

TRAFALGAR MIDDLE SCHOOL

POST REMEDIATION ASSESSMENT

Cape Coral, Florida
October 14, 2022
Project #021344

Post Remediation Assessment

Prepared By

Charles Connolly Senior Consultant

Reviewed By

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Prepared on October 14, 2022



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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 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 13 & 14, 2022, industrial hygienists from CTEH, LLC® (CTEH) and EFI Global, Inc. conducted post remediation verification (PRV) bioaerosol sampling and visually assessed the Trafalgar Middle School at 2120 Trafalgar Parkway, Cape Coral, FL 33991. 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 and the airborne bioaerosol sampling 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 13 & 14, 2022, by industrial hygienists from CTEH and EFI. The results of the post-remediation inspection revealed no visible mold growth but did reveal areas of carpet with moisture levels of 15% Wood Moisture Equivalent (%WME). Lemoine was notified of these areas of wet carpet on October 14, 2022 and advised to remediate. The post-remediation inspection also revealed psychrometric (i.e., atmospheric) readings above 55 Grains of Moisture per Pound of Air (GPP), which may warrant further investigation / dehumidification techniques to inhibit microbial growth.



^{*} 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.

The results of the air testing in the assessed rooms are considered normal and typical and do not indicate the presence of elevated airborne mold spores. Assuming the areas of wet carpet identified on October 14, 2022 are addressed in a timely manner and prior to re-occupancy, no further testing is warranted at this time and the affected areas are permitted to be re-occupied without any further access 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



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:** 932205716 **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 **Collected Date:**

Received Date: 10/14/2022 09:25 AM

Phone: (501) 454-1622

Fax: (501) 614-2835

Analyzed Date: 10/14/2022

Project: 035.18478 Trafalgar Middle School

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

Lab Sample Number:	culates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391) 932205716-0002 932205716-0003									
Client Sample ID:	932205716-0001 T01 150 Bidg 1- Classroom 01-006			T02			T03			
Volume (L):					150			150		
Sample Location:				Bldg 2 - Cl	assroom - Teacher F	Planning	Bldg 4 - Cafeteria			
Spore Types	Raw Count	Count/M³	% of Total	Raw Count	Count/M³	% of Total	Raw Count	Count/M³	% of Total	
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-	
Ascospores	3	70	11	1	20	4.8	2	40	9.5	
Aspergillus/Penicillium	6	100	15.8	7	200	48	3	70	16.7	
Basidiospores	9	200	31.5	2	40	9.6	-	-	-	
Bipolaris++	-	-	-	1	20	4.8	-	-	-	
Chaetomium++	-	-	-	-	-	-	-	-	-	
Cladosporium	11	240	37.9	2	40	9.6	14	310	73.8	
Curvularia	2*	10*	1.6	3	70	16.8	-	-	-	
Epicoccum	-	-	-	-	-	-	-	-	-	
Fusarium++	-	-	-	-	-	-	-	-	-	
Ganoderma	-	-	-	1	20	4.8	-	-	-	
Myxomycetes++	-	-	-	-	-	-	-	-	-	
Pithomyces++	-	-	-	-	-	-	-	-	-	
Rust	-	-	-	-	-	-	-	-	-	
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-	
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-	
Unidentifiable Spores	-	-	-	-	-	-	-	-	-	
Cercospora++	-	-	-	-	-	-	-	-	-	
Nigrospora	1*	7*	1.1	-	-	-	-	-	-	
Pestalotia++	-	-	-	1*	7*	1.7	-	-	-	
Spegazzinia	1*	7*	1.1	-	-	-	-	-	-	
Total Fungi	33	634	100	18	417	100	19	420	100	
Hyphal Fragment	-	-	-	-	-	-	-	-	-	
Insect Fragment	-	-	-	1	20	-	-	-	-	
Pollen	-	-	-	-	-	-	-	-	-	
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.

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

Gerald lannuzzi, Laboratory Manager or other Approved Signatory

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



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Project: 035.18478 Trafalgar Middle 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):	932205716-0004 T04 150			932205716-0005 T05 150 Bldg 6 - Secretarial Space			932205716-0006 T06 150		
Sample Location:							Bldg 7 - Classroom 07-027		
Spore Types	Raw Count	Count/M³	% of Total	Raw Count	Count/M³	% of Total	Raw Count	Count/M³	% of Total
Alternaria (Ulocladium)	-	· -	<u> </u>	-	-	-	-	-	<u> </u>
Ascospores	-	-	-	3	70	13	-	-	-
Aspergillus/Penicillium	1	20	18.2	1	20	3.7	1	20	7.1
Basidiospores	1	20	18.2	-	-	-	-	-	-
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	3	70	63.6	19	420	78.2	11	240	85.7
Curvularia	-	-	-	1*	7*	1.3	1	20	7.1
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Cercospora++	-	-	-	-	-	-	-	-	-
Nigrospora	-	-	-	-	-	-	-	-	-
Pestalotia++	-	-	-	1	20	3.7	-	-	-
Spegazzinia	-	-	-	-	-	-	-	-	-
Total Fungi	5	110	100	25	537	100	13	280	100
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
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)	-	1	-	-	1	-	-	1	-

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

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

Gerald lannuzzi, Laboratory Manager or other Approved Signatory

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Lab Sample Number: Client Sample ID: Volume (L):	932205716-0007 T07 150			932205716-0008 T08 150 Bldg 10 - Classroom 10-048			932205716-0009 T09 150		
Sample Location:							Bldg 10 - 10-055		
Spore Types	Raw Count	Count/M ³	% of Total	Raw Count	Count/M³	% of Total	Raw Count	Count/M³	% of Total
Alternaria (Ulocladium)	-	· -	<u> </u>	-	-	<u> </u>	-	-	<u>'</u> -
Ascospores	1	20	1.3	9	200	16.6	-	-	-
Aspergillus/Penicillium	10	210	13.6	3	60	5	-	-	-
Basidiospores	4	80	5.2	5	100	8.3	-	-	-
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	60	1200	77.7	36	740	61.3	15	310	100
Curvularia	1	20	1.3	3	60	5	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	1*	7*	0.5	2	40	3.3	-	-	-
Pithomyces++	1*	7*	0.5	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Cercospora++	-	-	-	-	-	-	-	-	-
Nigrospora	-	-	-	-	-	-	-	-	-
Pestalotia++	-	-	-	1*	7*	0.6	-	-	-
Spegazzinia	-	-	-	-	-	-	-	-	-
Total Fungi	78	1544	100	59	1207	100	15	310	100
Hyphal Fragment	3	60	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	21	-	-	21	-	-	21	-
Analyt. Sensitivity 300x	-	7*	-	-	7*	-	-	7*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	1	-	-	2	-	-	1	-

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

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

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Lab Sample Number: Client Sample ID: Volume (L):	932205716-0010 T10 150 Bldg 9 - Gym			932205716-0011 T11 150 Bldg 6 - Library			932205716-0012 T12 150		
Sample Location:							Outside		
Spore Types	Raw Count	Count/M³	% of Total	Raw Count	Count/M³	% of Total	Raw Count	Count/M³	% of Total
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	<u> </u>
Ascospores	-	-	-	1	20	10	24	530	13.6
Aspergillus/Penicillium	1	20	18.2	1	20	10	11	240	6.2
Basidiospores	-	-	-	2	40	20	16	350	9
Bipolaris++	-	-	-	1	20	10	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	4	90	81.8	5	100	50	111	2450	62.8
Curvularia	-	-	-	-	-	-	10	220	5.6
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	1	20	0.5
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	1	20	0.5
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Cercospora++	-	-	-	-	-	-	3	70	1.8
Nigrospora	-	-	-	-	-	-	-	-	-
Pestalotia++	-	-	-	-	-	-	-	-	-
Spegazzinia	-	-	-	-	-	-	-	-	-
Total Fungi	5	110	100	10	200	100	177	3900	100
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	1	20	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
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)	-	1	-	-	1	-	-	1	-

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

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

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