Quarterly
Microbial IAQ
Assessment Report

Conducted At

Pembroke High School

80 Learning Lane
Pembroke, Massachusetts

November, 2024

Prepared For: Ms. Erin Obey
Superintendent of Schools
Pembroke Public Schools
72 Pilgrim Road
Pembroke, MA 02339

Report Prepared By: *Paul Matuszko*

Paul Matuszko, CIH
Paul Matuszko Environmental Consulting
79 Cedar Street
Walpole, MA 02081

Report Date: November 26, 2024

PMEC Project #: 24-163.5

November 26, 2024

Ms. Erin Obey
Superintendent of Schools
Pembroke Public Schools
72 Pilgrim Road
Pembroke, MA 02339

RE: Quarterly Microbial (Mold) IAQ Sampling Report #1 for
Pembroke High School
80 Learning Lane, Pembroke, MA
PMEC Project #24-163.5

Dear Ms. Obey:

Paul Matuszko Environmental Consulting (**PMEC**) is pleased to submit the enclosed report for the quarterly microbial (mold) indoor air quality (IAQ) sampling conducted at Pembroke High School, 80 Learning Lane, Pembroke, Massachusetts. PMEC conducted the sampling within the school on November 14, 2024. Seven (7) total air samples were collected for microbial laboratory analysis.

This limited microbial assessment report has been prepared for the exclusive use of The Pembroke Public Schools.

Certification:

PMEC certifies that the results and findings provided herein for the Pembroke High School building have been reviewed for accuracy, content, regulatory compliance and quality of presentation.

Should you have any questions regarding this report, please do not hesitate to contact me at (617) 893-4476. Thank you for providing PMEC with the opportunity to provide our services to the Pembroke Public Schools for this project.

Respectively submitted;

Paul Matuszko, CIH, CIEC
Project Manager
CIH - Certified Industrial Hygienist (American Board of Industrial Hygiene #9236 CP)
CIEC - Certified Indoor Environmental Consultant (American Council for Accredited Certification #0610006)

PMEC

**Paul Matuszko
Environmental Consulting**

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**Paul Matuszko
Environmental Consulting**

**Quarterly Microbial IAQ
Sampling Report #1
For
Pembroke High School
80 Learning Lane
Pembroke, Massachusetts**

November, 2024

1.0   Introduction

A. Paul Matuszko Environmental Consulting (**PMEC**) is pleased to submit this report for the quarterly microbial indoor air quality (IAQ) sampling assessment (#1) conducted at the Pembroke High School, 80 Learning Lane, Pembroke, Massachusetts. PMEC was retained by the Pembroke Public Schools to conduct the air sampling and general inspection for water and microbial growth within the representative areas of the school building. The microbial sampling was conducted by PMEC on the late afternoon of November 14, 2024. The air sampling was conducted to determine existing spore levels in compliance with the on-going School system IAQ program. A summary of the sampling locations and methods, analysis methods and results are outlined within the report.

B. PMEC conducted the sampling without escort or assistance. Locations were selected which representative of the building. In general, a mix of classrooms on the perimeter and interior were sampled in each wing or section. Member(s) of the Pembroke Schools Teachers Union were offered to attend but were not present during PMEC's late afternoon sampling session. The sampling was conducted to determine existing airborne microbial spore levels in representative areas of each section or wing of the school building.

C. During sampling, PMEC conducted a general visual inspection of representative room surfaces. Additionally, measurements baseline indoor temperature and humidity levels were collected. PMEC noted any areas or locations with atypical conditions. The following report summarizes the findings of the assessment, analysis results, and general recommendations.

2.0   Scope of Work

A. The indoor air quality (IAQ) assessment was conducted in accordance with the following tasks:

1. General inspection of the representative areas for visible water damaged materials and mold growth in the rooms being sampled.

2. Conduct representative bioaerosol (microbial) spore trap air sampling for airborne mold (fungal) analysis in the areas sampled. Nine (9) interior and one (1) exterior/outdoor air samples were collected during the November 14, 2024 after school hours site visit (~4:30-6 pm).

3. Prepare a detailed report detailing the findings of the assessment and sampling data.

3.0   Existing Conditions

A. General Observations

1. Classrooms horizontal surfaces were generally clean and free of accumulated dust and debris. Carpeting and ceiling tiles were generally clean and free of excessive water stains and debris.

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2. Minor quantities of brown (water damaged) stained ceiling tiles and dust accumulation on ceiling vents were observed in the Science wing as previously documented. These ceiling tiles should be replaced and ceiling vents cleaned as required.

4.0   Air Quality Measurements

A. A direct reading, thermohygrometer (Fluke Model 971) was used to collect representative temperature and relative humidity (ratio of water vapor in air) measurements. Recommended season levels per ASHRAE are:

- Temperature (Temp.): Recommended Winter Range: 63-72 °F
  (degrees Fahrenheit °F) Recommended Summer: 68-78 °F
- Relative Humidity (RH%) Recommended Range: between 30%-60%; (<50% goal)

B. The measurement results on the assessment date are provided in Table 1 below:

Table 1 Baseline Air Quality Measurements			
Location	**Temperature**	**Relative Humidity %**	**Comments**
Classroom #A149	68.8 °F	24.9%	Slightly lower RH% level
Classroom #A173	72.5 °F	22.6%	Slightly lower RH% level
Classroom #A103	73.2 °F	20.4%	Slightly lower RH% level
Classroom #A232	71.2 °F	21.5%	Slightly lower RH% level
Classroom #A259	66.9 °F	24.8%	Cooler room, slightly lower RH% level
Classroom #A203	68.3 °F	23.4%	Cooler room, slightly lower RH% level
Classroom #B265	72.6 °F	22.3%	Slightly lower RH% level
Library (center)	70.4 °F	23.8%	Slightly lower RH% level
Band (music) classroom 193	72.6 °F	22.3%	Slightly lower RH% level
Outside ambient air (outside front entrance)	42.8°F	44.8%	Cool, clear, dry, evening (~6 pm) typical late fall day

C. Discussion

1. Temperatures were typical for a school building during the late fall season. Relative humidity levels were within or slightly lower than recommended levels. However, this is typical of occupied buildings during a dry and cool late fall season day.

5.0   Mold Sampling and Analysis Methods

A. PMEC collected "spore trap" air samples for mold spore analysis using air-o-cell® brand sampling cassettes. Nine (9) indoor samples and one (1) outdoor comparison sample were collected for analysis. A calibrated, battery operated Zefon IAQ 15 sampling pump was used to draw air onto the sample cassette's adhesive slide. PMEC collected the samples at 15 liters of air per minute (LPM) for a five (5) minute sample duration for a total sample collection volume of 75 liters of air. The airborne aerosols (mold, particulates, pollen, etc.) are trapped on the filter media slide for direct microscopic examination.

B. The samples were collected on November 14, 2024 at approximately ~4:30 pm – 6:00 pm. Ambient conditions were cool (~42° F), clear, and dry. Indoor conditions were typical of the season.

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C. The samples were sent via chain of custody by Fed Ex to Hayes Microbial Laboratory (Hayes), located in Midlothian, Virginia. Hayes Laboratory is accredited by the American Industrial Hygiene Association (AIHA) for mold and bacteria identification and analysis (AIHA EMPAT Laboratory Accreditation ID # 188863).

D. Results are reported as Total Fungi Counts in spores per cubic meter of air (**C/m^3**). The samples were analyzed for both non-viable and viable fungi by direct analysis optical microscopy. A summary of analysis criteria of spore trap and direct identification analysis is provided in the lab analysis sheets. The sample results are provided as Attachment B to this report.

6.0 Laboratory Analysis Results

A. The results of the November 14, 2024 spore trap air sampling are presented in Table 2 below.

Table 2 Spore Trap Air Sample Analysis Results November 14, 2024 Quarterly IAQ Sampling Session #1				
Sample #	**Sample Location**	**Total Fungi (C/m^3)**	**Specific Species & levels of note**	**Comments**
3911 3662 **(01)**	**Science Classroom #A149**	13 C/m^3	Ascospores – 13 C/m^3	Low and acceptable level
3911 3648 **(02)**	**Classroom #173**	53 C/m^3	Cladosporium – 40 C/m^3 Pithomyces – 13 C/m^3	Low and acceptable level
3911 3589 **(03)**	**Classroom #A103**	13 C/m^3	Ascospores – 13 C/m^3	Low and acceptable level
3911 3587 **(04)**	**Classroom #A232**	27 C/m^3	Ascospores – 27 C/m^3	Low and acceptable level
3911 3685 **(05)**	**Classroom #A259**	40 C/m^3	Ascospores – 27 C/m^3 Basidiospores – 13 C/m^3	Low and acceptable level
3911 3566 **(06)**	**Classroom # A203**	13 C/m^3	Ascospores – 13 C/m^3	Low and acceptable level
3911 3705 **(07)**	**Classroom # B265**	27 C/m^3	Ascospores – 27 C/m^3	Low and acceptable level
3911 3564 **(08)**	**Library** (middle)	13 C/m^3	Ascospores – 13 C/m^3	Low and acceptable level
3911 3644 **(09)**	**Music (Band) Classroom #B193**	26 C/m^3	Ascospores – 13 C/m^3 Myxomycetes – 13 C/m^3	Low and acceptable level
3911 3619 **(10)**	**Outside ambient air** (outside front entrance)	214 C/m^3	Ascospores – 67 C/m^3 Basidiospores – 27 C/m^3 Cladosporium – 93 C/m^3 Myxomycetes – 27 C/m^3	Typical fall season levels

Notes: - Additional information on species types are provided in the Laboratory Analysis results.
- C/m^3 = spore counts per cubic meter of air
- Samples collected in middle or back middle of room unless noted
- Results in **Bold** = species or levels of concern.

7.0 Discussion of Analysis Results

A. The analysis results for the November 14, 2024 sampling session indicate very low and acceptable indoor airborne spore levels. The species identified in the rooms sampled are typically found indoors at low levels and are not a cause for concern.

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B. The indoor sample species identified are similar to the species present on the outdoor ambient air sample analysis. No water damage indicator species were identified on each sample. The current airborne spore levels on the sampling date are not representative of an amplified airborne spore condition in the locations sampled.

C. No aspergillus/penicillium species spores were identified on each of the indoor samples.

8.0 Background Mold Information

A. Currently, there are no standards or regulations to indicate acceptable numerical levels of airborne fungal spores derived from indoor environments. Results are also assessed for specific target species that may induce allergic reactions. Specific species are reviewed for their known potential to cause allergic reactions or as an indicator of potential water damage and moisture issues. In general, indoor mold levels should be equivalent to or lower than outdoor levels or non-complaint areas with similar types and percentages of mold species. Please note that airborne mold spores are present in most indoor environments at low levels.

B. There are no regulations for acceptable levels of mold in the indoor environment; therefore, exact numerical limits are not supported at this time. Specific fungal species of concern are recommended to have much lower levels in the indoor environment. Existing conditions and symptoms are unique to each season, building and occupant. Airborne mold spore levels may vary greatly by location, time of day and weather conditions. However, health impacts cannot be predicted based on this information; individuals experience varying levels of allergic and non-allergic response to mold. Controlling moisture, in each form, is critical to the prevention of indoor mold growth issues.

9.0 Summary Conclusions

A. The November 14, 2024 laboratory analysis results indicate that the airborne mold spore levels in the locations sampled were low and acceptable.

B. Relative humidity levels were slightly lower than recommended during the sampling period. However, this is typical for the seasonal day with dry conditions.

C. PMEC did not identify any accessible, visible conditions that would directly impact IAQ.

10.0 Limitations

A. The assessment provided herein is based on the professional judgment of PMEC using approved industry standards and guidelines. Not all areas of the school building were accessed for inspection during the representative general spore trap air sampling. Assessment findings are based on the investigator's careful consideration of field observations and interpretation of analysis results in accordance with industry standards, including, but not limited to, IICRC S520 guidelines for Condition 1 – normal fungal ecology, 2008 AIHA (Green Book) publication "Recognition, Evaluation, and Control of Indoor Mold", and the ACGIH 1999 book "Bioaerosols – Assessment and Control".

B. The analysis results are only representative of the conditions of the date and time of sample collection and are considered a "snapshot in time". PMEC's results and discussion listed herein represent the conditions present at the time of inspection and sampling.

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ATTACHMENTS

Attachment A – Sampling Floor Plan (2 pages)

Attachment B – Hayes Microbial – November 14, 2024 Sample Analysis Results (pages 1-7)

Attachment A

Sample Location Floor Plan

(Pages 1-2)

Attachment A – Sampling Floor Plan

Atrium – First Floor

Pembroke High School
IAQ Microbial Sampling
November 14, 2024

Room	
173 – Lafond (02)	
177 – Griggs	
179 – COMPASS Overstreet	
179A – COMPASS Overstreet	
182 – Maintenance	

| 157 – Blakeley |
| 156 – Baker |
| Girls | Boys | 139 – Para Office |
| 152 – Cartee |
| 151 – Kenney |
| 149 – Butler (01) |

| 142 – |
| 141 – |
138- ELL Ferrer	137 – Rooney	122 – Warren
134 – Eidlin	123 –
133 – George	125 – ISS
129 – Townsend

| 119 – Goetz |
| 121 – |

| 101- Pourbaix |
| 103 – Whalen (03) |
| 105 – Costa |
| 107 – Consolati |
| 109 – Flaherty |
| 112 – Walsh |
| 114 – Infascelli |

Math

Science   ⬤ (#) = Sample # Location

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Atrium – Second Floor

Pembroke High School
IAQ Microbial Sampling
November 14, 2024

| 267 – Rose |
| 266 – T. Hall |
| 265 – Almon |
| 263 – Gould |
| 262 – McDonough |
| 261 – Doyle |
| 259 – King (05) |

Social Studies

| 256 – Jackson |
| Girls |
| Boys |
| 237- | 234 - Language Lab - |
| 236 - Galligan |
| 233 – Zopatti | 232 – Kirtley (04) | 231 – |
| 225 – Noguer | 224 – Elfilali | 223 – Siva-Delgado | 222 – Lopez – Whitehill |

| 200 – Conference |

Library (08)

| 211– Clapp |
| 212 – Fulmine |
| 213 – Walls |
| 215 – Messina |

| 201 – Kniffen |
| 202 – Campbell |
| 203 – Ruka (06) |
| 204 – Mrowka |
| 205 – Courchene |
| 206 – Talbot |
| 207– McCormack |

English

World Language   ⬤ (#) = Sample # Location

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Attachment A – Sampling Floor Plan

Pembroke High School
IAQ Microbial Sampling
November 14, 2024

Fitness Room

B193 – Band Glass
● (09)

B109 – Music Glass

B183 – Chorus Chapman

Auditorium

Athletic. Office

Nurse

Main Office

● (#) = Sample # location

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Pembroke High School
IAQ Microbial Sampling
November 14, 2024

Network Analyst

B251 – Art Lazarus

B245 – Art Green

B247 – Art Savoia

B256 – Piano Lab

PACTV Studio

B262 – Morse

B264 – Morse

(07)

LCISW

B265 – ng

Guidance

C205

C203 Gates

C 201 Frates

Storage

B213 –

● (#) = Sample # location

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Attachment B

Laboratory Analysis Results

Hayes Microbial Analytical Laboratory

November 14, 2024 Sampling Session
(pages 1-7)

HAYES MICROBIAL CONSULTING

Analysis Report prepared for

Paul Matuszko Environmental Consulting

79 Cedar Street
Walpole, MA 02081

Phone: **(617) 893-4476**

24-163
Pembroke High School
80 Learning Ln.
Pembroke, MA 02359

Collected: **November 14, 2024**
Received: **November 18, 2024**
Reported: **November 18, 2024**

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 November 18th, 2024.

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.

EPA Laboratory ID: VA01419

Lab ID: #188863

DPH License: #PH-0198

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Pembroke High School
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Pembroke, MA 02359

Spore Trap
SOP - HMC#101

Sample Number*	1	3911 3662		2	3911 3648		3	3911 3589		4	3911 3587	
Sample Name*	**Classroom 149**			**Classroom 173**			**Classroom A103**			**Classroom A232**		
Sample Volume*	75 L			75 L			75 L			75 L		
Reporting Limit	13 spores/m³			13 spores/m³			13 spores/m³			13 spores/m³		
Background	2			2			2			2		
Fragments	ND			ND			ND			ND		
Organism	Raw Count	Count / m³	% of Total	Raw Count	Count / m³	% of Total	Raw Count	Count / m³	% of Total	Raw Count	Count / m³	% of Total
Alternaria												
Ascospores	1	13	100.0%				1	13	100.0%	2	27	100.0%
Aspergillus|Penicillium												
Basidiospores												
Bipolaris|Drechslera												
Chaetomium												
Cladosporium				3	40	75.0%						
Curvularia												
Epicoccum												
Fusarium												
Memnoniella												
Myxomycetes												
Pithomyces				1	13	25.0%						
Stachybotrys												
Stemphylium												
Torula												
Ulocladium												
Total	1	13	100%	4	53	100%	1	13	100%	2	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 14, 2024**   Received: **Nov 18, 2024**   Reported: **Nov 18, 2024**

HAYES
MICROBIAL CONSULTING

Project Analyst:
Ramesh Poluri, PhD   *P. Ramesh*

Date:
11 - 18 - 2024

Reviewed By:
Steve Hayes, BSMT   *Stephen N. Hayes*

Date:
11 - 18 - 2024

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

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Pembroke, MA 02359

#24052121

Spore Trap
SOP - HMC#101

Sample Number*	5	3911 3685		6	3911 3566		7	3911 3705		8	3911 3564	
Sample Name*	**Classroom A259**			**Classroom A203**			**Classroom B265**			**Library**		
Sample Volume*	75 L			75 L			75 L			75 L		
Reporting Limit	13 spores/m³			13 spores/m³			13 spores/m³			13 spores/m³		
Background	2			2			2			2		
Fragments	ND			ND			ND			ND		
Organism	Raw Count	Count / m³	% of Total	Raw Count	Count / m³	% of Total	Raw Count	Count / m³	% of Total	Raw Count	Count / m³	% of Total
Alternaria												
Ascospores	2	27	66.7%	1	13	100.0%	2	27	100.0%	1	13	100.0%
Aspergillus|Penicillium												
Basidiospores	1	13	33.3%									
Bipolaris|Drechslera												
Chaetomium												
Cladosporium												
Curvularia												
Epicoccum												
Fusarium												
Memnoniella												
Myxomycetes												
Pithomyces												
Stachybotrys												
Stemphylium												
Torula												
Ulocladium												
Total	3	40	100%	1	13	100%	2	27	100%	1	13	100%

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

* indicates data provided by the customer

Collected: **Nov 14, 2024**   Received: **Nov 18, 2024**   Reported: **Nov 18, 2024**

HAYES
MICROBIAL CONSULTING

Project Analyst:
Ramesh Poluri, PhD

Date:
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#24052121

Spore Trap
SOP - HMC#101

Sample Number*	9	3911 3644		10	3911 3619								
Sample Name*	**Music B193**			**Outside Ambient Air**									
Sample Volume*	75 L			75 L									
Reporting Limit	13 spores/m³			13 spores/m³									
Background	2			2									
Fragments	ND			13/m³									
Organism	Raw Count	Count / m³	% of Total	Raw Count	Count / m³	% of Total							
Alternaria													
Ascospores	1	13	50.0%	5	67	31.3%							
Aspergillus|Penicillium													
Basidiospores				2	27	12.5%							
Bipolaris|Drechslera													
Chaetomium													
Cladosporium				7	93	43.8%							
Curvularia													
Epicoccum													
Fusarium													
Memnoniella													
Myxomycetes	1	13	50.0%	2	27	12.5%							
Pithomyces													
Stachybotrys													
Stemphylium													
Torula													
Ulocladium													
Total	2	26	100%	16	214	100%							

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

* indicates data provided by the customer

Collected: **Nov 14, 2024**   Received: **Nov 18, 2024**   Reported: **Nov 18, 2024**

HAYES MICROBIAL CONSULTING

Project Analyst:
Ramesh Poluri, PhD   *P. Ramesh*

Date:
11 - 18 - 2024

Reviewed By:
Steve Hayes, BSMT   *Stephen N. Hayes*

Date:
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#24052121

Spore Trap Information

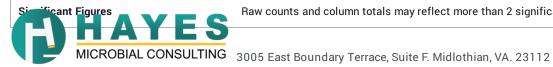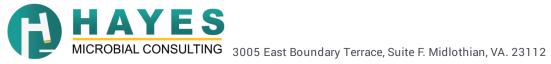|	
Reporting Limit	The Reporting Limit is the lowest number of spores that can be detected based on the total volume of the sample collected and the percentage of the slide that is counted. At Hayes Microbial, 100% of the slide is read so the LOD is based solely on the total volume. Raw spore counts that exceed 500 spores will be estimated.
Blanks	Results have not been corrected for field or laboratory blanks.
Background	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: **NBD:** No background detected due to possible pump or cassette malfunction. Recollect sample. (Field Blanks will display NBD) **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.
Fragments	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.
Control Comparisons	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.
Water Damage Indicator Common Allergen Slightly Higher than Baseline Significantly Higher than Baseline Ratio Abnormality	**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.
Color Coding	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.
Significant Figures	Raw counts and column totals may reflect more than 2 significant figures, but results should only be considered significant to 2 figures.

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24-163
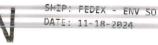Pembroke High School
80 Learning Ln.
Pembroke, MA 02359

#24052121

Analyte Descriptions

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

HAYES
MICROBIAL CONSULTING

Paul Matuszko Environmental Consulting
79 Cedar Street
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Job Number:	24-163		Job Name: Pembroke High School 80 Learning Lane Pembroke, MA 02359		Mobile: 6178934476	Email: pmatuszko@pmecsolution:
Collector:	Paul Matuszko					
Date Collected:	11/14/24				Note: 43°F OA, clear	

Analysis Type			Analysis Description	Turnaround	Accepted Media Types
Spore Trap	S		Identification & Enumeration of Fungal Spores	24 Hour	Air Cassettes, Impact Slides
	S+		Spore Trap Analysis with Dander, Fiber, and Pollen counts	24 Hour	Air Cassettes, Impact Slides
Direct ID	D		ID & Semi-Quantative Enumeration of spores and mycelium	24 Hour	Bio-Tape, Tape, Swab, Bulk, Agar Plate
	D+		Direct Analysis with Fully Quantitative spore count	24 Hour	Bio-Tape, Tape, Swab, Bulk, Agar Plate
Culture	C1		Identification & Enumeration of Mold only	7 Day	Air Plate, Agar Plate, Swab, Bulk
	C2		Identification & Enumeration of Bacteria only	4 Day	Air Plate, Agar Plate, Swab, Bulk
	C3		Identification & Enumeration of Mold and Bacteria	7 Day	Air Plate, Agar Plate, Swab, Bulk
	C5		Coliform Screen for Sewage Bacteria	2 Day	Agar Plate, Swab, Bulk
Particle	TPA		Total Particulate Analysis, ID & Count (Does Not Include Mold)	24 Hour	Air Cassettes, Impact Slides, Bio-Tape

#	Number	Sample	Analysis	Volume	Notes
1	3911 3662	classroom 149	S	75L	5min@15Lpm Background sampling
2	3911 3648	classroom 173	S		
3	3911 3589	Classroom A103	S		
4	3911 3587	classroom A232	S		
5	3911 3685	classroom A259	S		
6	3911 3566	classroom A203	S		
7	3911 3705	classroom B265	S		
8	3911 3564	Library	S		
9	3911 3644	Music B193	S		3911 3644 (P4) 3654
10	3911 3619	Outside Ambient Air	S		
11					
12					
13					
14					
15					
16					

Released by: *Paul Matuszko*	Date: 11/15/24	Received By:		Date: 11/18