



www.esi4u.com (410)-867-6262

## Discovery Environmental Inspection Report

### Project Contact Information

Alex Baylor Environmental Specialists Environmental Safety Office 13306 Old Marlboro Pike Upper Marlboro, MD 20772 301-952-6760 alex.baylor@pgcps.org	Cesar Chavez Elementary School  30,066Ft <sup>2</sup>	Vinny Gigliotti Certified Indoor Environmentalist Environmental Solutions, Inc. 6114 Drum Point Rd Deale, MD 20751 410-867-6262 Vinny@esi4u.com
-------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------

### Property Location

6609 Riggs Road, Hyattsville, MD 20782

Date of Inspection 3/5/2019



Prepared By: Vinny Gigliotti and Ryan Fitzgerald

Certified Indoor Environmentalist (CIE)

Dear Mr. Baylor,

The results of the inspection and testing performed at Cesar Chavez Elementary School are concluded, and the findings are enclosed. I want to thank you for allowing ESI the opportunity to service your indoor environmental needs. Included in this report are the observations, lab results, and recommendation from ESI's 3/5/2019 inspection and testing.

### **Background Information**

The Prince Georges County Public School Environmental Team has taken a proactive approach in cleaning the above-mentioned school to ensure there are no health or environmental risks related to microbial and biological hazards. Historically elevated levels of humidity, condensation from pipes, periodic steam leaks and outdated HVAC systems, may have contributed to water damage ceiling tiles and colonization of mold spores in various area of the school.

### **Purpose**

ESI was engaged to inspect the school in a random sufficient manner. Classrooms, administration offices and common area building materials and contents, will be visually inspected for water damage and microbial growth.

In each location inspected, the indoor air quality will be tested for elevated levels of carbon dioxide and carbon monoxide, in addition to measuring the relative humidity and temperature. Microbial / biological hazards within the breathable air space will also be tested.

Based upon the visible assessment, instrument readings and lab results, ESI will determine if additional remediation is required.

### **Observations and instrument readings**

The following table is designed for this project. Some of the fields may not be filled in due to not being applicable during the time of the inspection. You will notice either a 'YES' or 'NO' in the table. 'YES' indicates that mold and /or water damage was detected and 'NO' indicates it was not. If 'YES' is noted, remediation recommendation will be included for the area inspected. Please note that the cubic feet of air in the rooms inspected is an approximate number.

Location	IAQ Sample #	Swab	R/H	Temp	CO2	Co	Cubic feet of air.	
<b>14</b>	2377985	N/A	28.3	71.4	<b>1,696</b>	001	5,760	
Inspected								
Ceiling Tiles	Walls	Teachers Desk	Children's Desk	Tables	Cabinets Shelving	Convector	HVAC Diffusors	<b>Windows</b>
2x4	CMU	1	18	3	6	1	0	4
No	No	No	No	No	No	No	N/A	No
Observation Notes								
<ul style="list-style-type: none"> <li>• Rust was seen on the return registers.</li> <li>• One ceiling tile was bowed.</li> <li>• The Carbon Dioxide CO2 level in this room were elevated at 1,696 ppm. The CO2 level may have been increased due to the students recently occupying the classroom.</li> <li>• The indoor air quality should pose no health or environmental risk, as the spore count was 240 spores per cubic meter of air.</li> </ul>								
Recommendations								
<ul style="list-style-type: none"> <li>• To reduce Carbon dioxide (CO2) levels, increase air exchange within this classroom. Ventilating or circulating the air with a fan will also reduce Carbon dioxide (CO2) levels.</li> </ul>								

Location	IAQ Sample #	Swab	R/H	Temp	CO2	Co	Cubic feet of air.	
<b>4</b>	2377980	N/A	27.3	71.7	<b>1,687</b>	001	5,800	
Inspected								
Ceiling Tiles	Walls	Teachers Desk	Children's Desk	Tables	Cabinets Shelving	Convector	HVAC Diffusors	<b>Windows</b>
2x4	CMU	1	0	6	6	2	0	5
No	No	No	N/A	No	No	No	N/A	No
Inspected								
<ul style="list-style-type: none"> <li>• Light rust was seen on the return register.</li> <li>• The Carbon Dioxide CO2 level in this room were elevated at 1,687 ppm. The CO2 level may have been increased due to the students recently occupying the classroom.</li> <li>• The indoor air quality should pose no health or environmental risk, as the spore count was 440 spores per cubic meter of air.</li> </ul>								
Recommendations								
<ul style="list-style-type: none"> <li>• To reduce Carbon dioxide (CO2) levels, increase air exchange within this classroom. Ventilating or circulating the air with a fan will also reduce Carbon dioxide (CO2) levels.</li> </ul>								

Location	IAQ Sample #	Swab	R/H	Temp	CO2	Co	Cubic feet of air.	
1	2377970	N/A	25.0	71.0	1,744	001	5,760	
Inspected								
Ceiling Tiles	Walls	Teachers Desk	Children's Desk	Tables	Cabinets Shelving	Convector	HVAC Diffusors	Windows
2x4	CMU	1	0	6	6	2	0	6
No	No	No	N/A	No	Yes	No	N/A	No
Observation Notes								
<ul style="list-style-type: none"> <li>Discolorations and suspected microbial growth were seen in the sink cabinetry.</li> <li>The Carbon Dioxide CO2 level in this room were elevated at 1,744 ppm. The CO2 level may have been increased due to the students occupying the classroom.</li> <li>The indoor air quality should pose no health or environmental risk, as the spore count was 240 spores per cubic meter of air.</li> </ul>								
Recommendations								
<ul style="list-style-type: none"> <li>HEPA vacuum, then damp-wipe the sink cabinetry with an anti-microbial agent to remove discolorations and suspected microbial growth.</li> <li>To reduce Carbon dioxide (CO2) levels, increase air exchange within this classroom. Ventilating or circulating the air with a fan will also reduce Carbon dioxide (CO2) levels.</li> </ul>								

Location	IAQ Sample #	Swab	R/H	Temp	CO2	Co	Cubic feet of air.	
20	2377965	N/A	12.5	77.7	905	000	9,175	
Inspected								
Ceiling Tiles	Walls	Teachers Desk	Children's Desk	Tables	Cabinets Shelving	Convector	HVAC Diffusors	Windows
2x4	CMU	1	18	6	5	0	4	3
No	No	No	No	No	No	N/A	No	No
Observation Notes								
<ul style="list-style-type: none"> <li>Dust and organic debris were seen on the return register.</li> <li>The indoor air quality should pose no health or environmental risk, as the spore count was 560 spores per cubic meter of air.</li> </ul>								
Recommendations								
None								

Location	IAQ Sample #	Swab	R/H	Temp	CO2	Co	Cubic feet of air.	
16	2378004	N/A	11.6	75.2	981	000	7,040	
Inspected								
Ceiling Tiles	Walls	Teachers Desk	Children's Desk	Tables	Cabinets Shelving	Convector	HVAC Diffusors	Windows
2x4	CMU	1	19	4	2	0	4	3
No	No	No	No	No	No	N/A	No	No
Observation Notes								
<ul style="list-style-type: none"> <li>Rust was seen on one diffuser.</li> <li>The indoor air quality had slightly elevated levels of <b>Aspergillus/Penicillium</b> at <b>960</b> spores per cubic meter of air.</li> </ul>								
Recommendations								
<ul style="list-style-type: none"> <li>Engage HEPA filtered air scrubber in this location for approximately 4-6 hours. Damp wipe all horizontal surfaces with an antimicrobial, then fog the breathable air space.</li> </ul>								

### Interpretation of Lab Results

In the enclosed Air Cassette Analysis report, you will notice Fungal Identification, which is the species detected in the breathable airspace inside, and outside. The Raw count is the actual number of spores counted on the slide, and the Count/m<sup>3</sup> are the spores per cubic meter of air. The other particles are non-living particles such as dander, mycelial fragments, pollens, etc.

In order for humans to be exposed indoors, fungal spores, fragments, or metabolites must be released into the air and inhaled, physically contacted (dermal exposure), or ingested. Whether symptoms develop in people exposed to fungi depends on the nature of the fungal material (e.g., allergenic, toxic, or infectious), the amount of exposure, and the susceptibility of exposed persons.

Susceptibility varies with genetic predisposition (e.g., allergic reactions do not always occur in all individuals), age, state of health, and concurrent exposures.

# Air Sampling Lab Results



**Name:** Environmental Solutions, Inc  
**Address:** 534-A Deale Road  
 Deale, MD 20751  
**Phone:** 410-867-6262

**Project Number:** 6609 Riggs Rd  
**P.O. Number:**  
**Project Name:** Cesar Chavez Elementary  
**Collected Date:** 3/5/2019  
**Received Date:** 3/6/2019 10:05:00 AM

SanAir ID Number  
**19010166**  
**FINAL REPORT**  
 3/6/2019 2:58:20 PM

Analyst: Smith, Kiersten

## Air Cassette Analysis

*ND = None Detected. Blank spaces indicate no spores detected.*

SanAir ID Number	19010166-001			19010166-002			19010166-003			19010166-004		
Analysis Using STL	107C			107C			107C			107C		
Sample Number	2377989			2377985			2377980			2377970		
Sample Identification	Outdoors			Classroom #14			Classroom #4			Classroom #1		
Sample Type	Air Cassette - Micro-5			Air Cassette - Micro-5			Air Cassette - Micro-5			Air Cassette - Micro-5		
Volume	25 Liters			25 Liters			25 Liters			25 Liters		
Analytical Sensitivity	40 Count/M <sup>3</sup>			40 Count/M <sup>3</sup>			40 Count/M <sup>3</sup>			40 Count/M <sup>3</sup>		
Background Density	1+			2			2+			2		
<b>Other</b>	<b>Raw Count</b>	<b>Count/M<sup>3</sup></b>	<b>%</b>	<b>Raw Count</b>	<b>Count/M<sup>3</sup></b>	<b>%</b>	<b>Raw Count</b>	<b>Count/M<sup>3</sup></b>	<b>%</b>	<b>Raw Count</b>	<b>Count/M<sup>3</sup></b>	<b>%</b>
Dander	1	40	n/a	142	5680	n/a	158	6320	n/a	116	4640	n/a
Fibers	4	160	n/a	8	320	n/a	5	200	n/a	3	120	n/a
Mycelial Fragments				2	80	n/a						
<b>Fungal Identification</b>	<b>Raw Count</b>	<b>Count/M<sup>3</sup></b>	<b>%</b>	<b>Raw Count</b>	<b>Count/M<sup>3</sup></b>	<b>%</b>	<b>Raw Count</b>	<b>Count/M<sup>3</sup></b>	<b>%</b>	<b>Raw Count</b>	<b>Count/M<sup>3</sup></b>	<b>%</b>
Aspergillus/Penicillium				3	120	50	6	240	55	3	120	50
Basidiospores	3	120	>99				2	80	18	1	40	17
Bispora like							1	40	9			
Cladosporium species				2	80	33	1	40	9	2	80	33
Pestalotiopsis-like							1	40	9			
Smuts/Myxomycetes				1	40	17						
<b>TOTAL</b>	<b>3</b>	<b>120</b>		<b>6</b>	<b>240</b>		<b>11</b>	<b>440</b>		<b>6</b>	<b>240</b>	

Signature:

*K. Smith*

Date: 3/6/2019

Reviewed:

*Jonathan Wilson*

Date: 3/6/2019



**Name:** Environmental Solutions, Inc  
**Address:** 534-A Deale Road  
 Deale, MD 20751  
**Phone:** 410-867-6262

**Project Number:** 6609 Riggs Rd  
**P.O. Number:**  
**Project Name:** Cesar Chavez Elementary  
**Collected Date:** 3/5/2019  
**Received Date:** 3/6/2019 10:05:00 AM

SanAir ID Number  
**19010166**  
**FINAL REPORT**  
 3/6/2019 2:58:20 PM

Analyst: Smith, Kiersten

### Air Cassette Analysis

*ND - None Detected. Blank spaces indicate no spores detected.*

SanAir ID Number	19010166-005			19010166-006		
Analysis Using STL	107C			107C		
Sample Number	2377965			2378004		
Sample Identification	Classroom #20			Classroom #16		
Sample Type	Air Cassette - Micro-5			Air Cassette - Micro-5		
Volume	25 Liters			25 Liters		
Analytical Sensitivity	40 Count/M <sup>3</sup>			40 Count/M <sup>3</sup>		
Background Density	2+			2+		
<b>Other</b>	<b>Raw Count</b>	<b>Count/M<sup>3</sup></b>	<b>%</b>	<b>Raw Count</b>	<b>Count/M<sup>3</sup></b>	<b>%</b>
Dander	145	5800	n/a	125	5000	n/a
Fibers	10	400	n/a	11	440	n/a
Mycelial Fragments						
<b>Fungal Identification</b>	<b>Raw Count</b>	<b>Count/M<sup>3</sup></b>	<b>%</b>	<b>Raw Count</b>	<b>Count/M<sup>3</sup></b>	<b>%</b>
Aspergillus/Penicillium	10	400	71	24	960	96
Basidiospores	2	80	14			
Bispora like						
Cladosporium species	2	80	14	1	40	4
Pestalotia- / Pestalotiopsis-like						
Smuts/Myxomycetes						
<b>TOTAL</b>	<b>14</b>	<b>560</b>		<b>25</b>	<b>1000</b>	

Signature:

*K. Smith*

Date: 3/6/2019

Reviewed:

*Johnathan Wilson*

Date: 3/6/2019





SanAir ID Number  
19010166  
FINAL REPORT  
3/6/2019 2:58:20 PM

**Name:** Environmental Solutions, Inc  
**Address:** 534-A Deale Road  
Deale, MD 20751  
**Phone:** 410-867-6262

**Project Number:** 6609 Riggs Rd  
**P.O. Number:**  
**Project Name:** Cesar Chavez Elementary  
**Collected Date:** 3/5/2019  
**Received Date:** 3/6/2019 10:05:00 AM

## Organism Descriptions

*The descriptions of the organisms presented are derived from various reference materials. The laboratory report is based on the data derived from the samples submitted and no interpretation of the data, as to potential, or actual, health effects resulting from exposure to the numbers of organisms found, can be made by laboratory personnel. Any interpretation of the potential health effects of the presence of this organism must be made by qualified professional personnel with first hand knowledge of the sample site, and the problems associated with that site.*

**Dander** - Comprised of human and/or animal skin cells. Counts may be higher in carpeted rooms and in rooms with more traffic.  
**Health Effects:** May cause allergies.

**Fibers** - This category can include clothing, carpet, and insulation fibers.

**Mycelial Fragments** - A mycelium (plural = mycelia) is the "body" of a fungus. It is a collective term for hyphae (singular = hypha), which are the tubular units of the mycelium usually composed of chitin. The terms hyphae and mycelial fragments are used interchangeably. [This information was referenced from the mycology text "The Fifth Kingdom"] In some cases a fungal identification cannot be obtained due to lack of sporulation. Only the mycelial fragments are present, and cannot be identified without the distinguishing characteristics of the spores or the structures they grow from.  
**Health Effects:** Allergic reactions may occur in the presence of spores (conidia) or mycelial/hyphal fragments.

**Aspergillus/Penicillium** - These spores are easily aerosolized. Only through the visualization of reproductive structures can the genera be distinguished. Also included in this group are the spores of the genera Acremonium, Phialophora, Verticillium, Paecilomyces, etc. Small, round spores of this group lack the necessary distinguishing characteristics when seen on non-viable examination.  
**Health Effects:** Can cause a variety of symptoms including allergic reactions. Most symptoms occur if the individual is immunocompromised in some way (HIV, cancer, etc). Both Penicillium and Aspergillus spores share similar morphology on non-viable analysis and therefore are lumped together into the same group.

**Basidiospores** - From the Subphylum Basidiomycotina which contains the mushrooms, shelf fungi, and a variety of other macrofungi. They are saprophytes, ectomycorrhizal fungi or agents of wood rot, which may destroy the structure wood of buildings. It is extremely difficult to identify a specific genera of mushrooms by using standard culture plate techniques. Some basidiomycete spores can be identified by spore morphology; however, some care should be exercised with regard to specific identification. The release of basidiospores is dependant upon moisture, and they are dispersed by wind.  
**Health Effects:** Many have the potential to produce a variety of toxins. Members of this group may trigger Type I and III fungal hypersensitivity reactions. Rarely reported as opportunistic pathogens.

**Bispora like** - Bispora is a ubiquitous anamorphic fungus and may be isolated from decaying wood.  
**Health Effects:** There has been no known research on the health effects, toxicity, or allergens to this fungi.  
**References:** C.J. K. Wang, R.A. Zabel, Identification Manual for Fungi from Utility Poles in the Eastern United States, American Type Culture Collection 1990

**Cladosporium species** - The most commonly identified outdoor fungus. The outdoor numbers are reduced in the winter and are often high in the summer. Often found indoors in numbers less than outdoor numbers. It is commonly found on the surface of fiberglass duct liner in the interior of supply ducts. A wide variety of plants are food sources for this fungus. It is found on dead plants, woody plants, food, straw, soil, paint and textiles. Often found in dirty refrigerators and especially in reservoirs where condensation is collected, on moist window frames it can easily be seen covering the whole painted area with a velvety olive green layer.  
**Health Effects:** It is a common allergen. It can cause mycosis. Common cause of extrinsic asthma (immediate-type hypersensitivity: type I). Acute symptoms include edema and bronchospasms, chronic cases may develop pulmonary emphysema. Illnesses caused by this genus can include phaeohyphomycosis, chromoblastomycosis, hay fever and common allergies.  
**References:** Flannigan, Brian, Robert A. Samson, and J. David Miller, eds. Microorganisms in Home and Indoor Work Environments: Diversity, Health Impacts, Investigation, and Control. London and New York: Taylor & Francis, 2001.





SanAir ID Number  
**19010166**  
FINAL REPORT  
3/6/2019 2:58:20 PM

**Name:** Environmental Solutions, Inc  
**Address:** 534-A Deale Road  
Deale, MD 20751  
**Phone:** 410-867-6262

**Project Number:** 6609 Riggs Rd  
**P.O. Number:**  
**Project Name:** Cesar Chavez Elementary  
**Collected Date:** 3/5/2019  
**Received Date:** 3/6/2019 10:05:00 AM

## Organism Descriptions

*The descriptions of the organisms presented are derived from various reference materials. The laboratory report is based on the data derived from the samples submitted and no interpretation of the data, as to potential, or actual, health effects resulting from exposure to the numbers of organisms found, can be made by laboratory personnel. Any interpretation of the potential health effects of the presence of this organism must be made by qualified professional personnel with first hand knowledge of the sample site, and the problems associated with that site.*

**Pestalotia- / Pestalotiopsis-like** - This group consists of several genera. Mostly plant pathogens.

**Smuts/Myxomycetes** - Smuts and Myxomycetes are parasitic plant pathogens. They are typically grouped together due to their association with plants, the outdoors and because they share similar microscopic morphology.

**Health Effects:** Can produce type I fungal hypersensitivity reactions.

**References:** Martin, G.W., C.J. Alexopoulos, and M.L. Farr. The Genera of Myxomycetes. Iowa City, Iowa: University of Iowa Press, 1983.

### Conclusions/Recommendations

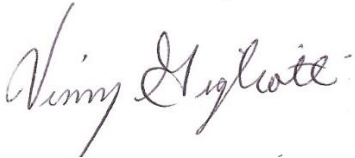
The school was relatively clean of visible mold and water damage during the inspection. However, the CO2 in the school was elevated in several areas. This may have been due to the students occupying the rooms during the time of the inspection but should be monitored and the recommendations listed above should be followed.

Only Classroom 16 contained slightly elevated airborne mold spores. Cleaning recommendations are listed above.

The samples for the other classrooms tested in this report do not indicate the presence of elevated airborne mold spores and should not pose health or environmental risks. Please refer to the attached lab results for identification and spore count per location.

I hope you found our service beneficial. If you have any questions or concerns, please feel free to contact me at 410-867-6262.

Respectfully,



Vinny Gigliotti (CIE)  
Environmental Solutions, Inc.



## **Industry References**

Since the 1993 New York City Department of Health (NYCDOH) document (Assessment and remediation of *Stachybotrys Atra* in Indoor Environments) was produced, several other guidance documents have been written. This report was developed in accordance with and including:

- *Fungal Contamination in Buildings: A Guide to Recognition and Management* (Health Canada, 1995).
- *Control of Moisture Problems Affecting Biological Indoor Air Quality* (Flannigan and Morey, 1996).
- *Bioaerosols: Assessment and Control* (American Conference of Government Industrial Hygienists [ACGIH], 1999).
- *Guidelines on Assessment and Remediation of Fungi in Indoor Environments* (NYCDOH, 2000). [external link]
- *Mold Remediation in Schools and Commercial Buildings* (U.S. EPA, 2001).
- *Report of the Microbial Growth Task Force* (The American Industrial Hygiene Association, 2001).
- *Fungal Contamination: A manual for investigation, remediation and control (BECi) 2005.*
- *29 CFR 1910, Occupational Safety and Health Standards for General Industry, U.S. Department of Labor*
- Institute of Inspection, Cleaning and Restoration Certification Standard IICRC S520 *29 CFR 1926, Occupational Safety and Health Standards for the Construction Industry, U.S. Department of Labor*
- *40 CFR 61, National Emission Standards for Hazardous Air Pollutants (NESHAP), U.S. Environmental Protection Agency*
- *ACR 2006, Assessment, Cleaning and Restoration of HVAC Systems, National Air Duct Cleaners Association, 2006\**
- *ASHRAE Standards 62.1 or 62.2*
- *ASTM D-1653, Standard Test Methods for Water Vapor Transmission of Organic Coating Films*
- *Bioaerosols: Assessment and Control, American Conference of Governmental Industrial Hygienists, 1999*
- *Field Guide for Determination of Biological Contaminants in Environmental Samples, American Industrial Hygiene Association, 2005*
- *A Guide for Mold Remediation in Schools and Commercial Buildings, US Environmental Protection Agency, 2001 Protecting the Built Environment: Cleaning for Health, Michael A. Berry Ph.D., 1993*
- *IICRC S100 Standard and Reference Guide for Professional Carpet Cleaning, Fourth Edition, Institute of Inspection, Cleaning and Restoration Certification, (S100)\**
- *IICRC S300 Standard and Reference Guide for Professional Upholstery Cleaning, First Edition, Institute of Inspection, Cleaning and Restoration Certification, (S300)\**
- *ANSI/IICRC S500 Standard and Reference Guide for Professional Water Damage Restoration, Third Edition, Institute of Inspection, Cleaning and Restoration Certification, (S500)\**