



August 13, 2019

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

RE: Microbial Investigation – Air Quality Sampling
East Stroudsburg Senior High School North
279 Timberwolf Drive
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 Main Office, Guidance Office, and Classrooms 106, 114, 130, 205, 208, 214, 222, 228, 301, 303, and 307 located within the East Stroudsburg Senior High School North. This investigation is part of a biannual sampling plan in order to document air quality within the East Stroudsburg Senior High School North. 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 East Stroudsburg Senior High School North is primarily composed of a combination of masonry block units and wallboard walls, carpet and vinyl tile flooring, and drop ceiling tiles. Hillmann not did observe water staining or visible microbial growth on accessible surfaces.

Average temperature and relative humidity readings were 75.1°F and 36.9% respectively. With the exception of the Guidance office which was unconditioned with its average temperature and relative humidity being 85.7°F and 41.5% respectively.

Thirteen (13) airborne fungal spore sample were from Main Office, Guidance Office, and Classrooms 106, 114, 130, 205, 208, 214, 222, 228, 301, 303, and 307 located within East Stroudsburg Senior High School North. Laboratory analysis showed total indoor fungal spore concentrations and individual fungal genera were lower and/or comparable to the outdoor reference levels with the exception of the Guidance Office, which presented with elevated levels of *Penicillium/Aspergillus*.

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:

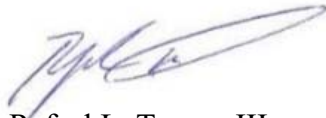
- Overall indoor/outdoor fungal genera identified are similar on the day of sampling. Raw spore counts less than ten (10) do not represent a statistically significant number. Therefore, the presence of one (1) spore of certain indicator genera (i.e. *Stachybotrys*) will not be grounds for failure.
- 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 the Guidance Office 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-0755
Enclosed: Laboratory Results

Date of Sampling: 07/31/2019 **Job #:** PH-0867
Date of Sample Receipt: 07/31/2019 **Order#:** 0719532
Client: EAST STROUDSBURG AREA SCHOOL DISTRICT
 50 VINE STREET
 EAST STROUDSBURG, PA 18301 **#Received:** 15



HILLMANN CONSULTING, L.L.C.
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 PHONE: (908) 688-7800 FAX: (908) 686-2636
 www.hillmannconsulting.com

Attn:
Collection Site: HIGH SCHOOL NORTH/ 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:	Main Office			Room 106			Room 114		
Lab ID#:	F49029			F49030			F49031		
Volume (Liters):	75			75			75		
Background Debris: *	Light			Light			Light		
	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**
Ascospores				1	61	12%	1	61	11%
Basidiospores	5	310	72%	6	370	75%	7	430	78%
Cladosporium							1	61	11%
Ganoderma	1	61	14%						
Penicillium/Aspergillus	1	61	14%	1	61	12%			
Total Spores/m3	430			490			550		
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.
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Signature:

Angelo Tango Laboratory Manager #Analyzed: 15



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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:	Room 130			Room 228			Room 222		
Lab ID#:	F49032			F49033			F49034		
Volume (Liters):	75			75			75		
Background Debris: *	Light			Light			Light		
	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**
Basidiospores	6	370	86%	3	180	50%	3	180	33%
Cladosporium				3	180	50%	5	310	56%
Myxo./Periconia/Rusts/Smuts	1	61	14%						
Polythrincium							1	61	11%
Total Spores/m3	430			360			550		
Analytical Sensitivity ***	61			61			61		

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Attn:
Collection Site: HIGH SCHOOL NORTH/ 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:	Room 214			Room 208			Guidence Office		
Lab ID#:	F49035			F49036			F49037		
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	1%
Ascospores				1	61	6%	10	610	7%
Basidiospores	3	180	100%	8	490	44%	50	3,100	37%
Cladosporium				6	370	34%	32	2,000	24%
Coprinus				1	61	6%	5	310	4%
Curvularia				1	61	6%			
Ganoderma							3	180	2%
Hyphal Fragments							2	120	1%
Penicillium/Aspergillus				1	61	6%	32	2,000	24%
Total Spores/m3	180			1,100			8,400		
Analytical Sensitivity ***	61			61			61		

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Attn:
Collection Site: HIGH SCHOOL NORTH/ 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:	Room 205			Room 301			Room 303		
Lab ID#:	F49038			F49039			F49040		
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	6	370	47%	15	920	52%	5	310	34%
Cladosporium	3	180	23%	5	310	17%	8	490	53%
Ganoderma	1	61	8%						
Penicillium/Aspergillus	3	180	23%	7	430	24%			
Polythrincium				2	120	7%			
Total Spores/m3	790			1,800			920		
Analytical Sensitivity ***	61			61			61		

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Attn:

Collection Site: HIGH SCHOOL NORTH/ 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:	Room 307			Outside			Outside		
Lab ID#:	F49041			F49042			F49043		
Volume (Liters):	75			75			75		
Background Debris: *	Light			Light			Light		
	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**
Ascospores	1	61	17%	7	430	3%	7	430	4%
Basidiospores	3	180	50%	51	3,100	20%	121	7,380	65%
Cladosporium	1	61	17%	176	10,700	70%	39	2,400	21%
Coprinus				5	310	2%	6	370	3%
Curvularia				1	61	0%			
Epicoccum							1	61	1%
Ganoderma				2	120	1%	3	180	2%
Hyphal Fragments				1	61	0%			
Myxo./Periconia/Rusts/Smuts				1	61	0%	4	240	2%
Penicillium/Aspergillus	1	61	17%	5	310	2%	5	310	3%
Polythrincium				1	61	0%			
Xylariaceae				1	61	0%	1	61	1%
Total Spores/m3	360			15,300			11,400		
Analytical Sensitivity ***	61			61			61		

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Angelo Tango Laboratory Manager #Analyzed: 15



Fungal Spore Chain-of-Custody and Analysis Request Form

Date of Sampling: 7/31/19

Job #: PH0867

Date of Sample Receipt: _____

Order #: 0719532

Client: East Stevedock bldg SP

Location: High school North

Field Hygienist: J24 Hilt+elciter



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f49029

Sample ID Lab ID	Sample Type (Air, Bulk, Tape)	Air-Flow Time		Air-Flow Rate		Air Volume(L) or Area (ln) ²	Sample Location Description	Turnaround Time					Comments	
		Start	End	Start	End			3-8hr	8-12hr	24hr	48hr	72hr		5-7 day
IH02	Air	8:25	8:30	15	15	75L	M01h OFFICE							
IH13		8:32	8:37			75L	106							
IH14		8:40	8:45			75L	114							
IH15		8:47	8:52			75L	130							
IH16		9:55	10:00			75L	228							
IH17		10:02	10:07			75L	222							
IH18		10:10	10:15			75L	214							
IH19		10:18	10:23			75L	208							
IH20		10:25	10:30			75L	9V dance OFFICE							
IH21		10:32	10:38			75L	205							
IH22		10:41	10:46			75L	301							
IH23		10:48	10:53			75L	303							
IH24		10:55	11:00			75L	307							
IH25		11:10	11:15			75L	OUTSIDE							
IH26		11:15	11:20			75L	OUTSIDE							

Sampled By:	Transported By:	Received By:	Prepared By:	Analyzed By:
Name: <u>J24 Hilt+elciter</u>		<u>900 Chris Barbay</u>		<u>[Signature]</u>
Signature: <u>[Signature]</u>		<u>7-31-19</u>		<u>7/31/19</u>
Date:				