



May 7, 2019

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

**RE: Microbial Investigation – Air Quality Sampling**  
East Stroudsburg Elementary School  
93 Independence Road  
East Stroudsburg, Pennsylvania 18301  
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, Mr. John Murphy, CMI, conducted a Microbial Investigation and Air Quality Sampling of the Café and Classrooms 309, 344, 222, 229, 208, 121, 132, and 153 located within East Stroudsburg Elementary School. This investigation is part of a biannual sampling plan in order to document air quality within East Stroudsburg 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.

---

**Your Property. Our Priority.**  
*Making a better future for the communities we touch.*  
[www.HillmannConsulting.com](http://www.HillmannConsulting.com)

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

Average temperature and relative humidity readings were 70.8°F and 31.8% respectively.

Nine (9) airborne fungal spore samples were from the Café and Classrooms 309, 344, 222, 229, 208, 121, 132, and 153 within East Stroudsburg Elementary School. 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 Classroom 344 which revealed elevated levels of *Aspergillus/Penicillium* when compared to 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<sup>3</sup> of air. Exceptions will be made depending on conditions, fungal genera identified, and outlying factors.

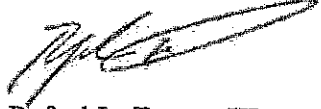
## CONCLUSIONS & RECOMMENDATIONS

Based upon the findings and laboratory results, the subject spaces do not appear to be facilitating microbial growth at this time; with the exception of Classroom 344.

Hillmann recommends a comprehensive investigation within Classroom 344 to determine the source for elevated levels of *Aspergillus/Penicillium*.

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



John Murphy  
Industrial Hygienist, CMI

File: PH-0755  
Enclosed: Laboratory Results

Date of Sampling: 04/17/2019 Job #: PH-0755  
 Date of Sample Receipt: 04/19/2019 Order#: 0419378  
 Client: EAST STROUDSBURG AREA SCHOOL DISTRICT  
 50 VINE STREET  
 EAST STROUDSBURG, PA 18301 #Received: 11



**HILLMANN  
CONSULTING**

HILLMANN CONSULTING, L.L.C.  
 ENVIRONMENTAL CONSULTING, LAB SERVICES  
 1600 ROUTE 22 EAST  
 P.O. BOX 1597  
 UNION, NEW JERSEY 07083-1597  
 PHONE: (908) 688-7800 FAX: (908) 686-2636  
 www.hillmannconsulting.com

Attn:  
 Collection Site: EAST STROUDSBURG/ PA/ EAST STROUDSBURG  
 ELEMENTRY  
 Field Technician: John Murphy  
 Date of Analysis: 04/19/2019  
 Date of Issue: 04/22/2019  
 Sampling Method: Air-O-Cell

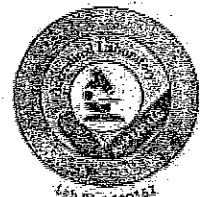
**SPORE TRAP REPORT: Method (Fungal Spore SOP)**

Location:	Room 309			Room 344			Room 222		
Lab ID#:	F48162			F48163			F48164		
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	2%			
Basidiospores	1	61	33%	1	61	2%	1	61	33%
Hyphal Fragments	1	61	33%				1	61	33%
Penicillium/Aspergillus	1	61	33%	39	2,400	95%	1	61	33%
<b>Total Spores/m3</b>	<b>180</b>			<b>2,500</b>			<b>180</b>		
<b>Analytical Sensitivity ***</b>	<b>61</b>			<b>61</b>			<b>61</b>		

\* 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: 11



Date of Sampling: 04/17/2019 Job #: PH-0755  
 Date of Sample Receipt: 04/19/2019 Order#: 0419378  
 Client: EAST STROUDSBURG AREA SCHOOL #Received: 11  
 DISTRICT  
 50 VINE STREET  
 EAST STROUDSBURG, PA 18301



**HILLMANN  
CONSULTING**

HILLMANN CONSULTING, L.L.C.  
 ENVIRONMENTAL CONSULTING, LAB SERVICES  
 1600 ROUTE 22 EAST  
 P.O. BOX 1597  
 UNION, NEW JERSEY 07083-1597  
 PHONE: (908) 688-7800 FAX: (908) 686-2636  
 www.hillmannconsulting.com

Attn:  
 Collection Site: EAST STROUDSBURG/ PA/ EAST STROUDSBURG  
 ELEMENTRY  
 Field Technician: John Murphy  
 Date of Analysis: 04/19/2019  
 Date of Issue: 04/22/2019  
 Sampling Method: Air-O-Cell

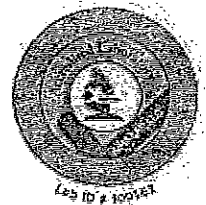
**SCOPE TRAP REPORT: Method (Fungal Spore SOP)**

Location:	Room 229			Room 208			Room 121		
Lab ID#:	F48165			F48166			F48167		
Volume (Liters):	75			75			75		
Background Debris: *	Light			Light			Light		
	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**
Hyphal Fragments							1	61	100%
Penicillium/Aspergillus	2	120	100%						
<b>Total Spores/m3</b>	120			No Spores Detected			61		
<b>Analytical Sensitivity ***</b>	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: 11



Date of Sampling: 04/17/2019 Job #: PH-0755  
 Date of Sample Receipt: 04/19/2019 Order#: 0419378  
 Client: EAST STROUDSBURG AREA SCHOOL DISTRICT #Received: 11  
 50 VINE STREET  
 EAST STROUDSBURG, PA 18301



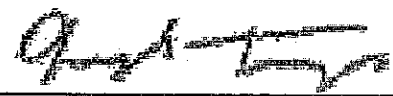
HILLMANN CONSULTING, L.L.C.  
 ENVIRONMENTAL CONSULTING, LAB SERVICES  
 1600 ROUTE 22 EAST  
 P.O. BOX 1597  
 UNION, NEW JERSEY 07083-1597  
 PHONE: (908) 688-7800 FAX: (908) 686-2636  
 www.hillmannconsulting.com

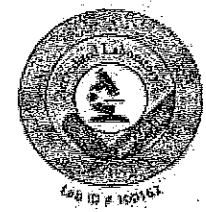
Attn:  
 Collection Site: EAST STROUDSBURG/ PA/ EAST STROUDSBURG ELEMENTRY  
 Field Technician: John Murphy  
 Date of Analysis: 04/19/2019  
 Date of Issue: 04/22/2019  
 Sampling Method: Air-O-Cell

SPORE TRAP REPORT: Method (Fungal Spore SOP)

Location:	Room 132			Room 153			Cafe		
Lab ID#:	F48168			F48169			F48170		
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	6%	1	61	8%
Baskidiospores	3	180	75%	4	240	25%	6	370	51%
Hyphal Fragments				2	120	12%	1	61	8%
Penicillium/Aspergillus	1	61	25%	9	550	57%	4	240	33%
<b>Total Spores/m3</b>	<b>240</b>			<b>970</b>			<b>730</b>		
<b>Analytical Sensitivity ***</b>	<b>61</b>			<b>61</b>			<b>61</b>		

\* 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: 11



Date of Sampling: 04/17/2019 Job #: PH-0755  
 Date of Sample Receipt: 04/19/2019 Order#: 0419378  
 Client: EAST STROUDSBURG AREA SCHOOL DISTRICT  
 50 VINE STREET  
 EAST STROUDSBURG, PA 18301 #Received: 11




HILLMANN CONSULTING, L.L.C.  
 ENVIRONMENTAL CONSULTING, LAB SERVICES  
 1600 ROUTE 22 EAST  
 P.O. BOX 1597  
 UNION, NEW JERSEY 07083-1597  
 PHONE: (908) 688-7800 FAX: (908) 686-2636  
 www.hillmannconsulting.com

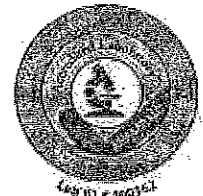
Attn:  
 Collection Site: EAST STROUDSBURG/ PA/ EAST STROUDSBURG ELEMENTRY  
 Field Technician: John Murphy  
 Date of Analysis: 04/19/2019  
 Date of Issue: 04/22/2019  
 Sampling Method: Air-O-Cell

**SPORE TRAP REPORT: Method (Fungal Spore SOD)**

Location:	Outside			Outside					
	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**
Lab ID#:	F48171			F48172					
Volume (Liters):	75			75					
Background Debris: *	Light			Light					
Ascospores				1	61	6%			
Basidiospores	8	490	50%	10	610	63%			
Cladosporium				3	180	19%			
Hyphal Fragments	1	61	6%						
Penicillium/Aspergillus	7	430	44%	2	120	12%			
<b>Total Spores/m3</b>	<b>980</b>			<b>970</b>					
<b>Analytical Sensitivity ***</b>	<b>61</b>			<b>61</b>					

\* 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: 11





HILLMANN  
CONSULTING

May 16, 2019

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

**RE: Microbial Investigation – Classroom 344**  
East Stroudsburg Elementary School  
93 Independence Road  
East Stroudsburg, Pennsylvania 18301  
Hillmann Project Number: PH-0755

Dear Ms. Lopez:

Thank you for retaining Hillmann Consulting, LLC (Hillmann) to address your environmental concerns. On May 13, 2019, Mr. John Murphy, CMI, conducted a follow up Microbial Investigation and Air Quality Sampling of Classroom 344 located within the East Stroudsburg Elementary School. This investigation is part of a biannual sampling plan in order to document air quality within East Stroudsburg Elementary School. The parameters for the investigation included a visual inspection and the collection of one airborne fungal spore sample within the subject space listed above.

On April 17, 2019, Mr. John Murphy, CMI, conducted a Microbial Investigation and Air Quality Sampling of the Café and Classrooms 309, 344, 222, 229, 208, 121, 132, and 153 located within East Stroudsburg Elementary School. 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 Classroom 344 which revealed elevated levels of *Aspergillus/Penicillium* when compared to outdoor reference levels. According to District representatives, the classroom was thoroughly cleaned prior to the reinspection.

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 completed to reassess indoor airborne spore concentrations within Classroom 344.

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

Average temperature and relative humidity readings were 70.1°F and 42.3% respectively.

One (1) airborne fungal spore sample was collected from Classroom 344 within East Stroudsburg Elementary School. Laboratory analysis showed total indoor fungal spore concentrations and individual fungal genera were lower and/or comparable to the outdoor reference levels. The cleaning performed by the District was effective in reducing the indoor fungal spore concentrations within Classroom 344.

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<sup>3</sup> of air. Exceptions will be made depending on conditions, fungal genera identified, and outlying factors.

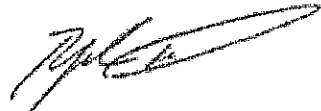
### **CONCLUSIONS & RECOMMENDATIONS**

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

Hillmann has no further recommendations 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



John Murphy  
Industrial Hygienist, CMI

File: PH-0755  
Enclosed: Laboratory Results

Date of Sampling: 05/13/2019 Job #: PH-0755  
 Date of Sample Receipt: 05/14/2019 Order#: 0519336  
 Client: EAST STROUDSBURG AREA SCHOOL DISTRICT #Received: 3  
 50 VINE STREET  
 EAST STROUDSBURG, PA 18301



**HILLMANN  
CONSULTING**

HILLMANN CONSULTING, L.L.C.  
 ENVIRONMENTAL CONSULTING, LAB SERVICES  
 1600 ROUTE 22 EAST  
 P.O. BOX 1597  
 UNION, NEW JERSEY 07083-1597  
 PHONE: (908) 688-7800 FAX: (908) 686-2636  
 www.hillmannconsulting.com

Attn:  
 Collection Site: EAST STROUDSBURG ELEMENTARY  
 Field Technician: John Murphy  
 Date of Analysis: 05/14/2019  
 Date of Issue: 05/14/2019  
 Sampling Method: Air-O-Cell

**SPORE TRAP REPORT: Method (Fungal Spore SOP)**

Location:	Classroom 344			Outside			Outside		
Lab ID#:	F48382			F48383			F48384		
Volume (Liters):	75			75			75		
Background Debris: *	Light			Light			Light		
	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**	raw ct.	spores/m3	%**
Ascospores				5	320	2%	5	320	2%
Basidiospores	2	130	100%	214	13,700	97%	263	16,800	97%
Coprinus							2	130	1%
Diatrypaceae				1	64	0%			
<b>Total Spores/m3</b>	<b>130</b>			<b>14,100</b>			<b>17,300</b>		
<b>Analytical Sensitivity ***</b>	<b>64</b>			<b>64</b>			<b>64</b>		

\* 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  
 Dylan Jaycox, Laboratory Director #Analyzed: 3

