

May 18, 2021

STENC21003

Strategic Environmental Consulting Inc.

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

**RE: FUNGAL INSPECTION
PEMBERTON TOWNSHIP HIGH SCHOOL – GYM A, PE OFFICE
148 ARNEYS MOUNT ROAD
PEMBERTON, NEW JERSEY 08068**

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 the Physical Education (PE) office associated with Gym A, surface moisture level measurements, recording of occupant comfort parameters and the 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 in Gym A are being impacted by fungi or other anomalies and to identify whether remedial actions or further investigations are warranted.

VISUAL INSPECTION

Ms. Nancy Wilson, one of Pennoni's Certified Industrial Hygienists, conducted a fungal inspection of the PE office in Gym A on May 12, 2021 (see Appendix A – Inspector Credentials). The following observations were made (see Appendix B – Site Photographs):

General

- At the time of our inspection, weather conditions were 58.0 degrees Fahrenheit with no precipitation. Exterior relative humidity was measured at 42.0%.
- The area of concern is the PE office in Gym A. The office was shut down from March until November 2020 and then shut down again from November until December 2020. The maintenance staff was keeping the heating, ventilation and air conditioning (HVAC) system operating and the areas clean during the shutdown.

PE Office

- The PE office is approximately 8'x20' in size. Accessible finishes within the office consists of concrete masonry units (CMU) block walls, vinyl floor tile with a ceiling tile grid system.
- No mold or musty odors were noted upon entry to the PE office. Reportedly, the PE teacher/coach uses a fair number of plug-in deodorizers which were removed prior to our inspection. A slight odor from the deodorizers was noticeable.
- There were two ceiling tiles in the office with minor staining. Currently, there are no leaks.
- Minor rusting was observed on the locker as well as the Univent. The rust on the locker and the Univent are merely from mopping as well as plants or coffee stains.
- The PE office has one diffuser and no return.
- Ductwork is cleaned every summer by a professional company. The maintenance staff is responsible to clean the vents after the ducts are cleaned. However, the vent in the office needs cleaning. The facilities director, Mr. Dean Adams, asked that one of his employees to wipe down the vent at the time of our inspection.
- No suspect fungal growth or active sources of water intrusion were observed on accessible building finishes.
- Moisture testing on accessible finishes indicated low (dry) moisture content via moisture meter on a wood moisture equivalency (WME) scale.

PE Office Bathroom

- There is a bathroom right off the office that is approximately 4'x12' in size. Accessible finishes within the bathroom consists of CMU block walls and tile floor.
- A noticeable odor was observed within the bathroom which may be attributable to the two traps. One trap is next to the toilet and sink. The other trap is in the shower. The traps are likely dry from lack of use. The maintenance staff may need to put some water down them. The odor from the traps was perhaps masked by the plug-in deodorizer devices.
- The bathroom has one exhaust unit which is currently not operating and no return.
- At the time of our inspection, Pennoni observed numerous stored contents stored in the shower preventing use of the shower. The stored items make it inaccessible and difficult to maintain.
- No suspect fungal growth or active sources of water intrusion were observed on accessible building finishes.
- Moisture testing on accessible finishes indicated low (dry) moisture content via moisture meter on a WME scale.

COMFORT PARAMETER MEASUREMENTS

Using a handheld indoor air quality monitor, Pennoni measured temperature (°F), relative humidity (%RH) and carbon dioxide (CO₂) within the PE office, bathroom and the exterior for comparison. Measured temperature, relative humidity and carbon dioxide levels were within acceptable comfort or exposure ranges recommended by industry groups and government agencies.

Table 1. Comfort Parameter Measurements Pemberton Township High School 148 Arneys Mount 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	58.0	-	42.0	-	433	-
PE Office	72.3	73 – 79	28.0	30 – 60	549	1,133
Bathroom	72.8	73 – 79	29.9	30 – 60	620	1,133

**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 Eurofins EMLab P&K of Marlton, 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 lower and/or similar concentrations of fungal spores when compared to the exterior non-culturable air sample result.

Table 2. Non-Culturable Fungi Sampling Results – 5/12/21 Pemberton Township High School 148 Arneys Mount Road Pemberton, New Jersey						
Sample Location	Predominant Species, Spores/m3					Total
	Ascospores	Basidiospores	Cladosporium	Penicillium/Aspergillus types	Smuts, Periconia, Myxomycetes	
Exterior Air	160	640	750	110	13	1,700
PE Office	*	110	110	160	*	370
Bathroom	*	53	*	53	*	110

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

SUMMARY/CONCLUSIONS

Based upon our site investigation and results of the samples collected, no suspect fungal growth is present at this time. Minor water staining was observed on two ceiling tiles within the PE office. No signs of moisture or an active source of water intrusion was observed at the time of our inspection.

Measured temperature, relative humidity and carbon dioxide levels were within acceptable comfort or exposure ranges recommended by industry groups and government agencies.

Pennoni observed numerous contents being stored in the shower preventing the use of it. The stored items make it inaccessible and difficult to maintain. Multiple stored contents in cardboard boxes were observed within the office and bathroom. It is recommended that stored contents within the shower be removed and contents in cardboard boxes be stored in plastic totes to prevent potential fungal growth.

Interior air sampling results for the samples collected within the PE office and bathroom indicate lower 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:

- Remove and replace minor water-stained ceiling tile within the PE office.
- Stored contents within the shower should be removed. Contents in cardboard boxes in the office and bathroom should be removed. Porous items should be stored in plastic totes. This includes clothing stored in the bathroom
- Limit the number of plug-in deodorizers. Plug-in deodorizers can mask odors/issues. The door to the office is always left open because of the returns for the HVAC system are in the adjoining gym.
- Based on previous occupant complaints, install a High-efficiency Particulate Air (HEPA) cleaner in the office. HEPA air cleaners are known to reduce naturally occurring allergens found in the environment and will help reduce allergic symptoms of occupants.

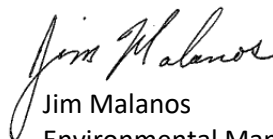
If you have any questions or require additional information, please feel free to contact us at 856-547-0505.

Sincerely,

PENNONI ASSOCIATES INC.



Nancy Wilson, CIH
Senior Industrial Hygienist



Jim Malanos
Environmental Manager

Attachments:

Appendix A – Inspector Credentials

Appendix B – Site Photographs

Appendix C – Air Sampling Results