

March 25, 2024

Mr. Richard Underwood
Director of Operations and Maintenance
Lowell Public Schools
155 Merrimack Street, 4th Floor
Lowell, Massachusetts 01852

RE: **Monthly Surveillance Sampling for Mold, March 2024**
Pawtucketville Memorial Elementary School
425 West Meadow Road, Lowell, Massachusetts
EFI Project No.: 014.07230

Dear Rick:

On March 6, 2024, representatives of EFI Global, Inc. (EFI) conducted monthly surveillance sampling for mold at the Pawtucketville Memorial Elementary School (Pawtucketville School) located at 425 West Meadow Road in Lowell, Massachusetts. The monthly surveillance sampling consisted of the collection of bioaerosol samples for airborne total fungal spores (air samples for mold) in fifty (50) locations within the school building. The monthly surveillance sampling was requested in order to monitor indoor air quality conditions in the school building with respect to the presence of airborne fungal spores following the resolution of a circumstance that necessitated the execution of mold remediation activities at the beginning of the school year.

ASSESSMENT METHOD

The monthly surveillance sampling for March of 2024 was conducted by EFI representatives Mr. Peter von Au, CMC, CIEC and Ms. Kamila Zygodlo on March 6, 2024. A total of fifty (50) bioaerosol samples were collected at indoor locations, three outdoor samples also were collected for purposes of comparison with the indoor sampling results and two field blank samples were prepared for purposes of quality control. All samples were submitted to EMSL Analytical, Inc. (EMSL) of Woburn, Massachusetts for analysis.

All bioaerosol samples were collected on Zefon Air-O-Cell spore trap cassettes using a Zefon Bio-Pump Plus sampling pump with a calibrated flow rate of 15 liters per minute (lpm). Each sample was collected over a period of five minutes resulting in a total of 75 liters of air being drawn through the spore trap cassettes. These cassettes are a unique sampling device designed for the rapid collection and analysis of a wide range of airborne particles, including fungal spores. Samples were analyzed via light microscopy at the standardized magnification of 600 times. Spore trap sampling measures the viable spores that are capable of growing and reproducing given the proper conditions, the non-viable (dead, but still allergenic) spores, and the fragments of fungal colonies that are released as the fungi grow. These are the primary bio aerosols that can cause allergic reactions in sensitive individuals and contribute lowering the indoor air quality. Unfortunately, this technique does not allow for the differentiation between *Aspergillus* and *Penicillium* spores because they are morphologically identical. Additionally, the technique does not allow for cultivation, or the identification of spores to the species level, barring a few cases.

RESULTS and RECOMMENDATIONS

Microbial Guidelines

There are no government regulations currently in effect for microbiological contaminants; however, there exist several non-regulatory guidelines, which are based on extensive field experience. It must be emphasized that fungal and bacterial contamination are dynamic phenomena and that species within an area can change due to environmental conditions. Allergic reaction is a common health effect of exposure to mold. Additionally, individual health may be affected by the presence of high levels of non-toxic or non-pathogenic microbes that may emit volatile compounds (musty odors) from the mycelia (fungal plant) or vapors from substrate breakdown.

In general, airborne concentrations indoors should be less than or comparable to that found in the outdoors, with similar species composition. Indoor spore counts significantly greater than those outdoors, or the presence of large numbers of different types of spores indoors that are not found outdoors, may indicate contamination and potential indoor air quality problems.

In most cases, EFI uses a combination of published laboratory information as well as our own experience to establish the following recommended guidelines for air samples:

- Total concentrations obtained inside the building/residence that are below ambient levels or below 2,000 spores per cubic meter (spores/m³), whichever is greater, and;
- Less than 650 spores/m³ for individual mold organisms, are considered normal for the screening method utilized.

Bioaerosol Samples for Airborne Fungal Spores

The following table summarizes the results of air samples for mold collected on March 6, 2024. The analytical laboratory report for these samples is included with this report as part of the attachment.

SUMMARY OF RESULTS – AIR SAMPLING FOR MOLD Pawtucketville Memorial Elementary School 425 West Meadow Road, Lowell, Massachusetts March 6, 2024		
Location	Time	Result (spores/m³)
Outdoors	12:09 p.m.	380
Cafeteria	12:08 p.m.	120
Main Office, Room 1008	12:16 p.m.	80
Gymnasium	12:17 p.m.	120
Classroom 1063	12:24 p.m.	100
Classroom 1061	12:26 p.m.	80
Classroom 1038	12:31 p.m.	80
Classroom 1041	12:33 p.m.	100

SUMMARY OF RESULTS – AIR SAMPLING FOR MOLD Pawtucketville Memorial Elementary School 425 West Meadow Road, Lowell, Massachusetts March 6, 2024		
Location	Time	Result (spores/m³)
Classroom 1043	12:39 p.m.	120
Classroom 1045	12:46 p.m.	180
Classroom 1066	12:48 p.m.	180
Classroom 1068	12:53 p.m.	130
Classroom 1067	12:55 p.m.	140
Classroom 1069	12:59 p.m.	130
Classroom 1071	1:03 p.m.	220
Classroom 1072	1:05 p.m.	80
Classroom 1073	1:11 p.m.	40
Classroom 1074	1:13 p.m.	430
Classroom 1075	1:17 p.m.	80
Classroom 1076	1:19 p.m.	40
Classroom 1077	1:27 p.m.	80
Classroom 1078	1:28 p.m.	80
Classroom 1079	1:34 p.m.	80
Classroom 1081	1:35 p.m.	50
Classroom 1082, SPED	1:40 p.m.	40
Classroom 1083, Pre-K	1:41 p.m.	40
Outdoors	1:47 p.m.	380
Room 1097, Music	1:49 p.m.	120
Room 1093, Art	1:55 p.m.	100
Classroom 1108	1:57 p.m.	40
Kitchen	2:05 p.m.	280
Library (Room 2018)	2:16 p.m.	420
Classroom 2005	2:18 p.m.	40
Classroom 2004	2:25 p.m.	190
Classroom 2003	2:26 p.m.	130
Classroom 2002	2:31 p.m.	370
Classroom 2001	2:32 p.m.	130
Room 2027, Small Group	2:36 p.m.	140
Room 2028, Testing	2:38 p.m.	390
Room 2019, Teachers	2:42 p.m.	420
Room 2012, Small Group	2:44 p.m.	280
Room 2016 (inside library)	2:50 p.m.	640
Room 2017A (inside library)	2:51 p.m.	470
Outdoors	3:00 p.m.	420
Room 1084	3:02 p.m.	80
Room 1054	3:08 p.m.	170

SUMMARY OF RESULTS – AIR SAMPLING FOR MOLD Pawtucketville Memorial Elementary School 425 West Meadow Road, Lowell, Massachusetts March 6, 2024		
Location	Time	Result (spores/m³)
Room 1016	3:22 p.m.	80
Room 1021	3:23 p.m.	40
Room 1004	3:27 p.m.	80
Room 1019	3:31 p.m.	40
Room 1024	3:37 p.m.	160
Room 1013	3:39 p.m.	40
Room 1014	3:44 p.m.	200

Notes: 1. ND (<13) = None detected. 2. No spores were detected on the field blank sample.

The March 6, 2024, bioaerosol sampling results mainly (or collectively) indicate that the concentrations of total fungal spores measured at indoor locations were approximately equal to the average of the concentrations of total fungal spores measured at outdoor locations (393 spores/m³). In addition, the concentrations of total fungal spores measured at indoor locations were comprised of spore taxa (types) detected outdoors, or commonly detected outdoors.

It should be noted that in a small number of locations (up to five), concentrations of total fungal spores measured at indoor locations could or would be considered greater than the average of the concentrations of total fungal spores measured at outdoor locations. This is largely attributable to the fact that very few spores were detected outdoors on March 6, which is common during the late autumn, winter and early spring seasons. These “higher” concentrations of fungal spores were lower than concentrations that would typically be measured outdoors at other times of the year – spring, summer autumn. In addition, as mentioned above, the spore taxa (types) detected at indoor locations are taxa that are commonly detected outdoors, such as *Cladosporium*, *Aspergillus/Penicillium*, *Myxomycetes*, *Ascospores* and *Basidiospores*.

CONCLUSION

Based on the results of the March 2024 monthly surveillance sampling for mold at the Pawtucketville School, the school building continues to be safe for its intended use and occupancy with respect to the presence of airborne fungal spores.

LIMITATIONS

This report has been prepared to assist the client in evaluating indoor air quality concerns at the above referenced site. EFI provided these services consistent with the level and skill ordinarily exercised by members of the profession currently practicing under similar conditions. This statement is in lieu of other statements either expressed or implied. This report is intended for the sole use of the client. This report is not intended to serve as a bidding document nor as a project specification document and actual site conditions and quantities should be field verified. The scope of services performed in execution of this

evaluation may not be appropriate to satisfy the needs of other users, and use or re-use of this document, the findings, conclusions, or recommendations is at the risk of said user. Although a reasonable attempt has been made to identify indoor air quality issues in the areas inspected, the inspection was limited by the techniques used and areas inspected. Additionally, other possible building material hazards such as asbestos, lead-based paint and microbial issues were not included as part of this evaluation and may require proper sampling for identification prior to disturbance.

Additionally, the passage of time may result in a change in the environmental characteristics at this site. This report does not warrant against future operations or conditions that could affect the recommendations made. The results, findings, conclusions, and recommendations expressed in this report are based only on conditions that were observed during the inspection of the site.

EFI appreciates this opportunity to provide indoor air quality services to Lowell Public Schools. If you require additional information or have questions regarding the contents of this report, please contact either of the undersigned at (978) 688-3736.

Sincerely,
EFI Global, Inc.



Peter G. von Au, CMC, CIEC
Senior Industrial Hygiene Project Manager
Cell: 978-863.8401
peter.vonau@efiglobal.com

Reviewed by:



Michael McCarter
Senior Project Manager
Cell: 978-604-7662
Michael.mccarter@efiglobal.com

Attachment: EMSL Analytical Laboratory Report, March 6, 2024

ATTACHMENT

EMSL ANALYTICAL LABORATORY REPORT

March 6, 2024



EMSL Analytical, Inc.

5 Constitution Way, Unit A Woburn, MA 01801

Tel/Fax: (781) 933-8411 / (781) 933-8412

<http://www.EMSL.com/bostonlab@emsl.com>

EMSL Order: 132401427

Customer ID: EAFI66

Customer PO:

Project ID:

Attention: Peter VonAu

EFI Global, Inc.

155 West Street

Suite 6

Wilmington, MA 01887

Project: PMES 014.07230

Phone: (978) 688-3736

Fax: (978) 688-5494

Collected Date: 03/06/2024

Received Date: 03/07/2024 02:30 PM

Analyzed Date: 03/12/2024 - 03/14/2024

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

Lab Sample Number: Client Sample ID: Volume (L): Sample Location:	132401427-0001 A01			132401427-0002 A02 75			132401427-0003 A03 75		
	Field Blank			Outdoors			Cafeteria		
Spore Types	Raw Count†	Count/m²	% of Total	Raw Count†	Count/m²	% of Total	Raw Count†	Count/m²	% of Total
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium++	-	-	-	2	80	21.1	-	-	-
Basidiospores	-	-	-	8	300	78.9	1	40	33.3
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	-	-	-	2	80	66.7
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Total Fungi	-	No Trace	-	10	380	100	3	120	100
Hyphal Fragment	-	-	-	-	-	-	1	40	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	0	-	-	41	-	-	41	-
Analyt. Sensitivity 300x	-	0*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	-	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	-	-	-	1	-	-	1	-
Background (1-5)	-	-	-	-	1	-	-	2	-

† Due to method stopping rules, extrapolated raw counts are reported in parenthesis.

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

Steve Grise, Laboratory Manager
or other Approved Signatory

EMSL Analytical, Inc. maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. EMSL Analytical, Inc. bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. Skin Fragment and Fibrous Particulate ratings are based on the percent of non-fungal material they represent: 1 (1-25%), 2 (26-50%), 3 (51-75%), or 4 (76-100%). Background ratings are based on the total area covered by non-fungal particles: 1 (1-25%), 2 (26-50%), 3 (51-75%), 4 (76-99%), or 5 (100%; overloaded). 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 >= 100 are extrapolated based on the percentage analyzed.

Samples analyzed by EMSL Analytical, Inc. Woburn, MA AIHA LAP, LLC-EMLAP Accredited #180179

Initial report from: 03/14/2024 02:28 PM

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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: Client Sample ID: Volume (L): Sample Location:	132401427-0004 A04 75 Main Office, Room 1008			132401427-0005 A05 75 Gymnasium			132401427-0006 A06 75 Classroom 1063		
	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total
Spore Types									
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium++	1	40	50	-	-	-	-	-	-
Basidiospores	-	-	-	2	80	66.7	3	100	100
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	1	40	33.3	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	1	40	50	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Total Fungi	2	80	100	3	120	100	3	100	100
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	41	-	-	41	-	-	41	-
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	-	-	1	-

† Due to method stopping rules, extrapolated raw counts are reported in parenthesis.

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

Steve Grise, Laboratory Manager
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Collected Date: 03/06/2024

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Analyzed Date: 03/12/2024 - 03/14/2024

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

Lab Sample Number: Client Sample ID: Volume (L): Sample Location:	132401427-0007 A07 75			132401427-0008 A08 75			132401427-0009 A09 75		
	Classroom 1061			Classroom 1038			Classroom 1041		
Spore Types	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium++	1	40	50	-	-	-	-	-	-
Basidiospores	1	40	50	1	40	50	3	100	100
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	-	-	-	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	1	40	50	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Total Fungi	2	80	100	2	80	100	3	100	100
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	41	-	-	41	-	-	41	-
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	-

† Due to method stopping rules, extrapolated raw counts are reported in parenthesis.

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

Steve Grise, Laboratory Manager
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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: Client Sample ID: Volume (L): Sample Location:	132401427-0010 A10 75			132401427-0011 A11 75			132401427-0012 A12 75		
	Classroom 1043			Classroom 1045			Classroom 1066		
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	33.3	-	-	-	-	-	-
Aspergillus/Penicillium++	2	80	66.7	1	40	22.2	2	90	50
Basidiospores	-	-	-	3	100	55.6	2	90	50
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	-	-	-	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	1	40	22.2	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Total Fungi	3	120	100	5	180	100	4	180	100
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	41	-	-	43	-	-	43	-
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	-

† Due to method stopping rules, extrapolated raw counts are reported in parenthesis.

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

Steve Grise, Laboratory Manager
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Samples analyzed by EMSL Analytical, Inc. Woburn, MA AIHA LAP, LLC-EMLAP Accredited #180179

Initial report from: 03/14/2024 02:28 PM

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Customer ID: EAFI66

Customer PO:

Project ID:

Attention: Peter VonAu

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Phone: (978) 688-3736

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Collected Date: 03/06/2024

Received Date: 03/07/2024 02:30 PM

Analyzed Date: 03/12/2024 - 03/14/2024

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

Lab Sample Number: Client Sample ID: Volume (L): Sample Location:	132401427-0013 A13 75			132401427-0014 A14 75			132401427-0015 A15 75		
	Classroom 1068			Classroom 1067			Classroom 1069		
	Spore Types	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium++	1	40	30.8	1	40	28.6	-	-	-
Basidiospores	2	90	69.2	-	-	-	1	40	30.8
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	-	-	-	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	3	100	71.4	2	90	69.2
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Total Fungi	3	130	100	4	140	100	3	130	100
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	43	-	-	43	-	-	43	-
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	-

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Samples analyzed by EMSL Analytical, Inc. Woburn, MA AIHA LAP, LLC-EMLAP Accredited #180179

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Collected Date: 03/06/2024

Received Date: 03/07/2024 02:30 PM

Analyzed Date: 03/12/2024 - 03/14/2024

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

Lab Sample Number: Client Sample ID: Volume (L): Sample Location:	132401427-0016 A16			132401427-0017 A17 75			132401427-0018 A18 75		
	Field Blank			Classroom 1071			Classroom 1072		
Spore Types	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium++	-	-	-	1	40	18.2	1	40	50
Basidiospores	-	-	-	2	90	40.9	1	40	50
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	-	-	-	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	2	90	40.9	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Total Fungi	-	No Trace	-	5	220	100	2	80	100
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	0	-	-	43	-	-	43	-
Analyt. Sensitivity 300x	-	0*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	-	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	-	-	-	1	-	-	1	-
Background (1-5)	-	-	-	-	2	-	-	1	-

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Collected Date: 03/06/2024

Received Date: 03/07/2024 02:30 PM

Analyzed Date: 03/12/2024 - 03/14/2024

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

Lab Sample Number: Client Sample ID: Volume (L): Sample Location:	132401427-0019 A19 75			132401427-0020 A20 75			132401427-0021 A21 75		
	Classroom 1073			Classroom 1074			Classroom 1075		
	Spore Types	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium++	-	-	-	6	300	69.8	-	-	-
Basidiospores	-	-	-	1	40	9.3	-	-	-
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	2	90	20.9	1	40	50
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	1	40	100	-	-	-	1	40	50
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Total Fungi	1	40	100	9	430	100	2	80	100
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	43	-	-	43	-	-	41	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	2	-	-	3	-	-	2	-

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

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Collected Date: 03/06/2024

Received Date: 03/07/2024 02:30 PM

Analyzed Date: 03/12/2024 - 03/14/2024

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

Lab Sample Number: Client Sample ID: Volume (L): Sample Location:	132401427-0022 A22 75			132401427-0023 A23 75			132401427-0024 A24 75		
	Classroom 1076			Classroom 1077			Classroom 1078		
	Spore Types	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium++	-	-	-	1	40	50	-	-	-
Basidiospores	-	-	-	1	40	50	-	-	-
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	1	40	100	-	-	-	2	80	100
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Total Fungi	1	40	100	2	80	100	2	80	100
Hyphal Fragment	-	-	-	1	40	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	41	-	-	41	-	-	41	-
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	-

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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: Client Sample ID: Volume (L): Sample Location:	132401427-0025 A25 75			132401427-0026 A26 75			132401427-0027 A27 75		
	Classroom 1079			Classroom 1081			Classroom 1082, SPED		
Spore Types	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	1	10*	20	-	-	-
Aspergillus/Penicillium++	-	-	-	1	40	80	-	-	-
Basidiospores	1	40	50	-	-	-	-	-	-
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	1	40	50	-	-	-	1	40	100
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Total Fungi	2	80	100	2	50	100	1	40	100
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	41	-	-	41	-	-	41	-
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	-

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Samples analyzed by EMSL Analytical, Inc. Woburn, MA AIHA LAP, LLC-EMLAP Accredited #180179

Initial report from: 03/14/2024 02:28 PM

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EMSL Order: 132401427

Customer ID: EAFI66

Customer PO:

Project ID:

Attention: Peter VonAu

EFI Global, Inc.

155 West Street

Suite 6

Wilmington, MA 01887

Project: PMES 014.07230

Phone: (978) 688-3736

Fax: (978) 688-5494

Collected Date: 03/06/2024

Received Date: 03/07/2024 02:30 PM

Analyzed Date: 03/12/2024 - 03/14/2024

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

Lab Sample Number: Client Sample ID: Volume (L): Sample Location:	132401427-0028 A28 75			132401427-0029 A29 75			132401427-0030 A30 75		
	Classroom 1083, Pre-K			Outdoors			Classroom 1097, Music		
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	10.5	-	-	-
Aspergillus/Penicillium++	-	-	-	-	-	-	-	-	-
Basidiospores	-	-	-	7	300	78.9	2	80	66.7
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	1	40	100	1	40	10.5	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	1	40	33.3
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Total Fungi	1	40	100	9	380	100	3	120	100
Hyphal Fragment	1	40	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	41	-	-	41	-	-	41	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	1	-	-	-	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	2	-	-	1	-	-	1	-

† Due to method stopping rules, extrapolated raw counts are reported in parenthesis.

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

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Samples analyzed by EMSL Analytical, Inc. Woburn, MA AIHA LAP, LLC-EMLAP Accredited #180179

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Collected Date: 03/06/2024

Received Date: 03/07/2024 02:30 PM

Analyzed Date: 03/12/2024 - 03/14/2024

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

Lab Sample Number: Client Sample ID: Volume (L): Sample Location:	132401427-0031 A31 75			132401427-0032 A32 75			132401427-0033 A33 75		
	Classroom 1093, Art			Classroom 1108			Kitchen		
	Spore Types	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium++	-	-	-	-	-	-	3	100	35.7
Basidiospores	3	100	100	-	-	-	3	100	35.7
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	-	-	-	1	40	14.3
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	1	40	100	1	40	14.3
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Total Fungi	3	100	100	1	40	100	8	280	100
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	41	-	-	41	-	-	43	-
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	-

† Due to method stopping rules, extrapolated raw counts are reported in parenthesis.

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

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Collected Date: 03/06/2024

Received Date: 03/07/2024 02:30 PM

Analyzed Date: 03/12/2024 - 03/14/2024

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

Lab Sample Number: Client Sample ID: Volume (L): Sample Location:	132401427-0034 A34 75			132401427-0035 A35 75			132401427-0036 A36 75		
	Library, Room 2018			Classroom 2005			Classroom 2004		
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	9.5	-	-	-	-	-	-
Aspergillus/Penicillium++	4	200	47.6	-	-	-	2	90	47.4
Basidiospores	2	90	21.4	1	40	100	3	100	52.6
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	-	-	-	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	2	90	21.4	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Total Fungi	9	420	100	1	40	100	5	190	100
Hyphal Fragment	1	40	-	1	40	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	43	-	-	43	-	-	43	-
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	-	-	1	-

† Due to method stopping rules, extrapolated raw counts are reported in parenthesis.

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Collected Date: 03/06/2024

Received Date: 03/07/2024 02:30 PM

Analyzed Date: 03/12/2024 - 03/14/2024

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

Lab Sample Number: Client Sample ID: Volume (L): Sample Location:	132401427-0037 A37 75			132401427-0038 A38 75			132401427-0039 A39 75		
	Classroom 2003			Classroom 2002			Classroom 2001		
Spore Types	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium++	1	40	30.8	2	90	24.3	2	90	69.2
Basidiospores	2	90	69.2	5	200	54.1	1	40	30.8
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	1	40	10.8	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	1	40	10.8	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Total Fungi	3	130	100	9	370	100	3	130	100
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	43	-	-	43	-	-	43	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	1	-	-	1	-	-	1	-

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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: Client Sample ID: Volume (L): Sample Location:	132401427-0040			132401427-0041			132401427-0042		
	A40			A41			A42		
	75			75			75		
	Room 2027, Small Group			Room 2028, Testing			Room 2019, Teachers		
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	9.5
Aspergillus/Penicillium++	3	100	71.4	4	200	51.3	6	300	71.4
Basidiospores	1	40	28.6	3	100	25.6	1	40	9.5
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	2	90	23.1	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	1	40	9.5
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Total Fungi	4	140	100	9	390	100	9	420	100
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	43	-	-	43	-	-	43	-
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	-	-	1	-

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<http://www.EMSL.com/bostonlab@emsl.com>

EMSL Order: 132401427

Customer ID: EAFI66

Customer PO:

Project ID:

Attention: Peter VonAu

EFI Global, Inc.

155 West Street

Suite 6

Wilmington, MA 01887

Project: PMES 014.07230

Phone: (978) 688-3736

Fax: (978) 688-5494

Collected Date: 03/06/2024

Received Date: 03/07/2024 02:30 PM

Analyzed Date: 03/12/2024 - 03/14/2024

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

Lab Sample Number: Client Sample ID: Volume (L): Sample Location:	132401427-0043			132401427-0044			132401427-0045		
	A43			A44			A45		
	75			75			75		
	Room 2012, Small Group			Room 2016			Room 2017A		
Spore Types	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium++	1	40	14.3	7	300	46.9	-	-	-
Basidiospores	4	200	71.4	7	300	46.9	10	430	91.5
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	-	-	-	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	1	40	6.3	1	40	8.5
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	1	40	14.3	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Total Fungi	6	280	100	15	640	100	11	470	100
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	43	-	-	43	-	-	43	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	1	-	-	1	-	-	1	-

† Due to method stopping rules, extrapolated raw counts are reported in parenthesis.

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

Steve Grise, Laboratory Manager
or other Approved Signatory

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Samples analyzed by EMSL Analytical, Inc. Woburn, MA AIHA LAP, LLC-EMLAP Accredited #180179

Initial report from: 03/14/2024 02:28 PM

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Collected Date: 03/06/2024

Received Date: 03/07/2024 02:30 PM

Analyzed Date: 03/12/2024 - 03/14/2024

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

Lab Sample Number: Client Sample ID: Volume (L): Sample Location:	132401427-0046 A46 75 Outdoors			132401427-0047 A47 75 Room 1084			132401427-0048 A48 75 Room 1054		
	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total
	Spore Types								
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	1	40	9.5	-	-	-	-	-	-
Aspergillus/Penicillium++	1	40	9.5	-	-	-	1	40	23.5
Basidiospores	7	300	71.4	1	40	50	2	90	52.9
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	1	40	9.5	1	40	50	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	1	40	23.5
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Total Fungi	10	420	100	2	80	100	4	170	100
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	43	-	-	43	-	-	43	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	-	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	2	-	-	1	-	-	1	-

† Due to method stopping rules, extrapolated raw counts are reported in parenthesis.

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

Steve Grise, Laboratory Manager
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Samples analyzed by EMSL Analytical, Inc. Woburn, MA AIHA LAP, LLC-EMLAP Accredited #180179

Initial report from: 03/14/2024 02:28 PM

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Collected Date: 03/06/2024

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Analyzed Date: 03/12/2024 - 03/14/2024

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

Lab Sample Number: Client Sample ID: Volume (L): Sample Location:	132401427-0049			132401427-0050			132401427-0051		
	A49			A50			A51		
	75			75			75		
	Room 1016			Room 1021			Room 1004		
Spore Types	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium++	1	40	50	1	40	100	-	-	-
Basidiospores	1	40	50	-	-	-	2	80	100
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	-	-	-	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Total Fungi	2	80	100	1	40	100	2	80	100
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	1	40	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	43	-	-	43	-	-	41	-
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	-	-	1	-

† Due to method stopping rules, extrapolated raw counts are reported in parenthesis.

++ 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: Client Sample ID: Volume (L): Sample Location:	132401427-0052			132401427-0053			132401427-0054		
	A52			A53			A54		
	75			75			75		
	Room 1019			Room 1024			Room 1013		
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	25	-	-	-
Aspergillus/Penicillium++	-	-	-	1	40	25	-	-	-
Basidiospores	1	40	100	2	80	50	1	40	100
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	-	-	-	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Total Fungi	1	40	100	4	160	100	1	40	100
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	41	-	-	41	-	-	41	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	1	-	-	1	-	-	1	-

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++ 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:	132401427-0055				
Client Sample ID:	A55				
Volume (L):	75				
Sample Location:	Room 1014				
Spore Types	Raw Count†	Count/m³	% of Total		
Alternaria (Ulocladium)	-	-	-	-	-
Ascospores	-	-	-	-	-
Aspergillus/Penicillium++	-	-	-	-	-
Basidiospores	4	200	100	-	-
Bipolaris++	-	-	-	-	-
Chaetomium++	-	-	-	-	-
Cladosporium	-	-	-	-	-
Curvularia	-	-	-	-	-
Epicoccum	-	-	-	-	-
Fusarium++	-	-	-	-	-
Ganoderma	-	-	-	-	-
Myxomycetes++	-	-	-	-	-
Pithomyces++	-	-	-	-	-
Rust	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-
Zygomycetes	-	-	-	-	-
Total Fungi	4	200	100	-	-
Hyphal Fragment	-	-	-	-	-
Insect Fragment	-	-	-	-	-
Pollen	-	-	-	-	-
Analyt. Sensitivity 600x	-	41	-	-	-
Analyt. Sensitivity 300x	-	13*	-	-	-
Skin Fragments (1-4)	-	1	-	-	-
Fibrous Particulate (1-4)	-	1	-	-	-
Background (1-5)	-	1	-	-	-

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Microbiology Chain of Custody

EMSL Order Number (Lab Use Only):

132401427

EMSL ANALYTICAL, INC.
5 CONSTITUTION WAY, UNIT A
WOBURN, MA 01801
PHONE: (781) 933-8411
FAX: (781) 933-8412

Company Name: EFI Global			EMSL-Bill to: <input checked="" type="checkbox"/> Same <input type="checkbox"/> Different If Bill to is Different note instructions in Comments**				
Street: 155 West Street			Third Party Billing requires written authorization from third party.				
City: Wilmington	State/Province: MA		Zip/Postal Code: 01887		Country: USA		
Report To (Name): Peter von Au			Telephone #: 978.863.8401				
Email Address: peter.vonau@efiglobal.com			Fax #: _____		Purchase Order: _____		
Project Name/Number: PMES 014.87238			Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email				
U.S. State Samples Taken: MA			Project Zip Code: 01854		Connecticut Samples: <input type="checkbox"/> Commercial <input type="checkbox"/> Residential		
Sterile, Sodium Thiosulfate Preserved Bottle Used: <input type="checkbox"/> Biocide Used in Source (specify): <input type="checkbox"/>							
Public Water Supply Samples: <input type="checkbox"/> Note: All results may automatically be reported to DOH if required by state.							
Turnaround Time (TAT) Options * - Please Check							
<input type="checkbox"/> 3 Hour	<input type="checkbox"/> 6 Hour	<input type="checkbox"/> 24 Hour	<input type="checkbox"/> 48 Hour	<input type="checkbox"/> 72 Hour	<input type="checkbox"/> 96 Hour	<input checked="" type="checkbox"/> 1 Week	<input type="checkbox"/> 2 Week
Microbiology Test Codes							
M001 Air-O-Cell M030 Micro 5 M041 Fungal Direct Examination M169 Pollen ID & Enumeration M280 Dust Characterization Level-1 M281 Dust Characterization Level-2 M005 Viable Fungi- Air Samples (Genus ID & Count) M006 Viable Fungi- Air Samples (Includes <i>Penicillium</i> , <i>Aspergillus</i> , <i>Cladosporium</i> , <i>Stachybotrys</i> Species ID & Count) M007 Culturable fungi - Surface Samples (Genus ID & Count) M008 Culturable fungi - Surface Samples (Includes <i>Penicillium</i> , <i>Aspergillus</i> , <i>Cladosporium</i> , <i>Stachybotrys</i> Species ID & Count) M009 Bacteria Culture Gram Stain & Count M010 Bacteria Count & ID - 3 Most Prominent M011 Bacteria Count & ID - 5 Most Prominent		M174 MoldSnap M032 Allergenco-D M012 <i>Pseudomonas aeruginosa</i> (P/A***) M024 <i>Pseudomonas aeruginosa</i> (MFT*) M015 Heterotrophic Plate Count M017 Total Coliform & <i>E. coli</i> (Colilert P/A***) M018 Total Coliform & <i>E. coli</i> (MFT*) M114 Total Coliform & <i>E. coli</i> Enumeration (Colilert MPN**) M019 Fecal Coliform (MFT*) M020 Fecal <i>Streptococcus</i> (MFT*) M029 <i>Enterococci</i> (MFT*) M129 <i>Enterococci</i> (Enterolert P/A***) M180 Real Time qPCR-ERMI 36 Panel M025 Sewage Screen -Water (MFT*)		M115 Sewage Screen - Water (P/A***) M116 Sewage Screen - Water (MPN**) M117 Sewage Screen - Swab (P/A***) M013 Sewage Screen - Swab (MFT*) M133 Methicillin-resistant <i>Staph. aureus</i> (MRSA) M031 Rapid-growing non-TB <i>Mycobacteria</i> Detection & Enumeration M014 Endotoxin Analysis M044 Group Allergen (Cat, Dog, Cockroach, Dust Mite) Other See Analytical Price Guide Legionella Analysis Please use EMSL Legionella COC			
*MFT= Membrane Filtration Technique **MPN= Most Probable Number ***P/A= Presence/Absence							
Name of Sampler: Peter von Au			Signature of Sampler:				
Sample #	Sample Location/Description	Sample Type	Potable/NonPotable (Only for Waters)	Test Code	Volume/Area	Date/Time Collected	Temperature (°C) (Lab Use Only)
Example A1	Kitchen Sink/Tap	Water	<input checked="" type="checkbox"/> P <input type="checkbox"/> NP	M017	100 mL	9/1/13 4:00 PM	
A01	FIELD BLANK	Air	<input type="checkbox"/> P <input type="checkbox"/> NP	M001			
A02	OUTDOORS		<input type="checkbox"/> P <input type="checkbox"/> NP		75L	3/6/24 12:54 pm	
A03	CAFETERIA		<input type="checkbox"/> P <input type="checkbox"/> NP				
A04	MAIN OFFICE, ROOM 1008		<input type="checkbox"/> P <input type="checkbox"/> NP				
A05	GYMNASIUM		<input type="checkbox"/> P <input type="checkbox"/> NP				
Client Sample # (s): A01 - A55			Total # of Samples: 55 P.V.		Samples Received Chilled? (Lab Use Only) Yes / No		
Relinquished (Client): Peter G. von Au			Date: 3/8/24		Time: 2:30 P.M.		
Received (Lab):			Date:		Time:		
Comments/Special Instructions:							

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Microbiology Chain of Custody

EMSL Order Number (Lab Use Only):

132401427

EMSL ANALYTICAL, INC.
5 CONSTITUTION WAY, UNIT A
WOBURN, MA 01886
PHONE: (781) 933-8411
FAX: (781) 933-8412

Additional pages of the chain of custody are only necessary if needed for additional sample information.

Sample #	Sample Location/Description	Sample Type	Potable/ NonPotable (Only for Waters)	Test Code	Volume/ Area	Date/Time Collected	Temperature (°C) (Lab Use Only)
A06	CLASSROOM 1063	Air	<input type="checkbox"/> P <input type="checkbox"/> NP	M001	75L	3/6/24 12:04PM	
A07	CLASSROOM 1061		<input type="checkbox"/> P <input type="checkbox"/> NP				
A08	CLASSROOM 1038		<input type="checkbox"/> P <input type="checkbox"/> NP				
A09	CLASSROOM 1041		<input type="checkbox"/> P <input type="checkbox"/> NP				
A10	CLASSROOM 1043		<input type="checkbox"/> P <input type="checkbox"/> NP				
A11	CLASSROOM 1045		<input type="checkbox"/> P <input type="checkbox"/> NP				
A12	CLASSROOM 1066		<input type="checkbox"/> P <input type="checkbox"/> NP				
A13	CLASSROOM 1068		<input type="checkbox"/> P <input type="checkbox"/> NP				
A14	CLASSROOM 1067		<input type="checkbox"/> P <input type="checkbox"/> NP				
A15	CLASSROOM 1069		<input type="checkbox"/> P <input type="checkbox"/> NP				
A16	FIELD BLANK		<input type="checkbox"/> P <input type="checkbox"/> NP				
A17	CLASSROOM 1071		<input type="checkbox"/> P <input type="checkbox"/> NP				
A18	CLASSROOM 1072		<input type="checkbox"/> P <input type="checkbox"/> NP				
A19	CLASSROOM 1073		<input type="checkbox"/> P <input type="checkbox"/> NP				
A20	CLASSROOM 1074		<input type="checkbox"/> P <input type="checkbox"/> NP				
A21	CLASSROOM 1075		<input type="checkbox"/> P <input type="checkbox"/> NP				
A22	CLASSROOM 1076		<input type="checkbox"/> P <input type="checkbox"/> NP				
A23	CLASSROOM 1077		<input type="checkbox"/> P <input type="checkbox"/> NP				
A24	CLASSROOM 1078		<input type="checkbox"/> P <input type="checkbox"/> NP				
A25	CLASSROOM 1079		<input type="checkbox"/> P <input type="checkbox"/> NP				
A26	CLASSROOM 1081		<input type="checkbox"/> P <input type="checkbox"/> NP				
A27	CLASSROOM 1082, SPED		<input type="checkbox"/> P <input type="checkbox"/> NP				
A28	CLASSROOM 1083-PRE-K		<input type="checkbox"/> P <input type="checkbox"/> NP				

Comments/Special Instructions:

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Sample #	Sample Location/Description	Sample Type	Potable/ NonPotable (Only for Waters)	Test Code	Volume/ Area	Date/Time Collected	Temperature (°C) (Lab Use Only)
A29	OUTDOORS	AIR	<input type="checkbox"/> P <input type="checkbox"/> NP	M001	75L	3/6/24 12:04PM	
A30	CLASSROOM 1097, MUSIC		<input type="checkbox"/> P <input type="checkbox"/> NP				
A31	CLASSROOM 1093, ART		<input type="checkbox"/> P <input type="checkbox"/> NP				
A32	CLASSROOM 1108		<input type="checkbox"/> P <input type="checkbox"/> NP				
A33	KITCHEN		<input type="checkbox"/> P <input type="checkbox"/> NP				
A34	LIBRARY, ROOM 2018		<input type="checkbox"/> P <input type="checkbox"/> NP				
A35	CLASSROOM 2005		<input type="checkbox"/> P <input type="checkbox"/> NP				
A36	CLASSROOM 2004		<input type="checkbox"/> P <input type="checkbox"/> NP				
A37	CLASSROOM 2003		<input type="checkbox"/> P <input type="checkbox"/> NP				
A38	CLASSROOM 2002		<input type="checkbox"/> P <input type="checkbox"/> NP				
A39	CLASSROOM 2001		<input type="checkbox"/> P <input type="checkbox"/> NP				
A40	ROOM 2027, SMALL GROUP		<input type="checkbox"/> P <input type="checkbox"/> NP				
A41	ROOM 2028, TESTING		<input type="checkbox"/> P <input type="checkbox"/> NP				
A42	ROOM 2019, TEACHERS		<input type="checkbox"/> P <input type="checkbox"/> NP				
A43	ROOM 2013, SMALL GROUP		<input type="checkbox"/> P <input type="checkbox"/> NP				
A44	ROOM 2016		<input type="checkbox"/> P <input type="checkbox"/> NP				
A45	ROOM 2017A		<input type="checkbox"/> P <input type="checkbox"/> NP				
A46	OUTDOORS		<input type="checkbox"/> P <input type="checkbox"/> NP				
A47	ROOM 1084		<input type="checkbox"/> P <input type="checkbox"/> NP				
A48	ROOM 1054		<input type="checkbox"/> P <input type="checkbox"/> NP				
A49	ROOM 1016		<input type="checkbox"/> P <input type="checkbox"/> NP				
A50	ROOM 1021		<input type="checkbox"/> P <input type="checkbox"/> NP				
A51	ROOM 1004		<input type="checkbox"/> P <input type="checkbox"/> NP				
Comments/Special Instructions:							

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