



HILLMANN
CONSULTING

May 2, 2019

Ms. Rebecca Lopez
East Stroudsburg Area School District
50 Vine Street
East Stroudsburg, Pennsylvania 18301

RE: Microbial Investigation – Air Quality Sampling
Bushkill Elementary School
131 North School Drive
Dingmans Ferry, Pennsylvania 18328
Hillmann Project Number: PH-0755

Dear Ms. Lopez:

Thank you for retaining Hillmann Consulting, LLC (Hillmann) to address your environmental concerns. On April 17, 2019, Ian Hinterleiter conducted a Microbial Investigation and Air Quality Sampling of the Cafeteria, and Classrooms 15, 21, 27, 33, 44, and 38 located within Bushkill Elementary School. This investigation is part of a biannual sampling plan in order to document air quality within Bushkill Elementary School. The parameters for the investigation included a visual inspection and the collection of one airborne fungal spore sample within the subject spaces listed above.

Hillmann selected the sampling parameters based on consultations with the client (East Stroudsburg Area School District), the laboratory performing the analysis, and our in-house experts. The inspection was a general screening to randomly assess indoor airborne spore concentrations within the subject spaces.

Airborne fungal spores were collected by drawing air through an Air-O-Cell® cassette utilizing a Zefon BioPump. Samples were collected for a time period of five (5) minutes at a calibrated flow rate of 15 L/min yielding a total sample volume of 75 liters. These cassettes were then sent to an AIHA EMLAP accredited laboratory where fungal spores were identified by genera and concentration. Fungal spores are present in normal indoor settings. If found in excess amounts, these spores can produce allergy-like symptoms as well as asthmatic reactions in those who are sensitive to them. If the indoor samples are found to have a greater diversity of genera, and/or higher amounts of fungal spores than outdoor samples, it can be presumed that the subject space may be facilitating microbial growth.

OBSERVATIONS AND FINDINGS

Hillmann was met on site by facility personnel, who escorted Hillmann through the subject spaces to conduct airborne microbial quality assurance sampling.

The Bushkill Elementary School is primarily composed of a combination of masonry block units and wallboard walls, carpet and vinyl tile flooring, and drop ceiling tiles. Hillmann did not observe water staining or visible microbial growth on accessible surfaces.

Average temperature and relative humidity readings were 70.7°F and 34.9% respectively.

Seven (7) airborne fungal spore samples were collected from the Cafeteria, and Classrooms 15, 21, 27, 33, 44, and 38 located within Bushkill Elementary School. Laboratory analysis showed total indoor fungal spore concentrations and individual fungal genera were lower and/or comparable to the outdoor reference levels.

In the absence of health-based federal standards, Hillmann has adopted industry standard practice and recommended practices by the ACGIH to compare indoor/outdoor fungal concentrations. Samples are deemed “comparable” or “acceptable” when the following criteria are met:


- Overall indoor/outdoor fungal genera identified are similar on the day of sampling. Raw spore counts less than ten (10) do not represent a statistically significant number. Therefore, the presence of one (1) spore of certain indicator genera (i.e. *Stachybotrys*) will not be grounds for failure.
- Common outdoor genera identified indoors are similar to or less than outdoor concentrations.
- Common water intrusion indicator genera including but not limited to: *Penicillium/Aspergillus* group, *Chaetomium*, etc. are similar to outdoor concentrations and/or within one order of magnitude (10 times difference). Exceptions will be made depending on conditions, fungal genera identified, and outlying factors.
- Hillmann also recommends that common water intrusion indicator genera be below a level of 1,000 CFU/m³ of air. Exceptions will be made depending on conditions, fungal genera identified, and outlying factors.

CONCLUSIONS & RECOMMENDATIONS


Based upon the findings and laboratory results, the subject spaces do not appear to be facilitating microbial growth at this time.

If you have any questions, or need additional information, please feel free to contact our office at (856) 581-9055.

Regards,
Hillmann Consulting, LLC



Rafael L. Torres, III
Director of Operations
Philadelphia Area Regional Office



Ian Hinterleiter
Industrial Hygienist

File: PH-0755
Enclosed: Laboratory Results

Date of Sampling: 04/17/2019 Job #: PH-0755
 Date of Sample Receipt: 04/18/2019 Order#: 0419330
 Client: EAST STROUDSBURG AREA SCHOOL #Received: 9
 DISTRICT
 50 VINE STREET
 EAST STROUDSBURG, PA 18301




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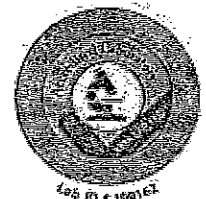
Attn:
 Collection Site: BUSHKILL ELEMENTARY SCHOOL
 Field Technician: Ian Hinterleiter
 Date of Analysis: 04/18/2019
 Date of Issue: 04/19/2019
 Sampling Method: Air-O-Cell

SPORE TRAP REPORT: Method (Fungal Spore SOP)

Location:	Cafeteria			Room 44			Room 38		
Lab ID#:	F48098			F48099			F48100		
Volume (Liters):	75			75			75		
Background Debris: *	Light			Light			Light		
	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**
Basidiospores				4	240	23%	1	61	8%
Cladosporium	1	61	50%	11	670	65%	8	490	62%
Coprinus							1	61	8%
Hyphal Fragments	1	61	50%	1	61	6%	2	120	15%
Penicillium/Aspergillus				1	61	6%	1	61	8%
Total Spores/m3	120			1,000			790		
Analytical Sensitivity ***	61			61			61		

* Background debris may affect analysis of sample causing results to be reported lower than actually present in the air.
 Background debris are expressed qualitatively: heavy > medium > light.
 ** Percentages may not equal 100% due to rounding.
 *** Analytical sensitivity is based on 1000X magnification and 15% of trace analyzed.
 Samples arrived in acceptable condition unless otherwise noted.
 Uncertainty of measurement available upon request.
 This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by Hillmann Consulting, LLC.

Signature: 
 Angelo Tango Laboratory Manager #Analyzed: 9



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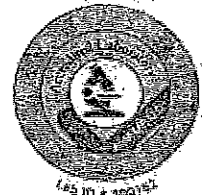
SPORE TRAP REPORT: Method (Fungal Spore SOP)

Location:	Room 33			Room 27			Room 21/ 22/ Room Has Divider That is Open		
Lab ID#:	F48101			F48102			F48103		
Volume (Liters):	75			75			75		
Background Debris: *	Light			Light			Light		
	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**
Ascospores							2	120	13%
Basidiospores	2	120	18%	4	240	16%	4	240	26%
Cladosporium	7	430	64%	16	980	67%	1	61	7%
Hyphal Fragments	1	61	9%	2	120	8%	2	120	13%
Penicillium/Aspergillus	1	61	9%	1	61	4%	6	370	41%
Ulociadium				1	61	4%			
Total Spores/m3	670			1,500			910		
Analytical Sensitivity ***	61			61			61		

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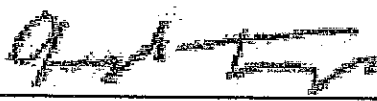
Attn:
 Collection Site: BUSHKILL ELEMENTARY SCHOOL

Field Technician: Ian Hinterleiter
 Date of Analysis: 04/18/2019
 Date of Issue: 04/19/2019
 Sampling Method: Air-O-Cell

SPODE TRAP REPORT: Method (Fungal Spore SOP)

Location:	Room 15			Outside			Outside		
Lab ID#:	F48104			F48105			F48106		
Volume (Liters):	75			75			75		
Background Debris: *	Light			Light			Light		
	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**
Alternaria				1	61	0%			
Ascospores	1	61	5%				2	120	12%
Basidiospores	2	120	10%	5	310	2%	10	610	63%
Cladosporium	7	430	37%	30	1,800	13%	1	61	6%
Coprinus				1	61	0%			
Epicoccum				9	550	4%			
Hyphal Fragments				1	61	0%			
Myxo./Periconia/Rusts/Smuts				184	11,200	79%			
Penicillium/Aspergillus	9	550	47%	3	180	1%	3	180	19%
Total Spores/m3	1,200			14,200			970		
Analytical Sensitivity ***	61			61			61		

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