



LRC Indoor Testing and Research
 140 Iowa Lane, Suite 102
 Cary, NC 27511
 (919) 342-4936

Certificate of Laboratory Analysis
Non-Viable Spore Trap Analysis

City of New Bern
 Foster Hughes
 300 Polluck Street
 New Bern, NC 28560

Project #: 20-1237
 Project Location: 800 Cedar Street
 New Bern, NC 28560
 Project Type: CLR
 PO/Claim #: -

Table 1: Non-Viable Air Samples

Date Collected:	3/10/20	3/10/20	3/10/20	3/10/20	3/10/20
	1	2	3	4	5
Spore Identification	Meeting Room	Event Room at HVAC Return	Center Event Room	Rear Left Event Room	Storage/Mechanical
<i>Cladosporium</i>	40	93	40	93	107
Ascospores	27	13	13	40	-
Basidiospores ²	13	80	27	27	67
Smuts, <i>Periconia</i> , <i>Myxomycetes</i> ⁴	-	13	13	-	-
<i>Penicillium/Aspergillus</i> Group ¹	-	13	40	13	13
Hyphal Elements ³	-	-	-	-	-
<i>Alternaria</i>	-	-	-	-	-
<i>Curvularia</i>	-	-	-	-	-
<i>Epicoccum</i>	-	-	-	-	-
<i>Cercospora</i>	-	-	-	-	-
<i>Arthrinium</i>	-	-	-	-	-
Clear Brown	-	-	-	-	-
Colorless	-	-	-	-	-
Trichocladium	-	-	-	-	-
Unidentified	-	-	-	-	-
<i>Ulocladium</i>	-	-	-	-	-
Torula	-	-	-	-	-
Pithomyces	-	-	-	-	-
Rust ⁵	-	-	-	-	-
<i>Drechslera/Bipolaris</i>	-	-	-	13	-
<i>Tetraploa</i>	-	-	-	-	-
<i>Chaetomium</i>	-	-	-	-	-
<i>Stachybotrys</i>	-	-	-	-	-
	-	-	-	-	-
Total Spores/m³	80	213	133	187	187
Particulate Level	low	low	low	low	low
Date Analyzed:	3/11/20	3/11/20	3/11/20	3/11/20	3/11/20

Analyzed by: Cathy A. Richmond, B.S.

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Table 1: Non-Viable Air Samples

Date Collected:	3/10/20	3/10/20
Spore Identification	6	7
	Restroom	Outdoor Air
<i>Cladosporium</i>	253	187
Ascospores	40	187
Basidiospores ²	27	107
Smuts, <i>Periconia</i> , <i>Myxomycetes</i> ⁴	80	-
<i>Penicillium/Aspergillus</i> Group ¹	-	53
Hyphal Elements ³	-	-
<i>Alternaria</i>	-	-
<i>Curvularia</i>	-	-
<i>Epicoccum</i>	-	-
<i>Cercospora</i>	-	-
<i>Arthrinium</i>	-	-
Clear Brown	-	-
Colorless	-	-
<i>Trichocladium</i>	-	-
Unidentified	-	-
<i>Ulocladium</i>	-	-
Torula	-	-
Pithomyces	-	-
Rust ⁵	-	-
<i>Drechslera/Bipolaris</i>	-	-
<i>Tetraploa</i>	-	-
<i>Chaetomium</i>	-	-
<i>Stachybotrys</i>	-	-
	-	-
Total Spores/m³	400	533
Particulate Level	low-moderate	low-moderate
Date Analyzed:	3/11/20	3/11/20

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Project #: 20-1237
Project Location: 800 Cedar Street
 New Bern, NC 28560
Project Type: CLR
PO/Claim #: -

Sample Number: 1
Sample Location: Meeting Room
Date Collected: 3/10/20
Test Requested: Non-viable spore trap analysis
Date Analyzed: 3/11/20

Volume (L): 75
Percentage of Slide Read: 100.0%
Detection Limit: 13.33
Particulate Level: low
Notes:

Spore Identification	Count	Results	Units	Percentage
<i>Cladosporium</i>	3	40	spores/m ³	50%
Ascospores	2	27	spores/m ³	33%
Basidiospores	1	13	spores/m ³	17%
Smuts, <i>Periconia</i> , Myxomycetes		-	spores/m ³	-
<i>Penicillium/Aspergillus</i> Group		-	spores/m ³	-
Hyphal Elements		-	spores/m ³	-
<i>Alternaria</i>		-	spores/m ³	-
<i>Curvularia</i>		-	spores/m ³	-
<i>Epicoccum</i>		-	spores/m ³	-
<i>Cercospora</i>		-	spores/m ³	-
<i>Arthrinium</i>		-	spores/m ³	-
Clear Brown		-	spores/m ³	-
Colorless		-	spores/m ³	-
<i>Trichocladium</i>		-	spores/m ³	-
Unidentified		-	spores/m ³	-
<i>Ulocladium</i>		-	spores/m ³	-
Torula		-	spores/m ³	-
<i>Pithomyces</i>		-	spores/m ³	-
Rust		-	spores/m ³	-
<i>Drechslera/Bipolaris</i>		-	spores/m ³	-
<i>Tetraploa</i>		-	spores/m ³	-
<i>Chaetomium</i>		-	spores/m ³	-
<i>Stachybotrys</i>		-	spores/m ³	-
		-	spores/m ³	-
Total Spores	6	80	spores/m³	

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Project Type: CLR
PO/Claim #: -

Sample Number: 2 **Volume (L):** 75
Sample Location: Event Room at HVAC Return **Percentage of Slide Read:** 100.0%
Date Collected: 3/10/20 **Detection Limit:** 13.33
Test Requested: Non-viable spore trap analysis **Particulate Level:** low
Date Analyzed: 3/11/20 **Notes:**

Spore Identification	Count	Results	Units	Percentage
<i>Cladosporium</i>	7	93	spores/m ³	44%
Ascospores	1	13	spores/m ³	6%
Basidiospores	6	80	spores/m ³	38%
Smuts, <i>Periconia</i> , Myxomycetes	1	13	spores/m ³	6%
<i>Penicillium/Aspergillus</i> Group	1	13	spores/m ³	6%
Hyphal Elements		-	spores/m ³	-
<i>Alternaria</i>		-	spores/m ³	-
<i>Curvularia</i>		-	spores/m ³	-
<i>Epicoccum</i>		-	spores/m ³	-
<i>Cercospora</i>		-	spores/m ³	-
<i>Arthrinium</i>		-	spores/m ³	-
Clear Brown		-	spores/m ³	-
Colorless		-	spores/m ³	-
<i>Trichocladium</i>		-	spores/m ³	-
Unidentified		-	spores/m ³	-
<i>Ulocladium</i>		-	spores/m ³	-
Torula		-	spores/m ³	-
<i>Pithomyces</i>		-	spores/m ³	-
Rust		-	spores/m ³	-
<i>Drechslera/Bipolaris</i>		-	spores/m ³	-
<i>Tetraploa</i>		-	spores/m ³	-
<i>Chaetomium</i>		-	spores/m ³	-
<i>Stachybotrys</i>		-	spores/m ³	-
		-	spores/m ³	-
Total Spores	16	213	spores/m³	

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Project Type: CLR
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Sample Number: 3
Sample Location: Center Event Room
Date Collected: 3/10/20
Test Requested: Non-viable spore trap analysis
Date Analyzed: 3/11/20

Volume (L): 75
Percentage of Slide Read: 100.0%
Detection Limit: 13.33
Particulate Level: low
Notes:

Spore Identification	Count	Results	Units	Percentage
<i>Cladosporium</i>	3	40	spores/m ³	30%
Ascospores	1	13	spores/m ³	10%
Basidiospores	2	27	spores/m ³	20%
Smuts, <i>Periconia</i> , Myxomycetes	1	13	spores/m ³	10%
<i>Penicillium/Aspergillus</i> Group	3	40	spores/m ³	30%
Hyphal Elements		-	spores/m ³	-
<i>Alternaria</i>		-	spores/m ³	-
<i>Curvularia</i>		-	spores/m ³	-
<i>Epicoccum</i>		-	spores/m ³	-
<i>Cercospora</i>		-	spores/m ³	-
<i>Arthrinium</i>		-	spores/m ³	-
Clear Brown		-	spores/m ³	-
Colorless		-	spores/m ³	-
<i>Trichocladium</i>		-	spores/m ³	-
Unidentified		-	spores/m ³	-
<i>Ulocladium</i>		-	spores/m ³	-
Torula		-	spores/m ³	-
<i>Pithomyces</i>		-	spores/m ³	-
Rust		-	spores/m ³	-
<i>Drechslera/Bipolaris</i>		-	spores/m ³	-
<i>Tetraploa</i>		-	spores/m ³	-
<i>Chaetomium</i>		-	spores/m ³	-
<i>Stachybotrys</i>		-	spores/m ³	-
		-	spores/m ³	-
Total Spores	10	133	spores/m³	

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Project Type: CLR
PO/Claim #: -

Sample Number: 4
Sample Location: Rear Left Event Room
Date Collected: 3/10/20
Test Requested: Non-viable spore trap analysis
Date Analyzed: 3/11/20

Volume (L): 75
Percentage of Slide Read: 100.0%
Detection Limit: 13.33
Particulate Level: low
Notes:

Spore Identification	Count	Results	Units	Percentage
<i>Cladosporium</i>	7	93	spores/m ³	50%
Ascospores	3	40	spores/m ³	21%
Basidiospores	2	27	spores/m ³	14%
Smuts, <i>Periconia</i> , Myxomycetes		-	spores/m ³	-
<i>Penicillium/Aspergillus</i> Group	1	13	spores/m ³	7%
Hyphal Elements		-	spores/m ³	-
<i>Alternaria</i>		-	spores/m ³	-
<i>Curvularia</i>		-	spores/m ³	-
<i>Epicoccum</i>		-	spores/m ³	-
<i>Cercospora</i>		-	spores/m ³	-
<i>Arthrinium</i>		-	spores/m ³	-
Clear Brown		-	spores/m ³	-
Colorless		-	spores/m ³	-
<i>Trichocladium</i>		-	spores/m ³	-
Unidentified		-	spores/m ³	-
<i>Ulocladium</i>		-	spores/m ³	-
Torula		-	spores/m ³	-
<i>Pithomyces</i>		-	spores/m ³	-
Rust		-	spores/m ³	-
<i>Drechslera/Bipolaris</i>	1	13	spores/m ³	7%
<i>Tetraploa</i>		-	spores/m ³	-
<i>Chaetomium</i>		-	spores/m ³	-
<i>Stachybotrys</i>		-	spores/m ³	-
		-	spores/m ³	-
Total Spores	14	187	spores/m³	

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PO/Claim #: -

Sample Number: 5
Sample Location: Storage/Mechanical
Date Collected: 3/10/20
Test Requested: Non-viable spore trap analysis
Date Analyzed: 3/11/20

Volume (L): 75
Percentage of Slide Read: 100.0%
Detection Limit: 13.33
Particulate Level: low
Notes:

Spore Identification	Count	Results	Units	Percentage
<i>Cladosporium</i>	8	107	spores/m ³	57%
Ascospores		-	spores/m ³	-
Basidiospores	5	67	spores/m ³	36%
Smuts, <i>Periconia</i> , Myxomycetes		-	spores/m ³	-
<i>Penicillium/Aspergillus</i> Group	1	13	spores/m ³	7%
Hyphal Elements		-	spores/m ³	-
<i>Alternaria</i>		-	spores/m ³	-
<i>Curvularia</i>		-	spores/m ³	-
<i>Epicoccum</i>		-	spores/m ³	-
<i>Cercospora</i>		-	spores/m ³	-
<i>Arthrinium</i>		-	spores/m ³	-
Clear Brown		-	spores/m ³	-
Colorless		-	spores/m ³	-
<i>Trichocladium</i>		-	spores/m ³	-
Unidentified		-	spores/m ³	-
<i>Ulocladium</i>		-	spores/m ³	-
Torula		-	spores/m ³	-
<i>Pithomyces</i>		-	spores/m ³	-
Rust		-	spores/m ³	-
<i>Drechslera/Bipolaris</i>		-	spores/m ³	-
<i>Tetraploa</i>		-	spores/m ³	-
<i>Chaetomium</i>		-	spores/m ³	-
<i>Stachybotrys</i>		-	spores/m ³	-
		-	spores/m ³	-
Total Spores	14	187	spores/m³	

Analyzed by: Cathy A. Richmond, B.S.



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Project #: 20-1237
Project Location: 800 Cedar Street
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Project Type: CLR
PO/Claim #: -

Sample Number: 6
Sample Location: Restroom
Date Collected: 3/10/20
Test Requested: Non-viable spore trap analysis
Date Analyzed: 3/11/20

Volume (L): 75
Percentage of Slide Read: 100.0%
Detection Limit: 13.33
Particulate Level: low-moderate
Notes:

Spore Identification	Count	Results	Units	Percentage
<i>Cladosporium</i>	19	253	spores/m ³	63%
Ascospores	3	40	spores/m ³	10%
Basidiospores	2	27	spores/m ³	7%
Smuts, <i>Periconia</i> , Myxomycetes	6	80	spores/m ³	20%
<i>Penicillium/Aspergillus</i> Group		-	spores/m ³	-
Hyphal Elements		-	spores/m ³	-
<i>Alternaria</i>		-	spores/m ³	-
<i>Curvularia</i>		-	spores/m ³	-
<i>Epicoccum</i>		-	spores/m ³	-
<i>Cercospora</i>		-	spores/m ³	-
<i>Arthrinium</i>		-	spores/m ³	-
Clear Brown		-	spores/m ³	-
Colorless		-	spores/m ³	-
<i>Trichocladium</i>		-	spores/m ³	-
Unidentified		-	spores/m ³	-
<i>Ulocladium</i>		-	spores/m ³	-
Torula		-	spores/m ³	-
<i>Pithomyces</i>		-	spores/m ³	-
Rust		-	spores/m ³	-
<i>Drechslera/Bipolaris</i>		-	spores/m ³	-
<i>Tetraploa</i>		-	spores/m ³	-
<i>Chaetomium</i>		-	spores/m ³	-
<i>Stachybotrys</i>		-	spores/m ³	-
		-	spores/m ³	-
Total Spores	30	400	spores/m³	

Analyzed by: Cathy A. Richmond, B.S.



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Project Type: CLR
PO/Claim #: -

Sample Number: 7
Sample Location: Outdoor Air
Date Collected: 3/10/20
Test Requested: Non-viable spore trap analysis
Date Analyzed: 3/11/20

Volume (L): 75
Percentage of Slide Read: 100.0%
Detection Limit: 13.33
Particulate Level: low-moderate
Notes:

Spore Identification	Count	Results	Units	Percentage
<i>Cladosporium</i>	14	187	spores/m ³	35%
Ascospores	14	187	spores/m ³	35%
Basidiospores	8	107	spores/m ³	20%
Smuts, <i>Periconia</i> , Myxomycetes		-	spores/m ³	-
<i>Penicillium/Aspergillus</i> Group	4	53	spores/m ³	10%
Hyphal Elements		-	spores/m ³	-
<i>Alternaria</i>		-	spores/m ³	-
<i>Curvularia</i>		-	spores/m ³	-
<i>Epicoccum</i>		-	spores/m ³	-
<i>Cercospora</i>		-	spores/m ³	-
<i>Arthrinium</i>		-	spores/m ³	-
Clear Brown		-	spores/m ³	-
Colorless		-	spores/m ³	-
<i>Trichocladium</i>		-	spores/m ³	-
Unidentified		-	spores/m ³	-
<i>Ulocladium</i>		-	spores/m ³	-
Torula		-	spores/m ³	-
<i>Pithomyces</i>		-	spores/m ³	-
Rust		-	spores/m ³	-
<i>Drechslera/Bipolaris</i>		-	spores/m ³	-
<i>Tetraploa</i>		-	spores/m ³	-
<i>Chaetomium</i>		-	spores/m ³	-
<i>Stachybotrys</i>		-	spores/m ³	-
		-	spores/m ³	-
Total Spores	40	533	spores/m³	

Analyzed by: Cathy A. Richmond, B.S.



LRC Indoor Testing and Research
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Certificate of Laboratory Analysis Direct Microscopic Examination

City of New Bern
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-

Project #: 20-1237
Project Location: 800 Cedar Street
New Bern, NC 28560

Project Type: CLR
PO/Claim #: -

Table 2: Non-Viable Surface Samples

Sample Number: 8	Date Collected: 3/10/20
Sample Location: T-1 Wooden Chair Leg	
Area: 1 in ²	Test Requested: Direct Microscopic Examination
Results:	Numerous: Penicillium/Aspergillus Group
	Numerous: Hyphal Elements
Analyzed by: Cathy A. Richmond, B.S.	Date Analyzed: 3/11/20

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Project #: **20-1237**

Report Information:

DETECTION LIMITS (DL) for samples are the minimum number of spores or colonies forming units that can be satisfactorily identified for each sample type.

SPORE TRAP SAMPLES: Calculations based on volume of air sampled & percentage of slide counted, i.e. DL = 1000 L / 75 L if 100% of the slide is counted.

CODE 11: Fungal content and/or particulate level on slide too heavy to identify and enumerate fungal content.

Footnotes:

1. *Penicillium/Aspergillus* group spores are characterized by their small size, round to ovoid shape, being unicellular and usually colorless to lightly pigmented. There are numerous genera of fungi whose spore morphology is similar to that of the *Penicillium/Aspergillus* type. Several common examples would be *Acremonium*, *Paecilomyces*, and *Trichoderma*. Although the majority of spores placed in this group are *Penicillium*, *Aspergillus*, or a combination of both, these are not the only two possibilities.
2. Basidiospores are primarily transported indoors from outdoor sources and rarely grow indoors. A high basidiospore count indoors can be indicative of a wood decay problem or wet soil, and should be verified if and an outdoor source of the spores is not present.
3. Hyphae are the tubular filaments of fungi. Hyphae can fragment and become airborne much like spores and are potentially allergenic.
4. The Smut, *Periconia*, Myxomycete group is a group composed of three different types of organisms whose spores have similar morphologies. Smuts are plant pathogens, *Periconia* is a relatively uncommon mold indoors, and Myxomycetes are not fungi, but slime molds. Although these organisms do not typically proliferate indoors, their spores are potentially allergenic.
5. Rusts are plant pathogens. These fungi do not typically grow indoors unless an infected plant is present. Rust spores are potentially allergenic.

Direct Microscopic Exam Reporting:

We use a 400x-600x magnification microscope.

Reporting Quantification Levels are as follows:

Reporting Level	Quantitative Description
Occasional	1-10 per square inch
Few	11-100 per square inch
Moderate	101-1000 per square inch
Numerous	More than 1,000 per square inch

Submitted By Analyst: Cathy A. Richmond, BS