

The logo for CTEH, featuring the letters 'CTEH' in a bold, white, sans-serif font inside a dark blue square. A registered trademark symbol (®) is located to the upper right of the 'H'.

CTEH[®]

THE SCIENCE OF READYSM

PINE ISLAND ELEMENTARY SCHOOL

POST REMEDIATION ASSESSMENT

Bokeelia, Florida

October 15, 2022

Project #021408

Post Remediation Assessment

Prepared By

Charles Connolly
Senior Consultant

Reviewed By

Jacob Fenske, CIH
Director, Disaster Recovery

David Watts, CIH
Senior Industrial Hygienist

Prepared on October 15, 2022

Table of Contents

1.0 Background	4
2.0 Exposure Standards and Guidelines.....	4
3.0 Methods and Equipment	5
3.1 Visual Inspection.....	5
4.0 Results.....	5
5.0 Conclusions and Recommendations	5
6.0 References	6

List of Appendices

Appendix A.....	Laboratory Reports
-----------------	--------------------

1.0 Background

On September 28, 2022, Hurricane Ian made landfall in Cayo Costa, FL with winds of 155 miles per hour, two miles per hour short of a Category 5 hurricane. Over the course of two days, Ian moved across Florida, exiting on September 30, 2022, but not before causing major flooding and tornado-like damage in areas across the state.

In response to Hurricane Ian, CTEH, LLC® (CTEH) was requested by Lemoine Disaster Recovery (Lemoine) to assess structures associated with Lee County School District awarded to them under RFQ No. 22-7431TA for potential water intrusion. On October 14, 2022, industrial hygienists from CTEH, LLC® (CTEH) and EFI Global, Inc. conducted post remediation verification (PRV) bioaerosol sampling and visually assessed the Pine Island Elementary School at 5360 Ridgewood Dr, Bokeelia, FL 33922. All samples were collected under the supervision of a licensed mold assessor from EFI. The assessments were requested by Lemoine to assess the potential presence of airborne mold spores, and were conducted in both the impacted and non-impacted buildings.

Heating, ventilation, and air-conditioning (HVAC) for each room is provided by a HVAC system on the roof of the building.

At this time all rooms are sampled and there were no visible signs of mold in the rooms inspected; however, there were four rooms that contained spore counts associated with *Aspergillus/Penicillium* notably above background. Those rooms are located at:

- Building 03; Room 3-003
- Building 06; Room 6-004
- Building 06; Room 6-006
- Building 12; Room 12-102

The airborne bioaerosol sampling in all other rooms confirmed mold spores were consistent with what would be found outdoors or in a typical building environment.

2.0 Exposure Standards and Guidelines

Currently, there are no generally accepted occupational or public health standards for interpreting airborne microbiological sample results. Individual susceptibility varies with genetic predisposition, age, state of health, concurrent exposures, and previous sensitization. Due to these challenges, it is not possible to determine an indoor spore concentration that can guarantee all individuals will be asymptomatic. Guidelines published by the American Industrial Hygiene Association (AIHA) recommend comparing the indoor and outdoor air sampling results. In general, the types of fungi and their airborne concentrations found indoors should be similar (in non-problem buildings) to outdoor air.^[1] Differences

in the airborne levels or types of fungi may indicate the presence of moisture sources and resultant fungal growth.

3.0 Methods and Equipment

All collected samples were sent under chain-of-custody to EMSL Analytical, Inc., an AIHA-accredited laboratory.* All monitoring equipment was factory calibrated at the manufacturers recommended interval or prior to sampling.

Bioaerosol samples were collected indoors and outdoors using Zefon Air-O-Cell sampling cassettes attached to an SKC QuickTake 30 air sampling pump. Prior to sampling, the pump was calibrated to a flowrate of approximately 15 L/min, as specified by the sampling media manufacturer, using a Bios Defender 510 DryCal. Each sample was collected for a ten-minute duration resulting in a sampled air volume of approximately 150 Liters.† Samples were analyzed by microscopic examination using method EMSL 05-TP-003/ASTM D7391 to determine mold spore genus and spore concentration. This method does not differentiate between viable and non-viable spore types.

3.1 Visual Inspection

A visual inspection was conducted in accessible portions of the classrooms, school common areas, and above drop ceilings as necessary.

3.2 Psychrometric Assessment

A psychrometric assessment was conducted utilizing a Protimeter Hygromaster L (Model #: POL7750L) Hygrometer in both the impacted and non-impacted buildings.

4.0 Results

Laboratory reports for all samples are provided in **Appendix A**.

5.0 Conclusions and Recommendations

The inspections and tests were performed on October 14, 2022, by industrial hygienists from CTEH and EFI. The results of the post-remediation inspection revealed no visible mold growth but did reveal four rooms that had spore counts for *Aspergillus*/*Penicillium* notably (15x – 28x) above background. Lemoine was notified of these results and advised to investigate the potential source of these detections further, and that isolation of the rooms and additional remediation actions prior to permitting re-occupancy to

* AIHA Laboratory Accreditation Program (AIHA-LAP) – Environmental Microbiology; AIHA Environmental Microbiology Proficiency Analytical Testing Program (AIHA-EMPAT) Participant; CDC Elite – Legionella

† See laboratory reports in the appendix for exact flowrates and collected volumes.

this school location may be warranted. The post-remediation inspection also revealed psychrometric (i.e., atmospheric) readings above 55 Grains of Moisture per Pound of Air (GPP), which may also warrant further investigation / dehumidification techniques to inhibit microbial growth.

The results of the air testing in all other assessed rooms are considered normal and typical and do not indicate the presence of elevated airborne mold spores.

While some areas of the Pine Island Elementary School may be fit for re-occupancy at this time, the presence of *Aspergillus*/*Penicillium* notably above background may warrant a more thorough investigation, and it is recommended that, at a minimum, the rooms that these contained elevated spore counts are retested following further investigation and remediation activities prior to removing occupancy restrictions.

6.0 References

[1] (AIHA), American Industrial Hygiene Association. *Facts About Mold*. Edited by American Industrial Hygiene Association (AIHA). Falls Church, Virginia: AIHA, 2011.

Appendix A

Laboratory Reports



EMSL Analytical, Inc.

5700 Memorial Highway, Suite 122 Tampa, FL 33615

Tel/Fax: (813) 280-8752 / (813) 280-8753

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

EMSL Order: 932205765

Customer ID: CTEH99

Customer PO:

Project ID:

Attention: Noah Ambos
CTEH Center for Toxicology & Env. Health
5120 North Shore Drive
North Little Rock, AR 72118

Phone: (501) 454-1622
Fax: (501) 614-2835
Collected Date: 10/14/2022
Received Date: 10/15/2022 06:15 AM
Analyzed Date: 10/15/2022

Project: 035.18478/ Pine Island Elementary School

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:	932205765-0001 P01 150 Building 01-01/101			932205765-0002 P02 150 Building 02-2-009			932205765-0003 P03 150 Building 04-4-004		
	Spore Types	Raw Count	Count/M ³	% of Total	Raw Count	Count/M ³	% of Total	Raw Count	Count/M ³
Alternaria (Ulocladium)	1	20	0.7	-	-	-	1*	7*	0.7
Ascospores	3	70	2.4	1	20	3.7	-	-	-
Aspergillus/Penicillium	40	880	30.5	19	420	77.2	28	620	65.5
Basidiospores	6	100	3.5	-	-	-	4	90	9.5
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	75	1700	58.9	4	90	16.5	4	90	9.5
Curvularia	5	100	3.5	1*	7*	1.3	5	100	10.6
Fusarium++	1*	7*	0.2	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Cercospora++	1*	7*	0.2	1*	7*	1.3	-	-	-
Corynespora	-	-	-	-	-	-	-	-	-
Nigrospora	-	-	-	-	-	-	2	40	4.2
Oidium++	-	-	-	-	-	-	-	-	-
Pestalotia++	-	-	-	-	-	-	-	-	-
Pyricularia	-	-	-	-	-	-	-	-	-
Sporidesmium++	-	-	-	-	-	-	-	-	-
Tetraploa	-	-	-	-	-	-	-	-	-
Total Fungi	132	2884	100	26	544	100	44	947	100
Hyphal Fragment	-	-	-	-	-	-	1	20	-
Insect Fragment	2	40	-	-	-	-	1	20	-
Pollen	2	40	-	-	-	-	1*	7*	-

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

Gerald Iannuzzi, Laboratory Manager
or other Approved Signatory

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

EMSL 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. EMSL 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. High levels of background particulate can obscure spores and other particulates, leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. **** Denotes particles found at 300X. "-" Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed. Skin & Fibrous ratings: 1 (1-25%), 2 (26-50%), 3 (51-75%), 4 (76-100%) of the background particles.

Samples analyzed by EMSL Analytical, Inc. Tampa, FL A2LA Accredited – Certificate #2845.28

Initial report from: 10/15/2022 12:49 PM

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



EMSL Analytical, Inc.

5700 Memorial Highway, Suite 122 Tampa, FL 33615

Tel/Fax: (813) 280-8752 / (813) 280-8753

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

EMSL Order: 932205765
Customer ID: CTEH99
Customer PO:
Project ID:

Attention: Noah Ambos CTEH Center for Toxicology & Env. Health 5120 North Shore Drive North Little Rock, AR 72118	Phone: (501) 454-1622 Fax: (501) 614-2835 Collected Date: 10/14/2022 Received Date: 10/15/2022 06:15 AM Analyzed Date: 10/15/2022
Project: 035.18478/ Pine Island Elementary School	

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

Lab Sample Number:	932205765-0001			932205765-0002			932205765-0003		
Client Sample ID:	P01			P02			P03		
Volume (L):	150			150			150		
Sample Location:	Building 01-01/101			Building 02-2-009			Building 04-4-004		
Spore Types	Raw Count	Count/M ³	% of Total	Raw Count	Count/M ³	% of Total	Raw Count	Count/M ³	% of Total
Analyt. Sensitivity 600x	-	22	-	-	22	-	-	22	-
Analyt. Sensitivity 300x	-	7*	-	-	7*	-	-	7*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	2	-	-	1	-	-	1	-
Background (1-5)	-	2	-	-	1	-	-	3	-

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

Gerald Iannuzzi, Laboratory Manager
or other Approved Signatory

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

EMSL 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. EMSL 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. High levels of background particulate can obscure spores and other particulates, leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. **** Denotes particles found at 300X. "-" Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed. Skin & Fibrous ratings: 1 (1-25%), 2 (26-50%), 3 (51-75%), 4 (76-100%) of the background particles.

Samples analyzed by EMSL Analytical, Inc. Tampa, FL A2LA Accredited – Certificate #2845.28

Initial report from: 10/15/2022 12:49 PM

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



EMSL Analytical, Inc.

5700 Memorial Highway, Suite 122 Tampa, FL 33615

Tel/Fax: (813) 280-8752 / (813) 280-8753

[http://www.EMSL.com / tampalab@emsl.com](http://www.EMSL.com/tampalab@emsl.com)

EMSL Order: 932205765

Customer ID: CTEH99

Customer PO:

Project ID:

Attention: Noah Ambos
CTEH Center for Toxicology & Env. Health
5120 North Shore Drive
North Little Rock, AR 72118

Phone: (501) 454-1622
Fax: (501) 614-2835
Collected Date: 10/14/2022
Received Date: 10/15/2022 06:15 AM
Analyzed Date: 10/15/2022

Project: 035.18478/ Pine Island Elementary School

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:	932205765-0004			932205765-0005			932205765-0006		
	P04	P05	P06	Raw Count	Count/M ³	% of Total	Raw Count	Count/M ³	% of Total
	150	150	150						
	Building 05-5-002	Building 06-6-006	Building 06-6-004						
Spore Types	Raw Count	Count/M ³	% of Total	Raw Count	Count/M ³	% of Total	Raw Count	Count/M ³	% of Total
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	1	20	1.1	1	20	1.1	8	200	8.5
Aspergillus/Penicillium	27	600	32.2	68	1500	82.6	90	2000	84.7
Basidiospores	8	200	10.7	1	20	1.1	2	40	1.7
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	37	820	44.1	8	200	11	5	100	4.2
Curvularia	4	90	4.8	3	70	3.9	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	1	20	0.8
Pithomyces++	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Cercospora++	5	100	5.4	-	-	-	-	-	-
Corynespora	2*	10*	0.5	-	-	-	-	-	-
Nigrospora	1*	7*	0.4	1*	7*	0.4	-	-	-
Oidium++	-	-	-	-	-	-	-	-	-
Pestalotia++	1*	7*	0.4	-	-	-	-	-	-
Pyricularia	1*	7*	0.4	-	-	-	-	-	-
Sporidesmium++	-	-	-	-	-	-	-	-	-
Tetraploa	-	-	-	-	-	-	-	-	-
Total Fungi	87	1861	100	82	1817	100	106	2360	100
Hyphal Fragment	3	70	-	1	20	-	-	-	-
Insect Fragment	-	-	-	-	-	-	1*	7*	-
Pollen	1	20	-	2	40	-	-	-	-

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

Gerald Iannuzzi, Laboratory Manager
or other Approved Signatory

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

EMSL 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. EMSL 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. High levels of background particulate can obscure spores and other particulates, leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. **** Denotes particles found at 300X. "-" Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed. Skin & Fibrous ratings: 1 (1-25%), 2 (26-50%), 3 (51-75%), 4 (76-100%) of the background particles.

Samples analyzed by EMSL Analytical, Inc. Tampa, FL A2LA Accredited – Certificate #2845.28

Initial report from: 10/15/2022 12:49 PM

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



EMSL Analytical, Inc.

5700 Memorial Highway, Suite 122 Tampa, FL 33615

Tel/Fax: (813) 280-8752 / (813) 280-8753

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

EMSL Order: 932205765
Customer ID: CTEH99
Customer PO:
Project ID:

Attention: Noah Ambos CTEH Center for Toxicology & Env. Health 5120 North Shore Drive North Little Rock, AR 72118	Phone: (501) 454-1622 Fax: (501) 614-2835 Collected Date: 10/14/2022 Received Date: 10/15/2022 06:15 AM Analyzed Date: 10/15/2022
Project: 035.18478/ Pine Island Elementary School	

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

Lab Sample Number:	932205765-0004			932205765-0005			932205765-0006		
Client Sample ID:	P04			P05			P06		
Volume (L):	150			150			150		
Sample Location:	Building 05-5-002			Building 06-6-006			Building 06-6-004		
Spore Types	Raw Count	Count/M ³	% of Total	Raw Count	Count/M ³	% of Total	Raw Count	Count/M ³	% of Total
Analyt. Sensitivity 600x	-	22	-	-	22	-	-	22	-
Analyt. Sensitivity 300x	-	7*	-	-	7*	-	-	7*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	2	-	-	2	-	-	2	-

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

Gerald Iannuzzi, Laboratory Manager
or other Approved Signatory

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

EMSL 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. EMSL 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. High levels of background particulate can obscure spores and other particulates, leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. "" Denotes particles found at 300X. "-" Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed. Skin & Fibrous ratings: 1 (1-25%), 2 (26-50%), 3 (51-75%), 4 (76-100%) of the background particles.

Samples analyzed by EMSL Analytical, Inc. Tampa, FL A2LA Accredited – Certificate #2845.28

Initial report from: 10/15/2022 12:49 PM

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



EMSL Analytical, Inc.

5700 Memorial Highway, Suite 122 Tampa, FL 33615

Tel/Fax: (813) 280-8752 / (813) 280-8753

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

EMSL Order: 932205765

Customer ID: CTEH99

Customer PO:

Project ID:

Attention: Noah Ambros
CTEH Center for Toxicology & Env. Health
5120 North Shore Drive
North Little Rock, AR 72118

Phone: (501) 454-1622

Fax: (501) 614-2835

Collected Date: 10/14/2022

Received Date: 10/15/2022 06:15 AM

Analyzed Date: 10/15/2022

Project: 035.18478/ Pine Island Elementary School

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:	932205765-0007			932205765-0008			932205765-0009		
	Raw Count	Count/M ³	% of Total	Raw Count	Count/M ³	% of Total	Raw Count	Count/M ³	% of Total
P07 150 Building 03-3-003	P08 150 Building 11-11-001	P09 150 Building 12-12-102							
Spore Types									
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	7	200	6	2	40	3.2	1	20	0.4
Aspergillus/Penicillium	95	2100	62.7	22	490	38.9	126	2780	52.9
Basidiospores	2	40	1.2	4	90	7.1	6	100	1.9
Bipolaris++	-	-	-	-	-	-	2*	10*	0.2
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	42	930	27.8	25	550	43.7	89	2000	38
Curvularia	2	40	1.2	3	70	5.6	10	220	4.2
Fusarium++	-	-	-	-	-	-	1	20	0.4
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	1	20	0.6	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Cercospora++	1	20	0.6	1	20	1.6	4	90	1.7
Corynespora	-	-	-	-	-	-	-	-	-
Nigrospora	-	-	-	-	-	-	-	-	-
Oidium++	-	-	-	-	-	-	-	-	-
Pestalotia++	-	-	-	-	-	-	1	20	0.4
Pyricularia	-	-	-	-	-	-	-	-	-
Sporidesmium++	-	-	-	-	-	-	-	-	-
Tetraploa	-	-	-	-	-	-	-	-	-
Total Fungi	150	3350	100	57	1260	100	240	5260	100
Hyphal Fragment	1	20	-	-	-	-	1*	7*	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	2	40	-	-	-	-

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

Gerald Iannuzzi, Laboratory Manager
or other Approved Signatory

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

EMSL 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. EMSL 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. High levels of background particulate can obscure spores and other particulates, leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. **** Denotes particles found at 300X. "-" Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed. Skin & Fibrous ratings: 1 (1-25%), 2 (26-50%), 3 (51-75%), 4 (76-100%) of the background particles.

Samples analyzed by EMSL Analytical, Inc. Tampa, FL A2LA Accredited – Certificate #2845.28

Initial report from: 10/15/2022 12:49 PM

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



EMSL Analytical, Inc.

5700 Memorial Highway, Suite 122 Tampa, FL 33615

Tel/Fax: (813) 280-8752 / (813) 280-8753

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

EMSL Order: 932205765
Customer ID: CTEH99
Customer PO:
Project ID:

Attention: Noah Ambos CTEH Center for Toxicology & Env. Health 5120 North Shore Drive North Little Rock, AR 72118	Phone: (501) 454-1622 Fax: (501) 614-2835 Collected Date: 10/14/2022 Received Date: 10/15/2022 06:15 AM Analyzed Date: 10/15/2022
Project: 035.18478/ Pine Island Elementary School	

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:	932205765-0007			932205765-0008			932205765-0009		
	Raw Count	Count/M ³	% of Total	Raw Count	Count/M ³	% of Total	Raw Count	Count/M ³	% of Total
P07				P08			P09		
150				150			150		
Building 03-3-003	Building 11-11-001			Building 12-12-102					
Spore Types	Raw Count	Count/M ³	% of Total	Raw Count	Count/M ³	% of Total	Raw Count	Count/M ³	% of Total
Analyt. Sensitivity 600x	-	22	-	-	22	-	-	22	-
Analyt. Sensitivity 300x	-	7*	-	-	7*	-	-	7*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	2	-	-	1	-	-	1	-
Background (1-5)	-	1	-	-	1	-	-	1	-

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

Gerald Iannuzzi, Laboratory Manager
or other Approved Signatory

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

EMSL 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. EMSL 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. High levels of background particulate can obscure spores and other particulates, leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. **** Denotes particles found at 300X. "-" Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed. Skin & Fibrous ratings: 1 (1-25%), 2 (26-50%), 3 (51-75%), 4 (76-100%) of the background particles.

Samples analyzed by EMSL Analytical, Inc. Tampa, FL A2LA Accredited – Certificate #2845.28

Initial report from: 10/15/2022 12:49 PM

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



EMSL Analytical, Inc.

5700 Memorial Highway, Suite 122 Tampa, FL 33615

Tel/Fax: (813) 280-8752 / (813) 280-8753

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

EMSL Order: 932205765

Customer ID: CTEH99

Customer PO:

Project ID:

Attention: Noah Ambos
CTEH Center for Toxicology & Env. Health
5120 North Shore Drive
North Little Rock, AR 72118

Phone: (501) 454-1622
Fax: (501) 614-2835
Collected Date: 10/14/2022
Received Date: 10/15/2022 06:15 AM
Analyzed Date: 10/15/2022

Project: 035.18478/ Pine Island Elementary School

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:	932205765-0010			932205765-0011			932205765-0012		
	Raw Count	Count/M ³	% of Total	Raw Count	Count/M ³	% of Total	Raw Count	Count/M ³	% of Total
P10 150 Building 13-13-103	P11 150 Building 14-14-104	P12 150 Outside of Building 4							
Spore Types									
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	1	20	5.1	1	20	2.3	15	330	9.4
Aspergillus/Penicillium	3	70	17.9	11	240	27.8	6	100	2.8
Basidiospores	6	100	25.6	4	90	10.4	10	220	6.3
Bipolaris++	-	-	-	1*	7*	0.8	2	40	1.1
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	6	100	25.6	18	400	46.3	88	1900	54.1
Curvularia	5	100	25.6	6	100	11.6	23	510	14.5
Fusarium++	-	-	-	-	-	-	3	70	2
Ganoderma	-	-	-	-	-	-	1	20	0.6
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces++	-	-	-	1*	7*	0.8	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Cercospora++	-	-	-	-	-	-	4	90	2.6
Corynespora	-	-	-	-	-	-	6	100	2.8
Nigrospora	-	-	-	-	-	-	3*	20*	0.6
Oidium++	-	-	-	-	-	-	6	100	2.8
Pestalotia++	-	-	-	-	-	-	-	-	-
Pyricularia	-	-	-	-	-	-	-	-	-
Sporidesmium++	-	-	-	-	-	-	1*	7*	0.2
Tetraploa	-	-	-	-	-	-	1*	7*	0.2
Total Fungi	21	390	100	42	864	100	169	3514	100
Hyphal Fragment	-	-	-	1*	7*	-	-	-	-
Insect Fragment	1	20	-	-	-	-	-	-	-
Pollen	2	40	-	-	-	-	4	90	-

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

Gerald Iannuzzi, Laboratory Manager
or other Approved Signatory

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

EMSL 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. EMSL 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. High levels of background particulate can obscure spores and other particulates, leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. **** Denotes particles found at 300X. "-" Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed. Skin & Fibrous ratings: 1 (1-25%), 2 (26-50%), 3 (51-75%), 4 (76-100%) of the background particles.

Samples analyzed by EMSL Analytical, Inc. Tampa, FL A2LA Accredited – Certificate #2845.28

Initial report from: 10/15/2022 12:49 PM

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



EMSL Analytical, Inc.

5700 Memorial Highway, Suite 122 Tampa, FL 33615

Tel/Fax: (813) 280-8752 / (813) 280-8753

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

EMSL Order: 932205765
Customer ID: CTEH99
Customer PO:
Project ID:

Attention: Noah Ambos CTEH Center for Toxicology & Env. Health 5120 North Shore Drive North Little Rock, AR 72118	Phone: (501) 454-1622 Fax: (501) 614-2835 Collected Date: 10/14/2022 Received Date: 10/15/2022 06:15 AM Analyzed Date: 10/15/2022
Project: 035.18478/ Pine Island Elementary School	

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

Lab Sample Number:	932205765-0010			932205765-0011			932205765-0012		
Client Sample ID:	P10			P11			P12		
Volume (L):	150			150			150		
Sample Location:	Building 13-13-103			Building 14-14-104			Outside of Building 4		
Spore Types	Raw Count	Count/M ³	% of Total	Raw Count	Count/M ³	% of Total	Raw Count	Count/M ³	% of Total
Analyt. Sensitivity 600x	-	22	-	-	22	-	-	22	-
Analyt. Sensitivity 300x	-	7*	-	-	7*	-	-	7*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	2	-	-	2	-	-	1	-

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

Gerald Iannuzzi, Laboratory Manager
or other Approved Signatory

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

EMSL 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. EMSL 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. High levels of background particulate can obscure spores and other particulates, leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. "" Denotes particles found at 300X. "-" Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed. Skin & Fibrous ratings: 1 (1-25%), 2 (26-50%), 3 (51-75%), 4 (76-100%) of the background particles.

Samples analyzed by EMSL Analytical, Inc. Tampa, FL A2LA Accredited – Certificate #2845.28

Initial report from: 10/15/2022 12:49 PM

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