HILLMANN
CONSULTING

August 19, 2019

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

RE: Microbial Investigation – Air Quality Sampling Addendum
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.

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 the Guidance Office presented with elevated levels of *Penicillum/Aspergillus*.

Based upon the findings and laboratory results, further investigation of the Guidance Office was recommended to identify potential sources of water intrusion and assess if mold is actively proliferating within the space. The District stated that it would perform a thorough horizontal surface cleaning of the Guidance Office complete with HEPA-vacuuming to address the elevated spore concentrations prior to the reinspection.

On August 16, 2019, Alyson Albertson returned to the school to investigate and resample the Guidance Office. The parameters for the investigation included a visual inspection and the collection of one airborne fungal spore sample within the subject space.

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 space.

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 space to conduct airborne microbial quality assurance sampling.

The following observations were made on August 16, 2019:

- No suspect mold growth was observed within the Guidance Office.
- Elevated moisture readings within building materials were not identified.
- Hillmann was informed of that the roof of the school is planned to be replaced. Roof leaks had previously occurred in the hallway near the Guidance Office and water was reported to make its way to the Guidance Office.

Laboratory analysis showed total indoor fungal spore concentrations and individual fungal genera following the procedures implemented by the District 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/m^3 of air. Exceptions will be made depending on conditions, fungal genera identified, and outlying factors.

CONCLUSIONS & RECOMMENDATIONS

Based upon the findings and laboratory results, actions taken by the District have mitigated the elevated spore concentrations within the subject 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

Alyson Albertson, LEED Green Associate
Environmental Specialist

File: PH-0867
Enclosed: Laboratory Results

Date of Sampling: 08/16/2019
Date of Sample Receipt: 08/16/2019
Client: EAST STROUDSBURG AREA SCHOOL DISTRICT
50 VINE STREET
EAST STROUDSBURG, PA 18301

Attn:

Collection Site: HIGH SCHOOL NORTH

Field Technician: Alyson Albertson
Date of Analysis: 08/16/2019
Date of Issue: 08/16/2019
Sampling Method: Air-O-Cell

Job #: PH-0867
Order#: 0819228
#Received: 2

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SPORE TRAP REPORT: Method (Fungal Spore SOP)

Location:	Guidance Office			Outside					
Lab ID#:	F49384			F49385					
Volume (Liters):	75			75					
Background Debris: *	Light			Light					
	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**
Ascospores				4	240	2%			
Basidiospores	5	310	56%	27	1,600	13%			
Cladosporium	1	61	11%	176	10,700	84%			
Curvularia				3	180	1%			
Ganoderma				1	61	0%			
Helicomyces	1	61	11%						
Penicillium/Aspergillus	1	61	11%						
Pithomyces	1	61	11%						
Total Spores/m3	**550**			**12,800**					
Analytical Sensitivity * **	**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.

Signature: 

Angelo Tango Laboratory Manager #Analyzed: 2

Fungal Spore Chain-of-Custody and Analysis Request Form

Date of Sampling: 8/16/19 Job #: PH-0867

Date of Sample Receipt: _____ Order #: 0819228

Client: East Stroudsburg Area School District

Location: High School North

Field Hygenist: Alysen Albertson (aalbertson@hillmannconsulting.com)

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Sample ID / Lab ID	Sample Type (Air, Bulk, Tape)	Air-Flow Time Start	Air-Flow Time End	Air-Flow Rate Start	Air-Flow Rate End	Air Volume(L) or Area (in)^2	Sample Location Description	Turnaround Time 3-6hr	8-12hr	24hr	48hr	72hr	5-7 day	Comments
HSN-01 F49364	Air	0814	0819	15	15	75.0	Guidance Office			X				
HSN-02	‡	0906	0911	‡	‡	‡	Outside			X				
~~HSN-03~~	‡			‡	‡	‡	Outside			X				(AA)

Sampled By:	Transported By:	Received By: Prepared By:	Analyzed By:
Name: Alysen Albertson	Alysen Albertson		
Signature:			
Date: 8/16/19	8/16/19	1100 8/16/19	8/16/19