

Discovery Environmental Inspection Report

Project Contact Information

<p>Alex Baylor Environmental Specialists Environmental Safety Office 13306 Old Marlboro Pike Upper Marlboro, MD 20772 301-952-6760 alex.baylor@pgcps.org</p>	<p>Edgar Allen Poe Elementary 45,401Ft²</p>	<p>Vinny Gigliotti Certified Indoor Environmentalist Environmental Solutions, Inc. 6114 Drum Point Rd Deale, MD 20751 410-867-6262 Vinny@esi4u.com</p>
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Property Location

2001 Shadyside Ave, Suitland, MD 20746

Date of Inspection 3/4/2019



Prepared By: Vinny Gigliotti and Ryan Fitzgerald

Certified Indoor Environmentalist (CIE)

Dear Mr. Baylor,

The results of the inspection and testing performed at Edgar Allen Poe Academy, located at 2001 Shadyside Ave, Suitland, MD 20746, are concluded, and the findings are enclosed. I want to thank you for allowing ESI the opportunity to service your indoor environmental needs. Included in this report are the observations, lab results, and recommendations from ESI's 3/4/2019 inspection and testing.

Background Information

The Prince Georges County Public School Environmental Team has taken a proactive approach in cleaning the above-mentioned school to ensure there are no health or environmental risks related to microbial and biological hazards. Historically elevated levels of humidity, condensation from pipes, periodic steam leaks and outdated HVAC systems, may have contributed to water damage ceiling tiles and colonization of mold spores in various area of the school.

Purpose

ESI was engaged to inspect the school in a random sufficient manner. Classrooms, administration offices and common area building materials and contents, will be visually inspected for water damage and microbial growth.

In each location inspected, the indoor air quality will be tested for elevated levels of carbon dioxide and carbon monoxide, in addition to measuring the relative humidity and temperature. Microbial / biological hazards within the breathable air space will also be tested.

Based upon the visual assessment, instrument readings and lab results, ESI will determine if additional remediation is required.

Observations and instrument readings

The following table is designed for this project. Some of the fields may not be filled in due to not being applicable during the time of the inspection. You will notice either a 'YES' or 'NO' in the table. 'YES' indicates that mold and /or water damage was detected and 'NO' indicates it was not. If 'YES' is noted, remediation recommendation will be included for the area inspected. Please note that the cubic feet of air in the rooms inspected is an approximate number.

Location	IAQ Sample #	Swab	R/H	Temp	CO2	Co	Cubic feet of air.	
102	2377966	N/A	22.0	68.9	440	000	8,370	
Inspected								
Ceiling Tiles	Walls	Teachers Desk	Children's Desk	Tables	Cabinets Shelving	Convector	HVAC Diffusors	Windows
2x2	CMU	2	9	3	5	1	0	2
No	No	No	No	No	Yes	No	N/A	No
Observation Notes								
<ul style="list-style-type: none"> • There was water staining and discolorations on the sink cabinetry. • The built-in shelving along the exterior wall contained water damage. • Dirt/grime was seen on a few ceiling tiles. • The indoor air quality should pose no health or environmental risk, as the spore count was 40 spores per cubic meter of air. 								
Recommendations								
<ul style="list-style-type: none"> • HEPA vacuum, spray antimicrobial, then damp wipe the sink cabinetry and impacted exterior wall shelving. • Further investigate the source of water damage along the exterior wall shelving. 								

Location	IAQ Sample #	Swab	R/H	Temp	CO2	Co	Cubic feet of air.	
105	2378005	N/A	12.8	74.1	331	001	8,060	
Inspected								
Ceiling Tiles	Walls	Teachers Desk	Children's Desk	Tables	Cabinets Shelving	Convector	HVAC Diffusors	Windows
2x2	CMU	2	12	3	4	1	0	4
Yes	No	No	No	No	Yes	No	N/A	No
Inspected								
<ul style="list-style-type: none"> • There was water damage and staining on the bottom of the cabinetry, more notably by the convector. • Four ceiling tiles had suspected microbial growth. One ceiling tile was water stained. These ceiling tiles were located along the right side of the exterior wall. • The indoor air quality should pose no health or environmental risk, as the spore count was 40 spores per cubic meter of air. 								
Recommendations								
<ul style="list-style-type: none"> • Remove and replace the water damaged and contaminated ceiling tiles. The ceiling tiles should be placed in a sealed plastic bag for disposal. 								

Location	IAQ Sample #	Swab	R/H	Temp	CO2	Co	Cubic feet of air.	
108	2378010	N/A	19.0	73.5	434	001	9,234	
Inspected								
Ceiling Tiles	Walls	Teachers Desk	Children's Desk	Tables	Cabinets Shelving	Convector	HVAC Diffusors	Windows
2x4	CMU	1	15	2	4	0	4	4
No	No	No	No	No	No	N/A	No	No
Observation Notes								
<ul style="list-style-type: none"> The linoleum flooring under the sink was warped and discolored. The indoor air quality should pose no health or environmental risk, as no airborne mold spores were detected during the time of the inspection. 								
Recommendations								
None								

Location	IAQ Sample #	Swab	R/H	Temp	CO2	Co	Cubic feet of air.	
209	2377990	N/A	20.4	71.6	415	001	8,020	
Inspected								
Ceiling Tiles	Walls	Teachers Desk	Children's Desk	Tables	Cabinets Shelving	Convector	HVAC Diffusors	Windows
2x4	CMU	0	0	13	3	0	4	4
No	No	N/A	N/A	No	No	N/A	No	No
Observation Notes								
<ul style="list-style-type: none"> There were no signs of mold growth or elevated levels of moisture detected within this location. The remediation and cleaning efforts were completed successfully, and the indoor air quality should pose no health or environmental risk, as no airborne mold spores were detected during the time of the inspection. 								
Recommendations								
None								

Location	IAQ Sample #	Swab	R/H	Temp	CO2	Co	Cubic feet of air.	
202	2377995	N/A	17.8	74.1	563	001	8,370	
Inspected								
Ceiling Tiles	Walls	Teachers Desk	Children's Desk	Tables	Cabinets Shelving	Convector	HVAC Diffusors	Windows
2x2	CMU	1	15	3	3	1	0	4
No	No	No	No	No	No	No	N/A	No
Observation Notes								
<ul style="list-style-type: none"> • There were no signs of mold growth or elevated levels of moisture detected within this location. • The remediation and cleaning efforts were completed successfully, and the indoor air quality should pose no health or environmental risk, as the total spore count was 200 spores per cubic meter of air. 								
Recommendations								
None								

Interpretation of Lab Results

In the enclosed Air Cassette Analysis report, you will notice Fungal Identification, which is the species detected in the breathable airspace inside, and outside. The Raw count is the actual number of spores counted on the slide, and the Count/m³ are the spores per cubic meter of air. The other particles are non-living particles such as dander, mycelial fragments, pollens, etc.

In order for humans to be exposed indoors, fungal spores, fragments, or metabolites must be released into the air and inhaled, physically contacted (dermal exposure), or ingested. Whether symptoms develop in people exposed to fungi depends on the nature of the fungal material (e.g., allergenic, toxic, or infectious), the amount of exposure, and the susceptibility of exposed persons.

Susceptibility varies with genetic predisposition (e.g., allergic reactions do not always occur in all individuals), age, state of health, and concurrent exposures.

Air sampling Lab Results



Name: Environmental Solutions, Inc
 Address: 534-A Deale Road
 Deale, MD 20751
 Phone: 410-867-6262

Project Number: 2001 Shadyside Ave
 P.O. Number:
 Project Name: Edgar Allen Poe Academy
 Collected Date: 3/4/2019
 Received Date: 3/5/2019 10:25:00 AM

SanAir ID Number
19009923
 FINAL REPORT
 3/6/2019 10:04:41 AM

Analyst: Acharya, Uttam

Air Cassette Analysis

ND - None Detected. Blank spaces indicate no spores detected.

SanAir ID Number	19009923-001			19009923-002			19009923-003			19009923-004		
Analysis Using STL	107C			107C			107C			107C		
Sample Number	2377975			2377966			2378005			2378010		
Sample Identification	Outdoors			Classroom #102			Classroom #105			Classroom #108		
Sample Type	Air Cassette - Micro-5			Air Cassette - Micro-5			Air Cassette - Micro-5			Air Cassette - Micro-5		
Volume	25 Liters			25 Liters			25 Liters			25 Liters		
Analytical Sensitivity	40 Count/M ³			40 Count/M ³			40 Count/M ³			40 Count/M ³		
Background Density	1+			1+			2			1+		
Other	Raw Count	Count/M³	%	Raw Count	Count/M³	%	Raw Count	Count/M³	%	Raw Count	Count/M³	%
Dander	1	40	n/a	64	2560	n/a	17	680	n/a	15	600	n/a
Fibers	ND			1	40	n/a	ND			ND		
Mycelial Fragments	ND			1	40	n/a	1	40	n/a	ND		
Pollen	1	40	n/a	ND			ND			ND		
Fungal Identification	Raw Count	Count/M³	%	Raw Count	Count/M³	%	Raw Count	Count/M³	%	Raw Count	Count/M³	%
Ascospores	1	40	25	ND			1	40	>99	ND		
Aspergillus/Penicillium	ND			1	40	>99	ND			ND		
Basidiospores	3	120	75	ND			ND			ND		
Cladosporium species	ND			ND			ND			ND		
Stachybotrys species	ND			ND			ND			ND		
TOTAL	4	160		1	40		1	40		ND	ND	

Signature:

Date: 3/6/2019

Reviewed:

Date: 3/6/2019



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Air Cassette Analysis

ND - None Detected. Blank spaces indicate no spores detected.

SanAir ID Number	19009923-005			19009923-006		
Analysis Using STL	107C			107C		
Sample Number	2377990			2377995		
Sample Identification	Teachers Lounge #209			Classroom #202		
Sample Type	Air Cassette - Micro-5			Air Cassette - Micro-5		
Volume	25 Liters			25 Liters		
Analytical Sensitivity	40 Count/M ³			40 Count/M ³		
Background Density	1+			1+		
Other	Raw Count	Count/M³	%	Raw Count	Count/M³	%
Dander	23	920	n/a	104	4160	n/a
Fibers	1	40	n/a	3	120	n/a
Mycelial Fragments	ND			1	40	n/a
Pollen	ND			ND		
Fungal Identification	Raw Count	Count/M³	%	Raw Count	Count/M³	%
Ascospores	ND			ND		
Aspergillus/Penicillium	ND			2	80	40
Basidiospores	ND			ND		
Cladosporium species	ND			2	80	40
Stachybotrys species	ND			1	40	20
TOTAL	ND	ND		5	200	

Signature:

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Organism Descriptions

The descriptions of the organisms presented are derived from various reference materials. The laboratory report is based on the data derived from the samples submitted and no interpretation of the data, as to potential, or actual, health effects resulting from exposure to the numbers of organisms found, can be made by laboratory personnel. Any interpretation of the potential health effects of the presence of this organism must be made by qualified professional personnel with first hand knowledge of the sample site, and the problems associated with that site.

Dander - Comprised of human and/or animal skin cells. Counts may be higher in carpeted rooms and in rooms with more traffic.
Health Effects: May cause allergies.

Fibers - This category can include clothing, carpet, and insulation fibers.

Mycelial Fragments - A mycelium (plural = mycelia) is the "body" of a fungus. It is a collective term for hyphae (singular = hypha), which are the tubular units of the mycelium usually composed of chitin. The terms hyphae and mycelial fragments are used interchangeably. [This information was referenced from the mycology text "The Fifth Kingdom"] In some cases a fungal identification cannot be obtained due to lack of sporulation. Only the mycelial fragments are present, and cannot be identified without the distinguishing characteristics of the spores or the structures they grow from.
Health Effects: Allergic reactions may occur in the presence of spores (conidia) or mycelial/hyphal fragments.

Pollen - Produced by trees, flowers, weeds and grasses. The level of pollen production can depend on water availability, precipitation, temperature, and light. Pollen is usually dispersed by either insects or the wind.
Health Effects: Mostly effects the respiratory tract with hay fever symptoms but has also been shown to trigger asthma in some people.

Ascospores - From the fungal Subphylum Ascomycotina. Ascospores are ubiquitous in nature and are commonly found in the outdoor environment. This class contains the "sac fungi" and yeasts. Some ascospores can be identified by spore morphology, however; some care should be exercised with regard to specific identification. They are identified on tape lifts and non-viable analysis by the fact that they have no attachment scars and are sometimes enclosed in sheaths with or without sacs. Ascomycetes may develop both sexual and asexual stages. Rain and high humidity may help asci to release, and disperse ascospores, which is why during these weather conditions there is a great increase in counts.
Health Effects: This group contains possible allergens.

Aspergillus/Penicillium - These spores are easily aerosolized. Only through the visualization of reproductive structures can the genera be distinguished. Also included in this group are the spores of the genera Acremonium, Phialophora, Verticillium, Paecilomyces, etc. Small, round spores of this group lack the necessary distinguishing characteristics when seen on non-viable examination.
Health Effects: Can cause a variety of symptoms including allergic reactions. Most symptoms occur if the individual is immunocompromised in some way (HIV, cancer, etc). Both Penicillium and Aspergillus spores share similar morphology on non-viable analysis and therefore are lumped together into the same group.

Basidiospores - From the Subphylum Basidiomycotina which contains the mushrooms, shelf fungi, and a variety of other macrofungi. They are saprophytes, ectomycorrhizal fungi or agents of wood rot, which may destroy the structure wood of buildings. It is extremely difficult to identify a specific genera of mushrooms by using standard culture plate techniques. Some basidiomycete spores can be identified by spore morphology; however, some care should be exercised with regard to specific identification. The release of basidiospores is dependant upon moisture, and they are dispersed by wind.
Health Effects: Many have the potential to produce a variety of toxins. Members of this group may trigger Type I and III fungal hypersensitivity reactions. Rarely reported as opportunistic pathogens.



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Cladosporium species - The most commonly identified outdoor fungus. The outdoor numbers are reduced in the winter and are often high in the summer. Often found indoors in numbers less than outdoor numbers. It is commonly found on the surface of fiberglass duct liner in the interior of supply ducts. A wide variety of plants are food sources for this fungus. It is found on dead plants, woody plants, food, straw, soil, paint and textiles. Often found in dirty refrigerators and especially in reservoirs where condensation is collected, on moist window frames it can easily be seen covering the whole painted area with a velvety olive green layer.

Health Effects: It is a common allergen. It can cause mycosis. Common cause of extrinsic asthma (immediate-type hypersensitivity: type I). Acute symptoms include edema and bronchospasms, chronic cases may develop pulmonary emphysema. Illnesses caused by this genus can include phaeoohyphomycosis, chromoblastomycosis, hay fever and common allergies.

References: Flannigan, Brian, Robert A. Samson, and J. David Miller, eds. Microorganisms in Home and Indoor Work Environments: Diversity, Health Impacts, Investigation, and Control. London and New York: Taylor & Francis, 2001.

Stachybotrys species - This organism is rarely found in outdoor samples. It is usually difficult to find in indoor air samples unless it is physically disturbed because the spores are in a gelatinous mass. Grows well on wet media, preferably containing cellulose. It proliferates in the indoor environment with long term water damage, growing on wallpaper, gypsum board, and textiles. As a general rule, air cultures for Stachybotrys yields unpredictable results, mainly due to the fact that this fungus is usually accompanied by other fungi such as Aspergillus and Penicillium that normally are better aerosolized than Stachybotrys. This is a slow growing fungus on media. It does not compete well with other rapidly growing fungi. The black fungi grow on building material with high cellulose content and low nitrogen content. Appropriate media for the growth of this organism will have high cellulose content and low nitrogen content.

Health Effects: It has worldwide distribution and has been reported to cause dermatitis, cough, rhinitis, and headache, although no definitive reports of human infections have been verified. It has the ability to cause type I hypersensitivity. It is a documented mycotoxin producer.

References: Flannigan, Brian, Robert A. Samson, and J. David Miller, eds. Microorganisms in Home and Indoor Work Environments: Diversity, Health Impacts, Investigation, and Control. London and New York: Taylor & Francis, 2001.

Conclusions/Recommendations

Throughout the first floor of the school, the classrooms inspected appeared to contain water damage on or around the sink cabinetry. Water damaged and/or suspected contaminated ceiling tiles were also seen. The 2nd floor of the school appeared to be relatively clean, as no visible contamination was noticed. Further recommendations are listed above.

The samples in this report indicate a normal fungal ecology for the specific locations tested. Based on the visual inspection and lab results, there are no health or environmental risks related to the inspected areas of the school. Please refer to the attached lab results for identification and spore count per location.

I hope you found our service beneficial. If you have any questions or concerns, please feel free to contact me at 410-867-6262.

Respectfully,



Vinny Gigliotti (CIE)
Environmental Solutions, Inc.



Industry References

Since the 1993 New York City Department of Health (NYCDOH) document (Assessment and remediation of *Stachybotrys Atra* in Indoor Environments) was produced, several other guidance documents have been written. This report was developed in accordance with and including:

- *Fungal Contamination in Buildings: A Guide to Recognition and Management* (Health Canada, 1995).
- *Control of Moisture Problems Affecting Biological Indoor Air Quality* (Flannigan and Morey, 1996).
- *Bioaerosols: Assessment and Control* (American Conference of Government Industrial Hygienists [ACGIH], 1999).
- *Guidelines on Assessment and Remediation of Fungi in Indoor Environments* (NYCDOH, 2000). [external link]
- *Mold Remediation in Schools and Commercial Buildings* (U.S. EPA, 2001).
- *Report of the Microbial Growth Task Force* (The American Industrial Hygiene Association, 2001).
- *Fungal Contamination: A manual for investigation, remediation and control (BECi) 2005.*
- *29 CFR 1910, Occupational Safety and Health Standards for General Industry, U.S. Department of Labor*
- Institute of Inspection, Cleaning and Restoration Certification Standard IICRC S520 *29 CFR 1926, Occupational Safety and Health Standards for the Construction Industry, U.S. Department of Labor*
- *40 CFR 61, National Emission Standards for Hazardous Air Pollutants (NESHAP), U.S. Environmental Protection Agency*
- *ACR 2006, Assessment, Cleaning and Restoration of HVAC Systems, National Air Duct Cleaners Association, 2006**
- *ASHRAE Standards 62.1 or 62.2*
- *ASTM D-1653, Standard Test Methods for Water Vapor Transmission of Organic Coating Films*
- *Bioaerosols: Assessment and Control, American Conference of Governmental Industrial Hygienists, 1999*
- *Field Guide for Determination of Biological Contaminants in Environmental Samples, American Industrial Hygiene Association, 2005*
- *A Guide for Mold Remediation in Schools and Commercial Buildings, US Environmental Protection Agency, 2001 Protecting the Built Environment: Cleaning for Health, Michael A. Berry Ph.D., 1993*
- *IICRC S100 Standard and Reference Guide for Professional Carpet Cleaning, Fourth Edition, Institute of Inspection, Cleaning and Restoration Certification, (S100)**
- *IICRC S300 Standard and Reference Guide for Professional Upholstery Cleaning, First Edition, Institute of Inspection, Cleaning and Restoration Certification, (S300)**
- *ANSI/IICRC S500 Standard and Reference Guide for Professional Water Damage Restoration, Third Edition, Institute of Inspection, Cleaning and Restoration Certification, (S500)**