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September 14, 2020

STENC20009

Strategic Environmental Consulting Inc.
Mr. Jim Bonanno
25 Butternut Lane
Bayville New Jersey 08721
Email: Jbonses@AOL.com

RE: FUNGAL INSPECTION
HELEN FORT MIDDLE SCHOOL – CLASSROOM 58
301 FORT DIX ROAD
PEMBERTON, NEW JERSEY

Dear Mr. Bonanno:

Pennoni is providing this report to **Strategic Environmental Consulting Inc.** documenting the results of the Fungal Inspection we conducted at the above referenced location. This report summarizes our findings relative to the conditions encountered during the investigation, which consisted of a visual inspection of Classroom 58, surface moisture level measurements, recording of occupant comfort parameters and collection and analysis of fungal air samples.

Our investigation followed acceptable industry standards including the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standard 55, Thermal Environmental Conditions for Human Occupancy, Occupational Safety and Health Administration (OSHA) Policy on Indoor Air Quality: Office Temperature/Humidity, dated February 24, 2003, the United States Environmental Protection Agency (USEPA) Care For Your Air: A Guide to Indoor Air Quality, EPA 402F-08/008, and the American Industrial Hygiene Association (AIHA) publication The IAQ Investigator's Guide, dated 2016.

BACKGROUND

The purpose of the fungal inspection is to determine if conditions within the Classroom 58 are being impacted by fungi or other anomalies and to identify whether remedial actions or further investigations are warranted. The building has had previous issues with fungal growth.

VISUAL INSPECTION

Mr. Jeremy Humble, one of Pennoni's trained Industrial Hygienists, conducted a fungal inspection of the Classroom 58 on September 10, 2020 (see Appendix A – Inspector Credentials). The following observations were made (see Appendix B – Site Photographs):

- At the time of our inspection, weather conditions were 84.0 degrees Fahrenheit with overnight precipitation. Exterior relative humidity was measured at 69.0%.
- No discernable odors were observed throughout the areas inspected.
- Accessible finishes within Classroom 58 consist of concrete masonry units (CMU) block walls, vinyl floor tile flooring and a fiberboard ceiling. Areas above the fiberboard ceiling were inaccessible at the time of inspection.

- The classroom is conditioned via unit ventilator. At the time of inspection, the unit was running and providing both fresh and cool/conditioned air.
- Approximately 3 square feet (SF) of water staining was observed on the ceiling in the southwest corner of the room.
- The top of the microwave was observed dirty.
- The wood bookshelves were observed with accumulated dust and dirt of the shelves.
- Moisture testing on the following surfaces identified the low (dry) moisture content via moisture meter on a wood moisture equivalency (WME) scale:
    - Wood microwave stand – 7.8%
    - Wood bookshelves – 7.8 – 10.3%

COMFORT PARAMETER MEASUREMENTS

Using a handheld indoor air quality monitor, Pennoni measured temperature (°F), relative humidity (%RH) and carbon dioxide (CO_2) within Classroom 58, the hallway at the entrance to Classroom 58 and the exterior for comparison. Measured temperature and carbon dioxide were within acceptable comfort or exposure ranges recommended by industry groups and government agencies**. Measured relative humidity within Classroom 58 exceeded acceptable comfort or exposure ranges recommended by industry groups and government agencies.**

Table 1. Comfort Parameter Measurements
Helen Fort Middle School – Classroom 58
301 Fort Dix Road
Pemberton, New Jersey

Location	Measured Temp. (°F)	Acceptable Spring/Summer Temp. (°F)	Measured Relative Humidity (%)	Acceptable Relative Humidity (%)	Measured CO_2 (ppm)	Acceptable CO_2* (ppm)
Exterior	84.0	-	69.0	-	533	-
Hallway at Main Entry	76.2	73 – 79	54.8	30 – 60	529	1,233
Room 58	70.2	73 – 79	**65.2**	30 – 60	542	1,233

**Indoor criterion is average outdoor ppm + 700 ppm*

AIR SAMPLING – NON-CULTURABLE FUNGI

Pennoni performed airborne non-culturable microbiological sampling utilizing Air-O-Cell® cassettes. At each sampling location, a known volume of air was drawn over a laboratory prepared slide. Two interior air samples were collected and submitted to a microbiological laboratory. One outside air sample was collected as a baseline reference for comparison to the indoor air samples.

The sampling cassettes were transported to Prestige EnviroMicrobiology, Inc. of Voorhees, New Jersey where they were analyzed for fungal enumeration and identification. The analytical results are summarized in Table 2 below and the full laboratory results are included as Appendix C – Air Sampling Results. While there is no accepted standard for microbiological organisms, the results are best utilized to compare areas within a given building.

Interior air sampling results for the samples collected indicate low and/or similar concentrations of fungal spores when compared to the exterior non-culturable air sample result.

Table 2. Non-Culturable Fungi Sampling Results
Helen Fort Middle School – Classroom 58
301 Fort Dix Road
Pemberton, New Jersey

Sample Location	Predominant Species, Spores/m3								
	Ascospores	Basidiospores	Cladosporium	Epicoccum	Ganoderma	Hyphal Fragments	Myxomycetes	Pen/Asp-like	Total
Exterior Air	4,900	470	53	53	53	*	160	530	6,200
Classroom 58, Center	*	*	*	*	*	53	*		53
Classroom 58 S. Corner	*	*	*	*	*	*	*	53	53

** None Detected*
Minimum Detection Limit: 13 spores/m3

SUMMARY/CONCLUSIONS

Based upon our site investigation and results of the samples collected, it appears that surface fungal growth was not observed on accessible building finishes at the time of our inspection. Measured relative humidity within Classroom 58 exceeded acceptable comfort or exposure ranges recommended by industry groups and government agencies.

Approximately 3 square feet (SF) of water staining was observed on the ceiling in the southwest corner of the room likely due to a previous water intrusion event. No discernable odors were observed during our inspection. Surfaces such as the wood bookshelves and the microwave stand were observed dirty with dust buildup.

Interior air sampling results for the samples collected within Classroom 58 and the adjacent hallway indicated low and/or similar concentrations of fungal spores when compared to the exterior non-culturable air sample result.

It should be noted that the conditions observed during this investigation are considered to be a “snapshot” of that point in time. With indoor air quality, conditions can change over time in relation to the outdoor environment and other factors.

RECOMMENDATIONS

Based on our visual observations, Pennoni offers the following recommendations for remediation activities:

- Engage a qualified heating, ventilation and air conditioning (HVAC) professional to inspect the HVAC system to reduce relative humidity. Efforts should be made to maintain temperature and relative humidity levels below 60% to help prevent fungal growth.
- Clean horizontal surfaces with dirt and dust build up, such as the wood shelves and microwave. Continue cleaning routine to not allow for dirt and dust build up.

If you have any questions or require additional information, please feel free to contact us at 856-547-0505.

Sincerely,

PENNONI ASSOCIATES INC.

Jeremy Humble
Project Industrial Hygienist

Nancy Wilson, CIH
Senior Industrial Hygienist

Attachments:

Appendix A – Inspector Credentials
Appendix B – Site Photographs
Appendix C – Air Sampling Results

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APPENDIX A

Inspector Credentials

ABIH®

american board of industrial hygiene®

organized to improve the practice of industrial hygiene
proclaims that

Nancy Ann Wilson

having met all requirements of
education, experience and examination,
is hereby certified in the

COMPREHENSIVE PRACTICE
of
INDUSTRIAL HYGIENE

and has the right to use the designations

CERTIFIED INDUSTRIAL HYGIENIST

CIH

Certificate Number	**11921 CP**
Awarded:	**October 23, 2019**
Expiration Date:	**June 1, 2025**

Dirk Yamamoto
Chair, ABIH

Chief Executive Officer, ABIH

Certificate of Completion

awarded to

Jeremy Humble

for successfully completing the prescribed course of study in

Pennsylvania Asbestos Building Inspector Refresher Course

under TSCA Title II

presented by

ACCESS TRAINING SERVICES, INC.
7921 River Road, Pennsauken, NJ 08110
(856) 665-3449

7/2/20	**N/A**	**7/2/21**
Course Date	*Exam Date*	*Expiration Date*
Not Provided	**ACC-0720-6-001**	*Mark K. Schläger*
Social Security Number	*Certificate Number*	*Training Director*

APPENDIX B

Site Photographs

Photograph 1. Exterior Overview of Building

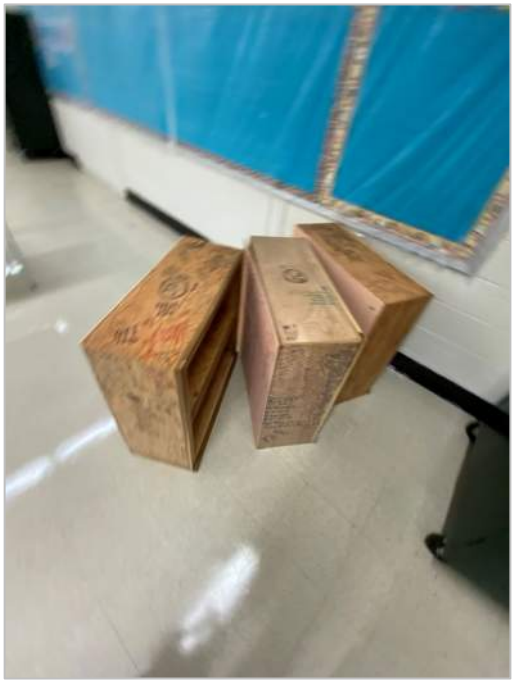
Photograph 2. Overview of Classroom 58

Photograph 3. Water staining on fibrous ceiling

Photograph 4. Clean vents throughout classroom

Pennoni Associates, Inc. 515 Grove Street, Suite 1B Haddon Heights, New Jersey 08035		FUNGAL INSPECTION
		HELEN FORT MIDDLE SCHOOL – CLASSROOM 58 301 FORT DIX ROAD PEMBERTON, NEW JERSEY
Job No. STENC20009	Date Taken: SEPTEMBER 10, 2020	SITE PHOTOGRAPHS

Photograph 5. View of dirty wood microwave stand



Photograph 6. View of removed wood shelves

Photograph 7. Dirty wood shelf

Photograph 8. Dirty wood shelf

Pennoni Pennoni Associates, Inc. 515 Grove Street, Suite 1B Haddon Heights, New Jersey 08035		FUNGAL INSPECTION HELEN FORT MIDDLE SCHOOL – CLASSROOM 58 301 FORT DIX ROAD PEMBERTON, NEW JERSEY
Job No. STENC20009	Date Taken: SEPTEMBER 10, 2020	SITE PHOTOGRAPHS

Photograph 9. Dirty wood shelf

Photograph 10. View of unit ventilator in Classroom

Photograph 11. Interior view of clean unit ventilator

Photograph 12. Clean refrigerator inside Classroom 58

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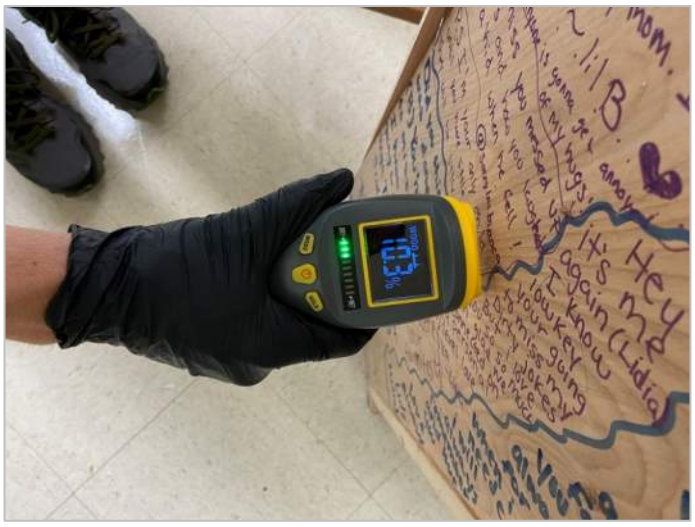
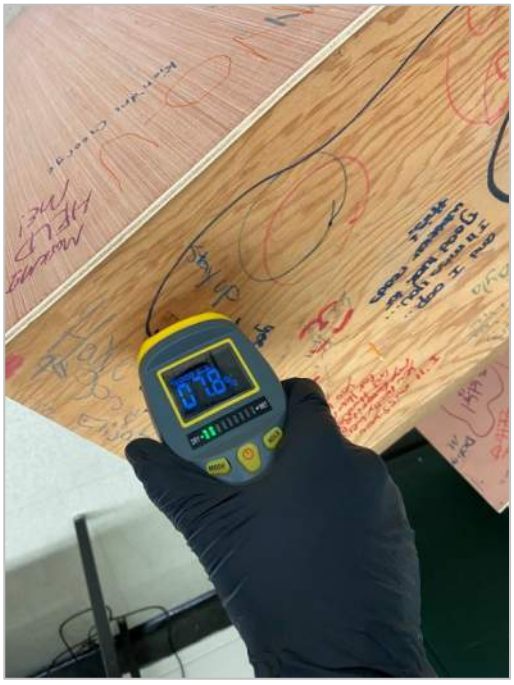
Job No. STENC20009	Date Taken: SEPTEMBER 10, 2020	SITE PHOTOGRAPHS

Photograph 13. View of downspout outside Classroom 58

Photograph 14. Exterior of Classroom 58



Photograph 15. Acceptable moisture reading on wood bookshelf



Photograph 16. Acceptable moisture reading on wood bookshelf

Pennoni Associates, Inc. 515 Grove Street, Suite 1B Haddon Heights, New Jersey 08035		FUNGAL INSPECTION HELEN FORT MIDDLE SCHOOL – CLASSROOM 58 301 FORT DIX ROAD PEMBERTON, NEW JERSEY
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Photograph 17. Acceptable moisture reading on bookshelf wall

Photograph 18. Acceptable moisture reading on wood microwave stand

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Job No. STENC20009	Date Taken: SEPTEMBER 10, 2020	SITE PHOTOGRAPHS

APPENDIX C

Air Sampling Results

Prestige EnviroMicrobiology, Inc.

Analytical Test Report

Client: Pennoni, 515 Grove Street, Suite 1B, Haddon Heights, NJ 08035

Client Project/Name: STENC20009

Sample date: 9-10-2020

Submittal date: 9-10-2020

Samples submitted by: Jeremy Humble

Date analysis completed: September 11, 2020

Prestige Report number: 200910-07

Microscopic Method (P001): Analysis of Air-O-Cell Samples for Total Fungal Structures by Optical Microscopy

Prestige # Client sample ID Location	Air vol. (m^3)	% read	Presumptive fungal ID	Counts of fungal structures	Fungal structures/m^3	Percentage	Background rating
200910-07-075 ST-1 Outside	0.075	25.3	ascospores	93	4,900	79%	
			basidiospores	9	470	8%	
			Cladosporium	1	53	1%	
			Epicoccum	1	53	1%	
			Ganoderma	1	53	1%	
			myxomycetes	3	160	3%	
			Pen/Asp-like	10	530	8%	
					Total 6,200		1
200910-07-076 ST-2 Room 58 Center	0.075	25.3	hyphal fragments	1	53	100%	
					Total 53		1
200910-07-077 ST-3 Room 58 South Corner	0.075	25.3	Pen/Asp-like	1	53	100%	
					Total 53		1

Report approved: Theresa Lehman

Theresa Lehman, MPH, Lab Director

Technical Manager: _____

Chin S Yang, Ph.D.

Analyst: Theresa Lehman

1. The samples in this report were received in good, acceptable conditions. Prestige EnviroMicrobiology has not performed sample collection for the sample items listed in this report. Results relate only to the items tested.
2. Spore trap samples are first scanned at 200x and then analyzed at 600x magnification.

3. Concentrations and percentages are rounded. Total percentage may not add up to 100% due to rounding. Percentage is for each group in total population.
4. Background rating 1-5 (1 being the lowest and 5 the highest) indicates density of sample deposit. The higher the sample deposit is, the more likely some fungal structures are obscured. A "0" background indicates no trace was observed.
5. The detection limit of this analysis is one fungal colony, one bacterial colony or one fungal structure. The analytical sensitivities vary from analysis to analysis or by air volume. For calculation of your analytical sensitivities, please visit our webpage http://prestige-em.com/index-tech.htm or contact us by calling 856-767-8300 or by email info@Prestige-em.com.
6. For technical information on result interpretation, please visit www.Prestige-EM.com.

Prestige EnviroMicrobiology, Inc. Tel: 856-767-8300 www.Prestige-em.com
242 Terrace Boulevard, Suite B-1, Voorhees, New Jersey 08043

Prestige Proj.#: 20090-07

Chain-of-Custody and Analysis Request Form

Client name: Perroni Tel: 609-970-6113 Client proj.#: STENC 20009

Address: E-mail: jhumble@perroni.com P.O.#:

Date sampled: 9/10/20

Sample ID	Location or source	Sample type	Air vol (L)/ Area (inch^2)	Water: potable or non-potable	Analysis requests code or description	Turnaround time	Notes or special instructions
ST-1	Outside	Spore Trap	75L		P001	ND	
ST-2	Room 58 CENTER	ST	75L		P001	ND	
ST-3	Room 58 South Corner	ST	75L		P001	ND	

Contact name: Jeremy Humble Submitted by: (sign & print) Jeremy Humble Date submitted: 9/10/20

Received by: (sign & print) Ching-Yi Tsai Date & time received: 9/10/2020, 3:45pm Delivered by: Fedex, UPS, USPO, in person

(For lab use only) Processed by: Sample type: Date:

Data QC'd by: Report reviewed by: Report emailed by: Date & time: