

IV. LABORATORY ANALYSIS REPORT

Air-O-Cell cassettes are run for 10 minutes to collect a total volume of 150 L of air. These samples are collected in all areas of concern and compared against the normal outdoor air conditions on that day (aka the baseline sample). A full list of commonly encountered fungi is provided in table form and results are reported if the airborne spore count meets or exceeds 7 spores/m³. Blank spaces indicate that no spores were detected in the sample at or above 7 spores/m³ for the corresponding mold type. Elevations of airborne mold are color-coded either orange or red to highlight the severity of the elevation in comparison with the baseline sample. Values reported but not color-coded do not represent an elevation and/or are not of concern unless otherwise noted in the body of this report. Mold spores are common allergens and it is expected to find some detectable levels in ambient air.



#23040946

Analysis Report prepared for

Enviromed Services, Inc.

470 Murdock Avenue
Box 13
Meriden, CT 06450
Phone: (203) 238-4846

IH-23-1377
JFK Middle School
Enfield

Collected: September 25, 2023
Received: September 26, 2023
Reported: September 26, 2023



EPA Laboratory ID: VA01419

We would like to thank you for trusting Hayes Microbial for your analytical needs! We received 10 samples by FedEx in good condition for this project on September 26th, 2023.

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Steve Hayes, BSMT(ASCP)
Laboratory Director
Hayes Microbial Consulting, LLC.


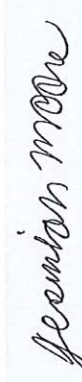


Lab ID: #188863



DPH License: #PH-0198

Sample Number*	A1		A2		A3		A4		
	Raw Count	Count / m ³	% of Total	Raw Count	Count / m ³	% of Total	Raw Count	Count / m ³	% of Total
Sample Name*	Baseline								
Sample Volume*	150 L								
Reporting Limit	7 spores/m ³								
Background	2								
Fragments	ND								
Organism	Raw Count	Count / m ³	% of Total	Raw Count	Count / m ³	% of Total	Raw Count	Count / m ³	% of Total
Alternaria									
Ascospores	330	2200	72.8%				2	13	100.0%
Aspergillus Penicillium									
Basidiospores	123	820	27.2%						
Bipolaris Drechslera									
Chaetomium									
Cladosporium									
Curvularia									
Epicoccum									
Fusarium									
Memnoniella									
Myxomycetes				4	27	50.0%	1	7	100.0%
Pithomyces				3	20	37.5%			
Stachybotrys									
Stemphylium									
Torula									
Ulocladium									
Total	453	3020	100%	8	54	100%	1	7	100%

Water Damage Indicator	Common Allergen	Slightly Higher than Baseline	Significantly Higher than Baseline	Ratio Abnormality
* indicates data provided by the customer				
Collected: Sep 25, 2023 Project Analyst: Jeremiah Moore,		Received: Sep 26, 2023 Reviewed By: Steve Hayes, BSMT		Reported: Sep 26, 2023 Revision: 2
				Date: 09 - 26 - 2023
3005 East Boundary Terrace, Suite F. Midlothian, VA. 23112 (804) 562-3435		contact@hayesmicrobial.com		Date: 12 - 06 - 2023

Sample Number*	Sample Name*	A5		A6		A7		A8	
		Count / m³	% of Total	Count / m³	% of Total	Count / m³	% of Total	Count / m³	% of Total
5	Cafe	150 L		150 L		150 L		150 L	
	Reporting Limit	7 spores/m³		7 spores/m³		7 spores/m³		7 spores/m³	
	Background	2		2		2		2	
	Fragments	ND		ND		ND		ND	
	Organism	Raw Count	Count / m³	Raw Count	Count / m³	Raw Count	Count / m³	Raw Count	Count / m³
	Alternaria								
	Ascospores	3	20						
	Aspergillus Penicillium	2	13						
	Basidiospores	3	20					1	7
	Bipolaris Drechslera								
	Chaetomium								
	Cladosporium	2	13					1	7
	Curvularia								
	Epicoccum								
	Fusarium								
	Memnoniella								
	Myxomycetes								
	Pithomyces								
	Stachybotrys								
	Stemphylium								
	Torula								
	Ulocladium								
	Total	10	66	1	7	2	14	2	14
			100%		100%		100%		100%

Water Damage Indicator	Common Allergen	Slightly Higher than Baseline	Significantly Higher than Baseline	Ratio Abnormality
Collected: Sep 25, 2023		Received: Sep 26, 2023	Reported: Sep 26, 2023	Revision: 2
Project Analyst: Jeremiah Moore,		Reviewed By: Steve Hayes, BSMT		Date: 12 - 06 - 2023
3005 East Boundary Terrace, Suite F. Midlothian, VA. 23112		Contact: <i>Stephan N. Hayes</i>		Date: 12 - 06 - 2023
		(804) 562-3435		contact@hayesmicrobial.com

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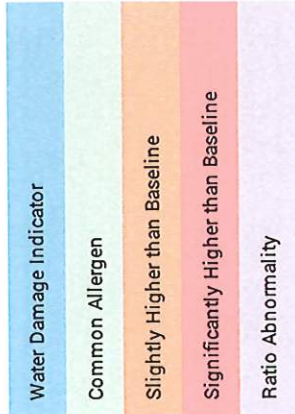


Sample Number*	9	A9	10	A10
Sample Name*	Hallway Outside A038		Classroom B22	
Sample Volume*	150 L	150 L	150 L	150 L
Reporting Limit	7 spores/m ³	7 spores/m ³	7 spores/m ³	7 spores/m ³
Background	2	2	2	2
Fragments	ND	ND	ND	ND
Organism	Raw Count	Count / m ³	Count / m ³	% of Total
Alternaria				
Ascospores			2	28.6%
Aspergillus Penicillium			3	42.9%
Basidiospores				
Bipolaris Drechslera				
Chaetomium				
Cladosporium			2	28.6%
Curvularia				
Epicoccum				
Fusarium				
Memnoniella				
Myxomycetes	2	13		33.3%
Pithomyces	4	27		66.7%
Stachybotrys				
Stemphylium				
Torula				
Ulocladium				
Total	6	40	7	100%

Water Damage Indicator	Common Allergen	Slightly Higher than Baseline	Significantly Higher than Baseline	Ratio Abnormality



Spore Trap Information

<p>Reporting Limit</p> <p>The Reporting Limit is the lowest number of spores that can be detected based on the total volume of the sample collected and the percentage of the slide that is counted. At Hayes Microbial, 100% of the slide is read so the LOD is based solely on the total volume. Raw spore counts that exceed 500 spores will be estimated.</p>
<p>Blanks</p> <p>Results have not been corrected for field or laboratory blanks.</p>
<p>Background</p> <p>The Background is the amount of debris that is present in the sample. This debris consists of skin cells, dirt, dust, pollen, drywall dust and other organic and non-organic matter. As the background density increases, the likelihood of spores, especially small spores such as those of Aspergillus and Penicillium may be obscured. The background is rated on a scale of 1 to 5 and each level is determined as follows:</p> <p>NBD: No background detected due to possible pump or cassette malfunction. Recollect sample. (Field Blanks will display NBD)</p> <p>1 : <5% of field occluded. No spores will be uncountable. 2 : 5-25% of field occluded. 3 : 25-75% of field occluded. 4 : 75-90% of field occluded. 5 : >90% of field occluded. Suggested recollection of sample.</p>
<p>Fragments</p> <p>Fragments are small pieces of fungal mycelium or spores. They are not identifiable as to type and when present in very large numbers, may indicate the presence of mold amplification.</p>
<p>Control Comparisons</p> <p>There are no national standards for the numbers of fungal spores that may be present in the indoor environment. As a general rule and guideline that is widely accepted in the indoor air quality field, the numbers and types of spores that are present in the indoor environment should not exceed those that are present outdoors at any given time. There will always be some mold spores present in "normal" indoor environments. The purpose of sampling and counting spores is to help determine whether an abnormal condition exists within the indoor environment and if it does, to help pinpoint the area of contamination. Spore counts should not be used as the sole determining factor of mold contamination. There are many factors that can cause anomalies in the comparison of indoor and outdoor samples due to the dynamic nature of both of those environments.</p>
 <p>Water Damage Indicator (Blue)</p> <p>Common Allergen (Green)</p> <p>Slightly Higher than Baseline (Orange)</p> <p>Significantly Higher than Baseline (Red)</p> <p>Ratio Abnormality (Purple)</p> <p>Blue: These molds are commonly seen in conditions of prolonged water intrusion and usually indicate a problem. Green: Although all molds are potential allergens, these are the most common allergens that may be found indoors. Orange: The spore count is slightly higher than the outside count and may or may not indicate a source of contamination. Red: The spore count is significantly higher than the baseline count and probably indicates a source of contamination. Violet: The types of spores found indoors should be similar to the ones that were identified in the baseline sample. Significant increases (more than 25%) in the ratio of a particular spore type may indicate the presence of abnormal levels of mold, even if the total number of spores of that type is lower in the indoor environment than it was outdoors.</p>
<p>Color Coding</p> <p>Fungi that are present in indoor samples at levels lower than 200 per cubic meter are not color coded on the report, unless they are one of the water damage indicators.</p>
<p>Significant Figures</p> <p>Raw counts and column totals may reflect more than 2 significant figures, but results should only be considered significant to 2 figures.</p>

Organism Descriptions

Alternaria

Habitat: Commonly found outdoors in soil and decaying plants. Indoors, it is commonly found on window sills and other horizontal surfaces.
Effects: A common allergen and has been associated with hypersensitivity pneumonitis. Alternaria is capable of producing toxic metabolites which may be associated with disease in humans or animals. Occasionally an agent of onychomycosis, ulcerated cutaneous infection and chronic sinusitis, principally in the immunocompromised patient.

Ascospores

Habitat: A large group consisting of more than 3000 species of fungi. Common plant pathogens and outdoor numbers become very high following rain. Most of the genera are indistinguishable by spore trap analysis and are combined on the report.
Effects: Health affects are poorly studied, but many are likely to be allergenic.

Aspergillus|Penicillium

Habitat: The most common fungi isolated from the environment. Very common in soil and on decaying plant material. Are able to grow well indoors on a wide variety of substrates.
Effects: This group contains common allergens and many can cause hypersensitivity pneumonitis. They may cause extrinsic asthma, and many are opportunistic pathogens. Many species produce mycotoxins which may be associated with disease in humans and other animals. Toxin production is dependent on the species, the food source, competition with other organisms, and other environmental conditions.

Basidiospores

Habitat: A common group of Fungi that includes the mushrooms and bracket fungi. They are saprophytes and plant pathogens. In wet conditions they can cause structural damage to buildings.
Effects: Common allergens and are also associated with hypersensitivity pneumonitis.

Cladosporium

Habitat: One of the most common genera worldwide. Found in soil and plant debris and on the leaf surfaces of living plants. The outdoor numbers are lower in the winter and often relatively high in the summer, especially in high humidity. The outdoor numbers often spike in the late afternoon and evening. Indoors, it can be found growing on textiles, wood, sheetrock, moist window sills and in HVAC supply ducts.
Effects: A common allergen, producing more than 10 allergenic antigens and a common cause of hypersensitivity pneumonitis.

Curvularia

Habitat: They exist in soil and plant debris, and are plant pathogens.
Effects: They are allergenic and a common cause of allergic fungal sinusitis. An occasional cause of human infection, including keratitis, sinusitis, onychomycosis, mycetoma, pneumonia, endocarditis and disseminated infection, primarily in the immunocompromised.

Myxomycetes

Habitat: Found on decaying plant material and as a plant pathogen.

Effects: Some allergenic properties reported, but generally pose no health concerns to humans.

Pithomyces

Habitat: Common fungus isolated from soil, decaying plant material. Rarely found indoors.

Effects: Allergenic properties are poorly studied. No cases of infection in humans.



#23041179

Analysis Report prepared for

Enviromed Services, Inc.

470 Murdock Avenue
Box 13
Meriden, CT 06450
Phone: (203) 238-4846

IH-23
JFK Middle School
155 Raffia Rd
Enfield, CT

Collected: **September 26, 2023**
Received: **September 27, 2023**
Reported: **September 27, 2023**



EPA Laboratory ID: VA01419

We would like to thank you for trusting Hayes Microbial for your analytical needs!
We received 10 samples by FedEx in good condition for this project on September 27th, 2023.

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Steve Hayes, BSMT (ASCP)
Laboratory Director
Hayes Microbial Consulting, LLC.



Lab ID: #188863



DPH License: #PH-0198

Sample Number* Sample Name*	A-15		A-16		A-17		A-18	
	Count / m ³	% of Total	Count / m ³	% of Total	Count / m ³	% of Total	Count / m ³	% of Total
Auditorium								
Sample Volume*	150 L		150 L		150 L		150 L	
Reporting Limit	7 spores/m ³		7 spores/m ³		7 spores/m ³		7 spores/m ³	
Background	1		2		2		2	
Fragments	ND		ND		ND		ND	
Organism	Raw Count	Count / m ³	Raw Count	Count / m ³	Raw Count	Count / m ³	Raw Count	Count / m ³
Alternaria								
Ascospores	1	7	4	27	2	13	1	7
Aspergillus Penicillium		100.0%		57.1%				
Basidiospores			1	7	1	7	1	7
Bipolaris Drechslera								
Chaetomium								
Cladosporium								
Curvularia								
Epicoccum								
Fusarium								
Memnoniella								
Myxomycetes								
Pithomyces			2	13				
Stachybotrys								
Stemphylium								
Torula								
Ulocladium								
Total	1	7	7	47	3	20	2	14
		100%		100%		100%		100%

Water Damage Indicator


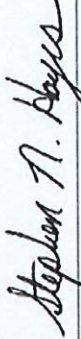
Common Allergen

Slightly Higher than Baseline

Significantly Higher than Baseline


Ratio Abnormality

* indicates data provided by the customer

Collected: Sep 26, 2023	Received: Sep 27, 2023	Reported: Sep 27, 2023
Project Analyst: Ramesh Poluri, PhD	Reviewed By: Steve Hayes, BSMT	Date: 09 - 27 - 2023
		
3005 East Boundary Terrace, Suite F. Midlothian, VA. 23112		contact@hayesmicrobial.com
(804) 562-3435		Page: 3 of 6



Sample Number*	Sample Name*	A-19		A-20	
		Count / m ³	% of Total	Count / m ³	% of Total
9	Stair B2	13	100.0%	27	100%
	Sample Volume*	150 L		150 L	
	Reporting Limit	7 spores/m ³		7 spores/m ³	
	Background	2		2	
	Fragments	ND		ND	
	Organism	Raw Count	% of Total	Raw Count	% of Total
	Alternaria				
	Ascospores	2	100.0%	2	50.0%
	Aspergillus Penicillium				
	Basidiospores				
	Bipolaris Drechslera				
	Chaetomium				
	Cladosporium				
	Curvularia				
	Epicoccum				
	Fusarium				
	Memnoniella				
	Myxomycetes				
	Pithomyces				
	Stachybotrys				
	Stemphylium				
	Torula				
	Ulocladium				
	Total	2	100%	4	100%

Water Damage Indicator	Common Allergen	Slightly Higher than Baseline	Significantly Higher than Baseline	Ratio Abnormality
* indicates data provided by the customer				
		Collected: Sep 26, 2023 Project Analyst: P. Ramesh Ramesh Poluri, PhD 3005 East Boundary Terrace, Suite F. Midlothian, VA. 23112 (804) 562-3435 contact@hayesmicrobial.com		
Received: Sep 27, 2023 Reviewed By: Steve Hayes, BSMT Date: 09 - 27 - 2023		Reported: Sep 27, 2023 Reviewed By: Stephen A. Hayes Date: 09 - 27 - 2023		

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<p>Blanks</p> <p>Results have not been corrected for field or laboratory blanks.</p>					
<p>Background</p> <p>The Background is the amount of debris that is present in the sample. This debris consists of skin cells, dirt, dust, pollen, drywall dust and other organic and non-organic matter. As the background density increases, the likelihood of spores, especially small spores such as those of Aspergillus and Penicillium may be obscured. The background is rated on a scale of 1 to 5 and each level is determined as follows:</p> <p>NBD: No background detected due to possible pump or cassette malfunction. Recollect sample. (Field Blanks will display NBD)</p> <p>1 : <5% of field occluded. No spores will be uncountable.</p> <p>2 : 5-25% of field occluded.</p> <p>3 : 25-75% of field occluded.</p> <p>4 : 75-90% of field occluded.</p> <p>5 : >90% of field occluded. Suggested recollection of sample.</p>					
<p>Fragments</p> <p>Fragments are small pieces of fungal mycelium or spores. They are not identifiable as to type and when present in very large numbers, may indicate the presence of mold amplification.</p>					
<p>Control Comparisons</p> <p>There are no national standards for the numbers of fungal spores that may be present in the indoor environment. As a general rule and guideline that is widely accepted in the indoor air quality field, the numbers and types of spores that are present in the indoor environment should not exceed those that are present outdoors at any given time. There will always be some mold spores present in "normal" indoor environments. The purpose of sampling and counting spores is to help determine whether an abnormal condition exists within the indoor environment and if it does, to help pinpoint the area of contamination. Spore counts should not be used as the sole determining factor of mold contamination. There are many factors that can cause anomalies in the comparison of indoor and outdoor samples due to the dynamic nature of both of those environments.</p>					
<div data-bbox="982 1648 1282 2068" style="border: 1px solid black; padding: 5px;"> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="background-color: #ADD8E6; padding: 2px;">Water Damage Indicator</td> </tr> <tr> <td style="background-color: #90EE90; padding: 2px;">Common Allergen</td> </tr> <tr> <td style="background-color: #FFDAB9; padding: 2px;">Slightly Higher than Baseline</td> </tr> <tr> <td style="background-color: #FFB6C1; padding: 2px;">Significantly Higher than Baseline</td> </tr> <tr> <td style="background-color: #DDA0DD; padding: 2px;">Ratio Abnormality</td> </tr> </table> </div> <p>Blue: These molds are commonly seen in conditions of prolonged water intrusion and usually indicate a problem.</p> <p>Green: Although all molds are potential allergens, these are the most common allergens that may be found indoors.</p> <p>Orange: The spore count is slightly higher than the outside count and may or may not indicate a source of contamination.</p> <p>Red: The spore count is significantly higher than the baseline count and probably indicates a source of contamination.</p> <p>Violet: The types of spores found indoors should be similar to the ones that were identified in the baseline sample. Significant increases (more than 25%) in the ratio of a particular spore type may indicate the presence of abnormal levels of mold, even if the total number of spores of that type is lower in the indoor environment than it was outdoors.</p>	Water Damage Indicator	Common Allergen	Slightly Higher than Baseline	Significantly Higher than Baseline	Ratio Abnormality
Water Damage Indicator					
Common Allergen					
Slightly Higher than Baseline					
Significantly Higher than Baseline					
Ratio Abnormality					
<p>Color Coding</p> <p>Fungi that are present in indoor samples at levels lower than 200 per cubic meter are not color coded on the report, unless they are one of the water damage indicators.</p>					
<p>Significant Figures</p> <p>Raw counts and column totals may reflect more than 2 significant figures, but results should only be considered significant to 2 figures.</p>					

Ascospores

Habitat: A large group consisting of more than 3000 species of fungi. Common plant pathogens and outdoor numbers become very high following rain. Most of the genera are indistinguishable by spore trap analysis and are combined on the report.

Effects: Health affects are poorly studied, but many are likely to be allergenic.

Basidiospores

Habitat: A common group of Fungi that includes the mushrooms and bracket fungi. They are saprophytes and plant pathogens. In wet conditions they can cause structural damage to buildings.

Effects: Common allergens and are also associated with hypersensitivity pneumonitis.

Cladosporium

Habitat: One of the most common genera worldwide. Found in soil and plant debris and on the leaf surfaces of living plants. The outdoor numbers are lower in the winter and often relatively high in the summer, especially in high humidity. The outdoor numbers often spike in the late afternoon and evening. Indoors, it can be found growing on textiles, wood, sheetrock, moist window sills and in HVAC supply ducts.

Effects: A common allergen, producing more than 10 allergenic antigens and a common cause of hypersensitivity pneumonitis.

Pithomyces

Habitat: Common fungus isolated from soil, decaying plant material. Rarely found indoors.

Effects: Allergenic properties are poorly studied. No cases of infection in humans.



#23041391

Analysis Report prepared for

Enviromed Services, Inc.

470 Murdock Avenue
Box 13
Meriden, CT 06450
Phone: (203) 238-4846

IH-23-1377
JFK Middle School
155 Raffia Road
Enfield, CT

Collected: **September 27, 2023**
Received: **September 28, 2023**
Reported: **September 28, 2023**



EPA Laboratory ID: VA01419

Hayes Microbial Consulting, LLC.

3005 East Boundary Terrace, Suite F. Midlothian, VA. 23112

(804) 562-3435

contact@hayesmicrobial.com

Page: 1 of 7

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Steve Hayes, BSMT(ASCP)
Laboratory Director
Hayes Microbial Consulting, LLC.



Lab ID: #188863



DPH License: #PH-0198

DPH License: #PH-0198

Sample Number*	A-30	A-31	A-32	A-33
Sample Name*	Exterior Baseline			
Sample Volume*	150 L	150 L	150 L	150 L
Reporting Limit	7 spores/m³	7 spores/m³	7 spores/m³	7 spores/m³
Background	2	2	2	3
Fragments	ND	ND	ND	13/m³
Organism	Raw Count	Count / m³	% of Total	Raw Count
Alternaria				
Ascospores	78	520	36.1%	2
Aspergillus Penicillium				
Basidiospores	126	840	58.3%	
Bipolaris Drechslera				
Chaetomium				
Cladosporium	12	80	5.6%	1
Curvularia				
Epicoccum				
Fusarium				
Memmoniella				
Myxomycetes				
Pithomyces				
Rusts/Smuts				
Stachybotrys				4
Stemphylium				3
Torula				
Ulocladium				2
Total	216	1440	100%	12
				80
				100%
				16.7%
				8.3%
				33.3%
				25.0%
				16.7%
				100%

Water Damage Indicator	Common Allergen	Slightly Higher than Baseline	Significantly Higher than Baseline	Ratio Abnormality
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* indicates data provided by the customer

Collected: Sep 27, 2023 Project Analyst: Joseph Lape,	Received: Sep 28, 2023 Reviewed By: Steve Hayes, BSMT	Reported: Sep 28, 2023 Date: 09 - 28 - 2023	Date: 09 - 28 - 2023
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3005 East Boundary Terrace, Suite F, Midlothian, VA, 23112
 (804) 562-3435 contact@hayesmicrobial.com



Sample Number*	Sample Name*	A-34		A-35		A-36		A-37	
		Count / m ³	% of Total	Count / m ³	% of Total	Count / m ³	% of Total	Count / m ³	% of Total
5	2nd Fl. Blue Wing - Classroom B28	150 L		150 L		150 L		150 L	
	Reporting Limit	7 spores/m ³		7 spores/m ³		7 spores/m ³		7 spores/m ³	
	Background	2		1		2		2	
	Fragments	ND		ND		ND		ND	
	Organism	Raw Count	Count / m ³	Raw Count	Count / m ³	Raw Count	Count / m ³	Raw Count	Count / m ³
	Alternaria								
	Ascospores								
	Aspergillus Penicillium					2	13	3	20
	Basidiospores								
	Bipolaris Drechslera								
	Chaetomium								
	Cladosporium	2	13						
	Curvularia		66.7%						
	Epicoccum								
	Fusarium								
	Memnoniella								
	Myxomycetes	1	7	2	13				
	Pithomyces		33.3%						
	Rusts/Smuts								
	Stachybotrys								
	Stemphylium								
	Torula								
	Ulocladium								
	Total	3	20	2	13	2	13	3	20
			100%		100%		100%		100%

Water Damage Indicator	Common Allergen	Slightly Higher than Baseline	Significantly Higher than Baseline	Ratio Abnormality

* indicates data provided by the customer

Collected: Sep 27, 2023
 Received: Sep 28, 2023
 Reported: Sep 28, 2023

Project Analyst: Joseph Lape
 Reviewed By: Steve Hayes, BSMT
 Date: 09 - 28 - 2023

3005 East Boundary Terrace, Suite F. Midlothian, VA. 23112
 (804) 562-3435
 contact@hayesmicrobial.com

HAYES
 MICROBIAL CONSULTING

Stephan N. Hayes


Date: 09 - 28 - 2023

Page: 3 of 7

Sample Number*	9	A-38	10	A-39		
Sample Name*	1st Fl. Yellow Wing - Hallway		1st Fl. Gym / Cafe Wing - Cafe / Lounge			
Sample Volume*	150 L		150 L			
Reporting Limit	7 spores/m ³		7 spores/m ³			
Background	3		3			
Fragments	7/m ³		ND			
Organism	Raw Count	Count / m ³	% of Total	Raw Count	Count / m ³	% of Total
Alternaria						
Ascospores	2	13	28.6%			
Aspergillus Penicillium						
Basidiospores						
Bipolaris Drechslera				1	7	20.0%
Chaetomium						
Cladosporium						
Curvularia	1	7	14.3%			
Epicoccum	1	7	14.3%			
Fusarium						
Memnoniella						
Myxomycetes	1	7	14.3%	1	7	20.0%
Pithomyces	1	7	14.3%	3	20	60.0%
Rusts/Smuts	1	7	14.3%			
Stachybotrys						
Stemphylium						
Torula						
Ulocladium						
Total	7	48	100%	5	34	100%

Water Damage Indicator Common Allergen Slightly Higher than Baseline Significantly Higher than Baseline Ratio Abnormality

* indicates data provided by the customer
 Collected: Sep 27, 2023 Received: Sep 28, 2023 Reported: Sep 28, 2023
 Project Analyst: Joseph Lape, *Joseph Lape* Reviewed By: Steve Hayes, BSMT
 Date: 09 - 28 - 2023 Date: 09 - 28 - 2023
 3005 East Boundary Terrace, Suite F. Midlothian, VA. 23112 (804) 562-3435 contact@hayesmicrobial.com
HAYES MICROBIAL CONSULTING
 Stephen A. Hayes

<p>Reporting Limit</p>	<p>The Reporting Limit is the lowest number of spores that can be detected based on the total volume of the sample collected and the percentage of the slide that is counted. At Hayes Microbial, 100% of the slide is read so the LOD is based solely on the total volume. Raw spore counts that exceed 500 spores will be estimated.</p>
<p>Blanks</p>	<p>Results have not been corrected for field or laboratory blanks.</p>
<p>Background</p>	<p>The Background is the amount of debris that is present in the sample. This debris consists of skin cells, dirt, dust, pollen, drywall dust and other organic and non-organic matter. As the background density increases, the likelihood of spores, especially small spores such as those of Aspergillus and Penicillium may be obscured. The background is rated on a scale of 1 to 5 and each level is determined as follows:</p> <p>NBD: No background detected due to possible pump or cassette malfunction. Recollect sample. (Field Blanks will display NBD)</p> <p>1 : <5% of field occluded. No spores will be uncountable.</p> <p>2 : 5-25% of field occluded.</p> <p>3 : 25-75% of field occluded.</p> <p>4 : 75-90% of field occluded.</p> <p>5 : >90% of field occluded. Suggested recollection of sample.</p>
<p>Fragments</p>	<p>Fragments are small pieces of fungal mycelium or spores. They are not identifiable as to type and when present in very large numbers, may indicate the presence of mold amplification.</p>
<p>Control Comparisons</p>	<p>There are no national standards for the numbers of fungal spores that may be present in the indoor environment. As a general rule and guideline that is widely accepted in the indoor air quality field, the numbers and types of spores that are present in the indoor environment should not exceed those that are present outdoors at any given time. There will always be some mold spores present in "normal" indoor environments. The purpose of sampling and counting spores is to help determine whether an abnormal condition exists within the indoor environment and if it does, to help pinpoint the area of contamination. Spore counts should not be used as the sole determining factor of mold contamination. There are many factors that can cause anomalies in the comparison of indoor and outdoor samples due to the dynamic nature of both of those environments.</p>
	<p>Blue: These molds are commonly seen in conditions of prolonged water intrusion and usually indicate a problem.</p> <p>Green: Although all molds are potential allergens, these are the most common allergens that may be found indoors.</p> <p>Orange: The spore count is slightly higher than the outside count and may or may not indicate a source of contamination.</p> <p>Red: The spore count is significantly higher than the baseline count and probably indicates a source of contamination.</p> <p>Violet: The types of spores found indoors should be similar to the ones that were identified in the baseline sample. Significant increases (more than 25%) in the ratio of a particular spore type may indicate the presence of abnormal levels of mold, even if the total number of spores of that type is lower in the indoor environment than it was outdoors.</p>
<p>Color Coding</p>	<p>Fungi that are present in indoor samples at levels lower than 200 per cubic meter are not color coded on the report, unless they are one of the water damage indicators.</p>
<p>Significant Figures</p>	<p>Raw counts and column totals may reflect more than 2 significant figures, but results should only be considered significant to 2 figures.</p>

Ascospores	<p>Habitat: A large group consisting of more than 3000 species of fungi. Common plant pathogens and outdoor numbers become very high following rain. Most of the genera are indistinguishable by spore trap analysis and are combined on the report.</p> <p>Effects: Health affects are poorly studied, but many are likely to be allergenic.</p>
Aspergillus Penicillium	<p>Habitat: The most common fungi isolated from the environment. Very common in soil and on decaying plant material. Are able to grow well indoors on a wide variety of substrates.</p> <p>Effects: This group contains common allergens and many can cause hypersensitivity pneumonitis. They may cause extrinsic asthma, and many are opportunistic pathogens. Many species produce mycotoxins which may be associated with disease in humans and other animals. Toxin production is dependent on the species, the food source, competition with other organisms, and other environmental conditions.</p>
Basidiospores	<p>Habitat: A common group of Fungi that includes the mushrooms and bracket fungi. They are saprophytes and plant pathogens. In wet conditions they can cause structural damage to buildings.</p> <p>Effects: Common allergens and are also associated with hypersensitivity pneumonitis.</p>
Bipolaris Drechslera	<p>Habitat: They are found in soil and as plant pathogens. Can grow indoors on a variety of substrates.</p> <p>Effects: They may be allergenic and are very commonly involved in allergic fungal sinusitis. They are opportunistic pathogens but occasionally infect healthy individuals, causing keratitis, sinusitis and osteomyelitis.</p>
Cladosporium	<p>Habitat: One of the most common genera worldwide. Found in soil and plant debris and on the leaf surfaces of living plants. The outdoor numbers are lower in the winter and often relatively high in the summer, especially in high humidity. The outdoor numbers often spike in the late afternoon and evening. Indoors, it can be found growing on textiles, wood, sheetrock, moist window sills and in HVAC supply ducts.</p> <p>Effects: A common allergen, producing more than 10 allergenic antigens and a common cause of hypersensitivity pneumonitis.</p>
Curvularia	<p>Habitat: They exist in soil and plant debris, and are plant pathogens.</p> <p>Effects: They are allergenic and a common cause of allergic fungal sinusitis. An occasional cause of human infection, including keratitis, sinusitis, onychomycosis, mycetoma, pneumonia, endocarditis and disseminated infection, primarily in the immunocompromised.</p>

Habitat: It is found in soil and plant litter and is a plant pathogen. It can grow indoors on a variety of substrates, including paper and textiles and is commonly found on wet drywall.

Effects: It is a common allergen. No cases of infection have been reported in humans.

Epizococcum

Myxomycetes

Habitat: Found on decaying plant material and as a plant pathogen.

Effects: Some allergenic properties reported, but generally pose no health concerns to humans.

Pithomyces

Habitat: Common fungus isolated from soil, decaying plant material. Rarely found indoors.

Effects: Allergenic properties are poorly studied. No cases of infection in humans.

Stachybotrys

Habitat: Commonly found in soil and on decaying plant material. It is cellulolytic, and can be found indoors on wet materials containing cellulose, such as wallboard, ceiling tile, and other paper-based materials. It is found outdoors on decaying plant material although it is rarely detected on outdoor air samples.

Effects: Allergenic properties are poorly studied and no cases of infection have been reported in humans. They do however produce potent tricothecene mycotoxins. The toxins produced by this fungus can suppress the immune system affecting the lymphoid tissue and the bone marrow. The mycotoxin is also reported to be a liver and kidney carcinogen.

V. LABORATORY ANALYSIS CLEARANCE REPORT

Air-O-Cell cassettes are run for 10 minutes to collect a total volume of 150 L of air. These samples are collected in all areas of concern and compared against the normal outdoor air conditions on that day (aka the baseline sample). A full list of commonly encountered fungi is provided in table form and results are reported if the airborne spore count meets or exceeds 7 spores/m³. Blank spaces indicate that no spores were detected in the sample at or above 7 spores/m³ for the corresponding mold type. Elevations of airborne mold are color-coded either orange or red to highlight the severity of the elevation in comparison with the baseline sample. Values reported but not color-coded do not represent an elevation and/or are not of concern unless otherwise noted in the body of this report. Mold spores are common allergens and it is expected to find some detectable levels in ambient air.



#23052869

Analysis Report prepared for

EnviroMed Services, Inc.

470 Murdock Avenue
Box 13
Meriden, CT 06450
Phone: (203) 238-4846

IH-23-1710
JFK Middle School
IH-23-1710

Collected: November 7, 2023
Received: November 9, 2023
Reported: December 6, 2023



EPA Laboratory ID: VA01419

We would like to thank you for trusting Hayes Microbial for your analytical needs!
We received 2 samples by FedEx in good condition for this project on November 9th, 2023.

The results in this analysis pertain only to this job, collected on the stated date, and should not be used in the interpretation of any other job. Information supplied by the customer can affect the validity of results. These results apply only to the samples as received. This report may not be duplicated, except in full, without the written consent of Hayes Microbial Consulting, LLC.

All information provided to Hayes Microbial is confidential information relating to our customers and their clients. We will not disclose, copy, or distribute any information verbally or written, except to those designated by the customer(s). We take confidentiality very seriously. No changes to the distribution list will be made without the express consent of the customer.

This laboratory bears no responsibility for sample collection activities, analytical method limitations, or your use of the test results. Interpretation and use of test results are your responsibility. Any reference to health effects or interpretation of mold levels is strictly the opinion of Hayes Microbial. In no event, shall Hayes Microbial or any of its employees be liable for lost profits or any special, incidental or consequential damages arising out of the use of these test results.

Steve Hayes, BSMT(ASCP)
Laboratory Director
Hayes Microbial Consulting, LLC.



Lab ID: #188863



DPH License: #PH-0198

Sample Number*	A3	A4				
JFK Middle School / Baseline		JFK Middle School / Green Wing Hallway				
Sample Volume*	150 L	150 L				
Reporting Limit	7 spores/m ³	7 spores/m ³				
Background	2	2				
Fragments	13/m ³	ND				
Organism	Raw Count	Count / m ³	% of Total	Raw Count	Count / m ³	% of Total
Alternaria	1	7	<1%			
Ascospores	70	470	29.5%	3	20	75.0%
Aspergillus Penicillium						
Basidiospores	129	860	54.4%			
Bipolaris Drechslera						
Cercospora	2	13	<1%			
Chaetomium						
Cladosporium	32	210	13.5%	1	7	25.0%
Curvularia						
Epicoccum						
Fusarium						
Memnoniella						
Myxomycetes	3	20	1.3%			
Pithomyces						
Stachybotrys						
Stemphylium						
Torula						
Ulocladium						
Total	237	1580	100%	4	27	100%

Water Damage Indicator Common Allergen Slightly Higher than Baseline Significantly Higher than Baseline Ratio Abnormality

* indicates data provided by the customer

Collected: Nov 7, 2023

Project Analyst:
Joseph Lape,

Joseph Lape

Received: Nov 9, 2023

Date:
11 - 09 - 2023

Reviewed By:
Steve Hayes, BSMT

Stephen A. Hayes

Reported: Dec 6, 2023

Date:
12 - 06 - 2023

3005 East Boundary Terrace, Suite F. Midlothian, VA. 23112

(804) 562-3435

contact@hayesmicrobial.com

Page: 2 of 4



Spore Trap Information

Reporting Limit	<p>The Reporting Limit is the lowest number of spores that can be detected based on the total volume of the sample collected and the percentage of the slide that is counted. At Hayes Microbial, 100% of the slide is read so the LOD is based solely on the total volume. Raw spore counts that exceed 500 spores will be estimated.</p>
Blanks	<p>Results have not been corrected for field or laboratory blanks.</p>
Background	<p>The Background is the amount of debris that is present in the sample. This debris consists of skin cells, dirt, dust, pollen, drywall dust and other organic and non-organic matter. As the background density increases, the likelihood of spores, especially small spores such as those of Aspergillus and Penicillium may be obscured. The background is rated on a scale of 1 to 5 and each level is determined as follows:</p> <p>NBD: No background detected due to possible pump or cassette malfunction. Recollect sample. (Field Blanks will display NBD)</p> <p>1 : <5% of field occluded. No spores will be uncountable. 2 : 5-25% of field occluded. 3 : 25-75% of field occluded. 4 : 75-90% of field occluded. 5 : >90% of field occluded. Suggested recollection of sample.</p>
Fragments	<p>Fragments are small pieces of fungal mycelium or spores. They are not identifiable as to type and when present in very large numbers, may indicate the presence of mold amplification.</p>
Control Comparisons	<p>There are no national standards for the numbers of fungal spores that may be present in the indoor environment. As a general rule and guideline that is widely accepted in the indoor air quality field, the numbers and types of spores that are present in the indoor environment should not exceed those that are present outdoors at any given time. There will always be some mold spores present in "normal" indoor environments. The purpose of sampling and counting spores is to help determine whether an abnormal condition exists within the indoor environment and if it does, to help pinpoint the area of contamination. Spore counts should not be used as the sole determining factor of mold contamination. There are many factors that can cause anomalies in the comparison of indoor and outdoor samples due to the dynamic nature of both of those environments.</p>
Water Damage Indicator	<p>Blue: These molds are commonly seen in conditions of prolonged water intrusion and usually indicate a problem.</p>
Common Allergen	<p>Green: Although all molds are potential allergens, these are the most common allergens that may be found indoors.</p>
Slightly Higher than Baseline	<p>Orange: The spore count is slightly higher than the outside count and may or may not indicate a source of contamination.</p>
Significantly Higher than Baseline	<p>Red: The spore count is significantly higher than the baseline count and probably indicates a source of contamination.</p>
Ratio Abnormality	<p>Violet: The types of spores found indoors should be similar to the ones that were identified in the baseline sample. Significant increases (more than 25%) in the ratio of a particular spore type may indicate the presence of abnormal levels of mold, even if the total number of spores of that type is lower in the indoor environment than it was outdoors.</p>
Color Coding	<p>Fungi that are present in indoor samples at levels lower than 200 per cubic meter are not color coded on the report, unless they are one of the water damage indicators.</p>
Significant Figures	<p>Raw counts and column totals may reflect more than 2 significant figures, but results should only be considered significant to 2 figures.</p>

Organism Descriptions

Alternaria

Habitat: Commonly found outdoors in soil and decaying plants. Indoors, it is commonly found on window sills and other horizontal surfaces.
Effects: A common allergen and has been associated with hypersensitivity pneumonitis. *Alternaria* is capable of producing toxic metabolites which may be associated with disease in humans or animals. Occasionally an agent of onychomycosis, ulcerated cutaneous infection and chronic sinusitis, principally in the immunocompromised patient.

Ascospores

Habitat: A large group consisting of more than 3000 species of fungi. Common plant pathogens and outdoor numbers become very high following rain. Most of the genera are indistinguishable by spore trap analysis and are combined on the report.
Effects: Health effects are poorly studied, but many are likely to be allergenic.

Basidiospores

Habitat: A common group of Fungi that includes the mushrooms and bracket fungi. They are saprophytes and plant pathogens. In wet conditions they can cause structural damage to buildings.
Effects: Common allergens and are also associated with hypersensitivity pneumonitis.

Cercospora

Habitat: Found on wood and decaying plant matter.
Effects: Health effects are poorly studied.

Cladosporium

Habitat: One of the most common genera worldwide. Found in soil and plant debris and on the leaf surfaces of living plants. The outdoor numbers are lower in the winter and often relatively high in the summer, especially in high humidity. The outdoor numbers often spike in the late afternoon and evening. Indoors, it can be found growing on textiles, wood, sheetrock, moist window sills and in HVAC supply ducts.
Effects: A common allergen, producing more than 10 allergenic antigens and a common cause of hypersensitivity pneumonitis.

Myxomycetes

Habitat: Found on decaying plant material and as a plant pathogen.
Effects: Some allergenic properties reported, but generally pose no health concerns to humans.



Figure 29. Green Wing Hallway and location of clearance sample A4. **Figure from re-test taken on November 7, 2023.**

VI. LABORATORY CERTIFICATION



AIHA Laboratory Accreditation Programs, LLC

acknowledges that

Hayes Microbial Consulting

3005 E. Boundary Terrace, Suite F Midlothian, VA 23112

Laboratory ID: LAP-188863

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:
- ENVIRONMENTAL LEAD Accreditation Expires:
- ENVIRONMENTAL MICROBIOLOGY Accreditation Expires: February 01, 2025
- FOOD Accreditation Expires:
- UNIQUE SCOPES Accreditation Expires:

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

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



AIHA Laboratory Accreditation Programs, LLC

SCOPE OF ACCREDITATION

Hayes Microbial Consulting
 3005 E. Boundary Terrace, Suite F Midlothian, VA
 23112

Laboratory ID: LAP-188863
 Issue Date: 05/01/2023

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: 08/01/2010

EMLAP Scope Category	Field of Testing (FOT)	Component, parameter or characteristic tested	Method	Method Description <i>(for internal methods only)</i>
Fungal	Air - Culturable	Air	HMC-#103	In House: Viable Air Culture
Fungal	Air - Direct Examination	Spore Trap	HMC-#101	In House: Spore Trap Analysis
Fungal	Bulk - Culturable	Bulk Material	HMC-#104	In House: Bulk Culture Analysis
Fungal	Bulk - Direct Examination	Bulk Material	HMC-#102	In House: Direct Identification Analysis
Fungal	Surface - Culturable	Swab	HMC-#105	In House: Swab Culture Analysis
Fungal	Surface - Direct Examination	Bio-Tape, Swab	HMC-#102	In House: Direct Identification Analysis

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