnstround times 6 Hours or Less. \*32 Hour TAT available for select tests only; samples must be submitted by 11:30am Turn-Around-Time (TAT) 2 Week 1 Week 48 Hour 96 Hour 72 Hour 32° Hour 3 Hour 6 Hour 24 Hour MICROBIOLOGY TEST CODES M115 Sewage Screen - Water (P/A\*\*\*) M012 Pseudomonas aeruginosa (P/A\*\*\*) M001 Air-O-Cell M174 MoldSnap M116 Sewage Screen - Water (MPN\*\*) M024 Pseudomonas aeruginosa (MFT\*) M030 Micro 5 M032 Allergenco-D M815 Heterotrophic Plate Count M117 Sewage Screen - Swab (P/A\*\*\*) M041 Fungal Direct Examination M013 Sewage Screen - Swab (MFT\*) M017 Total Coliform & E. Coli (Collect P/A\*\*\*) M169 Pollen ID & Enumeration M730 Methicillin-resistant Staph, aureus (MRSA) M018 Total Coliforn & E. Coli (MFT\*) M280 Dust Characterization Level-1 M031 Repid-growing non-TB Mycobacteria Detection & M114 Total Coliforn & E. Coli Enumeration (Colifert MPN\*\*) M281 Dust Characterization Level-2 Enumeration M019 Fecal Coliform (MFT\*) MCOS Viable Fungi-Air Samples (Genus ID & Count) M014 Endotoxin Analysis M020 Fecal Streptococcus (MFT\*) MODS Viable Fungi-Air Samples (Includes Penicilium, Aspergilius, M044 Group Allergen (Cat, Dog, Cockroach, Dust Mile) Cladosporium, Stachybotrys Species ID & Count) M029 Enterococci (MFT\*) M095 Bacteroides M129 Enterococci (Enteroleit P/A\*\*\*) M007 Culturable Fungi-Surface Samples (Genus ID & Count) Other - See Analytical Price Guide for Test Code M180 Real Time qPCR-ERMI 36 Panel M008 Culturable Fungi-Surface Samples (Includes Penicillum, Aspergillus, Cladosporium, Stachybotrys Species ID & Count) Legionella Analysis Please use EMSL Legionella COC M025 Sewage Screen - Water (MFT\*) \*MFT= Membrane Filtration Technique M009 Bacteria Culture Gram Stain & Count \*MPN = Most Probable Number M010 Bacteria Count & ID - 3 Most Prominent \*\*P/A = Presence/Absence M011 Bacteria Count & ID - 5 Most Prominent Potable / Non-Temperature Sample Type Volume/Area Date / Time Collected **Test Code** Sample Location/Description Potable (Only for (Lab Use Only) Sample # (Matrix) Water) M017 1.000 ml 1/1/2021 3:30pm Water Potable Kitchen Example: Sample 1 1.500 ml 3/28/24 11:03 AM Air M001 Front Door 5603859 M001 1.500 ml 3/28/24 11:10 AM Auditorium Air 5603288 M001 1.500 ml 3/28/24 11:18 AM Air Cafeteria 5603691 M001 1.500 ml 3/28/24 11:27 AM Air 5283871 Hallway Rm C10 M001 1.500 ml 3/28/24 11:34 AM Air Hallway Rm B9 5603624 Special Instructions and/or Regulatory Requirements (Sample Specifications, Processing Methods, Limits of Detection, etc.) EMSL Fed Ex Sample Condition Upon Receipt: Method of Shipment: Date/Time Date/Time:3/28/24 Retinquished by: Christopher Tsioles Date/Time. Date/Time Relinquished by: ontrolled Document - COC-34 Micro R13 03/02/2021

AGREE TO ELECTRONIC SIGNATURE (By checking, I consent to signing this Chem 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

Attention: Christopher Tsioles

Environmental Abatement Associates, Inc.

239 Schuyler avenue suite 125B

KINGSTON, PA 18704

EMSL Order: 182401345 Customer ID: ENVA55

Customer PO: Project ID:

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: Client Sample ID: Volume (L): Sample Location:		182401345-0001 5603859 1500 FRONT DOOR			82401345-0002 5603288 1500 AUDITORIUM		1	82401345-0003 5603691 1500 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		- Table	BALLY CONT			
Ascospores	11	24	8.9		-	-	-	-	-
Aspergillus/Penicillium++							•		
Basidiospores	101(111)	242	89.7	4	9	93.1	2	4	100
Bipolaris++							· .		
Chaetomium++		-	-	( <del>-</del> (	-	-	-	-	-
Cladosporium	4	3*	1.1	English Service			•	Terror - Terror	
Curvularia		-	-	-	-	-	-	-	
Epicoccum									•
Fusarium++			-		-	:¥:	-	-	
Ganoderma									
Myxomycetes++				1	<1*	6.9		-	-
Pithomyces++	1000 A . 1000				•	•			-
Rust		-	-		-		-	-	-
Scopulariopsis/Microascus						TO CHARLES			
Stachybotrys/Memnoniella	-		-	-	-	· -	-	-	-
Unidentifiable Spores									•
Zygomycetes			_	-	-	-	-	-	-
Total Fungi	127	269	100	5	9	100	2	4	100
Hyphal Fragment		-	-	1	2	-		-	-
Insect Fragment	e tree in the	Taran Land			•	-			
Pollen	1-	2		-	-	-	-	-	-
Analyt. Sensitivity 600x	money average	2	PERSONAL PROPERTY.	111153 - 1111	. 2			2	
Analyt. Sensitivity 300x	-	<1*			<1*		-	<1*	
Skin Fragments (1-4)		1	1000	100 100 120 100 100	2			2	
Fibrous Particulate (1-4)	4.	1		-	1	-	-	1	-
Background (1-5)	SHIP TO MELLER	2			1 .	Until State of the	4	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.

Muni Cum

Kevin Ream, Laboratory Manager or other Approved Signatory

EMSL Analytical, Inc. maintains liability limited to cost of analysis, Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. EMSL Analytical, Inc. bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received, Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. Skin Fragment and Fibrous Particulate ratings are based on the percent of non-fungal material they represent: 1 (1-25%), 2 (26-50%), 3 (51-75%), or 4 (76-100%). Background ratings are based on the total area covered by non-fungal particles: 1 (1-25%), 2 (26-50%), 3 (51-75%), 4 (76-99%), or 5 (100%) overloaded). High levels of background particulate can obscure spores and other particulates, leading to underestimation. Background levels of 5 indicate an overloading of background particulates, provided and particulates, provided particulat

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

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



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Lab Sample Number: Client Sample ID: Volume (L): Sample Location:		82401345-0004 5283871 1500 LLWAY RM C1		182401345-0005 5603624 1500 HALLWAY RM B9				
Spore Types	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total	 	,
Alternaria (Ulocladium)		• I						
Ascospores	-	-	-	-	-	-		
Aspergillus/Penicillium++	2	4	28.6		•	•		
Basidiospores	5	10	71.4	3	7	100		
Bipolaris++				•	•	•		
Chaetomium++		-	-	-	-	-		
Cladosporium						-		
Curvularia			-	-	-	-		
Epicoccum				-		•		
Fusarium++				-	-			
Ganoderma						•		
Myxomycetes++	-	-			-			
Pithomyces++	Self-Grand Self-							
Rust	-	-	-		-	-		
Scopulariopsis/Microascus					inches i			
Stachybotrys/Memnoniella		-	-	-	-	-		
Unidentifiable Spores				-				
Zygomycetes	-	-	-	-	-	-		
Total Fungi	7	14	100	3	7	100		
Hyphal Fragment		-	-	-	-	-		
Insect Fragment	MERCHANISM I							
Pollen		-	-	-	-	-		
Analyt. Sensitivity 600x		2		public survey	2	-		
Analyt. Sensitivity 300x	-	<1*	-	-	<1*	-		
Skin Fragments (1-4)	Here and the second	2			2			
Fibrous Particulate (1-4)		1		-	1	-		
Background (1-5)	SECTION AND DESCRIPTION	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.

Muni Cun

Kevin Ream, Laboratory Manager or other Approved Signatory

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

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

**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. Onartan

Managing Director, AIHA Laboratory Accreditation Programs, LLC

Revision19.1: 07/28/2021 Date Issued: 08/31/2021



# 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  Standard Operating Procedure for the Microscopic Examination of Fungal Spores, Fungal Structures, Hyphae, Pollen, Insect Fragments, and Fibrous Particulate from Surface Samples	
Fungal	Bulk - Direct Examination	Bulks (liquid or solid)	MICRO-SOP-200		
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: <a href="http://www.aihaaccreditedlabs.org">http://www.aihaaccreditedlabs.org</a>

Effective: 07/29/2021 Revision: 7.1 Page 1 of 1

# 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

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1.00	INTRODUCTION AND BACKGROUND	1
2.00	EVALUATION STRATEGY	
3.00	DISCUSSION AND CONCLUSIONS	5-6

#### **APPENDIX**

MOLD AIR SAMPLE ANALYSIS RESULTS ACCREDITATIONS

"This document was prepared and created by Environmental Abatement Associates, Inc. and contains confidential, proprietary and/or privileged information that is legally protected. The document is intended for the sole use of the addressee indicated above. You are hereby notified that any use of the contents of this document or any action to inform another of its contents is strictly prohibited without first securing the written consent of Environmental Abatement Associates, Inc."

大量的大大型的大型,不是一种企业,不是一个工程,不是一个工程的大型,不是一个工程的大型,不是一个工程的大型,不是一个工程的工程的大型,不是一个工程的工程的工程的

# INDOOR AIR QUALITY INSPECTION / TESTING REPORT

Prepared for:

Brandon Holgren

For the properties known as:

99 Lee Park Ave.

Hanover, PA, 18706

Quality Inspection / Testing report prepared by Indoor Air 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.

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In parts per million (ppm)

MEASURED PARAMETER	OSHA PEL Occupational Safety and Health- Permissible Exposure Limits	Governmen Hygienists	H TLV onference of tal Industrial - Threshold Values	National I	nstitute for Occi	SH REL upational Safety ar d 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
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Carbon Dioxide	5,000	5,000	30,000	5,000	30,000	<u>-</u>	40,000	< 700 ppm above outdoor level indicates adequate ventilation
Temperature								68 °F - 75 °F (winter) 73 °F - 79 °F (summer)
Relative Humidity								30% – 60%

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	Tomporation, transfer and trans									
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		
	1									
			<del>                                     </del>							

#### 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** 

## OrderID: 182401440 EMBL ANALYTICAL, INC.

## Microbiology Chain of Custody Form EMSL Order Number / Lab Use Only

182401440

EMBL Analytical, Inc. 5221 Militia Hill Rd

Plymouth Meeting, PA 19462

PHONE: (610) 828-3102

EMAIL: plymouthmeetinglab@emsl.co

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	Biling Co	Office						
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18704 Country: US								
	Phone:	570-	283-0500					
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## 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

Attention: Christopher Tsioles

Environmental Abatement Associates, Inc.

239 Schuyler avenue suite 125B

KINGSTON, PA 18704

EMSL Order: 182401440 Customer ID: ENVA55

Customer PO: Project ID:

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: Client Sample ID: Volume (L): Sample Location:		182401440-0001 5603613 1500 1500 1500 1500						82401440-0003 5603517 1500 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++			la visita in the	3	6	10.7			
Basidiospores	107(155)	327	87	20	42	75	-		
Bipolaris++							•		
Chaetomium++		-			-		-	•	
Cladosporium							• • • • •	•	
Curvularia		-			-	- 7	-	-	
Epicoccum			I AST TOTAL					•	
Fusarium++		CLASSING ALL	A RESIDENCE PROPERTY.	-	-		-	-	-
Ganoderma		SOLD THE PERSON	wind the				-		•
DEACHAL MARKET CONTROL OF THE CONTRO		Eller Eller			-				-
Myxomycetes++		-					•		•
Pithomyces++				-	-	-			-
Rust		marine de la compa						1	•
Scopulariopsis/Microascus				_	-	-		-	
Stachybotrys/Memnoniella		Barrell (1995) Section 1	a record desi			SENSOR PROPERTY.			
Unidentifiable Spores	avenit ;				and the second		-	-	
Zygomycetes		070	100	27	56	100		No Trace	
Total Fungi	178	376	100	1	-		-	-	-
Hyphal Fragment	and the second second second	•		Name and Part of the Part of t					
Insect Fragment					The state of the state of	AL DESCRIPTION OF THE PERSON		-	-
Pollen	-				2			2	
Analyt. Sensitivity 600x		2			<1*		_	<1*	
Analyt. Sensitivity 300x		<1*	-	AND RESIDENCE AND RESIDENCE	2				
Skin Fragments (1-4)		1			1				
Fibrous Particulate (1-4)		1			1				
Background (1-5)		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.

Muni Cam

Kevin Ream, Laboratory Manager or other Approved Signatory

EMSL Analytical, Inc. maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. EMSL Analytical, Inc. bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples are received, Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. Skin Fragment and Fibrous Particulate ratings are based on the percent of non-fungal material they represent: 1 (1-25%), 2 (26-50%), 3 (51-75%), a (76-100%). Background ratings are based on the total area covered by non-fungal particles: 1 (1-25%), 2 (26-50%), 3 (51-75%), a (76-99%), o 75 (100%; overloaded). High levels of background particulate can obscure spores and other particulates, leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. \*\*\* Denotes particles found at 300X. \*\*\* Denotes not detected. Due to method stopping rules, raw counts >= 100 are extrapolated based on the percentage analyzed.

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

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



## 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

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Lab Sample Number: Client Sample ID: Volume (L): Sample Location:	1	82401440-0004 5603604 1500 LIBRARY			82401440-0005 5603546 1500 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++			-	( e		-		
Pithomyces++	100							
Rust		-		-	-	-		
Scopulariopsis/Microascus						-		
Stachybotrys/Memnoniella		-	-	-	-	-		
Unidentifiable Spores								
Zygomycetes			-		-	-		
Total Fungi	1	2	100	12	25	100		
Hyphal Fragment	Marks and Assessment		-	-	-	-		
Insect Fragment	extension side							
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)	sensoria com dice	1		THE RESERVE	1			

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

Muni Run

Kevin Ream, Laboratory Manager or other Approved Signatory

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

<sup>++</sup> Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

<sup>†</sup> Due to method stopping rules, extrapolated raw counts are reported in parenthesis.

## **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

$\square$	INDUSTRIAL HYGIENE	Accreditation Expires: September 01, 202.
	ENVIRONMENTAL LEAD	Accreditation Expires:
	ENVIRONMENTAL MICROBIOLOGY	Accreditation Expires: September 01, 202
	FOOD	Accreditation Expires:
$\overline{\Box}$	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.

Chervl O Morton

Managing Director, AIHA Laboratory Accreditation Programs, LLC

Cheryl O. Martan

Revision19.1: 07/28/2021 Date Issued: 08/31/2021



# 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

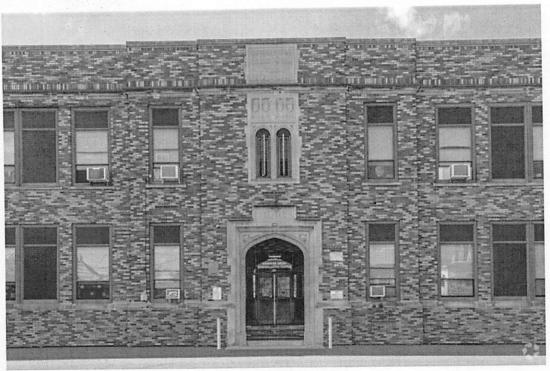
EMLAP Scope Category	Field of Testing (FOT)	Component, parameter or characteristic tested	Method	Method Description (for internal methods only)
Fungal	Air - Direct Examination	Spore Trap	MICRO-SOP-201	Standard Operating Procedure for the Analysis of Airborne Fungal Spores, Hyphal Fragments, Pollen, Insect 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: <a href="http://www.aihaaccreditedlabs.org">http://www.aihaaccreditedlabs.org</a>

Effective: 07/29/2021 Revision: 7.1 Page 1 of 1

## 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

Page		
1	INTRODUCTION AND BACKGROUND	1.00
	EVALUATION STRATEGY	
5-6	DISCUSSION AND CONCLUSIONS	3.00

#### **APPENDIX**

MOLD AIR SAMPLE ANALYSIS RESULTS ACCREDITATIONS

<sup>&</sup>quot;This document was prepared and created by Environmental Abatement Associates, Inc. and contains confidential, proprietary and/or privileged information that is legally protected. The document is intended for the sole use of the addressee indicated above. You are hereby notified that any use of the contents of this document or any action to inform another of its contents is strictly prohibited without first securing the written consent of Environmental Abatement Associates, Inc."

## INDOOR AIR QUALITY INSPECTION / TESTING REPORT

### Prepared for:

## Brandon Holgren

## For the properties known as: 651 Main Rd Hanover, PA, 18706

Inspection / Testing report prepared by Quality This Indoor Air 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 Environmental and for complying with applicable laws and regulations. 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.

collected on were air the samples mold of four (4) total Α sampling Allergenco-D using buildings interior of by Environmental Monitoring Systems and cassettes manufactured air sample was pump. One (1) sampling volume air hiah in order to establish a background to collected outside the back door indoor air results of the the when interpreting be used sample was manufacturer recommendations, each air samples. 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	OSHA PEL Occupational Safety and Health- Permissible Exposure Limits	American C Governmen Hygienists	H TLV onference of tal Industrial - Threshold Values	National I	nstitute for Occi	SH REL upational Safety and Exposure Limits	ASHRAE American Society of Heating, Refrigerating and Air-Conditioning Engineers	
PARAMETER	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 °F - 75 °F (winter) 73 °F - 79 °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
,								
<u>.</u>								
			-					

#### 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, and allergic 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 nontoxic 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



## OrderID: 182401340 EMSL ANALYTICAL INC.

## Microbiology Chain of Custody Form EMSL Order Number / Lab Use Only

EMOL Analytical, Inc. 5221 Militia Hill Rd

182401340

Plymouth Meeting, PA 19462

PHONE: (610) 828-3102 EMAIL: plymouthmeetinglab@emsl.co

	Customer ID.		1		$\neg \neg$	1	Billing ID:	IS THE SECTION DE LAND							
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Sam	Christopher Tsioles Sampled By Signature:												n Shipmer		
	Sterile,	Sodium Thiosulfate Preserved Bottle L		Blocide Usa	ed in Sou	ice	(specify)			014/4	Clato				
		Public Water Supply SamTurn-Around-Tig		tote: All n	esults m	ay a	utomatic: ander times	ally be reported ound times 6 Hours or	Less.	Or it required to 12 Hour TAT available	of select lesis	only: sam	ples must b	e submitted by 19-30am.	
	3 Hour	6 Hour 24 Hour	32. Hon		48 Hou			72 Hour		96 Hour		1 Weel		2 Wask	
_		<u> </u>					T CODE	s							
MOC	1 Arr-O-Cell	M174 MoldSnap	M012 Pso							M115 Sewage S M116 Sewage S					
	0 Micro 5	M032 Allergenco-D		<i>udomonas (</i> Protrophic P			ur i - j			M117 Sewage S					
	i1 Fungal Direct Exami i9 Pollen ID & Enumera	•	I	M015 Heterotrophic Plate Cou M017 Total Coliform & E. Cali				nt P/A***) M013 Sewage Screen					een - Swab (MFT*)		
	O Dust Characterization			d Coliform 8						M730 Methicillin M031 Rapid-gro					
	1 Dust Characterization					Entw	neration (	Collect MPN**)		Enumeration	Ming non-11	D MYSI	Juavioria	Delection o	
	_	ples (Genus ID & Count) ples (Includes <i>Penicillum, Aspergillus,</i>	1	al Coliform al Streptoco	•	FT°)				M014 Endotoxir	n Analysis				
Cl3	dosporium, Stachyboln	s Species ID & Count)	1	erococci (M						MD44 Group All		Dog. C	Cockroac	h, Dust Mile)	
		faco Samples (Genus ID & Count)	1	arococci (E							t Code				
M0 As	08 Culturable Fungi-Sui ie <i>rgillus, Cladosporium</i> ,	face Samples (Includes Penicilium, Stachybotrys Species ID & Count)		il Time qPC vage Screei						Legionella Ana					
l	ng Bacteria Culture Gra			mbrane Fil						<del></del>					
	10 Becteria Count & ID		1	Most Proba		er									
MO	11 Bacteria Count & ID	- 5 Most Prominent	***P/A = F	resence/Al	Potable	.,	Non		_				<del></del>		
	Sample#	Sample Location/Description	(Ma	e Type trix)	Potabl V	e (C Vate	only for er)	Test Code	$oldsymbol{ol}}}}}}}}}}}}}$	olume/Area	Date / Tim	ne Col	lected	Temperature (Lab Use Only)	
	Example: -Sample 1	Kitchen	w.w	eter	r gr P	otat		M017			1/1/202		- +		
5	603810	Front Door	Air	\				M001	11,	,500 ml	3/28/24	9:04	AM		
5	603543	Cafeteria	Air					M001	1,	<u>,500 ml</u>	3/28/24	9:14	AM		
5	603702	Basement	_Air_					M001	+-	,500 ml					
5	283463	Room B14	Air					M001	1	,500 ml	3/28/24	9:31	AM	- A# 14	
5	603611	Room A1	Air					M001	1	<u>,500 mi</u>	3/28/24	9:39	AM (	-	
r		Special Instructions and/or	Regulatory Ro	oquirements	(Sample	Spe	eclication	s, Processing Me	ethod	s, Limits of Deter			1 C		
Mr	thod of Shipment.						Sampl	e Condition Upor	Rec	eipt:	EMSL	. Fe	ul E	<u> </u>	
L		-tbT-!-1	Date/Tim	18:0 100	10.4	_	_	red by:	•	The -	<u> </u>	Date	Time.	29/2-1	
_		stopher Tsioles	Date/Tim	18:3/28/	124			red by:	1_4			Date/	O/7	7/6-1 7000	
L	elinquished by:	Alera R13 03/02/2021								-1	Austral : di			30PM	
-	controlled Document - COC-34 Micro R13 03/02/2021  AGREE TO ELECTRONIC SI					NAT	URE (8y d	hecking, I consent	to sig	ning this Chain of	Custody doca	umant b	iy electroi	iic 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

Attention: Christopher Tsioles

Environmental Abatement Associates, Inc.

239 Schuyler avenue suite 125B

KINGSTON, PA 18704

EMSL Order: 182401340 Customer ID: ENVA55

Customer PO: Project ID:

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: Client Sample ID: Volume (L): Sample Location:	182401340-0001 5603810 1500 FRONT DOOR			82401340-0002 5603543 1500 CAFETERIA		182401340-0003 5603702 1500 BASEMENT			
Spore Types	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total
Alternaria (Ulocladium)						A - # (5) 1 -	• 200		
Ascospores	1	2	0.6		-	-	-		a some management
Aspergillus/Penicillium++					•		•		400
Basidiospores	106(146)	319	99.4	6	10	100	11	24	100
Bipolaris++						•			•
Chaetomium++					-	1.7	-	-	-
Cladosporium						-		•	
Curvularia		_		-		-	-	-	-
Epicoccum		PROFESSION NAMED IN			HISTORY OF THE				
Fusarium++					-		-		-
Ganoderma					Hotels - Stand				
				-			-		-
Myxomycetes++		Name of the last of							
Pithomyces++	•	Banco Fortes	a Manual Committee	-		¥	-		-
Rust		Assessment of the latest of th		grante galego.					
Scopulariopsis/Microascus					Landa problem beautiful		-	-	-
Stachybotrys/Memnoniella		Annual Control of the Control		CONTRACTOR OF THE PARTY OF THE					
Unidentifiable Spores		•					-	2	
Zygomycetes	-		400	6	10	100	11	24	100
Total Fungi	147	321	100	0		- 100	-		
Hyphal Fragment	•			AND DESCRIPTION OF THE PARTY.					
Insect Fragment						-	-		
Pollen	5	3*			2			2	
Analyt. Sensitivity 600x		2			<1*		-	<1*	-
Analyt. Sensitivity 300x	-	<1*		Name and Address of the Owner, where	2			1	
Skin Fragments (1-4)		1			1			1	
Fibrous Particulate (1-4)	and the latest	1		A CONTRACTOR OF THE LOCAL DESIGNATION OF THE L	1		A COLUMN TO SERVICE	2	
Background (1-5)		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.

Muni Cum

Kevin Ream, Laboratory Manager or other Approved Signatory

EMSL Analytical, Inc. maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. EMSL Analytical, Inc. bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received, Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody, Samples are within quality control criteria and met method specifications unless otherwise noted. Skin Fragment and Fibrous Particulate ratings are based on the percent of non-fungal material they represent: 1 (1-25%), 2 (26-50%), 3 (51-75%), or 4 (76-100%). Background ratings are based on the total area covered by non-fungal particles: 1 (1-25%), 2 (26-50%), 3 (51-75%), or 5 (100%; overloaded). High levels of background particulate can obscure spores and other particulates, leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. \*\*\* Denotes particles found at 300X. \*\*\* Denotes not detected. Due to method stopping rules, raw counts >= 100 are extrapolated based on the percentage analyzed.

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

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



## EMSL Analytical, Inc.

5221 Militia Hill Road Plymouth Meeting, PA 19462 Tel/Fax: (610) 828-3102 / (610) 828-3122

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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: Client Sample ID: Volume (L): Sample Location:	1	82401340-0004 5283463 1500 ROOM B14		11	82401340-0005 5603611 1500 ROOM A1			
Spore Types	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total		
Alternaria (Ulocladium)						•		
Ascospores		-		-	-			
Aspergillus/Penicillium++		HOLENO		•				
Basidiospores	7	20	100	11	24	100		
Bipolaris++				•	-	•		
Chaetomium++			-	-	7	-		
Cladosporium					•			
Curvularia		-		-	-	-		
Epicoccum					•	-		
Fusarium++		-	-	-	-	-		
Ganoderma								
Myxomycetes++			-	-	-	-		
Pithomyces++								
Rust	_		-	-	-	-		
Scopulariopsis/Microascus				18 - E				
Stachybotrys/Memnoniella		-	-	-	-	-		
Unidentifiable Spores				Birch - Killer				
Zygomycetes			2		-			
Total Fungi	7	20	100	11	24	100		
Hyphal Fragment	Elizabeth Charles	A SECURITION OF THE PERSON.		-	-	-		
Insect Fragment	and the second	(Kengrakanan)						
Pollen			-		-	-		
Analyt, Sensitivity 600x	*	2			2			
Analyt, Sensitivity 300x		<1*			<1*			
Skin Fragments (1-4)	WWW.	2	N STORY SEE		2	A RESIDENCE		
Fibrous Particulate (1-4)		1	-		1	-		
Background (1-5)	terestativi curio	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.

Muni Eur

Kevin Ream, Laboratory Manager or other Approved Signatory

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

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

## **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:
	ENVIRONMENTAL LEAD ENVIRONMENTAL MICROBIOLOGY FOOD

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

Managing Director, AIHA Laboratory Accreditation Programs, LLC

Cheryl O. Charton

Revision19.1: 07/28/2021

Date Issued: 08/31/2021



# 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: <a href="http://www.aihaaccreditedlabs.org">http://www.aihaaccreditedlabs.org</a>

Effective: 07/29/2021 Revision: 7.1

Page 1 of 1

## 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

		Page
1.00	INTRODUCTION AND BACKGROUND	1
	EVALUATION STRATEGY	
3.00	DISCUSSION AND CONCLUSIONS	5-6

#### **APPENDIX**

MOLD AIR SAMPLE ANALYSIS RESULTS ACCREDITATIONS

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## INDOOR AIR QUALITY INSPECTION / TESTING REPORT

### Prepared for:

## Brandon Holgren

## For the properties known as: 2 Colley St. Hanover, PA, 18706

Testing report prepared Inspection / Quality This Indoor Air 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.

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## 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.

collected on air the samples were four (4) mold total of Α Allergenco-D sampling using buildings interior of by Environmental Monitoring and **Systems** cassettes manufactured air sample was (1) pump. One volume air sampling high establish a background to in order to outside the back door collected air the indoor the results of when interpreting be used air sample manufacturer recommendations, each 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	American C Governmen Hygienists	H TLV onference of tal Industrial - Threshold Values	National I	nstitute for Occi	SH REL upational Safety and 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 °F - 75 °F (winter) 73 °F - 79 °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
			<b>†</b>					
			-					

#### 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

## OrderID: 182401344 EMSL ANALYTICAL, INC.

## Microbiology Chain of Custody Form EMSL Order Number / Lab Use Only

182401344

EMSL Analytical, Inc. 5221 Militia Hill Rd

Plymouth Meeting, PA 19462

PHONE: (610) 828-3102

EMAIL: plymouthmeetinglab@emsl.co

	# Bri-To is the same as Report-To leave this section blank. Third-party billing requires written authorization.													
	Customer ID:					L	Billing ID.							
5	Company Name: Environmental Abatement Associates, Inc.							mpany Name: Environmental Abatement Associates, Inc.						
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<u> </u>	Street Address: 239	et Address: 239 Schuyler avenue suite 125B								chuyler ave			ountry: US	
Customer Information	City, State, Zip: KIN	IGSTON PA	18704	Country: (		12	City, State,			STON	PA	18704 C	, 03	
usto	Phone: 57	0-283-0500				_ L	Phone.			83-0500				
ပ	Email(s) for Report:	awdt@verizon.net				ľ	Email(s) fo	r invoice						
_	L			Pro	ject Infor	mat	lon			Purci	ase			
Project 24-12.4 Hanover Lynnwood Elementary Name/No: Zin Code										of location:				
MS	L LIMS Project ID: licable, EMSL will		State Samples	PA	Zip Co Samp	des	173	331			rcial (Taxat		ential (Non-taxable	
rovid	o)		Collected: Sampled By	Signature	Collec	180::				<u></u>		No. of Sar		
3611	Chris	stopher Tsioles											<sup>nt</sup> 5	
	Sterile, S	odium Thiosulfate Preserved Bottle Us	_=	iocide Us	ed in Sou	ICO (	(specify)	ly bo re	orted to	DOH if required	by State.			
		Public Water Supply Sampl Turn-Around-Time		cose call chos	4 (or large pr	ojects :	and/or turnero	und times 8	Hours or Les	s. '32 Hour TAT everlat	le for select les		on submitted by 11-30am	
ı	3 Hour	6 Hour 24 Hour	32° Hour	يبئا	48 Hou		<u> </u>	72 Ho	ur	88 Hour		1 Wesk	2 Week	
			M012 Psou				T CODES			M115 Sewage	Screen - W	/ater (P/A***)		
$\perp$	O1 Air-O-Cell  BO Micro 5	M 174 MoldSnap M032 Allergenco-D	M024 Pseu							M116 Sewage				
	41 Fungal Direct Examina		M015 Hete	•						M117 Sewage Screen - Swab (P/A***)				
	69 Pollen ID & Enumerati		M017 Total					)		M013 Sewage Screen - Swab (MFT*) M730 Methicilin-resistant Steph, aureus (MRSA)				
	80 Dust Characterization		M018 Total Coldom & E. Coll (MFT*)							M031 Rapid-growing non-TB Mycobacteria Detection &				
	31 Dust Charactenzation 35 Viable Fungi-Air Samp		M114 Total Coliform & E. Coll Enumeration (Colliert MPN**) M919 Fecal Coliform (MFT*)							Enumeration				
Ma	ns Viable Funci-Air Sami	des (Includes Penicilium, Aspergilius,	M020 Fecal Streptococcus (MFT*)							M014 Endotoxin Analysis				
Clé	dosporium, Stachybotrys	Species ID & Count)	M029 Enterococci (MFT*)						M044 Group Allergen (Cat, Dog, Cockroach, Dust Mile) M095 Bacteroides					
		ace Samples (Genus ID & Count)	M129 Enterococci (Enterolert PIA***)						Other - See Analytical Price Guide for Test Code					
MC As	08 Culturable Fungi-Surfi perpillus, Cladosporium,	ace Samples (Includes Penicilium, Stachybotrys Species ID & Count)	1	M180 Real Time qPCR-ERMI 36 Panel M025 Sewage Screen - Water (MFT*)						Legionella Analysis Please use EMSL Legionella COC				
ı	09 Bacteria Culture Gran		*MFT= Membrane Filtration Technique											
	10 Bacteria Count & ID -		**MPN = Most Probable Number											
M	11 Bacteria Count & ID -	6 Most Prominent	Potable / Non-							<del></del>				
	Sample #	Sample Location/Description		e Type trix)	Potab!		nly for	Test C	ode	Volume/Area	Date / T	ime Collected	Temperature (Lab Use Only)	
	Example: Sample 1	Kilchen	Wa	ater	Р	otab	le	MO:	17	1,000 ml	1/1/20	021 3:30pm		
5	603320	Front Door	Air					M00		1,500 m	<del></del>			
5	603509	Girls Bathroom	Air					MOC		1,500 m				
5	603329	Hallway Rm B8	Air					MOC	<del></del>	1,500 m	+			
5	283706	Haliway Rm A7	Air					MOC		<del></del>	3/28/24 10:39 AM		41	
5	603319	Hallway Rm A5	Air M001				)1	1,500 m	3/28/24	4 10:45 AM	ļ			
				<u> </u>					l	· 				
		Special Instructions and/or Ro	egulatory Re	quirements	(Sample	Spe	cifications	, Process	sing Meth	ods, Limits of Det				
						_				<b>-</b>	E	MSL Fed	Ex	
М	ethod of Shipment:								n Upon R	eceipt:			<del></del>	
R	elinquished by: Chris	topher Tsioles	Date/Time: 3/28/24				Receive	d by:	mi	IM		Date/Time 3/	28/11	
	elinquished by:	·						Date/Time	35PM					
Ļ	introlled Document - COC-34 M	cro R13 03/02/2021	ACRES T	AGREE TO BE ECTRONIC SIGNATURE (By checkun, I consent to signing this Cham of Circlety document by electronic signature)								nic sinnatura )		



## 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

Attention: Christopher Tsioles

Environmental Abatement Associates, Inc.

239 Schuyler avenue suite 125B

KINGSTON, PA 18704

EMSL Order: 182401344 Customer ID: ENVA55

Customer PO: Project ID:

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: Client Sample ID: Volume (L): Sample Location:		82401344-0001 5603320 1500 FRONT DOOR			82401344-0002 5603509 1500 RLS BATHROOI	м	182401344-0003 5603329 1500 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++					-		• 1615		100
Basidiospores	111(122)	266	91.7	6	10	83.3	16	35	100
Bipolaris++	-					•		-	-
Chaetomium++		-			-	-	-	-	
Cladosporium	and the second							•	
Curvularia	_		-		-	-	-	-	-
Epicoccum									•
Fusarium++		) Establishment	_		-		-	-	-
Ganoderma					300				-
				1	2	16.7	-	-	-
Myxomycetes++	and the second second						•		
Pithomyces++			A BELGERANDE			-	-	-	-
Rust							•		-
Scopulariopsis/Microascus				_	-	-	-	-	-
Stachybotrys/Memnoniella		15 CONTRACTOR		STATE OF BUILDING	STREET, STREET				
Unidentifiable Spores				-		-	-		-
Zygomycetes		-	100	7	12	100	16	35	100
Total Fungi	133	290	100	ALC DATE OF THE PARTY OF THE PA	-	-	-		-
Hyphal Fragment		a management of the Section		-					
Insect Fragment		•			-		-		
Pollen		-			2			2	
Analyt. Sensitivity 600x		2	•		<1*		-	<1*	
Analyt. Sensitivity 300x		<1*	a servicio de la composicio della composicio della composicio della composicio della composicio della compos	and the second second	2			1	-
Skin Fragments (1-4)		1			1		-	1	-
Fibrous Particulate (1-4)		1	ne Crosson de maleira	and the second	1	at acres in the		1	
Background (1-5)		1	7						

++ 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.

Muni Cun

Kevin Ream, Laboratory Manager or other Approved Signatory

EMSL Analytical, Inc. maintains liability limited to cost of analysis, Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. EMSL Analytical, Inc. bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are writin quality control criteria and met method specifications unless otherwise noted. Skin Fragment and Fibrous Particulate ratings are based on the percent of non-fungal material they represent: 1 (1-25%), 2 (26-50%), 3 (51-75%), or 4 (76-100%). Background ratings are based on the total area covered by non-fungal particulate: 1 (1-25%), 2 (26-50%), 3 (51-75%), 4 (76-99%), or 5 (100%; overloaded). High levels of background particulates, and the particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. "" Denotes particles found at 300X. "-" Denotes not detected. Due to method stopping rules, raw counts >= 100 are extrapolated based on the percentage analyzed.

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

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



## **EMSL** Analytical, Inc.

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

Lab Sample Number: Client Sample ID: Volume (L): Sample Location:		82401344-0004 5283706 1500 ALLWAY RM A7		182401344-0005 5603319 1500 HALLWAY RM A5				
Spore Types	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total		
Alternaria (Ulocladium)					30 lag <del>3</del> 200			
Ascospores	1	2	18.2	•	-			
Aspergillus/Penicillium++		•	-	•				
Basidiospores	4	9	81.8	24	52	100		
Bipolaris++						•		
Chaetomium++			-	-	-	•		
Cladosporium				-				
Curvularia		-	-	-		-		
Epicoccum								
Fusarium++						-		
Ganoderma	nining the same				-			
Myxomycetes++	-				-	-		
Pithomyces++		entité de la constitue de la c				•		
Rust		-		-	-	-		
Scopulariopsis/Microascus			in harmonia in the	ELIZABETH CONTRACTOR	-	-		
Stachybotrys/Memnoniella	1 10 1	REMOVED OF THE		STATE OF THE STATE OF				
Unidentifiable Spores		The second		-		-		
Zygomycetes		11	100	24	52	100		
Total Fungi	5	RESERVED AND DESCRIPTION OF THE PERSON NAMED IN COLUMN TWO	100	ALL STATE OF THE PARTY OF THE P	-	_		
Hyphal Fragment				ACTOR SECTION	Herita da			
Insect Fragment						a Kanada a sa		
Pollen	THE REAL PROPERTY.	2			2	Address of the latest of the l		
Analyt. Sensitivity 600x	- 22- TIME	<1*			<1*	-		
Analyt. Sensitivity 300x	-		an administration	and result	1	war to make the		
Skin Fragments (1-4)	• •	1		CELEDIAL CO	1	OF REAL PROPERTY.		
Fibrous Particulate (1-4)		1		STREET, STREET	1	H E 1911 - 1911		
Background (1-5)	•	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.

Muni Cum

Kevin Ream, Laboratory Manager or other Approved Signatory

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

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

## **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

$\square$	INDUSTRIAL HYGIENE	Accreditation Expires: September 01, 202.
	ENVIRONMENTAL LEAD	Accreditation Expires:
	ENVIRONMENTAL MICROBIOLOGY	Accreditation Expires: September 01, 2022
	FOOD	Accreditation Expires:
П	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.

Chervl O Morton

Managing Director, AIHA Laboratory Accreditation Programs, LLC

Cheryl O. Charton

Revision19.1: 07/28/2021 Date Issued: 08/31/2021



# 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: <a href="http://www.aihaaccreditedlabs.org">http://www.aihaaccreditedlabs.org</a>

Effective: 07/29/2021 Revision: 7.1 Page 1 of 1