AHERA Consultants INCORPORATED

PO Box 385
Oceanville, NJ 08231-0385
E-Mail ahera@comcast.net

Fax 609.652.1140
Phone 609.652.1833

INDOOR AIR QUALITY EVALUATION REPORT

Annual Assessment

Clinton Elementary School
27 Berkshire Road
Maplewood, NJ 07040

Prepared for

South Orange/Maplewood School District
525 Academy Street
Maplewood, NJ 07040
Attn: Mr. Thomas Giglio

Survey dates: 03/11/2022
Inspection performed by: Mr. Eric Clarkson

Section I — Introduction

AHERA Consultants Inc. was retained by the South Orange / Maplewood School District to conduct an annual indoor air quality (IAQ) assessment at the Clinton Elementary School located in Maplewood, New Jersey. This assessment was performed at the request of Mr. Thomas Giglio, Facilities Director with the South Orange Maplewood School District.

Section II — Physical Inspection

Existing Conditions

On March 11, 2022, I Eric Clarkson of AHERA Consultants, Inc. arrived at the Clinton Elementary School. The custodial staff provided access to various areas within the building.

Testing and visual inspection of random areas was performed. HVAC systems within this facility consist of boilers, radiators, unit ventilators and window air conditioning units. Periodic maintenance is performed on the system.

Based on my observations I determined that ambient air sampling to assess current air quality conditions with respect to temperature, humidity, carbon dioxide CO2, carbon monoxide CO, mold screening and airborne asbestos in random locations inside the building would be appropriate.

Section III — Sampling Procedures

- ◊ Indoor air quality measurements for temperature, humidity, CO^2 and CO were taken utilizing a Model 7545 IAQ-Calc Indoor Air Quality Meter. (See IAQ Investigation Logs provided within this report)
- ◊ Asbestos air sampling was conducted utilizing TEM sampling media and a high-volume air sampling pump calibrated to 10 LPM. Testing was conducted in the 1st floor entrance hallway.
- ◊ Air sampling for airborne fungal bioaerosols was performed utilizing Air-O-Cell Cassettes. 150 liters of air was drawn through each sample. The sampling media was submitted to EMSL Analytical Laboratories in Piscataway, NJ for analysis. Air samples were analyzed within a 72-hour turnaround period.

Section IV — Testing Results

◊ Air-O-Cell Sampling Results — March 11, 2022

ANALYSIS OF FUNGAL SPORES & PARTICULATES BY OPTICAL MICROSCOPY: AIR-O-CELL Cassette

SAMPLE ID #	SAMPLE LOCATION	PARTICLE ID	COUNT/ m3
CES-01	Main Entrance Hallway	Aspergillus/Penicillium	70
		Basidiospores	70
		Cladosporium	40
		Total Fungi	**180**
CES-02	Outdoor Control Sample	Aspergillus/Penicillium	440
		Basidiospores	240
		Cladosporium	20
		Total Fungi	**700**

Results: Concentrations of indoor fungal spores were comparable to and less than the outdoor control sample. No visible active mold growth was observed at the time of this assessment.

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◊ Asbestos Air Sampling Results	March 11, 2022

Asbestos Fiber Analysis by Transmission Electron Microscopy (TEM)

SAMPLE ID #	SAMPLE LOCATION	Asbestos Type(s)	Asbestos Concentration (S/CC^2)
CES-01	1st floor entrance hallway	None Detected	<.0044

Results: Sample was "none detected" for asbestos structures.

Section V — Interpretation of Results

At this time there are no governmental standards regarding Indoor Air Quality. The Occupational Safety and Health Association (OSHA) and the National Institute of Occupational Safety and Health (NIOSH), as well as other occupational health related associations, have not established permissible exposure levels (PELs), recommended exposure limits (RELs), or other limit values for aeroallergens. (See EMSL Expanded Fungal Report) provided herein.

Most of the fungi detected in typical indoor investigations are considered common to both indoor and outdoor environments. These include species that belong to the genera Cladosporium, Aspergillus, Penicillium, Alternaria, Basidiospores and others. False negative and false positive data are possible. However, it is generally accepted in the "indoor air quality" industry that indoor fungal growth is undesirable and may necessitate removal or other appropriate remedial actions.

No remedial project should be based solely on data obtained from culturable fungal bioaerosols to represent a threshold value having a medical or health significance with respect to exposure, nor is it necessarily representative of an unacceptable indoor environment. Rather, it is intended to be a "reactionary threshold" to incite further investigation as to the cause(s) of what is considered to be an above average concentration for culturable indoor bioaerosols.

Under the Public Employees Occupational Safety and Health Program there is currently an indoor air quality standard for the state of New Jersey (NJAC 12:100-13). Additionally, there are recommendations under ASHRAE "The American Society of Heating, Refrigeration, and Air Conditioning Engineers for the Indoor Environment.

Under NJAC 12:100-13 a range of 68 to 79 degrees Fahrenheit is the desired temperature range to maintain with Carbon Dioxide (CO^2) not exceeding 1000 ppm. If Carbon Dioxide (CO^2) exceeds 1000 PPM the HVAC system should be evaluated for proper operation.

ASHRAE recommends that a relative humidity between 30% and 60% are acceptable, readings in excess of 70% is considered a friendly environment to microorganisms such as mold.

Carbon Monoxide (CO) levels based on OSHA limits long-term workplace exposure levels to 50 ppm over an 8-hour time weighted average. The Threshold Limit Value or TLV for carbon monoxide is 25 ppm.

Section VI — Observations/Recommended Response Actions

Observations:

Results of the air testing conducted during this assessment did not indicate abnormal or exceptional concentrations of airborne fungal bioaerosols at the time of testing. Relative humidity (RH) throughout the building was at and/or below the recommended 30% at the time of testing indicating dry conditions. The temperature, carbon dioxide and carbon monoxide levels were all within acceptable ranges.

Sampling results for airborne asbestos fibers were none detected.

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Recommendations:

Continue to monitor relative humidity (RH) within the building during different times of the year. RH is typically lower during the winter months due to the heating season. Maintain temperatures between the desired range of 68 and 79 degrees.

To prevent creating environments that would promote mold proliferation all sources of excessive moisture/water infiltration should be identified, controlled and/or eliminated when/if they occur.

Finally, increasing fresh air exchanges within interior spaces should help ameliorate and/or maintain acceptable indoor air quality. Proper cleaning procedures will help eliminate dirt/dust & fungal spore accumulations as well.

Maintain all asbestos containing materials in an intact condition and do not disturb.

ATTACHMENTS:

IAQ Investigation Logs - (3 Pages)
Asbestos Fiber Analysis Report (1 Page)
EMSL Expanded Fungal Assessment Report - (12 Pages)

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Clinton Elementary School
27 Berkshire Road
Maplewood, NJ 07040

03/11/2022

IAQ Investigation Log		
Test ID:	**Clinton Elementary School**	**Main Entrance Hallway**
Model Number:	IAQ Calc 7545	
Serial Number:	T75451321002	
Test ID:	29	
Test Abbreviation:	Test 029	
Start Date:	3/11/2022	
Start Time:	17:36:46	
Duration (dd:hh:mm:ss):	0:00:01:10	
Log Interval (mm:ss):	0:05	
Number of points:	5	
Notes:	Test 029	

Statistics	**Channel:**	**CO2 - Carbon Dioxide**	**T - Temperature**	**H - Humidity**	**CO - Carbon Monoxide**
	Units:	**ppm**	**deg F**	**%rh**	**ppm**
	Average:	505	66.8	33.4	3.4
	Minimum:	500	65.7	32.1	3.4
	Time of Minimum:	17:36:51	17:36:51	17:37:56	17:37:56
	Date of Minimum:	3/11/2022	3/11/2022	3/11/2022	3/11/2022
	Maximum:	515	67.9	34.2	3.5
	Time of Maximum:	17:37:56	17:37:40	17:37:05	17:36:51
	Date of Maximum:	3/11/2022	3/11/2022	3/11/2022	3/11/2022

Calibration	**Meter:**	6/2/2021			
Calibration	**Sensor:**	**CO2 - Carbon Dioxide**	**T-Temperature**	**H-Humidity**	**CO - Carbon Monoxide**
	Cal. Date	6/2/2021	6/2/2021	6/2/2021	6/2/2021

Date	**Time**	**CO2 - Carbon Dioxide**	**T-Temperature**	**H-Humidity**	**CO - Carbon Monoxide**
MM/DD/YYYY	**hh:mm:ss**	**ppm**	**deg F**	**%rh**	**ppm**
3/11/2022	17:36:51	500	65.7	34	3.5
3/11/2022	17:37:05	502	66.2	34.2	3.5
3/11/2022	17:37:20	505	66.8	33.8	3.5
3/11/2022	17:37:40	505	67.9	32.7	3.4
3/11/2022	17:37:56	515	67.6	32.1	3.4

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Clinton Elementary School
27 Berkshire Road
Maplewood, NJ 07040

03/11/2022

IAQ Investigation Log		
Test ID:	**Clinton Elementary School**	**2nd Floor Hallway**
Model Number:	IAQ Calc 7545	
Serial Number:	T75451321002	
Test ID:	30	
Test Abbreviation:	Test 030	
Start Date:	3/11/2022	
Start Time:	17:40:24	
Duration (dd:hh:mm:ss):	0:00:01:09	
Log Interval (mm:ss):	0:05	
Number of points:	5	
Notes:	Test 030	

Statistics	**Channel:**	**CO2 - Carbon Dioxide**	**T - Temperature**	**H - Humidity**	**CO - Carbon Monoxide**
	Units:	**ppm**	**deg F**	**%rh**	**ppm**
	Average:	474	70.2	26.1	3.6
	Minimum:	469	69.1	25.1	3.4
	Time of Minimum:	17:41:33	17:40:29	17:41:33	17:41:04
	Date of Minimum:	3/11/2022	3/11/2022	3/11/2022	3/11/2022
	Maximum:	482	70.7	26.8	3.8
	Time of Maximum:	17:40:29	17:41:33	17:40:29	17:40:29
	Date of Maximum:	3/11/2022	3/11/2022	3/11/2022	3/11/2022

Calibration	**Meter:**	6/2/2021			
Calibration	**Sensor:**	**CO2 - Carbon Dioxide**	**T-Temperature**	**H-Humidity**	**CO - Carbon Monoxide**
	Cal. Date	6/2/2021	6/2/2021	6/2/2021	6/2/2021

Date	**Time**	**CO2 - Carbon Dioxide**	**T-Temperature**	**H-Humidity**	**CO - Carbon Monoxide**
MM/DD/YYYY	**hh:mm:ss**	**ppm**	**deg F**	**%rh**	**ppm**
3/11/2022	17:40:29	482	69.1	26.8	3.8
3/11/2022	17:40:52	474	70	26.2	3.6
3/11/2022	17:41:04	473	70.4	26.1	3.4
3/11/2022	17:41:15	474	70.7	26	3.6
3/11/2022	17:41:33	469	70.7	25.1	3.6

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03/11/2022

IAQ Investigation Log		
Test ID:	**Clinton Elementary School**	**Outdoor Control Sample**
Model Number:	IAQ Calc 7545	
Serial Number:	T75451321002	
Test ID:	31	
Test Abbreviation:	Test 031	
Start Date:	3/11/2022	
Start Time:	17:54:46	
Duration (dd:hh:mm:ss):	0:00:00:48	
Log Interval (mm:ss):	0:05	
Number of points:	5	
Notes:	Test 031	

Statistics	**Channel:**	**CO2 - Carbon Dioxide**	**T - Temperature**	**H - Humidity**	**CO - Carbon Monoxide**
	Units:	**ppm**	**deg F**	**%rh**	**ppm**
	Average:	467	48.2	50.1	6.1
	Minimum:	453	46.8	43.8	5.8
	Time of Minimum:	17:55:02	17:55:24	17:54:51	17:54:51
	Date of Minimum:	3/11/2022	3/11/2022	3/11/2022	3/11/2022
	Maximum:	480	50.5	55.1	6.5
	Time of Maximum:	17:55:34	17:54:51	17:55:34	17:55:02
	Date of Maximum:	3/11/2022	3/11/2022	3/11/2022	3/11/2022

Calibration	**Meter:**	6/2/2021			
Calibration	**Sensor:**	**CO2 - Carbon Dioxide**	**T-Temperature**	**H-Humidity**	**CO - Carbon Monoxide**
	Cal. Date	6/2/2021	6/2/2021	6/2/2021	6/2/2021

Date	**Time**	**CO2 - Carbon Dioxide**	**T-Temperature**	**H-Humidity**	**CO - Carbon Monoxide**
MM/DD/YYYY	**hh:mm:ss**	**ppm**	**deg F**	**%rh**	**ppm**
3/11/2022	17:54:51	461	50.5	43.8	5.8
3/11/2022	17:55:02	453	48.6	47.4	6.5
3/11/2022	17:55:14	465	47.8	51.1	6.1
3/11/2022	17:55:24	476	46.8	53.2	6
3/11/2022	17:55:34	480	47.2	55.1	6

EMSL Analytical, Inc.

1056 Stelton Road Piscataway, NJ 08854

Tel/Fax: (732) 981-0550 / (732) 981-0551

http://www.EMSL.com / piscatawaylab@emsl.com

EMSL Order: 052201010
Customer ID: AHER50
Customer PO:
Project ID:

Attention: Ahera Consultants, INC
Ahera Consultants, Inc.
PO Box 385
Oceanville, NJ 08231-0385

Phone: (609) 652-1833
Fax: (609) 652-1140
Received Date: 03/14/2022 09:00 AM
Analysis Date: 03/16/2022
Collected Date: 03/11/2022

Project: 22-6032 / Clinton Elementary School, 27 Berkshire Road, Maplewood, NJ 07040

Test Report: Asbestos Fiber Analysis by Transmission Electron Microscopy (TEM) Performed by EPA 40 CFR Part 763 Appendix A to Subpart E

Sample	Location	Volume (Liters)	Area Analyzed (mm²)	Non Asb	Asbestos Type(s)	#Structures ≥0.5µ < 5µ	#Structures ≥5µ	Analytical Sensitivity (S/cc)	Asbestos Concentration (S/mm²)	Asbestos Concentration (S/cc)
CES-01	1st Floor Entrance Hallway	1350.00	0.0645	1	None Detected	0	0	0.0044	<16.00	<0.0044
052201010-0001										

Analyst(s)

Colin Slattery (1)

Chaiyut Sae Lao, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. Piscataway, NJ NYS ELAP 11423, NVLAP Lab Code 101048-2, NJ NELAC 12037, Philadelphia 289, CT PH-0266

Initial report from: 03/17/2022 07:47 AM

EXPANDED FUNGAL ASSESSMENT REPORT ™

Prepared Exclusively For

AHERA Consultants, Inc.

PO Box 385
Oceanville, NJ 08231-0385
Phone:609-652-1833

Report Date:	**3/17/2022**
Project:	**22-6032 / South Orange / Maplewood School District, Clinton Elementary School, 27 Berkshire Road, Maplewood, NJ 07040**
EMSL Order:	**052201000**

AIHA-LAP, LLC-EMLAP Accredited
#167035

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EMSL Analytical, Inc.
1056 Stelton Road Piscataway, NJ 08854
Phone: (732) 981-0550 Fax: (732) 981-0551 Web: http://www.EMSL.com Email:piscatawaylab@emsl.com

Attn: AHERA Consultants, INC
AHERA Consultants, Inc.
PO Box 385
Oceanville, NJ 08231-0385

EMSL Order: 052201000
Customer ID: AHER50
Collected: 3/11/2022
Received: 3/14/2022
Analyzed: 3/16/2022

Proj: 22-6032 / South Orange / Maplewood School District, Clinton Elementary School, 27 Berkshire Road, Maplewood, NJ 07040

1. Description of Analysis

Analytical Laboratory

EMSL Analytical, Inc. (EMSL) is a nationwide, full service, analytical testing laboratory network providing Asbestos, Mold, Indoor Air Quality, Microbiological, Environmental, Chemical, Forensic, Materials, Industrial Hygiene and Mechanical Testing services since 1981. Ranked as the premier independently owned environmental testing laboratory in the nation, EMSL puts analytical quality as its top priority. This quality is recognized by many well-respected federal, state and private accrediting agencies, and assured by our high-quality personnel, including many Ph.D. microbiologists and mycologists.

EMSL is an independent laboratory that performed the analysis of these samples. EMSL did not conduct the sampling or site investigation for this report. The samples referenced herein were analyzed under strict quality control procedures using state-of-the-art microbiological methods. The analytical methods used and the data presented are scientifically and legally defensible.

The laboratory data is provided in compliance with ISO-IEC 17025 guidelines for the particular test(s) requested, including any associated limitations for the methods employed. These data are intended for use by professionals having knowledge of the testing methods necessary to interpret them accurately.

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Air Samples - Spore traps:
Spore traps are commercially available sampling devices that capture airborne particles on an adhesive slide. Air is pulled through the device using a vacuum pump. Spores, as well as other airborne particles, are impacted on the collection adhesive. Using spore trap collection methods has inherent limitations. These collection methods are biased towards larger spore sizes.

The analysis for total spore counts is a direct microscopic examination and does not include culturing or growing the fungi. Therefore, the results include both viable and non-viable spores. Some fungal groups produce similar spore types that cannot be distinguished by direct microscopic examination alone (i.e., *Aspergillus/Penicillium*, and others). Other spore types may lack distinguishing features that aid in their identification. These types are grouped into larger categories such as Ascospores or Basidiospores.

Fungal spores are identified and grouped by morphological characteristics including color, shape, septation, ornamentation, and fruiting structures (if present) which are compared to published mycological identification keys and texts. EMSL reports provide spore counts per cubic meter of air to three significant figures. Please note that each spore category is reported to three significant figures. Due to rounding and the application of three significant figures the sum of the individual spore numbers may not equal the total spore count on the report. EMSL does not maintain responsibility for final volume concentrations (counts/m3) since this volume is provided by the field collector and cannot be verified by EMSL.

EMSL analyzes spore traps using phase contrast microscopy. There is a wide choice of collection devices (Air-O-Cell, Micro-5, Burkhard, etc.) on the market. Differences in analytical method may exist between spore trap devices.

Spore trap results are reported in spores per cubic meter of air. Due to the other airborne particles collected with the spores, EMSL reports a background particle density. Background density is an indication of overall particulate matter present on the sample (i.e. dust in the air). High background concentrations may obscure spores such as the *Penicillium/Aspergillus* group. The rating system is from 1-5 with 1 = 1 - 25% of the background obscured by material, 2 = 26 - 50%, 3 = 51 - 75%, 4 = 76% - 99%, 5 = 100% or overloaded. A background rating of 4 or higher should be regarded as a minimum count since the actual concentrations may be higher than those reported. EMSL will not be held responsible for overloading of samples. Sample volumes are left to the discretion of the company or persons conducting the fieldwork.

Skin fragment density is the percentage of skin cells making up the total background material, 1 = 1 - 25%, 2 = 26 - 50%, 3 = 51 - 75%, 4 = 76-100%. Skin fragment density is considered an indication of the general cleanliness in the area sampled. It has been estimated that up to 90% of household dust consists of dead skin cells.

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Attn: AHERA Consultants, INC
AHERA Consultants, Inc.
PO Box 385
Oceanville, NJ 08231-0385

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Analyzed: 3/16/2022

Proj: 22-6032 / South Orange / Maplewood School District, Clinton Elementary School, 27 Berkshire Road, Maplewood, NJ 07040

2. Analytical Results

See attached data reports and charts.

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

Lab Sample Number:	052201000-0001			052201000-0002		
Client Sample ID:	CES-01			CES-02		
Volume (L):	150			150		
Sample Location:	Main Entrance Hallway			Outdoor Control Sample		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-
Aspergillus/Penicillium	3	70	38.9	20	440	62.9
Basidiospores	3	70	38.9	11	240	34.3
Bipolaris++	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-
Cladosporium	2	40	22.2	1	20	2.9
Curvularia	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-
Rust	-	-	-	-	-	-
Scopulariopsis/Microascu	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-
Total Fungi	**8**	**180**	**100**	**32**	**700**	**100**
Hyphal Fragment	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-
Pollen	-	-	-	2*	10*	-
Analyt. Sensitivity 600x	-	22	-	-	22	-
Analyt. Sensitivity 300x	-	7*	-	-	7*	-
Skin Fragments (1-4)	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-
Background (1-5)	-	2	-	-	3	-

Nicholas Maslowski, Microbiology Lab Manager
or Other Approved Signatory

++ 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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Initial report from: 03/17/2022 07:35:48

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EMSL Analytical, Inc.

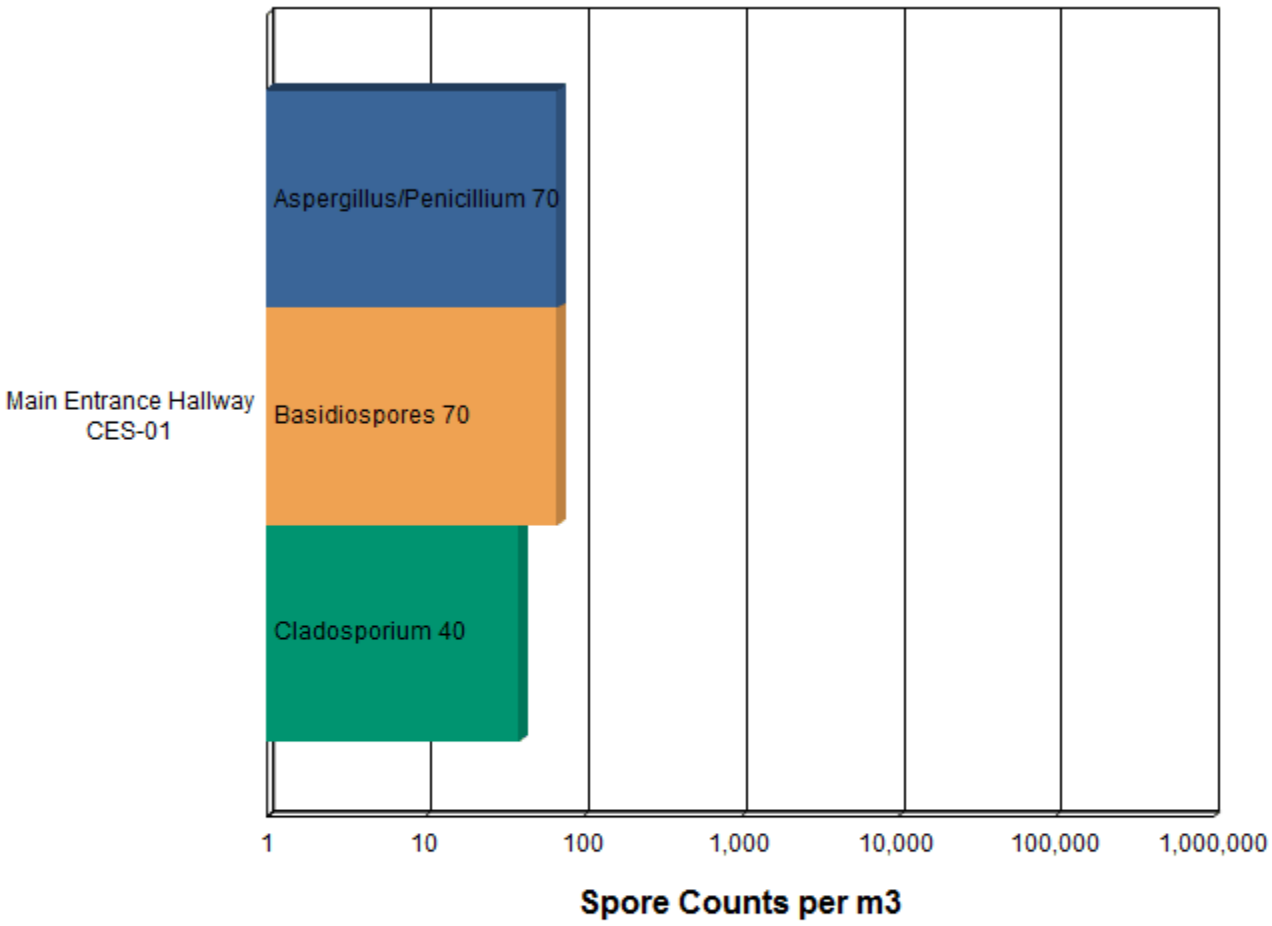
1056 Stelton Road Piscataway, NJ 08854
Phone: (732) 981-0550 Fax: (732) 981-0551 Web: http://www.EMSL.com Email:piscatawaylab@emsl.com

Attn: AHERA Consultants, INC
AHERA Consultants, Inc.
PO Box 385
Oceanville, NJ 08231-0385

EMSL Order: 052201000
Customer ID: AHER50
Collected: 3/11/2022
Received: 3/14/2022
Analyzed: 3/16/2022

Proj: 22-6032 / South Orange / Maplewood School District, Clinton Elementary School, 27 Berkshire Road, Maplewood, NJ 07040

Spore Trap Report: Total Counts



* The chart is displayed using a logarithmic scale. Bar size is not directly proportional to the number of spores.

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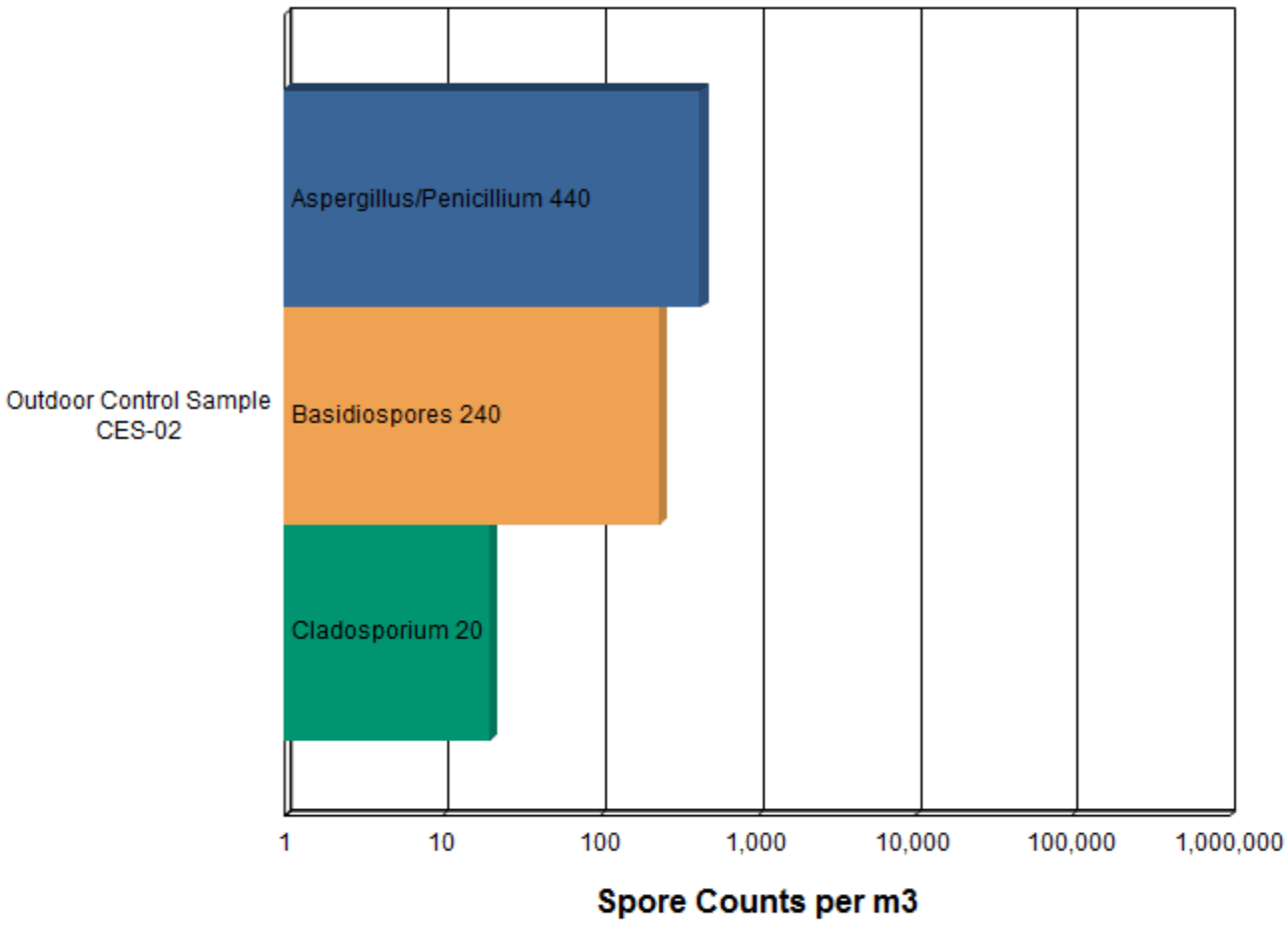

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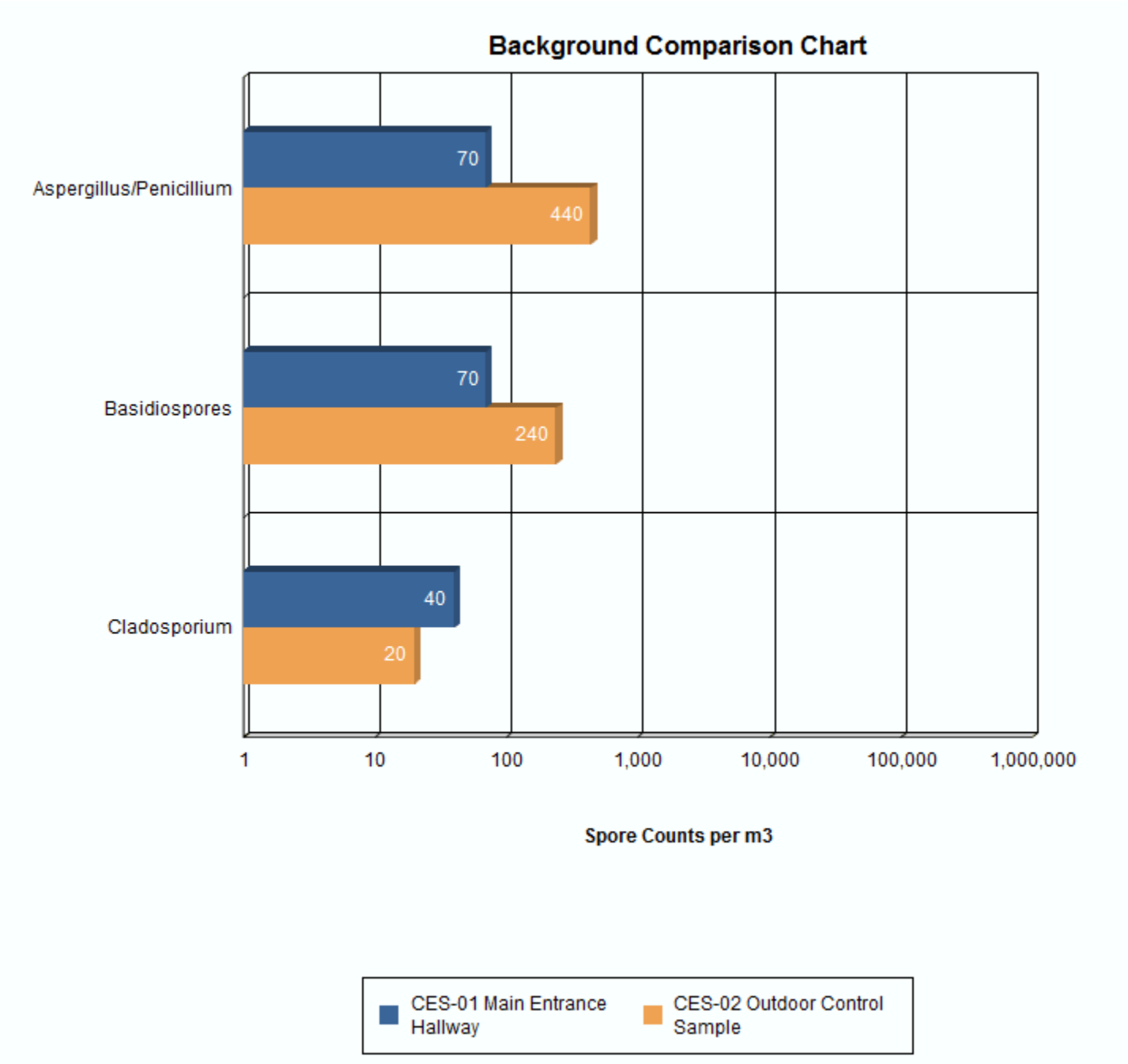

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3. Understanding the Results

EMSL Analytical, Inc. is an independent laboratory, providing unbiased and scientifically valid results. These data represent only a portion of an overall IAQ investigation. Visual information and environmental conditions measured during the site assessment (humidity, moisture readings, etc.) are crucial to any final interpretation of the results. Many factors impact the final results; therefore, result interpretation should only be conducted by qualified individuals. The American Conference of Governmental Industrial Hygienists (ACGIH) has published a good reference book covering sampling and data interpretation. It is entitled, Bioaerosols: Assessment and Control, 1999.

Fungal spores are found everywhere. Whether or not symptoms develop in people exposed to fungi depends on the nature of the fungal material (e.g., allergenic, toxic, or infectious), the exposure level, and the susceptibility of exposed persons. Susceptibility varies with the genetic predisposition (e.g., allergic reactions do not always occur in all individuals), age, pre-existing medical conditions (e.g., diabetes, cancer, or chronic lung conditions), use of immunosuppressive drugs, and concurrent exposures. These reasons make it difficult to identify dose/response relationships that are required to establish “safe” or “unsafe” levels (i.e., permissible exposure limits).

It is generally accepted in the industry that indoor fungal growth is undesirable and inappropriate, necessitating removal or other appropriate remedial actions. The New York City guidelines and EPA guidelines for mold remediation in schools and commercial buildings define the conditions warranting mold remediation. Always remember that water is the key. Preventing water damage or water condensation will prevent mold growth.

This report is not intended to provide medical advice or advice concerning the relative safety of an occupied space. Always consult an occupational or environmental health physician who has experience addressing indoor air contaminants if you have any questions.

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4. Glossary of Fungi

ASPERGILLUS/PENICILLIUM	
Natural Habitat	Plant debris ·Seed ·Cereal crops
Suitable Substrates in the Indoor Environment	Grows on a wide range of substrates indoors ·Prevalent in water damaged buildings ·Foods (blue mold on cereals, fruits, vegetables, dried foods) ·House dust ·Fabrics ·Leather ·Wallpaper ·Wallpaper glue
Water Activity	Aw=0.75-0.94
Mode of Dissemination	Wind ·Insects
Allergic Potential	Type I (hay fever, asthma) ·Type III (hypersensitivity)
Potential or Opportunistic Pathogens	Possible depending on the species.
Industrial Uses	Many depending on the species
Potential Toxins Produced	Possible depending on the species.
Other Comments	Spores of Aspergillus and Penicillium (including others such as Acremonium, Talaromyces, and Paecilomyces) are small and spherical with few distinguishing characteristics. They cannot be differentiated or speciated by non-viable impaction sampling methods. Some species with very small spores may be undercounted in samples with high background debris.

BASIDIOSPORES	
Natural Habitat	Forest floors. Lawns .Plants (saprobes or pathogens depending on genus)
Suitable Substrates in the Indoor Environment	Depends on genus. Wood products
Water Activity	Unknown.
Mode of Dissemination	Forcible ejection. Wind currents.
Allergic Potential	Type I allergies (hay fever, asthma) . Type III (hypersensitivity pneumonitis)
Potential or Opportunistic Pathogens	Depends on genus.
Industrial Uses	Edible mushrooms are used in the food industry.
Potential Toxins Produced	Amanitins. monomethyl-hydrazine. muscarine. ibotenic acid. psilocybin.
Other Comments	Basidiospores are the result of sexual reproduction and formed on a structure called the basidium. Basidiospores belong to the members of the Phylum Basidiomycota, which includes mushrooms, shelf fungi, rusts, and smuts.

CLADOSPORIUM	
Natural Habitat	Dead plant matter. Straw. Soil. Woody plants
Suitable Substrates in the Indoor Environment	Fiberglass duct liner. Paint. Textiles. Found in high concentration in water-damaged building materials.
Water Activity	Aw 0.84-0.88
Mode of Dissemination	Air
Allergic Potential	Type I (asthma and hay fever).
Potential or Opportunistic Pathogens	Edema. keratitis. onychomycosis. pulmonary infections. Sinusitis.
Industrial Uses	Produces 10 antigens.
Potential Toxins Produced	Cladosporin and Emodin.

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5. Important Terms, Conditions, and Limitations

. Sample Retention

Samples analyzed by EMSL will be retained for 60 days after analysis date Storage beyond this period is available for a fee with written request prior to the initial 30-day period. Samples containing hazardous/toxic substances which require special handling will be returned to the client immediately. EMSL reserves the right to charge a sample disposal fee or return samples to the client.

Change Orders and Cancellation

All changes in the scope of work or turnaround time requested by the client after sample acceptance must be made in writing and confirmed in writing by EMSL. If requested changes result in a change in cost the client must accept payment responsibility. In the event work is cancelled by a client, EMSL will complete work in progress and invoice for work completed to the point of cancellation notice. EMSL is not responsible for. holding times that are exceeded due to such changes.

Warranty

EMSL warrants to its clients that all services provided hereunder shall be performed in accordance with established and recognized analytical testing procedures and with reasonable care in accordance with applicable federal, state and local laws. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied. EMSL disclaims any other warranties, express or implied, including a warranty of fitness for particular purpose and warranty of merchantability.

Limits of Liability

In no event shall EMSL be liable for indirect, special, consequential, or incidental damages, including, but not limited to, damages for loss of profit or goodwill regardless of the negligence (either sole or concurrent) of EMSL and whether EMSL has been informed of the possibility of such damages, arising out of or in connection with EMSL's services thereunder or the delivery, use, reliance upon or interpretation of test results by client or any third party. We accept no legal responsibility for the purposes for which the client uses the test results. EMSL will not be held responsible for the improper selection of sampling devices even if we supply the device to the user. The user of the sampling device has the sole responsibility to select the proper sampler and sampling conditions to ensure that a valid sample is taken for analysis. Any resampling performed will be at the sole discretion of EMSL, the cost of which shall be limited to the reasonable value of the original sample delivery group (SDG) samples. In no event shall EMSL

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be liable to a client or any third party, whether based upon theories of tort, contract or any other legal or equitable theory, in excess of the amount paid to EMSL by client thereunder.

Indemnification

Client shall indemnify EMSL and its officers, directors and employees and hold each of them harmless for any liability, expense or cost, including reasonable attorney's fees, incurred by reason of any third-party claim in connection with EMSL services, the test result data or its use by client

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OrderID: 052201010

05 2261010

Chain of Custody

Client: AHERA Consultants, Inc.
PO Box 385
Oceanville, NJ 08231-0385
Phone: (609) 652-1833
E-Mail: info@aherainc.com
Fax: (609) 652-1140

Project No: 22-6032
Project Name: Clinton Elementary School
27 Berkshire Road
Maplewood, NJ 07040

Contact: E. Clarkson

TYPE:

ASBESTOS		LEAD		OTHER
☒ AIR	☐ SOIL	☐ AIR	☐ SOIL	_____
☐ BULK	☐ DUST	☐ BULK	☐ PAINT	_____
☐ WATER	☐ OTHER	☐ WATER	☐ OTHER	_____

ANALYSIS METHOD:

☐ PCM: NIOSH 7400	☐ PLM: BULK ASBESTOS EPA600	☒ TEM: AHERA
☐ PCM: OSHA	☐ PLM: POINT COUNTING	☐ TEM: NIOSH 7402
☐ PCM: OTHER	☐ PLM: OTHER	☐ TEM: EPA LEVEL II
	☐ PLM EPA NOB (gravimetric reduction)	☐ TEM: ASBESTOS IN WATER

☐ AAS LEAD IN DRINKING WATER	☐ TEM: BULK ANALYSIS
☐ AAS LEAD IN PAINT	☐ TEM: MICROVAC DUST
☐ AAS OTHER LEAD	☐ TEM: EPA NOB (gravimetric reduction)
☐ AAS OTHER METALS	
☐ AAS NIOSH 7082 (LEAD IN AIR)	☐ TOTAL DUST: EPA/OSHA

TURN AROUND TIME:

☐ 5 DAY ☒ 72 HOUR ☐ 48 HOUR ☐ 24 HOUR ☐ 6 HOUR _____

SAMPLE NUMBERS:

CLIENT SAMPLE NUMBERS: CES-01 TO CES-01 TOTAL: 1EA.

RELINQUISHED: [signature]	DATE: 03/11/2022	TIME: _____
RECEIVED: _____	DATE: _____	TIME: _____
SAMPLE LOG-IN: _____	DATE: _____	TIME: _____
ANALYZED: _____	DATE: _____	TIME: _____
REVIEWED: _____	DATE: _____	TIME: _____
ARCHIVED: _____	DATE: _____	TIME: _____
RELEASED: _____	DATE: _____	TIME: _____

MAR 14 2022
BY SP 9:00am
EMSL PISCATAWAY
Drop Box

AHERA Consultants INCORPORATED
PO Box 385
Oceanville, NJ 08231-0385
Phone: 609.652.1833
Fax: 609.652.1140
E-mail: ahera@aherainc.com

OrderID: 052201010

052201010

AIR MONITORING DATA SHEET

CLIENT: AHERA Consultants, Inc.

ADDRESS: PO Box 385

Oceanville, NJ 08231-0385

SITE ADDRESS: Clinton Elementary School

27 Berkshire Road

Maplewood, NJ 07040

DATE: 03/11/2022

JOB #: 22-6032

ANALYSIS: TEM

METHOD AHERA

LOT #:

BLDG: FLOOR:

PRE-CALIBRATED DATE: 03/11/2022
INITIALS: EDC

POST-CALIBRATED DATE: 03/11/2022
INITIALS: EDC

SAMPLE #	SAMPLE ID	FLOW RATE PRE / POST /AVG (L/MIN)			START/STOP	TIME ELAPSE (MIN)	SAMPLE VOLUME (L)	RESULTS
CES-01	1ST FLOOR ENTRANCE HALLWAY	10	10	10	17:30-19:45	135	1350	

TYPE SAMPLING: ☐ PCM ☒ TEM

MICROSCOPIST:

DATE ANALYZED:

RELINQUISHED BY DATE/TIME 03/11/2022

FIELD HYGIENIST: E. Clarkson

DATE TAKEN: 03/11/2022

RECEIVED BY RECEIVED DATE/TIME

MAR 14 2022

BY EMSL PISCATAWAY

AHERA Consultants INCORPORATED

PO Box 385
Oceanville, NJ 08231-0385
Phone: 609.652.1833
Fax: 609.652.1140
E-mail: ahera@aheraInc.com

OrderID: 052201000

052261000

AHERA Consultants INCORPORATED

PO Box 385
Oceanville, NJ 08231-0385
PHONE: 609.652.1833
FAX: 609.652.1140

MICROBIOLOGY – CHAIN OF CUSTODY

Date Collected: 03/11/2022	Date Submitted: 03/11/2022

Contact: E. Clarkson		**Company:**	AHERA Consultants, Inc.
Project Location:	Clinton Elementary School		PO Box 385
	27 Berkshire Road		Oceanville, NJ 08231-0385
	Maplewood, NJ 07040	**Phone:**	(609) 652-1833
		Fax:	(609) 652-1140
Client:	South Orange / Maplewood School District	**E-mail:**	info@aherainc.com

Job Number: 22-6032

Air Samples

- [X] Mold & Fungi by Air-O-Cell Cassette (Select turn around time)
- [ ] Mold & Fungi by Agar Plate (Count & identification)
- [ ] Mold & Fungi by Agar Plate (Count only)
- [ ] Bacterial Count & Gram Stain
- [ ] Bacterial Count & Identification (Three most prominent types)

Water Samples

- [ ] Total Count, Coliforms, Fecal Coliforms (Specify)_____
- [ ] Other (Specify)_____

Wipe & Bulk Samples

- [ ] Mold & Fungi – Direct Examination (Select turn around time) Submit cellophane tape sample or bulk
- [ ] Mold & Fungi – Direct Examination- Follow up examination by culture if necessary
- [ ] Mold & Fungi – Culture (ID & Count)
- [ ] Mold & Fungi – Culture (Count only)
- [ ] Bacterial Count & Gram Stain
- [ ] Bacterial Count & Identification (Three most prominent types)

TURN AROUND TIME:

[ ] SAME DAY [ ] 1 DAY [ ] 2 DAY [X] 3 DAY [ ] 4 DAY [ ] 5 DAY [ ] 6-10 DAY

SAMPLE ID	LOCATION	VOLUME	COMMENTS
CES-01	MAIN ENTRANCE HALLWAY	150L	T-029
	2ND FLOOR HALLWAY		T-030
CES-02	OUTDOOR CONTROL SAMPLE	150L	T-031

Relinquished by:	Technician Signature: [signature]	Date: 03/11/2022	Time:
Received by:	Laboratory Representative:	Date:	Time:

RECEIVED
MAR 14 2022
BY SP 9:00am
EMSL PISCATAWAY

Drop Box