



August 29, 2024

Mr. Joe Gnoffo
Operations Supervisor
Montoursville Area School District
50 North Arch Street
Montoursville, PA 17754
[jgnoffo@montoursville.k12.pa.us]

RE: Montoursville Area School District
District Wide Random Mold/IAQ Sampling
SSM File 109944.0018

Dear: Mr. Gnoffo:

On August 14, 2024, at the request of the Montoursville Area School District, Spotts, Stevens & McCoy (SSM) performed District Wide, Random Mold and Indoor Air Quality (IAQ) sampling at Loyalsock Valley Elementary School, C. E. McCall Middle School, Lyter Elementary School and Montoursville Area High School. The sampling included twenty (20) total airborne mold spore samples inside the schools and five (5) exterior samples for comparison purposes. The sampling was done at random locations throughout each of the School Buildings. Some areas chosen in the Schools included areas with the most student traffic such as cafeterias and libraries.

Results and Observations

The results of the total airborne mold spore sampling showed that the air quality was generally acceptable throughout the Loyalsock Valley Elementary School, C. E. McCall Middle School, Lyter Elementary School and Montoursville Area High School, as compared to the exterior comparison samples. Below is a summary of the sampling from each building. The total airborne mold spore results are categorized as “Acceptable”, where the concentration is at or below the background (exterior) samples, “Slightly Elevated” when the concentration is above the background samples and “Elevated”, when the concentration is ten times or more than the background samples.

Loyalsock Valley Elementary School

The results of the total airborne mold spore sampling showed that the air quality was generally acceptable throughout the Loyalsock Valley Elementary School. The areas sampled included the Café, Room A-6, the Art Room, Room B-4, Library and the Hallway outside Room B4. The sample results showed the Library (Sample No. LS-8-14-03) was “Slightly Elevated” for Myxomycetes and Polythrincium; The Cafe (Sample LS-8-14-04) was “Slightly Elevated” for Pithomyces, Room B-4 (Sample LS-8-14-07) was “Slightly Elevated” for Myxomycetes, as compared to the exterior background samples (Samples LS-8-14-01 and LS-8-14-02). All other airborne mold spore samples found were at “Acceptable” levels as compared to the exterior “background” samples.

Direct read instrument sampling showed that the Café, Room A-6, Art Room, Room B-4 and the Hallway outside Room B-4 were elevated for Relative Humidity (RH). All other direct read sampling results were within industry standards.

Lyter Elementary School

The results of the total airborne mold spore sampling showed that the air quality was acceptable throughout the Lyter Elementary School. The areas sampled included the Café, Room C-7 - STEM, Library and Hallway outside Room B-15. Room C-7 - STEM (Sample L-8-14-02) was “Slightly Elevated” for Pithomyces. There were no “Slightly Elevated” or “Elevated” sample results for any of the other locations tested.

Direct read instrument sampling showed that the Café, Room C-7 - STEM, Library and Hallway outside Room B-15 were elevated for Temperature. All other direct read sampling results were within industry standards.

McCall Middle School

The results of the total airborne mold spore sampling showed that the air was acceptable throughout the McCall Middle School. The areas sampled included the Library, Room 141, Room 220-Science Lab and the Hallway outside Room 220. The sample collected in the Library (Sample M-8-14-01) and Room 141 (Sample M-8-14-02) were “Slightly Elevated” for Pithomyces as compared to the exterior background samples (Samples M-8-14-Ext, L-8-14-Ext and HS-8-14-Ext). All remaining air born mold spores samples were at “Acceptable” levels.

Direct read instrument sampling showed that all areas sampled were elevated for Temperature and Relative Humidity (RH), with the exception of Room 141. (Room 141 was slightly below the industry standard). All other direct read sampling results were within industry standards.

Montoursville Area High School

The results of the total airborne mold spore sampling showed that the air was acceptable throughout the Montoursville Area High School. The areas sampled included the Café, Hallway outside Room 206, Library, 3rd Floor Commons and Room 310. The sample collected in the 3rd Floor Commons (Sample HS-8-14-04) was “Slightly Elevated” for Torula; The sample collected in the Room 310 (Sample HS-8-14-05) was “Slightly Elevated” for Pithomyces as compared to the exterior background samples (Samples M-8-14-Ext, L-8-14-Ext and HS-8-14-Ext). All other mold spores found were at “Acceptable” levels when compared to the exterior background samples.

Direct read instrument sampling showed that all areas sampled were elevated for Temperature. All other direct read sampling results were within industry standards.

See “Description of Molds Identified” attached to this letter for explanations of mold species found at “Slightly Elevated” or “Elevated” levels.

Criteria and Observations of Evaluated Areas **Criteria for Mold Sampling**

If airborne mold spores are found in the interior samples, they generally should be similar to the varieties found in the outside samples, and should be at a substantially lower number (1/2 to 1/4 or less of the outside count), unless the windows are open for ventilation which can result in virtual equality. If windows are not open in an area sampled and the results are comparable to outside, it may indicate inadequate filtration on the HVAC system or outside air may be following a less obvious pathway (for example in a window in an adjacent room and then into the sampled area). If varieties of mold are found that are not present in the outside samples, they may be artifacts (entered the building with normal air exchange when different varieties of mold were outside,

possibly hours, days, or even months before). They could also indicate localized mold growth occurring outside near an entry point (such as a window or a fresh air intake for an HVAC system) that did not directly affect the outside samples. An additional possible source is that they could indicate mold growth occurring in a hidden or distant location within the building or possibly a passive reservoir such as carpeting where mold spores have settled into the carpet with other dust and dirt and get released by activity (people walking in a hall or on the carpet, etc). If an option other than active growth in the sampled area is suspected, similar mold varieties will usually be noted in samples collected closer to the unknown source. If mold spores are found in substantially higher number than the outside sample, or elevated counts appear for varieties not found outside, then this could indicate some mold growth in the vicinity of the collected sample and a careful visual inspection is in order. Some specific varieties of mold can indicate problems; for example: the presence of significant numbers of *Stachybotrys* or *Chaetomium* can indicate very wet conditions were occurring recently or in the past at a prime mold food source (such as drywall, cellulose ceiling tile or paper products including cardboard).

Direct Read IEQ Parameters

Direct read parameters were used to evaluate general air quality conditions in the Loyalsock Valley Elementary School, C. E. McCall Middle School, Lyter Elementary School and Montoursville Area High School during the IEQ Evaluation. The direct read criteria included:

- Carbon Monoxide (CO) levels which are measured to evaluate possible intrusion of combustion exhaust
- Carbon Dioxide (CO₂) levels which are measured as an indicator of adequate ventilation
- Total particulate levels that are measured for IAQ evaluations to determine the presence of dust and particulate as a potential allergen/irritant and for cleanliness.
- Relative humidity levels were measured since humidity in excess of 60% could contribute to increased microbial growth, which in turn may aggravate allergic conditions or create biological hazards. Values near the 60% RH level are more common in the cooling season and values lower than 30% RH are very common in the heating season. Interior humidity can shift quickly depending on the outside conditions and the amount of outside air being introduced to the building.
- Total volatile organic compounds (VOC's) are often present in the indoor environment from many familiar sources, (inks, glues, etc.), however, elevated concentrations are generally to be avoided, making TVOC's a common parameter in IAQ/IEQ evaluations.

CONCLUSION

The results of the District Wide Limited Mold/IAQ sampling of the Montoursville Area School District showed generally acceptable conditions throughout the buildings.

RECOMMENDATIONS

SSM makes the following recommendations:

- Ensure that all HVAC filters are changed as per manufacturer's recommendations.
- Try to have RH levels maintained at 60% or lower during summer months.
- At Loyalsock Valley Elementary School, consider an HVAC engineering specialist to evaluate the system in the building to ensure RH levels are below 60%, especially in summer months when there is little or no activity in the building.
- As always, staff should be vigilant when leaks are discovered to address the source, clean the moisture and replace discolored building materials such as ceiling tiles.

Mr. Joe Gnoffo | Moutoursville Area School District
SSM File 109944.0018
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We appreciate the opportunity to provide the Montoursville Area School District with mold consulting services for this project. Should you have questions or require additional information, please contact me.

Very truly yours,
Spotts, Stevens and McCoy

A handwritten signature in black ink, appearing to read "D. Kuchinski", written over a light blue horizontal line.

David L. Kuchinski
Industrial Hygienist
dave.kuchinski@ssmgroup.com

Enclosures

Laboratory Analytical Report
Loyalsock Valley Elementary School



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Order ID: 372413762
Customer ID: SPOT50
Customer PO:
Project ID:

Attn: Dave Kuchinski
Spotts Stevens and McCoy, Inc.
1047 North Park Road
Reading, PA 19610
Phone: (610) 621-2000
Fax:
Collected: 08/14/2024
Received: 08/16/2024
Analyzed: 08/20/2024
Proj: 109944.0018/Montoursville SD/Loyalsock

Spore Trap ASSESSMENT Report™ Air-O-Cell™ Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

	Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
372413762-0001	Alternaria (Ulocladium)	1	40	0.1	
	Ascospores	34	1400	2.3	
Client Sample ID LS-8-14--01	Aspergillus/Penicillium++	-	-	-	
	Basidiospores	1400	59100	95.1	
Location Ext. Front Lot	Bipolaris++	-	-	-	
	Chaetomium++	-	-	-	
	Cladosporium	9	400	0.6	
Sample Volume (L) 75	Curvularia	-	-	-	
	Epicoccum	-	-	-	
	Fusarium++	-	-	-	
Sample Type Background	Ganoderma	25	1100	1.8	
	Myxomycetes++	-	-	-	
	Pithomyces++	-	-	-	
	Rust	-	-	-	
Comments	Scopulariopsis/Microascus	-	-	-	
	Stachybotrys/Memnoniella	-	-	-	
	Unidentifiable Spores	1	40	0.1	
	Zygomycetes	-	-	-	
	Nigrospora	1	40	0.1	
	Polythrincium	-	-	-	
	Trichoderma	-	-	-	
	Total Fungi	1471	62120	100	
Hyphal Fragment	-	-	-		
Insect Fragment	-	-	-		
Pollen	-	-	-		

Analytical Sensitivity 600x: **42** counts/cubic meter
Analytical Sensitivity 300x *: **13*** counts/cubic meter

Skin Fragments: **1** 1 to 4 (low to high)
Fibrous Particulate: **1** 1 to 4 (low to high)
Background: **1** 1 to 4 (low to high); 5 (overloaded)

- Not commonly found growing indoors, spores likely come from outside.
- Spores reported to be able to cause allergies in individuals.
- Potential for mycotoxin production exists with these fungi.
- These fungi are considered water damage indicators.

Bipolaris++ = Bipolaris / Drechslera / Exserohilum
Myxomycetes++ = Myxomycetes / Smut /

Vincent Iuzzolino, M.S., Laboratory Director
or Other Approved Signatory

Initial report from: 08/20/2024 17:03:37

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372413762-0002	Alternaria (Ulocladium)	-	-	-	
	Ascospores	15	630	0.7	
Client Sample ID	Aspergillus/Penicillium++	3	100	0.1	
LS-8-14--02	Basidiospores	2000	84400	98.2	
	Bipolaris++	-	-	-	
	Chaetomium++	-	-	-	
Location	Cladosporium	5	200	0.2	
Ext. Rear Lot	Curvularia	-	-	-	
	Epicoccum	-	-	-	
Sample Volume (L)	Fusarium++	-	-	-	
75	Ganoderma	14	590	0.7	
	Myxomycetes++	-	-	-	
	Pithomyces++	-	-	-	
Sample Type	Rust	-	-	-	
Background	Scopulariopsis/Microascus	-	-	-	
	Stachybotrys/Memnoniella	-	-	-	
Comments	Unidentifiable Spores	-	-	-	
	Zygomycetes	-	-	-	
	Nigrospora	-	-	-	
	Polythrincium	1*	10*	0	
	Trichoderma	4*	50*	0.1	
	Total Fungi	2042	85980	100	
	Hyphal Fragment	-	-	-	
	Insect Fragment	-	-	-	
	Pollen	-	-	-	

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	Particle Identification	Raw Count	(Count/m ³)	% of Total	Interpretation Guideline
372413762-0003	Alternaria (Ulocladium)	-	-	-	Acceptable
	Ascospores	-	-	-	Acceptable
Client Sample ID	Aspergillus/Penicillium++	-	-	-	Acceptable
LS-8-14--03	Basidiospores	3	100	55.6	Acceptable  
	Bipolaris++	-	-	-	Acceptable
	Chaetomium++	-	-	-	Acceptable
Location	Cladosporium	-	-	-	Acceptable
Library (L-2)	Curvularia	-	-	-	Acceptable
	Epicoccum	-	-	-	Acceptable
Sample Volume (L)	Fusarium++	-	-	-	Acceptable
75	Ganoderma	-	-	-	Acceptable
	Myxomycetes++	1	40	22.2	Slightly Elevated  
	Pithomyces++	-	-	-	Acceptable
Sample Type	Rust	-	-	-	Acceptable
Inside	Scopulariopsis/Microascus	-	-	-	Acceptable
	Stachybotrys/Memnoniella	-	-	-	Acceptable
Comments	Unidentifiable Spores	-	-	-	Acceptable
	Zygomycetes	-	-	-	Acceptable
	Nigrospora	-	-	-	Acceptable
	Polythrincium	1	40	22.2	Slightly Elevated 
	Trichoderma	-	-	-	Acceptable
	Total Fungi	5	180	100	Acceptable
	Hyphal Fragment	-	-	-	Acceptable
	Insect Fragment	-	-	-	Acceptable
	Pollen	-	-	-	Acceptable

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372413762-0004	Alternaria (Ulocladium)	-	-	-	Acceptable
	Ascospores	3	100	0.5	Acceptable
Client Sample ID	Aspergillus/Penicillium++	-	-	-	Acceptable
LS-8-14--04	Basidiospores	468	19800	98.3	Acceptable
	Bipolaris++	-	-	-	Acceptable
	Chaetomium++	-	-	-	Acceptable
Location	Cladosporium	4	200	1	Acceptable
Cafe	Curvularia	-	-	-	Acceptable
	Epicoccum	-	-	-	Acceptable
Sample Volume (L)	Fusarium++	-	-	-	Acceptable
75	Ganoderma	1	40	0.2	Acceptable
	Myxomycetes++	-	-	-	Acceptable
Sample Type	Pithomyces++	1*	10*	0	Slightly Elevated
Inside	Rust	-	-	-	Acceptable
	Scopulariopsis/Microascus	-	-	-	Acceptable
	Stachybotrys/Memnoniella	-	-	-	Acceptable
Comments	Unidentifiable Spores	-	-	-	Acceptable
	Zygomycetes	-	-	-	Acceptable
	Nigrospora	-	-	-	Acceptable
	Polythrincium	-	-	-	Acceptable
	Trichoderma	-	-	-	Acceptable
	Total Fungi	477	20150	100	Acceptable
	Hyphal Fragment	-	-	-	Acceptable
	Insect Fragment	-	-	-	Acceptable
	Pollen	-	-	-	Acceptable

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372413762-0005	Alternaria (Ulocladium)	-	-	-	Acceptable
	Ascospores	1	40	16.7	Acceptable
Client Sample ID	Aspergillus/Penicillium++	-	-	-	Acceptable
LS-8-14--05	Basidiospores	5	200	83.3	Acceptable
	Bipolaris++	-	-	-	Acceptable
	Chaetomium++	-	-	-	Acceptable
Location	Cladosporium	-	-	-	Acceptable
Rm. A-6	Curvularia	-	-	-	Acceptable
	Epicoccum	-	-	-	Acceptable
Sample Volume (L)	Fusarium++	-	-	-	Acceptable
75	Ganoderma	-	-	-	Acceptable
	Myxomycetes++	-	-	-	Acceptable
	Pithomyces++	-	-	-	Acceptable
Sample Type	Rust	-	-	-	Acceptable
Inside	Scopulariopsis/Microascus	-	-	-	Acceptable
	Stachybotrys/Memnoniella	-	-	-	Acceptable
Comments	Unidentifiable Spores	-	-	-	Acceptable
	Zygomycetes	-	-	-	Acceptable
	Nigrospora	-	-	-	Acceptable
	Polythrincium	-	-	-	Acceptable
	Trichoderma	-	-	-	Acceptable
	Total Fungi	6	240	100	Acceptable
	Hyphal Fragment	-	-	-	Acceptable
	Insect Fragment	-	-	-	Acceptable
	Pollen	-	-	-	Acceptable

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Order ID: 372413762
Customer ID: SPOT50
Customer PO:
Project ID:

Attn: Dave Kuchinski
Spotts Stevens and McCoy, Inc.
1047 North Park Road
Reading, PA 19610
Phone: (610) 621-2000
Fax:
Collected: 08/14/2024
Received: 08/16/2024
Analyzed: 08/20/2024
Proj: 109944.0018/Montoursville SD/Loyalsock

Spore Trap ASSESSMENT Report™ Air-O-Cell™ Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

	Particle Identification	Raw Count	(Count/m ³)	% of Total	Interpretation Guideline
372413762-0006	Alternaria (Ulocladium)	-	-	-	Acceptable
	Ascospores	1	40	1.3	Acceptable
Client Sample ID	Aspergillus/Penicillium++	-	-	-	Acceptable
LS-8-14--06	Basidiospores	62	2600	83.1	Acceptable
	Bipolaris++	-	-	-	Acceptable
	Chaetomium++	-	-	-	Acceptable
Location	Cladosporium	9	400	12.8	Acceptable
Art Room	Curvularia	-	-	-	Acceptable
	Epicoccum	-	-	-	Acceptable
Sample Volume (L)	Fusarium++	-	-	-	Acceptable
75	Ganoderma	2	80	2.6	Acceptable
	Myxomycetes++	-	-	-	Acceptable
	Pithomyces++	-	-	-	Acceptable
Sample Type	Rust	-	-	-	Acceptable
Inside	Scopulariopsis/Microascus	-	-	-	Acceptable
	Stachybotrys/Memnoniella	-	-	-	Acceptable
Comments	Unidentifiable Spores	1*	10*	0.3	Acceptable
	Zygomycetes	-	-	-	Acceptable
	Nigrospora	-	-	-	Acceptable
	Polythrincium	-	-	-	Acceptable
	Trichoderma	-	-	-	Acceptable
	Total Fungi	75	3130	100	Acceptable
	Hyphal Fragment	-	-	-	Acceptable
	Insect Fragment	-	-	-	Acceptable
	Pollen	-	-	-	Acceptable

Analytical Sensitivity 600x: **42** counts/cubic meter
Analytical Sensitivity 300x *: **13*** counts/cubic meter

Skin Fragments: **2** 1 to 4 (low to high)
Fibrous Particulate: **1** 1 to 4 (low to high)
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- Acceptable** Concentration at or below background
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- Not commonly found growing indoors, spores likely come from outside.
- Spores reported to be able to cause allergies in individuals.
- Potential for mycotoxin production exists with these fungi.
- These fungi are considered water damage indicators.

Bipolaris++ = Bipolaris / Drechslera / Exserohilum
Myxomycetes++ = Myxomycetes / Smut /

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372413762-0007	Alternaria (Ulocladium)	-	-	-	Acceptable
	Ascospores	1	40	8.7	Acceptable
Client Sample ID	Aspergillus/Penicillium++	-	-	-	Acceptable
LS-8-14--07	Basidiospores	6	300	65.2	Acceptable
	Bipolaris++	-	-	-	Acceptable
	Chaetomium++	-	-	-	Acceptable
Location	Cladosporium	2	80	17.4	Acceptable
Rm. B4	Curvularia	-	-	-	Acceptable
	Epicoccum	-	-	-	Acceptable
Sample Volume (L)	Fusarium++	-	-	-	Acceptable
	Ganoderma	-	-	-	Acceptable
75	Myxomycetes++	1	40	8.7	Slightly Elevated
	Pithomyces++	-	-	-	Acceptable
Sample Type	Rust	-	-	-	Acceptable
	Scopulariopsis/Microascus	-	-	-	Acceptable
Inside	Stachybotrys/Memnoniella	-	-	-	Acceptable
Comments	Unidentifiable Spores	-	-	-	Acceptable
	Zygomycetes	-	-	-	Acceptable
	Nigrospora	-	-	-	Acceptable
	Polythrincium	-	-	-	Acceptable
	Trichoderma	-	-	-	Acceptable
	Total Fungi	10	460	100	Acceptable
	Hyphal Fragment	-	-	-	Acceptable
	Insect Fragment	-	-	-	Acceptable
	Pollen	-	-	-	Acceptable

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	Particle Identification	Raw Count	(Count/m ³)	% of Total	Interpretation Guideline
372413762-0008	Alternaria (Ulocladium)	-	-	-	Acceptable
	Ascospores	2	80	1.2	Acceptable
Client Sample ID	Aspergillus/Penicillium++	4	200	3.1	Slightly Elevated
LS-8-14--08	Basidiospores	147	6200	95.7	Acceptable
	Bipolaris++	-	-	-	Acceptable
	Chaetomium++	-	-	-	Acceptable
Location	Cladosporium	-	-	-	Acceptable
Hall O/S B4	Curvularia	-	-	-	Acceptable
	Epicoccum	-	-	-	Acceptable
Sample Volume (L)	Fusarium++	-	-	-	Acceptable
75	Ganoderma	-	-	-	Acceptable
	Myxomycetes++	-	-	-	Acceptable
	Pithomyces++	-	-	-	Acceptable
Sample Type	Rust	-	-	-	Acceptable
Inside	Scopulariopsis/Microascus	-	-	-	Acceptable
	Stachybotrys/Memnoniella	-	-	-	Acceptable
Comments	Unidentifiable Spores	-	-	-	Acceptable
	Zygomycetes	-	-	-	Acceptable
	Nigrospora	-	-	-	Acceptable
	Polythrincium	-	-	-	Acceptable
	Trichoderma	-	-	-	Acceptable
	Total Fungi	153	6480	100	Acceptable
	Hyphal Fragment	-	-	-	Acceptable
	Insect Fragment	-	-	-	Acceptable
	Pollen	-	-	-	Acceptable

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Laboratory Analytical Report
Lyter Elementary School





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	Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
372413761-0001	Alternaria (Ulocladium)	-	-	-	Acceptable
	Ascospores	-	-	-	Acceptable
Client Sample ID	Aspergillus/Penicillium++	-	-	-	Acceptable
L-8-14-01	Basidiospores	9	400	100	Acceptable  
	Bipolaris++	-	-	-	Acceptable
Location	Chaetomium++	-	-	-	Acceptable
Cafe	Cladosporium	-	-	-	Acceptable
	Curvularia	-	-	-	Acceptable
	Epicoccum	-	-	-	Acceptable
Sample Volume (L)	Fusarium++	-	-	-	Acceptable
75	Ganoderma	-	-	-	Acceptable
	Myxomycetes++	-	-	-	Acceptable
	Pithomyces++	-	-	-	Acceptable
Sample Type	Rust	-	-	-	Acceptable
Inside	Scopulariopsis/Microascus	-	-	-	Acceptable
	Stachybotrys/Memnoniella	-	-	-	Acceptable
Comments	Unidentifiable Spores	-	-	-	Acceptable
	Zygomycetes	-	-	-	Acceptable
	Pestalotia++	-	-	-	Acceptable
	Polythrincium	-	-	-	Acceptable
	Total Fungi	9	400	100	Acceptable
	Hyphal Fragment	-	-	-	Acceptable
	Insect Fragment	-	-	-	Acceptable
	Pollen	-	-	-	Acceptable

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	Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
372413761-0002	Alternaria (Ulocladium)	-	-	-	Acceptable
	Ascospores	3	100	1.9	Acceptable
Client Sample ID	Aspergillus/Penicillium++	-	-	-	Acceptable
L-8-14-02	Basidiospores	118	4980	94.7	Acceptable
	Bipolaris++	-	-	-	Acceptable
	Chaetomium++	-	-	-	Acceptable
Location	Cladosporium	3	100	1.9	Acceptable
C-7 STEM	Curvularia	-	-	-	Acceptable
	Epicoccum	-	-	-	Acceptable
Sample Volume (L)	Fusarium++	-	-	-	Acceptable
75	Ganoderma	1	40	0.8	Acceptable
	Myxomycetes++	-	-	-	Acceptable
	Pithomyces++	1*	10*	0.2	Slightly Elevated
Sample Type	Rust	2*	30*	0.6	Acceptable
Inside	Scopulariopsis/Microascus	-	-	-	Acceptable
	Stachybotrys/Memnoniella	-	-	-	Acceptable
Comments	Unidentifiable Spores	-	-	-	Acceptable
	Zygomycetes	-	-	-	Acceptable
	Pestalotia++	-	-	-	Acceptable
	Polythrincium	-	-	-	Acceptable
	Total Fungi	128	5260	100	Acceptable
	Hyphal Fragment	-	-	-	Acceptable
	Insect Fragment	-	-	-	Acceptable
	Pollen	-	-	-	Acceptable

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372413761-0003	Alternaria (Ulocladium)	-	-	-	Acceptable
	Ascospores	1	40	2.8	Acceptable
Client Sample ID	Aspergillus/Penicillium++	2	80	5.6	Acceptable
L-8-14-03	Basidiospores	29	1200	83.3	Acceptable
	Bipolaris++	-	-	-	Acceptable
	Chaetomium++	-	-	-	Acceptable
Location	Cladosporium	2	80	5.6	Acceptable
Hall O/S B-15	Curvularia	-	-	-	Acceptable
	Epicoccum	-	-	-	Acceptable
Sample Volume (L)	Fusarium++	-	-	-	Acceptable
75	Ganoderma	1	40	2.8	Acceptable
	Myxomycetes++	-	-	-	Acceptable
	Pithomyces++	-	-	-	Acceptable
Sample Type	Rust	-	-	-	Acceptable
Inside	Scopulariopsis/Microascus	-	-	-	Acceptable
	Stachybotrys/Memnoniella	-	-	-	Acceptable
Comments	Unidentifiable Spores	-	-	-	Acceptable
	Zygomycetes	-	-	-	Acceptable
	Pestalotia++	-	-	-	Acceptable
	Polythrincium	-	-	-	Acceptable
	Total Fungi	35	1440	100	Acceptable
	Hyphal Fragment	-	-	-	Acceptable
	Insect Fragment	-	-	-	Acceptable
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	Ascospores	-	-	-	Acceptable
Client Sample ID	Aspergillus/Penicillium++	-	-	-	Acceptable
L-8-14-04	Basidiospores	-	-	-	Acceptable
	Bipolaris++	-	-	-	Acceptable
	Chaetomium++	-	-	-	Acceptable
Location	Cladosporium	-	-	-	Acceptable
Library	Curvularia	-	-	-	Acceptable
	Epicoccum	-	-	-	Acceptable
Sample Volume (L)	Fusarium++	-	-	-	Acceptable
75	Ganoderma	-	-	-	Acceptable
	Myxomycetes++	-	-	-	Acceptable
	Pithomyces++	-	-	-	Acceptable
Sample Type	Rust	-	-	-	Acceptable
Inside	Scopulariopsis/Microascus	-	-	-	Acceptable
	Stachybotrys/Memnoniella	-	-	-	Acceptable
Comments	Unidentifiable Spores	-	-	-	Acceptable
	Zygomycetes	-	-	-	Acceptable
	Pestalotia++	-	-	-	Acceptable
	Polythrincium	-	-	-	Acceptable
	Total Fungi	-	None Detected	-	Acceptable
	Hyphal Fragment	-	-	-	Acceptable
	Insect Fragment	-	-	-	Acceptable
	Pollen	-	-	-	Acceptable
Analytical Sensitivity 600x: 42 counts/cubic meter			Skin Fragments: 2 1 to 4 (low to high)		
Analytical Sensitivity 300x *: 13* counts/cubic meter			Fibrous Particulate: 1 1 to 4 (low to high)		
			Background: 1 1 to 4 (low to high); 5 (overloaded)		

- Acceptable** Concentration at or below background
- Slightly Elevated** Concentration above background
- ELEVATED** Concentration 10X or more above background

- Not commonly found growing indoors, spores likely come from outside.
- Spores reported to be able to cause allergies in individuals.
- Potential for mycotoxin production exists with these fungi.
- These fungi are considered water damage indicators.

Bipolaris++ = Bipolaris / Drechslera / Exserohilum
Myxomycetes++ = Myxomycetes / Smut /

Initial report from: 08/21/2024 07:27:43

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



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Fax:
Collected: 08/14/2024
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Analyzed: 08/20/2024
Proj: 109944.0018/Montoursville SD/Lyter ES

Spore Trap ASSESSMENT Report™ Air-O-Cell™ Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

	Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
372413761-0005	Alternaria (Ulocladium) Ascospores	1* 6	10* 300	0 1.1	
Client Sample ID M-8-14-Ext.	Aspergillus/Penicillium++ Basidiospores	128 480	5590 20900	19.8 74	
	Bipolaris++	1	40	0.1	
Location McCall	Chaetomium++ Cladosporium	- 20	- 870	- 3.1	
	Curvularia	-	-	-	
	Epicoccum	-	-	-	
Sample Volume (L) 75	Fusarium++ Ganoderma	- 12	- 520	- 1.8	
	Myxomycetes++	-	-	-	
Sample Type Background	Pithomyces++ Rust	- -	- -	- -	
	Scopulariopsis/Microascus	-	-	-	
	Stachybotrys/Memnoniella	-	-	-	
Comments	Unidentifiable Spores	-	-	-	
	Zygomycetes	-	-	-	
	Pestalotia++	-	-	-	
	Polythrincium	-	-	-	
	Total Fungi	648	28230	100	
	Hyphal Fragment	-	-	-	
	Insect Fragment	-	-	-	
	Pollen	1*	10*	-	
Analytical Sensitivity 600x: 44 counts/cubic meter		Skin Fragments: 1		1 to 4 (low to high)	
Analytical Sensitivity 300x *: 13* counts/cubic meter		Fibrous Particulate: 1		1 to 4 (low to high)	
		Background: 2		1 to 4 (low to high); 5 (overloaded)	

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Spore Trap ASSESSMENT Report™ Air-O-Cell™ Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

	Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
372413761-0006	Alternaria (Ulocladium)	1*	10*	0.1	
	Ascospores	9	400	2.3	
Client Sample ID	Aspergillus/Penicillium++	21	920	5.2	
L-8-14-Ext.	Basidiospores	333	14500	81.9	
	Bipolaris++	-	-	-	
	Chaetomium++	1	40	0.2	
Location	Cladosporium	18	790	4.5	
Lyter	Curvularia	-	-	-	
	Epicoccum	-	-	-	
Sample Volume (L)	Fusarium++	-	-	-	
75	Ganoderma	15	660	3.7	
	Myxomycetes++	7	300	1.7	
	Pithomyces++	-	-	-	
Sample Type	Rust	1	40	0.2	
Background	Scopulariopsis/Microascus	-	-	-	
	Stachybotrys/Memnoniella	-	-	-	
Comments	Unidentifiable Spores	-	-	-	
	Zygomycetes	-	-	-	
	Pestalotia++	1	40	0.2	
	Polythrincium	-	-	-	
	Total Fungi	407	17700	100	
	Hyphal Fragment	-	-	-	
	Insect Fragment	1	40	-	
	Pollen	1	40	-	

Analytical Sensitivity 600x: **44** counts/cubic meter
Analytical Sensitivity 300x *: **13*** counts/cubic meter

Skin Fragments: **1** 1 to 4 (low to high)
Fibrous Particulate: **1** 1 to 4 (low to high)
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Spore Trap ASSESSMENT Report™ Air-O-Cell™ Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

	Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
372413761-0007	Alternaria (Ulocladium)	2	90	0.7	
	Ascospores	6	300	2.4	
Client Sample ID HS-8-14-Ext.	Aspergillus/Penicillium++	-	-	-	
	Basidiospores	204	8900	70	
Location High School	Bipolaris++	-	-	-	
	Chaetomium++	-	-	-	
	Cladosporium	67	2900	22.8	
Sample Volume (L) 75	Curvularia	-	-	-	
	Epicoccum	-	-	-	
	Fusarium++	-	-	-	
Sample Type Background	Ganoderma	12	520	4.1	
	Myxomycetes++	-	-	-	
	Pithomyces++	-	-	-	
Comments	Rust	-	-	-	
	Scopulariopsis/Microascus	-	-	-	
	Stachybotrys/Memnoniella	-	-	-	
	Unidentifiable Spores	-	-	-	
	Zygomycetes	-	-	-	
	Pestalotia++	-	-	-	
	Polythrincium	1*	10*	0.1	
	Total Fungi	292	12720	100	
	Hyphal Fragment	2	90	-	
	Insect Fragment	-	-	-	
	Pollen	1	40	-	

Analytical Sensitivity 600x: **44** counts/cubic meter
Analytical Sensitivity 300x *: **13*** counts/cubic meter

Skin Fragments: **1** 1 to 4 (low to high)
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Laboratory Analytical Report
McCall Middle School











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Spore Trap ASSESSMENT Report™ Air-O-Cell™ Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

	Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
372413773-0001	Alternaria (Ulocladium)	-	-	-	Acceptable
	Ascospores	-	-	-	Acceptable
Client Sample ID	Aspergillus/Penicillium++	-	-	-	Acceptable
M-8-14-01	Basidiospores	8	300	71.4	Acceptable  
	Bipolaris++	-	-	-	Acceptable
	Chaetomium++	-	-	-	Acceptable
Location	Cladosporium	-	-	-	Acceptable
Library	Curvularia	-	-	-	Acceptable
	Epicoccum	-	-	-	Acceptable
Sample Volume (L)	Fusarium++	-	-	-	Acceptable
75	Ganoderma	1	40	9.5	Acceptable  
	Myxomycetes++	1	40	9.5	Acceptable  
	Pithomyces++	1	40	9.5	Slightly Elevated  
Sample Type	Rust	-	-	-	Acceptable
Inside	Scopulariopsis/Microascus	-	-	-	Acceptable
	Stachybotrys/Memnoniella	-	-	-	Acceptable
Comments	Unidentifiable Spores	-	-	-	Acceptable
	Zygomycetes	-	-	-	Acceptable
	Pestalotia++	-	-	-	Acceptable
	Polythrincium	-	-	-	Acceptable
	Total Fungi	11	420	100	Acceptable
	Hyphal Fragment	-	-	-	Acceptable
	Insect Fragment	-	-	-	Acceptable
	Pollen	-	-	-	Acceptable

Analytical Sensitivity 600x: **44** counts/cubic meter
Analytical Sensitivity 300x *: **13*** counts/cubic meter

Skin Fragments: **1** 1 to 4 (low to high)
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Spore Trap ASSESSMENT Report™ Air-O-Cell™ Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

	Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
372413773-0002	Alternaria (Ulocladium)	-	-	-	Acceptable
	Ascospores	-	-	-	Acceptable
Client Sample ID	Aspergillus/Penicillium++	-	-	-	Acceptable
M-8-14-02	Basidiospores	3	100	58.8	Acceptable  
	Bipolaris++	-	-	-	Acceptable
	Chaetomium++	-	-	-	Acceptable
Location	Cladosporium	-	-	-	Acceptable
Room 141	Curvularia	-	-	-	Acceptable
	Epicoccum	-	-	-	Acceptable
Sample Volume (L)	Fusarium++	-	-	-	Acceptable
75	Ganoderma	-	-	-	Acceptable
	Myxomycetes++	1	40	23.5	Acceptable  
Sample Type	Pithomyces++	2*	30*	17.6	Slightly Elevated  
	Rust	-	-	-	Acceptable
	Scopulariopsis/Microascus	-	-	-	Acceptable
Inside	Stachybotrys/Memnoniella	-	-	-	Acceptable
Comments	Unidentifiable Spores	-	-	-	Acceptable
	Zygomycetes	-	-	-	Acceptable
	Pestalotia++	-	-	-	Acceptable
	Polythrincium	-	-	-	Acceptable
	Total Fungi	6	170	100	Acceptable
	Hyphal Fragment	-	-	-	Acceptable
	Insect Fragment	-	-	-	Acceptable
	Pollen	-	-	-	Acceptable

Analytical Sensitivity 600x: **44** counts/cubic meter
Analytical Sensitivity 300x *: **13*** counts/cubic meter

Skin Fragments: **1** 1 to 4 (low to high)
Fibrous Particulate: **1** 1 to 4 (low to high)
Background: **2** 1 to 4 (low to high); **5** (overloaded)

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	Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
372413773-0003	Alternaria (Ulocladium)	1*	10*	8.3	Acceptable   
	Ascospores	-	-	-	Acceptable
Client Sample ID	Aspergillus/Penicillium++	-	-	-	Acceptable
M-8-14-03	Basidiospores	2	90	75	Acceptable  
	Bipolaris++	-	-	-	Acceptable
	Chaetomium++	-	-	-	Acceptable
Location	Cladosporium	1*	10*	8.3	Acceptable 
220 Science Lab	Curvularia	-	-	-	Acceptable
	Epicoccum	-	-	-	Acceptable
Sample Volume (L)	Fusarium++	-	-	-	Acceptable
75	Ganoderma	-	-	-	Acceptable
	Myxomycetes++	-	-	-	Acceptable
	Pithomyces++	-	-	-	Acceptable
Sample Type	Rust	1*	10*	8.3	Acceptable  
Inside	Scopulariopsis/Microascus	-	-	-	Acceptable
	Stachybotrys/Memnoniella	-	-	-	Acceptable
Comments	Unidentifiable Spores	-	-	-	Acceptable
	Zygomycetes	-	-	-	Acceptable
	Pestalotia++	-	-	-	Acceptable
	Polythrincium	-	-	-	Acceptable
	Total Fungi	5	120	100	Acceptable
	Hyphal Fragment	-	-	-	Acceptable
	Insect Fragment	-	-	-	Acceptable
	Pollen	-	-	-	Acceptable

Analytical Sensitivity 600x: **44** counts/cubic meter
Analytical Sensitivity 300x *: **13*** counts/cubic meter

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Phone/Fax: (800) 220-3675 / (856) 786-0262
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Order ID: 372413773
Customer ID: SPOT50
Customer PO:
Project ID:

Attn: Dave Kuchinski
Spotts Stevens and McCoy, Inc.
1047 North Park Road
Reading, PA 19610
Phone: (610) 621-2000
Fax:
Collected: 08/14/2024
Received: 08/16/2024
Analyzed: 08/20/2024
Proj: 109944.0018 / Montoursville SD / McCall





Spore Trap ASSESSMENT Report™ Air-O-Cell™ Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

	Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
372413773-0004	Alternaria (Ulocladium)	-	-	-	Acceptable
	Ascospores	-	-	-	Acceptable
Client Sample ID	Aspergillus/Penicillium++	-	-	-	Acceptable
M-8-14-04	Basidiospores	13	570	65.5	Acceptable  
	Bipolaris++	-	-	-	Acceptable
	Chaetomium++	-	-	-	Acceptable
Location	Cladosporium	7	300	34.5	Acceptable 
Hall o/s 220	Curvularia	-	-	-	Acceptable
	Epicoccum	-	-	-	Acceptable
Sample Volume (L)	Fusarium++	-	-	-	Acceptable
75	Ganoderma	-	-	-	Acceptable
	Myxomycetes++	-	-	-	Acceptable
	Pithomyces++	-	-	-	Acceptable
Sample Type	Rust	-	-	-	Acceptable
Inside	Scopulariopsis/Microascus	-	-	-	Acceptable
	Stachybotrys/Memnoniella	-	-	-	Acceptable
Comments	Unidentifiable Spores	-	-	-	Acceptable
	Zygomycetes	-	-	-	Acceptable
	Pestalotia++	-	-	-	Acceptable
	Polythrincium	-	-	-	Acceptable
	Total Fungi	20	870	100	Acceptable
	Hyphal Fragment	-	-	-	Acceptable
	Insect Fragment	-	-	-	Acceptable
	Pollen	-	-	-	Acceptable

Analytical Sensitivity 600x: **44** counts/cubic meter
Analytical Sensitivity 300x *: **13*** counts/cubic meter

Skin Fragments: **1** 1 to 4 (low to high)
Fibrous Particulate: **1** 1 to 4 (low to high)
Background: **2** 1 to 4 (low to high); **5** (overloaded)

- Acceptable** Concentration at or below background
- Slightly Elevated** Concentration above background
- ELEVATED** Concentration 10X or more above background

-  Not commonly found growing indoors, spores likely come from outside.
-  Spores reported to be able to cause allergies in individuals.
-  Potential for mycotoxin production exists with these fungi.
-  These fungi are considered water damage indicators.

Bipolaris++ = Bipolaris / Drechslera / Exserohilum
Myxomycetes++ = Myxomycetes / Smut /

Vincent Iuzzolino, M.S., Laboratory Director
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Spore Trap ASSESSMENT Report™ Air-O-Cell™ Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

	Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
372413773-0005	Alternaria (Ulocladium)	1*	10*	0	
	Ascospores	6	300	1.1	
Client Sample ID	Aspergillus/Penicillium++	128	5590	19.8	
M-8-14-Ext.	Basidiospores	480	20900	74	
	Bipolaris++	1	40	0.1	
	Chaetomium++	-	-	-	
Location	Cladosporium	20	870	3.1	
McCall	Curvularia	-	-	-	
	Epicoccum	-	-	-	
Sample Volume (L)	Fusarium++	-	-	-	
75	Ganoderma	12	520	1.8	
	Myxomycetes++	-	-	-	
	Pithomyces++	-	-	-	
Sample Type	Rust	-	-	-	
Background	Scopulariopsis/Microascus	-	-	-	
	Stachybotrys/Memnoniella	-	-	-	
Comments	Unidentifiable Spores	-	-	-	
	Zygomycetes	-	-	-	
	Pestalotia++	-	-	-	
	Polythrincium	-	-	-	
	Total Fungi	648	28230	100	
	Hyphal Fragment	-	-	-	
	Insect Fragment	-	-	-	
	Pollen	1*	10*	-	
Analytical Sensitivity 600x: 44 counts/cubic meter		Skin Fragments: 1		1 to 4 (low to high)	
Analytical Sensitivity 300x *: 13* counts/cubic meter		Fibrous Particulate: 1		1 to 4 (low to high)	
		Background: 2		1 to 4 (low to high); 5 (overloaded)	

- Not commonly found growing indoors, spores likely come from outside.
- Spores reported to be able to cause allergies in individuals.
- Potential for mycotoxin production exists with these fungi.
- These fungi are considered water damage indicators.

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Spore Trap ASSESSMENT Report™ Air-O-Cell™ Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

	Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
372413773-0006	Alternaria (Ulocladium)	1*	10*	0.1	
	Ascospores	9	400	2.3	
Client Sample ID	Aspergillus/Penicillium++	21	920	5.2	
L-8-14-Ext.	Basidiospores	333	14500	81.9	
	Bipolaris++	-	-	-	
	Chaetomium++	1	40	0.2	
Location	Cladosporium	18	790	4.5	
Lyter	Curvularia	-	-	-	
	Epicoccum	-	-	-	
Sample Volume (L)	Fusarium++	-	-	-	
75	Ganoderma	15	660	3.7	
	Myxomycetes++	7	300	1.7	
	Pithomyces++	-	-	-	
Sample Type	Rust	1	40	0.2	
Background	Scopulariopsis/Microascus	-	-	-	
	Stachybotrys/Memnoniella	-	-	-	
Comments	Unidentifiable Spores	-	-	-	
	Zygomycetes	-	-	-	
	Pestalotia++	1	40	0.2	
	Polythrincium	-	-	-	
	Total Fungi	407	17700	100	
	Hyphal Fragment	-	-	-	
	Insect Fragment	1	40	-	
	Pollen	1	40	-	

Analytical Sensitivity 600x: **44** counts/cubic meter
Analytical Sensitivity 300x *: **13*** counts/cubic meter
Skin Fragments: **1** 1 to 4 (low to high)
Fibrous Particulate: **1** 1 to 4 (low to high)
Background: **2** 1 to 4 (low to high); **5** (overloaded)

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Spore Trap ASSESSMENT Report™ Air-O-Cell™ Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

	Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
372413773-0007	Alternaria (Ulocladium)	2	90	0.7	
	Ascospores	6	300	2.4	
Client Sample ID HS-8-14-Ext.	Aspergillus/Penicillium++	-	-	-	
	Basidiospores	204	8900	70	
Location High School	Bipolaris++	-	-	-	
	Chaetomium++	-	-	-	
	Cladosporium	67	2900	22.8	
Sample Volume (L) 75	Curvularia	-	-	-	
	Epicoccum	-	-	-	
Sample Type Background	Fusarium++	-	-	-	
	Ganoderma	12	520	4.1	
Comments	Myxomycetes++	-	-	-	
	Pithomyces++	-	-	-	
	Rust	-	-	-	
	Scopulariopsis/Microascus	-	-	-	
	Stachybotrys/Memnoniella	-	-	-	
	Unidentifiable Spores	-	-	-	
	Zygomycetes	-	-	-	
	Pestalotia++	-	-	-	
	Polythrincium	1*	10*	0.1	
	Total Fungi	292	12720	100	
	Hyphal Fragment	2	90	-	
	Insect Fragment	-	-	-	
	Pollen	1	40	-	

Analytical Sensitivity 600x: **44** counts/cubic meter
Analytical Sensitivity 300x *: **13*** counts/cubic meter
Skin Fragments: **1** 1 to 4 (low to high)
Fibrous Particulate: **1** 1 to 4 (low to high)
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Laboratory Analytical Report
Montoursville Area High School





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Spore Trap ASSESSMENT Report™ Air-O-Cell™ Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

	Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
372413760-0001	Alternaria (Ulocladium)	-	-	-	Acceptable
	Ascospores	-	-	-	Acceptable
Client Sample ID	Aspergillus/Penicillium++	-	-	-	Acceptable
HS-8-14-01	Basidiospores	10	420	100	Acceptable  
	Bipolaris++	-	-	-	Acceptable
	Chaetomium++	-	-	-	Acceptable
Location	Cladosporium	-	-	-	Acceptable
Cafe	Curvularia	-	-	-	Acceptable
	Epicoccum	-	-	-	Acceptable
Sample Volume (L)	Fusarium++	-	-	-	Acceptable
75	Ganoderma	-	-	-	Acceptable
	Myxomycetes++	-	-	-	Acceptable
	Pithomyces++	-	-	-	Acceptable
Sample Type	Rust	-	-	-	Acceptable
Inside	Scopulariopsis/Microascus	-	-	-	Acceptable
	Stachybotrys/Memnoniella	-	-	-	Acceptable
Comments	Unidentifiable Spores	-	-	-	Acceptable
	Zygomycetes	-	-	-	Acceptable
	Pestalotia++	-	-	-	Acceptable
	Polythrincium	-	-	-	Acceptable
	Torula++	-	-	-	Acceptable
	Total Fungi	10	420	100	Acceptable
	Hyphal Fragment	-	-	-	Acceptable
	Insect Fragment	-	-	-	Acceptable
	Pollen	-	-	-	Acceptable

Analytical Sensitivity 600x: **42** counts/cubic meter
Analytical Sensitivity 300x *: **13*** counts/cubic meter

Skin Fragments: **2** 1 to 4 (low to high)
Fibrous Particulate: **1** 1 to 4 (low to high)
Background: **1** 1 to 4 (low to high); **5** (overloaded)

- Acceptable** Concentration at or below background
- Slightly Elevated** Concentration above background
- ELEVATED** Concentration 10X or more above background

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	Particle Identification	Raw Count	(Count/m ³)	% of Total	Interpretation Guideline
372413760-0002	Alternaria (Ulocladium)	-	-	-	Acceptable
	Ascospores	-	-	-	Acceptable
Client Sample ID	Aspergillus/Penicillium++	-	-	-	Acceptable
HS-8-14-02	Basidiospores	7	300	100	Acceptable  
	Bipolaris++	-	-	-	Acceptable
	Chaetomium++	-	-	-	Acceptable
Location	Cladosporium	-	-	-	Acceptable
Hall O/S 206	Curvularia	-	-	-	Acceptable
	Epicoccum	-	-	-	Acceptable
Sample Volume (L)	Fusarium++	-	-	-	Acceptable
75	Ganoderma	-	-	-	Acceptable
	Myxomycetes++	-	-	-	Acceptable
	Pithomyces++	-	-	-	Acceptable
Sample Type	Rust	-	-	-	Acceptable
Inside	Scopulariopsis/Microascus	-	-	-	Acceptable
	Stachybotrys/Memnoniella	-	-	-	Acceptable
Comments	Unidentifiable Spores	-	-	-	Acceptable
	Zygomycetes	-	-	-	Acceptable
	Pestalotia++	-	-	-	Acceptable
	Polythrincium	-	-	-	Acceptable
	Torula++	-	-	-	Acceptable
	Total Fungi	7	300	100	Acceptable
	Hyphal Fragment	-	-	-	Acceptable
	Insect Fragment	-	-	-	Acceptable
	Pollen	-	-	-	Acceptable
Analytical Sensitivity 600x: 42 counts/cubic meter		Skin Fragments: 2		1 to 4 (low to high)	
Analytical Sensitivity 300x *: 13* counts/cubic meter		Fibrous Particulate: 1		1 to 4 (low to high)	
		Background: 1		1 to 4 (low to high); 5 (overloaded)	

Acceptable Concentration at or below background
Slightly Elevated Concentration above background
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	Particle Identification	Raw Count	(Count/m ³)	% of Total	Interpretation Guideline
372413760-0003	Alternaria (Ulocladium)	-	-	-	Acceptable
	Ascospores	3	100	11.1	Acceptable
Client Sample ID	Aspergillus/Penicillium++	-	-	-	Acceptable
HS-8-14-03	Basidiospores	18	760	84.4	Acceptable
	Bipolaris++	-	-	-	Acceptable
	Chaetomium++	-	-	-	Acceptable
Location	Cladosporium	-	-	-	Acceptable
Library	Curvularia	-	-	-	Acceptable
	Epicoccum	-	-	-	Acceptable
Sample Volume (L)	Fusarium++	-	-	-	Acceptable
75	Ganoderma	1	40	4.4	Acceptable
	Myxomycetes++	-	-	-	Acceptable
	Pithomyces++	-	-	-	Acceptable
Sample Type	Rust	-	-	-	Acceptable
Inside	Scopulariopsis/Microascus	-	-	-	Acceptable
	Stachybotrys/Memnoniella	-	-	-	Acceptable
Comments	Unidentifiable Spores	-	-	-	Acceptable
	Zygomycetes	-	-	-	Acceptable
	Pestalotia++	-	-	-	Acceptable
	Polythrincium	-	-	-	Acceptable
	Torula++	-	-	-	Acceptable
	Total Fungi	22	900	100	Acceptable
	Hyphal Fragment	-	-	-	Acceptable
	Insect Fragment	-	-	-	Acceptable
	Pollen	-	-	-	Acceptable

Analytical Sensitivity 600x: **42** counts/cubic meter
Analytical Sensitivity 300x *: **13*** counts/cubic meter

Skin Fragments: **2** 1 to 4 (low to high)
Fibrous Particulate: **1** 1 to 4 (low to high)
Background: **1** 1 to 4 (low to high); **5** (overloaded)

- Acceptable** Concentration at or below background
- Slightly Elevated** Concentration above background
- ELEVATED** Concentration 10X or more above background

- Not commonly found growing indoors, spores likely come from outside.
- Spores reported to be able to cause allergies in individuals.
- Potential for mycotoxin production exists with these fungi.
- These fungi are considered water damage indicators.

Bipolaris++ = Bipolaris / Drechslera / Exserohilum
Myxomycetes++ = Myxomycetes / Smut /

Vincent Iuzzolino, M.S., Laboratory Director
or Other Approved Signatory

Initial report from: 08/20/2024 15:16:32

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Order ID: 372413760
Customer ID: SPOT50
Customer PO:
Project ID:

Attn: Dave Kuchinski
Spotts Stevens and McCoy, Inc.
1047 North Park Road
Reading, PA 19610
Phone: (610) 621-2000
Fax:
Collected: 08/14/2024
Received: 08/16/2024
Analyzed: 08/20/2024
Proj: 109944.0018/Montoursville SD/High School

Spore Trap ASSESSMENT Report™ Air-O-Cell™ Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

	Particle Identification	Raw Count	(Count/m ³)	% of Total	Interpretation Guideline
372413760-0004	Alternaria (Ulocladium)	-	-	-	Acceptable
	Ascospores	-	-	-	Acceptable
Client Sample ID	Aspergillus/Penicillium++	-	-	-	Acceptable
HS-8-14-04	Basidiospores	4	200	71.4	Acceptable  
	Bipolaris++	-	-	-	Acceptable
	Chaetomium++	-	-	-	Acceptable
Location	Cladosporium	1	40	14.3	Acceptable 
3rd Floor Commons	Curvularia	-	-	-	Acceptable
	Epicoccum	-	-	-	Acceptable
Sample Volume (L)	Fusarium++	-	-	-	Acceptable
75	Ganoderma	-	-	-	Acceptable
	Myxomycetes++	-	-	-	Acceptable
	Pithomyces++	-	-	-	Acceptable
Sample Type	Rust	-	-	-	Acceptable
Inside	Scopulariopsis/Microascus	-	-	-	Acceptable
	Stachybotrys/Memnoniella	-	-	-	Acceptable
Comments	Unidentifiable Spores	-	-	-	Acceptable
	Zygomycetes	-	-	-	Acceptable
	Pestalotia++	-	-	-	Acceptable
	Polythrincium	-	-	-	Acceptable
	Torula++	1	40	14.3	Slightly Elevated 
	Total Fungi	6	280	100	Acceptable
	Hyphal Fragment	-	-	-	Acceptable
	Insect Fragment	-	-	-	Acceptable
	Pollen	-	-	-	Acceptable
Analytical Sensitivity 600x: 42 counts/cubic meter		Skin Fragments: 2		1 to 4 (low to high)	
Analytical Sensitivity 300x *: 13* counts/cubic meter		Fibrous Particulate: 1		1 to 4 (low to high)	
		Background: 1		1 to 4 (low to high); 5 (overloaded)	

Acceptable Concentration at or below background
Slightly Elevated Concentration above background
ELEVATED Concentration 10X or more above background

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Spore Trap ASSESSMENT Report™ Air-O-Cell™ Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

	Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
372413760-0005	Alternaria (Ulocladium)	-	-	-	Acceptable
	Ascospores	-	-	-	Acceptable
Client Sample ID	Aspergillus/Penicillium++	-	-	-	Acceptable
HS-8-14-05	Basidiospores	4	200	83.3	Acceptable  
	Bipolaris++	-	-	-	Acceptable
	Chaetomium++	-	-	-	Acceptable
Location	Cladosporium	-	-	-	Acceptable
Rm. 310	Curvularia	-	-	-	Acceptable
	Epicoccum	-	-	-	Acceptable
Sample Volume (L)	Fusarium++	-	-	-	Acceptable
75	Ganoderma	-	-	-	Acceptable
	Myxomycetes++	-	-	-	Acceptable
Sample Type	Pithomyces++	1	40	16.7	Slightly Elevated  
	Rust	-	-	-	Acceptable
Inside	Scopulariopsis/Microascus	-	-	-	Acceptable
	Stachybotrys/Memnoniella	-	-	-	Acceptable
Comments	Unidentifiable Spores	-	-	-	Acceptable
	Zygomycetes	-	-	-	Acceptable
	Pestalotia++	-	-	-	Acceptable
	Polythrincium	-	-	-	Acceptable
	Torula++	-	-	-	Acceptable
	Total Fungi	5	240	100	Acceptable
	Hyphal Fragment	-	-	-	Acceptable
	Insect Fragment	-	-	-	Acceptable
	Pollen	-	-	-	Acceptable

Analytical Sensitivity 600x: **42** counts/cubic meter
Analytical Sensitivity 300x *: **13*** counts/cubic meter

Skin Fragments: **1** 1 to 4 (low to high)
Fibrous Particulate: **1** 1 to 4 (low to high)
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Spore Trap ASSESSMENT Report™ Air-O-Cell™ Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

	Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
372413760-0006	Alternaria (Ulocladium)	1*	10*	0	
	Ascospores	6	300	1.1	
Client Sample ID M-8-14-Ext.	Aspergillus/Penicillium++	128	5590	19.8	
	Basidiospores	480	20900	74	
Location McCall	Bipolaris++	1	40	0.1	
	Chaetomium++	-	-	-	
	Cladosporium	20	870	3.1	
Sample Volume (L) 75	Curvularia	-	-	-	
	Epicoccum	-	-	-	
Sample Type Background	Fusarium++	-	-	-	
	Ganoderma	12	520	1.8	
Comments	Myxomycetes++	-	-	-	
	Pithomyces++	-	-	-	
	Rust	-	-	-	
	Scopulariopsis/Microascus	-	-	-	
	Stachybotrys/Memnoniella	-	-	-	
	Unidentifiable Spores	-	-	-	
	Zygomycetes	-	-	-	
	Pestalotia++	-	-	-	
	Polythrincium	-	-	-	
	Torula++	-	-	-	
	Total Fungi	648	28230	100	
	Hyphal Fragment	-	-	-	
	Insect Fragment	-	-	-	
	Pollen	1*	10*	-	
Analytical Sensitivity 600x: 44 counts/cubic meter		Skin Fragments: 1		1 to 4 (low to high)	
Analytical Sensitivity 300x *: 13* counts/cubic meter		Fibrous Particulate: 1		1 to 4 (low to high)	
		Background: 2		1 to 4 (low to high); 5 (overloaded)	

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Spore Trap ASSESSMENT Report™ Air-O-Cell™ Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

	Particle Identification	Raw Count	(Count/m ³)	% of Total	Interpretation Guideline
372413760-0007	Alternaria (Ulocladium)	1*	10*	0.1	
Client Sample ID	Ascospores	9	400	2.3	
	Aspergillus/Penicillium++	21	920	5.2	
L-8-14-Ext.	Basidiospores	333	14500	81.9	
	Bipolaris++	-	-	-	
Location	Chaetomium++	1	40	0.2	
	Cladosporium	18	790	4.5	
Lyter	Curvularia	-	-	-	
	Epicoccum	-	-	-	
Sample Volume (L)	Fusarium++	-	-	-	
	Ganoderma	15	660	3.7	
75	Myxomycetes++	7	300	1.7	
	Pithomyces++	-	-	-	
Sample Type	Rust	1	40	0.2	
	Scopulariopsis/Microascus	-	-	-	
Background	Stachybotrys/Memnoniella	-	-	-	
	Unidentifiable Spores	-	-	-	
Comments	Zygomycetes	-	-	-	
	Pestalotia++	1	40	0.2	
	Polythrincium	-	-	-	
	Torula++	-	-	-	
	Total Fungi	407	17700	100	
	Hyphal Fragment	-	-	-	
	Insect Fragment	1	40	-	
	Pollen	1	40	-	

Analytical Sensitivity 600x: **44** counts/cubic meter
Analytical Sensitivity 300x *: **13*** counts/cubic meter

Skin Fragments: **1** 1 to 4 (low to high)
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	Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
372413760-0008	Alternaria (Ulocladium)	2	90	0.7	
	Ascospores	6	300	2.4	
Client Sample ID	Aspergillus/Penicillium++	-	-	-	
HS-8-14-Ext.	Basidiospores	204	8900	70	
	Bipolaris++	-	-	-	
Location	Chaetomium++	-	-	-	
	Cladosporium	67	2900	22.8	
	Curvularia	-	-	-	
Sample Volume (L)	Epicoccum	-	-	-	
	Fusarium++	-	-	-	
	Ganoderma	12	520	4.1	
75	Myxomycetes++	-	-	-	
	Pithomyces++	-	-	-	
	Rust	-	-	-	
Sample Type	Scopulariopsis/Microascus	-	-	-	
	Stachybotrys/Memnoniella	-	-	-	
Comments	Unidentifiable Spores	-	-	-	
	Zygomycetes	-	-	-	
	Pestalotia++	-	-	-	
	Polythrincium	1*	10*	0.1	
	Torula++	-	-	-	
	Total Fungi	292	12720	100	
	Hyphal Fragment	2	90	-	
	Insect Fragment	-	-	-	
	Pollen	1	40	-	
Analytical Sensitivity 600x: 44 counts/cubic meter		Skin Fragments: 1		1 to 4 (low to high)	
Analytical Sensitivity 300x *: 13* counts/cubic meter		Fibrous Particulate: 1		1 to 4 (low to high)	
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Description of Common Molds Found

Slightly Elevated

Torula - mold is a yeast that has practical uses but can also be pathogenic. On the one hand, this common mold, in its inactive form, can be a flavor enhancer, a starter culture in the production of certain cheeses, and, when dissolved in water, can organically control olive flies in California and Europe. Torula can be found on wood, paper, and straw baskets, as well as on ceiling tiles and drywall. Outside, you might see torula mold growing on grass, dead stems, and in soil.

Pithomyces (pith-oh-my-sees) – contaminant, found on decaying plants, especially leaves and grasses. Rarely found indoors, but it can grow on paper. No reports of allergies or infections, but some species produce a toxin that causes facial eczema in sheep.

Myxomycete / Rust / Smut (mix-oh'-my-seat) – general category for commonly found genera usually associated with living and decaying plants as well as decaying wood. Sometimes can be found indoors. Some allergenic properties reported, but generally pose no health concerns to humans or animals. Smuts are ubiquitous parasitic plant pathogens, which require a living host to complete their life cycle and are not usually found growing indoors. Smuts are most often found on corn, grass, weeds, flowering plants and other fungi; they are usually disseminated by wind. They are called smuts because they form black powdery spore masses that resemble soot or smut. Myxomycetes are ubiquitous outdoor molds (often considered a slime mold), and are commonly found in forested areas where bark, soil, dung, and leaf litter are present.

Polythrincium is a leaf mold. Allergic reactions or negative health reactions in humans are not well studied.

Air Monitoring Data Form
Loyalsock Valley Elementary School

Date: August 14, 2024 Project Name: Montoursville Area School District, Loyalsock Valley Elementary School

Client/Work Order #: 109944.0018 Analysts: David L. Kuchinski

Sample	Location	CO ₂ (PPM)	CO (PPM)	Temperature (°F)	Relative Humidity (%)	VOC (ppb)	Total Particulate (<10 µm) (mg/m3)	Total Respirable Particulate (<10 µm) (mg/m ³)
	<i>Recommended IAQ Limits*</i>	<i><1058</i>	<i><9</i>	<i>68 - 75</i>	<i>30 - 60</i>	<i>< 1000</i>	<i><0.150</i>	<i><0.150</i>
1	Exterior-Front Parking Lot	456	0.0	70.6	63.1	0	0.038	0.044
2	Exterior-Rear of Building	460	0.0	65.3	74.9	0	0.045	0.035
3	Library (L-2)	553	0.0	70.1	40.0	48	0.042	0.025
4	Café	271	0.0	71.4	61.7	8	0.043	0.031
5	Room A-6	505	0.0	73.6	62.7	24	0.047	0.026
6	Art Room	515	0.0	74.3	61.9	3	0.036	0.034
7	Room B-4	561	0.0	73.1	64.8	19	0.035	0.031
8	Hallway outside Room B-4	520	0.0	73.6	63.0	31	0.024	0.026
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Units - ppm = parts/million; ppb = parts/billion; mg/m³ = milligrams/cubic meter
 recommended limit is outside ppm + 700 ppm. CO is an ASHRAE recommended level. For VOC's, recommended limit is 10% of PADOH IAQ for Schools evacuation limit and is generally for normal classrooms and hallways, special use areas such as Art rooms could be significantly higher due to expectation of some exposure in these areas and potential exposure duration would be shorter. Particulate values are based on EPA Ambient Air Quality values and are approximately 100 times lower than OSHA limits. *CO₂

Air Monitoring Data Form
Lyter Elementary School

Date: August 14, 2024 Project Name: Montoursville Area School District, Lyter Elementary School

Client/Work Order #: 109944.0018 Analysts: David L. Kuchinski

Sample	Location	CO ₂ (PPM)	CO (PPM)	Temperature (°F)	Relative Humidity (%)	VOC (ppb)	Total Particulate (<10 µm) (mg/m3)	Total Resipitable Particulate (<10 µm) (mg/m ³)
	<i>Recommended IAQ Limits*</i>	<1126	<9	68 - 75	30 - 60	< 1000	<0.150	<0.150
1	Exterior- East Side Lot	426	0.0	77.2	57.5	0	0.042	0.054
2	Café	543	0.0	79.4	54.5	0	0.039	0.026
3	Room C-7 - STEM	507	0.0	77.6	55.6	0	0.041	0.041
4	Hallway outside Room B-15	497	0.0	76.0	58.1	16	0.043	0.031
5	Library	556	0.0	75.3	57.5	67	0.028	0.042
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Units - ppm = parts/million; ppb = parts/billion; mg/m3 = milligrams/cubic meter
 recommended limit is outside ppm + 700 ppm. CO is an ASHRAE recommended level. For VOC's, recommended limit is 10% of PADOH IAQ for Schools evacuation limit and is generally for normal classrooms and hallways, special use areas such as Art rooms could be significantly higher due to expectation of some exposure in these areas and potential exposure duration would be shorter. Particulate values are based on EPA Ambient Air Quality values and are approximately 100 times lower than OSHA limits. *CO2

Air Monitoring Data Form
McCall Middle School

Date: August 14, 2024 Project Name: Montoursville Area School District, C.E. McCall Middle School

Client/Work Order #: 109944.0018 Analysts: David L. Kuchinski

Sample	Location	CO ₂ (PPM)	CO (PPM)	Temperature (°F)	Relative Humidity (%)	VOC (ppb)	Total Particulate (<10 µm) (mg/m3)	Total Resipitable Particulate (<10 µm) (mg/m ³)
	<i>Recommended IAQ Limits*</i>	<1122	<9	68 - 75	30 - 60	< 1000	<0.150	<0.150
1	Exterior-Side Lot	422	0.0	82.0	50.0	1	0.035	0.025
2	Library	493	0.0	76.8	61.8	129	0.027	0.036
3	Room 141	780	0.0	76.7	58.8	179	0.038	0.027
4	Room 220-Science Lab	496	0.0	77.1	61.4	245	0.031	0.032
5	Hallway outside Room 220	545	0.0	78.0	60.2	172	0.050	0.031
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Units - ppm = parts/million; ppb = parts/billion; mg/m3 = milligrams/cubic meter
 recommended limit is outside ppm + 700 ppm. CO is an ASHRAE recommended level. For VOC's, recommended limit is 10% of PADOH IAQ for Schools evacuation limit and is generally for normal classrooms and hallways, special use areas such as Art rooms could be significantly higher due to expectation of some exposure in these areas and potential exposure duration would be shorter. Particulate values are based on EPA Ambient Air Quality values and are approximately 100 times lower than OSHA limits. *CO2

Air Monitoring Data Form
Montoursville Area High School

Date: August 14, 2024 Project Name: Montoursville Area School District, High School

Client/Work Order #: 109944.0018 Analysts: David L. Kuchinski

Sample	Location	CO ₂ (PPM)	CO (PPM)	Temperature (°F)	Relative Humidity (%)	VOC (ppb)	Total Particulate (<10 µm) (mg/m3)	Total Resipitable Particulate (<10 µm) (mg/m ³)
	<i>Recommended IAQ Limits*</i>	<1126	<9	68 - 75	30 - 60	< 1000	<0.150	<0.150
1	Exterior, East Side Lot	426	0.0	84.9	47.0	0	0.071	0.034
2	Café	461	0.0	81.0	43.6	28	0.038	0.042
3	Hallway outside Room 206	512	0.0	78.0	49.0	76	0.028	0.029
4	Library	501	0.0	80.0	55.0	62	0.045	0.035
5	3rd Floor Commons	485	0.0	80.4	46.6	39	0.077	0.067
6	Room 310	490	0.0	79.7	48.7	74	0.027	0.029
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Units - ppm = parts/million; ppb = parts/billion; mg/m3 = milligrams/cubic meter
 recommended limit is outside ppm + 700 ppm. CO is an ASHRAE recommended level. For VOC's, recommended limit is 10% of PADOH IAQ for Schools evacuation limit and is generally for normal classrooms and hallways, special use areas such as Art rooms could be significantly higher due to expectation of some exposure in these areas and potential exposure duration would be shorter. Particulate values are based on EPA Ambient Air Quality values and are approximately 100 times lower than OSHA limits. *CO2

Direct Read Instrument Parameters

Carbon Monoxide

Carbon Monoxide (CO) levels are measured to evaluate possible intrusion of combustion exhaust.

- **Criteria**

- The Occupational Safety and Health Administration Permissible Exposure Limit (OSHA PEL) for carbon monoxide is 50 ppm.
- The National Institute of Occupational Safety and Health Recommended Exposure Limit (NIOSH REL) is 35 ppm.
- The American Council of Governmental Industrial Hygienists Threshold Limit Value (ACGIH TLV) is 25 ppm.
- The American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE) recommended guideline for IAQ purposes is 9 ppm.

Carbon Dioxide

Carbon Dioxide (CO₂) levels are measured as an indicator of adequate ventilation.

- **Criteria**

- The OSHA Permissible Exposure Limit (PEL) for carbon dioxide is 5,000 ppm.
- The American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE) recommended guideline for IAQ purposes is site specific. The limit is calculated as the amount of CO₂ outside the building at the time of sampling plus 700 ppm.

Relative Humidity (% RH)

Relative humidity in excess of 60% potentially contributes to increased microbial growth, which in turn may aggravate allergic conditions or create biological hazards. Values near the 60% RH level are more common in the cooling season and values lower than 30% RH are very common in the heating season. Interior humidity can shift quickly depending on the outside conditions and the amount of outside air being introduced.

- **Criteria**

Relative humidity affects occupant comfort when it is either too high or too low. The American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) recommended range for comfort is 30 to 60%.

Temperature

Occupant comfort may be affected by temperatures that are either too cold or too warm.

- **Criteria**

The ASHRAE 55-2010 Standard provides calculations that produce an acceptable temperature range for interior applications during the heating season of 69 to 78 °F; these values are for temperature controlled buildings. Note the different ranges for different humidity.

Temperature / Humidity Ranges for Comfort			
Conditions	Relative Humidity	Acceptable Operating Temperatures	
		°C	°F
Summer (light clothing)	If 30%, then	24.5 - 28	76 - 82
	If 60%, then	23 - 25.5	74 - 78
Winter (warm clothing)	If 30%, then	20.5 - 25.5	69 - 78
	If 60%, then	20 - 24	68 - 75

Source: Adapted from ASHRAE 55-2010.

Total Volatile Organic Compound (TVOC)

Volatile organic compounds are often present in the indoor environment from many familiar sources, (inks, glues, etc.), however, elevated concentrations are generally to be avoided, making TVOC's a common parameter in IAQ/IEQ evaluations.

- **Criteria**

The recommended limit for TVOC is based on a percentage (10% or 1000 ppb) of the Pennsylvania Department of Health (PADOH) IAQ for Schools VOC evacuation limit of 10,000 ppb. The 1000 ppb limit is generally for regular classrooms and hallways with special use areas such as Art rooms having a higher acceptable limit primarily due to use and shorter duration exposure.

Total Particulate

Total particulate levels are measured for IAQ evaluations to determine the presence of dust and particulate as potential allergen/irritant exposure and cleanliness.

- **Criteria**

The OSHA Permissible Exposure Limit (PEL) for particulate is 15.0 mg/m³. Particulate values are based on EPA Ambient Air Quality values and are 100 times lower than the OSHA PEL or 0.15 mg/m³.