

Monomoy Regional Middle School Air Quality Testing Report

Reason for Testing: Staff Concerns

Date of Testing: September 11, 2024

Description: Following reports of mold in classroom, further mold tests (surface and air) were conducted

Conducted By: Frank Zelinski of Safe-n-Dry

Summary of Findings: Airborne mold spores extremely low/non-existent. High levels of Cladosporium in some surface tests.

District Response: Focused cleaning / HEPA vacuum of classroom.

Continuing use of air purifiers.

Client Sample ID: Gifford Science Lab Class
Laboratory ID: 115851-1

Client: Safe-N-Dry
15 Pine Ridge Lane
Orleans, MA 02653
US

Sampled By: Frank Zelinski
Project: Gifford Classroom
Location: 425 Crowell Rd
Chatham, MA 02633

Report Number: 115851

**Thank you for using
IAQ Commercial Survey!**
If you have questions about your report,
please contact your service provider who
performed this test.

Client Sample ID: Gifford Science Lab Class
Sample Volume (L): 12.6
Date Sampled: 09/11/2024
Sample Type: TDT AK257
Sample Condition: Acceptable

Receive Date: 09/16/2024
Approve Date: 09/16/2024
Scan Date: 09/16/2024
Report Date: 09/18/2024

IAQ Commercial Survey™ is one of the most advanced, trusted air testing products on the market today for identifying chemical sources and active mold growth. Many indoor air quality (IAQ) issues identified by IAQ Commercial Survey can be easily remediated or eliminated. This test is an invaluable tool for improving air quality because it provides important information on potential contamination issues that cannot be detected by a visual inspection alone. Acting upon the information in this report will enable you to dramatically improve the air quality, creating a healthier environment.

Your Indoor Air Quality Report Summary

Your Indoor Air Quality Report has several sections describing different aspects of your air quality. A summary of this data is provided below, additional information and descriptions are included in the full report.

Total Volatile Organic Compounds (TVOC) Level

TVOC is a general indicator of the IAQ (see page 2).

 **Total VOCs** **510 ng/L**

Total Mold Volatile Organic Compounds (TMVOC) Level

TMVOC is an assessment of the actively growing mold (see page 3).

 **Total MVOCs** **< 3 ng/L**

Contamination Index (CI) Level

The CI shows the types of air-contaminating products and materials that are present in the sampled area (see pages 5 and 6). These levels are estimates based on common products and activities.

Building Sources

See page 5 for more detail.

N	Coatings (Paints, Varnishes, etc.)
N	PVC Cement
N	Building Materials-Toluene Based
N	Gasoline
N	Fuel Oil, Diesel Fuel, Kerosene
N	Light Hydrocarbons
N	Light Solvents

Occupant Sources

See page 6 for more detail.

N	HFCs and CFCs (Freons™)
M	Personal Care and Cleaning Products
N	Odorants and Fragrances
N	Dry Cleaning Solvents

Note: Severity levels begin at Normal or Minimal and progress through Moderate, Elevated, High and/or Severe. The color progression from green to red indicates results that are increasingly atypical and suggest potentially higher risk.

All Severity classifications are based on empirical data and should not be taken as a pass/fail or conformance to a published specified limit.

Normal **Moderate** **Elevated** **High** **Severe**

Enthalpy Analytical, LLC (MTP), the creator of IAQ Home and Commercial Survey, has been performing air quality assessments to industry and environmental consultants since 1995. Enthalpy Analytical, LLC (MTP) (ID 166272) is accredited by the AIHA Laboratory Accreditation Programs (AIHA-LAP), LLC in the Industrial Hygiene accreditation program for GC-MS Field of Testing as documented by the Scope of Accreditation [Certificate](#) and associated Scope. This analysis references methods EPA TO-17 and ISO 16000-6, which fall within the Scope of Accreditation.

Total Volatile Organic Compound (TVOC) Summary

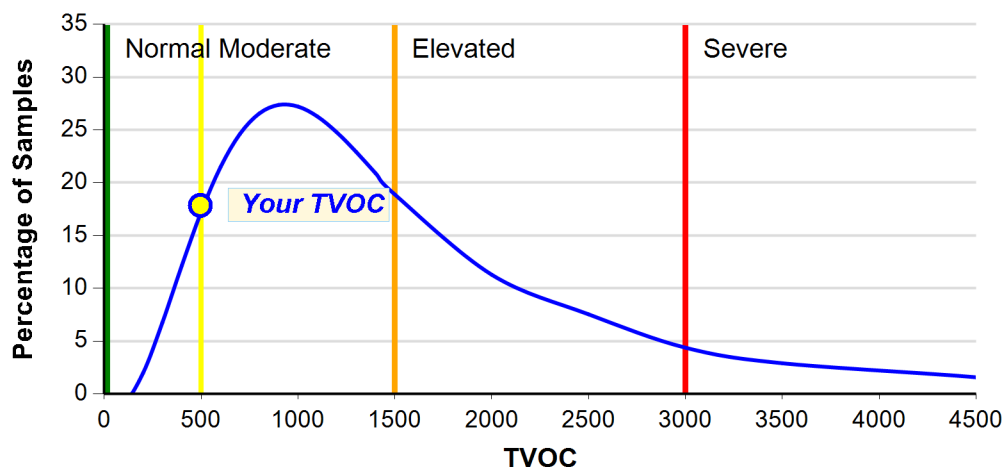
Your TVOC Level is: 510 ng/L

IAQ is borderline acceptable; some effect on occupants is possible; reduce potential sources and consider increasing ventilation.

Your Indoor Air Quality Level (Highlighted)

Normal < 500 ng/L	Moderate 500 - 1500 ng/L	Elevated 1500 - 3000 ng/L	Severe > 3000 ng/L
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**All IAQ Survey TVOC
Air Quality Indicator**



**The average TVOC is
1900 ng/L**

This chart represents the TVOC distribution of over 45,000 samples. Over 80% of these samples indicate improvements in IAQ are necessary to achieve the goal of TVOC less than 500 ng/L.

The chart above shows the TVOC levels for all locations tested using IAQ Survey. Results for this air sample are displayed on the chart as a yellow circle. The blue curved line represents the relationship between the percentage of locations (indicated on the vertical y-axis) and the TVOC level (indicated on the horizontal x-axis). The green, yellow, orange, and red vertical bars represent divisions between Normal, Moderate, Elevated, and Severe TVOC levels. As the TVOC value increases, individuals may experience aggravated health problems, and therefore, the need to address VOC issues becomes more critical. However, reductions in VOCs can be made at any level.

No government or organization has specified a TVOC limit for indoor air. However, the U.S. Green Building Council (USGBC) has set 500 ng/L as the recommended TVOC limit.

In general:

- < 500 ng/L IAQ is acceptable for most individuals; however, chemically sensitive persons may require lower levels.
- 500 - 1,500 ng/L some effects on the occupants is possible.
- > 1,500 ng/L IAQ should be improved.

Note: These levels are based on observed health effects and have been determined from a combination of published data and the statistical distribution of TVOC concentrations from the IAQ Survey methodology.

The presence of chemicals in your indoor environment can cause a wide range of problems, from an unpleasant odor to physical symptoms (burning and irritation in the eyes, nose, and throat; headaches; nausea; nervous system effects; severe illness; etc.). Anyone with respiratory issues like asthma or allergies, as well as children, the elderly, and pregnant women are more susceptible to poor indoor air quality than healthy individuals.

Click [here](#) for more information about VOCs.

The Contamination Index (CI) in the next pages of this report will help guide you through determining what types of products or materials could be problematic for your IAQ, and will provide some recommendations to help reduce or eliminate them.

Total Mold Volatile Organic Compound (TMVOC) Summary

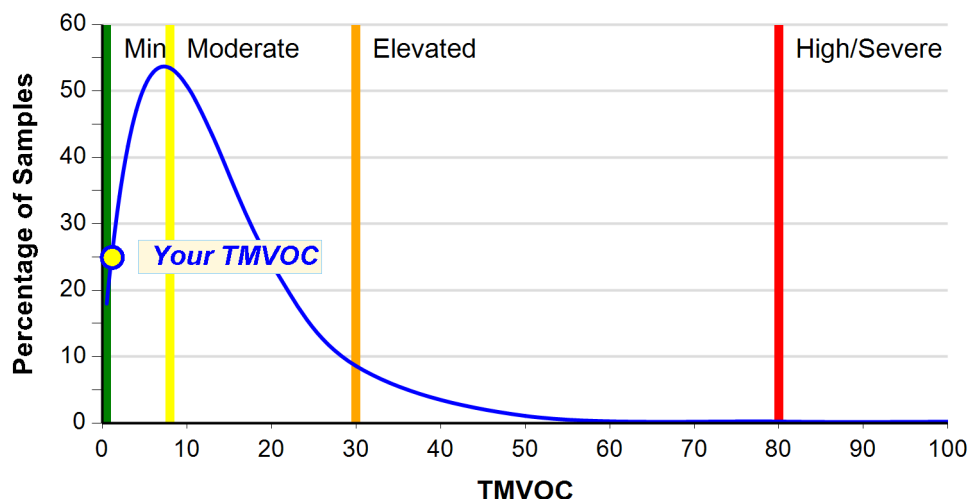
Your TMVOC Level is: < 3 ng/L

Actively growing molds may be present, but are at or below levels found in most homes and working environments.

Your Active Mold Level (Highlighted)

Minimal < 8 ng/L	Active-Moderate 8 - 30 ng/L	Active-Elevated 30-80 ng/L	Active-High 80 - 150 ng/L	Active-Severe > 150 ng/L
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All IAQ Survey TMVOC Active Mold Growth Indicator



**The average TMVOC is
10 ng/L**

This chart represents the TMVOC distribution of over 45,000 samples. Approximately half the samples indicate that some active mold growth is occurring at the time of sample collection.

The chart above shows the TMVOC level for all locations tested using IAQ Survey. Results for this air sample are displayed on the chart as a yellow circle. The blue curved line represents the relationship between the percentage of locations (indicated on the vertical y-axis) and the TMVOC level (indicated on the horizontal x-axis). For example, a TMVOC of 20 ng/L is reported in ~20% of the samples. The green, yellow, orange, and red vertical bars represent divisions between Minimal, Moderate, Elevated, and High/Severe TMVOC levels.

Molds can be found anywhere in the indoor environment as long as there is a source of water or moisture. Molds produce spores, VOCs (during the metabolic or digestive processes of mold), and mycotoxins (typically when the mold is threatened).

This test detects only the VOCs produced by actively growing molds and does not represent spores or mycotoxins. The TMVOC value is the sum of a select set of VOCs emitted by most molds while growing (when mold is in an inactive or dormant state it does not produce many MVOCs).

The presence of moisture is the primary factor in mold growth, controlling moisture and dampness is the only way to consistently control or limit mold growth.

Click [here](#) for more information about molds and mold VOCs.

Contamination Index™

The Contamination Index™ (CI) shows the types of air-contaminating products and materials that are present in the sampled area. Each CI category shows the approximate contribution of that category to the TVOC level, indicates how your location compares to thousands of other locations, and provides some suggestions about which products and materials might be the source for the VOCs. The CI is divided into two main source groups: Building Sources and Occupant Sources.

1. Building Sources are those that are typically part of the structure of the building and may be more difficult to reduce in the short term. Recent construction or renovation often increases the CI categories in this group to the Elevated, High, or Severe levels. VOCs from these activities often decrease substantially in the month following use or application of these products, especially if the area is flushed with air to dissipate the VOCs off gassed from the new products or materials.

2. Occupant Sources are those that the occupants of the building bring into the building and can usually be more readily identified and remediated. Recent construction or renovation can often contribute to other source categories in addition to Building Sources.

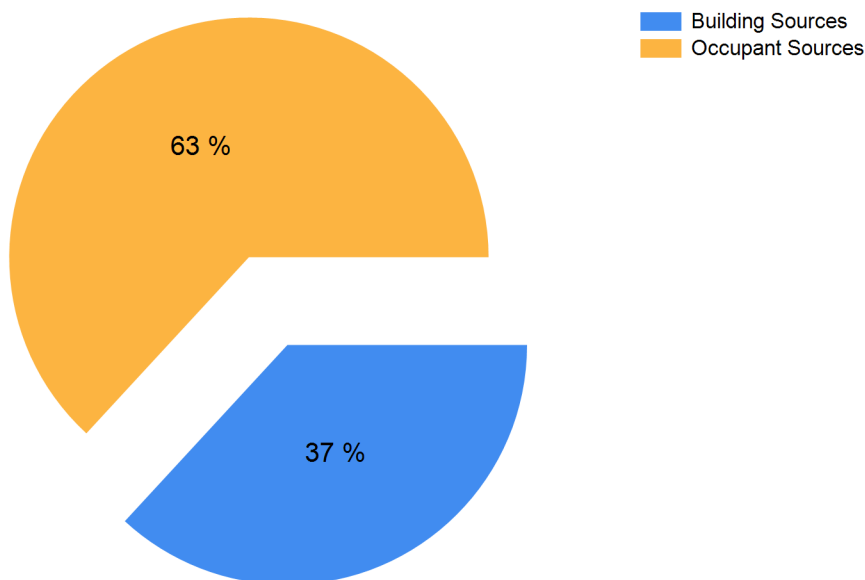
It is possible for a category listed in one source group to belong to another source group. For example, the 'Coatings' category is in the Building Sources group because the largest contribution is typically the paint on the walls, but cans of paint stored in a basement or storage area could be considered part of the Occupant Sources group. Always consider all possible sources for a particular CI category.

The CI categories comprise the most common sources but other products or activities may be present that are not included in the CI. The values assigned to each category are approximations based on typical office and commercial spaces. Locations with additional or atypical sources may require additional investigation to determine the source of certain chemicals that are not accurately represented by the CI.

Since there are potentially many sources of VOCs, buildings can often be re-contaminated even after sources have been removed because new products are constantly being brought into the building. Occupants should take note of this fact, and view IAQ as a continuous improvement process.

The chart below depicts the distribution of the Contamination Index source groups. These source groups are estimates and may not indicate all of the VOCs in your air sample.

Contamination Index Source Groups



Contamination Index™ Building Sources

Use the Contamination Index (CI) below to help you find products and materials in the sampled area that may be affecting your indoor air quality. Removing or reducing these products will improve your air quality. The concentrations reported here are approximate and may not add up to the TVOC value on page 2 of this report. These categories are typically part of the structure of the building and may be more difficult to reduce in the short term. Recent construction or renovation will often cause these categories to be elevated. Increased ventilation will help to reduce VOCs from construction or renovation sources. Levels indicated as Elevated, High, or Severe should be addressed immediately, and those listed as Moderate are areas that can be improved over time.

Building Sources	Contamination Index Category	Estimated VOC Level (ng/L)	Severity	Source Prediction & Suggestions for VOC Reduction
	Coatings (Paints, Varnishes, etc.)	120	Normal	Includes interior and exterior paints (including low- or no-VOC paints), varnishes, lacquers, some sealants, and other products that can be classified as a coating over a surface. Typically, VOCs from these products are in the 10 to 14 carbon size range and can linger for several months after application, sometimes longer. Ventilate as much as possible during and after application of any of these products. Dispose of opened but unused products and related supplies if possible or store in areas that will minimize off gassing. Additional sources include fuel oil or diesel fuel.
	PVC Cement	0	Normal	PVC cement is used to join pieces of PVC pipe together, usually for plumbing.
	Building Materials-Toluene Based	0	Normal	Adhesives and glues used in construction and maintenance, arts and crafts; adhesive removers; contact cement; sealants; coatings (paint, polyurethane, lacquer, thinner); automotive products, including parts cleaners. Additional sources include gasoline and other fuels.
	Gasoline	5	Normal	VOCs from gasoline are typically a result of off-gassing from gas containers, small spills, and gas-powered equipment used in facilities maintenance in nearby garage or storage areas. Most vehicles in good operating condition do not emit gasoline vapors due to the tightly sealed gas tank. This category does not include exhaust emissions. Gasoline VOCs can linger on clothing after refueling at a gas station. Gasoline includes chemical compounds that are also included in the Light Solvents category.
	Fuel Oil, Diesel Fuel, Kerosene	0	Normal	Typically found in garages and facilities maintenance areas. These fuels are not very volatile so they will not readily get into the air, but they can linger for a long time and produce a strong, unpleasant odor. This category does not include exhaust emissions. Additional sources include coatings such as paints, varnishes, sealants, waxes, etc.
	Light Hydrocarbons	1	Normal	Building materials; aerosol cans; liquefied petroleum gas (LPG); refrigerant; natural gas; propellant; blowing agent. Includes chemical compounds such as propane, butane, and isobutane.
	Light Solvents	21	Normal	Stoddard solvent; mineral spirits; some coatings (paints, varnish, enamels, etc.); wax remover; adhesives; automotive products; light oils. Typically, VOCs from these products are in the 6 to 9 carbon size range.

Contamination Index™ Occupant Sources

Use the Contamination Index (CI) below to help you find products and materials in the sampled area that may be affecting your indoor air quality. Removing or reducing these products will improve your air quality. The concentrations reported here are approximate and may not add up to the TVOC value on page 2 of this report. These categories are typically brought into the building by the occupants and can often be readily identified and removed or contained. Levels indicated as Elevated, High, or Severe should be addressed immediately, and those listed as Moderate are areas that can be improved over time.

Occupant Sources	Contamination Index Category	Estimated VOC Level (ng/L)	Severity	Source Prediction & Suggestions for VOC Reduction
	HFCs and CFCs (Freons™)	19	Normal	Most often used as refrigerants for air conditioners and refrigerator/freezers and propellants for blown-in insulation, cushions, aerosol cans, etc. Many of these chemical compounds are being phased out because of the Montreal Protocol.
	Personal Care and Cleaning Products	230	Moderate	Personal care products such as soap, deodorant, lotions, perfumes, hair coloring supplies, nail care supplies, oral hygiene products, etc. Cleaning agents such as surface, window, and flooring products, also restroom and antibacterial products. These products contain many VOCs that will dissipate if use is discontinued or reduced. Consider storing these products in a closed container or enclosed ventilated area such as a cabinet or closet when not in use. Increase ventilation when using these products if possible.
	Odorants and Fragrances	4	Normal	Air fresheners, scented cleaning products, and scented personal care products.
	Dry Cleaning Solvents	0	Normal	Typical dry-cleaning methods employ the use of carcinogenic chemicals. Dry-cleaning should be allowed to vent outside, without plastics bags, before being placed inside.

Significant VOCs

Based upon your specific air analysis, the chemical compounds listed below are significant contributors to the TVOC level reported on page 2 of your IAQ Commercial Survey Report or are indicative of specific types of products or problems. Compounds from a variety of chemical classes are represented here, although only the most common or most notable are specifically listed. These chemical compounds may come from a variety of sources as shown in the Contamination Index section of this report.

Locating and removing the source of the chemical compound is the most effective way to reduce the concentration of that chemical compound. If removing the source is not possible, try to contain it in some way (e.g., placing the source in an air-tight container when not in use). In addition, the ventilation system in some locations may not be optimized so evaluate the ventilation system and make adjustments to increase the amount of fresh air. Filter or purify re-circulated inside air to help reduce the TVOC. Since VOCs may continue to off-gas even when the sources are stored, ventilation and air-purification methods will need to be employed continuously in order to keep the VOC levels low.

The Chemical Abstracts Service (CAS) registry number after the chemical compound name in the table below is a unique identifier for that chemical compound and is often the best means to search for additional information. The two VOC levels in the table below (ng/L and ppb) are different ways of describing the same concentration, in some cases exposure limits or other information may be described using one or both of these concentration units.

Compound	CAS	Estimated VOC Level (ng/L)	Estimated VOC Level (ppb)	Description
Isopropanol	67-63-0	210	85	Rubbing alcohol; cleaners, especially antiseptic wipes; personal care; solvents; food and beverages; microbial biocides or antimicrobial agents
Trichlorofluoromethane	75-69-4	15	3	Refrigerant, phased out

Supplemental Information: Odorants

Many chemical compounds have odors associated with them, some pleasant and some unpleasant. These odors can combine to create different odors, making odor identification more difficult. The odor descriptions for the compounds reported in this air sample are listed below as well as some of the more common sources.

Compound	CAS	Conc. (ppb)	Odor Range (ppb)	Odor Description
Isopropanol	67-63-0	85	1,000 - 2,197,000	sharp, rubbing alcohol
Trichlorofluoromethane	75-69-4	3	5,000 - 200,057,000	-

Supplemental Information: EPA Hazardous Air Pollutants (HAPs)

Hazardous air pollutants, also known as toxic air pollutants or air toxics, are those pollutants that are known or suspected to cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental effects. Listed below are those HAPs that were detected with the IAQ Commercial Survey VOC test. This list does not include all HAPs. The '<' (less than) symbol in the 'Estimated VOC Level' columns indicates the compound is below the reporting limit for this air sample and therefore can be considered absent from the air sample. For more information about HAPs visit the EPA [Air Toxics website](#). The exposure limits listed below can also be found in the [NIOSH Guide to Chemical Hazards](#). The HAPs in the table below may also be listed as Significant VOCs if the concentration of that chemical compound is greater than the threshold level for a Significant VOC.

Compound	CAS	Estimated VOC Level (ng/L)	Estimated VOC Level (ppb)	NIOSH Exposure Limit	Description
Carbonyl Sulfide	463-58-1	1	0.5	None Listed	Fumigant; contaminated drywall; fuel combustion byproduct; some foods; naturally occurring at low levels

*These results pertain only to this sample as it was collected and to the items reported.
 These results have been reviewed and approved by the Laboratory Director or approved representative.*

This analysis was performed by Enthalpy Analytical, LLC (MTP). The results contained in this report are dependent upon a number of factors over which Enthalpy Analytical, LLC (MTP) has no control, which may include, but are not limited to, the sampling technique utilized, the size or source of sample, the ability of the sampler to collect a proper or suitable sample, the compounds which make up the TVOC, and/or the type of mold(s) present. Therefore, the opinions contained in this report may be invalid and cannot be considered or construed as definitive and neither Enthalpy Analytical, LLC (MTP), nor its agents, officers, directors, employees, or successors shall be liable for any claims, actions, causes of action, costs, loss of service, medical or other expenses or any compensation whatsoever which may now or hereafter occur or accrue based upon the information or opinions contained herein.

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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 425 Crowell Rd Chatham, MA 02633
Order Number:	2024-13977
Received Date:	September 16, 2024
Analysis Date:	September 17, 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. .





Swab Analysis-SOP-004

Sample ID:	2024-13977-1	2024-13977-2	2024-13977-3
Origin:	Gifford Room Back Of Shade	Gifford Room Stained Cabinet	Gifford Room Right Window Sill
Area Swabbed:	1 sqcm	1 sqcm	1 sqcm
Media:	Swab-Mold	Swab-Mold	Swab-Mold
Percent of Trace Analyzed:	Analyzed at 600X Magnification	Analyzed at 600X Magnification	Analyzed at 600X Magnification

Spore Types	Category	Category	Category
Ascospores	Low	-	-
Basidiospores	Low	-	Low
Cladosporium	High	High	Low
Curvularia	Low	-	Low
Epicoccum	Low	-	Low
Ulocladium	Low	-	Low
Hyphal Fragments	High	High	High
Background Debris	High	High	High
Aspergillus/Penicillium-Like	-	-	Low
Alternaria	-	-	-
Tetraploa	-	-	-
Comments:	Elevated	Elevated	Elevated

Category Count: Based on the amount of spores observed. Not Present: (0), Very Low: (1-9), Low (10 -100), Medium (101-1000), High (>1000). N/A means not applicable.
Background Debris: Based on the amount of debris observed occluding the field of view.
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.
N/A means not applicable.

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Swab Analysis-SOP-004

Sample ID:	2024-13977-4	2024-13977-5
Origin:	Gifford Room Under Table	Gifford Room Top Of Shelves
Area Swabbed:	1 sqcm	1 sqcm
Media:	Swab-Mold	Swab-Mold
Percent of Trace Analyzed:	Analyzed at 600X Magnification	Analyzed at 600X Magnification

Spore Types	Category	Category
Ascospores	Low	-
Basidiospores	-	Low
Cladosporium	-	High
Curvularia	-	Low
Epicoccum	-	-
Ulocladium	-	-
Hyphal Fragments	Low	High
Background Debris	Medium	High
Aspergillus/Penicillium-Like	-	-
Alternaria	-	Low
Tetraploa	-	Low
Comments:	Not Elevated	Elevated

Category Count: Based on the amount of spores observed. Not Present: (0), Very Low: (1-9), Low (10 -100), Medium (101-1000), High (>1000). N/A means not applicable.

Background Debris: Based on the amount of debris observed occluding the field of view.

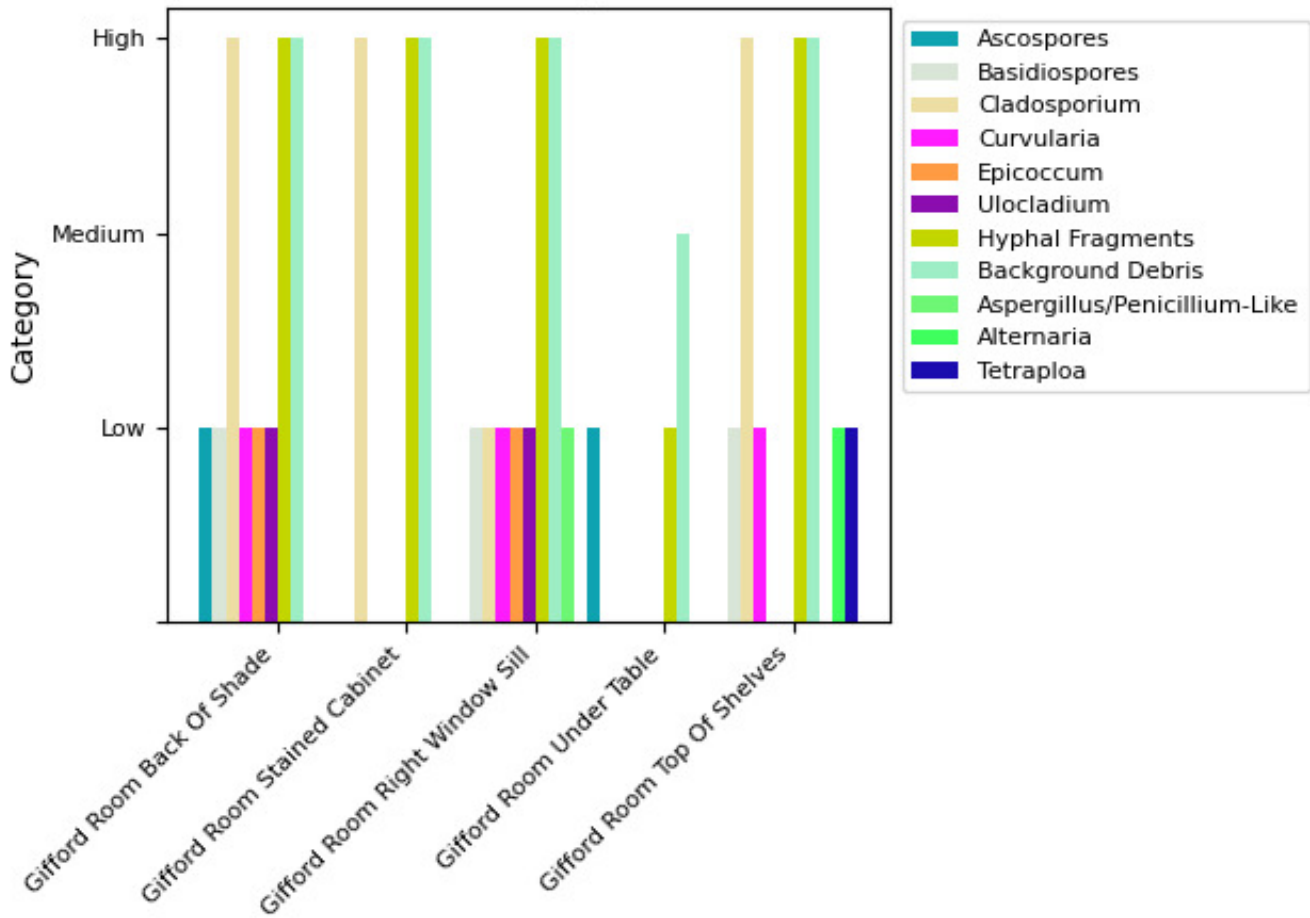
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Swab Analysis



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IAQ/MOLD ASSESSMENT REPORT



FOR: Monomoy Regional Middle School
Gifford Science Lab

BY: HealthyFreshAir.com/Frank Zelinski

NORMI™ Certified IAQ/Mold Inspector and Assessor (CMI/CMA)

Frank M Zelinski
Mold ProActive.com
15 Pine Ridge Lane
Orleans, MA 02653
September 19, 2024

www.healthyfreshair.com 774-216-9006 clearairtobreathe@gmail.com

Scott Carpenter scarpenter@monomoy.edu 508-945-5130

Michael MacMillan mmacmillan@monomoy.edu 617-848-0460

Gifford Science Lab inspected at 425 Crowell Rd, Chatham, MA 02633

Re: Occupant IAQ Concerns

We want to personally thank you for the time you have taken with us to help expedite this NORMI™ Certified IAQ/Mold Assessment. We are satisfied that we now have enough information to draw some important conclusions and make some specific recommendations to significantly improve the indoor air quality of the referenced property.

Attached find the report, labs, documentation, and summary report for your home. This report meets the guidelines of ASTM, IICRC S-520, and NORMI Professional Practices. We are eager to assist you in resolving the problems we have found and hope you will help us expedite a solution.

Respectfully yours,

A handwritten signature in black ink that reads 'Frank M. Zelinski'. The signature is written in a cursive, flowing style.

MOLD ASSESSORS Minimum Level of Insurable Practices

These general standards and practices are minimum requirements and do not constitute complete or sufficient specifications for mold assessment in all cases. More detailed requirements developed by a NORMI Certified Mold Assessor (CMA) for a mold assessment project may be required and shall take precedence over the provisions of this section. The NORMI professional shall work only under the provisions stated in a contract for services rendered, which should be presented to the client prior to the beginning of any project.¹

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- Visual/Olfactory Inspection and Walk-thru.
- Lab Reports and Diagnostics
- Interpretation of Results
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- IAQ/Mold Management Plan
- Closing Paragraph

General Information and History

A request was made to test for mold and Indoor Air Quality (IAQ) if Gifford Science Lab. Teacher has experienced some ill effects from mold. Pictures were submitted showing mold on the new window sill, the back of one shade, and the stained oak on a cabinet. About 3 PM on Sept 11, Michael MacMillan and I examined the room and took samples. One Prism one hour sampling was done on a counter in the room. Swab samples were taken on the back of one shade, the stained cabinet drawer, the new right windowsill, the underside of a work table, and on top of the cabinet in the area near the windows.

Interpretation of Results.

The Enthalpy air sampling shows total VOCs (TVOC) and total mold VOCs (TMVOCs). Note on page 3 that the yellow ball is at the lowest point compared to all samples ever done by Enthalpy testing. This means at the time of the test, airborne mold spore either extremely low or non-existent. The fact that an MCI Protect air purifier had been in place may have helped in acquiring a good IAQ rating.

The swab samples as processed by Nexlab does show High readings of Cladosporium on top of the shelves, the back of the shade, and the stained cabinet. The remedies would be for all flat surfaces in the room to be first lightly sprayed with a mildecide cleaning. Then vacuum with a HEPA rated vacuum. This would include the top of shelves and cabinets as well as the underside of cabinets, top of information boards, and floor. Doing this during the operation of the MCI Protect will help destroy any mold spores aerated. An ozone blasting at the end of the school week, set for a lower ozone level and for about 8 hours will do an excellent job of purifying both the air and all surfaces.

The continuous use the MCI Protect will continue to purify the air of any new mold spores and VOCs. Running the fan in the room near the unit will help facilitate the movement of the purifying air coming from the MCI Protect.

Regarding the stained front of the oak cabinet, it can be thoroughly sanded and recoated which will seal the surface from moisture. Being oak, it may not be possible to remove the black staining.

I am always available for any further questions. 774-216-9006

THE FOLLOWING ARE GENERAL GUIDELINES FOR CLEANING OR PREVENTING MOLD AND MAY NOT ALL BE SPECIFIC TO THIS JOB.

NORMI Sanitization Plan

From the **NORMI Professional Practices**, this protocol shall be used on all projects where mold counts are elevated, as interpreted by the NORMI certified professional, whether remediation has taken place.

- a. Thorough fogging and wiping down of the entire environment with an approved anti-microbial being careful to avoid spotting of leather, marble, tile, glass, and/or other surfaces which might be prone to spotting. This could include the fogging of a protectant, as a second step, to reduce the possibility of mold proliferation in the indoor environment. (See Recommended Products List.)
- b. Recommendation, where necessary, that the HVAC system be cleaned by an approved and trained mechanical contractor and/or duct cleaner. Where ducts are cleaned the NADCA guidelines should be followed.
- c. The installation of air filtration and purification equipment in accordance with NORMI IAQ training recommendations. This holistic approach to IAQ will improve any environment and reduce contaminants including the potential growth of mold and bacteria. (See Recommended Products List.)
- d. The installation of passive fresh-air makeup to reduce randomized air infiltration and enhance the effectiveness of air filtration and purification equipment.
- e. Ongoing use of water-based green chemistries to reduce VOCs and odors. These chemistries should be bio-degradable, water-based and used as an all-purpose cleaner. (See Recommended Products List.)
- f. Deliver to the client the NORMI Sanitization Protocol which includes “36 Ways to Have a Healthier Indoor Environment” from *Mold-Free Construction*.
- g. Recommend post screening after the Sanitization Protocol is in place and that on an annual basis to insure maintenance of a clean, healthy environment.³

It is our recommendation, based on all the information we gathered, our expertise, experience, and the clear IAQ/Mold Profile we have developed from this inspection, that you sanitize the indoor air environment using the following protocol. By partnering with us in this process, you will be able to provide a clean air environment for years to come and create a healthier living space for your home.

- 1) Fogging of recommended preparation product (see Recommended Products List)—this is a concentrated no VOCs, biodegradable water-based enzyme cleaner available that can also be used as a general all-purpose cleaner and mold/mildew remover. Surfaces cleaned with an enzyme cleaner will remain cleaner longer with no toxicity or harmful residue...this product is safe for food contact surfaces.
- 2) Fogging of recommended protectant product (see Recommended Products List)—this is a concentrated no VOCs, biodegradable water-based protectant that utilizes a mechanical method of killing mold and bacteria as it settled on surfaces.
- 3) Utilize recommended 1" filter in HVAC systems to reduce dust, bio-nesting and eliminate filter blow by. This will keep the duct system and internal working parts of the HVAC cleaner and reduce the possibility of mold growth inside the systems. (See Recommended Products List)
- 4) Utilize pro-active air purification technologies which should include stand-alone air purifiers and HVAC probes installed on the return plenum and supply plenum of each system to keep it clean and reduce the growth of mold, bacteria and the odors associated with them. (See Recommended Products List)

IAQ/Mold Management Plan

An IAQ/Mold Management Plan involves controlling contaminants in the indoor environment. By following this checklist and utilizing the recommended products, indoor air contaminants including mold and bacteria will be reduced in the air and on surfaces. Testing data is available upon request.⁴

- 5) This checklist is an excerpt from *Mold Free Construction*⁵ and should become part of any IAQ Management Plan.

- ☐ Keep the premises clean and regularly dust, vacuum, and mop.
- ☐ Install an efficient air purification system in your home or office to maintain good indoor air quality and reduce dust. This would require installation of air filtration/purification equipment in the HVAC system(s), general living areas and moisture prone areas. Your IAQ professional can design an efficient system for you.
- ☐ Use hood vents when cooking, cleaning, and dishwashing.
- ☐ Keep closet doors ajar, where possible, to increase airflow in the closets or install vented doors.
- ☐ Avoid excessive amounts of indoor plants.
- ☐ Use exhaust fans when bathing/showering.
- ☐ Leave exhaust fans on long enough to remove moisture from the room.
- ☐ Use ceiling fans.
- ☐ Water all indoor plants outdoors, if possible.
- ☐ Wipe down any moisture and/or spillage.
- ☐ Wipe down bathroom walls and fixtures after bathing/showering. There are

some good products out there for this very purpose.

- ☐ Wipe down any vanities/sink tops.
- ☐ Avoid drying clothes by hand drying indoors.
- ☐ Avoid air-drying dishes.
- ☐ Open blinds/curtains to allow light into premises.
- ☐ Wipe down floors after any water spillage.
- ☐ Hang shower curtains within the bath when showering.
- ☐ Securely close shower doors, if present, when showering.
- ☐ Leave bathroom and showers door open after use.
- ☐ Use a dryer if present for wet towels.
- ☐ Use household cleaners (we prefer biodegradable enzyme cleaners) on any hard surfaces.
- ☐ Remove any moldy or rotting food.
- ☐ Remove garbage regularly.
- ☐ Wipe down all visible signs of moisture.
- ☐ Regularly scan the ceiling for evidence of roof leaks.
- ☐ Periodically check the air conditioning vents to be sure they are clean.
- ☐ Change the air conditioning filter regularly.
- ☐ Perform scheduled maintenance on your air conditioning system, including, but not limited to, cleaning the evaporator coil.
- ☐ Wipe down windows and sills if moisture is present.
- ☐ Regularly, inspect for leaks under the sinks and around the base of the water closets, around the washing machine and water heater.
- ☐ Check all washer hoses and outside garden hose connections.
- ☐ Regularly empty dehumidifier.
- ☐ Clean behind the refrigerator and around the air conditioning air handler if possible.
- ☐ Empty the refrigerator condensation pan where possible.
- ☐ If possible, pour a small amount of bleach in the drip pan of the air conditioning air handler to decrease the potential for mold growth.
- ☐ Answer this question regularly and check for the signs of mold: "If I were mold and liked moisture, where would I feel most comfortable to set up a home and build a family?"

Recommended Products List

- Preparation Product—we recommend EnzyMagic201, a 20:1 concentrate, water-based, biodegradable all- purpose cleaner that reduces contaminants like mold, bacteria and the odors associated with them. Also see www.anabec.com for Advanced Cleaning Solution Plus.
- Protectant Protectant—we recommend BacShield, a 64:1 concentrate, because it has no VOCs, is a biodegradable water-based protectant that utilizes a mechanical method of

killing mold and bacteria as it settled on surfaces. As seen at www.blspro.com/02574 and available thru Frank Zelinski. Also available for prevention and protection is www.anabec.com product Anabec X70. When applied in tandem with the Cleaner by a trained applicator under the Anabec, Inc. Warranty Program, X70 carries a 30-year transferable warranty.

- HVAC Filter—we recommend the PerfectFit Filter which fits any size return and reduces bio-nesting, blow by, and has an internal frame rather than cardboard so mold will not grow on it. This filter can be purchase by subscription with FREE shipping at www.90dayfilter.com/02574
- Proactive Air Purification Technologies—we recommend the MCI™ Multi-Cluster Ionization technology from Best Living Systems. The technology website is, and a complete line of air and laundry purification products can be reviewed at where purchasing arrangements and sizing for your environment can be made by your NORMIPro Management IAQ/Mold Assessor. Also, a full line of air purification products can be seen at www.fmz.greentechaffiliate.com, and can be ordered thru Frank Zelinski.
- Mold preventive paints as seen at <https://www.rustoleum.com/product-catalog/consumer-brands/zinsser/specialty-coatings>. I have a 25 year long satisfactory experience with Perma-White paint for the interior. Most paint and big box stores carry Perma White. It can be tinted to pastel levels also.
- Use of proper dehumidification equipment. Either a dehumidifier, or dehumidifier alternative such as the XCHANGER as seen at https://www.tiernlund.com//xchanger_basement_fan.htm. Watch three videos at bottom of the page.
- For basement remodeling, a highly recommended framing and insulation product is seen at www.insofast.com. I have used it and highly recommend it as there is nothing organic for mold to grow on, and a bonus is that it does not provide space as living quarters for mice, as framed walls do. Also, if there is flooding, nothing needs to be torn out.

Closing Paragraph

It is our opinion that these recommendations will substantially improve the indoor air environment of your home and, in addition, reduce the potential for mold or other IAQ problems in the future. There is no “over-night” solution, but we believe the improvement will be significant and, over a relatively short period, the occupants and visitors in your home will feel better about their environment. If we may be of further service to you in the future, please do not hesitate to call. We appreciate your business and thank you for choosing a NORMI Certified IAQ/Mold Inspector.

Respectfully yours,



Frank M Zelinski
Certified Mold Assessor
Safe N Dry

¹ NORMI Professional Practices, Revision 10/08/2015, page 1

² NORMI Professional Practices, Mold Assessor, (5) **Mold Assessment Report (MAR)**, page 2

³ NORMI Professional Practices, Mold Remediator (15) **NORMI Sanitization Protocol**, pages 12-13

⁴ Best Living Systems, LLC Manufacturer Rep Binder, **Clinical Field Tests** by request

⁵ *Mold Free Construction*, D. Douglas Hoffman, **revised 01/01/2005**

