

# Mold Inspection / Testing Report

Hanover Area School District  
Memorial Elementary School  
80 West Saint Mary's Road  
Hanover Township, Pennsylvania 18706



**ENVIRONMENTAL ABATEMENT ASSOCIATES, INC.**

October 2, 2018

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## Mold Inspection / Testing Report

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Memorial Elementary School  
80 West Saint Mary's Road  
Hanover Township, Pennsylvania 18706

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MOLD AIR SAMPLE ANALYSIS RESULTS / SPORE TRAP ASSESSMENT REPORT  
ACCREDITATIONS  
MOLD GLOSSARY

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## MOLD INSPECTION / TESTING REPORT

Prepared for:

Hanover Area School District  
1600 San Souci Parkway  
Hanover Township, Pennsylvania 18706

For the property known as:

Memorial Elementary School  
80 West Saint Mary's Road  
Hanover Township, Pennsylvania 18706

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

## **1.0 INTRODUCTION AND BACKGROUND**

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On Tuesday, September 18, 2018, ENVIRONMENTAL ABATEMENT ASSOCIATES, INC. (EAA) was on site at Memorial Elementary School to conduct a visual inspection and testing. Services were requested by the School District after concerns regarding poor air quality and possible mold were expressed by a faculty member.

Memorial Elementary School is a four-story masonry structure constructed in 1921. Per the request of the district, the inspection and testing were limited to classroom 6-6/C-2. Floors in the classroom are concrete covered with vinyl floor tile, ceilings consist of a suspended ceiling system and walls are concrete. Heating is supplied to the classroom by a hot water baseboard and air conditioning is provided by a window mounted air conditioner.

## **2.0 EVALUATION STRATEGY**

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The general strategy employed in this evaluation was to:

1. CONDUCT A VISUAL INSPECTION;
2. COLLECT MOLD AIR SAMPLES;
3. PROVIDE A REPORT OF FINDINGS AND RECOMMENDATIONS.

A visual inspection was conducted in the classroom. Walls, floors, ceilings, furniture, etc. were examined for mold and any potential problems that could initiate mold growth were noted.

A mold air sample was collected in the classroom using an Allergenco-D sampling cassette and a high-volume sampling pump. An air sample was also collected outdoors to provide a background to be used when interpreting the results of indoor air samples. Each air sample was collected at a flow rate of 15 liters of air per minute (L/M) for a period of five (5) minutes.

Samples were logged, labeled and shipped to EMSL Analytical, Inc., an American Industrial Hygiene Association (AIHA) accredited microbiology laboratory, for analysis by direct exam.

## **3.0 RESULTS**

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### **Visual Inspection**

The inspection in classroom 6-6/C2-2 revealed a minor amount of water damage associated with a single window in the classroom. No other evidence of water damage was noted, and no evidence of leaks, condensation or mold were observed. There were also no musty odors present in the classroom.

**Mold Air Sample Analysis Results**

Air sample results are reported as spores per cubic meter (count/m<sup>3</sup>) of air. The analytical sensitivity is the lowest concentration that can be determined by the analytical procedures utilized and considers the size of the trace (airborne particulate deposit) analyzed and the volume of air sample to determine the resulting concentration. The analytical sensitivity is equal to one mold spore, pollen grain, insect fragment, etc. identified during analysis.

Air sample results are summarized in the following table:

Spore Type	Concentration of Mold Spores (count/m <sup>3</sup> )	
	MES-01 (Room 6-6/C-2)	MES-02 (Outdoor)
<i>Alternaria</i>	40	40
Ascospores	100	950
<i>Aspergillus/Penicillium</i>	640	560
Basidiospores	16,800	49,000
<i>Botrytis</i>	10	-
<i>Cercospora</i>	-	40
<i>Cladosporium</i>	90	3,700
<i>Curvularia</i>	-	10
<i>Epicoccum</i>	-	40
<i>Ganoderma</i>	40	470
Myxomycetes	40	200
<i>Paecilomyces-like</i>	-	200
<i>Pithomyces</i>	-	10
<i>Polythrincium</i>	-	40
<i>Pyricularia</i>	-	30
Rust	-	10
<i>Torula-like</i>	-	10
Unidentifiable spores	40	90
<b>Total spores</b>	<b>17,800</b>	<b>55,400</b>

The spores of *Aspergillus* and *Penicillium* are similar in size and morphology and could not be differentiated by the analytical procedures utilized. The results of direct microscopic examinations also do not indicate whether mold spores detected are viable or non-viable.

#### **4.0 DISCUSSION AND CONCLUSIONS**

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In general, two water phases - liquid and vapor - can create conditions conducive to mold colonization of vulnerable materials. Leaks through the building envelope (e.g. roof, exterior walls, windows, foundation, etc.) or plumbing problems are obvious water sources. If the indoor environment is improperly managed, high relative humidity combined with hot weather could also allow for condensation and mold accumulation on materials.

Mold is present everywhere in the environment. The presence of some mold in the indoor environment is normal. Molds produce spores and when spores settle on indoor surfaces with the appropriate conditions (i.e. moisture content, nutrients and temperature) spores will germinate and mold will begin to grow.

Mold spores have the potential to cause health issues such as allergies, irritations and infections. Young children, the elderly and individuals with compromised immune systems or existing respiratory problems (i.e. allergies, asthma, chemical sensitivities, etc.) are more susceptible to the health effects of mold spores. Some molds have the ability to produce toxins, which can also affect personal health.

There are currently no health standards or exposure limits regarding exposure to mold. Without standards or exposure limits, the most commonly used approach in interpreting air sample results is to compare the concentrations and types of mold spores detected in indoor air samples to an outdoor air sample, complaint areas to non-complaint areas or areas of concern to non-concern areas. In general, the concentrations and types of mold spores found in indoor, non-complaint or non-concern areas should be lower than and similar to those found in outdoor, complaint or concern areas.

Overall, the types of mold spores detected indoors were consistent with the types detected outdoors and the levels were equal to or lower than those outdoors; however, a very slightly elevated concentration of *Aspergillus/Penicillium* was found in comparison to the outdoors. As previously stated, there was no visible mold in the classroom. The slightly elevated level of *Aspergillus/Penicillium* does not suggest an indoor source is present. Spores may have migrated into the classroom through pathways such as open windows, etc.

There are no Federal, State or Local regulations or standards regarding mold in the indoor environment. It is important to note that there is no practical way to eliminate all mold spores in the indoor environment; the way to control indoor mold growth is to control moisture and humidity levels.

#### **5.0 RECOMMENDATIONS**

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1. Any existing moisture problems should be resolved to prevent damage to building materials and/or furnishings and unwanted mold growth.
2. Ensure adequate temperature control, humidity control and ventilation in interior building areas.

3. To prevent mold growth, any building materials or furnishings that become wet or damp should be cleaned and dried within 24-48 hours following exposure to moisture.

If you have any questions, please don't hesitate to call. Thank you for the opportunity to be of service.

Yours truly,



Christa Knorr  
Project Manager

# Appendix

# **Mold Air Sample Analysis Results / Spore Trap Assessment Report**



# EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077  
 Phone/Fax: (800) 220-3675 / (856) 786-0262  
<http://www.EMSL.com> / [cinmicrolab@emsl.com](mailto:cinmicrolab@emsl.com)

Order ID: 371816545  
 Customer ID: ENVA55  
 Customer PO:  
 Project ID:

**Attn:** Christa Knorr  
 Environmental Abatement Associates, Inc.  
 239 Schuyler Avenue  
 Suite 125B  
 Kingston, PA 18704

**Phone:** (570) 283-0500  
**Fax:** (570) 283-0577  
**Collected:** 09/18/2018  
**Received:** 09/20/2018  
**Analyzed:** 09/20/2018

**Proj:** 18-067-1 / Hanover Area S.D. - Memorial Elementary School

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

Lab Sample Number:	371816545-0001			371816545-0002		
Client Sample ID:	MES-01			MES-02		
Volume (L):	75			75		
Sample Location:	Room 6-6/C-2			Outdoor		
Spore Types	Raw Count	Count/m <sup>3</sup>	% of Total	Raw Count	Count/m <sup>3</sup>	% of Total
Alternaria (Ulocladium)	1	40	0.2	1	40	0.1
Ascospores	3	100	0.6	22	950	1.7
Aspergillus/Penicillium	15	640	3.6	13	560	1
Basidiospores	392	16800	94.4	1140	49000	88.4
Bipolaris++	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-
Cladosporium	2	90	0.5	85	3700	6.7
Curvularia	-	-	-	1*	10*	0
Epicoccum	-	-	-	1	40	0.1
Fusarium	-	-	-	-	-	-
Ganoderma	3*	40*	0.2	11	470	0.8
Myxomycetes++	1	40	0.2	4	200	0.4
Pithomyces++	-	-	-	1*	10*	0
Rust	-	-	-	1*	10*	0
Scopulariopsis/Microascus	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-
Unidentifiable Spores	1	40	0.2	2	90	0.2
Botrytis	1*	10*	0.1	-	-	-
Cercospora++	-	-	-	1	40	0.1
Paecilomyces-like	-	-	-	5	200	0.4
Polythrincium	-	-	-	1	40	0.1
Pyricularia	-	-	-	2*	30*	0.1
Torula-like	-	-	-	1*	10*	0
<b>Total Fungi</b>	<b>419</b>	<b>17800</b>	<b>100</b>	<b>1292</b>	<b>55400</b>	<b>100</b>
Hyphal Fragment	1	40	-	1*	10*	-
Insect Fragment	-	-	-	-	-	-
Pollen	1*	10*	-	2*	30*	-
Analyt. Sensitivity 600x	-	43	-	-	43	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	3	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-
Background (1-5)	-	2	-	-	1	-

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

Vincent Iuzzolino, M.S., Laboratory Director  
 or Other Approved Signatory

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

Samples received in good condition unless otherwise noted. 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 in excess of 100 are extrapolated based on the percentage analyzed. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ AIHA-LAP, LLC--EMLAP Lab 100194

Initial report from: 09/20/2018 19:46:46



EMSL ANALYTICAL, INC.  
LABORATORY PRODUCTS TRAINING

# Microbiology Chain of Custody

EMSL Order Number (Lab Use Only):

371816545

EMSL ANALYTICAL, INC.  
200 ROUTE 130 NORTH  
CINNAMINSON, NJ 08077  
PHONE: (800) 220-3675  
FAX: (856) 786-0262

Company Name: Environmental Abatement Associates, Inc.		EMSL-Bill to: <input checked="" type="checkbox"/> Same <input type="checkbox"/> Different If Bill to is Different note instructions in Comments**					
Street: 239 Schuyler Avenue, Suite 125B		Third Party Billing requires written authorization from third party					
City: Kingston	State/Province: PA	Zip/Postal Code: 18704	Country: US				
Report To (Name): CHRISTA KNORR		Telephone #: 570-283-0500					
Email Address: EAACJK@VERIZON.NET		Fax #: 570-283-0577	Purchase Order:				
Project Name/Number: 13-007-1 / HANOVER AREA S.D. - MEMORIAL ELEMENTARY SCHOOL		Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email					
U.S. State Samples Taken: PA	Zip Code Sample Taken: 18706	Connecticut Samples: <input type="checkbox"/> Commercial <input type="checkbox"/> Residential					
*Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide. TATs are subject to methodology requirements							
Sterile, Sodium Thiosulfate Preserved Bottle Used: <input type="checkbox"/> Biocide Used in Source (specify): <input type="checkbox"/>							
Public Water Supply Samples: <input type="checkbox"/> Note: All results may automatically be reported to DOH if required by state.							
Turnaround Time (TAT) Options * - Please Check							
<input type="checkbox"/> 3 Hour	<input type="checkbox"/> 6 Hour	<input checked="" type="checkbox"/> 24 Hour	<input type="checkbox"/> 48 Hour <input type="checkbox"/> 72 Hour <input type="checkbox"/> 96 Hour <input type="checkbox"/> 1 Week <input type="checkbox"/> 2 Week				
<b>Microbiology Test Codes</b>							
M001 Air-O-Cell	M174 MoldSnap	M024 Pseudomonas aeruginosa (MFT*)	M115 Sewage Screen - Water (P/A***)				
M030 Micro 5	M032 Allergenco-D	M015 Heterotrophic Plate Count	M116 Sewage Screen - Water (MPN**)				
M041 Fungal Direct Examination		M017 Total Coliform & E. coli (Colilert P/A***)	M117 Sewage Screen - Swab (P/A***)				
M168 Pollen ID & Enumeration		M018 Total Coliform & E. coli (MFT*)	M013 Sewage Screen - Swab (MFT*)				
M280 Dust Characterization Level-1		M114 Total Coliform & E. coli Enumeration (Colilert MPN**)	M133 Methicillin-resistant Staph. aureus (MRSA)				
M281 Dust Characterization Level-2		M019 Fecal Coliform (MFT*)	M031 Rapid-growing non-TB Mycobacteria Detection & Enumeration				
M005 Viable Fungi- Air Samples (Genus ID & Count)		M020 Fecal Streptococcus (MFT*)	M014 Endotoxin Analysis				
M006 Viable Fungi- Air Samples ( Includes Penicillium, Aspergillus, Cladosporium, Stachybotrys Species ID & Count)		M029 Enterococci (MFT*)	M044 Group Allergen (Cat, Dog, Cockroach, Dust Mite)				
M007 Culturable fungi - Surface Samples (Genus ID & Count)		M129 Enterococci (Enterolert P/A***)	Other See Analytical Price Guide				
M008 Culturable fungi - Surface Samples (Includes Penicillium, Aspergillus, Cladosporium, Stachybotrys Species ID & Count)		M180 Real Time qPCR-ERMI 36 Panel	Legionella Analysis Please use EMSL Legionella COC				
M009 Bacteria Culture Gram Stain & Count		M025 Sewage Screen -Water (MFT*)					
M010 Bacteria Count & ID - 3 Most Prominent							
M011 Bacteria Count & ID - 5 Most Prominent							
M012 Pseudomonas aeruginosa (P/A***)							
Name of Sampler: CHRISTA KNORR		Signature of Sampler: <i>Christa Knorr</i>					
Sample #	Sample Location/Description	Sample Type	Potable/ NonPotable (only for waters)	Test Code	Volume/ Area	Date/Time Collected	Temperature (°C) (Lab Use Only)
MES-01	ROOM 6-6/C-2	AIR	<input type="checkbox"/> P <input type="checkbox"/> NP	M032	75L	09/18/18 1517	
MES-02	OUTDOOR	AIR	<input type="checkbox"/> P <input type="checkbox"/> NP	M032	75L	09/18/18 1523	
			<input type="checkbox"/> P <input type="checkbox"/> NP				
			<input type="checkbox"/> P <input type="checkbox"/> NP				
			<input type="checkbox"/> P <input type="checkbox"/> NP				
			<input type="checkbox"/> P <input type="checkbox"/> NP				
			<input type="checkbox"/> P <input type="checkbox"/> NP				
Client Sample # (s): MES-01-MES-02		Total # of Samples: 2	Samples Received Chilled? Yes / No				
Relinquished (Client): <i>Christa Knorr</i>		Date: 09/19/18	Time: 1055				
Received (Lab): <i>J. S. [Signature]</i>		Date: 9/20/18	Time: 10:30				
Comments/Special Instructions:							

RECEIVED  
EMSL  
CINNAMINSON, NJ  
18 SEP 20 11:21

52  
2803759  
2803761

2



# EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077  
Phone/Fax: (800) 220-3675 / (856) 786-0262  
<http://www.EMSL.com> / [cinnmicrolab@emsl.com](mailto:cinnmicrolab@emsl.com)

Order ID: 371816545  
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Customer PO:  
Project ID:

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Environmental Abatement Associates, Inc.  
239 Schuyler Avenue  
Suite 125B  
Kinaston, PA 18704  
**Phone:** (570) 283-0500  
**Fax:** (570) 283-0577  
**Collected:** 09/18/2018  
**Received:** 09/20/2018  
**Analyzed:** 09/20/2018  
**Proj:** 18-067-1 / Hanover Area S.D. - Memorial Elementary School

### Spore Trap ASSESSMENT Report™ Allergenco-D(™) Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

	Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
371816545-0001	Alternaria (Ulocladium)	1	40	0.2	Acceptable   
	Ascospores	3	100	0.6	Acceptable 
<b>Client Sample ID</b>	Aspergillus/Penicillium	15	640	3.6	Slightly Elevated 
MES-01	Basidiospores	392	16800	94.4	Acceptable  
	Bipolaris++	-	-	-	
	Chaetomium	-	-	-	
<b>Location</b>	Cladosporium	2	90	0.5	Acceptable 
Room 6-6/C-2	Curvularia	-	-	-	
	Epicoccum	-	-	-	
<b>Sample Volume (L)</b>	Fusarium	-	-	-	
	Ganoderma	3*	40*	0.2	Acceptable  
75	Myxomycetes++	1	40	0.2	Acceptable  
	Pithomyces++	-	-	-	
<b>Sample Type</b>	Rust	-	-	-	
	Scopulariopsis/Microascus	-	-	-	
Inside	Stachybotrys/Memnoniella	-	-	-	
<b>Comments</b>	Unidentifiable Spores	1	40	0.2	Acceptable
	Botrytis	1*	10*	0.1	Slightly Elevated 
	Cercospora++	-	-	-	
	Paecilomyces-like	-	-	-	
	Polythrincium	-	-	-	
	Pyricularia	-	-	-	
	Torula-like	-	-	-	
	<b>Total Fungi</b>	<b>419</b>	<b>17800</b>	<b>100</b>	Acceptable
	Hyphal Fragment	1	40	-	Slightly Elevated
	Insect Fragment	-	-	-	
	Pollen	1*	10*	-	Acceptable  

Analytical Sensitivity 600x: **43** counts/cubic meter  
Analytical Sensitivity 300x \*: **13\*** counts/cubic meter

Skin Fragments: **3** 1 to 4 (low to high)  
Fibrous Particulate: **1** 1 to 4 (low to high)  
Background: **2** 1 to 4 (low to high); **5** (overloaded)

**Acceptable** Concentration at or below background  
**Slightly Elevated** Concentration above background  
**ELEVATED** Concentration 10X or more above background

 Not commonly found growing indoors, spores likely come from outside.  
 Spores reported to be able to cause allergies in individuals.  
 Potential for mycotoxin production exists with these fungi.  
 These fungi are considered water damage indicators.

Bipolaris++ = Bipolaris / Drechslera / Exserohilum  
Myxomycetes++ = Myxomycetes / Smut /

Vincent Iuzzolino, M.S., Laboratory Director  
or Other Approved Signatory

Initial report from: 09/20/2018 19:46:50

Samples received in good condition unless otherwise noted. 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 in excess of 100 are extrapolated based on the percentage analyzed. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client.

For Information on the fungi listed in this report please visit the Resources section at [www.emsl.com](http://www.emsl.com)



# EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077  
Phone/Fax: (800) 220-3675 / (856) 786-0262  
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Order ID: 371816545  
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	Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
371816545-0002	Alternaria (Ulocladium)	1	40	0.1	
	Ascospores	22	950	1.7	
<b>Client Sample ID</b> MES-02	Aspergillus/Penicillium	13	560	1	
	Basidiospores	1140	49000	88.4	
<b>Location</b> Outdoor	Bipolaris++	-	-	-	
	Chaetomium	-	-	-	
	Cladosporium	85	3700	6.7	
	Curvularia	1*	10*	0	
<b>Sample Volume (L)</b> 75	Epicoccum	1	40	0.1	
	Fusarium	-	-	-	
	Ganoderma	11	470	0.8	
<b>Sample Type</b> Background	Myxomycetes++	4	200	0.4	
	Pithomyces++	1*	10*	0	
	Rust	1*	10*	0	
<b>Comments</b>	Scopulariopsis/Microascus	-	-	-	
	Stachybotrys/Memnoniella	-	-	-	
	Unidentifiable Spores	2	90	0.2	
	Botrytis	-	-	-	
	Cercospora++	1	40	0.1	
	Paecilomyces-like	5	200	0.4	
	Polythrincium	1	40	0.1	
	Pyricularia	2*	30*	0.1	
	Torula-like	1*	10*	0	
	<b>Total Fungi</b>	<b>1292</b>	<b>55400</b>	<b>100</b>	
	Hyphal Fragment	1*	10*	-	
	Insect Fragment	-	-	-	
	Pollen	2*	30*	-	

Analytical Sensitivity 600x: **43** counts/cubic meter  
Analytical Sensitivity 300x \*: **13\*** counts/cubic meter

Skin Fragments: **1** 1 to 4 (low to high)  
Fibrous Particulate: **1** 1 to 4 (low to high)  
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- Not commonly found growing indoors, spores likely come from outside.
- Spores reported to be able to cause allergies in individuals.
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Vincent Iuzzolino, M.S., Laboratory Director  
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# Accreditations



August 31, 2018

Laboratory ID: 100194

Nicholas Straccione  
EMSL Analytical, Inc.  
200 Route 130 North  
Cinnaminson, NJ 08077

Dear Mr. Straccione:

AIHA Laboratory Accreditation Programs, LLC (AIHA-LAP, LLC) has approved an extension to your laboratory's current certificate of accreditation in the Industrial Hygiene, Environmental Lead and Environmental Microbiology. This extension will expire on November 01, 2018. Remember that your laboratory must maintain proficiency per Policy Module 6 in order for the new certificate to be issued.

Your laboratory remains an accredited laboratory in IHLAP, ELLAP and EMLAP. Please keep a copy of this letter with your expired certificate. If you have questions or concerns, please feel free to contact Drake McGregor, Laboratory Accreditation Specialist at (703) 846-0739.

Sincerely,

A handwritten signature in cursive script that reads "Cheryl O. Morton".

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



## AIHA Laboratory Accreditation Programs, LLC

*acknowledges that*

### **EMSL Analytical, Inc.**

200 Route 130 North, Cinnaminson, NJ 08077

Laboratory ID: 100194

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 17025:2005 international standard, *General Requirements for the Competence of Testing and Calibration Laboratories* in the following:

#### **LABORATORY ACCREDITATION PROGRAMS**

- |   |   |
|---|---|
| <input checked="" type="checkbox"/> <b>INDUSTRIAL HYGIENE</b>         | Accreditation Expires: September 01, 2018 |
| <input checked="" type="checkbox"/> <b>ENVIRONMENTAL LEAD</b>         | Accreditation Expires: September 01, 2018 |
| <input checked="" type="checkbox"/> <b>ENVIRONMENTAL MICROBIOLOGY</b> | Accreditation Expires: September 01, 2018 |
| <input type="checkbox"/> <b>FOOD</b>                                  | Accreditation Expires:                    |
| <input type="checkbox"/> <b>UNIQUE SCOPES</b>                         | 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 17025:2005 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](http://www.aihaaccreditedlabs.org)) for the most current Scope.

William Walsh, CIH  
Chairperson, Analytical Accreditation Board

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

Revision 15: 03/30/2016

Date Issued: 08/31/2016



## AIHA Laboratory Accreditation Programs, LLC SCOPE OF ACCREDITATION

### EMSL Analytical, Inc.

200 Route 130 North, Cinnaminson, NJ 08077

Laboratory ID: **100194**

Issue Date: 08/31/2016

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: 09/01/2002**

EMLAP Category	Field of Testing (FoT)	Method	Method Description <i>(for internal methods only)</i>
<b>Fungal</b>	Air - Culturable	M005	Detection and Enumeration of Culturable Fungi from Environmental Samples
	Bulk - Culturable	M005	Detection and Enumeration of Culturable Fungi from Environmental Samples
	Surface - Culturable	M005	Detection and Enumeration of Culturable Fungi from Environmental Samples
	Air - Direct Examination	05-TP-003.7	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
	Bulk - Direct Examination	M041	Standard Operating Procedure for the Microscopic Examination of Fungal Spores, Fungal Structures, Hyphae, Pollen, Insect Fragments, and Fibrous Material from Surface Samples
	Surface - Direct Examination	M041	Standard Operating Procedure for the Microscopic Examination of Fungal Spores, Fungal Structures, Hyphae, Pollen, Insect Fragments, and Fibrous Material from Surface Samples
<b>Bacterial</b>	Air - Culturable	M009	Detection and Enumeration of Culturable Bacteria from Environmental Samples
	Bulk - Culturable	M009	Detection and Enumeration of Culturable Bacteria from Environmental Samples
	Surface - Culturable	M009	Detection and Enumeration of Culturable Bacteria from Environmental Samples

Effective: 03/12/2013

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<b>EMLAP Category</b>	<b>Field of Testing (FoT)</b>	<b>Method</b>	<b>Method Description</b> <i>(for internal methods only)</i>
<b>Bacterial</b>	Legionella	05-TP-002	Recovery of Legionella from the Environment Using the Center for Disease Control and Prevention's Culture Method

A complete listing of currently accredited Environmental Microbiology laboratories is available on the AIHA-LAP, LLC website at: <http://www.aihaaccreditedlabs.org>

# Mold Glossary

## **MOLD GLOSSARY**

**(Mold Spores Detected in Indoor Air Samples)**

***Alternaria*** – Extremely widespread and ubiquitous. Common saprobe found on decaying wood, decaying plants, food, soil and outdoor air. Some species are plant pathogens. Can be found indoors in house dust, carpet, damp areas around showers and window frames and anywhere condensation occurs. Type I (hay fever, asthma) and Type III (hypersensitivity pneumonitis) allergen and one of the most common and potent indoor and outdoor airborne allergens. Some species can produce toxic metabolites that may be associated with disease in humans.

**Ascospores** – Ascospores are the result of sexual reproduction and are produced in a sac-like structure called an ascus. Found everywhere in nature and includes plant pathogens, saprobes and decomposers. Can be found indoors on damp substrates. Allergenic potential is highly variable and depends on genus and species. Ability to cause infections and produce toxins is dependent on genus and species.

***Aspergillus*** – One of the most common fungal genera. Found outdoors in soil, decaying plant debris, compost piles and other kinds of organic matter. Grows on a wide range of substrates indoors and is prevalent in water damaged buildings. Type I (hay fever, asthma) and Type III (hypersensitivity pneumonitis) allergen. Second most common opportunistic pathogen and common agent of pulmonary infections. Some species can produce mycotoxins depending on strain, substrate and/or food source.

**Basidiospores** – Basidiospores are the result of sexual reproduction and formed on a structure called the basidium. This category of spores includes mushrooms, toadstools, wood bracket fungi, puffballs and smuts. Commonly found outdoors in forests, lawns, gardens, woodlands and on plants. Some species are capable of rotting and decaying structural wood in buildings. Type I (hay fever, asthma) and Type III (hypersensitivity pneumonitis) allergen. May cause rare opportunistic infections. Some species can produce toxins, but toxicosis is usually the result of ingestion.

***Botrytis*** – Plant pathogen and saprophyte responsible for gray mold on a variety of fruits and vegetables. Common outdoors on flowers, leaves, stems and fruits of plants and in soil. Suitable substrates indoors include houseplants, stored fruits and vegetables. Type I (hay fever, asthma) and Type III (hypersensitivity pneumonitis) allergen. No known toxins produced.

***Cladosporium*** – One of the most common genera of fungi. Common outdoors on dead and decaying plant matter, straw, soil and woody plants. Can be found indoors on fiberglass duct liner, paint, textiles and on surfaces where condensation occurs. Found in high concentrations in water damaged buildings. One of the most common fungal allergens. Type I (hay fever, asthma) and Type III (hypersensitivity pneumonitis) allergen. Generally, non-pathogenic. Can produce toxins that are not normally highly toxic.

***Ganoderma*** – Grows on conifers and hardwoods worldwide causing white rot, root rot and stem rot. Suitable indoor substrates are unknown. Known allergen. Ability to cause infections and produce toxins is not known. Potential for medicinal use.

**Hypersensitivity Pneumonitis** – An inflammation of the lungs due to breathing in a foreign substance. Can be acute or chronic.

**Immunocompromised** – State in which the immune system's ability to fight infectious disease is compromised or entirely absent.

**Mycotoxin** – A toxic compound produced by certain fungi that is capable of causing disease and death in humans and animals.

**Myxomycetes** – Common outdoors on decaying logs, dead leaves, dung, lawns and mulched flower beds. Occasionally found indoors. Type I (hay fever, asthma) allergen. No reports of human infection. No known toxins produced.

**Pathogen** – A microorganism (e.g. bacteria, viruses, parasites) that can cause disease in humans, animals and plants.

**Penicillium** – One of the most common fungal genera worldwide. Typically found outdoors on cereal crops, soil, seeds, decaying plant debris and compost piles. Can be found in house dust and on fabrics, leather, wallpaper and behind paint in water damaged buildings. Type I (hay fever, asthma) and Type III (hypersensitivity pneumonitis) allergen. Human pathogenic species are rare. Can produce a variety of mycotoxins depending on species.

**Saprophyte / Saprobe** – An organism that requires and utilizes nutrients from dead or decaying organisms.