Soil and Land Use Technology, Inc.
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Telephone: (301) 595-3783
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March 8, 2021

Prince George's County Public Schools
Environmental Safety Office
13306 Old Marlboro Pike
Upper Marlboro, MD 20772

Attention: Alex Baylor
alex.baylor@pgcps.org

Subject: Indoor Air Quality Survey
Whitehall Elementary School
3901 Woodhaven Lane
Bowie, MD 20715

Mr. Baylor:

On December 3, 2020 and February 20, 2021 a Soil and Land Use Technology, Inc. (SaLUT) Industrial Hygienist conducted an indoor air quality (IAQ) evaluation at Whitehall Elementary School, a property maintained by Prince George's County Public Schools (PGCPS) located at 3901 Woodhaven Lane, Bowie, MD 20715. The inspection was performed in accordance with PGCPS contract number IFB 022-19.

Corrective Measures Implemented by PGPCS

On February 20, 2021, as part of this assessment, SaLUT conducted the IAQ evaluation, including IAQ instrumentation screening, and observations in affected areas. Prior to this assessment, in response to an initial assessment, PGPCS implemented the following corrective measures in Hallway by Classroom 128 and Hallway by Classroom 202:

1. Identify and clearly assess the affected area;
2. Remove and replace moldy and stained ceiling tiles;
3. Thorough cleanup throughout the affected areas;
4. Operate air scrubbers with HEPA filters in the impacted areas;
5. Monitor and evaluate clean-up operation to determine effectiveness.

Methodology

The IAQ evaluation conducted by SaLUT included a visual assessment, IAQ instrumentation screening, and a collection of interior air samples for mold in representative locations throughout the building. Additionally, one building exterior environmental air sample was taken for comparison.

Air-borne fungal spore samples were collected on *Air-O-Cell* cassettes using a Buck BioAire calibrated pump. The air samples were taken between three and five feet from the ground. In tandem with collecting mold samples, real-time readings for carbon dioxide, carbon monoxide, temperature and relative humidity were collected using a Fluke 975 Air Meter in representative areas within the facility.

The fungal spore air samples were delivered to EMSL Analytical, Inc. of Beltsville, Maryland for analysis. Fungal spores and particulates in air samples were analyzed by Optical Microscopy (methods EMSL 05-TP-003 and ASTM D7391). The sample chain-of-custody and laboratory reports are attached.

Observations

The table below summarizes the main observations from the IAQ survey at Whitehall Elementary School, visited on December 3, 2020, and February 20, 2021, respectively .

Table 1-Observations

Location	Summary of Observations 12-3-2020
In front of Main Entrance	2'x4' ceiling tiles and 2'x2' tile floor; No visual signs of microbial growth; Mild odor; Stained ceiling tiles; No visible dust on floor/other furniture surfaces; No visible dust around ventilator; Central AC.
Between Classroom 108 and 017	2'x4' ceiling tiles and 2'x 2' tile floor; Stained ceiling tiles; No visual signs of microbial growth, and no odor; No visible dust on floor/other furniture surfaces; No visible dust around ventilator; Central AC.
In front of Classroom 103	2'x4' ceiling tiles and 2'x 2' tile floor; No visual signs of microbial growth, and no odor; No visible dust on floor/other furniture surfaces; No visible dust around ventilator; Central AC.
Between Classrooms 202 and 211	2'x4' ceiling tiles and 2'x 2' tile floor; No visual signs of microbial growth, and no odor; No visible dust on floor/other furniture surfaces; No visible dust around ventilator; Central AC.
Between Classrooms 205 and 206	2'x4' ceiling tiles and 2'x 2' tile floor; No visual signs of microbial growth, and no odor; No visible dust on floor/other furniture surfaces; No visible dust around ventilator; Central AC.

Table 1.2-Observations

Location	Summary of Observations 02-20-2021
Hallway by Classroom 128	2'x4' ceiling tiles and 2'x2' tile floor; Stained ceiling tiles were replaced.
Hallway by Classroom 202	2'x4' ceiling tiles and 2'x 2' tile floor; Stained ceiling tiles were replaced.
Outside Exterior EV Sample	Windy

Measurements of Indoor Environmental Quality Parameters

Table 2 depicts a summary of average measurements of comfort.

Temperature

The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) have published recommendations for year round acceptable temperatures in Standard 55-2010 *Thermal Environmental Conditions for Human Occupancy*. The winter comfort range is 20 to 24°C (68 to 75°F) and 23 to 26°C (73 to 79°F) is the summer comfort range. The temperature readings were within the ASHRAE recommended ranges in the representative spaces.

Relative Humidity (RH)

RH is a key factor for mold growth. Mold has the potential of growing on suitable surfaces with humidity levels above 60%. ASHRAE Standard 62.1-2010 *Ventilation for Acceptable Indoor Air Quality* recommends a maximum indoor RH of 65% to preclude the likelihood of condensation on cool surfaces encouraging mold growth. The RH readings were within the ASHRAE recommended ranges in the representative areas.

Carbon Dioxide (CO_2)

Under conditions of maximum occupancy, ASHRAE Standard 62.1-2010, Appendix C, infers that the acceptable CO_2 upper limit is the prevailing outdoor CO_2 concentration plus 700 parts per million (ppm). On December 03, 2021, the outdoor (building exterior) CO_2 concentration was approximately 545 ppm therefore indoor concentrations should not exceed approximately 1,245 ppm (700 + 545). The maximum average interior CO_2 concentration detected was 649 ppm in front of Classroom 103, a range within the ASHRAE recommendations, per Table 2.1 below.

Carbon Monoxide (CO)

CO is a colorless and odorless gas that is produced by the incomplete combustion of carbon containing fuels. Oil, gasoline, diesel fuels, wood, coke, and coal are major sources of CO. All registered CO concentrations were below the EPA National Ambient Air Quality Standard (NAAQS) of 9 ppm, per Table 2.1 below.

Table 2.1: Whitehall Elementary School, Instrumental Screening Levels December 3, 2020 (7:30 AM-9:30 AM)

Sample Location	Temp ^{0}F	RH%	CO ppm	CO_2 ppm
Standards	ASHRAE 68 to 75°F*	ASHRAE <65%	NAAQS 9	ASHRAE 1,245
In front of Main Entrance	66.2	30.1	0	597
Between Classrooms 10 and 017	63.5	33.0	0	589
In front of Classroom 103	63.6	32.0	0	649
Between Classrooms 202 and 211	68.9	27.2	0	627
Between Classrooms 205 and 206	65.3	28.9	0	599
Outside Exterior EV Sample	49.1	42.7	0	545

PM – Particulate Matter size
°F – Degrees Fahrenheit
CO – Carbon Monoxide
ppm – parts per million
$\mu g/m^3$ – micrograms per cubic meter
RH% - % Relative Humidity
CO_2 – Carbon Dioxide
* - Winter Comfort Range

Table 2.2: Whitehall Elementary School, Instrumental Screening Levels February 20, 2021 (7:30 AM-9:30 AM)

Sample Location	Temp ^{0}F	RH%	CO ppm	CO_2 ppm
Standards	ASHRAE 68 to 75°F*	ASHRAE <65%	NAAQS 9	ASHRAE 1,171
Hallway by Classroom 128	55.4	28.0	0	493
Hallway by Classroom 202	57.2	26.0	0	520
Outside Exterior EV Sample	36.5	35.1	0	471

PM – Particulate Matter size
°F – Degrees Fahrenheit
CO – Carbon Monoxide
ppm – parts per million
$\mu g/m^3$ – micrograms per cubic meter
RH% - % Relative Humidity
CO_2 – Carbon Dioxide
* - Winter Comfort Range

Mold-in-Air Samples

There are no definitive regulations or standardized guidelines for addressing airborne mold in an indoor setting. If building systems (ventilation, envelope) are functioning properly, the indoor population profile should mimic what is encountered outdoors and the concentrations should be below the outdoor (building exterior) environmental sample levels.

Table 3.1: Summarizes airborne mold spore sampling results and locations. On December 3, 2020, total mold counts in representative samples (spore count/m^3 of air) in all the areas inspected were lower than the outdoor concentrations with the exception of in front of Main Entrance, between Classrooms 17 and 108, between Classrooms 202 and 211, and between Classrooms 205 and 206. Laboratory analysis follows this report (see attachment).

Table 3.2: Summarizes airborne mold spore sampling results and locations. On February 20, 2021, total mold counts in representative samples (spore count/m^3 of air) in all the areas inspected were lower than the outdoor concentrations with the exception of the Hallway by Classroom 128. Laboratory analysis follows this report (see attachment).

Table 3.1: Whitehall Elementary School - Measurements of Mold-in-Air Samples December 3, 2020 (7:30 AM-9:30 AM)

Spore Types	In front of Main Entrance	Between Classrooms 17 and 108	In front of Classroom 103	Between Classrooms 202 and 211
Alternaria (Ulocladium)	-	-	-	-
Ascospores	-	200	40	-
Aspergillus/Penicillium	80	300	-	300
Basidiospores	1,600	1,900	930	1,200
Bipolaris++	-	-	-	-
Chaetomium	-	-	-	-
Cladosporium	-	200	10*	40
Curvularia	-	-	-	-
Epicoccum	-	10*	-	-
Fusarium	-	-	-	-
Ganoderma	-	-	-	-
Myxomycetes++	-	40	-	40
Pithomyces++	-	200	-	-
Rust	-	10*	-	-
Scopulariopsis/Microascus	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-
Unidentifiable Spores	-	-	-	-
Zygomycetes	-	-	-	-
Nigrospora	-	-	-	-
Hyphal Fragment	-	40	-	-
Insect Fragment	-	-	-	-
Pollen	-	-	-	-
Total Fungi	**1,680**	**2,900**	**980**	**1,580**

* Spore Counts per cubic meter of air (Counts/m^3).
++Includes other spores with similar morphology.

Table 3.1: Whitehall Elementary School – Measurements of Mold-in-Air Samples continued December 3, 2020 (7:30 AM-9:30 AM)

Spore Types	Between Classroom 205 and 206	Outside Exterior EV Sample	Field Blank
Alternaria (Ulocladium)	-	-	-
Ascospores	300	-	-
Aspergillus/Penicillium	420	80	-
Basidiospores	510	890	-
Bipolaris++	-	-	-
Chaetomium	-	-	-
Cladosporium	-	40	-
Curvularia	-	-	-
Epicoccum	-	10*	-
Fusarium	-	-	-
Ganoderma	-	-	-
Myxomycetes++	40	-	-
Pithomyces++	-	-	-
Rust	-	-	-
Scopulariopsis/Microascus	-	-	-
Stachybotrys/Memnoniella	-	-	-
Unidentifiable Spores	-	-	-
Zygomycetes	-	-	-
Nigrospora	-	-	-
Hyphal Fragment	40	-	-
Insect Fragment	-	-	-
Pollen	-	-	-
Total Fungi	**1,310**	**1,020**	**No Trace**

*Spore Counts per cubic meter of air (Counts/m^3).
++Includes other spores with similar morphology.

Table 3.2: Whitehall Elementary School - Measurements of Mold-in-Air Samples February 20, 2021 (7:30 AM-9:30 AM)

Spore Types	Hallway By Classroom 128	Hallway By Classroom 202	Outside Exterior EV Sample	Field Blank
Alternaria (Ulocladium)	-	-	-	-
Ascospores	-	-	-	-
Aspergillus/Penicillium	400	100	90	-
Basidiospores	40	-	200	-
Bipolaris++	-	-	-	-
Chaetomium	-	-	-	-
Cladosporium	-	--	-	-
Curvularia	-	-	-	-
Epicoccum	-	-	-	-
Fusarium	-	-	-	--
Ganoderma	-	-	-	--
Myxomycetes++	-	-	-	-
Pithomyces++	-	-	-	-
Rust	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-
Unidentifiable Spores	-	-	-	-
Zygomycetes	-	-	-	-
Nigrospora	-	-	-	-
Hyphal Fragment	-	-	-	-
Insect Fragment	-	-	-	-
Pollen	-	-	-	-
Total Fungi	**440**	**100**	**290**	**No Trace**

* Spore Counts per cubic meter of air (Counts/m^3).
++Includes other spores with similar morphology.

Findings and Conclusions

The comfort parameters (i.e., temperature, RH, CO_2, and CO levels) in the representative areas conform to ASHRAE and/or NAAQS guidelines with the exception of the temperature. On December 3, 2020, total mold counts in representative area samples (spore count/m^3 of air) in all the areas inspected were lower than the outdoor concentrations, with the exception of in front of Main Entrance, between Classrooms 17 and 108, between Classrooms 202 and 211, and between Classrooms 205 and 206, indicating amplified mold growth.

On February 20, 2021, total mold counts in air samples (spore count/m^3 of air) in the cafeteria were significantly lower than the outdoor concentrations, indicating no amplified mold growth, with the exception of the Hallway by Classroom 128. However, Mold in air sample results did not indicate amplified mold growth in that area. Based on the observations, mold spore results, and the results of the indoor air quality parameters tested, the corrective actions implemented were determined to be effective.

Thank you for the opportunity to provide industrial hygiene services for PGCPS. If you have any questions, please contact me at 301.595.3783.

Sincerely,

Chaminda Jayatilake, PE, CIH, CSP, CHMM
Certified Industrial Hygienist
Soil and Land Use Technology Inc. (SaLUT)

Attachment
Attachment - Mold Spore Sample Analytical Results and Chain-of-Custody Forms

Attachment

Mold Spore Sample Analytical Results and Chain-of-Custody Forms

EMSL Analytical, Inc.

5221 Militia Hill Road Plymouth Meeting, PA 19462

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EMSL Order: 182003893
Customer ID: SALU50
Customer PO:
Project ID:

Attention: Indika Jayatilake
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Project: 19-035 - Whitehall ES

Phone: (301) 595-3783
Fax: (301) 595-3787
Collected Date:
Received Date: 12/03/2020 01:48 PM
Analyzed Date: 12/07/2020

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

Lab Sample Number:	182003893-0001			182003893-0002			182003893-0003		
Client Sample ID:	S1			S2			S3		
Volume (L):	75			75			75		
Sample Location:	Infront of Main Entrance			Between CR 202 and 211			Between CR 205 and 206		
Spore Types	**Raw Count**	**Count/M³**	**% of Total**	**Raw Count**	**Count/M³**	**% of Total**	**Raw Count**	**Count/M³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	7	300	23.6
Aspergillus/Penicillium	2	80	4.8	6	300	19	10	420	33.1
Basidiospores	38	1600	95.2	28	1200	75.9	12	510	40.2
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	1	40	2.5	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	1	40	2.5	1	40	3.1
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Spegazzinia	-	-	-	-	-	-	-	-	-
Torula-like	-	-	-	-	-	-	-	-	-
Total Fungi	**40**	**1680**	**100**	**36**	**1580**	**100**	**30**	**1270**	**100**
Hyphal Fragment	-	-	-	-	-	-	1	40	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	42	-	-	42	-	-	42	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	1	-	-	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.

Kevin Ream, Laboratory Manager
or other Approved Signatory

Initial report from: 12/08/2020 09:21 AM

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

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Collected Date:
Received Date: 12/03/2020 01:48 PM
Analyzed Date: 12/07/2020

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

Lab Sample Number:	182003893-0004			182003893-0005			182003893-0006		
Client Sample ID:	S4			S5			S6		
Volume (L):	75			75			75		
Sample Location:	Between CR 017 and 108			Infront of CR 103			Outside		
Spore Types	**Raw Count**	**Count/M³**	**% of Total**	**Raw Count**	**Count/M³**	**% of Total**	**Raw Count**	**Count/M³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	4	200	7	1	40	4.1	-	-	-
Aspergillus/Penicillium	6	300	10.5	-	-	-	2	80	7.5
Basidiospores	46	1900	66.2	22	930	94.9	21	890	84
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	4	200	7	1*	10*	1	1	40	3.8
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	1*	10*	0.3	-	-	-	1*	10*	0.9
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	1	40	1.4	-	-	-	-	-	-
Pithomyces++	4	200	7	-	-	-	-	-	-
Rust	1*	10*	0.3	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Spegazzinia	1*	10*	0.3	-	-	-	-	-	-
Torula-like	-	-	-	-	-	-	1	40	3.8
Total Fungi	**68**	**2870**	**100**	**24**	**980**	**100**	**26**	**1060**	**100**
Hyphal Fragment	1	40	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	42	-	-	42	-	-	42	-
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.

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Collected Date:
Received Date: 12/03/2020 01:48 PM
Analyzed Date: 12/07/2020

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

Lab Sample Number:	**182003893-0007**		
Client Sample ID:	**S7**		
Volume (L):			
Sample Location:	**Field Blank**		
Spore Types	**Raw Count**	**Count/M³**	**% of Total**
Alternaria (Ulocladium)	-	-	-
Ascospores	-	-	-
Aspergillus/Penicillium	-	-	-
Basidiospores	-	-	-
Bipolaris++	-	-	-
Chaetomium	-	-	-
Cladosporium	-	-	-
Curvularia	-	-	-
Epicoccum	-	-	-
Fusarium	-	-	-
Ganoderma	-	-	-
Myxomycetes++	-	-	-
Pithomyces++	-	-	-
Rust	-	-	-
Scopulariopsis/Microascus	-	-	-
Stachybotrys/Memnoniella	-	-	-
Unidentifiable Spores	-	-	-
Zygomycetes	-	-	-
Spegazzinia	-	-	-
Torula-like	-	-	-
Total Fungi	**-**	**No Trace**	**-**
Hyphal Fragment	-	-	-
Insect Fragment	-	-	-
Pollen	-	-	-
Analyt. Sensitivity 600x	-	0	-
Analyt. Sensitivity 300x	-	0*	-
Skin Fragments (1-4)	-	-	-
Fibrous Particulate (1-4)	-	-	-
Background (1-5)	-	-	-

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

Kevin Ream, Laboratory Manager
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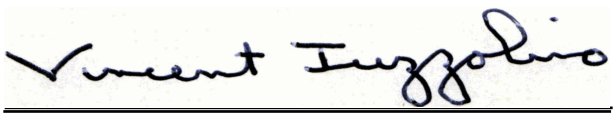
Collected Date: 02/20/2021
Received Date: 02/22/2021 11:00 AM
Analyzed Date: 02/25/2021

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

Lab Sample Number:	372102621-0001			372102621-0002			372102621-0003		
Client Sample ID:	31626257			31626255			31626262		
Volume (L):	75			75			75		
Sample Location:	Hallway By CR128			Hallway By CR 202			Outside Sample		
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	8	400	90.9	3	100	100	2	90	31
Basidiospores	1	40	9.1	-	-	-	4	200	69
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	-	-	-	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Total Fungi	**9**	**440**	**100**	**3**	**100**	**100**	**6**	**290**	**100**
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	44	-	-	44	-	-	44	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	2	-	-	3	-	-	2	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	1	-	-	2	-	-	1	-

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



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

Initial report from: 02/25/2021 02:03 PM

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: 372102621
Customer ID: SALU50
Customer PO:
Project ID:

Attention: Indika Jayatilake
SaLUT
1818 New York Avenue, NE
Suite 231
Washington, DC 20002

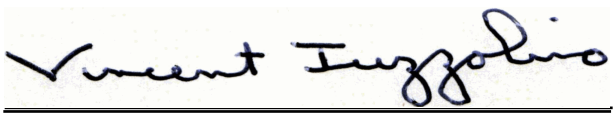
Phone: (301) 595-3783
Fax: (301) 595-3787
Collected Date: 02/20/2021
Received Date: 02/22/2021 11:00 AM
Analyzed Date: 02/25/2021

Project: PGPCS IAQ Reports 19-035 Whitehall Elementary School

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

Lab Sample Number:	**372102621-0004**		
Client Sample ID:	**31626365**		
Volume (L):			
Sample Location:	**Field Blank**		
Spore Types	**Raw Count**	**Count/M³**	**% of Total**
Alternaria (Ulocladium)	-	-	-
Ascospores	-	-	-
Aspergillus/Penicillium	-	-	-
Basidiospores	-	-	-
Bipolaris++	-	-	-
Chaetomium	-	-	-
Cladosporium	-	-	-
Curvularia	-	-	-
Epicoccum	-	-	-
Fusarium	-	-	-
Ganoderma	-	-	-
Myxomycetes++	-	-	-
Pithomyces++	-	-	-
Rust	-	-	-
Scopulariopsis/Microascus	-	-	-
Stachybotrys/Memnoniella	-	-	-
Unidentifiable Spores	-	-	-
Zygomycetes	-	-	-
Total Fungi	**-**	**No Trace**	**-**
Hyphal Fragment	-	-	-
Insect Fragment	-	-	-
Pollen	-	-	-
Analyt. Sensitivity 600x	-	0	-
Analyt. Sensitivity 300x	-	0*	-
Skin Fragments (1-4)	-	-	-
Fibrous Particulate (1-4)	-	-	-
Background (1-5)	-	-	-

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



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

Initial report from: 02/25/2021 02:03 PM

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

OrderID: 182003893

Microbiology Chain of Custody

EMSL Order Number *(Lab Use Only)*: **182003893**

EMSL ANALYTICAL, INC.
200 ROUTE 130 NORTH
CINNAMINSON, NJ 08077
PHONE: (800) 220-3675
FAX:(856) 786-0262

Company Name: Salut Inc	**EMSL-Bill to:** ☐ Same ☐ Different If Bill to is Different note instructions in Comments
Street: 1818 New York Ave NE Suite 231	*Third Party Billing requires written authorization from third party*
City: Washington — **State/Province:** DC	**Zip/Postal Code:** — **Country:**
Report To (Name): Indika Jayatilake	**Telephone #:**
Email Address: ijayatilake@salutinc.com	**Fax #:** — **Purchase Order:**
Project Name/Number: 19-035 - Whitehall ES	**Please Provide Results:** ☐ Fax ☐ Email

U.S. State Samples Taken: MD **Project Zip Code:** 20715 **Connecticut Samples:** ☐ Commercial ☐ Residential

Sterile, Sodium Thiosulfate Preserved Bottle Used: ☐ **Biocide Used in Source (specify):** ☐

Public Water Supply Samples: ☐ **Note: All results may automatically be reported to DOH if required by state.**

Turnaround Time (TAT) Options - Please Check

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

Microbiology Test Codes

M001 Air-O-Cell
M174 MoldSnap
M030 Micro 5
M032 Allergenco-D
M041 Fungal Direct Examination
M169 Pollen ID & Enumeration
M280 Dust Characterization Level-1
M281 Dust Characterization Level-2
M005 Viable Fungi- Air Samples (Genus ID & Count)
M006 Viable Fungi- Air Samples (Includes *Penicillium, Aspergillus, Cladosporium, Stachybotrys* Species ID & Count)
M007 Culturable fungi - Surface Samples (Genus ID & Count)
M008 Culturable fungi - Surface Samples (Includes *Penicillium, Aspergillus, Cladosporium, Stachybotrys* Species ID & Count)
M009 Bacteria Culture Gram Stain & Count
M010 Bacteria Count & ID - 3 Most Prominent
M011 Bacteria Count & ID - 5 Most Prominent

M012 *Pseudomonas aeruginosa* (P/A***)
M024 *Pseudomonas aeruginosa* (MFT*)
M015 Heterotrophic Plate Count
M017 Total Coliform & *E. coli* (Colilert P/A***)
M018 Total Coliform & *E. coli* (MFT*)
M114 Total Coliform & *E. coli* Enumeration (Colilert MPN**)
M019 Fecal Coliform (MFT*)
M020 Fecal *Streptococcus* (MFT*)
M029 *Enterococci* (MFT*)
M129 *Enterococci* (Enterolert P/A***)
M180 Real Time qPCR-ERMI 36 Panel
M025 Sewage Screen –Water (MFT*)

M115 Sewage Screen - Water (P/A***)
M116 Sewage Screen - Water (MPN**)
M117 Sewage Screen - Swab (P/A***)
M013 Sewage Screen - Swab (MFT*)
M133 *Methicillin-resistant Staph. aureus* (MRSA)
M031 Rapid-growing non-TB *Mycobacteria* Detection & Enumeration
M014 Endotoxin Analysis
M044 Group Allergen (Cat, Dog, Cockroach, Dust Mite)
Other See Analytical Price Guide
***Legionella* Analysis** Please use EMSL *Legionella* COC

*MFT= Membrane Filtration Technique
**MPN= Most Probable Number
***P/A= Presence/Absence

Name of Sampler: Sheral Dias **Signature of Sampler:** [signature]

Sample #	Sample Location/Description	Sample Type	Potable/ NonPotable (Only for Waters)	Test Code	Volume/ Area	Date/Time Collected	Temperature (°C) (Lab Use Only)
Example A1	Kitchen Sink/Tap	Water	☒ P ☐ NP	M017	100 mL	9/1/13 4:00 PM	
S1	Infront of Main entrance	Air	☐ P ☐ NP	M001	75 ml	12/02/12	
S2	between CR 202 and 211	"	☐ P ☐ NP	"	"	"	
S3	" " 205 and 206	"	☐ P ☐ NP	"	"	"	
S4	" " 017 and 108	"	☐ P ☐ NP	"	"	"	
S5	Infront of CR 103	"	☐ P ☐ NP	"	"	"	

Client Sample # (s): - **Total # of Samples:** 07 **Samples Received Chilled? Yes / No** (Lab Use Only)

Relinquished (Client): [signature]	**Date:**	**Time:**
Received (Lab): L. [signature]	**Date:**	**Time:**

Comments/Special Instructions:

RECEIVED EMSL ANALYTICAL, INC. BELTSVILLE, MD 2020 DEC -3 PM 1:48

Page 1 of ______

Controlled Document – COC-34 Micro R8 11/14/2017

OrderID: 182003893

EMSL ANALYTICAL, INC.
LABORATORY•PRODUCTS•TRAINING

Microbiology Chain of Custody

EMSL Order Number *(Lab Use Only)*:

182003893

EMSL ANALYTICAL, INC.
200 ROUTE 130 NORTH
CINNAMINSON, NJ 08077
PHONE: (800) 220-3675
FAX:(856) 786-0262

Additional pages of the chain of custody are only necessary if needed for additional sample information.

Sample #	Sample Location/Description	Sample Type	Potable/ NonPotable (Only for Waters)	Test Code	Volume/ Area	Date/Time Collected	Temperature (°C) (Lab Use Only)
S6	Outside	Air	☐P ☐NP	M001	75L	12/03/20	
S7	Field blank	"	☐P ☐NP	"	"	"	
			☐P ☐NP				
			☐P ☐NP				
			☐P ☐NP				
			☐P ☐NP				
			☐P ☐NP				
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			☐P ☐NP				
			☐P ☐NP				

Comments/Special Instructions:

Controlled Document – COC-34 Micro R8 11/14/2017

GEN-FM-10-1: Sample Transfer-One Time
Revision 4.2
Revision Date: 1/05/2016
Effective Date: 1/05/2016

182003893

EMSL Analytical, Inc.

Sample Transfer Form

Receiving Lab:	EMSL- BELTSVILLE	**Phone Number:**	3019375700
		Fax Number:	3019375701
Relinquished to:	EMSL- Plymouth Meeting	**Phone Number:**	8002203675
		Fax Number:	8567860262
Does new lab hold equivalent or additional accreditation? *		☒ Yes ☐ No	

EMSL Customer ID # (if known):	SALU50
Client Name:	SALUT INC
Client Project:	19-035 - WHITEHALL ES
Tests to be Performed:	M001
Date Received:	12/3/20
Date Relinquished:	12/3/20
Date Due:	3 DAYS - DUE 12/8/20
Special Instructions: (e.g. Work Order # , required qualifications, project specific procedures/modifications)	

Relinquished by (Signature):	**Date:** 12/3/20	**Received by (Signature):**	**Date:** 12.4.20
Relinquished by (Signature):	**Date:**	**Received by (Signature):**	**Date:**

Customer Agreement- Please sign form and send to the receiving laboratory. By signing below, you agree to permit the above named receiving lab to transfer samples to a separate EMSL lab with equivalent qualifications* for analysis. The final report will be issued from the analyzing laboratory. Ensure any requirements are listed in special instructions.

Name (please print):	**Signature:**	**Agent of:**	**Date:**

If this is a recurring project or sample type that may require samples to be relinquished on a regular basis, a Standing Agreement form must be completed.

* Receiving and analyzing labs shall be aware of required qualifications of project prior to transfer of samples.

Note: If customer has been notified and approved this transfer verbally or by e-mail, the receiving lab must sign for the customer above. EMSL employee filling out form on behalf of customer shall print name of person to whom they spoke, date agreement was received, and then sign under Signature.

OrderID: 372102621

Microbiology Chain of Custody

EMSL Order Number (*Lab Use Only*): 372102621

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

EMSL Analytical, Inc.
10768 Baltimore Avenue
Beltsville, MD 20705
PHONE: (301) 937-5700
FAX: (301) 937-5701

Company Name: SaLUT	**EMSL-Bill to:** ☑ Same ☐ Different If Bill To is different, note instructions in Comments *Third Party Billing requires written authorization from third party.*
Street: 1818 New York Avenue, NE Suite 231	
City: Washington **State/Province:** DC	**Zip/Postal Code:** 20002 **Country:** US
Report To (Name): Indika Jayatilake	**Telephone #:** 301-595-3783
Email Address: ijayatilake@salutinc.com	**Fax #:** 301-595-3787 **Purchase Order:**
Project Name/Number: PGPCS IAQ Reports 19-035 Whitehall Elementary School	**Please Provide Results:** ☐ Fax ☑ Email
U.S. State Samples Taken: MD **Project Zip Code:**	**Connecticut Samples:** ☐ Commercial ☐ Residential

Sterile, Sodium Thiosulfate Preserved Bottle Used: ☐ **Biocide Used in Source (specify):** ☐

Public Water Supply Samples: ☐ **Note: All results may automatically be reported to DOH if required by state.**

Turnaround Time (TAT) Options - Please Check

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

Microbiology Test Codes

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M030 Micro 5
M174 MoldSnap
M032 Allergenco-D
M041 Fungal Direct Examination
M169 Pollen ID & Enumeration
M280 Dust Characterization Level-1
M281 Dust Characterization Level-2
M005 Viable Fungi- Air Samples (Genus ID & Count)
M006 Viable Fungi- Air Samples (Includes *Penicillium, Aspergillus, Cladosporium, Stachybotrys* Species ID & Count)
M007 Culturable fungi - Surface Samples (Genus ID & Count)
M008 Culturable fungi - Surface Samples (Includes *Penicillium, Aspergillus, Cladosporium, Stachybotrys* Species ID & Count)
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M012 *Pseudomonas aeruginosa* (P/A***)
M024 *Pseudomonas aeruginosa* (MFT*)
M015 Heterotrophic Plate Count
M017 Total Coliform & *E. coli* (Colilert P/A***)
M018 Total Coliform & *E. coli* (MFT*)
M114 Total Coliform & *E. coli* Enumeration (Colilert MPN**)
M019 Fecal Coliform (MFT*)
M020 Fecal *Streptococcus* (MFT*)
M029 *Enterococci* (MFT*)
M129 *Enterococci* (Enterolert P/A***)
M180 Real Time qPCR-ERMI 36 Panel
M025 Sewage Screen –Water (MFT*)

M115 Sewage Screen - Water (P/A***)
M116 Sewage Screen - Water (MPN**)
M117 Sewage Screen - Swab (P/A***)
M013 Sewage Screen - Swab (MFT*)
M133 *Methicillin-resistant Staph. aureus* (MRSA)
M031 Rapid-growing non-TB *Mycobacteria* Detection & Enumeration
M014 Endotoxin Analysis
M044 Group Allergen (Cat, Dog, Cockroach, Dust Mite)
Other See Analytical Price Guide
***Legionella* Analysis** Please use EMSL *Legionella* COC

*MFT= Membrane Filtration Technique
**MPN= Most Probable Number
***P/A= Presence/Absence

RECEIVED EMSL ANALYTICAL, INC. BELTSVILLE, MD 2021 FEB 22 AM 11

Name of Sampler: Rahul Ekanayake **Signature of Sampler:**

Sample #	Sample Location/Description	Sample Type	Potable/ NonPotable (Only for Waters)	Test Code	Volume/ Area	Date/Time Collected	Temperature (°C) (Lab Use Only)
Example A1	Kitchen Sink/Tap	Water	☒ P ☐ NP	M017	100 mL	9/1/13 4:00 PM	
3162 6257	Hallway by CR 108	Air	☐ P ☐ NP	M001	75L	2/21/21 9:30 A.M	
3162 6255	Hallway by CR 202	Air	☐ P ☐ NP	M001	75L	2/21/21 9:36 A.M	
3162 6262	Outside Sample	Air	☐ P ☐ NP	M001	75L	2/21/21 9:42 A.M	
3162 6965	Field Blank	Air	☐ P ☐ NP	M001	N/A	2/21/21 9:46 A.M	
			☐ P ☐ NP				

Client Sample # (s): - 04 **Total # of Samples:** 04 **Samples Received Chilled?** Yes / No (Lab Use Only)

Relinquished (Client): Rahul Ekanayake **Date:** 2/21/21 **Time:** 1:30 P.M

Received (Lab): L. Howarth Drop Box **Date:** **Time:**

Comments/Special Instructions: Whitehall Elementary School

AM EKE 2-24-21 1100

RECEIVED EMSL ANALYTICAL, INC. BELTSVILLE, MD 2021 FEB 25 A 8: