



August 13, 2019

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

RE: Microbial Investigation – Air Quality Sampling
Lehman Intermediate School
257 Timberwolf Court
Dingmans Ferry, Pennsylvania 18328
Hillmann Project Number: PH-0867

Dear Ms. Lopez:

Thank you for retaining Hillmann Consulting, LLC (Hillmann) to address your environmental concerns. On July 30, 2019, Ian Hinterleiter conducted a Microbial Investigation and Air Quality Sampling of the Library and Classrooms 104, 114, 118, 200, 205, 216, 218, 300, 303, and 315 located within the Lehman Intermediate School. This investigation is part of a biannual sampling plan in order to document air quality within the Lehman Intermediate 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 Lehman Intermediate 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 observe minor water staining on drop ceiling tiles in Classrooms 101, 119, and 122. Hillmann did not observe visible microbial growth on accessible surfaces.

Average temperature and relative humidity readings on the 1st and 2nd Floors were 82.1°F and 43.2% respectively with the 3rd Floor Averages being 99.1°F and 47.5% with the exception of Classroom 315 which was open to outside air with the temperature and relative humidity being 81.0°F and 46.5%.

Eleven (11) airborne fungal spore samples were collected from the Library and Classrooms 104, 114, 118, 200, 205, 216, 218, 300, 303, and 315 located within the Lehman Intermediate School. Laboratory analysis showed an elevated level of *Penicillium/Aspergillus* within Classrooms 218 and 315 as well as elevated total indoor fungal spore concentrations within Classroom 114.

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, most of the subject spaces do not appear to be facilitating microbial growth at this time. Further investigation of Classrooms 114, 218, and 315 is recommended to identify potential sources of water intrusion and assess if mold is actively proliferating within the space.

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-0867
Enclosed: Laboratory Results

Date of Sampling: 07/31/2019 **Job #:** PH-0867
Date of Sample Receipt: 07/31/2019 **Order#:** 0719531
Client: EAST STROUDSBURG AREA SCHOOL DISTRICT
 50 VINE STREET
 EAST STROUDSBURG, PA 18301 **#Received:** 13



HILLMANN CONSULTING, L.L.C.
 ENVIRONMENTAL CONSULTING, LAB SERVICES
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 P.O. BOX 1597
 UNION, NEW JERSEY 07083-1597
 PHONE: (908) 688-7800 FAX: (908) 686-2636
 www.hillmannconsulting.com

Attn:
Collection Site: LEHMAN 15/ EAST STROUDSBURG, PA
Field Technician: Ian Hinterleiter
Date of Analysis: 07/31/2019
Date of Issue: 07/31/2019
Sampling Method: Air-O-Cell

SCOPE TRAP REPORT: Method (Fungal Spore SOP)

Location:	Library			104			114		
Lab ID#:	F49018			F49019			F49020		
Volume (Liters):	75			75			75		
Background Debris: *	Light			Light			Light		
	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**
Ascospores				6	380	5%	10	640	3%
Basidiospores				89	5,700	71%	50	3,200	13%
Bipolaris/Drechslera							1	64	0%
Cladosporium				19	1,200	15%	308	19,700	80%
Coprinus				1	64	1%	1	64	0%
Curvularia				1	64	1%			
Epicoccum							1	64	0%
Ganoderma				4	260	3%	5	320	1%
Hyphal Fragments				1	64	1%	1	64	0%
Myxo./Periconia/Rusts/Smuts				3	190	2%	1	64	0%
Penicillium/Aspergillus				1	64	1%	4	260	1%
Xylariaceae							3	190	1%
Total Spores/m3	No Spores Detected			8,000			25,000		
Analytical Sensitivity ***	64			64			64		

* 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:

Dylan Jaycox, Laboratory Director #Analyzed: 13



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Attn:

Collection Site: LEHMAN 15/ EAST STROUDSBURG, PA

Field Technician: Ian Hinterleiter
Date of Analysis: 07/31/2019
Date of Issue: 07/31/2019
Sampling Method: Air-O-Cell

SPODE TRAP REPORT: Method (Fungal Spore SOP)

Location:	118			200			205		
Lab ID#:	F49021			F49022			F49023		
Volume (Liters):	75			75			75		
Background Debris: *	Light			Light			Light		
	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**
Ascospores	2	130	3%	3	190	2%	4	260	5%
Basidiospores	25	1,600	33%	34	2,200	26%	27	1,700	30%
Cladosporium	47	3,000	63%	78	5,000	60%	47	3,000	52%
Coprinus				1	64	1%	1	64	1%
Ganoderma							4	260	5%
Hyphal Fragments							1	64	1%
Myxo./Periconia/Rusts/Smuts				4	260	3%			
Penicillium/Aspergillus				9	580	7%	5	320	6%
Pithomyces	1	64	1%						
Xylariaceae				1	64	1%	1	64	1%
Total Spores/m3	4,800			8,400			5,700		
Analytical Sensitivity ***	64			64			64		

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Attn:

Collection Site: LEHMAN 15/ EAST STROUDSBURG, PA

Field Technician: Ian Hinterleiter
Date of Analysis: 07/31/2019
Date of Issue: 07/31/2019
Sampling Method: Air-O-Cell

SPODE TRAP REPORT: Method (Fungal Spore SOD)

Location:	216			218			300		
Lab ID#:	F49024			F49025			F49026		
Volume (Liters):	75			75			75		
Background Debris: *	Light			Light			Light		
	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**
Ascospores	1	64	1%						
Basidiospores	27	1,700	25%	8	510	20%			
Cercospora	1	64	1%						
Cladosporium	73	4,700	69%	9	580	22%			
Ganoderma	1	64	1%						
Myxo./Periconia/Rusts/Smuts	3	190	3%						
Penicillium/Aspergillus				24	1,500	58%			
Total Spores/m3	6,800			2,600			No Spores Detected		
Analytical Sensitivity ***	64			64			64		

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 Dylan Jaycox, Laboratory Director

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Attn:

Collection Site: LEHMAN 15/ EAST STROUDSBURG, PA

Field Technician: Ian Hinterleiter
Date of Analysis: 07/31/2019
Date of Issue: 07/31/2019
Sampling Method: Air-O-Cell

SPODE TRAP REPORT: Method (Fungal Spore SOD)

Location:	303			315			Outside		
Lab ID#:	F49027			F49028			F49042		
Volume (Liters):	75			75			75		
Background Debris: *	Light			Light			Light		
	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**
Ascospores	1	64	13%	2	130	2%	5	320	2%
Basidiospores	5	320	63%	82	5,200	62%	68	4,400	24%
Cladosporium	1	64	13%	24	1,500	18%	192	12,300	68%
Coprinus				3	190	2%	3	190	1%
Ganoderma	1	64	13%				3	190	1%
Hyphal Fragments							3	190	1%
Myxo./Periconia/Rusts/Smuts				2	130	2%	5	320	2%
Penicillium/Aspergillus				17	1,100	13%	2	130	1%
Pithomyces				1	64	1%			
Xylariaceae				2	130	2%	2	130	1%
Total Spores/m3	510			8,400			18,200		
Analytical Sensitivity ***	64			64			64		

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Dylan Jaycox
 Dylan Jaycox, Laboratory Director

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Attn:

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Field Technician: Ian Hinterleiter
Date of Analysis: 07/31/2019
Date of Issue: 07/31/2019
Sampling Method: Air-O-Cell

SPODE TRAP REPORT: Method (Fungal Spore SOD)

Location:	Outside								
Lab ID#:	F49043								
Volume (Liters):	75								
Background Debris: *	Light								
	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**
Ascospores	5	320	3%						
Basidiospores	102	6,530	66%						
Cladosporium	33	2,100	21%						
Coprinus	3	190	2%						
Epicoccum	1	64	1%						
Ganoderma	2	130	1%						
Myxo./Periconia/Rusts/Smuts	8	510	5%						
Penicillium/Aspergillus	1	64	1%						
Total Spores/m3	9,910								
Analytical Sensitivity ***	64								

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Fungal Spore Chain-of-Custody and Analysis Request Form

Date of Sampling: 07/31/19

Job #: PH0867
Order #: 0719531

Date of Sample Receipt: _____

Client: East Stroudsburg SD

Location: LEHMAN 15

Field Hygienist: J24 Hill + Kleffer



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Sample ID Lab ID	Sample Type (Air, Bulk, Tape)	Air-Flow Time		Air-Flow Rate		Air Volume(L) or Area (in) ²	Sample Location Description	Turnaround Time						Comments
		Start	End	Start	End			3-6hr	8-12hr	24hr	48hr	72hr	5-7 day	
49018 IH01	Air	7:40	7:45	15	15	75L	Library							
19 IH02	Air	7:47	7:52	15	15	75L	104							
20 IH03	Air	7:54	7:59	15	15	75L	114							
21 IH04	Air	8:02	8:07			75L	118							
22 IH05	Air	8:10	8:15			75L	200							
23 IH06	Air	8:17	8:22			75L	205							
24 IH07	Air	8:30	8:35			75L	216							
25 IH08	Air	8:37	8:42			75L	218							
26 IH09	Air	8:48	8:53			75L	300							
27 IH10	Air	8:55	9:00			75L	303							
28 IH11	Air	9:03	9:08			75L	315							
49042 IH25	Air	11:40	11:45			75L	Outside							
43 IH26	Air	11:45	11:50			75L	Outside							

Sampled By:	Transported By:	Received By:	Prepared By:	Analyzed By:
Name: <u>J24 Hill + Kleffer</u>		<u>900</u>	<u>[Signature]</u>	<u>[Signature]</u>
Signature: <u>[Signature]</u>				
Date:		<u>7-31-19</u>		<u>7/31/19</u>