Windjammer Environmental LLC
6710 Oxon Hill Road
Suite 210
Oxon Hill, MD 20745
(888) 270-8387
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June 10, 2019

Alex Baylor
Environmental Specialist
PGCPS Environmental Safety Office
13306 Old Marlboro Pike
Upper Marlboro, MD 20772
Alex.baylor@pgcps.org

Re: IAQ and Mold Assessment Report
Prince George's County Public Schools
Potomac High School

Dear Mr. Baylor,

Windjammer Environmental LLC (Windjammer) was contracted to conduct a visual assessment, measure indoor air quality (IAQ) parameters and sample for mold in a limited number of areas at the Potomac High School located at 5211 Boydell Avenue, Oxon Hill, MD 20745. This assessment is intended to check on effectiveness of operations activities that are focused on preventing conditions that can lead to the development of an environment which is historically associated with an increase in reports of poor IAQ. This assessment was conducted by Certified Industrial Hygienists (CIHs) Damien Hammond and Katherine Dietrich on May 31, 2019.

This assessment included:

- Measurement of temperature, relative humidity, carbon dioxide (CO_2) and carbon monoxide (CO)
- Collection of nonviable airborne mold samples; and
- Visual assessment of select areas.

Methods

A TSI IAQ-Calc Model 7545 was used to measure temperature, relative humidity, carbon dioxide (CO_2) and carbon monoxide (CO).

Air samples for non-viable airborne fungi were collected on Air-O-Cell cassettes using a Zefon Bio-Pump Plus portable sampler calibrated to collect 15 liters of air per minute (lpm). The sampling period for the all samples was five minutes.

Direct read instrumentation used were calibrated in accordance with the manufacturer's specifications prior to the start of this assessment.

All samples collected were hand delivered to EMSL of Beltsville, MD and analyzed by EMSL of Carle Place, NY. EMSL is accredited by the American Industrial Hygiene Association (AIHA) for microbial analysis and participates in the Environmental Microbiology Laboratory Accreditation Program (EMLAP).

Guidance

The Occupational Safety and Health Administration's (OSHA) Permissible Exposure Limits (PELs) are the only enforceable regulatory standards for indoor air quality. However, other organizations such as the American Society of Heating Refrigeration and Air Conditioning Engineers (ASHRAE) and the Environmental Protection Agency (EPA) have developed widely accepted consensus standards that can be used to assess the suitability of indoor air quality.

ASHRAE Standards

62.1-2013 and 55-2013 are consensus standards that outline acceptable practices for the design of ventilation systems in commercial and residential structures. Both documents were developed "to specify minimum ventilation rates and indoor air quality that will be acceptable to human occupants and are intended to minimize the potential for adverse health effects." The standards also consider chemical, physical, and biological contaminants and other factors that impact indoor air quality and affect occupant health and comfort.

ASHRAE 55-2013 recommends temperature and relative humidity ranges that are considered suitable for indoor air quality. Recommended ranges are as follows:

- Temperature be maintained between 67 and 82 degrees Fahrenheit (°F)
- Relative humidity to be maintained below 65%

Carbon Dioxide

CO_2 is widely used as a surrogate gas in the assessment of indoor air quality. It is a byproduct of respiration and can be used to determine the effectiveness and/or management of building ventilation systems. Based on ASHRAE recommendations, indoor CO_2 concentrations that are below 1000 parts per million (ppm) or have a differential of less than 700 ppm compared to outside concentrations are considered to be suitable.

For example, if outside CO_2 concentrations are measured at 380 ppm, then indoor CO_2 concentrations measured up to 1080 ppm would be considered suitable.

Carbon Monoxide

OSHA has established a PEL for CO of 35 ppm over a time weighted average (TWA) of 8 hours and a ceiling CO exposure limit of 200 ppm in a five-minute period. ASHARE has adopted the EPA National Ambient Air Quality Standard (NAAQS) for CO of 9 ppm when evaluating indoor air quality. In nonindustrial settings, the NAAQS standard is commonly used to assess the suitability of IAQ.

Nonviable Airborne Fungi (Mold)

There are no set regulatory limits established for acceptable airborne fungi levels. However, indoor levels within schools and offices are generally lower than outdoor levels. The distribution of airborne species of fungi found in indoor air is expected to be similar in proportion to outside distributions. The type and concentrations of the airborne microorganisms can be used to determine if there is a potential hazard to occupants which requires action.

Findings

Indoor Air Quality

Except as noted, indoor air quality measurements collected were satisfactory with respect to temperature, relative humidity, carbon dioxide (CO_2), and carbon monoxide (CO). Recorded indoor air quality results are summarized in the following Table.

Table 1
Indoor Air Quality Measurement Summary
(Measurements Recorded on May 31, 2019)

Measurement Location	Temperature (°F)	Relative Humidity (%)	CO_2 (ppm)	CO (ppm)
Outdoors	75.0	63.3	457	0.0
Classroom 200	75.7	61.4	658	0.0
Classroom 203	74.8	59.6	918	0.0
Classroom 211	74.9	58.3	1270	0.0
Classroom 219	72.8	59.7	1094	0.0
Classroom 216	75.6	56.2	647	0.0
Classroom 240	74.8	58.1	571	0.0
Classroom 233	75.3	55.3	1025	0.0
Classroom 234	75.4	58.7	1006	0.0
2nd Fl. Faculty Lounge	74.1	54.9	629	0.0
Band Room B123	73.6	56.2	530	0.0
Classroom A138	72.8	43.1	670	0.0
Gymnasium	73.4	42.5	630	0.0
Classroom 103	71.6	62.1	795	0.0
Classroom 112	72.3	65.3	1253	0.0
Classroom 119	74.8	67.0	970	0.0
Classroom 136	70.9	66.8	647	0.0
Classroom 130	72.4	63.9	592	0.0
Classroom 104	65.0	61.7	631	0.0
Cafetorium	70.9	64.8	478	0.0
Classroom 155A	73.4	60.2	713	0.0
Classroom 153 Music	76.5	61.1	505	0.0
Classroom A102	73.9	52.1	721	0.0
Classroom A223	74.0	44.1	655	0.0

ppm – parts per million

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Non-viable Airborne Fungi Sampling

Measured total indoor airborne fungi concentrations were determined have a normal ecology and with indoor airborne fungi concentrations in most locations lower than measured total outdoor fungi concentrations at this time. Windows in the classrooms can be opened – which is typically not a problem, but then spore trap results may be reflection of exterior conditions rather than from sources in the room. When the survey was carried out classrooms 203 and 219 had open windows and classroom 234 had a broken window. The airborne fungi levels in classroom 234 were elevated. A complete laboratory analysis report is available for viewing in Attachment A.

Visual Assessment

A walk-through of the hallways and a limited number of classrooms and public areas was carried out. No bathrooms, staff offices, mechanical rooms, kitchen areas or storage areas were visited. The school was in session at the time of the inspection.

The school was free of evidence of current water intrusion (except as noted) or any unexpected odors. Except as noted, floors, walls and ceiling tiles observed were in acceptable condition. The housekeeping was acceptable.

The following areas for further investigation or improvement were noted:

- Outside Media Center – several stained ceiling tiles.
- B Building – water stained ceiling tiles observed throughout (B-103-B114)
- A Building – water stained ceiling tile in hall outside A318. Missing ceiling tile in hall outside A101 with wet floor sign and container catching drips from ceiling. Sticker next to leak “VAV113”.
- Classroom 200 – high spore count.
- Classroom 216 – stained ceiling tile (less than 1 ft^2)
- Classroom 234 – broken window, high spore count.
- Classroom 119 – high humidity, high spore count.
- Classroom 130 – eight stained ceiling tiles
- Classroom 104 – four stained ceiling tiles
- Classroom 155A – paint in corner by heater is peeling
- Classroom 153 (Music) – stains on carpet
- Classroom A223 – one missing ceiling tile

Conclusions & Recommendations

Except as noted, indoor air quality spore trap measurements collected in all areas assessed were less than the levels measured outside the building and with the same predominate spore types found. This is an indication that the spores sampled in the rooms assessed are more likely to be originating in the outdoor environment rather than an interior source - reducing the chance of undetected overgrowth or colonization in the building. While there are no standards for airborne levels of mold, this approach of comparing indoor to outdoor, and looking at the species found, is one tool identified by organizations such as the American Industrial Hygiene Association when identifying assessment methods and improvement measurement in indoor air quality.

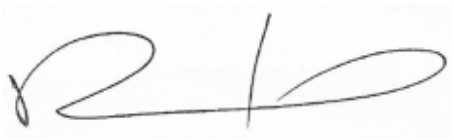
Please note the following considerations for improvement.

- Repair the broken window in classroom 234.
- Keep windows closed especially when it is raining.
- Identify the cause of any staining or peeling paint on walls, carpet or ceiling tiles and fix.
- Replace missing ceiling tiles.
- Reduce humidity levels below 65%
- Check to confirm the repair of the leak from the ceiling on the first floor of the A Building.

At this time, no other recommendations are provided.

Windjammer appreciates the opportunity to provide this indoor air quality assessment. If you have any questions or comments, please feel free to contact us at (888) 270 - 8387.

Best regards,



Damien Hammond Sr, MS, CSP, CIH
President

Katherine (Kay) Dietrich, CIH, CSP
Certified Industrial Hygienist

Attachment A: Microbial Laboratory Report (Air)

Attachment A

Windjammer Environmental LLC
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Phone: (301) 351-4213
Fax:
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Received: 05/31/2019
Analyzed: 06/05/2019

Project: PGCPS IAQ Potomac HS

Test Report: Air-O-Cell(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number:	061910906-0001			061910906-0002			061910906-0003		
Client Sample ID:	190531-1			190531-2			190531-3		
Volume (L):	75			75			75		
Sample Location	Outdoors			Classroom 200			Classroom 203		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	78	3400	20.4	56	2400	4.7	17	740	6.5
Aspergillus/Penicillium	16	700	4.2	-	-	-	-	-	-
Basidiospores	231	10100	60.7	1120	48900	95.2	244	10600	92.4
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	56	2400	14.4	-	-	-	2	90	0.8
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	1*	10*	0.1	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	1	40	0.1	-	-	-
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Polythrincium	1	40	0.2	-	-	-	1	40	0.3
Total Fungi	**383**	**16650**	**100**	**1177**	**51340**	**100**	**264**	**11470**	**100**
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	44	-	-	44	-	-	44	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	2	-	-	2	-	-	2	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

No discernable field blank was submitted with this group of samples.

Jeffrey Lau, Microbiology Laboratory Manager
or other approved signatory

High levels of background particulate can obscure spores and other particulates leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. "*" Denotes particles found at 300X. "-" Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Carle Place, NY AIHA-LAP, LLC--EMLAP Accredited #102344

Initial report from: 06/07/2019 08:33:18

For information on the fungi listed in this report, please visit the Resources section at www.emsl.com

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Analyzed: 06/05/2019

Project: PGCPS IAQ Potomac HS

Test Report: Air-O-Cell(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number:	061910906-0004			061910906-0005			061910906-0006		
Client Sample ID:	190531-4			190531-5			190531-6		
Volume (L):	75			75			75		
Sample Location	Classroom 211			Classroom 219			Classroom 216		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	8	300	3.3	19	830	9.2	22	960	5.9
Aspergillus/Penicillium	-	-	-	-	-	-	1	40	0.2
Basidiospores	196	8550	93.3	187	8160	90.8	349	15200	92.7
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	7	300	3.3	-	-	-	5	200	1.2
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Polythrincium	1*	10*	0.1	-	-	-	-	-	-
Total Fungi	**212**	**9160**	**100**	**206**	**8990**	**100**	**377**	**16400**	**100**
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	44	-	-	44	-	-	44	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	2	-	-	2	-	-	2	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	2	-	-	2	-	-	2	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

No discernable field blank was submitted with this group of samples.

Jeffrey Lau, Microbiology Laboratory Manager
or other approved signatory

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Test Report: Air-O-Cell(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number:	061910906-0007			061910906-0008			061910906-0009		
Client Sample ID:	190531-7			190531-8			190531-9		
Volume (L):	75			75			75		
Sample Location	Classroom 240			Classroom 233			Classroom 234		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	1*	10*	0.1	-	-	-
Ascospores	23	1000	7.7	12	520	6.7	Present	Present	-
Aspergillus/Penicillium	-	-	-	-	-	-	Present	Present	-
Basidiospores	262	11400	87.8	155	6760	86.6	Present	Present	-
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	13	570	4.4	10	440	5.6	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	1	40	0.5	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Polythrincium	1*	10*	0.1	1	40	0.5	-	-	-
Total Fungi	**299**	**12980**	**100**	**180**	**7810**	**100**	**-**	**-**	**-**
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	44	-	-	44	-	-	44	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	1	-	-	2	-	-	3	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	3	-
Background (1-5)	-	2	-	-	2	-	-	5	-

061910906-0009 - Overloaded

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

No discernable field blank was submitted with this group of samples.

Jeffrey Lau, Microbiology Laboratory Manager
or other approved signatory

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Test Report: Air-O-Cell(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number:	061910906-0010			061910906-0011			061910906-0012		
Client Sample ID:	190531-10			190531-11			190531-12		
Volume (L):	75			75			75		
Sample Location	2nd Fl Factulty Lounge			B123 Bandroom			Gym		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-	1	40	0.4
Ascospores	21	920	10.9	12	520	11	19	830	7.6
Aspergillus/Penicillium	-	-	-	-	-	-	-	-	-
Basidiospores	171	7460	88.1	93	4100	86.9	229	9990	92
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	2	90	1.1	3	100	2.1	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Polythrincium	-	-	-	-	-	-	-	-	-
Total Fungi	**194**	**8470**	**100**	**108**	**4720**	**100**	**249**	**10860**	**100**
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	44	-	-	44	-	-	44	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	2	-	-	1	-	-	2	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

No discernable field blank was submitted with this group of samples.

Jeffrey Lau, Microbiology Laboratory Manager
or other approved signatory

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Initial report from: 06/07/2019 08:33:18

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Phone: (301) 351-4213
Fax:
Collected: 05/31/2019
Received: 05/31/2019
Analyzed: 06/05/2019

Project: PGCPS IAQ Potomac HS

Test Report: Air-O-Cell(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number:	061910906-0013			061910906-0014			061910906-0015		
Client Sample ID:	190531-13			190531-14			190531-15		
Volume (L):	75			75			75		
Sample Location	Classroom 103			Classroom 112			Classroom 119		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	11	480	6.9	6	300	4.7	33	1400	4.7
Aspergillus/Penicillium	-	-	-	-	-	-	-	-	-
Basidiospores	147	6420	92.5	136	5940	93.8	644	28100	94.8
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	1	40	0.6	2	90	1.4	3	100	0.3
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	1	40	0.1
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Polythrincium	-	-	-	-	-	-	-	-	-
Total Fungi	**159**	**6940**	**100**	**144**	**6330**	**100**	**681**	**29640**	**100**
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	44	-	-	44	-	-	44	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	1	-	-	2	-	-	2	-
Fibrous Particulate (1-4)	-	1	-	-	2	-	-	2	-
Background (1-5)	-	2	-	-	2	-	-	2	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

No discernable field blank was submitted with this group of samples.

Jeffrey Lau, Microbiology Laboratory Manager
or other approved signatory

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Project: PGCPS IAQ Potomac HS

Test Report: Air-O-Cell(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number:	061910906-0016			061910906-0017			061910906-0018		
Client Sample ID:	190531-16			190531-17			190531-18		
Volume (L):	75			75			75		
Sample Location	Classroom 136			Classroom 130			Classroom 104		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	4	200	17.2	30	1300	11.7	11	480	7
Aspergillus/Penicillium	-	-	-	-	-	-	23*	310*	4.6
Basidiospores	22	960	82.8	220	9600	86.6	137	5980	87.8
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	3	100	0.9	1	40	0.6
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	2	90	0.8	-	-	-
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Polythrincium	-	-	-	-	-	-	-	-	-
Total Fungi	**26**	**1160**	**100**	**255**	**11090**	**100**	**172**	**6810**	**100**
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	44	-	-	44	-	-	44	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	1	-	-	2	-	-	1	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

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Test Report: Air-O-Cell(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number:	061910906-0019			061910906-0020			061910906-0021		
Client Sample ID:	190531-19			190531-20			190531-21		
Volume (L):	75			75			75		
Sample Location	Cafetorium			Classroom 155A			Classroom 153		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	18	790	10.3	10	440	18.8	16	700	6.9
Aspergillus/Penicillium	-	-	-	-	-	-	-	-	-
Basidiospores	157	6850	89.7	43	1900	81.2	215	9380	93.1
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	-	-	-	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Polythrincium	-	-	-	-	-	-	-	-	-
Total Fungi	**175**	**7640**	**100**	**53**	**2340**	**100**	**231**	**10080**	**100**
Hyphal Fragment	-	-	-	1*	10*	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	44	-	-	44	-	-	44	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	1	-	-	2	-	-	2	-
Fibrous Particulate (1-4)	-	1	-	-	2	-	-	2	-
Background (1-5)	-	1	-	-	2	-	-	2	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

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Lab Sample Number:	061910906-0022			061910906-0023			061910906-0024		
Client Sample ID:	190531-22			190531-23			190531-24		
Volume (L):	75			75			75		
Sample Location	Classroom A102			Classroom A223			Classroom A318		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	1	40	1.8	1	40	5.7	-	-	-
Aspergillus/Penicillium	-	-	-	-	-	-	-	-	-
Basidiospores	47	2100	93.8	15	660	94.3	11	480	92.3
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	3	100	4.5	-	-	-	1	40	7.7
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Polythrincium	-	-	-	-	-	-	-	-	-
Total Fungi	**51**	**2240**	**100**	**16**	**700**	**100**	**12**	**520**	**100**
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	44	-	-	44	-	-	44	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	1	-	-	2	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	1	-	-	2	-	-	1	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

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