Environmental Consultants and Engineers
1818 New York Avenue Suite 217
Washington, DC 20002
www.globalincusa.net

March 1, 2021

Prince Georges County
Environmental Safety Office
13306 Old Marlboro Pike
Upper Marlboro, MD 20772

Attention: Mr. Alex Baylor

RE: Indoor Air Quality Screening Report

Global Project Number: 20-064
School: Benjamin Tasker Middle School

Dear Mr. Baylor,

On December 2, 2020, Global Inc.'s (GLOBAL) team of Industrial Hygienists under the supervision of Certified Industrial Hygienist, Dr. Channa Bambaradeniya, conducted an Indoor Air Quality Screening at Benjamin Tasker Middle School located at 4901 Collington Rd, Bowie, MD 20715.

Methodology

The IAQ evaluation included a visual assessment, sampling for non-viable mold spores in air, and measurement of comfort parameters (temperature, humidity, carbon dioxide, and carbon monoxide) in randomly selected representative locations within the building. GLOBAL's inspector conducted a walkthrough with Prince Georges County Public School (PGCPS) personnel present. Rooms were selected in a random manner throughout the building so as to prevent sampling bias.

During the visual assessment of representative locations, and when noted, GLOBAL documented those areas with suspected mold growth, water intrusions, and wet conditions that have the potential to lead to mold growth. GLOBAL also noted any unusual odors. At least one microbial air sample was collected for every 10,000 Square Feet (SF) of space in the building and the analytical results for the interior spaces were compared to an outdoor (ambient) sample collected on the same day.

Microbial samples (including a field blank for quality control) were delivered under strict chain-of-custody procedures were to Hayes Microbial Consulting - an AIHA EMPAT-certified laboratory in Midlothian, Virginia for analysis by microscopy. The sample chain-of-custody and laboratory report is attached.

Observations

The general observations in the sixteen indoor locations inspected are summarized in Table 1 below:

Table 1: Observations

Location	Observations
Room 214	No issues
Room 223	No issues
Room 229	No issues
Girls Locker Room	No issues
Room 238	No issues
Room 201	No issues
Room 215	No issues
Room 206	No issues
Health Suite	No issues
Room 131	No issues
Room 137	No issues
Room 135	No issues
Cafeteria	No issues
Media Center	No issues
Room 124	No issues
Room 113	No issues

Comfort Parameter Measurements and Mold-in-Air Sample Results

The comfort parameter measurements and status of fungal ecology is summarized in Table 2 and Table 3.

Temperature

The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) have published recommendations for year-round acceptable temperatures in Standard 55-2016 (*Thermal Environmental Conditions for Human Occupancy*). The winter comfort range is 68 to 75°F and the summer comfort range is 73 to 79°F. It is important to note that ASHRAE standards are intended as a suggested guideline as opposed to a regulation. All the indoor temperature readings were within the ASHRAE Standard except for in the cafeteria and room 135.

Relative Humidity (RH)

Relative humidity is a key factor for mold growth. Mold has the potential of growing on suitable surfaces with humidity levels above 60%. ASHRAE standard 62.1-2013 (*Ventilation for Acceptable Indoor Air Quality*) recommends a maximum indoor relative humidity of 65% to preclude the likelihood of condensation on cool surfaces encouraging mold growth. All the indoor relative humidity readings were below the ASHRAE recommended level of 65%.

Carbon Monoxide

Carbon monoxide (CO) is a colorless and odorless gas that is produced by the incomplete combustion of carbon-containing fuels. Oil, gasoline, diesel fuels, wood, coke, and coal are the major sources of CO. All registered CO concentrations were below the EPA National Ambient Air Quality Standard (NAAQS) of 9 ppm.

Carbon Dioxide

Under conditions of maximum occupancy, ASHRAE Standard 62.1-2013, Appendix C, infers that the acceptable carbon dioxide upper limit is the prevailing outdoor carbon dioxide concentration plus 700 parts per million (ppm). On December 2, 2020, the outdoor (ambient) carbon dioxide concentration was approximately 405 ppm so indoor concentrations should not exceed approximately 1105 ppm (700 + 405). All indoor carbon dioxide measurements were within the ASHRAE standards.

Mold-in-Air Samples

There are no definitive regulations or standardized guidelines for addressing airborne mold in an indoor setting. If building systems (ventilation, envelope) are functioning properly, the indoor fungal ecology profile should be consistent with what is encountered outdoors and the spore concentrations should be below the ambient levels.

The analytical results of indoor air samples collected from Room 135, Health Suite, Cafeteria and the Media Center on December 2, 2020 indicated elevated presence of mold spores. The horizontal surfaces of the above locations were thoroughly recleaned, and air scrubbers with HEPA filters were operated for 24-36 hours. Subsequently, they were reinspected on February 27, 2021, and the analytical results of air samples collected indicated normal fungal ecology. Laboratory analytical results are attached at the end of this report.

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Table 2: Air Quality Results (Inspected on 12/2/2020)

Sample Location	Temp ^{0}F	RH%	CO ppm	CO2 ppm	Normal Fungal Ecology?
Standards	**ASHRAE 68 to 75°F**	**ASHRAE <65%**	**NAAQS <9**	**ASHRAE 1105**	
Ambient	45.0	37.6	0	405	-
Room 214	74.7	15.9	0	396	Yes
Room 223	71.8	16.2	0	401	Yes
Room 229	74.5	14.8	0	398	Yes
Girls Locker Room	74.0	21.7	0	394	Yes
Room 238	73.6	18.1	0	399	Yes
Room 201	73.9	13.9	0	395	Yes
Room 215	73.1	15.1	0	402	Yes
Room 206	74.4	16.3	0	409	Yes
Health Suite	72.9	18.1	0	447	No
Room 131	74.0	17.6	0	404	Yes
Room 137	71.9	16.8	0	389	Yes
Room 135	63.2	21.5	0	401	No
Cafeteria	67.0	25.0	0	407	No
Media Center	73.1	18.1	0	421	No
Room 124	75.1	13.9	0	403	Yes
Room 113	75.5	17.9	0	413	Yes

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Table 3: Air Quality Results (Inspected on 2/27/2021)

Sample Location	Temp ^{0}F	RH%	CO ppm	CO2 ppm	Normal Fungal Ecology?
Standards	**ASHRAE 68 to 75°F**	**ASHRAE <65%**	**NAAQS <9**	**ASHRAE 1144**	
Ambient	65.0	41.0	0	444	-
Health Suite	64.0	36.0	0	466	Yes
Room 135	69.0	35.0	0	433	Yes
Cafeteria	69.0	33.0	0	427	Yes
Media Center	68.0	36.0	0	455	Yes

Conclusions and Recommendations

The comfort parameters measured were in the range of the ASHRAE recommended range for winter.

Among the air samples collected, Room 135, Cafeteria, Health Suite and the Media Center on December 2, 2020 indicated indoor mold amplification. These locations was thoroughly recleaned and resampled on February 27, 2021, and the analytical results indicated normal fungal ecology.

It has been our pleasure to conduct these IAQ Screening services for the Prince Georges County Public School system. If you have any questions, please feel free to contact us.

Regards,

Channa Bambaradeniya, Ph.D., CIH, CSP, CHMM
Certified Industrial Hygienist
Global, Inc.
Mobile: 443-691-0455

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ATTACHMENT I

Air Sample Analytical Results and Chain-Of-Custody Form

HAYES MICROBIAL CONSULTING

#20045191

Analysis Report prepared for

Global, Inc.

1818 New York Ave.
Suite 217
Washington, DC, 20002

Phone: **(443) 691-0455**

BB203
Indoor Air Quality
Benjamin Tasker Middle School

Collected: **December 2, 2020**
Received: **December 3, 2020**
Reported: **December 3, 2020**

We would like to thank you for trusting Hayes Microbial for your analytical needs!
We received 18 samples by FedEx in good condition for this project on December 3rd, 2020.

The results in this analysis pertain only to this job, collected on the stated date, and should not be used in the interpretation of any other job. This report may not be duplicated, except in full, without the written consent of Hayes Microbial Consulting, LLC..

This laboratory bears no responsibility for sample collection activities, analytical method limitations, or your use of the test results. Interpretation and use of test results are your responsibility. Any reference to health effects or interpretation of mold levels is strictly the opinion of Hayes Microbial. In no event, shall Hayes Microbial or any of its employees be liable for lost profits or any special, incidental or consequential damages arising out of the use of these test results.

Steve Hayes, BSMT(ASCP)
Laboratory Director
Hayes Microbial Consulting, LLC.

EPA Laboratory ID: VA01419

Lab ID: #188863

DPH License: #PH-0198

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Indoor Air Quality
Benjamin Tasker Middle School

#20045191

Spore Trap, Spore Trap Blank
SOP - HMC#101

Sample Number	1	BTMS-1202-01		2	BTMS-1202-002		3	BTMS-1202-03		4	BTMS-1202-04	
Sample Name	**Ambient**			**Room 214**			**Room 223**			**Room 229**		
Sample Volume	75.00 liter			75.00 liter			75.00 liter			75.00 liter		
Reporting Limit	13 spores/m³			13 spores/m³			13 spores/m³			13 spores/m³		
Background	2			2			2			2		
Fragments	13/m³			ND			ND			13/m³		
Organism	**Raw Count**	**Count / m³**	**% of Total**	**Raw Count**	**Count / m³**	**% of Total**	**Raw Count**	**Count / m³**	**% of Total**	**Raw Count**	**Count / m³**	**% of Total**
Alternaria												
Ascospores	6	80	42.9%	2	27	28.6%				1	13	100.0%
Aspergillus|Penicillium												
Basidiospores	8	107	57.1%				1	13	100.0%			
Bipolaris|Drechslera												
Chaetomium												
Cladosporium				5	67	71.4%						
Curvularia												
Epicoccum												
Fusarium												
Memnoniella												
Myxomycetes												
Pithomyces												
Stachybotrys												
Stemphylium												
Torula												
Ulocladium												
Total	14	187	100%	7	94	100%	1	13	100%	1	13	100%

Water Damage Indicator | Common Allergen | Slightly Higher than Baseline | Significantly Higher than Baseline | Ratio Abnormality

Collected: **Dec 2, 2020** Received: **Dec 3, 2020** Reported: **Dec 3, 2020**

Project Analyst: Carlie Hampton, BS Date: **12 - 03 - 2020**

Reviewed By: Steve Hayes, BSMT Date: **12 - 03 - 2020**

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Sample Number	5	BTMS-1202-05		6	BTMS-1202-06		7	BTMS-1202-07		8	BTMS-1202-08	
Sample Name	Girls Locker Room			Room 238			Room 201			Room 215		
Sample Volume	75.00 liter			75.00 liter			75.00 liter			75.00 liter		
Reporting Limit	13 spores/m³			13 spores/m³			13 spores/m³			13 spores/m³		
Background	2			2			2			3		
Fragments	13/m³			ND			ND			ND		
Organism	**Raw Count**	**Count / m³**	**% of Total**	**Raw Count**	**Count / m³**	**% of Total**	**Raw Count**	**Count / m³**	**% of Total**	**Raw Count**	**Count / m³**	**% of Total**
Alternaria							1	13	20.0%			
Ascospores	1	13	25.0%	1	13	100.0%	2	27	40.0%	1	13	100.0%
Aspergillus|Penicillium												
Basidiospores							2	27	40.0%			
Bipolaris|Drechslera												
Chaetomium												
Cladosporium	3	40	75.0%									
Curvularia												
Epicoccum												
Fusarium												
Memnoniella												
Myxomycetes												
Pithomyces												
Stachybotrys												
Stemphylium												
Torula												
Ulocladium												
Total	4	53	100%	1	13	100%	5	67	100%	1	13	100%

Water Damage Indicator | Common Allergen | Slightly Higher than Baseline | Significantly Higher than Baseline | Ratio Abnormality

Collected: **Dec 2, 2020** Received: **Dec 3, 2020** Reported: **Dec 3, 2020**

Project Analyst: Carlie Hampton, BS Date: **12 - 03 - 2020**

Reviewed By: Steve Hayes, BSMT Date: **12 - 03 - 2020**

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Spore Trap, Spore Trap Blank
SOP - HMC#101

Sample Number	9	BTMS-1202-09		10	BTMS-1202-10		11	BTMS-1202-11		12	BTMS-1202-12	
Sample Name	**Room 206**			**Health Suite**			**Room 131**			**Room 137**		
Sample Volume	75.00 liter			75.00 liter			75.00 liter			75.00 liter		
Reporting Limit	13 spores/m³			13 spores/m³			13 spores/m³			13 spores/m³		
Background	2			2			2			1		
Fragments	ND			13/m³			27/m³			ND		
Organism	**Raw Count**	**Count / m³**	**% of Total**	**Raw Count**	**Count / m³**	**% of Total**	**Raw Count**	**Count / m³**	**% of Total**	**Raw Count**	**Count / m³**	**% of Total**
Alternaria												
Ascospores	1	13	100.0%	1	13	11.1%	1	13	33.3%			
Aspergillus|Penicillium				7	93	77.8%				1	13	100.0%
Basidiospores				1	13	11.1%						
Bipolaris|Drechslera												
Chaetomium												
Cladosporium							2	27	66.7%			
Curvularia												
Epicoccum												
Fusarium												
Memnoniella												
Myxomycetes												
Pithomyces												
Stachybotrys												
Stemphylium												
Torula												
Ulocladium												
Total	1	13	100%	9	119	100%	3	40	100%	1	13	100%

Water Damage Indicator | Common Allergen | Slightly Higher than Baseline | Significantly Higher than Baseline | Ratio Abnormality

Collected: **Dec 2, 2020** Received: **Dec 3, 2020** Reported: **Dec 3, 2020**

Project Analyst: Carlie Hampton, BS Date: **12 - 03 - 2020**

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Sample Number	13	BTMS-1202-13		14	BTMS-1202-14		15	BTMS-1202-15		16	BTMS-1202-16	
Sample Name	Room 135			Cafeteria			Media Center			Room 124		
Sample Volume	75.00 liter			75.00 liter			75.00 liter			75.00 liter		
Reporting Limit	13 spores/m³			13 spores/m³			13 spores/m³			13 spores/m³		
Background	2			2			3			1		
Fragments	27/m³			13/m³			ND			ND		
Organism	**Raw Count**	**Count / m³**	**% of Total**	**Raw Count**	**Count / m³**	**% of Total**	**Raw Count**	**Count / m³**	**% of Total**	**Raw Count**	**Count / m³**	**% of Total**
Alternaria												
Ascospores	6	80	17.6%				3	40	13.0%	1	13	50.0%
Aspergillus|Penicillium				34	453	97.1%	17	227	73.9%			
Basidiospores										1	13	50.0%
Bipolaris|Drechslera												
Chaetomium												
Cladosporium	28	373	82.4%	1	13	2.9%						
Curvularia												
Epicoccum							1	13	4.3%			
Fusarium												
Memnoniella												
Myxomycetes							2	27	8.7%			
Pithomyces												
Stachybotrys												
Stemphylium												
Torula												
Ulocladium												
Total	34	453	100%	35	466	100%	23	307	100%	2	26	100%

Water Damage Indicator | Common Allergen | Slightly Higher than Baseline | Significantly Higher than Baseline | Ratio Abnormality

Collected: **Dec 2, 2020** Received: **Dec 3, 2020** Reported: **Dec 3, 2020**

Project Analyst: Carlie Hampton, BS Date: **12 - 03 - 2020**

Reviewed By: Steve Hayes, BSMT Date: **12 - 03 - 2020**

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Benjamin Tasker Middle School

#20045191
Spore Trap, Spore Trap Blank
SOP - HMC#101

Sample Number	17	BTMS-1202-17	18	Field Blank
Sample Name	**Room 113**		**Field Blank**	
Sample Volume	75.00 liter		0.00 liter	
Reporting Limit	13 spores/m^3		1 spore/m^3	
Background	2		NBD	
Fragments	ND		ND	

Organism	Raw Count	Count / m^3	% of Total	Raw Count	Count / m^3	% of Total
Alternaria						
Ascospores	2	27	50.0%			
Aspergillus|Penicillium	1	13	25.0%			
Basidiospores	1	13	25.0%			
Bipolaris|Drechslera						
Chaetomium						
Cladosporium						
Curvularia						
Epicoccum						
Fusarium						
Memnoniella						
Myxomycetes						
Pithomyces						
Stachybotrys						
Stemphylium						
Torula						
Ulocladium						
Total	4	53	100%	ND	ND	

Water Damage Indicator | Common Allergen | Slightly Higher than Baseline | Significantly Higher than Baseline | Ratio Abnormality

Collected: **Dec 2, 2020** Received: **Dec 3, 2020** Reported: **Dec 3, 2020**

Project Analyst: Carlie Hampton, BS — Date: **12 - 03 - 2020**

Reviewed By: Steve Hayes, BSMT — Date: **12 - 03 - 2020**

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Spore Trap Information

Reporting Limit	The Reporting Limit is the lowest number of spores that can be detected based on the total volume of the sample collected and the percentage of the slide that is counted. At Hayes Microbial, 100% of the slide is read so the LOD is based solely on the total volume. Raw spore counts that exceed 500 spores will be estimated.
Blanks	Results have not been corrected for field or laboratory blanks.
Background	The Background is the amount of debris that is present in the sample. This debris consists of skin cells, dirt, dust, pollen, drywall dust and other organic and non-organic matter. As the background density increases, the likelihood of spores, especially small spores such as those of Aspergillus and Penicillium may be obscured. The background is rated on a scale of 1 to 5 and each level is determined as follows: **NBD:** No background detected due to possible pump or cassette malfunction. Recollect sample. (Field Blanks will display NBD) **1 :** <5% of field occluded. No spores will be uncountable. **2 :** 5-25% of field occluded. **3 :** 25-75% of field occluded. **4 :** 75-90% of field occluded. **5 :** >90% of field occluded. Suggested recollection of sample.
Fragments	Fragments are small pieces of fungal mycelium or spores. They are not identifiable as to type and when present in very large numbers, may indicate the presence of mold amplification.
Control Comparisons	There are no national standards for the numbers of fungal spores that may be present in the indoor environment. As a general rule and guideline that is widely accepted in the indoor air quality field, the numbers and types of spores that are present in the indoor environment should not exceed those that are present outdoors at any given time. There will always be some mold spores present in "normal" indoor environments. The purpose of sampling and counting spores is to help determine whether an abnormal condition exists within the indoor environment and if it does, to help pinpoint the area of contamination. Spore counts should not be used as the sole determining factor of mold contamination. There are many factors that can cause anomalies in the comparison of indoor and outdoor samples due to the dynamic nature of both of those environments.
Water Damage Indicator Common Allergen Slightly Higher than Baseline Significantly Higher than Baseline Ratio Abnormality	**Blue:** These molds are commonly seen in conditions of prolonged water intrusion and usually indicate a problem. **Green:** Although all molds are potential allergens, these are the most common allergens that may be found indoors. **Orange:** The spore count is slightly higher than the outside count and may or may not indicate a source of contamination. **Red:** The spore count is significantly higher than the baseline count and probably indicates a source of contamination. **Violet:** The types of spores found indoors should be similar to the ones that were identified in the baseline sample. Significant increases (more than 25%) in the ratio of a particular spore type may indicate the presence of abnormal levels of mold, even if the total number of spores of that type is lower in the indoor environment than it was outdoors.
Color Coding	Fungi that are present in indoor samples at levels lower than 200 per cubic meter are not color coded on the report, unless they are one of the water damage indicators.

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Alternaria

Habitat: Commonly found outdoors in soil and decaying plants. Indoors, it is commonly found on window sills and other horizontal surfaces.

Effects: A common allergen and has been associated with hypersensitivity pneumonitis. Alternaria is capable of producing toxic metabolites which may be associated with disease in humans or animals. Occasionally an agent of onychomycosis, ulcerated cutaneous infection and chronic sinusitis, principally in the immunocompromised patient.

Ascospores

Habitat: A large group consisting of more than 3000 species of fungi. Common plant pathogens and outdoor numbers become very high following rain. Most of the genera are indistinguishable by spore trap analysis and are combined on the report.

Effects: Health affects are poorly studied, but many are likely to be allergenic.

Aspergillus|Penicillium

Habitat: The most common fungi isolated from the environment. Very common in soil and on decaying plant material. Are able to grow well indoors on a wide variety of substrates.

Effects: This group contains common allergens and many can cause hypersensitivity pneumonitis. They may cause extrinsic asthma, and many are opportunistic pathogens. Many species produce mycotoxins which may be associated with disease in humans and other animals. Toxin production is dependent on the species, the food source, competition with other organisms, and other environmental conditions.

Basidiospores

Habitat: A common group of Fungi that includes the mushrooms and bracket fungi. They are saprophytes and plant pathogens. In wet conditions they can cause structural damage to buildings.

Effects: Common allergens and are also associated with hypersensitivity pneumonitis.

Cladosporium

Habitat: One of the most common genera worldwide. Found in soil and plant debris and on the leaf surfaces of living plants. The outdoor numbers are lower in the winter and often relatively high in the summer, especially in high humidity. The outdoor numbers often spike in the late afternoon and evening. Indoors, it can be found growing on textiles, wood, sheetrock, moist window sills and in HVAC supply ducts.

Effects: A common allergen, producing more than 10 allergenic antigens and a common cause of hypersensitivity pneumonitis.

Epicoccum

Habitat: It is found in soil and plant litter and is a plant pathogen. It can grow indoors on a variety of substrates, including paper and textiles and is commonly found on wet drywall.

Effects: It is a common allergen. No cases of infection have been reported in humans.

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BB203
Indoor Air Quality
Benjamin Tasker Middle School

#20045191

Organism Descriptions

Myxomycetes

Habitat: Found on decaying plant material and as a plant pathogen.

Effects: Some allergenic properties reported, but generally pose no health concerns to humans.

HAYES MICROBIAL CONSULTING

Company: Global, Inc
Address: 1818 New York Avenue, Suite 217, Washington Dc, 20002

N

SHIP: FEDEX - PAK SO
DATE: 12-03-2020

8160 4411 5690

MOLD
20045191

Job Number: BB203	Job Name: Indoor Air Quality Benjamin Tasker Middle School	Mobile: 443-691-0455	Email: channab@globalincusa.net
Collector: Kenna Leonzo		Note:	
Date Collected: 12/02/2020			

Analysis Type		Analysis Description	Turnaround	Accepted Media Types
Spore Trap	S	Identification & Enumeration of Fungal Spores	24 Hour	Air Cassettes, Impact Slides
	S+	Spore Trap Analysis with Dander, Fiber, and Pollen counts	24 Hour	Air Cassettes, Impact Slides
Direct ID	D	ID & Semi-Quantative Enumeration of spores and mycelium	24 Hour	Bio-Tape, Tape, Swab, Bulk, Agar Plate
	D+	Direct Analysis with Fully Quantitative spore count	24 Hour	Bio-Tape, Tape, Swab, Bulk, Agar Plate
Culture	C1	Identification & Enumeration of Mold only	7 Day	Air Plate, Agar Plate, Swab, Bulk
	C2	Identification & Enumeration of Bacteria only	4 Day	Air Plate, Agar Plate, Swab, Bulk
	C3	Identification & Enumeration of Mold and Bacteria	7 Day	Air Plate, Agar Plate, Swab, Bulk
	C5	Coliform Screen for Sewage Bacteria	2 Day	Agar Plate, Swab, Bulk
Particle	TPA	Total Particulate Analysis, ID & Count (Does Not Include Mold)	24 Hour	Air Cassettes, Impact Slides, Bio-Tape

#	Number	Sample	Analysis	Volume	Notes
1	BTMS-1202-01	Ambient	S	75 L	
2	BTMS-1202-02	Room 214			
3	BTMS-1202-03	Room 223			
4	BTMS-1202-04	Room 229			
5	BTMS-1202-05	Girls Locker Room			
6	BTMS-1202-06	Room 238			
7	BTMS-1202-07	Room 201			
8	BTMS-1202-08	Room 215			
9	BTMS-1202-09	Room 206			
10	BTMS-1202-10	Health Suite			
11	BTMS-1202-11	Room 131			
12	BTMS-1202-12	Room 137			
13	BTMS-1202-13	Room 135			
14	BTMS-1202-14	Cafeteria			
15	BTMS-1202-15	Media Center			
16	BTMS-1202-16	Room 124			

Released by:	Kenna Leonzo	Date: 12/02/20	Received By:	Date: 12.3.20

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Company: Global, Inc
Address: 1819 New York Avenue, Suite 217, Washington DC, 20002

N

SHIP: FEDEX - PAK SO
DATE: 12-03-2020

8160 4411 5690

MOLD
20045191

Job Number: BB203	Job Name: Indoor Air Quality Benjamin Tasker Middle School		
Collector: Kenna Leonzo		Mobile: 443-691-0455	Email: channab@globalincusa.net
Date Collected: 12/02/2020		Note:	

Analysis Type		Analysis Description	Turnaround	Accepted Media Types
Spore Trap	S	Identification & Enumeration of Fungal Spores	24 Hour	Air Cassettes, Impact Slides
	S+	Spore Trap Analysis with Dander, Fiber, and Pollen counts	24 Hour	Air Cassettes, Impact Slides
Direct ID	D	ID & Semi-Quantative Enumeration of spores and mycelium	24 Hour	Bio-Tape, Tape, Swab, Bulk, Agar Plate
	D+	Direct Analysis with Fully Quantitative spore count	24 Hour	Bio-Tape, Tape, Swab, Bulk, Agar Plate
Culture	C1	Identification & Enumeration of Mold only	7 Day	Air Plate, Agar Plate, Swab, Bulk
	C2	Identification & Enumeration of Bacteria only	4 Day	Air Plate, Agar Plate, Swab, Bulk
	C3	Identification & Enumeration of Mold and Bacteria	7 Day	Air Plate, Agar Plate, Swab, Bulk
	C5	Coliform Screen for Sewage Bacteria	2 Day	Agar Plate, Swab, Bulk
Particle	TPA	Total Particulate Analysis, ID & Count (Does Not Include Mold)	24 Hour	Air Cassettes, Impact Slides, Bio-Tape

#	Number	Sample	Analysis	Volume	Notes
1	BTMS-1202-17	Room 113	S	75 L	
2	Field blank	—	S	—	
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					

Released by:	Kenna Leonzo	Date: 12/02/20	Received By:	TM	Date: 12-3-20

HAYES MICROBIAL CONSULTING

#21006707

Analysis Report prepared for

Global, Inc.

1818 New York Ave.
Suite 217
Washington, DC, 20002

Phone: **(443) 691-0455**

20-064
IAQ Reinspection
Benjamin Tasker MS

Collected: **February 27, 2021**
Received: **March 1, 2021**
Reported: **March 1, 2021**

We would like to thank you for trusting Hayes Microbial for your analytical needs!
We received 6 samples by FedEx in good condition for this project on March 1st, 2021.

The results in this analysis pertain only to this job, collected on the stated date, and should not be used in the interpretation of any other job. This report may not be duplicated, except in full, without the written consent of Hayes Microbial Consulting, LLC..

This laboratory bears no responsibility for sample collection activities, analytical method limitations, or your use of the test results. Interpretation and use of test results are your responsibility. Any reference to health effects or interpretation of mold levels is strictly the opinion of Hayes Microbial. In no event, shall Hayes Microbial or any of its employees be liable for lost profits or any special, incidental or consequential damages arising out of the use of these test results.

Steve Hayes, BSMT(ASCP)
Laboratory Director
Hayes Microbial Consulting, LLC.

EPA Laboratory ID: VA01419

Lab ID: #188863

DPH License: #PH-0198

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Spore Trap, Spore Trap Blank
SOP - HMC#101

Sample Number	1	01		2	02		3	03		4	04	
Sample Name	**Ambient**			**Room 135**			**Health Suite**			**Cafeteria**		
Sample Volume	75.00 liter			75.00 liter			75.00 liter			75.00 liter		
Reporting Limit	13 spores/m^3			13 spores/m^3			13 spores/m^3			13 spores/m^3		
Background	2			2			2			2		
Fragments	ND			ND			ND			ND		
Organism	**Raw Count**	**Count / m^3**	**% of Total**	**Raw Count**	**Count / m^3**	**% of Total**	**Raw Count**	**Count / m^3**	**% of Total**	**Raw Count**	**Count / m^3**	**% of Total**
Alternaria	3	40	16.7%									
Ascospores	8	107	44.4%							2	27	66.7%
Aspergillus|Penicillium												
Basidiospores	1	13	5.6%				1	13	100.0%			
Bipolaris|Drechslera												
Chaetomium												
Cladosporium												
Curvularia	1	13	5.6%									
Epicoccum												
Fusarium	5	67	27.8%							1	13	33.3%
Memnoniella												
Myxomycetes				2	27	100.0%						
Pithomyces												
Stachybotrys												
Stemphylium												
Torula												
Ulocladium												
Total	18	240	100%	2	27	100%	1	13	100%	3	40	100%

Water Damage Indicator | Common Allergen | Slightly Higher than Baseline | Significantly Higher than Baseline | Ratio Abnormality

Collected: **Feb 27, 2021** Received: **Mar 1, 2021** Reported: **Mar 1, 2021**

HAYES MICROBIAL CONSULTING

Project Analyst: Shareef Abdelgadir, MS — Date: **03 - 01 - 2021**

Reviewed By: Steve Hayes, BSMT — Date: **03 - 01 - 2021**

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Spore Trap, Spore Trap Blank

SOP - HMC#101

Sample Number	5	05		6	06	
Sample Name	Media Center			Field Blank		
Sample Volume	75.00 liter			0.00 liter		
Reporting Limit	13 spores/m³			1 spore/m³		
Background	2			NBD		
Fragments	ND			ND		
Organism	**Raw Count**	**Count / m³**	**% of Total**	**Raw Count**	**Count / m³**	**% of Total**
Alternaria						
Ascospores						
Aspergillus|Penicillium						
Basidiospores						
Bipolaris|Drechslera						
Chaetomium						
Cladosporium	2	27	66.7%			
Curvularia						
Epicoccum						
Fusarium						
Memnoniella						
Myxomycetes	1	13	33.3%			
Pithomyces						
Stachybotrys						
Stemphylium						
Torula						
Ulocladium						
Total	3	40	100%	ND	ND	

Water Damage Indicator | Common Allergen | Slightly Higher than Baseline | Significantly Higher than Baseline | Ratio Abnormality

Collected: **Feb 27, 2021** Received: **Mar 1, 2021** Reported: **Mar 1, 2021**

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Spore Trap Information

Reporting Limit	The Reporting Limit is the lowest number of spores that can be detected based on the total volume of the sample collected and the percentage of the slide that is counted. At Hayes Microbial, 100% of the slide is read so the LOD is based solely on the total volume. Raw spore counts that exceed 500 spores will be estimated.
Blanks	Results have not been corrected for field or laboratory blanks.
Background	The Background is the amount of debris that is present in the sample. This debris consists of skin cells, dirt, dust, pollen, drywall dust and other organic and non-organic matter. As the background density increases, the likelihood of spores, especially small spores such as those of Aspergillus and Penicillium may be obscured. The background is rated on a scale of 1 to 5 and each level is determined as follows: **NBD:** No background detected due to possible pump or cassette malfunction. Recollect sample. (Field Blanks will display NBD) **1 :** <5% of field occluded. No spores will be uncountable. **2 :** 5-25% of field occluded. **3 :** 25-75% of field occluded. **4 :** 75-90% of field occluded. **5 :** >90% of field occluded. Suggested recollection of sample.
Fragments	Fragments are small pieces of fungal mycelium or spores. They are not identifiable as to type and when present in very large numbers, may indicate the presence of mold amplification.
Control Comparisons	There are no national standards for the numbers of fungal spores that may be present in the indoor environment. As a general rule and guideline that is widely accepted in the indoor air quality field, the numbers and types of spores that are present in the indoor environment should not exceed those that are present outdoors at any given time. There will always be some mold spores present in "normal" indoor environments. The purpose of sampling and counting spores is to help determine whether an abnormal condition exists within the indoor environment and if it does, to help pinpoint the area of contamination. Spore counts should not be used as the sole determining factor of mold contamination. There are many factors that can cause anomalies in the comparison of indoor and outdoor samples due to the dynamic nature of both of those environments.
Water Damage Indicator Common Allergen Slightly Higher than Baseline Significantly Higher than Baseline Ratio Abnormality	**Blue:** These molds are commonly seen in conditions of prolonged water intrusion and usually indicate a problem. **Green:** Although all molds are potential allergens, these are the most common allergens that may be found indoors. **Orange:** The spore count is slightly higher than the outside count and may or may not indicate a source of contamination. **Red:** The spore count is significantly higher than the baseline count and probably indicates a source of contamination. **Violet:** The types of spores found indoors should be similar to the ones that were identified in the baseline sample. Significant increases (more than 25%) in the ratio of a particular spore type may indicate the presence of abnormal levels of mold, even if the total number of spores of that type is lower in the indoor environment than it was outdoors.
Color Coding	Fungi that are present in indoor samples at levels lower than 200 per cubic meter are not color coded on the report, unless they are one of the water damage indicators.

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Organism Descriptions

Alternaria

Habitat: Commonly found outdoors in soil and decaying plants. Indoors, it is commonly found on window sills and other horizontal surfaces.

Effects: A common allergen and has been associated with hypersensitivity pneumonitis. Alternaria is capable of producing toxic metabolites which may be associated with disease in humans or animals. Occasionally an agent of onychomycosis, ulcerated cutaneous infection and chronic sinusitis, principally in the immunocompromised patient.

Ascospores

Habitat: A large group consisting of more than 3000 species of fungi. Common plant pathogens and outdoor numbers become very high following rain. Most of the genera are indistinguishable by spore trap analysis and are combined on the report.

Effects: Health affects are poorly studied, but many are likely to be allergenic.

Basidiospores

Habitat: A common group of Fungi that includes the mushrooms and bracket fungi. They are saprophytes and plant pathogens. In wet conditions they can cause structural damage to buildings.

Effects: Common allergens and are also associated with hypersensitivity pneumonitis.

Cladosporium

Habitat: One of the most common genera worldwide. Found in soil and plant debris and on the leaf surfaces of living plants. The outdoor numbers are lower in the winter and often relatively high in the summer, especially in high humidity. The outdoor numbers often spike in the late afternoon and evening. Indoors, it can be found growing on textiles, wood, sheetrock, moist window sills and in HVAC supply ducts.

Effects: A common allergen, producing more than 10 allergenic antigens and a common cause of hypersensitivity pneumonitis.

Curvularia

Habitat: They exist in soil and plant debris, and are plant pathogens.

Effects: They are allergenic and a common cause of allergic fungal sinusitis. An occasional cause of human infection, including keratitis, sinusitis, onychomycosis, mycetoma, pneumonia, endocarditis and desseminated infection, primarily in the immunocompromised.

Fusarium

Habitat: Commonly found in soil and plant debris and some species are plant pathogens. It is occasionally found indoors on a variety of substrates and in humidifiers, and requires very moist conditions.

Effects: Reported to be allergenic and several species may produce potent mycotoxins, including trichothecenes, fumonisin, and vomatoxin. It has a history of severe toxicoses with the ingestion of contaminated grains. An occasional cause of keratitis and mycetoma and can cause disseminated infection in immunocompromised patients.

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Organism Descriptions

Myxomycetes

Habitat: Found on decaying plant material and as a plant pathogen.

Effects: Some allergenic properties reported, but generally pose no health concerns to humans.

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N

SHIP: FEDEX - BOX SO
DATE: 03-01-2021

8160 4410 5634

MOLD

21006707

Job Number: 20-064	Job Name: IAQ Reinspection Benjamin Tasker MS
Collector: Shane Prabuddha	Mobile: 443-691-0455 Email: Channab@globalincusa.net
Date Collected: 02/27/21	Note:

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	D+	Direct Analysis with Fully Quantitative spore count	24 Hour	Bio-Tape, Tape, Swab, Bulk, Agar Plate
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	C3	Identification & Enumeration of Mold and Bacteria	7 Day	Air Plate, Agar Plate, Swab, Bulk
	C5	Coliform Screen for Sewage Bacteria	2 Day	Agar Plate, Swab, Bulk
Particle	TPA	Total Particulate Analysis, ID & Count (Does Not Include Mold)	24 Hour	Air Cassettes, Impact Slides, Bio-Tape

#	Number	Sample	Analysis	Volume	Notes
1	01	Ambient	S	75L	T: 65 RH: 41 CO2: 444 CO: 0
2	02	Room 135	S	75L	T: 69 RH: 35 CO2: 483 CO: 0
3	03	Health Suite	S	75L	T: 67 RH: 34 CO2: 466 CO: 0
4	04	Cafeteria	S	75L	T: 69 RH: 33 CO2: 427 CO: 0
5	05	Media Center	S	75L	T: 68 RH: 36 CO2: 455 CO: 0
6	06	Field blank	S		
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					

Released by: Shane Prabuddha	Date: 02/27/21	Received By: CLP	Date: 3/1/21