September 22, 2015

Clemson University
310 Klugh Avenue
Clemson, South Carolina 29634

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

Re: Limited Mold Investigation Report
Clemson University
Sirrine Hall – Office 132
Clemson, South Carolina
Terracon Project No. 86127158

Dear Mr. Newberry:

Terracon Consultants, Inc. (Terracon) conducted a limited mold investigation in office suite 132 at Sirrine Hall located on Clemson University's main campus in Clemson, South Carolina. It is our understanding there are occupant complaints pertaining to mold. The sampling was performed in general accordance with our IDC with Clemson University.

PROJECT DESCRIPTION

At the request of Clemson University Terracon conducted a limited mold investigation of office suite 132 in Sirrine Hall. The occupant of the office had complained of mold issues possibly related to past construction activities outside the office suite.

This 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 investigation. Many factors, such as weather conditions, building occupancy, ventilation patterns, and seasonal variations in fungal/bacterial concentrations or local sources of volatile chemicals, 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 investigation. 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 Inspection

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 inspection focused primarily on collecting observational data (i.e., information obtained by physical inspection of the building and interviews with the building management, owners, and occupants). The physical inspection 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 inspection 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; and,
- an examination of the HVAC system(s) and its components.

Mold Sampling

There are no state or federal exposure limits established for fungal aerosols. There are currently no regulatory standards or medically based threshold limit or dose-response relationships 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.

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 an HVAC-supplied building are typically less than, but qualitatively similar to, fungal spore concentrations found in the outside environment. To help interpret the sampling results, we compared indoor air and outdoor air measurements.

Total non-viable (non-culturable) fungal spore trap samples were collected using Air-O-Cell™ spore trap cassette specifically designed for the collection of airborne mold spores. Air samples were collected using a calibrated vacuum pump at a flow rate of 15 liters per minute (LPM) for 5 minutes at each location. After air sample collection, the samples were shipped to EMSL Analytical Laboratory (EMSL), accredited by the AIHA® Laboratory Accreditation Programs, LLC under the Environmental Microbiology Laboratory Accreditation Program (EMLAP), Accreditation #192283. The samples were analyzed by direct microscopic examination and are reported in spores per cubic meter of air (spores/m^3).

Surface samples were collected from representative surfaces with apparent mold growth using a 1-2 inch section of clear adhesive tape, which was then adhered to a clean microscope slide or a sterile swab. The samples were sent to EMSL analyzed by direct microscopic examination.

In addition to mold sampling, Terracon tested for temperature and humidity in the areas sampled.

FINDINGS

Physical Assessment

Office suite 132 is in the center of the building near a common area with an elevator. Heating and cooling is supplied through a fan coil units. Coils within the units appeared to have limited microbiological growth and debris were observed in the condensate pan. The unit was in cooling mode and the condensate appeared to be draining freely. A swab sample was collected on the coil.

Apparent mold was observed on a ceiling tile in an office that appeared wet from a pipe leak above. A tape lift sample was collected on the ceiling tile. The windows did not have water staining which would indicate water intrusion. Dehumidifiers were present in the office area but not operating. At the time of assessment no musty odors were observed in office suite132.

Evidence of recent renovations were observed adjacent to the office suite. Construction dust is still apparent on the floor and in the corners. No visible mold or musty odors were observed in the common area. This area has an elevator and is generally considered a high traffic area.

Photographs of the assessment are attached.

Mold Air Sampling

A total of seven samples were collected; four samples indoors, two samples outdoors for comparison and a trip blank. At the time of testing the indoor temperature ranged from 75° F to 78° F and relative humidity ranged from 53% to 58%. Outdoor temperature was 90° F and relative humidity was 64% with little to no wind on a clear day. No rain events occurred 24 hours prior to the sampling. The results of the laboratory analyses are summarized in Table 1 below:

Table 1: Summary of Mold Spore Results – September 1, 2015

Sample #	1	2	3	4	5 & 6	7
Location	**Reception Area Office 132**	**Room 132 F**	**Room 132 D**	**Common Area Adjacent to 132**	**Outdoor Range (2 samples)**	**Blank**
Spore Type	**Spores/m³**	**Spores/m³**	**Spores/m³**	**Spores/m³**	**Spores/m³**	**Spores/ m³**
Ascospores	40	---	---	80	---	---
Aspergillus/ Penicillium	300	80	---	80	300 - 460	---
Basidiospores	200	300	40	400	6,080 – 8,060	---
Chaetomium	80	---			---	
Cladosporium	---	80		200	1,900 – 3,200	---
Curvularia	---	---	---	40	ND - 40	---
Epicoccum	---	---	---	---	ND - 40	---
Fusarium	---				ND - 40	
Ganoderma	---	40			40 - 200	
Myxomycetes	---	80			40	
Pithomyces	---				10 – 40	
Rust	---			40		
Stachybotrys	---			80		
Unidentifiable	---				ND – 40	
Cercospora	---				40 – 80	
Zygophiala	---				ND - 40	
Total	**620**	**580**	**40**	**2,850**	**10,390 – 10, 740**	**No Trace**

Two surface samples were collected in the office suite. Sample S-1 was a tape lift collected on the ceiling tile below the leaking pipe. Analytical results reported a high number of *Stachybotrys* spores in the sample. The second surface sample (Sample S-2) was collected on the fan coil unit in the reception area of the suite. Analytical results reported a high number of *Cladosporium* spores in the sample.

The laboratory analytical report is attached.

Conclusions and Recommendations

The following conclusions and recommendations are provided based on our assessment:

- Mold spore levels in office suite 132 were below outdoor spore levels. Apparent mold was identified on the fan coil units in this suite and on a ceiling tile in an office. Terracon recommends correcting the cause of the drip onto the ceiling tile and replacing the ceiling tile. Additionally all the fan coil units in this suite should be cleaned (coil and condensate pan). These measures should reduce occupant complaints in this suite.

- Mold spore levels in the common area adjacent to suite 132 were lower than outdoor levels but were higher than office suite 132. Since this is a common traffic area with an elevator, mold spore levels may be may be introduced into the indoor environment by occupants or

other means (i.e. air movement within the elevator shaft). This area recently underwent renovations and construction dust is still apparent in the area. Terracon recommends further cleaning in this area to remove construction dust and settled spores.

- Dehumidifiers were observed, but were not running at the time of the inspection. Although the humidity was not above 60% at the time of testing, the presence of portable dehumidifiers may indicate the occupants need additional dehumidification. The fan coil units should also be checked to verify they are effectively removing humidity from the space and maintaining humidity below 60%.

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

Sincerely,
Terracon Consultants, Inc.

Jeffrey Gurrie
Senior Project Industrial Hygienist

Benjamin Hestir, P.E.
Project Industrial Hygienist

Attachments: Photographs
Laboratory Results

Photographs



Photo #1 Fan coil unit in reception area.



Photo #2 Mold growth on coils and dirty condensate pan. Swab sample collected on coil.

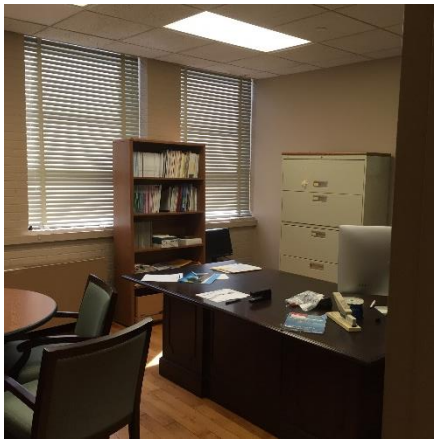


Photo #3 Office 132 F.



Photo #4 Portable dehumidifier/filter unit used in offices.



Photo #5 Mold observed on ceiling tile. Tape lift collected here.



Photo #6 Room 132 F, pipe leaking on ceiling tile.

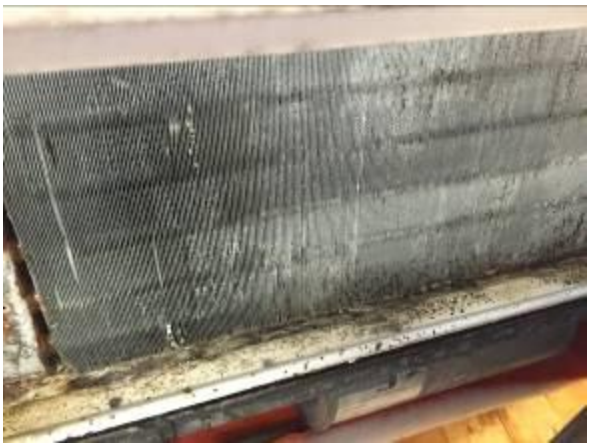


Photo #7 Room 132 F, coil with apparent mold growth.



Photo #8 Room 132 E.



Photo #9 Fan coil unit in Room 132 E. Dirty condensate drain pan.



Photo #10 Fan coil unit in Room 132 E. Dirty condensate drain pan.

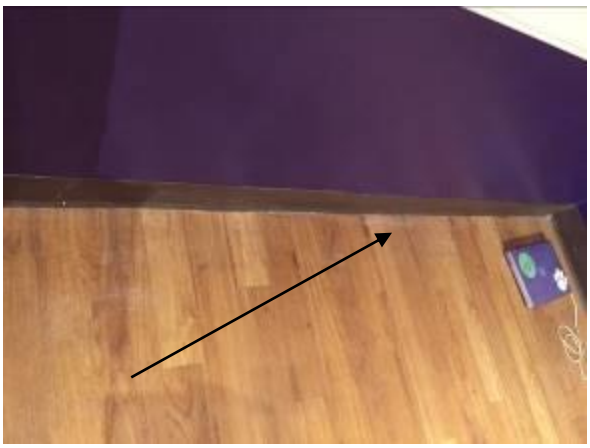


Photo #11 Construction dust still apparent in the common area.

Laboratory Results

EMSL Analytical, Inc.
376 Crompton Street Charlotte, NC 28273
Phone/Fax: (704) 525-2205 / (704) 525-2382
http://www.EMSL.com / charlottelab@emsl.com

Order ID: 411506231
Customer ID: GTER78
Customer PO:
Project ID:

Attn: Jeffrey Gurrie
Terracon Consultants, Inc.
3534 Rutherford Road
Taylors, SC 29687

Phone: (864) 292-2901
Fax: (864) 292-6361
Collected:
Received: 09/03/2015
Analyzed: 09/05/2015

Proj: 86127158 - Sirrint 132

Test Report: Air-O-Cell(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods EMSL 05-TP-003, ASTM D7391)

Lab Sample Number:	411506231-0001			411506231-0002			411506231-0003		
Client Sample ID:	1			2			3		
Volume (L):	75			75			75		
Sample Location:	Room 132 Sirrine			Room 132 F			Room 132 D		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**
Alternaria	-	-	-	-	-	-	-	-	-
Ascospores	1	40	6.5	-	-	-	-	-	-
Aspergillus/Penicillium	8	300	48.4	2	80	13.8	-	-	-
Basidiospores	4	200	32.3	8	300	51.7	1	40	100
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	2	80	12.9	-	-	-	-	-	-
Cladosporium	-	-	-	2	80	13.8	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	1	40	6.9	-	-	-
Myxomycetes++	-	-	-	2	80	13.8	-	-	-
Pithomyces	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis	-	-	-	-	-	-	-	-	-
Stachybotrys	-	-	-	-	-	-	-	-	-
Torula	-	-	-	-	-	-	-	-	-
Ulocladium	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Cercospora	-	-	-	-	-	-	-	-	-
Zygophiala	-	-	-	-	-	-	-	-	-
Total Fungi	**15**	**620**	**100**	**15**	**580**	**100**	**1**	**40**	**100**
Hyphal Fragment	1	40	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	1	40	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	42	-	-	42	-	-	42	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	3	-	-	2	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	2	-	-	2	-	-	2	-

Bipolaris++ = Bipolaris/Drechslera/Exserohilum
Myxomycetes++ = Myxomycetes/Periconia/Smut

Lee Plumley, Laboratory Manager
or Other Approved Signatory

High levels of background particulate can obscure spores and other particulates leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. "*" Denotes particles found at 300X. "-" Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Charlotte, NC AIHA-LAP, LLC - EMLAP 192283

Initial report from: 09/08/2015 13:08:26

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

EMSL Analytical, Inc.
376 Crompton Street Charlotte, NC 28273
Phone/Fax: (704) 525-2205 / (704) 525-2382
http://www.EMSL.com / charlottelab@emsl.com

Order ID: 411506231
Customer ID: GTER78
Customer PO:
Project ID:

Attn: Jeffrey Gurrie
Terracon Consultants, Inc.
3534 Rutherford Road
Taylors, SC 29687

Phone: (864) 292-2901
Fax: (864) 292-6361
Collected:
Received: 09/03/2015
Analyzed: 09/05/2015

Proj: 86127158 - Sirrint 132

Test Report: Air-O-Cell(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods EMSL 05-TP-003, ASTM D7391)

Lab Sample Number:	411506231-0004			411506231-0005			411506231-0006		
Client Sample ID:	4			5			6		
Volume (L):	75			75			75		
Sample Location:	Common Area			Outdoors			Outdoors		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**
Alternaria	-	-	-	-	-	-	-	-	-
Ascospores	2	80	8.7	11	460	4.4	6	300	2.8
Aspergillus/Penicillium	2	80	8.7	9	400	3.8	1	40	0.4
Basidiospores	9	400	43.5	144	6080	58.5	191	8060	75
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	5	200	21.7	75	3200	30.8	44	1900	17.7
Curvularia	1	40	4.3	-	-	-	1	40	0.4
Epicoccum	-	-	-	1	40	0.4	-	-	-
Fusarium	-	-	-	1	40	0.4	-	-	-
Ganoderma	-	-	-	1	40	0.4	4	200	1.9
Myxomycetes++	-	-	-	1	40	0.4	1	40	0.4
Pithomyces	-	-	-	1*	10*	0.1	1	40	0.4
Rust	1	40	4.3	-	-	-	-	-	-
Scopulariopsis	-	-	-	-	-	-	-	-	-
Stachybotrys	2	80	8.7	-	-	-	-	-	-
Torula	-	-	-	-	-	-	-	-	-
Ulocladium	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	1	40	0.4
Zygomycetes	-	-	-	-	-	-	-	-	-
Cercospora	-	-	-	2	80	0.8	1	40	0.4
Zygophiala	-	-	-	-	-	-	1	40	0.4
Total Fungi	**22**	**920**	**100**	**246**	**10390**	**100**	**252**	**10740**	**100**
Hyphal Fragment	-	-	-	-	-	-	1	40	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	42	-	-	42	-	-	42	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	3	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	2	-	-	3	-	-	3	-

Bipolaris++ = Bipolaris/Drechslera/Exserohilum
Myxomycetes++ = Myxomycetes/Periconia/Smut

Lee Plumley, Laboratory Manager
or Other Approved Signatory

High levels of background particulate can obscure spores and other particulates leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. "*" Denotes particles found at 300X. "-" Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Charlotte, NC AIHA-LAP, LLC - EMLAP 192283

Initial report from: 09/08/2015 13:08:26

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

EMSL Analytical, Inc.
376 Crompton Street Charlotte, NC 28273
Phone/Fax: (704) 525-2205 / (704) 525-2382
http://www.EMSL.com / charlottelab@emsl.com

Order ID: 411506231
Customer ID: GTER78
Customer PO:
Project ID:

Attn: Jeffrey Gurrie
Terracon Consultants, Inc.
3534 Rutherford Road
Taylors, SC 29687

Phone: (864) 292-2901
Fax: (864) 292-6361
Collected:
Received: 09/03/2015
Analyzed: 09/05/2015

Proj: 86127158 - Sirrint 132

Test Report: Air-O-Cell(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods EMSL 05-TP-003, ASTM D7391)

Lab Sample Number:	**411506231-0007**		
Client Sample ID:	**7**		
Volume (L):	**0**		
Sample Location:	**Blank**		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**
Alternaria	-	-	-
Ascospores	-	-	-
Aspergillus/Penicillium	-	-	-
Basidiospores	-	-	-
Bipolaris++	-	-	-
Chaetomium	-	-	-
Cladosporium	-	-	-
Curvularia	-	-	-
Epicoccum	-	-	-
Fusarium	-	-	-
Ganoderma	-	-	-
Myxomycetes++	-	-	-
Pithomyces	-	-	-
Rust	-	-	-
Scopulariopsis	-	-	-
Stachybotrys	-	-	-
Torula	-	-	-
Ulocladium	-	-	-
Unidentifiable Spores	-	-	-
Zygomycetes	-	-	-
Cercospora	-	-	-
Zygophiala	-	-	-
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)	-	-	-

Bipolaris++ = Bipolaris/Drechslera/Exserohilum
Myxomycetes++ = Myxomycetes/Periconia/Smut



Lee Plumley, Laboratory Manager
or Other Approved Signatory

High levels of background particulate can obscure spores and other particulates leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. "*" Denotes particles found at 300X. "-" Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Charlotte, NC AIHA-LAP, LLC - EMLAP 192283

Initial report from: 09/08/2015 13:08:26

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

EMSL Analytical, Inc.
376 Crompton Street Charlotte, NC 28273
Phone/Fax: (704) 525-2205 / (704) 525-2382
http://www.EMSL.com / charlottelab@emsl.com

Order ID: 411506231
Customer ID: GTER78
Customer PO:
Project ID:

Attn: Jeffrey Gurrie
Terracon Consultants, Inc.
3534 Rutherford Road
Taylors, SC 29687

Phone: (864) 292-2901
Fax: (864) 292-6361
Collected:
Received: 09/03/2015
Analyzed: 09/05/2015

Proj: 86127158 - Sirrint 132

Test Report: Microscopic Examination of Fungal Spores, Fungal Structures, Hyphae, and Other Particulates from Swab Samples (EMSL Method: M041)

Lab Sample Number: / Client Sample ID: / Sample Location:	411506231-0009 S-2 Swab - Fan Coil Unit Room 132				
Spore Types	Category				
Agrocybe/Coprinus	-				
Alternaria	-				
Ascospores	-				
Aspergillus/Penicillium	-				
Basidiospores	Rare				
Bipolaris++	-				
Chaetomium	-				
Cladosporium	*High*				
Curvularia	-				
Epicoccum	-				
Fusarium	-				
Ganoderma	-				
Myxomycetes++	-				
Paecilomyces	-				
Rust	-				
Scopulariopsis	-				
Stachybotrys	-				
Torula	-				
Ulocladium	-				
Unidentifiable Spores	-				
Zygomycetes	-				
Acremonium	-				
Aspergillus	-				
Fibrous Particulate	Rare				
Hyphal Fragment	Medium				
Insect Fragment	-				
Pollen	-				

Category: Count/per area analyzed
Rare: 1 to 10 Low: 11 to 100 Medium: 101 to 1000 High: >1000

Bipolaris++ = Bipolaris/Dreschlera/Exserohilum Myxomycetes++ = Myxomycetes/Periconia/Smut
* = Sample contains fruiting structures and/or hyphae associated with the spores.

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

Lee Plumley, Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation of the data contained in this report is the responsibility of the client. *-* denotes not detected. Samples received in good condition unless otherwise noted.
Samples analyzed by EMSL Analytical, Inc. Charlotte, NC AIHA-LAP, LLC--EMLAP Accredited #192283

Initial report from: 09/08/2015 13:08:26

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

EMSL Analytical, Inc.
376 Crompton Street Charlotte, NC 28273
Phone/Fax: (704) 525-2205 / (704) 525-2382
http://www.EMSL.com / charlottelab@emsl.com

Order ID: 411506231
Customer ID: GTER78
Customer PO:
Project ID:

Attn: Jeffrey Gurrie
Terracon Consultants, Inc.
3534 Rutherford Road
Taylors, SC 29687

Phone: (864) 292-2901
Fax: (864) 292-6361
Collected:
Received: 09/03/2015
Analyzed: 09/05/2015

Proj: 86127158 - Sirrint 132

Test Report: Microscopic Examination of Fungal Spores, Fungal Structures, Hyphae, and Other Particulates from Tape Samples (EMSL Method: M041)

Lab Sample Number:	411506231-0008				
Client Sample ID:	S-1				
Sample Location:	Tape Lift - Ceiling Tile Room 132 F				
Spore Types	Category				
Agrocybe/Coprinus	-				
Alternaria	-				
Ascospores	-				
Aspergillus/Penicillium	-				
Basidiospores	-				
Bipolaris++	-				
Chaetomium	-				
Cladosporium	-				
Curvularia	-				
Epicoccum	-				
Fusarium	-				
Ganoderma	-				
Myxomycetes++	-				
Paecilomyces	-				
Rust	-				
Scopulariopsis	-				
Stachybotrys	*High*				
Torula	-				
Ulocladium	-				
Unidentifiable Spores	-				
Zygomycetes	-				
Acremonium	*Medium*				
Aspergillus	*Low*				
Fibrous Particulate	-				
Hyphal Fragment	Medium				
Insect Fragment	-				
Pollen	-				

Category: Count/per area analyzed
Rare: 1 to 10 Low: 11 to 100 Medium: 101 to 1000 High: >1000

Bipolaris++ = Bipolaris/Dreschlera/Exserohilum Myxomycetes++ = Myxomycetes/Periconia/Smut
* = Sample contains fruiting structures and/or hyphae associated with the spores.

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

Lee Plumley, Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation of the data contained in this report is the responsibility of the client. "-" denotes not detected. Samples received in good condition unless otherwise noted.
Samples analyzed by EMSL Analytical, Inc. Charlotte, NC AIHA-LAP, LLC--EMLAP Accredited #192283

Initial report from: 09/08/2015 13:08:26

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

OrderID: 411506231

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Chain of Custody

EMSL Order Number (*Lab Use Only*): 411506231

EMSL Analytical, Inc.
376 Crompton Street
Charlotte, NC 28273
PHONE: (704) 525-2205
FAX: (704) 525 2382

Company : Terracon		**EMSL-Bill to:** ☑ Same ☐ Different If Bill to is Different note instructions in Comments** Third Party Billing requires written authorization from third party	
Street: 3534 Rutherford Road			
City: Taylors	**State/Province:** SC	**Zip/Postal Code:** 29687	**Country:** United States
Report To (Name): Jeffrey Gurrie		**Telephone #:** 864-360-7572	
Email Address: jagurrie@terracon.com		**Fax #:**	**Purchase Order:**
Project Name/Number: 86127158 - SIRRINE 132		**Please Provide Results:** ☐ FAX ☑ E-mail ☐ Mail	
U.S. State Samples Taken: SC		**Connecticut Samples:** Commercial Residential	

Turnaround Time (TAT) Options* - Please Check

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

For RUSH TAT's Please Call Ahead to Confirm Lab Hours and Availability. Not all TAT options are valid for every test. Materials Science and IAQ TATs are in Business Days rather than Hours (i.e. 24 Hour = End of Next Business Day)

Asbestos

PCM - Air
☐ NIOSH 7400
☐ w/ 8hr. TWA

TEM– Air ☐ 4-4.5hr TAT(AHERA ONLY)
☐ AHERA 40 CFR, Part 763
☐ NIOSH 7402
☐ EPA Level II
☐ ISO 10312

TEM - Water
Fibers ≥10µm ☐ Waste ☐ Drinking
All Fiber Sizes ☐ Waste ☐ Drinking

PLM - Bulk
☐ PLM EPA 600/R-93/116
☐ PLM EPA NOB (<1%)
☐ NYS 198.1 (friable-NY)
☐ NYS 198.6 (non-friable-NY)
Point Count ☐ 400 (<0.25%) ☐ 1000 (<0.1%)
Point Count w/ Gravimetric
☐ 400 (<0.25%) ☐ 1000 (<0.1%)

TEM - Dust
☐ Microvac – ASTM D 5755
☐ Wipe-ASTM D6480

TEM - Bulk
☐ TEM EPA NOB
☐ NYS NOB 198.4 (non-friable-NY)
☐ Chatfield SOP

Soil/Rock/Vermiculite
☐ PLM CARB 435 – A (0.25% sensitivity)
☐ PLM CARB 435 – B (0.1% sensitivity)
☐ TEM CARB 435 – B (0.1% sensitivity)
☐ EPA Reg. 1 Screening Protocol (Qualitative)

Other:

Lead (Pb)

Flame Atomic Absorption
☐ Chips SW846-7000B or AOAC 974.02
☐ Soil SW846-7000B/7420
☐ Air NIOSH 7082
☐ Wastewater SM3111B or SW846-7000B/7420
☐ ASTM Wipe SW846-7000B/7420
☐ non ASTM Wipe SW846-7000B/7420
☐ TCLP SW846-1311/7420/SM 3111B

ICP
☐ Air NIOSH 7300 Modified
☐ non ASTM Wipe SW846-6010B or C
☐ ASTM Wipe SW846-6010B or C
☐ Soil SW846-6010 B or C
☐ Waste Water SW846-6010B or C
☐ TCLP SW846-6010B or C

Graphite Furnace Atomic Absorption
☐ Soil SW846-7421 ☐ Wastewater EPA 200.9
☐ Air NIOSH 7105 ☐ Drinking Water EPA 200.9

Other: ☐

Materials Science

☐ Common Particle ID (large particles)
☐ Full Particle ID (environmental dust)
☐ Basic Material ID (solids)
☐ Advanced Material ID
☐ Physical Testing (Tensile, Compression)
☐ Combustion-by-products (soot, char, etc.)
☐ X-Ray Fluorescence (elem. analysis)
☐ X-Ray Diffraction (Crystalline Part.)
☐ MMVF's (Fibrous glass, RCF's)
☐ Particle Size (sieve/microscopy/laser)
☐ Combustible Dust
☐ Petrographic Examination

Other: ☐

Microbiology

Wipe and Bulk Samples
☒ Mold & Fungi – Direct Examination
☐ Mold & Fungi Culture (Genus Only)
☐ Mold & Fungi Culture (Genus & Species)
☐ Bacterial Count & ID (Up to Three Types)
☐ Bacterial Count & ID (Up to Five Types)
☐ MRSA
☐ *Pseudomonas aeruginosa*

Water Samples
☐ Total Coliform & E.coli (P/A)
☐ Fecal Coliform (SM 9222D)
☐ Sewage Screen
☐ Heterotrophic Plate Count (SM 9215)

Air Samples
☒ Mold & Fungi (Spore Trap)
☐ Mold & Fungi Culture (Genus Only)
☐ Mold & Fungi (Genus & Species)
☐ Bacterial Culture & ID (Up to Three Types)
☐ Bacterial Culture & ID (Up to Five Types)
☐ Endotoxin Testing

Real Time Q-PCR (See Analytical Guide for Code)
Code:

Legionella
☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Level 4

Other: ☐

IAQ

Nuisance Dust NIOSH ☐ 0500 ☐ 0600
Airborne Dust ☐ PM10 ☐ TSP
Silica Analysis: ☐ All Species
Silica Analysis – Single Species
☐ Alpha Quartz ☐ Cristobalite ☐ Tridymite
☐ HVAC Efficiency
☐ Carbon Black
☐ Airborne Oil Mist
Radon Testing: Call for Kit and COC

Other: ☐

****Comments/Special Instructions:**

Client Sample #'s		**Total # of Samples:**
Relinquished (Client):	**Date:** 9/2/15	**Time:**
Received (Lab):	**Date:** 9/3/15	**Time:** 8:45 AM Fax 7744 2769 7497

Analysis Completed in Accordance with EMSL's Terms and Conditions located in the Analytical Price Guide

OrderID: 411506231

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Chain of Custody

EMSL Order Number (*Lab Use Only*): 411506231

EMSL Analytical, Inc.
376 Crompton Street

Charlotte, NC 28273
PHONE: (704) 525-2205
FAX: (704) 525 2382

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
1	Rm 132 SIRRINE	75L	
2	Rm 132 F	75L	
3	Rm 132 D	75L	
4	COMMON AREA	75L	
5	OUTDOORS	75L	
6	OUTDOORS	75L	
7	BLANK	—	
S-1	TAPE LIFT - CEILING TILE Rm 132F		
S-2	SWAB - FAN COIL UNIT Rm 132		

*Comments/Special Instructions:

Analysis Completed in Accordance with EMSL's Terms and Conditions located in the Analytical Price Guide