October 20, 2017

Clemson University
310 Klugh Avenue
Clemson, South Carolina 29634

Attn: Mr. W. Robert Newberry, IV
E-mail: wnewber@clemson.edu

Re: Limited Mold Investigation Report
Pee Dee Research & Education Center
2200 Pocket Road
Florence, SC 29506
Terracon Project No. 86127158 – Task 102

Dear Mr. Newberry:

Terracon Consultants, Inc. (Terracon) conducted a limited Mold investigation in Rooms 218 and 240 at the Pee Dee Research and Education Center (Pee Dee Center) located on Pocket Road in Florence, South Carolina. This service was conducted in general accordance with our Master Service Agreement with Clemson University.

PROJECT DESCRIPTION

Scope of Services

At the request of Clemson University, Terracon representative Mr. Stephen Ellis conducted a limited mold investigation in Rooms 218 and 240 of the Pee Dee Center on August 16, 2017. The Pee Dee Center was reportedly constructed in the mid-1980's and contains approximately 40,000 square feet of office, meeting and laboratory space in the main building.

The investigation included measurements of temperature and relative humidity, the collection of airborne mold spore trap samples and surface samples in select areas, the collection of airborne mold spore traps outside the building for comparison and general observations for mold.

Standard of Care

This limited Mold investigation was conducted in a manner consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions in the same locale. Terracon did not attempt to identify every potential exposure or hazard present in the subject building. The results, findings, conclusions and recommendations expressed in this report are based on conditions observed during our sampling. Many factors, such as weather conditions, building occupancy, ventilation patterns and seasonal variations in fungal concentrations, can affect the conditions observed. The information contained in this report should not be relied upon to represent conditions that existed prior to or after this sampling. Terracon does not warrant the services of regulatory agencies, laboratories or other third parties supplying information that may have been used in the preparation of this report.

INVESTIGATION CRITERIA AND METHODS

Physical Assessment

The physical assessment was conducted to determine whether building materials were impacted by moisture intrusion or condensate formation, and to identify the presence of visible fungal growth. The assessment focused primarily on collecting observational data (i.e., information obtained by physical assessment of the building and interviews with the building management, owners, and occupants). The physical assessment can help to formulate plans for more in-depth investigation. Destructive sampling or testing to inspect interior wall cavity spaces or mechanical enclosures was not within the scope of work for this project.

The physical assessment included:

- an examination of the physical structure and potential indoor and outdoor sources of moisture intrusion;
- the identification of any discoloration or odor that could indicate moisture intrusion, water damage, and/or fungal growth;
- using a moisture meter to detect moisture impacted materials; and,
- a general examination of the HVAC air handler.

Moisture Content in Building Materials

Excess moisture in building materials may result in the growth of fungi or bacteria. There are no regulations or standards for moisture content in installed building materials. Moisture content will vary building-to-building and across geography, depending largely on relative humidity and indoor environmental conditions. Terracon applied industry best practices and equipment manufacturer guidelines to determine the moisture content of materials in this facility.

A moisture meter was used to identify suspect water-impacted materials. Building materials have different absorptive and moisture retention properties and will come into equilibrium with environmental moisture (as indicated by relative humidity levels) or become wet by contact with water.

Our investigation was limited to accessible surfaces. No demolition or fixture removal was performed to access interstitial spaces such as mechanical enclosures or wall cavities. A Protimeter® Mini Moisture Meter, Model BLD2000 direct-reading moisture meter was used to measure the moisture content of the building materials included in this investigation. Prior to use, the meter was calibrated according to the manufacturer's recommendations. The moisture meter works via the measurement of electroconductivity through the surface being tested via two penetrating probes.

According to Protimeter®, Wood Moisture Equivalent (%WME) readings above 16% should generally be considered excess moisture that may indicate moisture intrusion and the early stages of wood-deteriorating organism growth.

Mold Sampling

Total mold spore trap samples were collected using Allergenco-D™ spore trap cassettes specifically designed for the collection of airborne mold spores. Air samples were collected using a calibrated Zefon Bio-Pump™ at a flow rate of 15 liters per minute (LPM) for 5 minutes at each location.

After collection, the spore trap samples were hand delivered to the Southeastern Environmental Microbiology Lab (SEEML) in Greenville, South Carolina. SEEML is accredited by the AIHA® Laboratory Accreditation Programs, LLC under the Environmental Microbiology Laboratory Accreditation Program (EMLAP), Accreditation #173667. Air samples were analyzed by direct microscopic examination and results are reported in spores per cubic meter of air (spores/m^3).

To help interpret the mold spore trap sampling results, we compared indoor air and outdoor air measurements. High variability in airborne fungal spore concentrations can exist in different geographic locations, during different seasons, and weather patterns, and over the course of a given day. As a general rule, indoor air fungal spore concentrations in a heating, ventilation and air-conditioning (HVAC)-supplied building are typically less than, but qualitatively similar to, fungal spore concentrations found in the outside environment.

No state or federal exposure limits have been established for fungal aerosols. Regulatory standards, medically based threshold limit or dose-response relationships have not been established for exposure to airborne or surface concentrations of mold spores. Terracon relies upon experience, professional judgment, current scientific literature, guidelines and recommendations made by professional organizations and experts, and statistical methods in interpreting mold sampling results.

Mold surface swabs were collected using Healthlink Transporterä sterile swabs. After collection, the dust swabs were hand delivered to the Southeastern Environmental Microbiology Lab (SEEML) in Greenville, South Carolina for analysis by direct exam. Results from the swab samples are reported as either Fungal Growth (FG) or No Fungal Growth (NFG) and for the mold genera identified, a semi-quantitative category is assigned by the laboratory as either Very Light (VL), Light (L), Medium (M) or High (H).

Temperature and Relative Humidity

Indoor air temperature and relative humidity are physical conditions important to the perception of comfort. The American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) has published recommendations regarding thermal comfort. ASHRAE Standard 55-2013, Thermal Environmental Conditions for Human Occupancy, identifies six primary factors that affect comfort: metabolic rate (affected by the activity being performed); clothing insulation; air temperature; radiant temperature; air speed; and humidity.

Although the relationships are complex, a temperature range between 73 and 79 degrees Fahrenheit (°F) with relative humidity between roughly 20 and 60 percent (%) are recommended for persons in a conditioned setting wearing light summer clothing. Higher temperatures require lower humidity for comfort. For persons in winter clothing, temperatures can range between 68 and 75°F, with relative humidity between 20% and 60%, with preferred conditions falling between 30% and 50% for both winter and summer temperatures.

EPA recommends maintaining indoor humidity below 60%, ideally 30-50%, if possible.

Readings of temperature and relative humidity were collected with an Extech Model 445580 IAQ instrument which was calibrated by the manufacturer.

FINDINGS

Physical Assessment Results

General photographs of the assessment are attached. The following observations were noteworthy:

- Water damaged ceiling tiles were observed in Room 218. Observations above the lay-in ceiling tile grid identified significant quantities of water trapped between an HVAC trunk line and the associated silver duct wrap. Observations of the HVAC unit on the roof identified condensation that is likely the source of the water running down the ducts and accumulating in between the duct insulation and metal duct.

- Small areas (~2 – 4 square feet) of surficial mold growth were observed in Room 240, but only on the exterior walls adjacent to electrical outlets. No water staining was observed in Room 240 and there was no apparent water damage to ceiling tiles.

- The construction of the building consisted of an outer concrete façade with set-in windows and a renovated inner wall covering the existing outer windows.

Moisture Content in Building Materials Results

Because water damaged ceiling tiles were observed in Room 218, moisture readings were collected on various wall surfaces. Readings in Room 218 ranged between 11% and 14%, below the recommended 16% threshold established by Protimeter to indicate elevated moisture content.

Moisture readings on drywall in Room 240 were generally below 16% except for areas along the exterior walls adjacent to the electrical outlets which ranged from 19% to 20%.

Mold Air Sampling Results

On the morning of August 16, 2017, Terracon collected four mold spore trap air samples inside the building and two spore trap samples outside the building for comparison. The results of the total spore count samples analyses are presented in Table 1. The laboratory analytical reports are attached.

Table 1: Summary of Total Spore Count Analyses and
Temperature/Relative Humidity Measurements – August 16, 2017

Sample #	**1A**	**2A**	**3A**	**4A**	**5A**	**6A**
Location Description	**Room 218**	**Rm 240 Front**	**Rm 240 Back**	**Foyer**	**Exterior 1**	**Exterior 2**
Spore Type	**Spores/ m³**	**Spores/m³**	**Spores/m³**	**Spores/m³**	**Spores/m³**	**Spores/m³**
Alternaria	---	39	---	13	26	---
Ascospores	---	39	78	39	975	1,870
Basidiospores	273	312	273	117	5,030	4,680
Bipolaris/Drechslera	---	---	---	---	---	---
Cladosporium	78	117	117	13	1,520	780
Curvularia	---	39	26	---	---	65
Epicoccum	---	---	---	---	26	---
Cercospora	---	---	---	---	26	26
Nigrospora	13	---	---	---	26	13
Penicillium/ Aspergillus	78	351	234	156	117	---
Smuts/*Periconia*/ Myxomycetes	---	65	13	---	39	78
Polythrincium	---	---	---	---	13	---
Torula	---	---	---	---	---	26
Zygomycetes	26	---	26	---	---	---

Sample #	1A	2A	3A	4A	5A	6A
Location Description	**Room 218**	**Rm 240 Front**	**Rm 240 Back**	**Foyer**	**Exterior 1**	**Exterior 2**
Spore Type	**Spores/ m^3**	**Spores/m^3**	**Spores/m^3**	**Spores/m^3**	**Spores/m^3**	**Spores/m^3**
Total	**468**	**962**	**767**	**338**	**7,800**	**7,540**
Temperature (degrees Fahrenheit)	71.2	69.8	70.1	70.3	89.3	---
Relative Humidity (%)	47.5	48.8	49.3	47.7	71.9	---

The lowest outdoor total spore count was approximately 8 times higher than the highest total spore count inside. The dominant mold genera indoors were *Basidospores and Aspergillus/Penicillium.* The dominant mold genera outdoors were *Ascospores*, *Basidiospores and Cladosporium*. Conditions outside on the day we sampled were hot and sunny.

A swab sample collected adjacent to an electrical outlet in Room 240 identified *Basidiospores* at a Very Light (VL) level and *Cladosporium* at a Light (L) level.

CONCLUSIONS

The following conclusions are provided based on our assessment:

- The results of mold air sampling indicated that total airborne mold spore concentrations inside the building were below the total mold spore levels measured in the two outdoor samples. *Aspergillus/Penicillium* type mold spores were detected indoors in low quantities that were not observed in the outdoor samples. This may suggest the condensation on the HVAC system ducts, water damaged ceiling tile, or visible mold at the outlets may be contributing to *Aspergillus/Penicillium* type mold spores being present.
- Measurements of temperature and relative humidity were within recommended ranges.
- Evidence of water damage associated with the HVAC system was observed in Rooms 218 above the lay-in ceiling tile grid. Water had accumulated between an HVAC trunk duct and the duct insulation and was very likely the source that caused the staining to the ceiling tiles in this area. This water accumulation may have originated as condensation in the HVAC at roof level and run down between the ducts and the duct wrap.
- Small areas (less than 10 square feet) of fungal growth were observed along an exterior wall and adjacent to an electrical outlet in Room 240. *Basidiospores* at a Very Light (VL) level and *Cladosporium* at a Light (L) level where detected. Moisture readings in the drywall in Room 240 were elevated in scattered spots along the exterior walls.

- The construction of the building consisted of an outer concrete façade with set-in windows and a renovated inner wall covering the existing outer windows. The area in between the wall and original window may not be ventilated properly and/or there are leaks in the exterior window seals which may cause building materials to condense if the dew point is reached. Typically, outlets are not completely insulated and allow for air and moisture transfer; hence, the surficial mold observed at the outlets may be attributed to this construction.

RECOMMENDATIONS

The following recommendations are provided based on our assessment:

- Repairs to the HVAC system should be corrected to prevent condensation of the HVAC system. Wet ceiling tiles and duct insulation should be replaced. Other parts of the building's HVAC system should be checked to confirm this is not occurring elsewhere.
- It appears at this time the mold growth at the outlets is surficial and should be cleaned until corrective actions on the wall assembly can be made.
- Further investigation of the wall assembly should be made to verify the cause of increased moisture content and mold growth. As identified in the conclusions this may be a factor of dew point, ventilation, and/or vapor drive. If the wall system is opened up for further investigation, it should be made in a temporary controlled enclosure with HEPA filtration in case hidden mold is found.

Terracon appreciates the opportunity to provide this service to Clemson University. If you have any questions regarding this report, please contact the undersigned at 864-292-2901.

Sincerely,
Terracon Consultants, Inc.

Benjamin Hestir, P.E.
Project Industrial Hygienist

Jeffrey A. Gurrie
Senior Industrial Hygienist

Attachments: Photographs
Laboratory Results

Photographs



Photo #1 Stained ceiling tiles below HVAC trunk line with water trapped by duct wrap in Room 218

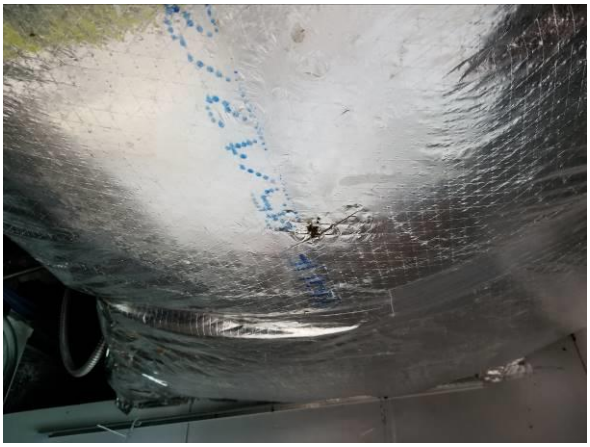


Photo #2 Water swollen duct wrap above Room 218



Photo #3 View of condensation on HVAC at rooftop



Photo #4 Mold growth adjacent to power outlet in Room 240



Photo #5 Elevated moisture reading in drywall in Room 240 on exterior wall



Photo #6 View of Pee Dee Research Center exterior façade)

Laboratory Results

SEEML Reference Number:
170817023

Southeast Environmental Microbiology Laboratories
506 Laurens Rd
Greenville, SC 29607
Phone: (864) 233-3770
FAX: (864) 233-6589

The information and data for **Terracon** has been checked for thoroughness and accuracy. The following reports are contained within this document:

- ☒ Direct Exam Report
- ☒ Spore Trap Report
- ☐ Andersen Fungal Report
- ☐ Quantitative Direct Exam Report
- ☐ Quantitative Fungal Report

Lab Manager Review: Rafael Berrios Date: 08/17/17

Thank you for using SEEML laboratories. We strive to provide superior quality and service.
SEEML laboratories are AIHA (American Industrial Hygiene Association) Environmental Microbiology Accredited laboratory for only fungal analysis Air-Direct Examination (EMLAP # 173667).

The data within this report is reliable to three significant figures. The third significant figure is technically unjustified. In this instance, the third figure is reported as an estimate to facilitate the interpretation by the customer.

Confidentiality Notice:
The document(s) contained herein are confidential and privileged information, intended for the exclusive use of the individual or entity named above. If the reader of this message is not the intended recipient, or the employee or agent responsible for delivering it to the intended recipient, you are hereby notified that any dissemination, distribution or copying of the document(s) is strictly prohibited. If you have received this document in error, please immediately notify us by telephone to arrange for its return. Thank you.

Guidelines for Interpretation:
No accepted quantitative regulatory standards currently exist by which to assess the health risks related to mold and bacterial exposure. Molds and bacteria have been associated with a variety of health effects and sensitivity varies from person to person.
Several organizations, including: the American Conference of Government Industrial Hygienists (ACGIH); the American Industrial Hygiene Association (AIHA); the Indoor Air Quality Association (IAQA); the United States Environmental Protection Agency (USEPA); the Centers for Disease Control (CDC), as well as the California Department of Health Services (CADHS), have all published guidelines for assessment and interpretation of mold resulting from water intrusion in buildings.

Interpretation of the data and information within this document is left to the company, consultant, and/or persons who conducted the fieldwork.

Spore Trap Report

Attention: Ben Hestir	Date Sampled: 08/16/17
Terracon	Date Received: 08/17/17
72 Pointe Circle	Date Analyzed: 08/17/17
Greenville, SC 29615	Date Reported: 08/17/17
	Date Revised:
	Project Name: 86127185
	Project Address: CU-Pee Dee Research
	Project City, State, ZIP: Florence, SC
	SEEML Reference # : 170817023

TEST METHOD: DIRECT MICROSCOPY EXAMINATION AT 400X (100% OF TRACE ANALYZED) SEEML SOP 7

Client Sample ID	1A			2A			3A		
Location	Rm 218			Rm 240 Front			Rm 240 Back		
Lab Sample ID	170817023-074			170817023-075			170817023-076		
Detection Limit (spores/m^3)	13			13			13		
Hyphal Fragments	2	26							
Pollen									
Spore Trap Used	Allergenco			Allergenco			Allergenco		
	raw ct.	spores/m^3	%	raw ct.	spores/m^3	%	raw ct.	spores/m^3	%
Alternaria				3	39	4			
Ascospores				3	39	4	6	78	10
Basidiospores	21	273	58	24	312	32	21	273	36
Bipolaris/Drechslera									
Chaetomium									
Cladosporium	6	78	17	9	117	12	9	117	15
Curvularia				3	39	4	2	26	3
Epicoccum									
Cercospora									
Fusarium									
Memnoniella									
Nigrospora	1	13	3						
Penicillium/Aspergillus	6	78	17	27	351	36	18	234	31
Polythrincium									
Rusts									
Smuts/Periconia/Myxomy				5	65	7	1	13	2
Spegazzinia									
Stachybotrys									
Stemphylium									
Tetraploa									
Torula									
Ulocladium									
Colorless/Other Brown 2									
Oidium									
Zygomycetes	2	26	6				2	26	3
Pithomyces									
Background debris (1-5)3	3			3			3		
Sample Volume(liters)	75			75			75		
TOTAL SPORES/M^3	36	**468**		74	**962**		59	**767**	

Comments: Condition of the sample(s) upon receipt: Acceptable.

1=Total % may not equal 100 due to rounding.

2 = Colorless,other Brown are spores without a distinctive morphology on spore traps and non-viable surface samples.

3 = Background debris is the amount of particulate matter present on the slide and is graded from 1-5 with 1 = very light, 2= Light, 3 = Medium, 4 = Heavy, 5 = Very Heavy. The higher the rating the more likelihood spores may be underestimated. A rating of 5 should be interpreted as minimal counts and may actually be higher than reported.

The reporting limit is 1 Spore/sample.

Disclaimer: This report relates only to the samples tested

Respectfully submitted, SEEML

Rafael Berrios

Rafael Berrios, Approved Laboratory Signatory

506 Laurens Road
Greenville, SC 29607
Phone: (864) 233- 3770
Fax: (864) 233-6589
AIHA-LAP, LLC EMLAP # 173667

Spore Trap Report

Attention: Ben Hestir	Date Sampled: 08/16/17
Terracon	Date Received: 08/17/17
72 Pointe Circle	Date Analyzed: 08/17/17
Greenville, SC 29615	Date Reported: 08/17/17
	Date Revised:
	Project Name: 86127185
	Project Address: CU-Pee Dee Research
	Project City, State, ZIP: Florence, SC
	SEEML Reference # : 170817023

TEST METHOD: DIRECT MICROSCOPY EXAMINATION AT 400X (100% OF TRACE ANALYZED) SEEML SOP 7

Client Sample ID	4A			5A			6A		
Location	Foyer/Entryway			Exterior 1			Exterior 2		
Lab Sample ID	170817023-077			170817023-078			170817023-079		
Detection Limit (spores/m^3)	13			13			13		
Hyphal Fragments				2	26		3	39	
Pollen									
Spore Trap Used	Allergenco			Allergenco			Allergenco		
	raw ct.	spores/m^3	%	raw ct.	spores/m^3	%	raw ct.	spores/m^3	%
Alternaria	1	13	4	2	26	<1			
Ascospores	3	39	12	75	975	13	144	1870	25
Basidiospores	9	117	35	387	5030	64	360	4680	62
Bipolaris/Drechslera									
Chaetomium									
Cladosporium	1	13	4	117	1520	19	60	780	10
Curvularia							5	65	<1
Epicoccum				2	26	<1			
Cercospora				2	26	<1	2	26	<1
Fusarium									
Memnoniella									
Nigrospora				2	26	<1	1	13	<1
Penicillium/Aspergillus	12	156	46	9	117	2			
Polythrincium				1	13	<1			
Rusts									
Smuts/Periconia/Myxomy				3	39	<1	6	78	1
Spegazzinia									
Stachybotrys									
Stemphylium									
Tetraploa									
Torula							2	26	<1
Ulocladium									
Colorless/Other Brown 2									
Oidium									
Zygomycetes									
Pithomyces									
Background debris (1-5)3	3			3			3		
Sample Volume(liters)	75			75			75		
TOTAL SPORES/M^3	26	**338**		600	**7800**		580	**7540**	

Comments: Condition of the sample(s) upon receipt: Acceptable.

1=Total % may not equal 100 due to rounding.

2 = Colorless,other Brown are spores without a distinctive morphology on spore traps and non-viable surface samples.

3 = Background debris is the amount of particulate matter present on the slide and is graded from 1-5 with 1 = very light, 2= Light, 3 = Medium, 4 = Heavy, 5 = Very Heavy. The higher the rating the more likelihood spores may be underestimated. A rating of 5 should be interpreted as minimal counts and may actually be higher than reported.

The reporting limit is 1 Spore/sample.

Disclaimer: This report relates only to the samples tested

Respectfully submitted, SEEML

Rafael Berrios

Rafael Berrios, Approved Laboratory Signatory

506 Laurens Road
Greenville, SC 29607
Phone: (864) 233- 3770
Fax: (864) 233-6589
AIHA-LAP, LLC EMLAP # 173667

Spore Trap Report

Attention: Ben Hestir	Date Sampled: 08/16/17
Terracon	Date Received: 08/17/17
72 Pointe Circle	Date Analyzed: 08/17/17
Greenville, SC 29615	Date Reported: 08/17/17
	Date Revised:
	Project Name: 86127185
	Project Address: CU-Pee Dee Research
	Project City, State, ZIP: Florence, SC
	SEEML Reference # : 170817023

TEST METHOD: DIRECT MICROSCOPY EXAMINATION AT 400X (100% OF TRACE ANALYZED) SEEML SOP 7

Client Sample ID	7A								
Location	Blank								
Lab Sample ID	170817023-080								
Detection Limit (spores/m^3)									
Hyphal Fragments									
Pollen									
Spore Trap Used	Allergenco								
	raw ct.	spores/m^3	%						
Alternaria									
Ascospores									
Basidiospores									
Bipolaris/Drechslera									
Chaetomium									
Cladosporium	No								
Curvularia	Trace								
Epicoccum									
Cercospora									
Fusarium									
Memnoniella									
Nigrospora									
Penicillium/Aspergillus									
Polythrincium									
Rusts									
Smuts/Periconia/Myxomy									
Spegazzinia									
Stachybotrys									
Stemphylium									
Tetraploa									
Torula									
Ulocladium									
Colorless/Other Brown 2									
Oidium									
Zygomycetes									
Pithomyces									
Background debris (1-5)3	0								
Sample Volume(liters)									
TOTAL SPORES/M^3									

Comments: Condition of the sample(s) upon receipt: Acceptable.

1=Total % may not equal 100 due to rounding.

2 = Colorless,other Brown are spores without a distinctive morphology on spore traps and non-viable surface samples.

3 = Background debris is the amount of particulate matter present on the slide and is graded from 1-5 with 1 = very light, 2= Light, 3 = Medium, 4 = Heavy, 5 = Very Heavy. The higher the rating the more likelihood spores may be underestimated. A rating of 5 should be interpreted as minimal counts and may actually be higher than reported.

The reporting limit is 1 Spore/sample.

Disclaimer: This report relates only to the samples tested

Respectfully submitted, SEEML

Rafael Berrios

Rafael Berrios, Approved Laboratory Signatory

506 Laurens Road
Greenville, SC 29607
Phone: (864) 233- 3770
Fax: (864) 233-6589
AIHA-LAP, LLC EMLAP # 173667

Surface and Bulk Sample Report

	Date Sampled: 08/16/17
Attention: Jeff Gurrie	Date Received: 08/17/17
Terracon	Date Analyzed: 08/17/17
72 Pointe Circle	Date Reported: 08/17/17
Greenville, SC 29615	Date Revised:
	Project Name: 86127185
	Project Address: CU-Pee Dee Research
	Project City, State ZIP: Florence, SC
	SEEML Reference #: 170817023

TEST METHOD: Direct Microscopic Examination (SEEML SOP 18)

Client Sample ID	1S			
Location	Arount Outlet Plate-Rm 240			
SEEML Sample ID	170817023-081			
Sample Type	Swab			
	Quantification*			
Hyphal Fragments	**VL**			
Pollen				
General Impressions **	**FG**			
Fungal Spore:				
Alternaria				
Acremonium				
Ascospores				
Basidiospores	**VL**			
Bipolaris/Drechslera				
Cercospora				
Chaetomium				
Cladosporium	**L**			
Curvularia				
Epicoccum				
Fusarium				
Geotrichum sp.				
Memnoniella				
Myxomycetes				
Nigrospora				
Penicillium/Aspergillus				
Pithomyces				
Rusts/Smuts				
Stachybotrys				
Torula				
Ulocladium				

**** General Impressions: NFG = No Fungal Growth, FG = Fungal Growth, MFG = Minimal Fungal Growth Or Growth in vicinity**

Quantification of fungal growth is done by semi-quantitative grading using the following ranges:

Scattered Spores, 1-20 fungal spores

VL = 21-100 fungal spores **L = 101-1,000 fungal spores** **M = 1,001-10,000 fungal spores** **H = >10,000 fungal spores**

ND = No Fungal Spores Detected

Disclaimer: This report relates only to the samples tested

Respectfully submitted, SEEML

Rafael Berrios, **Approved Laboratory Signatory**

506 Laurens Road

Greenville, SC 29607

Phone: (864) 233- 3770

Fax: (864) 233- 6589

AIHA-LAP, LLC EMLAP # 173667

Southeast Environmental Microbiology Laboratories

Chain of Custody

SEEML Labs

506 Laurens Rd, Greenville, SC 29607

Phone : 864-233-3770, Fax: 864-233-6589, www.seeml.com, AIHA-LAP, LLC. (EMLAP) #173667

Page ____ of ____

For Lab Use Only			
Condition of samples is acceptable	☑ YES ☐ NO	SEEML Ref #: 170817023	Lab ID: 074-081

Company Information		Client Information		Environmental Conditions	
(Project Manager)	Ben Hosting	Date Sampled:	8-16-17	Precipitation in last 16hrs:	None
(Company Name)	Terracon	Project Name:	CU-Pee Dee Research 2	Relative Humidity I/O:	48.3% / 71.4%
(Address)	72 Pointe Circle	Project Address:	8612 [redacted]	Temperature I/O:	70.3° / 89.3°
(City, State, Zip)	Greenville, SC 29615	City, State, Zip:	Florence, SC	Wind Conditions	Fair
(Phone)	864-292-2901				
(Email)	Ben.Hosting@terracon.com				

Sample Type Abbreviations:

A- Allergenco **S**-Swab **AP**-Andersen Plate
AOC- Air O Cell **T**-Tape **W**- Water
M5- Micro 5 **B**- Bulk **D**- Dust

Analysis Type:

1. SporeTrap, Air Sample Analysis-Same Day
2. Direct Exam Surface Sample Analysis -Same Day
3. Culturable Air / Surface Samples -7-10 days

Sample ID	Sample Location	Sample Type	Analysis Type	*Area	**Volume (L)	Notes
1A	Rm 218	A	1		75L	
2A	Rm 240 Front	A	1		75L	
3A	Rm 240 Back	A	1		75L	
4A	Foyer / Entryway	A	1		75L	
5A	Exterior 1	A	1		75L	
6A	Exterior 2	A	1		75L	
7A	Blank	A	1		~~75L~~	
1S	Around Outlet Plate- Rm 240	S	1		OL	Blank
		S	2	1in²		

Relinquished By:	Date/Time	Recieved By:	Date/Time
	8-17-17 0915		8-17-17

* Area is only required for culturable surface samples.

** Volume = Pump setting (L/min) x minutes