HEALTH, SAFETY & RISK MANAGEMENT
Christopher Naney
Program Coordinator

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Environmental Hygiene Report

Submitted to: Mr. John Willabay
Director of Buildings and Grounds
Poughkeepsie City School District

Prepared by: Christopher Naney, Environmental Compliance Coordinator

Location	Clinton Elementary School
Project No.	012-1718
Site Visit	September 27, 2017
Report Date	October 19, 2017
Investigator	Christopher Naney #MA00198

This survey is strictly limited to that which is identified in the Project Scope **of the report. Dutchess County BOCES *Health, Safety &Risk Management* does not assert that all potential health or safety hazards at this site were evaluated during this investigation.**

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Executive Summary

On September 7, 2017 a visual inspection of Room 28, the Music Room, in the Clinton Elementary School found massive fungal amplification on various items throughout the room. Previous sampling for total fungal structures in this room had shown elevated levels of Penicillium/Aspergillus type spores in this area and our office had suggested a thorough cleaning of this room prior to resampling, (see **Report # 007-1718**). On September 27, 2017 a visual inspection showed that the room had been cleaned, no evidence of active fungal growth was observed and the results of air sampling indicated lower fungal spore levels.

Please see the **Comments & Recommendations** section of this report.

Project Scope

Visually inspect Room 28 in the Clinton Elementary School for proper cleaning and the presence of fungal growth. Collect an air sample for total fungal structures within the rom and a sample outside the building for comparison. Review the data and information and prepare a written report for the Poughkeepsie City School District.

Materials & Methods

Air samples for total fungal structures were collected using a BIO-PUMP™ and 37-mm *Air-O-Cell*™ air sampling cassettes; both purchased from Zefon, International. This pump was calibrated to collect 15 liters per minute (lpm) of air throughout the 6- minute sampling period. All samples were securely packaged and shipped overnight via UPS to EMLab P&K Microbiology Services in Marlton, NJ for analysis.

Results Summary

Air Samples for Total Fungal Structures

September 27, 2017

Sample	Location	S/m^3*	Predominant Taxa	%
CLES092717-1	Music Room	800	Ascospores Basidiospores Penicillium/Aspergillus types Smuts, Periconia, Myxomycetes	11 61 22 6
CLES092717-2	Outside Building	12,000	Ascospores Basidiospores Cladosporium Ganoderma Smuts, Periconia, Myxomycetes	7 79 40 5 <1

***S/m3- Fungal structures per cubic meter of air**

Discussion

Bioaerosols, airborne particles that are living or originate from living organisms, are ubiquitous in nature and may be modified by human activities. ***(2)*** They become an occupational hygiene concern when, as a result of indoor sources, the kinds and levels of microorganisms inside a building or facility are different than those in the surrounding outdoor environment. Microbiological growth inside buildings is normally the result of water intrusion (e.g. from roof leaks), standing water, or high humidity and dew point. Bioaerosols of concern include fungi, bacteria, viruses, allergens, and other metabolic by products. Locating sources of bioaerosols inside buildings is heavily dependent upon good investigative techniques. Such techniques include, but are not wholly dependent upon, sampling. Sampling for bioaerosols includes air sampling and source (e.g. bulk, swab, tape-lift) sampling.

Comments & Recommendations

On September 7, 2017 a visual inspection of Room 28, the Music Room, in the Clinton Elementary School found massive fungal amplification on various items throughout the room. Previous sampling for total fungal structures in this room had shown elevated levels of Penicillium/Aspergillus type spores in this area and our office had suggested a thorough cleaning of this room prior to resampling, (see **Report # 007-1718**). On September 27, 2017 a visual inspection showed that the room had been cleaned, no evidence of active fungal growth was observed and the results of air sampling indicated lower fungal spore levels.

We have the following recommendations:

- ASHRAE 62-2001 calls for 15 cubic feet per minute (cfm) of outside air per person in a classroom. The district should have a qualified maintenance mechanic trouble shoot the room's ventilation system to bring it into compliance with this standard.

- Dehumidifiers should continue to be used to moderate moisture in this area to between 40% - 60% relative humidity.

- All surfaces and furnishings of Room 28 should be regularly cleaned and the room should be examined for fungal growth and moisture intrusion. This, and all school rooms, should be subject to regular and periodic cleanings.

Reference

1) **University of Minnesota:** *Fungal Glossary.* Minneapolis, MN: University of Minnesota, Department of Environmental Health & Safety, 2004

2) **Yang, Chin:** *Basics in Investigation of Microbiological Contamination in Buildings.* Cherry Hill, NJ: P&K Microbiology Services, 1996.

3) **Yang, Chin:** *Fungi in the Air: What do Results of Fungal Air Samples Mean?*Cherry Hill, NJ: P&K Microbiology Services, 2003.

APPENDIX A

Laboratory Data

EMLab P&K
A TestAmerica Company

Report for:

Mr. Christopher Naney
Dutchess County BOCES
5 BOCES Road
SPC Bldg., Room 140
Poughkeepsie, NY 12601

Regarding: Project: CLES092717; Clinton ES Music Room
EML ID: 1801771

Approved by:

Technical Manager
Ariunaa Jalsrai

Dates of Analysis:
Spore trap analysis: 10-02-2017

Service SOPs: Spore trap analysis (EM-MY-S-1038)
AIHA-LAP, LLC accredited service, Lab ID #103005

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. Due to the nature of the analyses performed, field blank correction of results is not applied. The results relate only to the items tested.

EMLab P&K ("the Company") shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the Company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.

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3000 Lincoln Drive East, Suite A, Marlton, NJ 08053
(866) 871-1984 Fax (856) 334-1040 www.emlab.com

Client: Dutchess County BOCES
C/O: Mr. Christopher Naney
Re: CLES092717; Clinton ES Music Room

Date of Sampling: 09-27-2017
Date of Receipt: 09-28-2017
Date of Report: 10-02-2017

SPORE TRAP REPORT: NON-VIABLE METHODOLOGY

Location:	CLES092717-1: Music Room		CLES092717-2: Outside Building	
Comments (see below)	None		None	
Lab ID-Version‡:	8430102-1		8430103-1	
Analysis Date:	10/02/2017		10/02/2017	
	raw ct.	spores/m3	raw ct.	spores/m3
Ascospores	2	89	19	840
Basidiospores	11	490	219	9,700
Chaetomium				
Cladosporium			27	1,200
Curvularia				
Epicoccum				
Fusarium				
Ganoderma			13	580
Myrothecium				
Nigrospora				
Other colorless				
Penicillium/Aspergillus types†	4	180		
Pithomyces				
Rusts				
Smuts, Periconia, Myxomycetes	4	44	3	33
Stachybotrys				
Stemphylium				
Torula				
Ulocladium				
Zygomycetes				
Background debris (1-4+)††	1+		1+	
Hyphal fragments/m3	< 11		< 11	
Pollen/m3	< 11		< 11	
Skin cells (1-4+)	1+		< 1+	
Sample volume (liters)	90		90	
§ TOTAL SPORES/m3		800		12,000

Comments:

Spore types listed without a count or data entry were not detected during the course of the analysis for the respective sample, indicating a raw count of <1 spore.
† The spores of *Aspergillus* and *Penicillium* (and others such as *Acremonium, Paecilomyces*) are small and round with very few distinguishing characteristics. They cannot be differentiated by non-viable sampling methods. Also, some species with very small spores are easily missed, and may be undercounted.
††Background debris indicates the amount of non-biological particulate matter present on the trace (dust in the air) and the resulting visibility for the analyst. It is rated from 1+ (low) to 4+ (high). Counts from areas with 4+ background debris should be regarded as minimal counts and may be higher than reported. It is important to account for samples volumes when evaluating dust levels.

The analytical sensitivity is the spores/m^3 divided by the raw count, expressed in spores/m^3. The limit of detection is the analytical sensitivity (in spores/m^3) multiplied by the sample volume (in liters) divided by 1000 liters.

For more information regarding analytical sensitivity, please contact QA by calling the laboratory.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".
§ Total Spores/m3 has been rounded to two significant figures to reflect analytical precision.

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Mr. Christopher Naney
Dutchess County BOCES
5 BOCES Road
SPC Bldg., Room 140
Poughkeepsie, NY 12601

Regarding: Project: CLES092717; Clinton ES Music Room
EML ID: 1801771

Approved by:

Technical Manager
Ariunaa Jalsrai

Dates of Analysis:
Spore trap analysis: 10-02-2017

Service SOPs: Spore trap analysis (EM-MY-S-1038)
AIHA-LAP, LLC accredited service, Lab ID #103005

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. Due to the nature of the analyses performed, field blank correction of results is not applied. The results relate only to the items tested.

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Date of Sampling: 09-27-2017
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SPORE TRAP REPORT: NON-VIABLE METHODOLOGY

Lab ID-Version‡ Location	Air vol. (L)	Background Debris	Counts of Fungal Structures	Fungal Structures/m3	Presumptive Fungal ID (raw counts*)	Percentage
8430102-1 10/02/2017	90	1+	8	89	Ascospores (2)	11
CLES092717-1			44	490	Basidiospores (11)	61
Music Room			16	180	Penicillium/Aspergillus types (4)	22
			4	44	Smuts, Periconia, Myxomycetes (4)	6
				§ Total: 800		
Comments:						
8430103-1 10/02/2017	90	1+	76	840	Ascospores (19)	7
CLES092717-2			876	9,700	Basidiospores (219)	79
Outside Building			108	1,200	Cladosporium (27)	10
			52	580	Ganoderma (13)	5
			3	33	Smuts, Periconia, Myxomycetes (3)	< 1
				§ Total: 12,000		
Comments:						

Background debris indicates the amount of non-biological particulate matter present on the trace (dust in the air) and the resulting visibility for the analyst. It is rated from 1+ (low) to 4+ (high). Counts from areas with 4+ background debris should be regarded as minimal counts and may be higher than reported. It is important to account for samples volumes when evaluating dust levels.

The analytical sensitivity is the spores/m^3 divided by the raw count, expressed in spores/m^3. The limit of detection is the analytical sensitivity (in spores/m^3) multiplied by the sample volume (in liters) divided by 1000 liters.

*All AIHA accredited laboratories are required to provide raw counts of fungal structures in spore trap reports. These counts are defined by AIHA as "Actual count without extrapolation or calculation". The number in parentheses next to the fungal type represents the exact number (or raw count) of fungal structures observed.

‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".
§ Total has been rounded to two significant figures to reflect analytical precision.

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Date of Sampling: 09-27-2017
Date of Receipt: 09-28-2017
Date of Report: 10-02-2017

MoldRANGE™, Local Climate; Extended Outdoor Comparison

Outdoor Location: CLES092717-2, Outside Building

Fungi Identified	Outdoor data	Typical Outdoor Data for: September in New York† EMLab Local Climate code¹ A Annual Temp, B Elev., A Rain, A Temp. Range (n‡=32)						Typical Outdoor Data for: The entire year in New York† EMLab Local Climate code¹ A Annual Temp, B Elev., A Rain, A Temp. Range (n‡=183)					
Project zip code 12601	spores/m3	very low	low	med	high	very high	freq %	very low	low	med	high	very high	freq %
Generally able to grow indoors*													
Alternaria	-	-	-	-	-	-	47	11	13	30	80	130	37
Bipolaris/Drechslera group	-	-	-	-	-	-	13	-	-	-	-	-	4
Chaetomium	-	-	-	-	-	-	6	-	-	-	-	-	1
Cladosporium	1,200	210	270	660	2,700	4,600	> 99	51	80	320	1,200	2,600	81
Curvularia	-	-	-	-	-	-	34	11	12	22	54	92	15
Ganoderma	580	-	-	-	-	-	34	43	48	130	220	300	13
Nigrospora	-	-	-	-	-	-	25	-	-	-	-	-	9
Penicillium/Aspergillus types	-	-	-	-	-	-	38	40	53	110	320	650	38
Stachybotrys	-	-	-	-	-	-	< 3	-	-	-	-	-	< 1
Torula	-	-	-	-	-	-	13	-	-	-	-	-	4
Seldom found growing indoors**													
Ascospores	840	90	280	610	1,300	2,200	94	44	110	430	1,100	2,100	69
Basidiospores	9,700	470	1,300	3,200	11,000	13,000	> 99	53	130	1,200	6,800	11,000	93
Rusts	-	-	-	-	-	-	47	11	11	13	45	77	21
Smuts, Periconia, Myxomycetes	33	11	19	40	93	190	84	11	13	33	79	160	57
§ TOTAL SPORES/m3	12,000												

¹EMLab Local Climate codes are a climate classification scheme for statewide geographic areas. The MoldRANGE™ Local Climate report uses the sampling location zip code to identify the EMLab Local Climate code in that area. Using information available from the NOAA weather database, the EMLab Local Climate code sharpens the precision of the MoldRANGE™reporting system, providing more reliable estimates of the range and average concentrations of the different airborne fungal spore types for each region. Additional information on the EMLab Local Climate code system can be found on the last page of this report.

†The Typical Outdoor Data represents the typical outdoor spore levels across the state for the time period and EMLab Local Climate code indicated. The last column represents the frequency of occurrence. The very low, low, med, high, and very high values represent the 10, 20, 50, 80, and 90 percentile values of the spore type when it is detected. For example, if the frequency of occurrence is 63% and the low value is 53, it would mean that the given spore type is detected 63% of the time and, when detected, 20% of the time it is present in levels above the detection limit and below 53 spores/m3. These values are updated periodically and if not enough data is available to make a statistically meaningful assessment, it is indicated with a dash.

‡ n is the sample size used to calculate the MoldRANGE™ Local Climate data summarized in the table.

* The spores in this category are generally capable of growing on wet building materials in addition to growing outdoors. Building related growth is dependent upon the fungal type, moisture level, type of material, and other factors. *Cladosporium* is one of the predominant spore types worldwide and is frequently present in high numbers. *Penicillium/Aspergillus* species colonize both outdoor and indoor wet surfaces rapidly and are very easily dispersed. Other genera are usually present in lesser numbers.

** These fungi are generally not found growing on wet building materials. For example, the rusts and smuts are obligate plant pathogens. However, in each group there are notable exceptions. For example, agents of wood decay are members of the basidiomycetes and high counts of a single morphological type of basidiospore on an inside sample should be considered significant.

§ Total Spores/m3 has been rounded to two significant figures to reflect analytical precision.

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Re: CLES092717; Clinton ES Music Room

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Understanding EMLab Local Climate Codes

Outdoor airborne spore concentrations are strongly influenced by climate and weather patterns, often resulting in pronounced seasonal and diurnal cycles (Burge 1995). The seasonal climatic changes directly affect the growth cycle of plants, thereby influencing fungal growth, spore maturation, and release cycles. By evaluating outdoor spore concentrations across similar climatic zones rather than for the state as a whole, it is possible to provide a more representative estimate of typical outdoor spore levels and frequency of occurrence for different airborne fungal spore types in a given area.

The EMLab Local Climate code system is a novel and patent pending classification system that uses data from the NOAA - National Oceanic and Atmospheric Administration database to define unique climate regions by state. The following local climate variables, for each statewide zip code, are obtained from NOAA and assigned a letter code of A (above the statewide average for that variable) or B (below the statewide average for that variable):

1. Annual High Temperature
2. Elevation
3. Rainfall/Precipitation
4. Monthly Temperature Range

The result is a 4-character code assigned to each statewide zip code, referred to as the Local Climate Code. Below are some examples of decoded Local Climate Codes:

AAAA = Above avg. Annual High Temperature, Above avg. Elevation, Above avg. Rainfall/Precipitation, Above avg. Monthly Temperature Range
AABB = Above avg. Annual High Temperature, Above avg. Elevation, Below avg. Rainfall/Precipitation, Below avg. Monthly Temperature Range
BBAA = Below avg. Annual High Temperature, Below avg. Elevation, Above avg. Rainfall/Precipitation, Above avg. Monthly Temperature Range

The actual outdoor air sample data from matching local climate codes in each state are then compiled in a manner relating typical spore concentrations and frequency of occurrence.

The NOAA local climate variables were selected by mapping data points from a subset of approximately 145,000 weather and geographic database entries to over 80,000 outdoor spore trap samples with known zip codes and assessing them using orthogonal array experimental design techniques. The results were then compared to the typical ranges of spore types found when grouping zip codes using the Koppen-Geiger climatic classification system; a commonly used climatic system that provides an objective numerical definition in terms of climatic elements such as temperature, rainfall, and other seasonal characteristics . The EMLab Local Climate codes showed improved granularity and refinement of the zip code groupings, implying a better representation of the expected range of spore types to be found within an individual zip code.

The values on this report were calculated by obtaining the four variables listed above from the over 585 million data points of weather and geographic information available in the NOAA database, and determining the frequencies and percentile values of spore types by utilizing over 180,000 EMLab P&K outdoor spore trap samples with known zip codes.

This report groups statewide zip codes in relation to these EMLab Local Climate codes and summarizes MoldRANGE™ data by month and year within each EMLab Local Climate code.

References:

Burge, Harriet, A. Bioaerosols: Boca Raton: Lewis Publishers, pp. 163-171, 1995.

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MoldSTAT™: Supplementary Statistical Spore Trap Report

Outdoor Summary: CLES092717-2: Outside Building

Species detected	Outdoor sample spores/m3 (<100 / 1K / 10K / >100K)	Typical outdoor ranges (North America)	Freq. %
Ascospores	840	13 - 210 - 6,300	77
Basidiospores	9,700	13 - 450 - 23,000	91
Cladosporium	1,200	27 - 480 - 9,200	90
Ganoderma	580	20 - 110 - 670	2
Penicillium/Aspergillus types	< 11	13 - 180 - 2,600	67
Smuts, Periconia, Myxomycetes	33	7 - 53 - 1,100	65
Total	12,000		

The "Typical outdoor ranges" and "Freq. %" columns show the typical low, medium, and high spore counts per cubic meter and the frequency of occurrence for the given spore type. The low, medium, and high values represent the 2.5, 50, and 97.5 percentile values when the spore type is detected. For example, if the low value is 53 and the frequency of occurence is 63%, it would mean that we typically detect the given spore type on 63 percent of all outdoor samples and, when detected, 2.5% of the time it is present in levels below 53 spores/m3.

Indoor Samples

Location: CLES092717-1: Music Room

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)
Result: 6%	dF: N/A Result: N/A Critical value: N/A Inside Similar: N/A	Result: 0.6667	dF: 6 Result: 0.1000 Critical value: 0.7714 Outside Similar: No	Score: 129 Result: Low

Species Detected	Spores/m3 (<100 / 1K / 10K / >100K)
Ascospores	89
Basidiospores	490
Penicillium/Aspergillus types	180
Smuts, Periconia, Myxomycetes	44
Total	800

* The Friedman chi-square statistic is a non-parametric test that examines variation in a set of data (in this case, all indoor spore counts). The null hypothesis (H0) being tested is that there is no meaningful difference in the data for all indoor locations. The alternative hypothesis (used if the test disproves the null hypothesis) is that there is a difference between the indoor locations. The null hypothesis is rejected when the result of the test is greater than the critical value. The critical value that is displayed is based on the degrees of freedom (dF) of the test and a significance level of 0.05.

** An agreement ratio is a simple method for assessing the similarity of two samples (in this case the indoor sample and the outdoor summary) based on the spore types present. A score of one indicates that the types detected in one location are the same as that in the other. A score of zero indicates that none of the types detected indoors are present outdoors. Typically, an agreement of 0.8 or higher is considered high.

*** The Spearman rank correlation is a non-parametric test that examines correlation between two sets of data (in this case the indoor location and the outdoor summary). The null hypothesis (H0) being tested is that the indoor and outdoor samples are unrelated. The alternative hypothesis (used if the test disproves the null hypothesis) is that the samples are similar. The null hypothesis is rejected when the result of the test is greater than the critical value. The critical value that is displayed is based on the degrees of freedom (dF) of the test and a significance level of 0.05.

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MoldSTAT™: Supplementary Statistical Spore Trap Report

**** MoldSCORE™ is a specialized method for examining air sampling data. It is a score between 100 and 300, with 100 indicating a greater likelihood that the airborne indoor spores originated from the outside, and 300 indicating a greater likelihood that they originated from an inside source. The Result displayed is based on the numeric score given and will be either Low, Medium, or High, indicating a low, medium, or high likelihood that the spores detected originated from an indoor source. EMLab P&Kreserves the right to, and may at anytime, modify or change the MoldScore algorithm without notice.

Interpretation of the data contained in this report is left to the client or the persons who conducted the field work. This report is provided for informational and comparative purposes only and should not be relied upon for any other purpose. "Typical outdoor ranges" are based on the results of the analysis of samples delivered to and analyzed by EMLab P&K and assumptions regarding the origins of those samples. Sampling techniques, contaminants infecting samples, unrepresentative samples and other similar or dissimilar factors may affect these results. With the statistical analysis provided, as with all statistical comparisons and analyses, false-positive and false-negative results can and do occur. EMLab P&K hereby disclaims any liability for any and all direct, indirect, punitive, incidental, special or consequential damages arising out of the data contained in, or any actions taken or omitted in reliance upon, this report.

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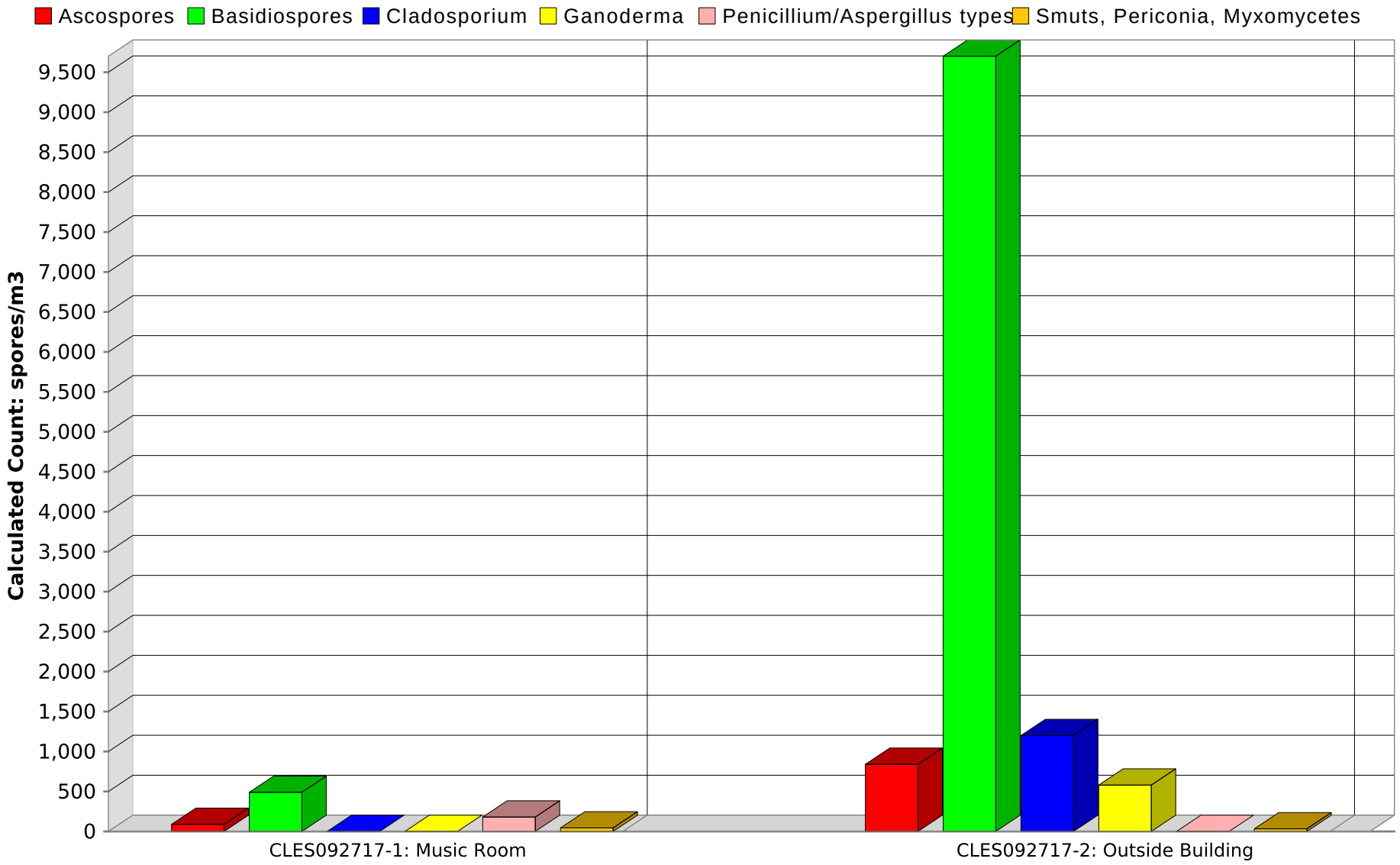
SPORE TRAP REPORT: NON-VIABLE METHODOLOGY



Comments:

Note: Graphical output may understate the importance of certain "marker" genera.

CHAIN OF CUSTODY

www.EMLabPK.com

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Phoenix, AZ: 1501 West Knudsen Drive, Phoenix, AZ 85027 * (800) 651-4802
SSF, CA: 6000 Shoreline Court, Suite 205, South San Francisco, CA 94080 * (866) 888-8653

Weather	Fog	Rain	Snow	Wind	Clear
None	☐	☒	☒	☐	☐
Light	☐	☐	☐	☒	
Moderate	☒	☐	☐	☐	
Heavy	☐	☐	☐	☐	

Level

EMLab ID: 1801771

REQUESTED SERVICES (Use checkboxes below)

CONTACT INFORMATION

Company:	Dutchess County BOCES (13311)	Address:	5 BOCES Road SPC Bldg., Room 140 Poughkeepsie, NY 12601 USA
Contact:	Christopher Nancy	Special Instructions:	
Phone:	845-486-8004 x2297		

PROJECT INFORMATION

Project ID:	CLES092717		
Project Description:	Clinton ES Music Room		
Project Zip Code:	12501	Sampling Date & Time:	09/27/2017 09:13 AM
PO Number:	18-00082	Sampled By: C. Nancy	

TURN AROUND TIME CODES (TAT)

STD – Standard (DEFAULT)
ND – Next Business Day
SD –Same Business Day Rush
WH – Weekend / Holiday

Rushes received after 2pm or on weekends, will be considered received the next business day. Please alert us in advance of weekend analysis needs.

Sample ID	Description	Sample Type (Below)	TAT (Above)	Volume / Area (as applicable)	ISO Class (as applicable)	Notes (Time of day, Temp, RH, etc.)	Spore trap analysis
CLES092717-1	Music Room	A	STD	90 liter			☒
CLES092717-2	Outside Building	A	STD	90 liter			☒
							☐
							☐
							☐
							☐
							☐
							☐
							☐
							☐
							☐

SAMPLE TYPE CODES		RELINQUISHED BY	DATE & TIME	RECEIVED BY	DATE & TIME
A - Spore Trap: Cassette		C. Nancy	09/27/17		9/28/17 9:50

By submitting this Chain of Custody, you agree to be bound by the terms and conditions set forth at http://www.emlab.com/s/main/serv/osterms.html

APPENDIX B

Fungal Glossary

Fungal Glossary

Species	Description
Ascospores	Those from sac fungi such as truffles, morels, yeasts and many lichens
Basidiospores	Those from macrofungi commonly called mushrooms or toadstools.
Cladosporium spp.	Some Cladosporium species are plant pathogens; others parasitize other fungi. These fungi are ubiquitous in outdoor air and not generally considered an indicator of poor indoor air quality.
Ganoderma spp.	Are shelf and bracket macrofungi. Some species are cultivated for food or traditional medicine. Mainly found on living and dead wood.
Myxomycetes spp.	Non-fungal amoeboid with a life cycle that alternates between single cell individuals and sporulating colonial masses
Penicillium/Aspergillus type spp. (these spores cannot be differentiated by non-viable sampling methods)	Penicillium is a large genus of fungi. Some species are pathogenic to plants or animals, some are the source of antibiotic medications, and others are used in food and beverage production such cheese and sausage. Aspergillus is a large genus of fungi. Some species are pathogenic to plants or animals, some are used in the production of chemicals such as citric acid, and others are used in food and beverage production such as sake and soy sauce.
Periconia	Are plant pathogens
Smuts	Are gall forming pathogens of grasses. Not generally considered an indicator of poor indoor air quality