March 7, 2021

Mr. Alex Baylor via email: alex.baylor@pgcps.org
Environmental Specialist
Environmental Safety Office
Prince George's County Public Schools
Division of Supporting Services / Building Services
13306 Old Marlboro Pike
Upper Marlboro, MD 20772

**RE: Indoor Air Quality (IAQ) and Mold Assessment Services**
**Prince George's County Public Schools (PGCPS) – Cooper Lane Elementary School**
**3817 Cooper Lane, Landover Hills, Maryland 20784**
**Contract No.: IFB 022-19: Indoor Air Quality Services at Various Locations**
**Tidewater Project No.: 5419-029**

Dear Mr. Baylor:

Tidewater, Inc. (Tidewater) is pleased to present this final report regarding the results of the Indoor Air Quality (IAQ) and Mold Assessment Services conducted by Tidewater at Cooper Lane Elementary School located at 3817 Cooper Lane in Landover Hills, Maryland. Tidewater's Project Manager and Certified Industrial Hygienist, Mr. Skanda Abeyesekere MS, CIH, CSP, CHMM, conducted these services on November 19, 2020. Re-sampling of areas with elevated mold concentrations were conducted on March 2, 2021.

The scope of work for the IAQ assessment and mold survey included:

- The following typical occupied areas of the school chosen at the industrial hygienist's discretion for inspection and sampling: Main Office, Library, Classroom 10, Classroom 5, Classroom 2, Classroom 14, Classroom 17, Classroom 25, Health Unit and Multipurpose Room. These areas were inspected for evidence of potential indoor air quality problems (including suspect microbial growth, water damage, chemical use/ storage, drain traps, sources of allergens/ contaminants, etc.) that may contribute to indoor air quality problems;
- Direct read measurements for temperature (T), relative humidity (RH), carbon dioxide ($CO_2$), and carbon monoxide (CO) in the above locations for comparison with standards established by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standard 62.1–2019, *Ventilation for Acceptable Indoor Air Quality*, and The United States Environmental Protection Agency (US EPA) National Ambient Air Quality Standards (NAAQS);
- Direct read measurements for Particulate Matter less than 10 microns (PM10) in the above locations for comparison with standards established by the US EPA NAAQS Final Action (December 7, 2020); and
- Air sampling for microbial spores in the above locations for total airborne fungal spore analysis.

**Visual Observation**

Due to the on-going COID-19 pandemic, the school building was occupied by limited number of staff and no students were present at the time of the survey. As a result, the majority of the classrooms and other common areas inspected were vacant. Tidewater's assessment included a visual inspection of the following areas of Cooper Lane Elementary School chosen at the Industrial hygienist's discretion. The results of Tidewater's visual inspection are as follows:

**Main Office**

The Main Office appeared to be clean and well maintained. Housekeeping appeared to be satisfactory. No signs of ongoing water-intrusion problems were observed and no odors were detected. One (1) wall-mounted fan coil unit was in operation and was emitting warm air at the time of the inspection. One (1) window-mounted air conditioning unit was also observed.

**Library**

Two (2) window-mounted air conditioning units were observed in the Library. None of these units were not in operation at the time of the inspection. Multiple wall-mounted fan coil units were in operation and were emitting warm air at the time of the inspection. No signs of ongoing water-intrusion problems were observed in the library and no odors were detected. The library appeared to be well maintained and organized.

**Classroom 10**

A wall-mounted fan coil unit was in operation and was emitting warm air at the time of the inspection. No signs of mold growth or past or ongoing water-intrusion problems were observed in Classroom 10. Furthermore, no notable odors were detected. The ceiling-mounted air supply vents appeared to have dust accumulations and rust buildup. The classroom appeared to be clean.

**Classroom 5**

One (1) window-mounted air conditioning unit and multiple wall-mounted fan coil units were observed in the classroom. The wall-mounted fan coil units were in operation and were emitting warm air at the time of the inspection. No signs of ongoing water-intrusion problems were observed in the classroom and no odors were detected. The ceiling-mounted air supply vents appeared to have dust accumulations and rust buildup.

**Classroom 14**

Two (2) window-mounted air conditioning units were installed in the classroom. The front panel of one of these units was dismantled and appeared to be broken. Multiple wall-mounted fan coil units were in operation and were emitting warm air at the time of the inspection. No signs of ongoing water-intrusion problems were observed in the classroom and no odors were detected. The ceiling-mounted air supply vents appeared to have dust accumulations and rust buildup.

**Classroom 17**

One (1) window-mounted air conditioning unit and multiple wall-mounted fan coil unit were observed in the classroom. The wall-mounted fan coil unit were in operation and were emitting warm air at the time of the inspection. The ceiling-mounted air supply vents appeared to have dust accumulations and rust buildup. The wall-mounted air supply grills appeared to be clean.

No signs of ongoing water-intrusion problems were observed. Furthermore, no odors were detected.

**Classroom 25**

Two (2) floor-mounted air conditioning units were operating and were emitting warm air at the time of the inspection. No signs of ongoing water-intrusion problems were observed in the classroom and no odors were detected. The classroom appeared to be clean and organized.

**Classroom 2**

A window-mounted air conditioning unit and multiple wall-mounted fan coil units were observed in the classroom. The wall-mounted fan coil units were in operation and were emitting warm air at the time of the inspection. The supply grills of the window-mounted air conditioning unit appeared to be dusty. The ceiling-mounted air supply vents appeared to have dust accumulations and rust buildup. The wall-mounted air supply grills also appeared to be dusty. No signs of ongoing water-intrusion problems were observed in the classroom and no odors were detected.

**Health Unit**

One (1) window-mounted air conditioning unit was observed in the health unit and was labelled "out of order". The fan coil unit was not in operation at the time of the inspection. No signs of ongoing water-intrusion problems were observed in the health unit and no odors were detected.

**Multipurpose Room**

Six (6) ceiling-mounted exhaust fans were in operation at the time of the inspection. The multi-purpose room was also equipped with four (4) window-mounted air conditioning units which were not in operation at the time of the inspection. No signs of ongoing water-intrusion problems were observed in the multipurpose room and no odors were detected. The ceiling-mounted air supply grills appeared to have dust accumulations and rust buildup.

**Comfort Parameter Air Testing**

During the assessment, Tidewater obtained temperature (T), relative humidity (RH), carbon dioxide ($CO_2$), and carbon monoxide (CO) measurements within select locations of the school using a TSI VelociCalc Indoor Air Quality instrument (Model Number 9565-X, Serial Number 9565X 1945 002, Calibration Date: November 8, 2019.) Measurements were taken after allowing the instrument to become acclimated to the ambient temperature and relative humidity for approximately five (5) minutes. Measurements were taken over a 5-minute time period at each designated location and the average concentration was recorded. Samples were obtained for comparison with standards established by the American Society for Heating Refrigeration and Air Conditioning (ASHRAE) Standard 62.1 – 2019, *Ventilation for Acceptable Indoor Air Quality*. Tidewater also obtained a background sample outdoors in front of the main entrance of the school building for comparison to the interior readings. The results of the IAQ comfort parameter monitoring are provided in Table 1, in **Attachment A.**

According to the American Society for Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) Standard 62.1 – 2019, *Ventilation for Acceptable Indoor Air Quality,* the temperature range in summer months should be maintained between 73.0°F and 79.0°F for maximum occupant comfort. The ASHRAE standard for temperature for winter months is between 68.0°F and 74.5°F. The indoor temperature levels within the assessed areas on November 19, 2020

ranged between 57.8°F and 73.1°F. The background temperature outside the building was 52.1°F. The temperature levels recorded within most areas monitored were within temperature levels typically observed during the fall-winter transitional period. The temperature levels recorded within classroom 25, health unit and the multipurpose room were below the ASHRAE lower temperature standard of 68.0°F recommended for winter months. These areas were vacant at the time of the inspection. Indoor temperature levels tend to fluctuate throughout the work day based on the number of occupants present within the individual work spaces. The temperature level in these areas are likely to be within ASHRAE standards when they are re-occupied.

Per the same ASHRAE standard, a maximum recommended relative humidity level of 65.0% or below is recommended to reduce the likelihood of condensation on cold surfaces. Relative humidity levels within the assessed areas on November 19, 2020 ranged between 20.8% and 42.4%. The background relative humidity level outside the building was 28.9%. The relative humidity levels in all areas assessed were below the ASHRAE recommended maximum relative humidity standard of 65.0%.

ASHRAE Standard 62.1 – 2019 recommends that indoor $CO_2$ levels not exceed 700 ppm above the outdoor background $CO_2$ level. The $CO_2$ levels in the assessed areas on November 19, 2020 ranged between 447 ppm to 578 ppm. The background $CO_2$ level outside the building was 440 ppm. The $CO_2$ levels within all interior locations assessed did not exceed 700 ppm above the outdoor background $CO_2$ level of 440 ppm.

The CO levels in all areas assessed on November 19, 2020 were below the maximum standard of 9.0 ppm recommended by the Indoor Air Quality Association (IAQA) for CO in occupied indoor environments.

**Particulate Matter Less Than 10 microns (PM10)**

During the assessment, Tidewater obtained particulate matter less than 10 microns (PM10) dust particulate measurements within select locations of the school using a TSI® DUST TRAK II™ Aerosol Monitor (Model 8534, Serial Number 8534170101.) Measurements were taken after allowing the device to become acclimated to the ambient temperature and relative humidity for five (5) minutes. Measurements were taken over a 5-minute time period at each sampling location and the average concentration was recorded for comparison with standards established by the US EPA NAAQS Final Action (December 7, 2020.)

Tidewater also obtained a background sample outdoors in front of the main entrance of the school building for comparison to the interior readings.

The results of the particulate matter sampling are provided in Table 2, in **Attachment A**.

Based on the EPA NAAQS for Particulate Matter, Final Action (December 7, 2020), the 24-hour primary and secondary exposure standard for particulate matter less than 10 microns (PM10) is 150.0 micrograms per cubic meter of air (µg/$m^3$) or 0.150 milligrams per cubic meter of air (mg/$m^3$.) The results of the PM10 analysis indicate that the average PM10 dust concentrations in all assessed areas ranged between 0.071 mg/$m^3$ and 0.083 mg/$m^3$. The average PM10 dust concentration in the background sample obtained in front of the main entrance was 0.074 mg/$m^3$. The PM10 concentrations all areas assessed were below the EPA 24-hour primary and secondary NAAQS of 0.150 mg/$m^3$.

**Spore Trap Bioaerosol Sampling**

Tidewater collected spore trap air samples from select locations within the school chosen by the Industrial hygienist's discretion to characterize air quality for total airborne total fungal spores. The samples were collected from the same locations where the comfort parameters were recorded. Tidewater obtained the spore trap samples using Allergenco-D cassettes affixed to a Buck BioAire™ Bioaerosol Sampling Pump (Pump Model Number B520 and Serial Number B153043) calibrated to a flow rate of 15.0 Liters per minute. Each sample was run for a period of five (5) minutes at each sample location to collect a total sample volume of 75.0 liters of air. Tidewater also obtained a background sample outdoors in front of the main entrance of the school building for comparison to the interior readings.

Once collected, the samples were transported to EMSL Analytical Laboratory (EMSL) located in Beltsville, Maryland for analysis via a standard turn-around time. The samples were transported following rigorous chain-of-custody guidelines to ensure proper handling and delivery of the samples. EMSL is accredited in the American Industrial Hygiene Association (AIHA) Environmental Microbiology Laboratory Accreditation Program (EMLAP) and is a successful participant in AIHA's Environmental Microbiology Proficiency Analytical Testing (EMPAT) program (Laboratory Number 102891.) The samples were analyzed via light microscopy at the standardized magnification of 600X. This technique does not allow for the differentiation between *Aspergillus* and *Penicillium* spores because they are morphologically identical. Additionally, the technique does not allow for cultivation, or the identification of spores to the species level, except in a few cases.

There are no universally accepted federal or State of Maryland standards for acceptable airborne concentrations of bioaerosols in an indoor occupational environment. In general, indoor airborne concentrations should be less than that found in the outdoor air, with similar species composition. Indoor spore counts significantly greater than those outdoors, or the presence of large numbers of different types of spores indoors that are not found outdoors, may indicate contamination and potential indoor air quality problems.

The total mold spore counts in all assessed areas of the school ranged between 710 spores/$m^3$ and 51,670 spores/$m^3$. The mold spore concentrations in the background sample obtained outdoors was 1,070 spores/$m^3$. The total mold spore concentrations in the indoor samples obtained from Classroom 5 (sample # CLES-3), Classroom 14 (sample # CLES-6), Classroom 25 (sample # CLES-8) and the Multi-purpose room (sample # CLES-10) were between 1 and 2.5 times higher than the total mold spore concentration detected in the background sample (sample # CLES-BG.) Although the total mold spore concentrations in the above locations were higher than the total mold spore concentration in the background sample, the species composition of these samples were somewhat similar to the species composition of the background sample.

However, the total mold concentration in Classroom 17 (sample # CLES-7) was significantly (over 48 times) higher than the total mold spore concentration detected in the background sample. Furthermore, the concentration of *Aspergillus/ Penicillium* species detected in Classroom 17 (sample # CLES-7) was 51,500 spores/$m^3$. No A*spergillus/ Penicillium* spores were detected in the background sample (CLES-BG.) The significantly high concentration of *Aspergillus/ Penicillium* species detected in sample # CLES-7 indicates the presence of a potential indoor source(s) of mold in Classroom 17.

A*spergillus/ Penicillium* are the most common mold species that are detected in indoor air samples. Most of the hundreds of sub-species are allergenic with only a few that are toxic. This group of species will grow with only the humidity in the air as its water source.

These areas were re-sampled on March 2, 2021 following cleanup activities. The results indicated that the total mold spore concentrations and the concentration of *Aspergillus/ Penicillium* spores in Classroom 17 and Classroom 25 were below the background concentration.

The summary of the results for the spore trap sampling are provided in Table 3 in **Attachment A**. The laboratory analytical results, including speciation and chain of custody forms for the spore trap samples are included in **Attachment B**.

## CONCLUSIONS

- During the visual inspections conducted within typically occupied areas of the school, chosen by the Industrial hygienist's discretion, the follow issues were identified:
  - Classrooms 10, 5, 14, 17, 2 and Multipurpose Room: The ceiling-mounted air supply vents appeared to have dust accumulations and rust buildup.
  - Classroom 2: The supply grills of the window-mounted air conditioning unit appeared to have dust deposits. Accumulated dust was also observed on the air supply grills mounted on the wall of the classroom.
  - Classroom 14: The front panel of one of the window-mounted air conditioning unit was dismantled and appeared to be broken.
  - Health Unit: The window-mounted air conditioning unit was non-functional.
- Temperature levels recorded within all interior locations assessed, except in classroom 25, health unit and the multipurpose room were within the temperature levels typically observed during the fall-winter transitional period. The temperature levels in these locations were below the ASHRAE lower temperature standard of 68.0°F for winter months.
- The Relative humidity, $CO_2$, CO readings and particulate matter less than 10 microns (PM10) recorded within the assessed areas were within industry standards and guidelines;
- The total mold spore concentrations in all interior locations assessed were below the background sample concentration and were also consistent with those observed in the background sample. The results do not indicate elevated levels of airborne total fungal spores in the interior locations sampled.

## RECOMMENDATIONS

Based on the results of our visual inspection, Tidewater proposes the following:

- Clean the ceiling-mounted air supply vents in Classrooms 10, 5, 14, 17, 2 and Multipurpose Room with a commercially available (EPA approved) disinfectant on a routine basis to remove dust deposits. If possible, also use a commercially available (EPA approved) rust remover to remove rust buildup from the supply vents;

- Clean the air supply grills of the window-mounted air conditioning unit and the air supply grills mounted on the walls of classroom 2 on a routine basis with a commercially available (EPA approved) disinfectant to remove dust deposits.
- The dismantled widow-mounted air-conditioning unit in Classroom 14 should be removed or replaced;
- The non-functional window-mounted air conditioning unit in the health unit should be repaired or replaced.
- Maintain good housekeeping practices in all common areas and classrooms. All common area and classrooms floors should be broom cleaned at the end of each day once the school re-opens for students. Furthermore, all horizontal surfaces including desktops, furniture, window sills, and light fixtures should be cleaned on a routine basis to prevent the accumulation of dust;
- Ensure the Heating Ventilation and Air Conditioning (HVAC) System supplying air to all common areas and classrooms is properly balanced per design requirements and are turned on and are operating at all times to ensure adequate ventilation throughout the classrooms before the school re-opens.

## Qualifications

Tidewater has endeavored to investigate existing conditions in select areas of Cooper Lane Elementary School located at 3817 Cooper Lane in Landover Hills, Maryland as they pertain to indoor air quality and mold contamination. Our conclusions and recommendations are based on the observations made on the day of our assessment, laboratory data from the time of the assessment, and information provided by both our Client and the area occupants. Actual conditions vary from day to day throughout the year.

Tidewater appreciates the opportunity to provide Industrial Hygiene consulting services for Prince Georges County Public Schools. Please contact us should any questions arise concerning this report or if we may be of further assistance.

Sincerely,

***Tidewater, Inc.***

Skanda Abeyesekere, MS, CIH, CSP, CHMM
Project Manager

Jonathan N. Schatz, MS
Manager, IH Services

SA/JNS

Attachments: **Attachment A – Summary of Comfort Parameters, PM10 Particulate Dust, and Microbial Results**
**Attachment B – Laboratory Reports and Chain of Custody Forms**
**Attachment C – Instrument Calibration Certificates**
**Attachment D – Relevant Certifications**
**Attachment E – Floor Plan with Sampling Locations**

# APPENDIX A

# COMFORT PARAMETERS, PM10 PARTICULATE DUST, AND MICROBIAL RESULTS

| Table 1: Indoor Air Quality Comfort Parameters<br>Cooper Lane Elementary School | | | | |
|---|---|---|---|---|
| **Location** | **Temperature (°F)** | **Carbon Dioxide (ppm)** | **Relative Humidity (%)** | **Carbon Monoxide (ppm)** |
| **November 19, 2020** | | | | |
| Main Office | 68.2 | 29.3 | 578 | 0.4 |
| Library | 71.5 | 28.4 | 546 | 0.4 |
| Classroom 10 | 72.5 | 21.3 | 501 | 0.3 |
| Classroom 5 | 73.1 | 23.1 | 564 | 0.2 |
| Classroom 14 | 70.1 | 24.0 | 498 | 0.0 |
| Classroom 17 | 69.7 | 25.4 | 506 | 0.1 |
| Classroom 25 | 57.8* | 42.4 | 519 | 0.0 |
| Classroom 2 | 72.0 | 20.8 | 471 | 0.0 |
| Health Unit | 67.8 | 26.7 | 476 | 0.0 |
| Multi-purpose Room | 66.7 | 20.8 | 447 | 0.0 |
| | | | | |
| Background (Outdoors) | 52.1 | 28.9 | 440 | 0.0 |

*Highlighted Areas indicate locations in which temperature levels were below the American Society for Heating Refrigeration and Air Conditioning (ASHRAE) Standard 62.1 – 2019 recommended standards for winter months.

| Table 2: Particulate Matter Less than 10 Microns (PM10)<br>Cooper Lane Elementary School | |
|---|---|
| **Location** | **Particulate Matter (PM10)**<br>**Concentration ($mg/m^3$)** |
| **November 19, 2020** | |
| Main Office | 0.083 |
| Library | 0.071 |
| Classroom 10 | 0.073 |
| Classroom 5 | 0.074 |
| Classroom 14 | 0.074 |
| Classroom 17 | 0.074 |
| Classroom 25 | 0.071 |
| Classroom 2 | 0.080 |
| Health Unit | 0.073 |
| Multipurpose Room | 0.075 |
| | |
| Background (Outdoors) | 0.074 |

| Table 3: Spore Trap Sampling Results<br>Cooper Lane Elementary School | | | |
|---|---|---|---|
| **November 19, 2020** | | | |
| **Sample Number** | **Sample Location** | **Sample Volume (L)** | **Total Fungi Concentration (Counts/m$^3$)** |
| CLES-1 | Main Office | 75.0 | 830 |
| CLES -2 | Library | 75.0 | 990 |
| CLES-3 | Classroom 5 | 75.0 | **1,240** |
| CLES-4 | Classroom 10 | 75.0 | 850 |
| CLES-5 | Classroom 2 | 75.0 | 710 |
| CLES-6 | Classroom 14 | 75.0 | **1,160** |
| CLES-7 | Classroom 17 | 75.0 | **51,670** |
| CLES-8 | Classroom 25 | 75.0 | **2,300** |
| CLES-9 | Health Unit | 75.0 | 1,040 |
| CLES-10 | Multipurpose Room | 75.0 | **2,080** |
| CLES -BG | Background (Outdoors) | 75.0 | 1,070 |

*Highlighted Area indicate location where the concentrations of the indoor sample exceeded the level detected in the background sample.

| Table 3: Spore Trap Sampling Results<br>Cooper Lane Elementary School | | | |
|---|---|---|---|
| **March 2, 2021** | | | |
| **Sample Number** | **Sample Location** | **Sample Volume (L)** | **Total Fungi Concentration (Counts/$m^3$)** |
| CLES-1 | Classroom 25 | 75.0 | 40 |
| CLES -2 | Classroom 17 | 75.0 | Noe Detected |
| CLES -BG | Background (Outdoors) | 75.0 | 90 |

# APPENDIX B

# LABORATORY REPORTS AND CHAIN OF CUSTODY FORMS

# EMSL Analytical, Inc.

100 Green Park Industrial Court Saint Louis, MO 63123
Tel/Fax: (314) 577-0150 / (314) 776-3313
http://www.EMSL.com / saintlouislab@emsl.com


**EMSL Order:** 392011029
**Customer ID:** TIDE50
**Customer PO:**
**Project ID:**

**Attention:** Skanda Abeyeskere
Tidewater, Inc.
6625 Selnick Drive
Suite A
Elkridge, MD 21075
**Project:** Cooper Lane ES

**Phone:** (410) 540-8700
**Fax:** (410) 997-8713
**Collected Date:** 11/19/2020
**Received Date:** 11/30/2020
**Analyzed Date:** 12/07/2020

**Test Report: Allergenco-D(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)**

| Lab Sample Number: | 392011029-0001 | | | 392011029-0002 | | | 392011029-0003 | | |
|---|---|---|---|---|---|---|---|---|---|
| Client Sample ID: | CLES-1 | | | CLES-2 | | | CLES-3 | | |
| Volume (L): | 75 | | | 75 | | | 75 | | |
| Sample Location: | Main Office | | | Library | | | Classroom 5 | | |
| **Spore Types** | **Raw Count** | **Count/m³** | **% of Total** | **Raw Count** | **Count/m³** | **% of Total** | **Raw Count** | **Count/m³** | **% of Total** |
| Alternaria (Ulocladium) | - | - | - | - | - | - | - | - | - |
| Ascospores | 2 | 90 | 10.8 | 5 | 200 | 20.2 | 3 | 100 | 8.1 |
| Aspergillus/Penicillium | - | - | - | 2 | 90 | 9.1 | 1 | 40 | 3.2 |
| Basidiospores | 10 | 440 | 53 | 15 | 660 | 66.7 | 8 | 300 | 24.2 |
| Bipolaris++ | - | - | - | - | - | - | - | - | - |
| Chaetomium | - | - | - | - | - | - | - | - | - |
| Cladosporium | 8 | 300 | 36.1 | 1 | 40 | 4 | 18 | 790 | 63.7 |
| Curvularia | - | - | - | - | - | - | - | - | - |
| Epicoccum | - | - | - | - | - | - | - | - | - |
| Fusarium | - | - | - | - | - | - | - | - | - |
| Ganoderma | - | - | - | - | - | - | - | - | - |
| Myxomycetes++ | - | - | - | - | - | - | - | - | - |
| Pithomyces++ | - | - | - | - | - | - | - | - | - |
| Rust | - | - | - | - | - | - | 1* | 10* | 0.8 |
| Scopulariopsis/Microascus | - | - | - | - | - | - | - | - | - |
| Stachybotrys/Memnoniella | - | - | - | - | - | - | - | - | - |
| Unidentifiable Spores | - | - | - | - | - | - | - | - | - |
| Zygomycetes | - | - | - | - | - | - | - | - | - |
| **Total Fungi** | **20** | **830** | **100** | **23** | **990** | **100** | **31** | **1240** | **100** |
| Hyphal Fragment | 1 | 40 | - | - | - | - | - | - | - |
| Insect Fragment | - | - | - | - | - | - | 1* | 10* | - |
| Pollen | - | - | - | - | - | - | - | - | - |
| Analyt. Sensitivity 600x | - | 44 | - | - | 44 | - | - | 44 | - |
| Analyt. Sensitivity 300x | - | 13* | - | - | 13* | - | - | 13* | - |
| Skin Fragments (1-4) | - | 1 | - | - | 1 | - | - | 1 | - |
| Fibrous Particulate (1-4) | - | 1 | - | - | 1 | - | - | 1 | - |
| Background (1-5) | - | 1 | - | - | 1 | - | - | 1 | - |

++ 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.

Amber Stegmann

Amber Stegmann, Micro Supervisor
or other Approved Signatory


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.

Samples analyzed by EMSL Analytical, Inc. Saint Louis, MO

Initial report from: 12/07/2020 08:57 AM

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

# EMSL Analytical, Inc.

100 Green Park Industrial Court Saint Louis, MO 63123
Tel/Fax: (314) 577-0150 / (314) 776-3313
http://www.EMSL.com / saintlouislab@emsl.com


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**Collected Date:** 11/19/2020
**Received Date:** 11/30/2020
**Analyzed Date:** 12/07/2020

**Test Report: Allergenco-D(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)**

| Lab Sample Number: | 392011029-0004 | | | 392011029-0005 | | | 392011029-0006 | | |
|---|---|---|---|---|---|---|---|---|---|
| Client Sample ID: | CLES-4 | | | CLES-5 | | | CLES-6 | | |
| Volume (L): | 75 | | | 75 | | | 75 | | |
| Sample Location: | Classroom 10 | | | Classroom 2 | | | Classroom 14 | | |
| **Spore Types** | **Raw Count** | **Count/m³** | **% of Total** | **Raw Count** | **Count/m³** | **% of Total** | **Raw Count** | **Count/m³** | **% of Total** |
| Alternaria (Ulocladium) | - | - | - | - | - | - | - | - | - |
| Ascospores | 2 | 90 | 10.6 | - | - | - | - | - | - |
| Aspergillus/Penicillium | - | - | - | 4 | 200 | 28.2 | 4 | 200 | 17.2 |
| Basidiospores | 15 | 660 | 77.6 | 5 | 200 | 28.2 | 10 | 440 | 37.9 |
| Bipolaris++ | - | - | - | - | - | - | - | - | - |
| Chaetomium | - | - | - | - | - | - | - | - | - |
| Cladosporium | 3 | 100 | 11.8 | 7 | 300 | 42.3 | 10 | 440 | 37.9 |
| Curvularia | - | - | - | - | - | - | - | - | - |
| Epicoccum | - | - | - | - | - | - | - | - | - |
| Fusarium | - | - | - | - | - | - | - | - | - |
| Ganoderma | - | - | - | - | - | - | - | - | - |
| Myxomycetes++ | - | - | - | 1* | 10* | 1.4 | 1 | 40 | 3.4 |
| Pithomyces++ | - | - | - | - | - | - | - | - | - |
| Rust | - | - | - | - | - | - | 1 | 40 | 3.4 |
| Scopulariopsis/Microascus | - | - | - | - | - | - | - | - | - |
| Stachybotrys/Memnoniella | - | - | - | - | - | - | - | - | - |
| Unidentifiable Spores | - | - | - | - | - | - | - | - | - |
| Zygomycetes | - | - | - | - | - | - | - | - | - |
| **Total Fungi** | **20** | **850** | **100** | **17** | **710** | **100** | **26** | **1160** | **100** |
| Hyphal Fragment | - | - | - | - | - | - | - | - | - |
| Insect Fragment | - | - | - | - | - | - | - | - | - |
| Pollen | - | - | - | - | - | - | - | - | - |
| Analyt. Sensitivity 600x | - | 44 | - | - | 44 | - | - | 44 | - |
| Analyt. Sensitivity 300x | - | 13* | - | - | 13* | - | - | 13* | - |
| Skin Fragments (1-4) | - | 1 | - | - | 1 | - | - | 1 | - |
| Fibrous Particulate (1-4) | - | 1 | - | - | 1 | - | - | 1 | - |
| Background (1-5) | - | 1 | - | - | 1 | - | - | 1 | - |

++ 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.

Amber Stegmann

Amber Stegmann, Micro Supervisor
or other Approved Signatory


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.

Samples analyzed by EMSL Analytical, Inc. Saint Louis, MO

Initial report from: 12/07/2020 08:57 AM

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

# EMSL Analytical, Inc.

100 Green Park Industrial Court Saint Louis, MO 63123
Tel/Fax: (314) 577-0150 / (314) 776-3313
http://www.EMSL.com / saintlouislab@emsl.com


**EMSL Order:** 392011029
**Customer ID:** TIDE50
**Customer PO:**
**Project ID:**

**Attention:** Skanda Abeyeskere
Tidewater, Inc.
6625 Selnick Drive
Suite A
Elkridge, MD 21075
**Project:** Cooper Lane ES

**Phone:** (410) 540-8700
**Fax:** (410) 997-8713
**Collected Date:** 11/19/2020
**Received Date:** 11/30/2020
**Analyzed Date:** 12/07/2020

**Test Report: Allergenco-D(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)**

| Lab Sample Number: | 392011029-0007 | | | 392011029-0008 | | | 392011029-0009 | | |
|---|---|---|---|---|---|---|---|---|---|
| Client Sample ID: | CLES-7 | | | CLES-8 | | | CLES-9 | | |
| Volume (L): | 75 | | | 75 | | | 75 | | |
| Sample Location: | Classroom 17 | | | Classroom 25 | | | Health Unit | | |
| **Spore Types** | **Raw Count** | **Count/m³** | **% of Total** | **Raw Count** | **Count/m³** | **% of Total** | **Raw Count** | **Count/m³** | **% of Total** |
| Alternaria (Ulocladium) | - | - | - | - | - | - | - | - | - |
| Ascospores | - | - | - | - | - | - | 1 | 40 | 3.8 |
| Aspergillus/Penicillium | 1180 | 51500 | 99.7 | 37 | 1600 | 69.6 | 3 | 100 | 9.6 |
| Basidiospores | 2 | 90 | 0.2 | 2 | 90 | 3.9 | 8 | 300 | 28.8 |
| Bipolaris++ | 1 | 40 | 0.1 | - | - | - | - | - | - |
| Chaetomium | - | - | - | - | - | - | - | - | - |
| Cladosporium | 1 | 40 | 0.1 | 14 | 610 | 26.5 | 12 | 520 | 50 |
| Curvularia | - | - | - | - | - | - | - | - | - |
| Epicoccum | - | - | - | - | - | - | 1 | 40 | 3.8 |
| Fusarium | - | - | - | - | - | - | - | - | - |
| Ganoderma | - | - | - | - | - | - | - | - | - |
| Myxomycetes++ | - | - | - | - | - | - | 1 | 40 | 3.8 |
| Pithomyces++ | - | - | - | - | - | - | - | - | - |
| Rust | - | - | - | - | - | - | - | - | - |
| Scopulariopsis/Microascus | - | - | - | - | - | - | - | - | - |
| Stachybotrys/Memnoniella | - | - | - | - | - | - | - | - | - |
| Unidentifiable Spores | - | - | - | - | - | - | - | - | - |
| Zygomycetes | - | - | - | - | - | - | - | - | - |
| **Total Fungi** | **1184** | **51670** | **100** | **53** | **2300** | **100** | **26** | **1040** | **100** |
| Hyphal Fragment | 1 | 40 | - | - | - | - | 1 | 40 | - |
| Insect Fragment | - | - | - | - | - | - | - | - | - |
| Pollen | - | - | - | - | - | - | - | - | - |
| Analyt. Sensitivity 600x | - | 44 | - | - | 44 | - | - | 44 | - |
| Analyt. Sensitivity 300x | - | 13* | - | - | 13* | - | - | 13* | - |
| Skin Fragments (1-4) | - | 1 | - | - | 1 | - | - | 1 | - |
| Fibrous Particulate (1-4) | - | 1 | - | - | 1 | - | - | 1 | - |
| Background (1-5) | - | 1 | - | - | 1 | - | - | 1 | - |

++ 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.

Amber Stegmann

Amber Stegmann, Micro Supervisor
or other Approved Signatory


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.

Samples analyzed by EMSL Analytical, Inc. Saint Louis, MO

Initial report from: 12/07/2020 08:57 AM

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

# EMSL Analytical, Inc.

100 Green Park Industrial Court Saint Louis, MO 63123
Tel/Fax: (314) 577-0150 / (314) 776-3313
http://www.EMSL.com / saintlouislab@emsl.com


**EMSL Order:** 392011029
**Customer ID:** TIDE50
**Customer PO:**
**Project ID:**

**Attention:** Skanda Abeyeskere
Tidewater, Inc.
6625 Selnick Drive
Suite A
Elkridge, MD 21075
**Project:** Cooper Lane ES

**Phone:** (410) 540-8700
**Fax:** (410) 997-8713
**Collected Date:** 11/19/2020
**Received Date:** 11/30/2020
**Analyzed Date:** 12/07/2020

**Test Report: Allergenco-D(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)**

| | 392011029-0010 | | | 392011029-0011 | | |
|---|---|---|---|---|---|---|
| **Lab Sample Number:** | | | | | | |
| **Client Sample ID:** | CLES-10 | | | CLES-BG | | |
| **Volume (L):** | 75 | | | 75 | | |
| **Sample Location:** | Multi Purpose | | | Outdoors | | |
| **Spore Types** | **Raw Count** | **Count/m³** | **% of Total** | **Raw Count** | **Count/m³** | **% of Total** |
| Alternaria (Ulocladium) | - | - | - | - | - | - |
| Ascospores | 3 | 100 | 4.8 | 4 | 200 | 18.7 |
| Aspergillus/Penicillium | 9 | 400 | 19.2 | - | - | - |
| Basidiospores | 15 | 660 | 31.7 | 10 | 440 | 41.1 |
| Bipolaris++ | - | - | - | - | - | - |
| Chaetomium | - | - | - | - | - | - |
| Cladosporium | 19 | 830 | 39.9 | 6 | 300 | 28 |
| Curvularia | - | - | - | - | - | - |
| Epicoccum | - | - | - | 2 | 90 | 8.4 |
| Fusarium | - | - | - | - | - | - |
| Ganoderma | - | - | - | - | - | - |
| Myxomycetes++ | 2 | 90 | 4.3 | 1 | 40 | 3.7 |
| Pithomyces++ | - | - | - | - | - | - |
| Rust | - | - | - | - | - | - |
| Scopulariopsis/Microascus | - | - | - | - | - | - |
| Stachybotrys/Memnoniella | - | - | - | - | - | - |
| Unidentifiable Spores | - | - | - | - | - | - |
| Zygomycetes | - | - | - | - | - | - |
| **Total Fungi** | **48** | **2080** | **100** | **23** | **1070** | **100** |
| Hyphal Fragment | - | - | - | 4 | 200 | - |
| Insect Fragment | - | - | - | - | - | - |
| Pollen | - | - | - | - | - | - |
| Analyt. Sensitivity 600x | - | 44 | - | - | 44 | - |
| Analyt. Sensitivity 300x | - | 13* | - | - | 13* | - |
| Skin Fragments (1-4) | - | 1 | - | - | 1 | - |
| Fibrous Particulate (1-4) | - | 1 | - | - | 1 | - |
| Background (1-5) | - | 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.

Amber Stegmann, Micro Supervisor
or other Approved Signatory


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.

Samples analyzed by EMSL Analytical, Inc. Saint Louis, MO

Initial report from: 12/07/2020 08:57 AM

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

OrderID: 392011029

# Microbiology Chain of Custody

**EMSL Order Number** (*Lab Use Only*):

392011029

PHONE:
FAX:

| | |
|---|---|
| **Company:** Tidewater Inc | **EMSL-Bill to:** ☐ Different ☐ Same<br>If Bill to is Different note instructions in Comments**<br>*Third Party Billing requires written authorization from third party* |
| **Street:** 6625 Selnick Drive, Suite A | |
| **City:** Elkridge **State/Province:** MD | **Zip/Postal Code:** **Country:** |
| **Report To (Name):** Skanda Abeyesekere | **Telephone #:** |
| **Email Address:** skanda@tideh2o.net | **Fax #:** **Purchase Order:** |
| **Project Name/Number:** Cooper Lane ES | **Please Provide Results:** ☐ FAX ☒ E-mail ☐ Mail |
| **U.S. State Samples Taken:** Maryland | **Connecticut Samples:** ☐ Commercial ☐ Residential |

**Turnaround Time (TAT) Options* - Please Check**

☐ 3 Hour ☐ 6 Hour ☒ 24 Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ☐ 1 Week ☒ 2 Week

**Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide. TATs are subject to methodology requirements*

**Non Culturable Air Samples (Spore Traps) – Test Codes**

| | | | | |
|---|---|---|---|---|
| • **M001** Air-O-Cell | • **M173** Allegro M2 | • **M004** Allergenco | • **M032** Allergenco-D | • **M172** Versa Trap |
| • **M049** BioSIS | • **M003** Burkard | • **M043** Cyclex | • **M002** Cyclex-d | |
| • **M030** Micro 5 | • **M174** MoldSnap | • **M176** Relle Smart | • **M130** Via-Cell | |

**Other Microbiology Test Codes**

| | | |
|---|---|---|
| • **M041** Fungal Direct Examination | • **M014** *Endotoxin Analysis* | • **M029** *Enterococci* |
| • **M005** Viable Fungi ID and Count | • **M015** Heterotrophic Plate Count | • **M019** Fecal Coliform |
| • **M006** Viable Fungi ID and Count (Speciation) | • **M180** Real Time Q-PCR-ERMI 36 | • **M133** MRSA Analysis |
| • **M007** Culturable Fungi | • Panel | • **M028** *Cryptococcus neoformans* |
| • **M008** Culturable Fungi (Speciation) | • **M018** Total Coliform | Detection |
| • **M009** Gram Stain Culturable Bacteria | (Membrane Filtration) | • **M120** *Histoplasma capsulatum* |
| • **M010** Bacterial Count and ID – 3 Most | • **M020** Fecal *Streptococcus* | Detection |
| Prominent | (Membrane Filtration) | • **M033-39** Allergen Testing |
| • **M011** Bacterial Count and ID – 5 Most | • **M210-215** *Legionella* Detection | • **M044** Group Allergen |
| Prominent | • **M026** Recreational Water Screen | (Cat, Dog, Cockroach, Dustmites) |
| • **M013** Sewage Contamination in Buildings | • **M027** Mycotoxin Analysis | • **Other** See Analytical Price Guide |

**Preservation Method (Water):**

**Name of Sampler:** Skanda Abeyesekere **Signature of Sampler:** Skanda Abeyesekere

| Sample # | Sample Location | Sample Type | Test Code | Volume/Area | Date/Time Collected |
|---|---|---|---|---|---|
| Example: A1 | Kitchen | Air | M001 | 75L | 1/1/12 4:00 PM |
| CLES-1 | Main office | Air | M032 | 75-0 | 11/19/2020 |
| CLES-2 | Library | " | " | " | |
| CLES-3 | Classroom 5 | | | | |
| CLES-4 | Classroom 10 | | | | |
| CLES-5 | Classroom 2 | | | | |
| CLES-6 | Classroom 14 | | | | |
| CLES-7 | Classroom 17 | | | | |
| | | | | | |
| | | | | | |

**Client Sample # (s):** 11 **Total # of Samples:** 11

**Relinquished (Client):** Skanda Abeyesekere **Date:** 11/19/2020 **Time:** 12:00 PM

**Received (Client):** K. Farnworth FedEx **Date:** **Time:**

**Comments:**

RECEIVED
EMSL ANALYTICAL, INC.
BELTSVILLE, MD
2020 NOV 23 A 10:0

OrderID: 392011029

# Microbiology Chain of Custody

**EMSL Order Number** *(Lab Use Only)*:

392011029

PHONE:
FAX:

*Additional Pages of the Chain of Custody are only necessary if needed for additional sample information*

| Sample # | Sample Location | Sample Type | Test Code | Volume/Area | Date/Time Collected |
|---|---|---|---|---|---|
| CLES-8 | classroom 25 | Air | | | |
| CLES-9 | Heath unit | ↓ | | | |
| CLES-10 | Multi: purpose | | | | |
| CLES-BG | outdoors | | | | |
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**Comments/Special Instructions:

Page 2 of 2 pages

# EMSL Analytical, Inc.

10768 Baltimore Avenue Beltsville, MD 20705
Tel/Fax: (301) 937-5700 / (301) 937-5701
http://www.EMSL.com / beltsvillelab@emsl.com


**EMSL Order:** 192101966
**Customer ID:** TIDE50
**Customer PO:**
**Project ID:**

**Attention:** Skanda Abeyeskere
Tidewater, Inc.
6625 Selnick Drive
Suite A
Elkridge, MD 21075
**Project:** PGCPS COOPER LANE ES

**Phone:** (410) 540-8700
**Fax:** (410) 997-8713
**Collected Date:** 03/02/2021
**Received Date:** 03/02/2021
**Analyzed Date:** 03/05/2021

**Test Report: Allergenco-D(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)**

| Lab Sample Number: | 192101966-0001 | | | 192101966-0002 | | | 192101966-0003 | | |
|---|---|---|---|---|---|---|---|---|---|
| Client Sample ID: | CLES-1 | | | CLES-1 | | | CLES-BG | | |
| Volume (L): | 75 | | | 75 | | | 75 | | |
| Sample Location: | CLASSRM 25 | | | CLASSRM 17 | | | OUTDOORS | | |
| **Spore Types** | **Raw Count** | **Count/m³** | **% of Total** | **Raw Count** | **Count/m³** | **% of Total** | **Raw Count** | **Count/m³** | **% of Total** |
| Alternaria (Ulocladium) | - | - | - | - | - | - | - | - | - |
| Ascospores | 1 | 40 | 100 | - | - | - | - | - | - |
| Aspergillus/Penicillium | - | - | - | - | - | - | - | - | - |
| Basidiospores | - | - | - | - | - | - | 2 | 90 | 100 |
| Bipolaris++ | - | - | - | - | - | - | - | - | - |
| Chaetomium | - | - | - | - | - | - | - | - | - |
| Cladosporium | - | - | - | - | - | - | - | - | - |
| Curvularia | - | - | - | - | - | - | - | - | - |
| Epicoccum | - | - | - | - | - | - | - | - | - |
| Fusarium | - | - | - | - | - | - | - | - | - |
| Ganoderma | - | - | - | - | - | - | - | - | - |
| Myxomycetes++ | - | - | - | - | - | - | - | - | - |
| Pithomyces++ | - | - | - | - | - | - | - | - | - |
| Rust | - | - | - | - | - | - | - | - | - |
| Scopulariopsis/Microascus | - | - | - | - | - | - | - | - | - |
| Stachybotrys/Memnoniella | - | - | - | - | - | - | - | - | - |
| Unidentifiable Spores | - | - | - | - | - | - | - | - | - |
| Zygomycetes | - | - | - | - | - | - | - | - | - |
| **Total Fungi** | **1** | **40** | **100** | **-** | **None Detected** | **-** | **2** | **90** | **100** |
| Hyphal Fragment | - | - | - | 1 | 40 | - | - | - | - |
| Insect Fragment | - | - | - | - | - | - | - | - | - |
| Pollen | - | - | - | - | - | - | - | - | - |
| Analyt. Sensitivity 600x | - | 44 | - | - | 44 | - | - | 44 | - |
| Analyt. Sensitivity 300x | - | 13* | - | - | 13* | - | - | 13* | - |
| Skin Fragments (1-4) | - | 2 | - | - | 1 | - | - | 1 | - |
| Fibrous Particulate (1-4) | - | 1 | - | - | 1 | - | - | 1 | - |
| Background (1-5) | - | 1 | - | - | 1 | - | - | 2 | - |

++ 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.

Abubakar Barry, Microbiology Lab Manager
or other Approved Signatory


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.

Samples analyzed by EMSL Analytical, Inc. Beltsville, MD AIHA-LAP, LLC-EMLAP Accredited #102891

Initial report from: 03/05/2021 02:29 PM

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

OrderID: 192101966

# Microbiology Chain of Custody

## EMSL Order Number (Lab Use Only):

192101966

PHONE:
FAX:

| | |
|---|---|
| **Company:** Tidewater Inc. | **EMSL-Bill to:** ☐ Different ☐ Same<br>If Bill to is Different note instructions in Comments**<br>*Third Party Billing requires written authorization from third party* |
| **Street:** 6625 Selnick Drive, Suite A | |
| **City:** Elkridge **State/Province:** MD | **Zip/Postal Code:** **Country:** |
| **Report To (Name):** Skanda Abeyesekere | **Telephone #:** |
| **Email Address:** skanda@tideh2o.net | **Fax #:** **Purchase Order:** |
| **Project Name/Number:** PGCPS Cooper Lane ES | **Please Provide Results:** ☐ FAX ☐ E-mail ☐ Mail |
| **U.S. State Samples Taken:** MD | **Connecticut Samples:** ☐ Commercial ☐ Residential |

**Turnaround Time (TAT) Options* - Please Check**

☐ 3 Hour ☐ 6 Hour ■ 24 Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ☐ 1 Week ☐ 2 Week

**Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide. TATs are subject to methodology requirements*

**Non Culturable Air Samples (Spore Traps) – Test Codes**

| | | | | |
|---|---|---|---|---|
| • **M001** Air-O-Cell | • **M173** Allegro M2 | • **M004** Allergenco | • **M032** Allergenco-D | • **M172** Versa Trap |
| • **M049** BioSIS | • **M003** Burkard | • **M043** Cyclex | • **M002** Cyclex-d | |
| • **M030** Micro 5 | • **M174** MoldSnap | • **M176** Relle Smart | • **M130** Via-Cell | |

**Other Microbiology Test Codes**

| | | |
|---|---|---|
| • **M041** Fungal Direct Examination | • **M014** Endotoxin Analysis | • **M029** *Enterococci* |
| • **M005** Viable Fungi ID and Count | • **M015** Heterotrophic Plate Count | • **M019** Fecal Coliform |
| • **M006** Viable Fungi ID and Count (Speciation) | • **M180** Real Time Q-PCR-ERMI 36 | • **M133** MRSA Analysis |
| • **M007** Culturable Fungi | • Panel | • **M028** *Cryptococcus neoformans* Detection |
| • **M008** Culturable Fungi (Speciation) | • **M018** Total Coliform (Membrane Filtration) | • **M120** *Histoplasma capsulatum* Detection |
| • **M009** Gram Stain Culturable Bacteria | • **M020** Fecal *Streptococcus* (Membrane Filtration) | • **M033-39** Allergen Testing |
| • **M010** Bacterial Count and ID – 3 Most Prominent | • **M210-215** *Legionella* Detection | • **M044** Group Allergen (Cat, Dog, Cockroach, Dustmites) |
| • **M011** Bacterial Count and ID – 5 Most Prominent | • **M026** Recreational Water Screen | • **Other** See Analytical Price Guide |
| • **M013** Sewage Contamination in Buildings | • **M027** Mycotoxin Analysis | |

**Preservation Method (Water):**

**Name of Sampler:** SKANDA ABEYESEKERE **Signature of Sampler:**

| Sample # | Sample Location | Sample Type | Test Code | Volume/Area | Date/Time Collected |
|---|---|---|---|---|---|
| Example: A1 | Kitchen | Air | M001 | 75L | 1/1/12 4:00 PM |
| CLES-1 | Classroom 25 | Air | M032 | 75 | 03/02/2021 |
| CLES-2 | Classroom 17 | Air | M032 | 75 | |
| CLES-BG | Outdoors - Background | Air | M032 | 75 | |

**Client Sample # (s):** 3 **Total # of Samples:** 3

**Relinquished (Client):** **Date:** 03/02/2021 **Time:** 2:30 PM

**Received (Client):** **Date:** **Time:**

**Comments:**

RECEIVED
EMSL ANALYTICAL, INC.
BELTSVILLE, MD
2021 MAR -2 P 3:00

Page 1 of 1 pages

# APPENDIX C

# INSTRUMENT CALIBRATION CERTIFICATES

TSI P/N 2300157

# CERTIFICATE OF CALIBRATION AND TESTING

TSI Incorporated, 500 Cardigan Road, Shoreview, MN 55126 USA
Tel: 1-800-874-2811 1-651-490-2811 Fax: 1-651-490-3824 http://www.tsi.com

| ENVIRONMENT CONDITIONS | | |
|---|---|---|
| TEMPERATURE | 74.1 (23.4) | °F (°C) |
| RELATIVE HUMIDITY | 26 | %RH |
| BAROMETRIC PRESSURE | 29.26 (990.9) | inHg (hPa) |

| MODEL | 9565-X |
|---|---|
| SERIAL NUMBER | 9565X1945002 |

☒ AS LEFT ☒ IN TOLERANCE
☐ AS FOUND ☐ OUT OF TOLERANCE

## -- CALIBRATION VERIFICATION RESULTS --

**THERMO COUPLE^** — **SYSTEM PRESSURE01-01** — *Unit: °F ( °C )*

| # | STANDARD | MEASURED | ALLOWABLE RANGE | # | STANDARD | MEASURED | ALLOWABLE RANGE |
|---|---|---|---|---|---|---|---|
| 1 | 71.6 (22.0) | 71.6 (22.0) | 69.6~73.6 (20.9~23.1) | | | | |

**BAROMETRIC PRESSURE** — **SYSTEM PRESSURE01-01** — *Unit: inHg ( hPa )*

| # | STANDARD | MEASURED | ALLOWABLE RANGE | # | STANDARD | MEASURED | ALLOWABLE RANGE |
|---|---|---|---|---|---|---|---|
| 1 | 29.26 (990.9) | 29.26 (990.9) | 28.67~29.85 (970.9~1010.8) | | | | |

^ *Circuit portion of temperature measurement only, not including probe.*

*TSI does hereby certify that the above described instrument conforms to the original manufacturer's specification (not applicable to As Found data) and has been calibrated using standards whose accuracies are traceable to the United States National Institute of Standards and Technology (NIST) or has been verified with respect to instrumentation whose accuracy is traceable to NIST, or is derived from accepted values of physical constants. TSI's calibration system is registered to ISO-9001:2015*

| Measurement Variable | System ID | Last Cal. | Cal. Due | Measurement Variable | System ID | Last Cal. | Cal. Due |
|---|---|---|---|---|---|---|---|
| DC Voltage | E003299 | 06-06-19 | 12-31-20 | DC Voltage | E003300 | 06-06-19 | 12-31-20 |
| Temperature | E004626 | 01-09-19 | 01-31-20 | Pressure | E003302 | 08-07-19 | 02-29-20 |
| Pressure | E003303 | 08-26-19 | 02-29-20 | | | | |

Rose Germain — CALIBRATED

November 8, 2019 — DATE

Doc. ID CERT_GEN_WCC_TM

TSI P/N 2300157

# CERTIFICATE OF CALIBRATION AND TESTING

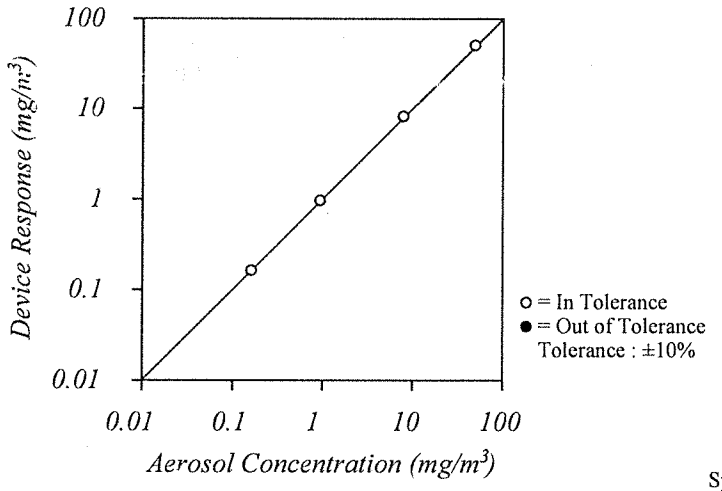
TSI Incorporated, 500 Cardigan Road, Shoreview, MN 55126 USA
Tel: 1-800-874-2811 1-651-490-2811 Fax: 1-651-490-3824 http://www.tsi.com

| Environment Conditions | | |
|---|---|---|
| Temperature | 75.83 (24.4) | °F (°C) |
| Relative Humidity | 43.6 | %RH |
| Barometric Pressure | 28.93 (979.7) | inHg (hPa) |

| | |
|---|---|
| **Model** | **8534** |
| **Serial Number** | **8534170101** |

☒ As Left ☒ In Tolerance
☐ As Found ☐ Out of Tolerance

## Concentration Linearity Plot




System ID: DTII01-02

## FLOW AND PRESSURE VERIFICATION — SYSTEM DTII01-01

| Parameter | Standard | Measured | Allowable Range | Parameter | Standard | Measured | Allowable Range |
|---|---|---|---|---|---|---|---|
| Flow lpm | 3.00 | 3.03 | 2.88 ~ 3.12 | Pressure kPa | 97.8 | 97.8 | 92.95 ~ 102.73 |
| Full Flow lpm | N/A | 4.54 | >3.80 | | | | |

*TSI Incorporated does hereby certify that all materials, components, and workmanship used in the manufacture of this equipment are in strict accordance with the applicable specifications agreed upon by TSI and the customer and with all published specifications. All performance and acceptance tests required under this contract were successfully conducted according to required specifications. There is no NIST standard for optical mass measurements. Calibration of this instrument performed by TSI has been done using emery oil and has been nominally adjusted to respirable mass per standard ISO 12103-1, A1 test dust (Arizona dust). Our calibration ratio is greater than 1.2:1*

| Measurement Variable | System ID | Last Cal. | Cal. Due |
|---|---|---|---|
| DC Voltage | E003314 | 01-15-20 | 01-31-21 |
| Microbalance | M001324 | 10-03-18 | 10-31-20 |
| 3 um PSL | 221853 | n/a | n/a |
| Pressure | E003511 | 10-04-19 | 10-31-20 |
| DC Voltage | E003315 | 01-15-20 | 01-31-21 |
| Flowmeter | E005922 | 06-29-20 | 06-30-21 |
| Microbalance | M001324 | 10-03-18 | 10-31-20 |
| 1 um PSL | 698880 | n/a | n/a |
| 10 um PSL | 212455 | n/a | n/a |

| Measurement Variable | System ID | Last Cal. | Cal. Due |
|---|---|---|---|
| Photometer | E005612 | 08-19-20 | 02-28-21 |
| 1 um PSL | 698880 | n/a | n/a |
| 10 um PSL | 212455 | n/a | n/a |
| Flowmeter | E005140 | 01-09-20 | 01-31-21 |
| Photometer | E003433 | 09-15-20 | 03-31-21 |
| DC Voltage(Keithley) | E002859 | 06-15-20 | 06-30-21 |
| Pressure | E005651 | 07-06-20 | 07-31-21 |
| 3 um PSL | 206030 | n/a | n/a |

David Farrell

Calibrated

September 24, 2020

Date

# Certificate of Conformance

(X) Buck BioAire™ ( ) Buck BioSlide™

**Serial number:** B153043 **Date Issued:** 3-18-20

## Flow Calibration

The instrument listed above is in conformance with factory specifications and the flow is set to nominal using a BUCK Calibrator which is N.I.S.T. traceable to A. P. Buck, Inc. Calibration Procedure APB-1, Ver. 6.2.

**QA APPROVAL BY:** Thomas J. Cravener



A.P. BUCK, INC.
7101 Presidents Drive, Suite 110
Orlando, FL 32809
Phone: 407-851-8602 • Fax: 407-851-8910

BUCK
A.P. BUCK, INC.

# APPENDIX D

# RELEVANT CERTIFICATIONS

# ABIH®

## american board of industrial hygiene®

organized to improve the practice of industrial hygiene
proclaims that

# *Skandakumar Harshanath Abeyesekere*

having met all requirements of
education, experience and examination, and
ongoing maintenance,
is hereby certified in the

**COMPREHENSIVE PRACTICE**
**of**
**INDUSTRIAL HYGIENE**

and has the right to use the designations

**CERTIFIED INDUSTRIAL HYGIENIST**

**CIH®**

| | |
|---|---|
| **Certificate Number** | **9928 CP** |
| **Awarded:** | **May 11, 2011** |
| **Expiration Date:** | **December 1, 2021** |


Susan Ripple
**Chair, ABIH**

**Chief Executive Officer, ABIH**

# BOARD OF CERTIFIED SAFETY PROFESSIONALS

affirms that

## Skandakumar Abeyesekere

Has applied for, met qualifications, and passed required examination(s) and is hereby authorized to use the designation

**Certified Safety Professional®**

in Comprehensive Practice

So long as this certificate is not suspended or revoked and the certificant renews this authorization annually and meets Continuance of Certification requirements.

Board of Examiners in witness whereof we have here unto set our hands and affixed the Seal of the Board this 7th Day of April, 2008

Paul S Adams — President

Linda Tapp — Secretary

20110 — CSP No.

INSTITUTE OF HAZARDOUS MATERIALS MANAGEMENT

THIS CERTIFIES THAT

# *Skandakumar Abeyeskere*

HAS SUCCESSFULLY MET ALL THE REQUIREMENTS OF EDUCATION, EXPERIENCE AND EXAMINATION, AND IS HEREBY DESIGNATED A

## CERTIFIED HAZARDOUS MATERIALS MANAGER
## CHMM

INSTITUTE OF HAZARDOUS MATERIALS MANAGEMENT IHMM CORPORATE SEAL 1984 DISTRICT OF COLUMBIA

May 13, 2016
DATE OF CERTIFICATION

19053
CREDENTIAL NUMBER

May 31, 2021
CERTIFICATION EXPIRES

*M. Patricia Buley*
ACTING EXECUTIVE DIRECTOR

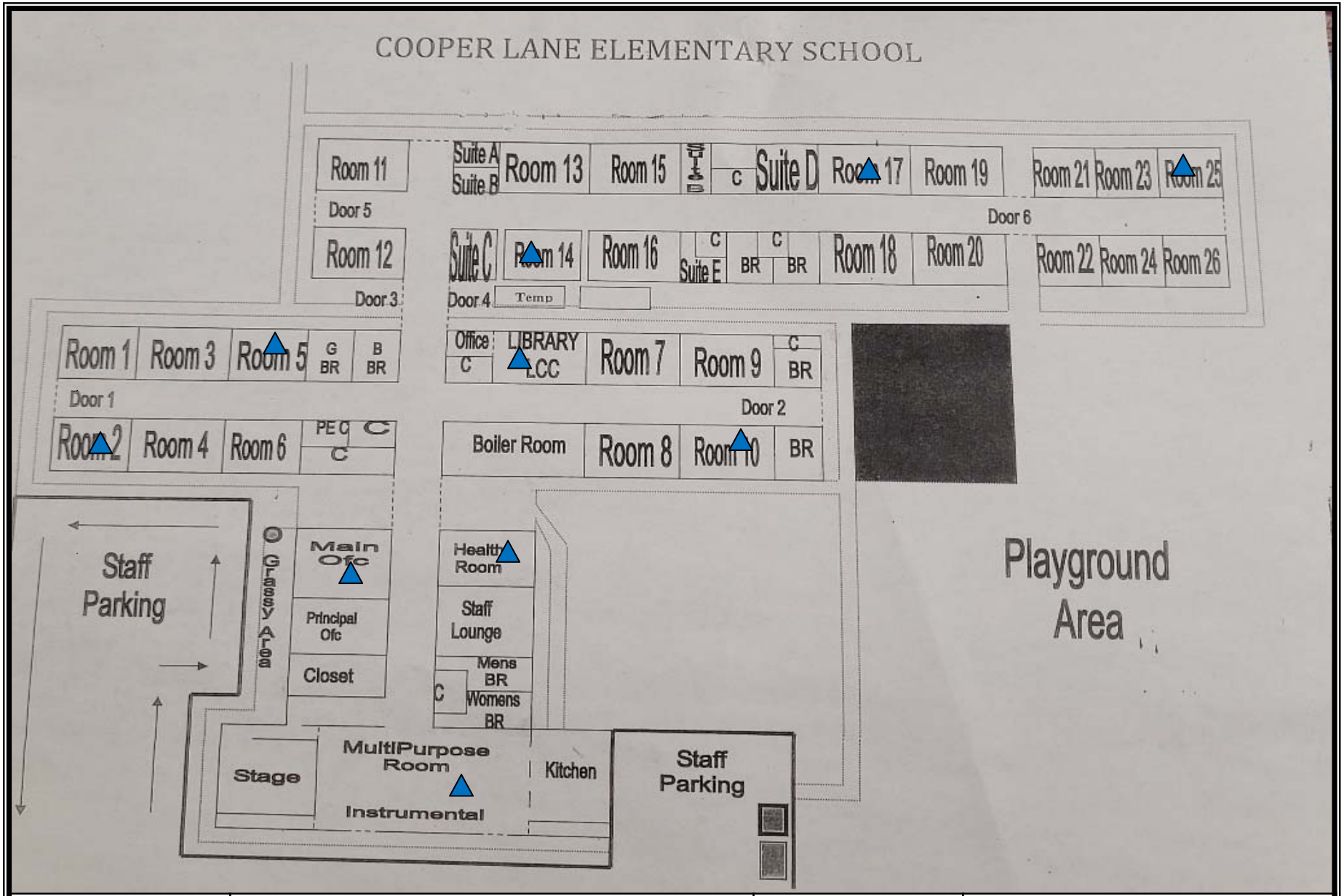
**VALID SO LONG AS THIS CREDENTIAL IS RENEWED ACCORDING TO SCHEDULE AND IS NOT OTHERWISE REVOKED.**

ANSI Accredited Program PERSONNEL CERTIFICATION

*Accredited by the American National Standards Institute and the Council of Engineering and Scientific Specialty Boards*

# APPENDIX E

## FLOOR PLAN WITH SAMPLING LOCATIONS




| | | | |
|---|---|---|---|
| TIDEWATER INC | **Attachment C**<br>**Cooper Lane Elementary School**<br>**Floor Plan with Sampling Locations** | Scale: N/A<br>Project #: 5419-029<br>Date: November 19, 2020 | **General Notes**<br>▲ = Sample Location |