

Monomoy Regional Middle School Air Quality Testing Report

Reason for Testing: Staff Concerns/ Post-Abatement Tests

Date of Testing: November 13, 2024

Description: Air tests from room E119 (post-abatement)

Conducted By: Frank Zelinski of Safe-n-Dry

Summary of Findings: Significant reduction to levels of spores detected.

District Response: Ongoing cleaning and air purification.

Customer: Healthy Fresh Air
15 Pine Ridge Lane. Orleans, MA 02653
clearairtobreathe@gmail.com/774-216-9006

Laboratory Analysis Report

Project Information:	Monomoy Regional School district 425 Crowell Rd Chatham, MA 02633
Order Number:	2024-14803
Received Date:	November 15, 2024
Analysis Date:	November 15, 2024

Katiuska Acosta

Katiuska Acosta, Laboratory Director or other approved signatory

The results presented pertain only to the samples as presented in the attached Chain of Custody. This report will not be reproduced except in its entirety and with the written approval of NexLab Environmental, LLC. Samples were received in good condition unless otherwise noted in the report. The use or interpretation of the results of laboratory analyses is the exclusive responsibility of the company and/or the individuals who conducted the sampling and does not imply any responsibility on the part of NexLab. It is important to note that neither the EPA nor OSHA have established standards for mold or mildew levels in indoor environments, and NexLab Environmental, LLC makes no express or implied warranties regarding the health of a property based solely on samples submitted to its laboratory for analysis. Any opinions or interpretations expressed in this report are outside the scope of A2LA accreditation. .





Spore Trap Analysis-ASTM

Sample ID:	2024-14803-1	2024-14803-2	2024-14803-3
Origin:	E119 Front of room	E119 Middle of room	E119 Back of room
Volume Sampled (L):	75 L	75 L	75 L
Media:	My Mold Detective	My Mold Detective	My Mold Detective
Percent of Trace Analyzed:	100% of 600X Magnification	100% of 600X Magnification	100% of 600X Magnification
Conclusion:	Not Elevated	Not Elevated	Not Elevated

Spore Types	Raw Count	Count/m ³	%	Raw Count	Count/m ³	%	Raw Count	Count/m ³	%
Alternaria	-	-	-	-	-	-	-	-	-
Ascospores	6	80	46	15	200	88	5	66	26
Aspergillus/Penicillium-Like	7	93	54	-	-	-	11	146	58
Basidiospores	-	-	-	2	26	12	1	13	5
Bipolaris/Dreschlera	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	-	-	-	2	26	11
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Pithomyces	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Smut/Myxomyces/Periconia	-	-	-	-	-	-	-	-	-
Total Spores	13	173	-	17	226	-	19	253	-
Hyphal Fragments	2	26	-	2	26	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Debris Rating	2			2			2		
Detection Limit	13.3333			13.3333			13.3333		

Detection Limit:

Based on the volume of air sampled, this is the lowest number of spores that can be detected and is an estimate of the lowest concentration of spores that can be read in the sample. Debris Rating is due to the amount of particles that are not pollen or spores and directly affects the accuracy of the spore counts. The categories 0-5 for Accurate Count, are used to indicate the amount of observed debris, with 1 indicating the lowest amount of debris, and 5 indicating an overloaded sample. Spores that were observed from the samples submitted are listed on this report. If a spore is not listed on this report, it was not observed in the samples submitted

Conclusion Interpretations: The conclusions are intended to help the client understand the results of the analysis report, but do not recommend in any manner health consequences or financial choices derived from the results. The mold analysis is one component of an inspector's evaluation and may be used in conjunction with other findings such as water leaks, excess humidity and damages to the property which may promote the growth of mold. "The opinions/interpretations identified/expressed in this report are outside the scope of this organization's A2LA accreditation."

The "Control" is an outdoor air sample taken adjacent to the property tested to provide a baseline of factors or expected range including spore count and type of spores present when the indoor samples are collected.

"Elevated" means that these factors when compared to the "Control" are higher than expected. Most commonly associated fungi with water issues that are of known potential harm include, but are not limited to: *Chaetomium*, *Stachybotrys*, *Memnoniella*, *Trichoderma*, *Fusarium* and *Aspergillus*.

"Not Elevated" means that the quantity and/or the diversity of spores are lower than the control.

"NA" (Not Applicable) means no control sample was submitted, so no baseline was established.

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Spore Trap Analysis-ASTM

Sample ID:	2024-14803-4	2024-14803-5	2024-14803-6
Origin:	Outside Vent to E119	Outside End of walk	Outside Vent left of back door
Volume Sampled (L):	75 L	75 L	75 L
Media:	My Mold Detective	My Mold Detective	My Mold Detective
Percent of Trace Analyzed:	100% of 600X Magnification	100% of 600X Magnification	100% of 600X Magnification
Conclusion:	Control	Not Elevated	Not Elevated

Spore Types	Raw Count	Count/m ³	%	Raw Count	Count/m ³	%	Raw Count	Count/m ³	%
Alternaria	-	-	-	-	-	-	1	13	2
Ascospores	-	-	-	5	66	16	-	-	-
Aspergillus/Penicillium-Like	-	-	-	-	-	-	-	-	-
Basidiospores	-	-	-	5	66	16	5	66	11
Bipolaris/Dreschlera	-	-	-	-	-	-	1	13	2
Cladosporium	8	106	14	5	66	16	10	133	21
Curvularia	3	40	5	-	-	-	1	13	2
Epicoccum	-	-	-	2	26	6	12	160	26
Pithomyces	-	-	-	-	-	-	2	26	4
Rust	46	613	78	15	200	47	10	133	21
Smut/Myxomyces/Periconia	2	26	3	-	-	-	5	66	11
Total Spores	59	786	-	32	426	-	47	626	-
Hyphal Fragments	-	-	-	-	-	-	-	-	-
Pollen	8	106	-	-	-	-	-	-	-
Debris Rating	2			2			2		
Detection Limit	13.3333			13.3333			13.3333		

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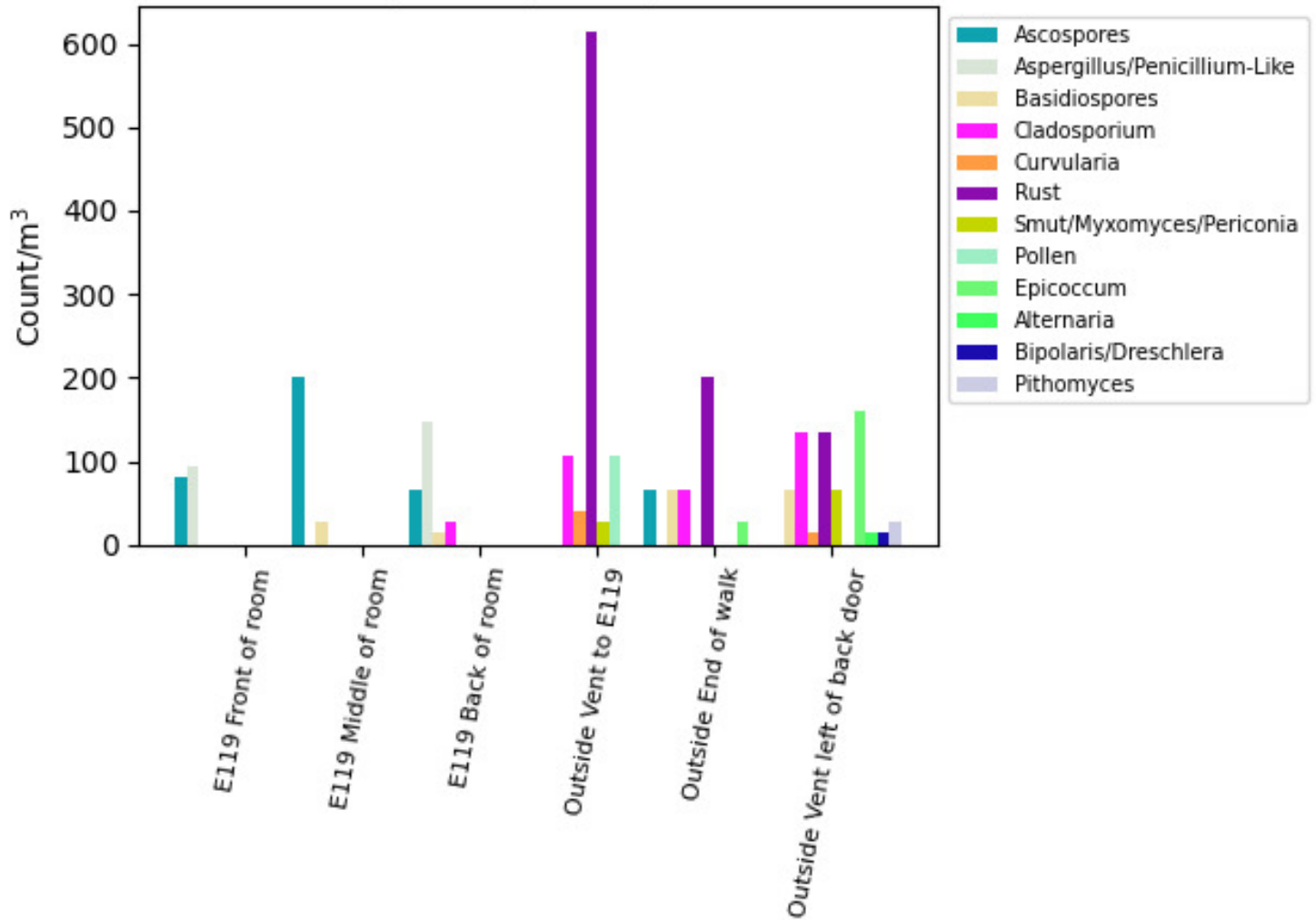
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Spore Trap Analysis



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SPORE TYPES

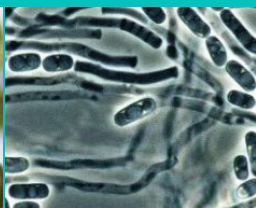
Fungal spore types that are commonly analyzed at Nexlab.



Alternaria



Arthrinium



Arthrospores



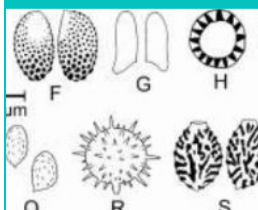
Ascospores



Aspergillus



Penicillium



Basidiospores



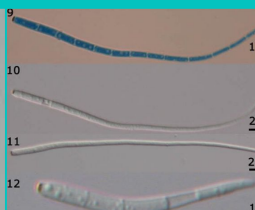
Beltrania



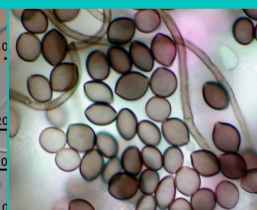
Bipo/Desch



Botrytis



Cercospora



Chaetomium



Cladosporium



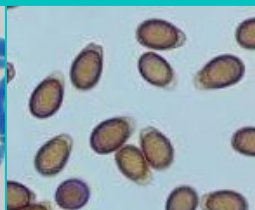
Curvularia



Epicoccum



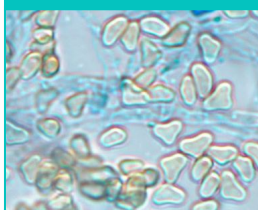
Fusarium



Ganoderma



Memnionella



Microascus



Nigrospora



Oidium



Paecilomyces



Papulospora



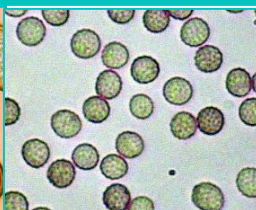
Pithomyces



Pyricularia



Rust



Smut



Spegazzinia



Stachybotrys



Taeniolella



Tetraploa



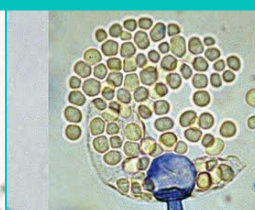
Trichoderma



Torula



Ulocladium



Zygomycetes



Zygosporium



All of the following can be identified in an air, tape, or swab sample. Many of them produce mycotoxins, which are toxins that can be on or released by spores even when they are no longer alive. They also release volatile organic compounds responsible for the odors and adverse health effects many people experience.

Microfungi of the Indoor and Outdoor Environment 1 of 3

Identification	Outdoor Habitat	Indoor Habitat	Clinical Significance	Comments
Alternaria	Common everywhere	Damp Cellulose-containing materials	Common Type I (hay fever, asthma), allergic sinusitis	
Arthrinium	Commonly occurs at saprobe on grasses and other plants	Uncommon indoors	Unknown	
Ascospores	Common everywhere. Found in large quantities in the air during summer and after rainfall	With exception of the species Chaetomium, and Peziza, most common ascospores do not grow indoors	Mostly unknown with the exception of Chaetomium	
Aspergillus/ Penicillium-like	Common everywhere. Grows on nearly everything	Able to grow in nearly any surface containing organic substrates as produce, drywall, wooden surfaces etc.	Type I (hay fever, asthma) allergies and Type III (hypersensitivity pneumonitis) allergies	Spores are highly similar in morphology thus grouped together when seen during analysis
Basidiospores	Mushroom Spores. Commonly found everywhere, especially in the late summer and fall	Unusual to have indoors, but can be found growing in the pots of inside plants	Some allergenicity reported. Type I (hay fever, asthma) and Type II (Hypersensitivity pneumonitis)	This group contains mushrooms that can be particularly destructive to buildings
Bipolaris / Drechslera	Common fungi found in grass and other plants	Uncommon to find indoors	Common Type I (hay fever, asthma)	This group includes spores that have similar morphology and cannot be identified solely on morphology
Botrytis	Common plant pathogen more commonly known for rotting of strawberries and similar fruits	Uncommon to find indoors	Type III (hypersensitivity pneumonitis) allergies "Winegrower's lung"	



Microfungi of the Indoor and Outdoor Environment 2 of 3

Identification	Outdoor Habitat	Indoor Habitat	Clinical Significance	Comments
Chaetomium	Normally found in soil, feces, air, Cellulose and plant debris	Can grow on fabric, and damp cellulose-containing building material	Produces mycotoxins that have been reported to be carcinogenic and teratogenic. Type I (hay fever, asthma) allergies and Type III (hypersensitivity pneumonitis) allergies	Can be dangerous to humans when continuously exposed. Can signal underlying chronic moisture problems in the home
Cladosporium	Commonly found everywhere	Can be found inside HVAC vents, bathrooms, damp areas and surfaces	Type I (hay fever, asthma) allergies	
Curvularia	Common everywhere. In the tropics and subtropics on plants as a plant pathogen	Capable of growing on any surface containing cellulose such as wooden cabinets, ceiling tiles and other wooden surfaces	Type I (hay fever, asthma) and common cause of allergenic sinusitis	
Epicocum	Plant pathogen, found in soil and produce	Can grow on produce, damp areas and Cellulose containing material	Type I (hay fever, asthma) allergies	
Fusarium	Commonly found in soil, plant pathogen	Not commonly found indoors	Unknown	
Ganoderma	Basidiospore found in large quantities after rainfall, grows everywhere. Associated with wood decay	Uncommon to find indoors	Type I (hay fever, asthma) allergies	
Memnionella	Commonly found on plants and soil	Damp surfaces such as vents, bathrooms and cellulose-containing surfaces	Type I (hay fever, asthma) allergies	Commonly seen in samples containing stachybotrys spores
Nigrospora	Abundant in warm climates. Ubiquitous	Uncommon to find indoors	Type I (hay fever, asthma) allergies	
Oidium/ Peronospora	Plant pathogen responsible for powdery mildew	Uncommon to find indoors	Unknown	



Microfungi of the Indoor and Outdoor Environment 3 of 3

Identification	Outdoor Habitat	Indoor Habitat	Clinical Significance	Comments
Paecilomyces	Ubiquitous in soil and grasses	Damp Cellulose-containing material, and produce	Type I (hay fever, asthma) allergies. Type III (hypersensitivity pneumonitis) allergies. Opportunistic infections have been reported	Spores are similar in morphology to Aspergillus and Penicillium spores
Pithomyces	Ubiquitous, in soil and grasses	Uncommon to find indoors	Unknown	
Rust	Ubiquitous plant pathogen	Uncommon to find indoors	Type I (hay fever, asthma) allergies	
Smut/ Myxomycetes/ Periconia	Ubiquitous plant pathogen, found in grass and flowering plants	Uncommon to find indoors	Type I (hay fever, asthma) allergies	
Stachybotrys	Ubiquitous in soil, decaying plants	Damp areas and cellulose-containing surfaces	Type I (hay fever, asthma) allergies	Release mycotoxins that can induce toxicosis on domestic animals and humans
Torula	Ubiquitous, most common in temperate areas. Found in soil and dead or decaying plant matter	Found in cellulose-containing surfaces	Type I (hay fever, asthma) allergies	
Ulocladium	Ubiquitous, found in soil, animal feces, paint, grass	Very damp areas, if present can be widespread in drywall and gypsum board materials	Type I (hay fever, asthma) allergies. Responsible for some opportunistic subcutaneous tissue infections	When present with Alternaria spores, it can increase the level of allergenic effects
Unidentified Spores	Common everywhere. Grow on decaying plant litter and other plant-derived material	Any wooden surface	Unknown	This classification is reserved for spores whose identity have usually never been seen before by our laboratory and/or are of such morphology that they cannot be identified with any degree certainty to a particular genus



Mold Sampling Methods

The objective of sampling is to assess the levels of mold growth and its intensity within an edifice. There are currently no EPA or OSHA standards for levels of mold or fungi in indoor environments. Additionally there are no standard collection methods though there are several general collection methods that are accepted and available for inspectors to study mold in indoor spaces. Control samples are taken of the outside to compare it to the mold growth on the inside. A high level of mold spores inside of a building might suggest mold growth. The following testing methods are used to detect the presence of mold and fungi. Keep in mind that even though dead, mold spores can still produce allergenic and even toxic effects on humans.

All sampled materials obtained in the laboratory is analyzed using microscopic methods, standard and mycological techniques, analyzed at 400x - 600x magnification.

Testing for mold with an accredited laboratory is the best way to assess whether a building had mold and what kind of mold it has.

Air Sampling Methods

Air-O-Cell(AOC) Cassette The AOC spore trap cassette is used with a portable air pump (15 liters/minute for 5 to 10 minutes) to collect airborne aerosols including mold, pollen and other airborne particulates that are impacted on an adhesive slide inside the cassette. These cassettes are efficient at collecting spores as small as 2.6µm. The trace is uneven and large so there is more spread of spores throughout the samples.

Allergenco-D Cassette The Allergenco-D spore trap cassette also uses the same methodology for sample collection as AOCs. These cassettes possess a sharp edge trace, and smaller trace, which makes the analysis time shorter and overall more efficient, as well as being able to collect spores even smaller than the AOCs.

Surface Sampling Methods

Tape (or tape-lift) Tape samples are collected using clear adhesive tape or adhesive slide for microscopic examination of suspicious stains, settled dust and spores.

Swab A sterile cotton or synthetic fiber-tipped swab is used to test an area of suspected mold growth. Samples obtained using this method are analyzed using direct microscopy for genus identification. Identified spores are generally reported as "high, med, low".



Accredited Laboratory

A2LA has accredited

NEXLAB ENVIRONMENTAL, LLC

Miami Lakes, FL

for technical competence in the field of

Biological Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).



Presented This 8th day of April 2022.

A blue ink signature of the Vice President, Accreditation Services.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 5889.01
Valid to June 30, 2024

For the tests to which this accreditation applies, please refer to the laboratory's Biological Scope of Accreditation.

References & Resources

Bioaerosols: Assessment and Control, Janet Macher, Sc.D., M.P.H., Editor. 1999. ACGIH, 1330 Kemper Meadow Drive, Cincinnati, OH 45240-1634.

Health Implications of Fungi in Indoor Environments, Edited by R.A. Samson. 1994. Elsevier Science, P.O. Box 945, Madison Square Station, New York, NY 10159-0945

CDC Mold Frequently Asked Questions

<https://www.cdc.gov/mold/faqs.htm>

National Institutes of Health - Mold and Remediation

<https://www.orf.od.nih.gov/TechnicalResources/ORFPolicies/Pages/MoldPrevPolicy.aspx>

National Institute of Environmental Health Sciences - Mold

<http://www.niehs.nih.gov/health/topics/agents/mold/index.cfm>

American Lung Association: Mold and Dampness

<https://www.lung.org>

There are currently no Federal regulations for evaluating potential health effects of fungal contamination and remediation. This information is subject to change as more information regarding such contaminants becomes known. This document was designed to follow currently known industry guidelines for the interpretation of microbial sampling, analysis, and remediation. Since interpretation of mold analysis reports is a scientific work in progress, it may as such be changed at any time without notice. The client is solely responsible for the use or interpretation of this report. The Client is hereby notified that due to the changing nature of fungal analysis and the mold growth process, laboratory samples can and do change over time relative to the originally sampled material. NexLAB Environmental reserves the right to properly dispose of all samples 2 months after the testing of such samples are completed.