March 8, 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) – Kenmoor Middle School
2500 Kenmoor Drive, Landover, Maryland 20785
Contract No.: IFB 022-19: Indoor Air Quality Services at Various Locations
Tidewater Project No.: 5419-048

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 Kenmoor Middle School located at 2500 Kenmoor Drive, in Landover, Maryland. Tidewater's Project Manager and Certified Industrial Hygienist, Mr. Skanda Abeyesekere MS, CIH, CSP, CHMM conducted these services on January 27, 2021. Re-sampling of areas with elevated mold concentrations were conducted on February 26, 2021.

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

- Inspecting, taking direct read measurements and conducting air sampling at the following select areas of the school: Classroom 109, Classroom 107, Classroom 103, Conference Room 5, Library, Multipurpose Room, Classroom 219, Classroom 224 (Music Room), Classroom 205, Classroom 209 and Principal's Office. 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;
- Taking direct read air measurements for comfort parameters including temperature (T), relative humidity (RH), carbon dioxide (CO_2), and carbon monoxide (CO) 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);
- Taking direct read measurements for Particulate Matter less than 10 microns (PM10) 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

The school building was occupied by a limited number of staff, and no students were present at the time of the survey because of the on-going COVID-19 pandemic. The majority of the classrooms and other common areas inspected were vacant. The results of Tidewater's visual inspection are presented below:

Classroom 109

A wall-mounted fan coil unit was operating at the time of the inspection and was emitting warm air. A water-stained ceiling with visible suspect surface mold was observed above the fan coil unit. No notable odors were detected. Flaking paint was observed on several walls. The Classroom appeared to be clean and well maintained. Housekeeping appeared to be satisfactory.

Classroom 107 (Autism Room)

Two (2) wall-mounted fan coil units were observed in the classroom. One (1) wall-mounted fan coil unit was operating at the time of the inspection and was emitting warm air. No mold growth nor notable odors were detected. The ceiling-mounted air supply grills had visible dust accumulations. The classroom appeared to be clean and well maintained.

Classroom 103

Numerous water-stained ceiling tiles were observed in the classroom. No signs of suspect mold growth were observed in the classroom. Furthermore, no odors were detected. One (1) wall-mounted fan coil unit was operating and was emitting warm air at the time of the inspection. Several missing ceiling tiles were also observed. The ceiling-mounted air supply grills contained dust accumulations. The classroom appeared to be clean and well maintained.

Conference Room 5

A ceiling-mounted air conditioning unit was observed. This unit was not operating at the time of the inspection. Two (2) missing ceiling tiles were observed. Several cleaning agents were stored in the room and a mild chemical odor was detected upon entry. The ceiling-mounted supply air and return air grills appeared to be clean.

Media Room

The Media Room was equipped with window-mounted air conditioning units and wall-mounted fan coil units. No mold growth nor notable odors were detected. The return air and supply grills located on the walls of the Media Room appeared to have dust accumulations. Numerous containers and pots with live plants were observed throughout the media center. Housekeeping appeared to be satisfactory.

Multipurpose Room

No signs of ongoing water-intrusion problems or suspect mold growth were observed in the multipurpose room. Furthermore, no notable odors were detected. The wall-mounted return air grills appeared to have dust accumulations. The ceiling mounted supply grills also had visible dust accumulations. Ceiling tiles with minor water stains were also observed in the multipurpose room.

Classroom 219

A wall-mounted fan coil unit was observed in the classroom. This unit was operating at the time of the inspection and was emitting warm air. No suspect mold growth nor notable odors were detected. The air supply grills located on the ceiling appeared to contain dust accumulations. The classroom appeared to be clean and well maintained.

Classroom 224 (Music Room)

No suspect mold growth nor notable odors were detected. One (1) wall-mounted fan coil unit was operating and was emitting warm air at the time of the inspection. The classroom appeared to be clean and well maintained.

Classroom 205

No suspect mold growth nor notable odors were detected. One (1) wall-mounted fan coil unit was operating and was emitting warm air at the time of the inspection. The air supply grills of this fan coil unit had debris accumulation. The classroom appeared to be clean and well maintained.

Classroom 209

No suspect mold growth nor notable odors were detected. One (1) wall-mounted fan coil unit was operating and was emitting warm air at the time of the inspection. The classroom appeared to be clean and well maintained.

Principals' Office

No suspect mold growth nor notable odors were detected. One (1) wall-mounted fan coil unit was observed in the office. This unit was not operating at the time of the inspection. A minor water stain was observed around the perimeter of the ceiling-mounted air supply grill. The office appeared to be clean and well maintained.

Comfort Parameter Air Testing

During the IAQ assessment, Tidewater obtained temperature (T), relative humidity (RH), carbon dioxide (CO_2), and carbon monoxide (CO) measurements within select locations 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 an "outdoors background" [Exterior] measurement 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 January 27, 2021 ranged between 67.2°F and 75.6°F. The background temperature outside the building was

57.0°F. The temperature levels recorded within most areas monitored were within the temperature standard of 68.0°F and 74.5°F recommended by ASHRAE for winter months. The temperature level in Room 109 was marginally below the lower temperature standard of 68.0°F recommended by ASHRAE for winter months. Most areas inspected were vacant at the time of the inspection. Indoor temperature levels fluctuate with the number of occupants present within the work area.

Per the same ASHRAE standard, a maximum 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 January 27, 2021 ranged between 22.9% and 39.6%. The background relative humidity level outside the building was 35.5%. 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 January 27, 2021 ranged between 447 ppm and 791 ppm. The background CO_2 level outside the building was 488 ppm. The CO_2 levels within all interior locations assessed did not exceed 700 ppm above the outdoor background CO_2 level of 488 ppm.

The CO levels in all areas assessed on January 27, 2021 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 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 exterior sample near 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 0.000 mg/m^3 and 0.042 mg/m^3. The average PM10 dust concentration in the background sample obtained outside the building was 0.004 mg/m^3. The PM10 concentrations in 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 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 to collect a total sample volume of 75.0 liters of air. Tidewater also obtained an outdoor background sample 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 identified in the outdoors environment, or the presence of large numbers of different types of spores identified in indoor versus the outdoor environments, may indicate contamination and potential indoor air quality problems.

The total mold spore counts in all assessed areas of the school ranged between 320 spores/m^3 and 31,190 spores/m^3. The total mold spore counts in the background sample obtained outdoors was 860 spores/m^3. The total mold spore concentrations in the samples obtained from Classroom 107 (sample # KMS-2), Classroom 103 (sample # KMS-3), Classroom 205 (sample # KMS-8), Classroom 209 (sample # KMS-9) and Principal's Office (sample # KMS 10) were (1.4 X – 37 X) higher than the total mold spore concentration obtained in the background sample (sample # KMS-BG.) The significantly high concentration of total mold spores detected in these samples may indicate the presence of a potential indoor source(s) of mold in these areas.

The concentration *Aspergillus/ Penicillium* spores detected in the above-mentioned areas were also significantly higher than the concentration of A*spergillus/ Penicillium* spores detected in the background sample. 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.

The areas with elevated mold spores were re-sampled on February 27, 2021 following cleanup activities. The results indicated that the total mold spore concentrations in all interior locations samples were below the background concentration. The results did not indicate elevated levels of airborne total fungal spores in these interior locations sampled.

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

- The follow issues were identified during the visual inspections:
  - Classroom 109: A water-stained ceiling with visible suspect surface mold was observed above the fan coil unit. Flaking paint was observed on several walls.
  - Classroom 107 (Autism Room): The ceiling-mounted air supply grills had dust accumulations.
  - Classroom 103: Several water-stained ceiling tiles and several missing ceiling tiles were observed. The ceiling-mounted air supply grills had dust accumulations.
  - Conference Room 5: Two (2) missing ceiling tiles were observed. A mild chemical odor was detected form the conference room.
  - Media Room: The return air and supply grills located on the walls of the Media Room appeared to have dust accumulations
  - Multipurpose Room: The wall-mounted return air grills and ceiling mounted supply grills also contained dust accumulations. Ceiling tiles with minor water stains were also observed in the multipurpose room.
  - Classroom 219**:** The air supply grills located on the ceiling appeared to contain dust accumulations
  - Classroom 205: Access debris accumulation was noted on the air supply grills of the fan coil unit.
- The temperature level in Room 109 was marginally below the lower temperature standard of 68.0°F recommended by ASHRAE 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:

- Investigate the drop ceiling above the water-stained ceiling tiles in Classroom 109, Classroom 103, and Multipurpose Room for any ongoing water leaks or condensation problems. If any ongoing moisture problems are detected, take immediate action to repair them. Remove the water-stained ceiling tiles in these areas and replace with new ceiling tiles.
- Replace all missing ceiling tiles in Classroom 103 and Conference Room 5.

- Appropriate steps should be taken to remediate the water-stained ceiling tiles with visible suspect surface mold in Classroom 109. Sanitize the surrounding area including the ceiling grid with a commercially available (EPA approved) fungicide to mitigate existing fungal spores prior to installing new ceiling tiles.
- The following areas should be cleaned with a commercially available (EPA approved) disinfectant on a routine basis to remove dust and grime buildup.
  - The ceiling-mounted air supply grills in Classroom 107 (Autism Room);
  - The ceiling-mounted air supply grills in Classroom 103.
  - The return air and supply grills located on the walls of the Media Room.
  - The wall-mounted return air grills and ceiling mounted supply grills in Multi-purpose room.
  - The ceiling-mounted air supply grills in Classroom 219.
- 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 and common areas before the school re-opens.
- 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.

Qualifications

Tidewater endeavored to investigate existing conditions in select areas of Kenmoor Middle School located at 2500 Kenmoor Drive, in Landover, Maryland as they pertain to indoor air quality and mold contamination. Our conclusions and recommendations are based on 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 George's 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 Kenmoor Middle School				
Location	**Temperature (°F)**	**Carbon Dioxide (ppm)**	**Relative Humidity (%)**	**Carbon Monoxide (ppm)**
January 27, 2021				
Classroom 109	**67.2**	480	29.5	0.1
Classroom 107	70.6	473	28.9	0.0
Classroom 103	68.5	465	30.8	0.0
Conference Room 5	67.7	462	39.6	0.0
Media Center	72.0	791	30.2	0.0
Multipurpose Room	75.6	480	26.8	0.0
Classroom 219	70.5	447	22.9	0.0
Classroom 224 (Music Room)	70.9	496	25.4	0.0
Classroom 205	70.2	458	34.0	0.0
Classroom 209	68.5	462	26.8	0.0
Principal's Office	70.0	547	32.0	0.0
Background (Outdoors)	58.0	488	35.5	0.2

*Highlighted Areas indicate locations with temperature levels 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) Kenmoor Middle School	
Location	**Particulate Matter (PM10)** **Concentration (mg/m^3)**
January 27, 2021	
Classroom 109	0.038
Classroom 107	0.004
Classroom 103	0.001
Conference Room 5	0.004
Media Center	0.002
Multipurpose Room	0.003
Classroom 219	0.003
Classroom 224 (Music Room)	0.002
Classroom 205	0.002
Classroom 209	0.006
Principal's Office	0.003
Background (Outdoors)	0.003

Table 3: Spore Trap Sampling Results Kenmoor Middle School				
January 27, 2021				
Sample Number	**Sample Location**	**Sample Volume (L)**	***Aspergillus Penicillium* Concentration (Counts/m^3)**	**Total Fungi Concentration (Counts/m^3)**
KMS-1	Classroom 109	75.0	200	320
KMS-2	Classroom 107	75.0	**7,390**	**9,130**
KMS-3	Classroom 103	75.0	**2,500**	**2,800**
KMS-4	Media Center	75.0	100	960
KMS-5	Multipurpose Room	75.0	300	950
KMS-6	Classroom 219	75.0	200	460
KMS-7	Classroom 224 (Music Room)	75.0	300	500
KMS-8	Classroom 205	75.0	**820**	**1,220**
KMS-9	Classroom 209	75.0	**29,800**	**31,190**
KMS-10	Principal's Office	75.0	**3,400**	**6,000**
KMS-BG	Background	75.0	80	860

*Highlighted areas indicate locations with a significantly high concentration of *Aspergillus/ peniciilum* spores and Total mold spores when compared with the background sample.

Table 3: Spore Trap Sampling Results Kenmoor Middle School				
February 27, 2021				
Sample Number	**Sample Location**	**Sample Volume (L)**	***Aspergillus Penicillium* Concentration (Counts/m^3)**	**Total Fungi Concentration (Counts/m^3)**
KMS-1	Principal's Office	75.0	-	100
KMS-2	Classroom 209	75.0	400	400
KMS-3	Classroom 205	75.0	100	220
KMS-4	Classroom 103	75.0	550	620
KMS-5	Classroom 107	75.0	100	140
KMS-BG	Background	75.0	-	1,940

APPENDIX B

LABORATORY REPORTS AND CHAIN OF CUSTODY FORMS

EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077
Tel/Fax: (800) 220-3675 / (856) 786-0262
http://www.EMSL.com / cinnmicrolab@emsl.com

EMSL Order: 372101484
Customer ID: TIDE50
Customer PO:
Project ID:

Attention: Skanda Abeyeskere
Tidewater, Inc.
6625 Selnick Drive
Suite A
Elkridge, MD 21075
Project: Kenmoor Middle School

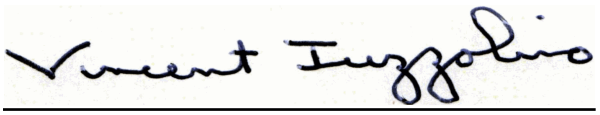
Phone: (410) 540-8700
Fax: (410) 997-8713
Collected Date: 01/27/2021
Received Date: 02/01/2021
Analyzed Date: 02/03/2021

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

Lab Sample Number:	372101484-0001			372101484-0002			372101484-0003		
Client Sample ID:	KMS-1			KMS-2			KMS-3		
Volume (L):	75			75			75		
Sample Location:	Room 109			Autism 107			Room 103		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium	5	200	62.5	180	7390	80.9	61	2500	89.3
Basidiospores	1	40	12.5	39	1600	17.5	4	200	7.1
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	2	80	25	3	100	1.1	3	100	3.6
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	1	40	0.4	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Total Fungi	**8**	**320**	**100**	**223**	**9130**	**100**	**68**	**2800**	**100**
Hyphal Fragment	-	-	-	4	200	-	1	40	-
Insect Fragment	-	-	-	1*	10*	-	-	-	-
Pollen	-	-	-	-	-	-	1	40	-
Analyt. Sensitivity 600x	-	41	-	-	41	-	-	41	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	2	-	-	2	-	-	2	-
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.



Vincent Iuzzolino, M.S., Laboratory Director
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. Cinnaminson, NJ AIHA-LAP, LLC-EMLAP Accredited #100194

Initial report from: 02/03/2021 11:32 AM

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

EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077
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Project: Kenmoor Middle School

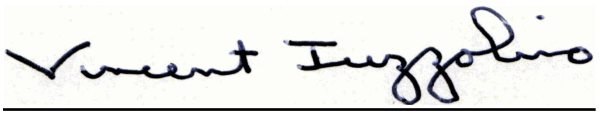
Phone: (410) 540-8700
Fax: (410) 997-8713
Collected Date: 01/27/2021
Received Date: 02/01/2021
Analyzed Date: 02/03/2021

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

Lab Sample Number:	372101484-0004			372101484-0005			372101484-0006		
Client Sample ID:	KMS-4			KMS-5			KMS-6		
Volume (L):	75			75			75		
Sample Location:	Media Center			Multipurpose Room			Room 219		
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	8.7
Aspergillus/Penicillium	3	100	10.4	7	300	31.6	5	200	43.5
Basidiospores	16	660	68.8	10	410	43.2	2	80	17.4
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	4	200	20.8	4	200	21.1	3	100	21.7
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	1	40	8.7
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	1	40	4.2	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Total Fungi	**23**	**960**	**100**	**22**	**950**	**100**	**12**	**460**	**100**
Hyphal Fragment	1	40	-	2	80	-	1	40	-
Insect Fragment	-	-	-	1	40	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	41	-	-	41	-	-	41	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	2	-	-	2	-	-	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.



Vincent Iuzzolino, M.S., Laboratory Director
or other Approved Signatory

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Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ AIHA-LAP, LLC-EMLAP Accredited #100194

Initial report from: 02/03/2021 11:32 AM

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

EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077
Tel/Fax: (800) 220-3675 / (856) 786-0262
http://www.EMSL.com / cinnmicrolab@emsl.com

EMSL Order: 372101484
Customer ID: TIDE50
Customer PO:
Project ID:

Attention: Skanda Abeyeskere
Tidewater, Inc.
6625 Selnick Drive
Suite A
Elkridge, MD 21075
Project: Kenmoor Middle School

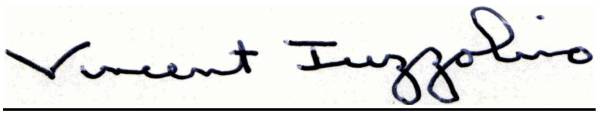
Phone: (410) 540-8700
Fax: (410) 997-8713
Collected Date: 01/27/2021
Received Date: 02/01/2021
Analyzed Date: 02/03/2021

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

Lab Sample Number:	372101484-0007			372101484-0008			372101484-0009		
Client Sample ID:	KMS-7			KMS-8			KMS-9		
Volume (L):	75			75			75		
Sample Location:	Room 224			Room 205			Room 209		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	2	80	0.3
Aspergillus/Penicillium	8	300	60	20	820	67.2	726	29800	95.5
Basidiospores	3	100	20	8	300	24.6	18	740	2.4
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	3	100	20	-	-	-	13	530	1.7
Curvularia	-	-	-	3	100	8.2	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	1	40	0.1
Zygomycetes	-	-	-	-	-	-	-	-	-
Total Fungi	**14**	**500**	**100**	**31**	**1220**	**100**	**760**	**31190**	**100**
Hyphal Fragment	3	100	-	2	80	-	5	200	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	1	40	-	-	-	-
Analyt. Sensitivity 600x	-	41	-	-	41	-	-	41	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	2	-	-	1	-	-	2	-
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.



Vincent Iuzzolino, M.S., Laboratory Director
or other Approved Signatory

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Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ AIHA-LAP, LLC-EMLAP Accredited #100194

Initial report from: 02/03/2021 11:32 AM

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

EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077
Tel/Fax: (800) 220-3675 / (856) 786-0262
http://www.EMSL.com / cinnmicrolab@emsl.com

EMSL Order: 372101484
Customer ID: TIDE50
Customer PO:
Project ID:

Attention: Skanda Abeyeskere
Tidewater, Inc.
6625 Selnick Drive
Suite A
Elkridge, MD 21075
Project: Kenmoor Middle School

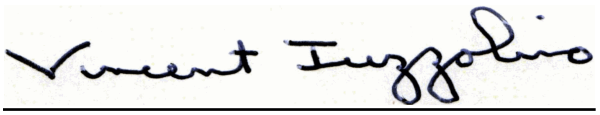
Phone: (410) 540-8700
Fax: (410) 997-8713
Collected Date: 01/27/2021
Received Date: 02/01/2021
Analyzed Date: 02/03/2021

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

Lab Sample Number:	372101484-0010			372101484-0011		
Client Sample ID:	KMS-10			KMS-BG		
Volume (L):	75			75		
Sample Location:	Principal's Office			Background		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-
Aspergillus/Penicillium	82	3400	56.7	2	80	9.3
Basidiospores	37	1500	25	16	660	76.7
Bipolaris++	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-
Cladosporium	26	1100	18.3	1	40	4.7
Curvularia	-	-	-	-	-	-
Epicoccum	-	-	-	2	80	9.3
Fusarium	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-
Rust	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-
Total Fungi	**145**	**6000**	**100**	**21**	**860**	**100**
Hyphal Fragment	10	410	-	-	-	-
Insect Fragment	-	-	-	-	-	-
Pollen	1*	10*	-	-	-	-
Analyt. Sensitivity 600x	-	41	-	-	41	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	2	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-
Background (1-5)	-	2	-	-	1	-

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

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



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or other Approved Signatory

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Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ AIHA-LAP, LLC-EMLAP Accredited #100194

Initial report from: 02/03/2021 11:32 AM

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

OrderID: 372101484

Microbiology Chain of Custody

EMSL Order Number (*Lab Use Only*): 372101484

RECEIVED
EMSL
CINNAMINSON, NJ
2021 FEB 1 A 11:23

PHONE:
FAX:

Company: Tidewater Inc	**EMSL-Bill to:** ☐ Different ☐ Same If Bill to is Different note instructions in Comments** *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: Kenmoor Middle School	**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
- **M049** BioSIS
- **M030** Micro 5
- **M173** Allegro M2
- **M003** Burkard
- **M174** MoldSnap
- **M004** Allergenco
- **M043** Cyclex
- **M176** Relle Smart
- **M032** Allergenco-D
- **M002** Cyclex-d
- **M130** Via-Cell
- **M172** Versa Trap

Other Microbiology Test Codes

- **M041** Fungal Direct Examination
- **M005** Viable Fungi ID and Count
- **M006** Viable Fungi ID and Count (Speciation)
- **M007** Culturable Fungi
- **M008** Culturable Fungi (Speciation)
- **M009** Gram Stain Culturable Bacteria
- **M010** Bacterial Count and ID – 3 Most Prominent
- **M011** Bacterial Count and ID – 5 Most Prominent
- **M013** Sewage Contamination in Buildings
- **M014** Endotoxin Analysis
- **M015** Heterotrophic Plate Count
- **M180** Real Time Q-PCR-ERMI 36 Panel
- **M018** Total Coliform (Membrane Filtration)
- **M020** Fecal *Streptococcus* (Membrane Filtration)
- **M210-215** *Legionella* Detection
- **M026** Recreational Water Screen
- **M027** Mycotoxin Analysis
- **M029** *Enterococci*
- **M019** Fecal Coliform
- **M133** MRSA Analysis
- **M028** *Cryptococcus neoformans* Detection
- **M120** *Histoplasma capsulatum* Detection
- **M033-39** Allergen Testing
- **M044** Group Allergen (Cat, Dog, Cockroach, Dustmites)
- **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
KMS-1	Room 109	AIR	M032	75.0L	01/27/2021
KMS-2	Autism # 107	"	"	"	"
KMS-3	Room 103				
KMS-4	Media Center				
KMS-5	Multipurpose Rm				
KMS-6	Room 219				
KMS-7	Room 224				
KMS-8	Room 205				
KMS-9	Room 209	"	"	"	"

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

Relinquished (Client): Skanda Abeyesekere **Date:** 01/27/21 **Time:** 12:00pm

Received (Client): L. Kenneth Prep Box **Date:** 1/29/21 **Time:** 2:50 pm

Comments: Chain FX 2/1/21 9b

Microbiology Chain of Custody

EMSL Order Number (*Lab Use Only*): 372101484

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
KMS-10	Principal's office	Air	M032	750	01/27/21
KMS-BG	Background	Air	M032	750	01/27/21

****Comments/Special Instructions:**

Page 2 of 2 pages

EMSL Analytical, Inc.

5221 Militia Hill Road Plymouth Meeting, PA 19462
Tel/Fax: (610) 828-3102 / (610) 828-3122
http://www.EMSL.com / plymouthmeetinglab@emsl.com

EMSL Order: 182100739
Customer ID: TIDE50
Customer PO:
Project ID:

Attention: Skanda Abeyeskere
Tidewater, Inc.
6625 Selnick Drive
Suite A
Elkridge, MD 21075
Project: PGCPS Kenmoore Middle School

Phone: (410) 540-8700
Fax: (410) 997-8713
Collected Date: 02/27/2021
Received Date: 03/02/2021
Analyzed Date: 03/03/2021

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

Lab Sample Number:	182100739-0001			182100739-0002			182100739-0003		
Client Sample ID:	KMS-1			KMS-3			KMS-2		
Volume (L):	75			75			75		
Sample Location:	Principal's Office			Room 205			Room 209		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium	-	-	-	3	100	45.5	9	400	100
Basidiospores	3	100	100	2	80	36.4	-	-	-
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	1	40	18.2	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Total Fungi	**3**	**100**	**100**	**6**	**220**	**100**	**9**	**400**	**100**
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	1*	10*	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	42	-	-	42	-	-	42	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	2	-	-	1	-	-	2	-
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.

Kevin Ream, Laboratory Manager
or other Approved Signatory

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Samples analyzed by EMSL Analytical, Inc. Plymouth Meeting, PA AIHA-LAP, LLC-EMLAP Accredited #178659

Initial report from: 03/03/2021 11:41 AM

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

EMSL Analytical, Inc.

5221 Militia Hill Road Plymouth Meeting, PA 19462
Tel/Fax: (610) 828-3102 / (610) 828-3122
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Project: PGCPS Kenmoore Middle School

Phone: (410) 540-8700
Fax: (410) 997-8713
Collected Date: 02/27/2021
Received Date: 03/02/2021
Analyzed Date: 03/03/2021

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

Lab Sample Number:	182100739-0004			182100739-0005			182100739-0006		
Client Sample ID:	KMS-4			KMS-5			KMS-BG		
Volume (L):	75			75			75		
Sample Location:	Room 103			Room 107			Background		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	20	840	43.3
Aspergillus/Penicillium	13	550	88.7	3	100	71.4	-	-	-
Basidiospores	1	40	6.5	1	40	28.6	27	1100	56.7
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	2*	30*	4.8	-	-	-	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Total Fungi	**16**	**620**	**100**	**4**	**140**	**100**	**47**	**1940**	**100**
Hyphal Fragment	-	-	-	-	-	-	1	40	-
Insect Fragment	1	40	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	42	-	-	42	-	-	42	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	2	-	-	2	-	-	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.

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Kevin Ream, Laboratory Manager
or other Approved Signatory

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Samples analyzed by EMSL Analytical, Inc. Plymouth Meeting, PA AIHA-LAP, LLC-EMLAP Accredited #178659

Initial report from: 03/03/2021 11:41 AM

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

OrderID: 182100739

Microbiology Chain of Custody

EMSL Order Number (Lab Use Only):

182100739

PHONE
FAX

Company: Tidewater Inc.

EMSL-Bill to: ☐ Different ☐ Same
If Bill to is Different note instructions in Comments**

Street: 6625 Selnick Drive, Suite A

Third Party Billing requires written authorization from third party

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 Kenmoor ~~MS~~ Middle School **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:** 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
KMS-1	principal's office ✓	Air	M032	75.0	02/27/21
KMS-3	Room 205 ✓				
KMS-2	Room 209 ✓				
KMS-4	Room 103				
KMS-5	Room 107				
KMS-BG	Background ✓				

Client Sample # (s): 6 **Total # of Samples:** 6

Relinquished (Client): Skanda Abeyesekere **Date:** 02/27/21 **Time:** 12:00 pm

Received (Client): [signature] **Date:** 3.2.21 **Time:** 1030

Comments:

EMSL Fedex (NO 4/4)

7842 3037 2122

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

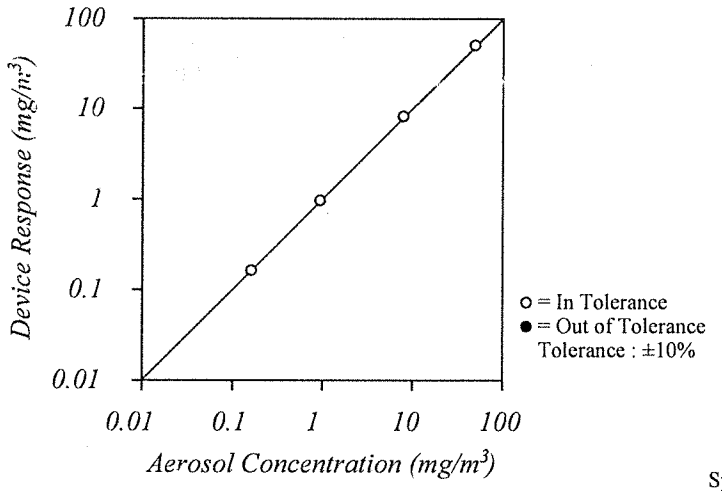
TSI Incorporated, 500 Cardigan Road, Shoreview, MN 55126 USA
Tel: 1-800-874-2811 1-651-490-2811 Fax: 1-651-490-3824 http://www.tsi.com

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

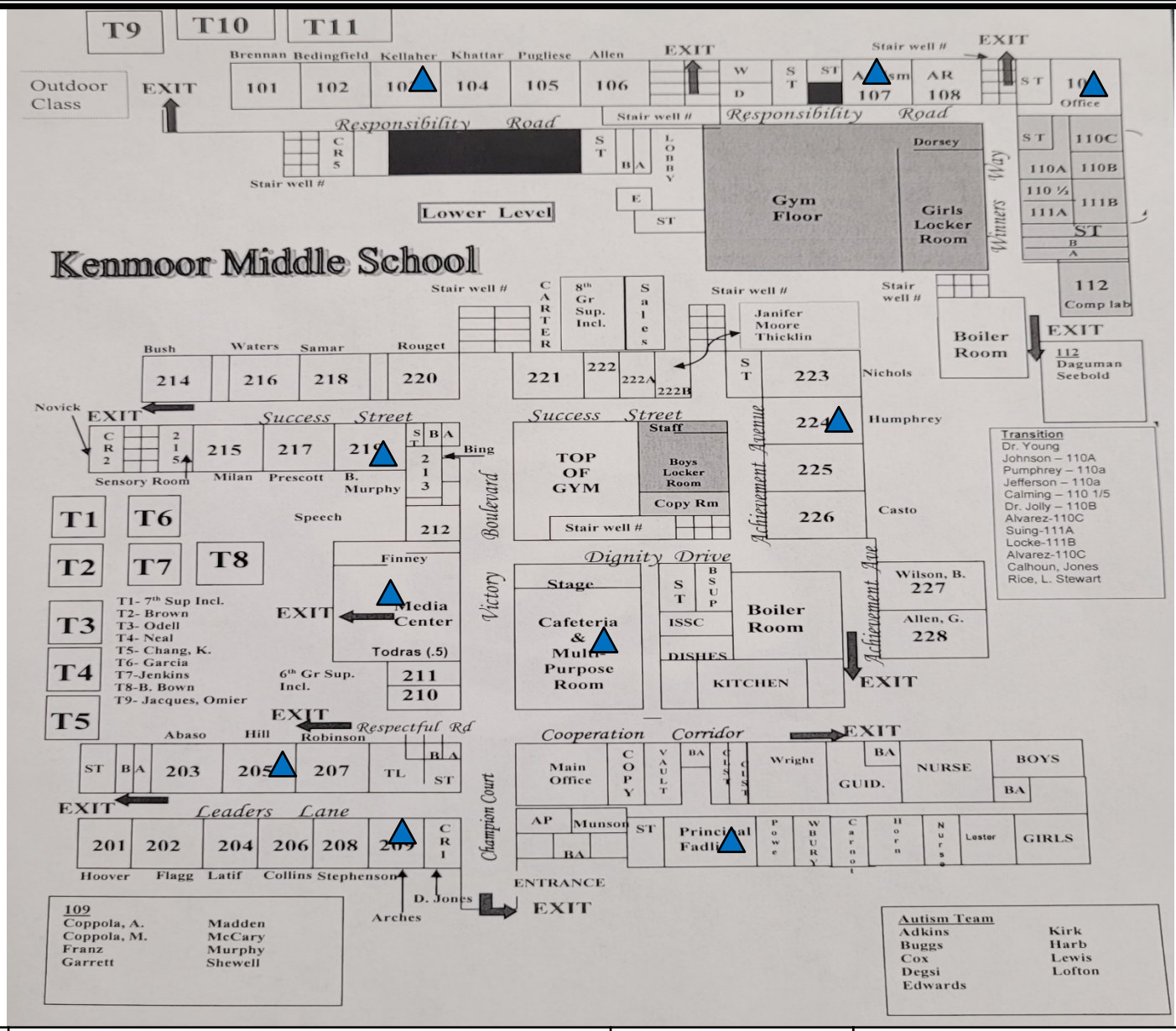
VALID SO LONG AS THIS CREDENTIAL IS RENEWED ACCORDING TO SCHEDULE AND IS NOT OTHERWISE REVOKED.

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** **Kenmoor Middle School** **Floor Plan with Sampling Locations**	Scale: N/A Project #: 5419-048 Date: January 27, 2021	**General Notes** ▲ = Sample Location