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

February 23, 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: Seat Pleasant Elementary School

Dear Mr. Baylor,

On November 20, 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 Seat Pleasant Elementary School located at 6411 G Street, Capitol Heights MD.

## 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 four indoor locations inspected are summarized in Table 1 below:

**Table 1: Observations**

| Location | Observations |
|---|---|
| Classroom 20 | No issues |
| Classroom 11 | No issues |
| Classroom 3 | Water damaged Ceiling tiles and dusty window sills |
| Multipurpose room/ Cafeteria | 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 above the ASHRAE Standard.

***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 November 20, 2020, the outdoor (ambient) carbon dioxide concentration was approximately 416 ppm so indoor concentrations should not exceed approximately 1116 ppm (700 + 416). 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. Laboratory analytical results are attached at the end of this report.

The analytical results of indoor air sample collected from Classroom 3 indicates elevated presence of *Aspergillus/Penicillium*.

**Table 2: Air Quality Results (Inspected on 11/20/2020)**

| Sample Location | Temp $^0$F | RH% | CO ppm | CO2 ppm | Normal Fungal Ecology? |
|---|---|---|---|---|---|
| **Standards** | **ASHRAE 68 to 75°F** | **ASHRAE <65%** | **NAAQS <9** | **ASHRAE 1116** | |
| Ambient | 59.7 | 28.5 | 0 | 416 | N/A |
| Classroom 20 | 80.3 | 15.1 | 0 | 504 | Yes |
| Classroom 11 | 78.8 | 14.7 | 0 | 437 | Yes |
| Classroom 3 | 80.8 | 14.4 | 0 | 443 | No |
| Multipurpose room/ Cafeteria | 77.3 | 16 | 0 | 437 | Yes |

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

**Table 3: Air Quality Results (Inspected on 2/21/2021)**

| Sample Location | Temp $^0$F | RH% | CO ppm | CO2 ppm | Normal Fungal Ecology? |
|---|---|---|---|---|---|
| **Standards** | **ASHRAE 68 to 75°F** | **ASHRAE <65%** | **NAAQS <9** | **ASHRAE 1250** | |
| Ambient | 50.0 | 18 | 0 | 550 | N/A |
| Classroom 3 | 52.0 | 25 | 0 | 552 | Yes |

## Conclusions and Recommendations

Among the comfort parameters measured, the indoor temperature readings were higher than the ASHRAE recommended range for winter. The indoor temperature should be maintained at the ASHRAE recommended range for general comfort.

Among the indoor locations sampled for mold spores in air, the samples collected on November 20, 2020 from Room #3 indicated elevated mold spores. This location was thoroughly recleaned and subsequently reinspected on February 21, 2021, and the air sample analytical results indicated normal fungal ecology for Room#3.

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

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

# ATTACHMENT I

## Air Sample Analytical Results and Chain-Of-Custody Form

HAYES MICROBIAL CONSULTING

**#20043941**

Analysis Report prepared for

# Global, Inc.

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

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

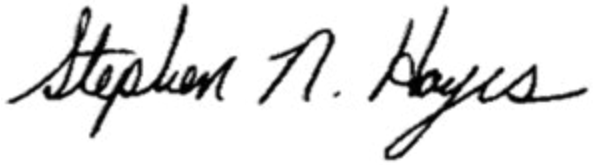
**20-064**
PGCPS Indoor Air Quality Inspection
Seat Pleasant Elementary School

Collected: **November 20, 2020**
Received: **November 23, 2020**
Reported: **November 23, 2020**

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 November 23rd, 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

**Kenna Leonzo**
**Global, Inc.**
1818 New York Ave. Suite 217
Washington, DC, 20002
(443) 691-0455

**20-064**
PGCPS Indoor Air Quality Inspection
Seat Pleasant Elementary School

**#20043941**

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

| Sample Number | 1 | SPES-1120-01 | | 2 | SPES-1120-02 | | 3 | SPES-1120-03 | | 4 | SPES-1120-04 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Name | **Ambient Sample** | | | **Classroom 20** | | | **Classroom 11** | | | **Classroom 3** | | |
| 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 | 27/$m^3$ | | | 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 | | | | | | | | | | | | |
| Ascospores | 24 | 320 | 66.7% | 2 | 27 | 66.7% | 1 | 13 | 100.0% | 1 | 13 | <1% |
| Aspergillus\|Penicillium | | | | | | | | | | 864 | 11520 | 99.7% |
| Basidiospores | 7 | 93 | 19.4% | 1 | 13 | 33.3% | | | | | | |
| Bipolaris\|Drechslera | | | | | | | | | | | | |
| Chaetomium | | | | | | | | | | | | |
| Cladosporium | 3 | 40 | 8.3% | | | | | | | 1 | 13 | <1% |
| Curvularia | | | | | | | | | | | | |
| Epicoccum | | | | | | | | | | | | |
| Fusarium | | | | | | | | | | | | |
| Memnoniella | | | | | | | | | | | | |
| Myxomycetes | 2 | 27 | 5.6% | | | | | | | 1 | 13 | <1% |
| Pithomyces | | | | | | | | | | | | |
| Stachybotrys | | | | | | | | | | | | |
| Stemphylium | | | | | | | | | | | | |
| Torula | | | | | | | | | | | | |
| Ulocladium | | | | | | | | | | | | |
| Total | 36 | 480 | 100% | 3 | 40 | 100% | 1 | 13 | 100% | 867 | 11559 | 100% |

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

Collected: **Nov 20, 2020** Received: **Nov 23, 2020** Reported: **Nov 23, 2020** Revision: **2**

Project Analyst: Ramesh Poluri, PhD P. Ramesh Date: **11 - 23 - 2020**

Reviewed By: Steve Hayes, BSMT Stephen N. Hayes Date: **11 - 25 - 2020**

HAYES MICROBIAL CONSULTING
3005 East Boundary Terrace, Suite F. Midlothian, VA. 23112 (804) 562-3435 contact@hayesmicrobial.com

**Kenna Leonzo**
**Global, Inc.**
1818 New York Ave. Suite 217
Washington, DC, 20002
(443) 691-0455

**20-064**
PGCPS Indoor Air Quality Inspection
Seat Pleasant Elementary School

**#20043941**

## Spore Trap, Spore Trap Blank

SOP - HMC#101

| Sample Number | 5 | SPES-1120-05 | | 6 | | |
|---|---|---|---|---|---|---|
| Sample Name | **Multi-Purpose Room (MPR)/Cafeteria** | | | **Field Blank** | | |
| Sample Volume | 75.00 liter | | | 0.00 liter | | |
| Reporting Limit | 13 spores/m$^3$ | | | 1 spore/m$^3$ | | |
| Background | 2 | | | NBD | | |
| Fragments | 13/m$^3$ | | | ND | | |
| **Organism** | **Raw Count** | **Count / m$^3$** | **% of Total** | **Raw Count** | **Count / m$^3$** | **% of Total** |
| Alternaria | | | | | | |
| Ascospores | 4 | 53 | 66.7% | | | |
| Aspergillus\|Penicillium | | | | | | |
| Basidiospores | 1 | 13 | 16.7% | | | |
| Bipolaris\|Drechslera | | | | | | |
| Chaetomium | | | | | | |
| Cladosporium | | | | | | |
| Curvularia | | | | | | |
| Epicoccum | | | | | | |
| Fusarium | | | | | | |
| Memnoniella | | | | | | |
| Myxomycetes | 1 | 13 | 16.7% | | | |
| Pithomyces | | | | | | |
| Stachybotrys | | | | | | |
| Stemphylium | | | | | | |
| Torula | | | | | | |
| Ulocladium | | | | | | |
| Total | 6 | 79 | 100% | ND | ND | |

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

Collected: **Nov 20, 2020** Received: **Nov 23, 2020** Reported: **Nov 23, 2020** Revision: **2**

Project Analyst: Ramesh Poluri, PhD P. Ramesh Date: **11 - 23 - 2020**

Reviewed By: Steve Hayes, BSMT Stephen N. Hayes Date: **11 - 25 - 2020**

**Kenna Leonzo**
**Global, Inc.**
1818 New York Ave. Suite 217
Washington, DC, 20002
(443) 691-0455

**20-064**
PGCPS Indoor Air Quality Inspection
Seat Pleasant Elementary School

**#20043941**

## 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:<br><br>**NBD:** No background detected due to possible pump or cassette malfunction. Recollect sample. (Field Blanks will display NBD)<br>**1 :** <5% of field occluded. No spores will be uncountable.<br>**2 :** 5-25% of field occluded.<br>**3 :** 25-75% of field occluded.<br>**4 :** 75-90% of field occluded.<br>**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<br>Common Allergen<br>Slightly Higher than Baseline<br>Significantly Higher than Baseline<br>Ratio Abnormality | **Blue:** These molds are commonly seen in conditions of prolonged water intrusion and usually indicate a problem.<br><br>**Green:** Although all molds are potential allergens, these are the most common allergens that may be found indoors.<br><br>**Orange:** The spore count is slightly higher than the outside count and may or may not indicate a source of contamination.<br><br>**Red:** The spore count is significantly higher than the baseline count and probably indicates a source of contamination.<br><br>**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. |

**Kenna Leonzo**
**Global, Inc.**
1818 New York Ave. Suite 217
Washington, DC, 20002
(443) 691-0455

**20-064**
PGCPS Indoor Air Quality Inspection
Seat Pleasant Elementary School

**#20043941**

## Organism Descriptions

**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.

**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 #8217
Washington, DC 20002

N

SHIP: FEDEX - PAK SO
DATE: 11-23-2020

8160 4411 5668

MOLD
20043941

| | | | |
|---|---|---|---|
| Job Number: 20-064 | Job Name: PGCPS Indoor Air Quality Inspection- Seat Pleasant Elementary School | ile: 2404358771 | Email: Kennal@globalincusa.net |
| or: Kenna Leonzo | | Note: Please email results to channab@globalincusa.net | |
| Date Collected: 11/20/20 | | | |

| 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 | SPES-1120-01 | Ambient Sample | S | 75 L | |
| 2 | SPES-1120-02 | Classroom 20 | S | 75 L | |
| 3 | SPES-1120-03 | Classroom 11 | S | 75 L | |
| 4 | SPES-1120-04 | Classroom 3 | S | 75 L | |
| 5 | SPES-1120-05 | Multi-purpose room (MPR)/ Cafeteria | S | 75 L | |
| 6 | FIELD BLANK | - | S | - | |
| 7 | | | | | |
| 8 | | | | | |
| 9 | | | | | |
| 10 | | | | | |
| 11 | | | | | |
| 12 | | | | | |
| 13 | | | | | |
| 14 | | | | | |
| 15 | | | | | |
| 16 | | | | | |

| | | | |
|---|---|---|---|
| Released by: Kenna Leonzo | Date: 11/20/20 | Received By: | Date: 11.23.20 |

HAYES MICROBIAL CONSULTING

**#21005722**

Analysis Report prepared for

# Global, Inc.

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

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

**20-064**
IAQ Reinspection
Seat Pleasant ES

Collected: **February 21, 2021**
Received: **February 23, 2021**
Reported: **February 23, 2021**

We would like to thank you for trusting Hayes Microbial for your analytical needs!
We received 2 samples by FedEx in good condition for this project on February 23rd, 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

**Shane Prabuddha**
**Global, Inc.**
1818 New York Ave. Suite 217
Washington, DC, 20002
(443) 691-0455

**20-064**
IAQ Reinspection
Seat Pleasant ES

**#21005722**

**Spore Trap**
SOP - HMC#101

| Sample Number | 1 | 01 | | 2 | 02 | |
|---|---|---|---|---|---|---|
| Sample Name | **Ambient** | | | **Class Room 2** | | |
| Sample Volume | 75.00 liter | | | 75.00 liter | | |
| Reporting Limit | 13 spores/m$^3$ | | | 13 spores/m$^3$ | | |
| Background | 2 | | | 2 | | |
| Fragments | ND | | | ND | | |
| | | | | | | |
| | | | | | | |
| **Organism** | **Raw Count** | **Count / m$^3$** | **% of Total** | **Raw Count** | **Count / m$^3$** | **% of Total** |
| Alternaria | | | | | | |
| Ascospores | 5 | 67 | 55.6% | | | |
| Aspergillus\|Penicillium | 2 | 27 | 22.2% | 5 | 67 | 100.0% |
| Basidiospores | | | | | | |
| Bipolaris\|Drechslera | | | | | | |
| Chaetomium | | | | | | |
| Cladosporium | 2 | 27 | 22.2% | | | |
| Curvularia | | | | | | |
| Epicoccum | | | | | | |
| Fusarium | | | | | | |
| Memnoniella | | | | | | |
| Myxomycetes | | | | | | |
| Pithomyces | | | | | | |
| Stachybotrys | | | | | | |
| Stemphylium | | | | | | |
| Torula | | | | | | |
| Ulocladium | | | | | | |
| | | | | | | |
| | | | | | | |
| Total | 9 | 121 | 100% | 5 | 67 | 100% |

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

Collected:**Feb 21, 2021** Received: **Feb 23, 2021** Reported: **Feb 23, 2021**

Project Analyst: Steve Hayes, BSMT — Date: **02 - 23 - 2021**

Reviewed By: Ramesh Poluri, PhD — Date: **02 - 23 - 2021**

HAYES MICROBIAL CONSULTING
3005 East Boundary Terrace, Suite F. Midlothian, VA. 23112 (804) 562-3435 contact@hayesmicrobial.com

**Shane Prabuddha Global, Inc.**
1818 New York Ave. Suite 217
Washington, DC, 20002
(443) 691-0455

**20-064**
IAQ Reinspection
Seat Pleasant ES

**#21005722**

## 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:<br><br>**NBD:** No background detected due to possible pump or cassette malfunction. Recollect sample. (Field Blanks will display NBD)<br>**1 :** <5% of field occluded. No spores will be uncountable.<br>**2 :** 5-25% of field occluded.<br>**3 :** 25-75% of field occluded.<br>**4 :** 75-90% of field occluded.<br>**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<br>Common Allergen<br>Slightly Higher than Baseline<br>Significantly Higher than Baseline<br>Ratio Abnormality | **Blue:** These molds are commonly seen in conditions of prolonged water intrusion and usually indicate a problem.<br><br>**Green:** Although all molds are potential allergens, these are the most common allergens that may be found indoors.<br><br>**Orange:** The spore count is slightly higher than the outside count and may or may not indicate a source of contamination.<br><br>**Red:** The spore count is significantly higher than the baseline count and probably indicates a source of contamination.<br><br>**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. |

**Shane Prabuddha**
**Global, Inc.**
1818 New York Ave. Suite 217
Washington, DC, 20002
(443) 691-0455

**20-064**
IAQ Reinspection
Seat Pleasant ES

**#21005722**

## Organism Descriptions

**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.

**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.

HAYES
MICROBIAL CONSULTING

Company: Global Inc
Address: 1818 New York Ave NE Suite 217
Washington DC 20002

N

SHIP: FEDEX - BOX SO
DATE: 02-23-2021

8160 4411 5587

MOLD
21005722

| | |
|---|---|
| Job Number: 20-064 | Job Name: IAQ Reinspection Seat Pleasant ES |
| Collector: Shane Prabuddha | Mobile: 443-691-0455 / Email: Channab@globalincusa.net |
| Date Collected: 02/21/21 | Note: |

| Analysis Type | | Analysis Description | Turnaround | Accepted Media Types |
|---|---|---|---|---|
| Spore Trap | S | Identification & Enumeration of Fungal Spores | 24 Hour X | 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 | 01 | Ambient | S | 75L | T:50 RH:18 CO2:550 CO:0 |
| 2 | 02 | Class Room 3 | S | 75L | T:52 RH:25 CO2:552 CO:0 |
| 3 | | | | | |
| 4 | | | | | |
| 5 | | | | | |
| 6 | | | | | |
| 7 | | | | | |
| 8 | | | | | |
| 9 | | | | | |
| 10 | | | | | |
| 11 | | | | | |
| 12 | | | | | |
| 13 | | | | | |
| 14 | | | | | |
| 15 | | | | | |
| 16 | | | | | |

| | | | |
|---|---|---|---|
| Released by: Shane Prabuddha | Date: 02/21/21 | Received By: | Date: 2/23/21 |