Members of the public wishing to speak on Items of Study must register with the County Clerk prior to the beginning of the meeting.

STUDY SESSION

BOARD OF FRANKLIN COUNTY COMMISSIONERS

Monday, Oct. 3, 2016 | 8:30 a.m.

TO BE HELD IN THE ANNEX COMMISSION CHAMBERS

A. **PUBLIC COMMENT**

A Citizen Desiring To Speak On An Item Not On The Agenda May Do So At This Time. Discussion Is Limited To Five Minutes And The Commission Will Not Take Action Or Discuss Items At This Time. Discussion Should Be Limited To Matters Of County Commission Business And Public Comment Is Not Permitted In Regard To Personnel Matters Or On Pending Legal Matters. Items Introduced Under **'Public Comment'** May Become Agenda Items At A Later Date**.**

B. **ITEMS OF STUDY**

1. Discussion Of Mold Report And Steps Necessary For Mold Remediation In County Courthouse. Paul Golden, Maintenance Director

   Documents:

   2016 1003 cv mold report-1.pdf
   contact sheet franklin cch ph-2 160815a (low res).pdf
   contact sheet franklin cch ph-1 160812a (low res).pdf
   lab results_air_franklin county courthouse-ph 2 160815a.pdf
   lab report_tape_franklin county courthouse-ph 2 160815a.pdf
   lab report_tape_franklin county courthouse-ph 1 160812a.pdf
   lab report_air_franklin county courthouse-ph 1 160812a.pdf
   fsr - franklin co courthouse 160815a (low res).pdf

2. Discussion Of Appointing An Interim County Administrator And The Process For Selecting A Long Term Successor. Derek Brown, County Counselor

   Documents:

   2016 1003 cv interim.pdf

C. **ADJOURNMENT**

D. **INFORMATION & ANNOUNCEMENTS**

1. UpComing Events

- Commission Meeting on Oct. 5, 2016 at 8:30 A.M.
- Commission Meeting on Oct. 12, 2016 at 8:30 A.M.
- Commission Study Session on Oct. 17, 2016 at 8:30 A.M.
- Commission Meeting on Oct. 19, 2016 at 8:30 A.M.
- Joint City/County/School Board Luncheon on Oct. 19, 2016 at USD 290.
- Commission Meeting on Oct. 26, 2016 at 8:30 A.M.
- Commission Study Session on Oct. 31, 2016 at 8:30 A.M.

Franklin County
Agenda Cover Sheet

To: Franklin County Board of County Commissioners
From: Paul Golden
Department: Maintenance
Date: 10/3/16

AGENDA ITEM NARRATIVE

Discussion of mold report and steps necessary for mold remediation in County Courthouse.

BACKGROUND

On Aug. 12 & 15, 2016, an environmental survey was conducted at the Franklin County Courthouse and the presence of mold was discovered. While the presence of "black mold" was not detected, remediation is needed. Staff have began efforts to rectify the issue, however a discussion needs to be had regarding a plan for full scale remediation.

SPECIFIC ACTION REQUESTED

ATTACHMENTS

Mold Report

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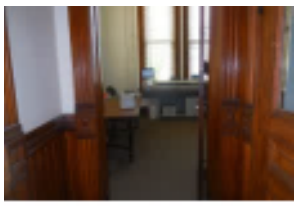
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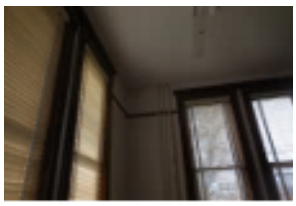
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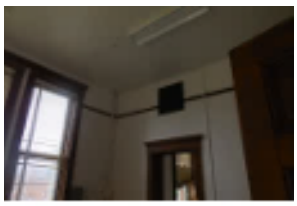
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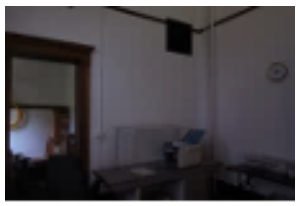
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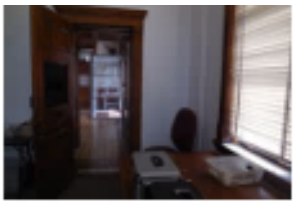
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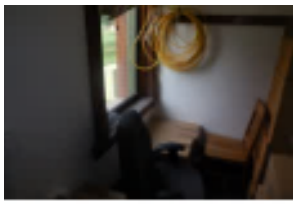
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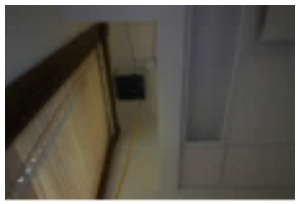
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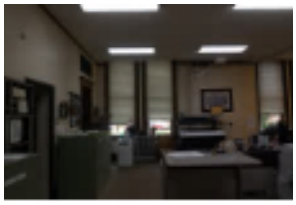
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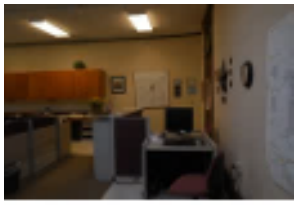
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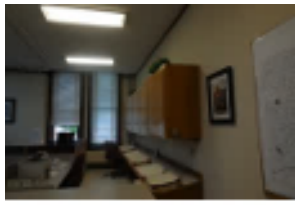
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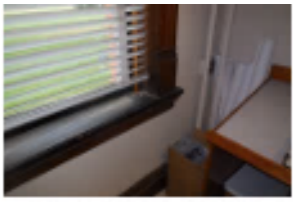
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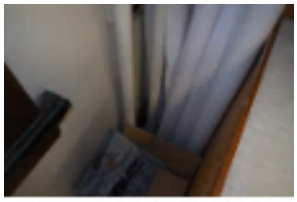
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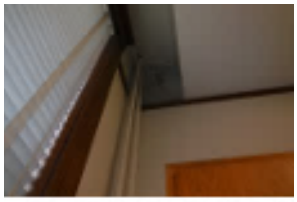
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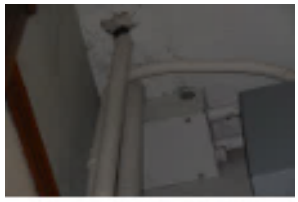
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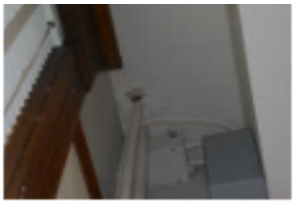
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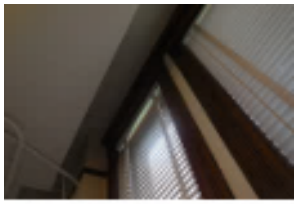
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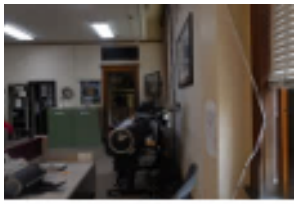
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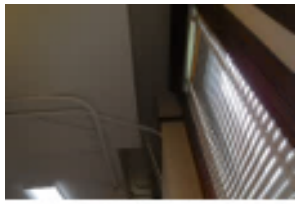
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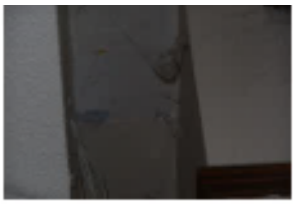
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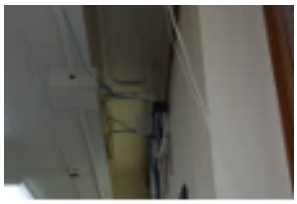
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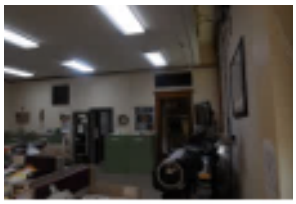
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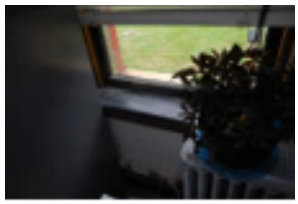
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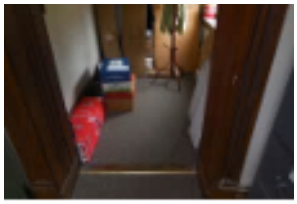
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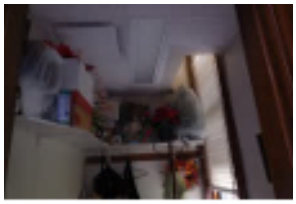
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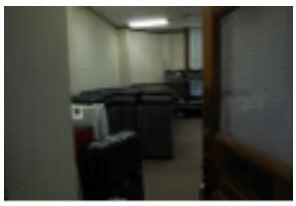
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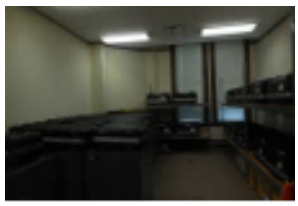
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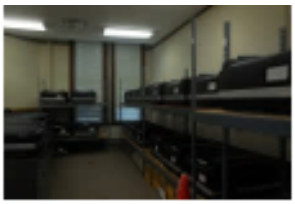
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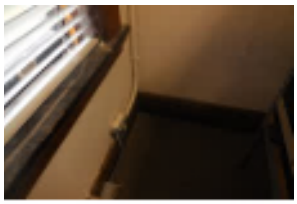
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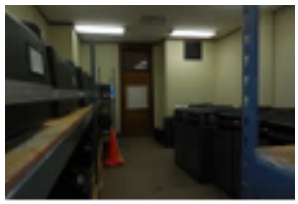
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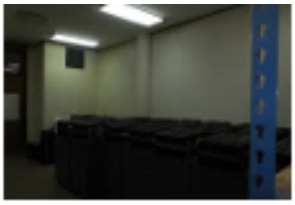
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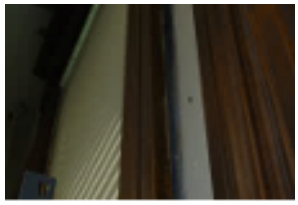
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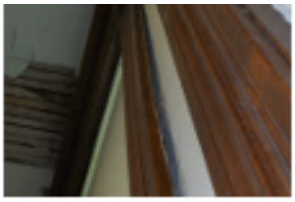
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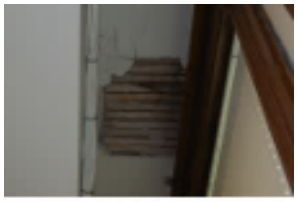
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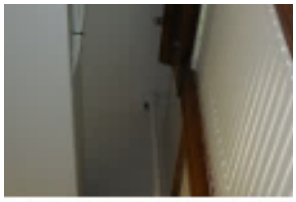
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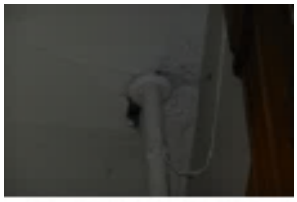
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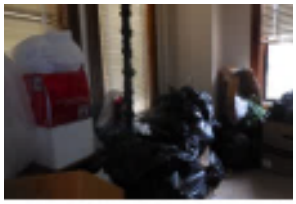
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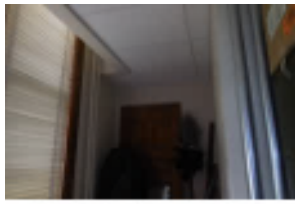
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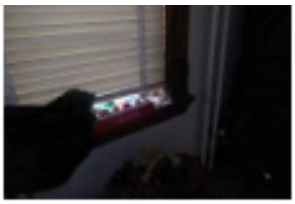
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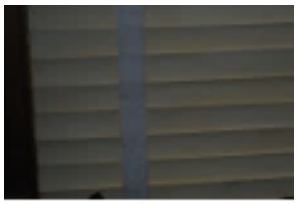
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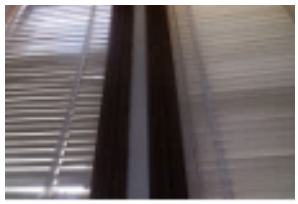
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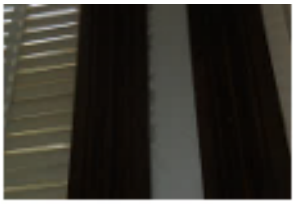
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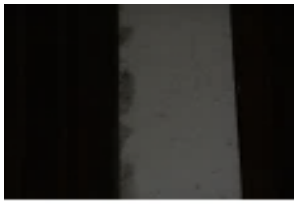
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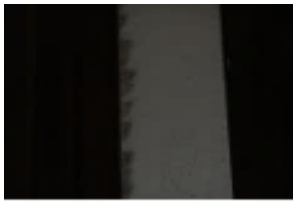
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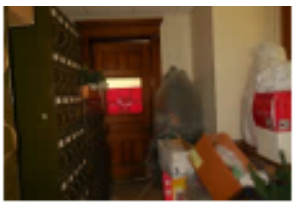
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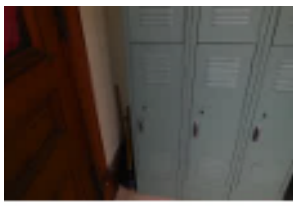
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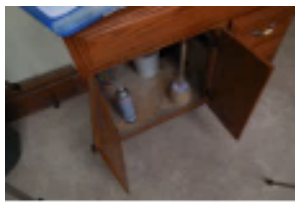
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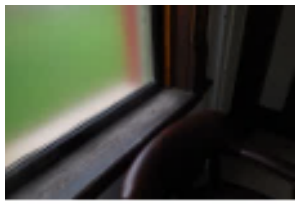
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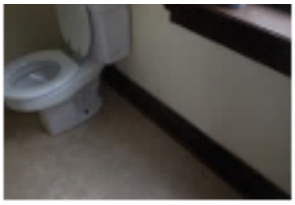
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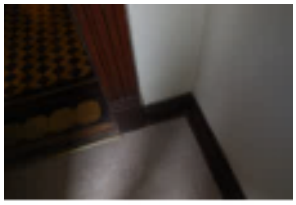
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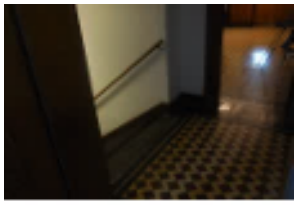
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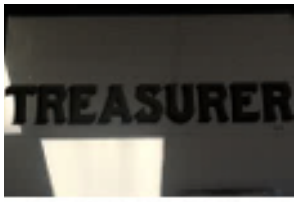

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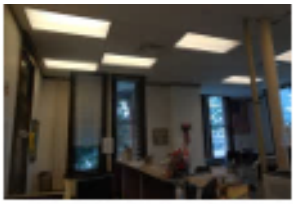
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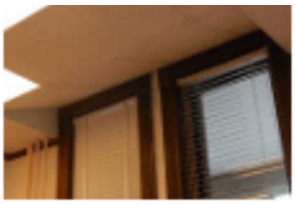
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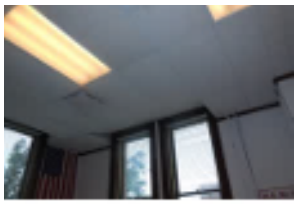
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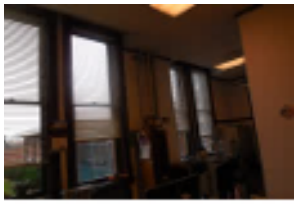
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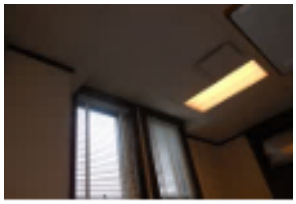
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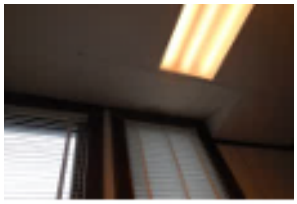
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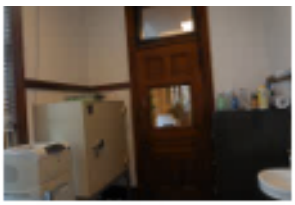
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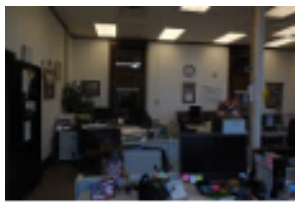
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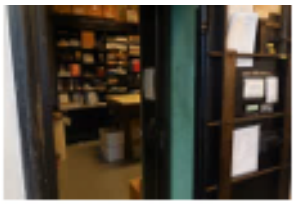
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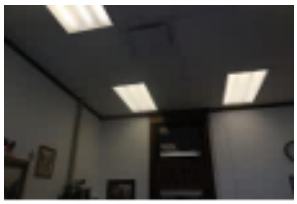
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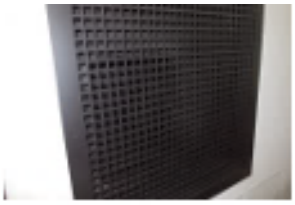
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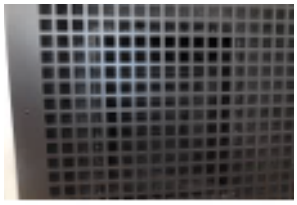
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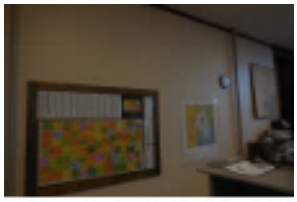
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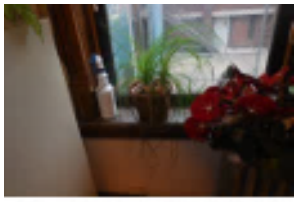
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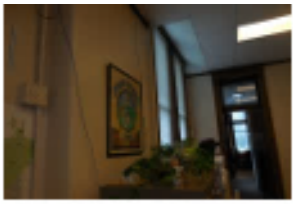
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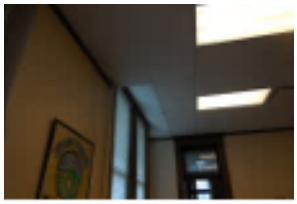
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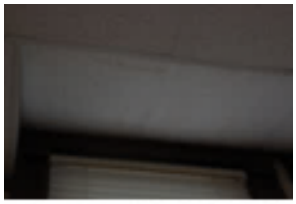
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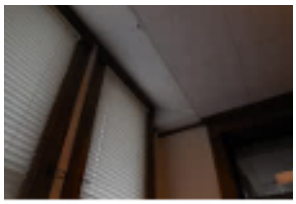
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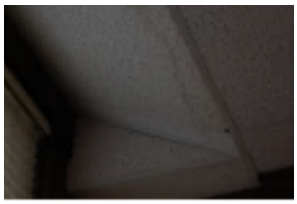
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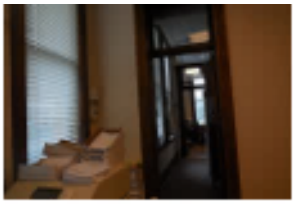
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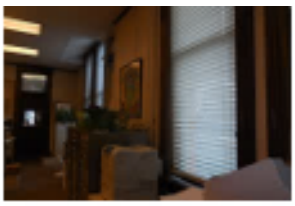
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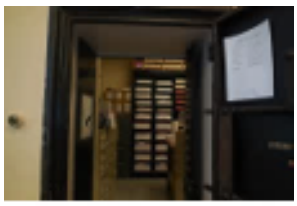
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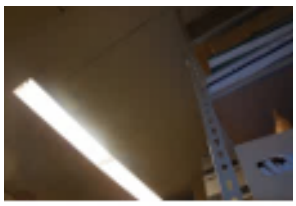
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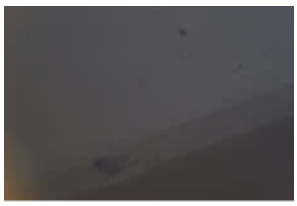
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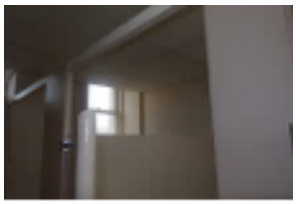
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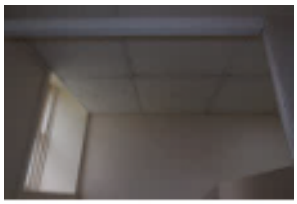
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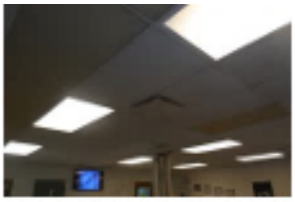
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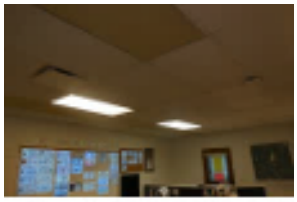
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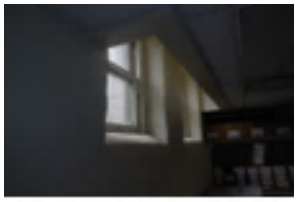
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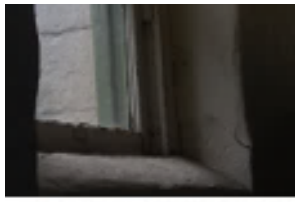
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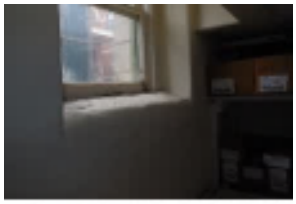
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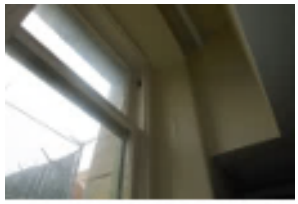
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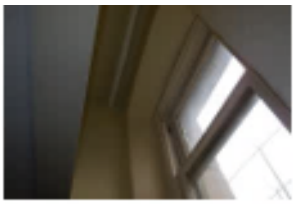
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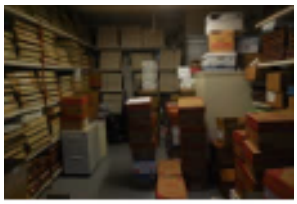
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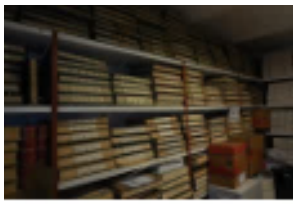
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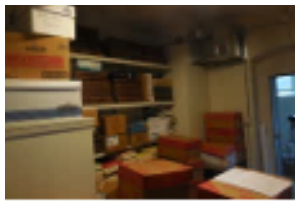
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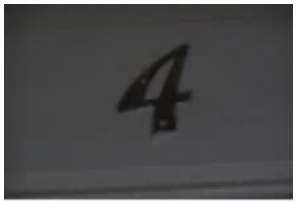

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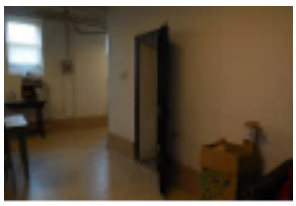
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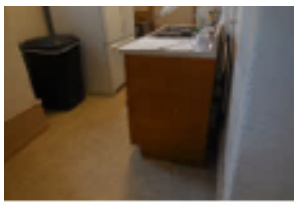
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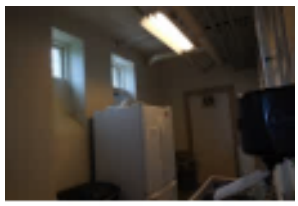
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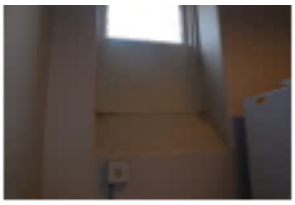
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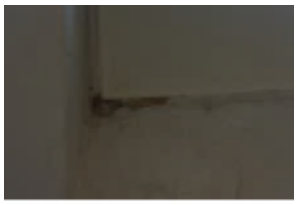
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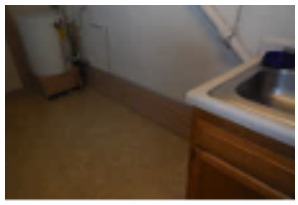
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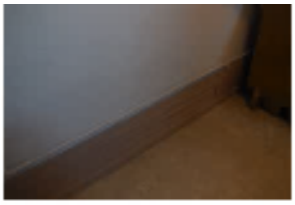
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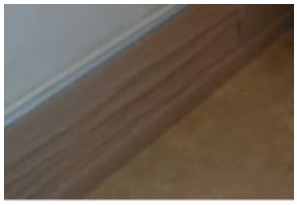
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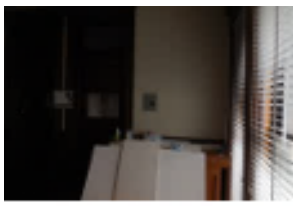
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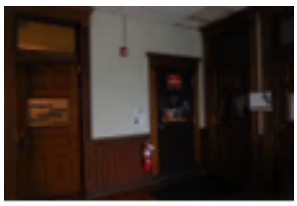
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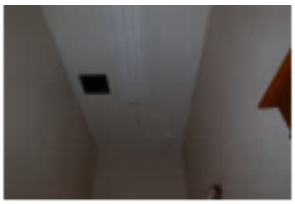
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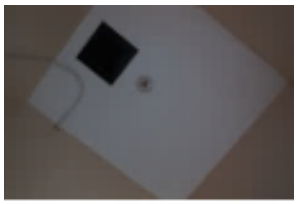
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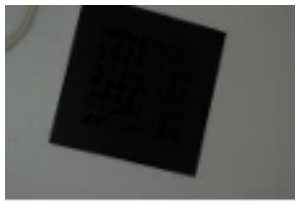
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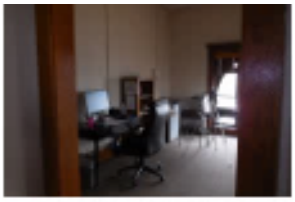
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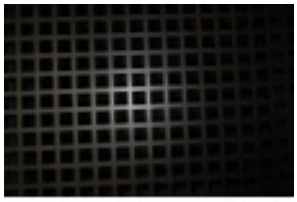
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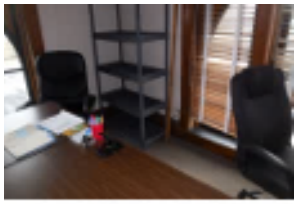
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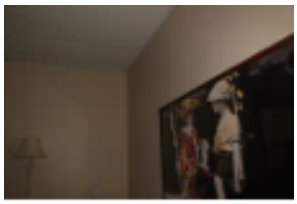
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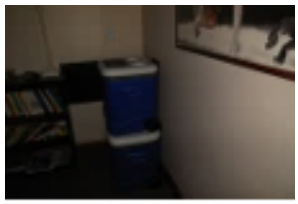
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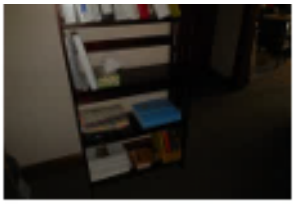
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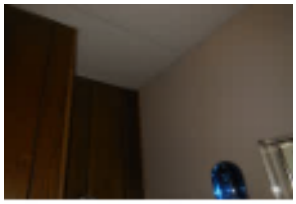
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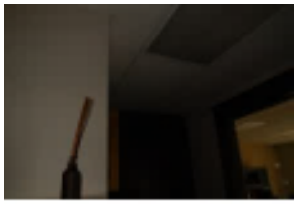
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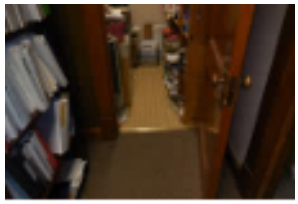
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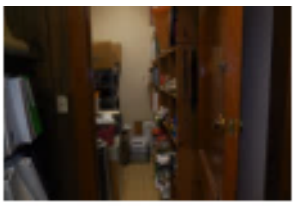
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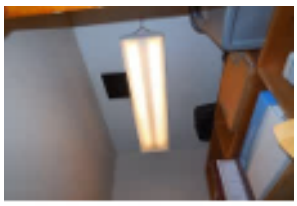
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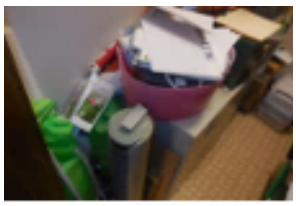
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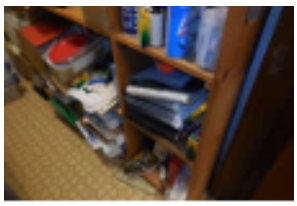
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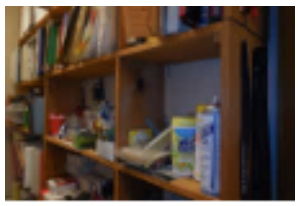
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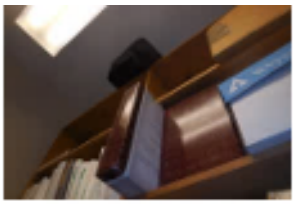
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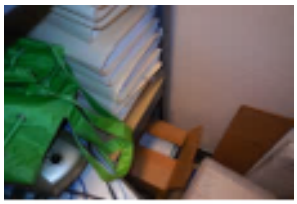
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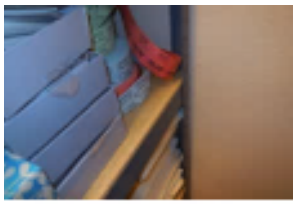
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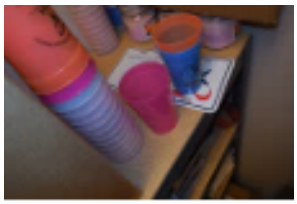
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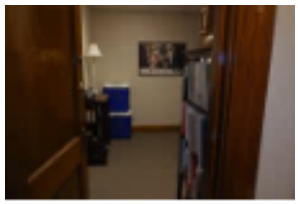
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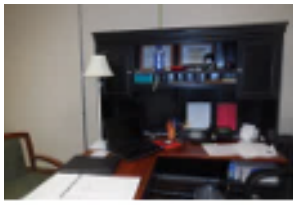
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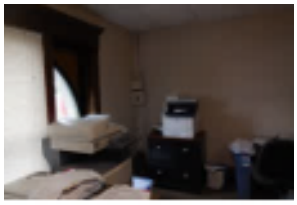
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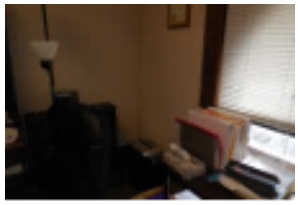
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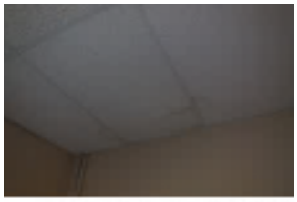
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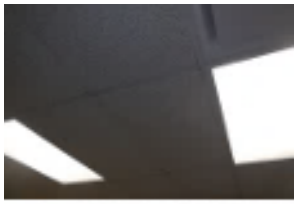
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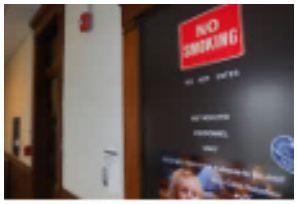

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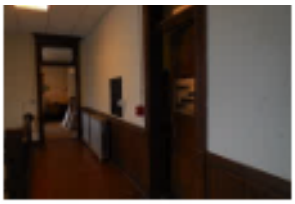
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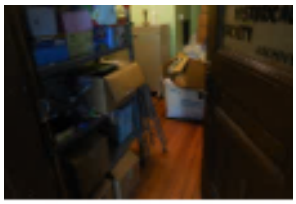
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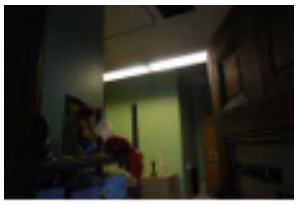
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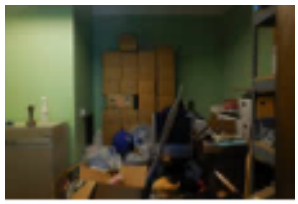
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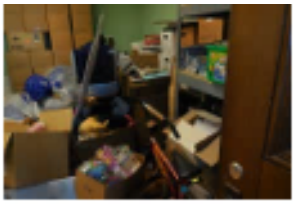
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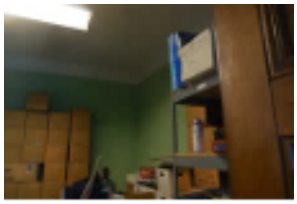
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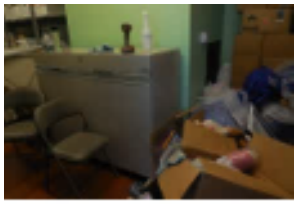
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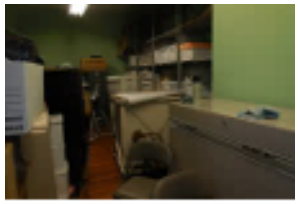
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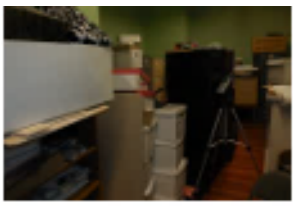
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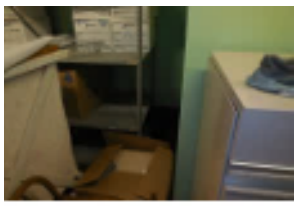
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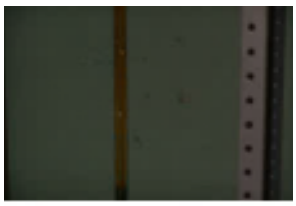
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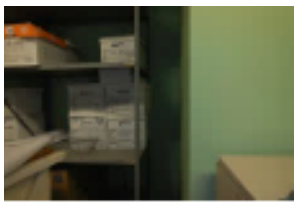
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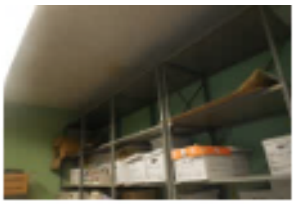
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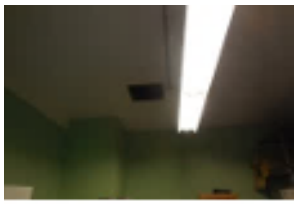
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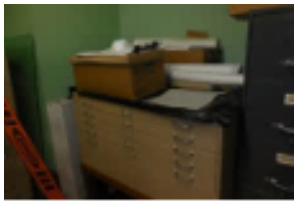
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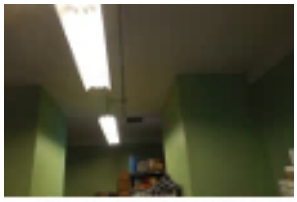
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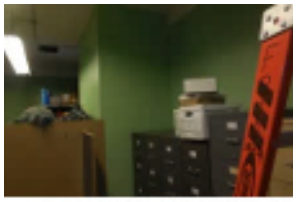
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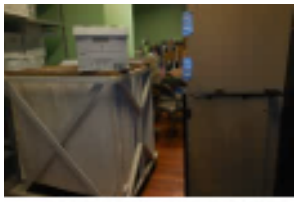
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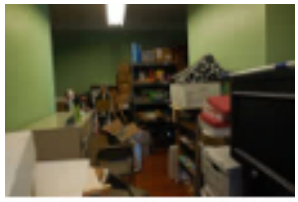
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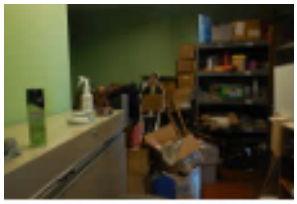
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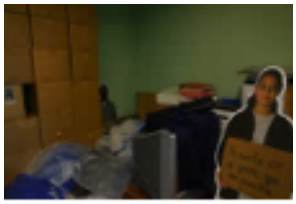
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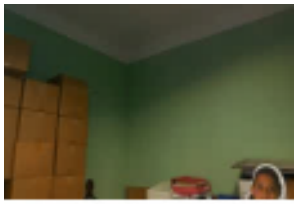
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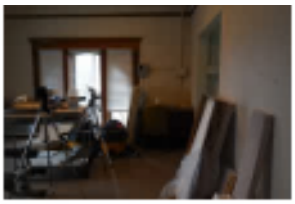
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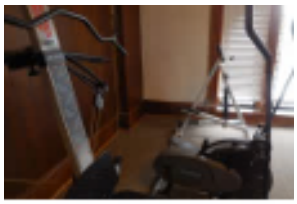
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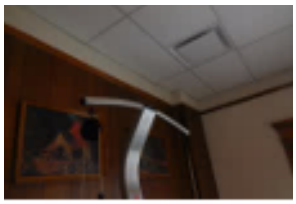
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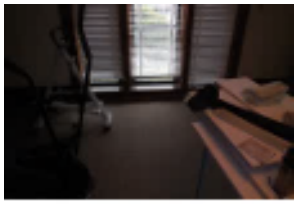
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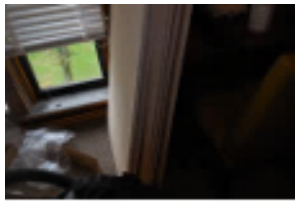
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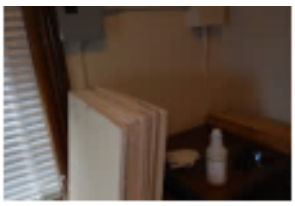
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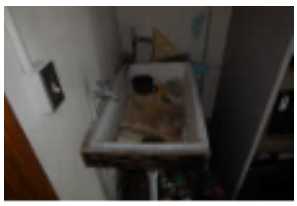
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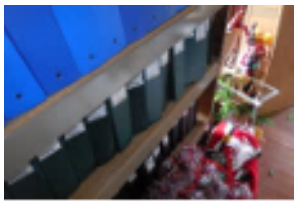
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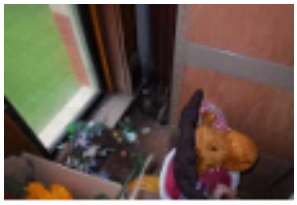
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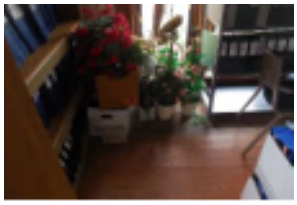
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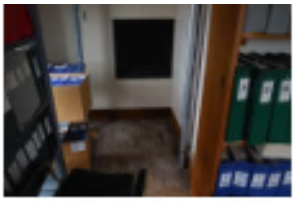
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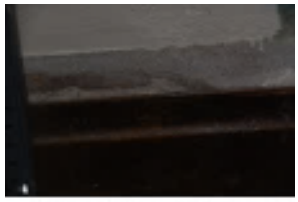
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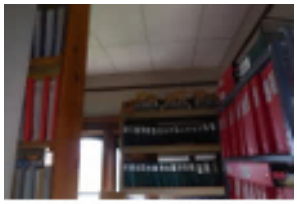
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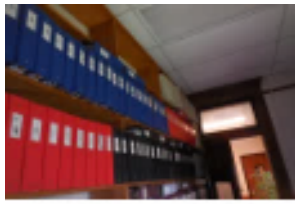
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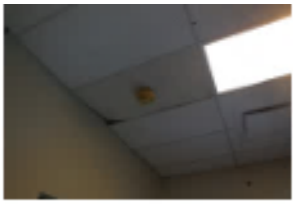
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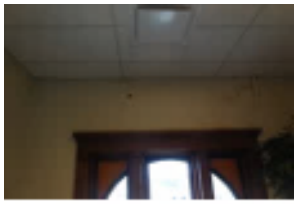
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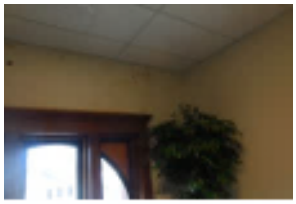
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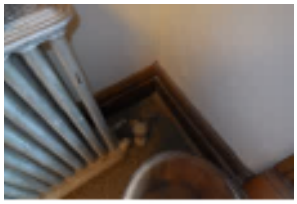
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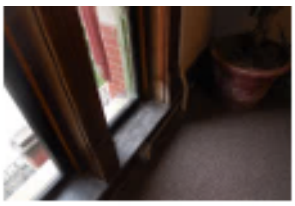
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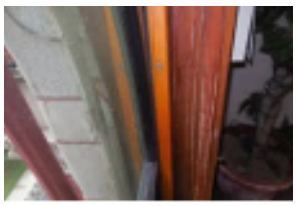
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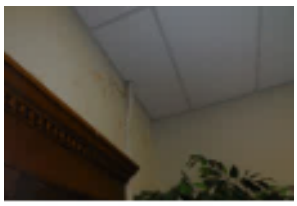
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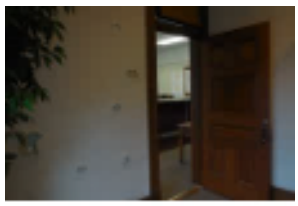
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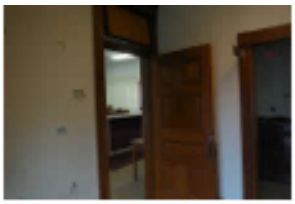
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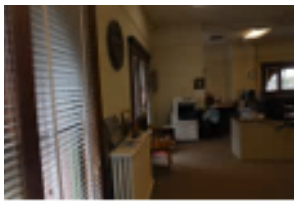
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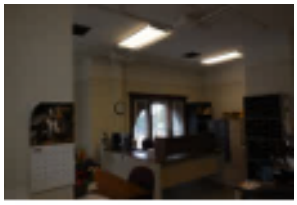
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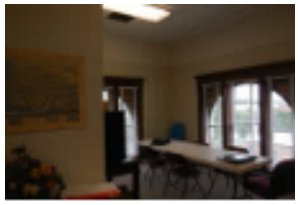
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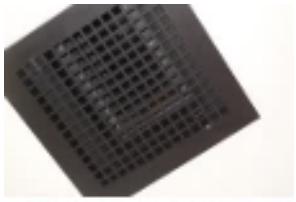
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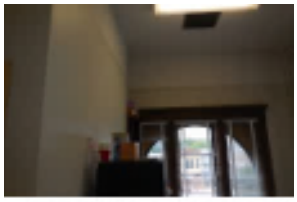
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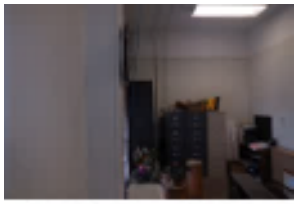
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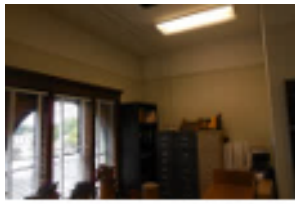
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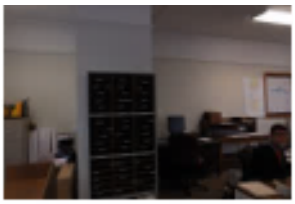
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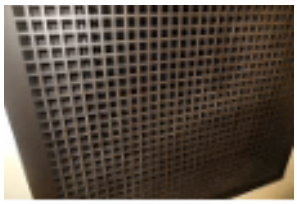
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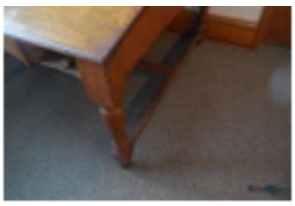
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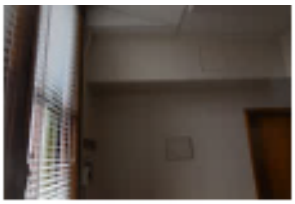
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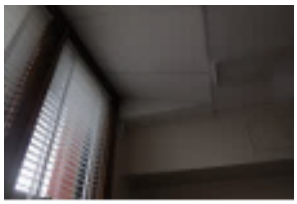
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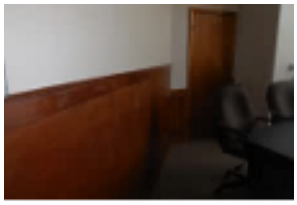
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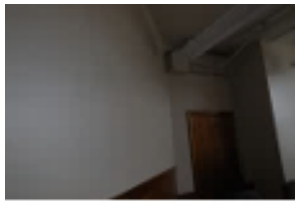
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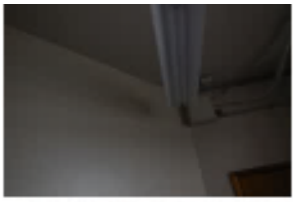
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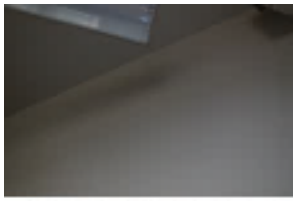
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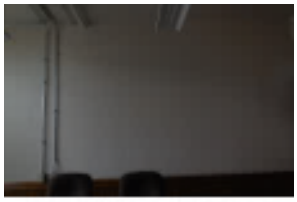
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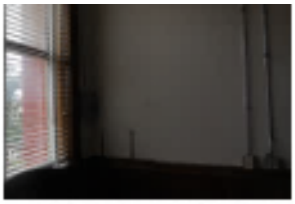
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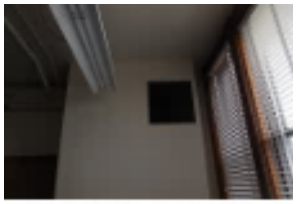
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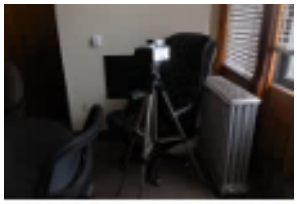
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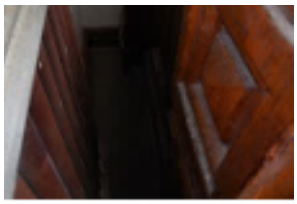
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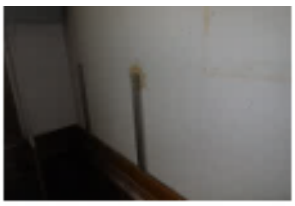
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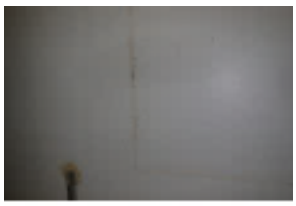
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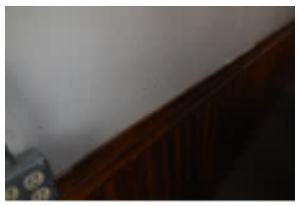
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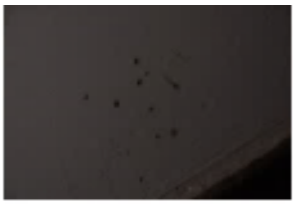
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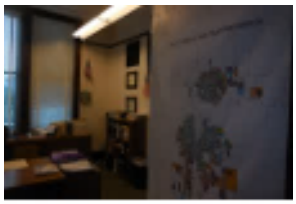
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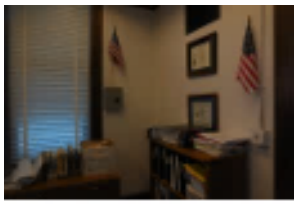
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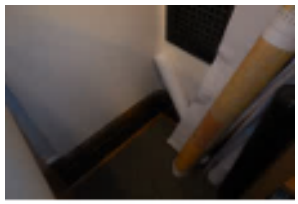
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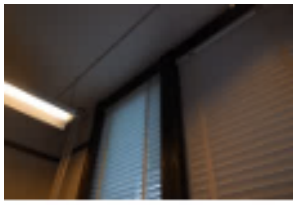
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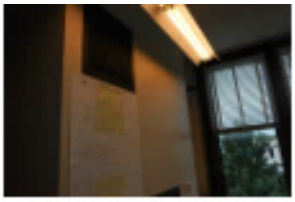
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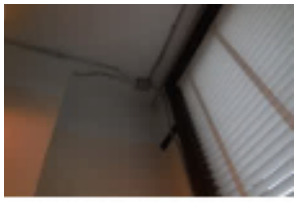
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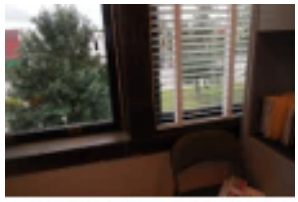
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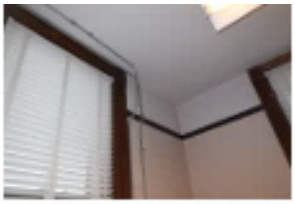
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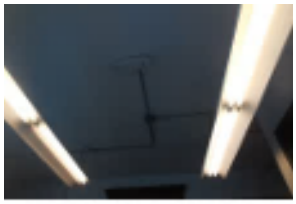
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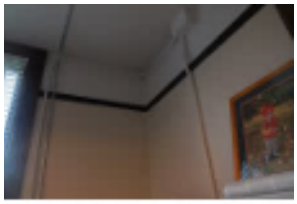
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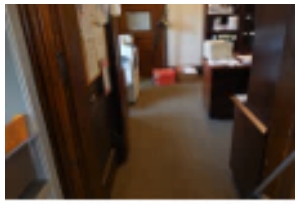
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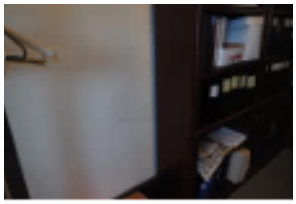
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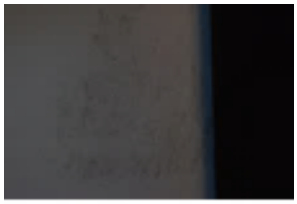
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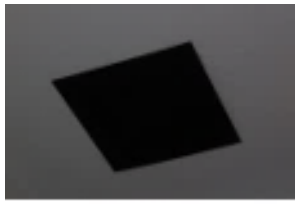
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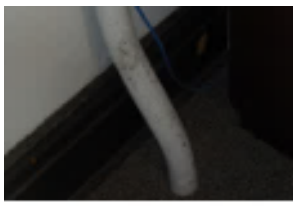
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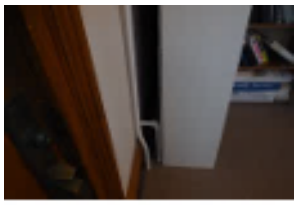
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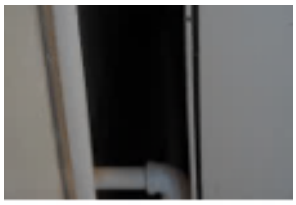
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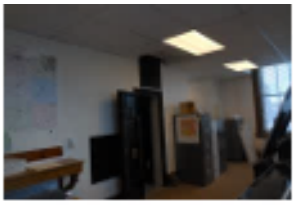
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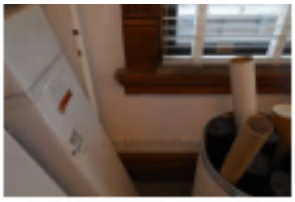
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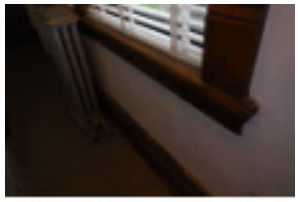
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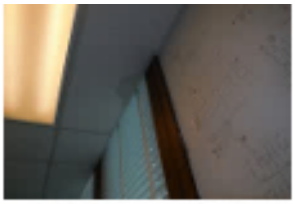
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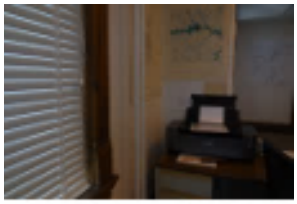
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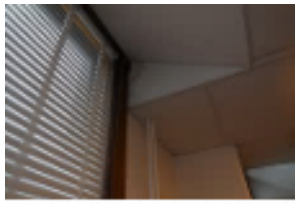
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QuanTEM LABORATORIES
2033 Heritage Park Dr, Oklahoma City, OK 73120 | 1.800.822.1650

Microbiology Analytical Report (Results)

QuanTEM Lab ID:	268192	**Client:**	Air & Mold Assessment, LLC Jerry Bascombe 10806 Haskins St Lenexa KS, 66210
Date Received:	08/16/2016		
Received By:	Rachel Brooks		
Analyzed By:	Robin Brady Naik		
Date Analyzed:	08/17/2016	**Account Number:**	C046
Methodology:	Spore Trap, Quantitative NonCulturable, MM001	**Project:**	Franklin Co Courthouse - Phase 2
		Location:	Ottawa, Kansas
AIHA ID Number:	101352	**Project No:**	160815A

QuanTEM Sample ID	268192-001	268192-002	268192-003	268192-004	268192-005	268192-006
Client Sample ID	Outside	Room 104	Room 103	Room 102	Restroom	SW Storage
Volume (L)	75	75	75	75	75	75
Detection Limit	13	13	13	13	13	13
	Results Counts/m³	Results Counts/m³	Results Counts/m³	Results Counts/m³	Results Counts/m³	Results Counts/m³
Alternaria	307			13		
Ascospores	9200		13	27		40
Aspergillus/Penicillium Group	53		67	133	133	38800
Basidiospores	1520	13		27		13
Bipolaris/Drechslera Group (2)	40					
Cercospora	120					
Cladosporium	12400		13	13		107
Curvularia	27		13			
Epicoccum	27					
Fusarium	13		13			
Fusicladium	13					
Hyphal Fragments	120	13	13	27		
Nigrospora	53					
Periconia/Myxomycetes/Smuts	93	13				
Pithomyces/Ulocladium	93			13		
Pollen	133					
Polythrincium	27					
Stemphylium	40					
Torula	13					
Zygophiala	13					
Total Results (Counts/m³)	24305	39	132	253	133	38960
Percent Coverage (%)	5	3	3	3	1	5
Comments						

QuanTEM LABORATORIES
2933 Heritage Park Dr, Oklahoma City, OK 73120 | 1.800.822.1650

Microbiology Analytical Report (Results)

QuanTEM Lab ID:	268192	**Client:**	Air & Mold Assessment, LLC Jerry Bascombe 10806 Haskins St Lenexa KS, 66210
Date Received:	08/16/2016		
Received By:	Rachel Brooks		
Analyzed By:	Robin Brady Naik		
Date Analyzed:	08/17/2016	**Account Number:**	C046
Methodology:	Spore Trap, Quantitative NonCulturable, MM001	**Project:**	Franklin Co Courthouse - Phase 2
		Location:	Ottawa, Kansas
AIHA ID Number:	101352	**Project No:**	160815A

QuanTEM Sample ID	268192-007	268192-008	268192-009	268192-010	268192-011	268192-012
Client Sample ID	Room 107	Room 106	Room 105	Basement	Janitorial	Ladys Room
Volume (L)	75	75	75	75	75	75
Detection Limit	13	13	13	13	13	13
	Results Counts/m³	Results Counts/m³	Results Counts/m³	Results Counts/m³	Results Counts/m³	Results Counts/m³
Alternaria	13				13	
Ascospores					40	
Aspergillus/Penicillium Group	667	93	13	227	387	5080
Cladosporium				40		
Curvularia	13	13				
Hyphal Fragments			27			
Periconia/Myxomycetes/Smuts					13	13
Pithomyces/Ulocladium		13	13		13	
Pollen			27			
Total Results (Counts/m³)	693	119	80	267	466	5093
Percent Coverage (%)	3	3	1	3	1	3
Comments						

QuanTEM LABORATORIES
2033 Heritage Park Dr, Oklahoma City, OK 73120 | 1.800.822.1650

Microbiology Analytical Report (Results)

QuanTEM Lab ID:	268192	**Client:**	Air & Mold Assessment, LLC Jerry Bascombe 10806 Haskins St Lenexa KS, 66210
Date Received:	08/16/2016		
Received By:	Rachel Brooks		
Analyzed By:	Robin Brady Naik		
Date Analyzed:	08/17/2016	**Account Number:**	C046
Methodology:	Spore Trap, Quantitative NonCulturable, MM001	**Project:**	Franklin Co Courthouse - Phase 2
		Location:	Ottawa, Kansas
AIHA ID Number:	101352	**Project No:**	160815A

QuanTEM Sample ID	268192-013	268192-014	268192-015	268192-016		
Client Sample ID	Mens Room	License Rm	Vault Rm	Lounge		
Volume (L)	75	75	75	75		
Detection Limit	13	13	13	13		
	Results Counts/m³	Results Counts/m³	Results Counts/m³	Results Counts/m³		
Ascospores		13	13	13		
Aspergillus/Penicillium Group			80			
Cladosporium		40	13			
Fusarium		13		13		
Periconia/Myxomycetes/Smuts			13			
Pithomyces/Ulocladium				13		
No Mold Detected	X					
Total Results (Counts/m³)		66	119	39		
Percent Coverage (%)	1	5	1	1		
Comments	No Mold Detected					

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Microbiology Analytical Report (Counts)

QuanTEM Lab ID:	268192	**Client:**	Air & Mold Assessment, LLC Jerry Bascombe 10806 Haskins St Lenexa KS, 66210
Date Received:	08/16/2016		
Received By:	Rachel Brooks		
Analyzed By:	Robin Brady Naik		
Date Analyzed:	08/17/2016	**Account Number:**	C046
Methodology:	Spore Trap, Quantitative NonCulturable, MM001	**Project:**	Franklin Co Courthouse - Phase 2
		Location:	Ottawa, Kansas
AIHA ID Number:	101352	**Project No:**	160815A

QuanTEM Sample ID	268192-001	268192-002	268192-003	268192-004	268192-005	268192-006
Client Sample ID	Outside	Room 104	Room 103	Room 102	Restroom	SW Storage
Volume (L)	75	75	75	75	75	75
	Counts	Counts	Counts	Counts	Counts	Counts
Alternaria	23			1		
Ascospores	690		1	2		3
Aspergillus/Penicillium Group	4		5	10	10	2910
Basidiospores	114	1		2		1
Bipolaris/Drechslera Group (2)	3					
Cercospora	9					
Cladosporium	930		1	1		8
Curvularia	2		1			
Epicoccum	2					
Fusarium	1		1			
Fusicladium	1					
Hyphal Fragments	9	1	1	2		
Nigrospora	4					
Periconia/Myxomycetes/Smuts	7	1				
Pithomyces/Ulocladium	7			1		
Pollen	10					
Polythrincium	2					
Stemphylium	3					
Torula	1					
Zygophiala	1					

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Microbiology Analytical Report (Counts)

QuanTEM Lab ID:	268192	**Client:**	Air & Mold Assessment, LLC Jerry Bascombe 10806 Haskins St Lenexa KS, 66210
Date Received:	08/16/2016		
Received By:	Rachel Brooks		
Analyzed By:	Robin Brady Naik		
Date Analyzed:	08/17/2016	**Account Number:**	C046
Methodology:	Spore Trap, Quantitative NonCulturable, MM001	**Project:**	Franklin Co Courthouse - Phase 2
		Location:	Ottawa, Kansas
AIHA ID Number:	101352	**Project No:**	160815A

QuanTEM Sample ID	268192-007	268192-008	268192-009	268192-010	268192-011	268192-012
Client Sample ID	Room 107	Room 106	Room 105	Basement	Janitorial	Ladys Room
Volume (L)	75	75	75	75	75	75
	Counts	Counts	Counts	Counts	Counts	Counts
Alternaria	1				1	
Ascospores					3	
Aspergillus/Penicillium Group	50	7	1	17	29	381
Cladosporium				3		
Curvularia	1	1				
Hyphal Fragments			2			
Periconia/Myxomycetes/Smuts					1	1
Pithomyces/Ulocladium		1	1		1	
Pollen			2			

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Microbiology Analytical Report (Counts)

QuanTEM Lab ID:	268192	**Client:**	Air & Mold Assessment, LLC Jerry Bascombe 10806 Haskins St Lenexa KS, 66210
Date Received:	08/16/2016		
Received By:	Rachel Brooks		
Analyzed By:	Robin Brady Naik		
Date Analyzed:	08/17/2016	**Account Number:**	C046
Methodology:	Spore Trap, Quantitative NonCulturable, MM001	**Project:**	Franklin Co Courthouse - Phase 2
		Location:	Ottawa, Kansas
AIHA ID Number:	101352	**Project No:**	160815A

QuanTEM Sample ID	268192-013	268192-014	268192-015	268192-016		
Client Sample ID	Mens Room	License Rm	Vault Rm	Lounge		
Volume (L)	75	75	75	75		
	Counts	Counts	Counts	Counts		
Ascospores		1	1	1		
Aspergillus/Penicillium Group			6			
Cladosporium		3	1			
Fusarium		1		1		
Periconia/Myxomycetes/Smuts			1			
Pithomyces/Ulocladium				1		

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Microbiology Analytical Report (Signature Page)

QuanTEM Lab ID:	268192	**Client:**	Air & Mold Assessment, LLC Jerry Bascombe 10806 Haskins St Lenexa KS, 66210
Date Received:	08/16/2016		
Received By:	Rachel Brooks		
Analyzed By:	Robin Brady Naik		
Date Analyzed:	08/17/2016	**Account Number:**	C046
Methodology:	Spore Trap, Quantitative NonCulturable, MM001	**Project:**	Franklin Co Courthouse - Phase 2
		Location:	Ottawa, Kansas
AIHA ID Number:	101352	**Project No:**	160815A

Unless otherwise noted, upon receipt the condition of the sample was acceptable for analysis.

(2)Also includes spores from Exosporium, Exserohilum and Helminthosporium
Percent coverage = amount of particulate matter. With 25-50% coverage, results may be underestimated; with 50-70% coverage, results will be underestimated; with >70% coverage, slides are designated overloaded (too dirty to count).
The results taken from your home, building, etc. cannot be interpreted without physical inspection of the contaminated area or without considering the building's characteristics and the factors that led to the present condition. Interpretation of results is the responsibility of the company or individual who conducted the investigation.
This report shall not be reproduced except in full, without the written approval of the laboratory.
This report may not be used to claim endorsement by AIHA or any other agency of the U.S. Government.

Approved: _____
Robin Brady Naik, Analyst

MICROBIOLOGY CHAIN OF CUSTODY

QuanTEM LABORATORIES
www.QuanTEM.com
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(800) 822-1650 • (405) 755-7272 • Fax: (405) 755-2058

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For Lab Use Only	
Lab No.	81681912
	Accept / Reject

Contact Information			
Company:	Air & Mold Assessment LLC	Phone:	785-331-6690
Contact:	Jerry Bascombe	Cell Phone:	
Account #:	A050	E-mail:	air.mold@yahoo
Sampled By: Name:	Jerry Bascombe	Date:	8/15/2016

Project Information	
Project Name:	Franklin Co Courthouse - Phase 2
Project Location:	Ottawa, Kansas
Project ID:	160815A
P.O. Number:	

Report Results (☑ one box)	
☐	QuanTEM Website
☑	Email air.mold@yahoo.c
☐	Other _____

RELINQUISHED BY	DATE & TIME	VIA	RECEIVED BY	DATE & TIME
Jerry Bascombe	8/15/16 - 1700	FedEx	RLJ	8/16/16 10:00

REQUESTED SERVICES (Please ☑ the Appropriate Boxes)

Fungal Analysis (non-culture)		Fungal Analysis (non-culture)		Fungal Analysis (culture based)		Bacterial Analysis		TURNAROUND TIME	
☑	Spore Trap	☐	Bulk/Swab	☐	Impaction Plate	☐	Water Screen	☐	Rush
☐	Spore Trap (Detailed)	☐	Bulk/Swab (Quantitative)	☐	Sedimentation Plate	☐	Sewage Screen	☐	Same Day
☐	Tape Lift	☐	Other (Specify in Comments)	☐	Bulk/Swab - Genus ID	☐	Heterotrophic Plate Count	☑	24 - Hour
☐	Tape/Lift (Quantitative)			☐	Bulk/Swab - Genus ID & Enumer.	☐	Heterotrophic Plate count with ID	☐	3 - Day
				☐	Other (Specify in Comments)	☐	Other (Specify in Comments)	☐	5 - Day
								☐	14 - Day (Cultures)

No.	Sample ID (16 Characters Max)	Description	Volume / Area (as applicable)	Media / Comments / Notes
1	Outside	West exp., warm, cloudy, slight breeze	15 L/m	5 minute sample (AP Buck Bio-slide)
2	Room 104	Mail Room first floor	15 L/m	5 minute sample (AP Buck Bio-slide)
3	Room 103	Register of Deeds	15 L/m	5 minute sample (AP Buck Bio-slide)
4	Room 102	Voting machine room	15 L/m	5 minute sample (AP Buck Bio-slide)
5	Restroom	1st floor employee's restroom	15 L/m	5 minute sample (AP Buck Bio-slide)
6	SW Storage	Off restroom, record & Decoration storage	15 L/m	5 minute sample (AP Buck Bio-slide)
7	Room 107	Tresurer's Room	15 L/m	5 minute sample (AP Buck Bio-slide)
8	Room 106	Clerks Room	15 L/m	5 minute sample (AP Buck Bio-slide)
9	Room 105	Conference / Interview Rm	15 L/m	5 minute sample (AP Buck Bio-slide)
10	Basement	West end corridor	15 L/m	5 minute sample (AP Buck Bio-slide)

SATURDAY FEDEX SAMPLE DELIVERY - CALL TO SCHEDULE • Use this address for Saturday Delivery only: 4220 N. Santa Fe Ave., Oklahoma City, OK 73105-8517 • Mark Package "Hold for Saturday Pickup"
Please Note - UPS and USPS are NOT available for Saturday Delivery

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For Lab Use Only
Lab No. 216192
Accept Reject

Project Information

Company: Air & Mold Assessment LLC | Project Name: | Project Location:

No.	Sample ID (10 Characters Max)	Description	Volume / Area (as applicable)	Media / Comments / Notes
11	Janitorial	Janitorial supply room below Stairs	15 L/m	5 minute sample (AP Buck Bio-slide)
12	Ladys room	Women's basement restroom	15 L/m	5 minute sample (AP Buck Bio-slide)
13	Mens room	Men,s basement restroom	15 L/m	5 minute sample (AP Buck Bio-slide)
14	License Rm	Auto license dept. IQAir running	15 L/m	5 minute sample (AP Buck Bio-slide)
15	Vault Rm	Basement license dept. vault	15 L/m	5 minute sample (AP Buck Bio-slide)
16	Lounge	Basement employee's lounge	15 L/m	5 minute sample (AP Buck Bio-slide)
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

SATURDAY FEDEX SAMPLE DELIVERY - CALL TO SCHEDULE • Use this address for Saturday Delivery only: 4220 N. Santa Fe Ave., Oklahoma City, OK 73105-8517 • Mark Package "Hold for Saturday Pickup"
Please Note - UPS and USPS are NOT available for Saturday Delivery

SURFACE SAMPLE LABORATORY REPORT: FUNGAL NON-VIABLE METHODOLOGY

11020 W. 122nd Street, Overland Park, Kansas 66213
913 322-2237 (phone) 866 225-6653 (toll free) 866 576-2719 (fax)

Client: **Air and Mold Assessment**
10806 Haskins Street
Lenexa, KS **66210-3710**

Job Site: Franklin CCH
Batch ID: 16274
Lab tech: SFlappan

Sample Date: 8/15/2016
Date of Receipt: 8/16/2016
Report Date: 8/18/2016

	1	2	3
	Room 103 - dust on W. Window Sill	**Voting machine room - dust on baseboard heater**	**Stain on west wall of SW 1st floor storage room**
Mold genus			
Alternaria		1+	
Ascospores	1+	1+	
Aspergillus/Penicillium types*	2+	1+	3+
Basidiospores	1+	1+	1+
Bipolaris/Drechslera group			
Cercospora/Pseudocercospora			
Chaetomium-like	1+		
Cladosporium sp.		1+	
Cladosporium sphaerospermum	3+	3+	5+
Curvularia	1+		
Epicoccum	1+	1+	1+
Fusarium			
Helicospores			
Myxomycetes/Periconia/Smuts	1+	1+	
Nigrospora	1+	1+	
Other clear			
Other pigmented			
Paecilomyces			
Pithomyces	1+	1+	
Polythrincium	1+		
Rusts			
Scopulariopsis			
Stachybotrys			
Ulocladium			
Mycelia			
Mycelia fragments	1+	1+	3+
Pollens	1+	3+	
OTHER NOTES	Fiberglass seen.	Fiberglass seen.	
RESULTS SUGGEST	Fungal Growth or Contamination in Vicinity.	Fungal Growth or Contamination in Vicinity.	Fungal Growth.

The following scale is used to estimate the amount of mold seen in the sample: 1+= trace; 2+= few; 3+= moderate; 4+= many; 5+= heavy

* Aspergillus/Penicillium types are small, round spores that are difficult to distinguish by direct microscopy alone. A culture would be required for a more definitive identification. Fungal genera that may fall into this category include Aspergillus, Penicillium, Acremonium, Trichoderma and Gliocladium.

SURFACE SAMPLE LABORATORY REPORT: FUNGAL NON-VIABLE METHODOLOGY

11020 W. 122nd Street, Overland Park, Kansas 66213
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Client: **Air and Mold Assessment**
10806 Haskins Street
Lenexa, KS **66210-3710**

Job Site: Franklin CCH
Batch ID: 16274
Lab tech: SFlappan

Sample Date: 8/15/2016
Date of Receipt: 8/16/2016
Report Date: 8/18/2016

	4
	Dust on Book #3 1971 in basement license vault
Mold genus	
Alternaria	1+
Ascospores	1+
Aspergillus/Penicillium types*	2+
Basidiospores	1+
Bipolaris/Drechslera group	
Cercospora/Pseudocercospora	
Chaetomium	1+
Cladosporium sp.	2+
Cladosporium sphaerospermum	1+
Curvularia	
Epicoccum	1+
Fusarium	
Helicospores	
Myxomycetes/Periconia/Smuts	1+
Nigrospora	
Other clear	
Other pigmented	
Paecilomyces	
Pithomyces	1+
Rusts	
Scopulariopsis	
Stachybotrys	
Ulocladium	
Mycelia	
Mycelia fragments	1+
Pollens	1+
OTHER NOTES	One sporulating Aspergillus structure seen.
RESULTS SUGGEST	Fungal Growth or Contamination in Vicinity.

The following scale is used to estimate the amount of mold seen in the sample: 1+= trace; 2+= few; 3+= moderate; 4+= many; 5+= heavy

* Aspergillus/Penicillium types are small, round spores that are difficult to distinguish by direct microscopy alone. A culture would be required for a more definitive identification. Fungal genera that may fall into this category include Aspergillus, Penicillium, Acremonium, Trichoderma and Gliocladium.

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11020 W. 122nd Street, Overland Park, Kansas 66213
913 322-2237 (phone) 866 225-6653 (toll free) 866 576-2719 (fax)

Client:	**Air and Mold Assessment**	**Job Site:** Franklin CCH	**Sample Date:** 8/15/2016
	10806 Haskins Street	**Batch ID:** 16274	**Date of Receipt:** 8/16/2016
	Lenexa, KS 66210-3710	**Lab tech:** SFlappan	**Report Date:** 8/18/2016

Notes:
Fungal spore analysis by non-viable methodology is performed in the laboratory by direct microscopy at 400 to 1000 times magnification. Spores are identified based on visual characteristics including size, shape, attachment scars, septations, texture and color. Most commonly encountered mold spores are distinguishable by their unique morphology. However, some do not have distinct characteristics to allow classification into a single genus. These are categorized into broader groups (such as Aspergillus/ Penicillium types, Myxomycetes/Periconia/Smut group, Bipolaris/Drechslera group).

Ascospores include a large, diverse category of spores inside of a sac (ascus). Ascospores are found in high numbers during and after rains.

Basidiospores (mushrooms) also include a large, diverse category of spores seen during periods of high humidity or rain. Some Basidiospores are the cause of wood rot.

There are thousands of mold spore types. Some of the less commonly encountered spores may be reported as 'other pigmented' or 'other clear'.

Indicator spores are fungi whose presence indicates excessive moisture, and includes the fungal genera Stachybotrys and Chaetomium.

Cladosporium sp. is commonly found in both indoor and outdoor air samples. However, Cladosporium sphaerospermum is uncommon in the outdoor air and is the predominant species of Cladosporium growing inside buildings.

Susan Flappan

Laboratory Director, PAACB Certified Spore Analyst I #03050083

8/18/2016
Date

All samples are archived by Flappan Consulting, Inc. for a minimum of 2 years and are available upon request.

Flappan Consulting Inc. ("the Company") shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.

SURFACE SAMPLE LABORATORY REPORT: FUNGAL NON-VIABLE METHODOLOGY

11020 W. 122nd Street, Overland Park, Kansas 66213
913 322-2237 (phone) 866 225-6653 (toll free) 866 576-2719 (fax)

Client: **Air and Mold Assessment**
10806 Haskins Street
Lenexa, KS 66210-3710

Job Site: Franklin CCH
Batch ID: 16271T
Lab tech: SFlappan

Sample Date: 8/12/2016
Date of Receipt: 8/13/2016
Report Date: 8/17/2016

	1	2	3
	Appraiser's office return air vent	**Dust on drafting table in 2nd flr elevator foyer**	**Room 204, 2nd floor, East wall stain**
Mold genus			
Alternaria	1+	1+	
Ascospores			
Aspergillus/Penicillium types*	2+	5+	
Basidiospores	1+	1+	
Bipolaris/Drechslera group	1+		
Cercospora/Pseudocercospora			
Chaetomium	1+		
Cladosporium sp.	1+	1+	
Cladosporium sphaerospermum	1+	2+	5+
Curvularia	1+		
Epicoccum	1+	1+	
Fusarium			
Helicospores			
Myxomycetes/Periconia/Smuts	1+	1+	
Nigrospora	1+		
Other clear			
Other pigmented			
Paecilomyces			
Pithomyces	1+		
Rusts			
Scopulariopsis			
Stachybotrys			
Ulocladium			
Mycelia		4+	5+
Mycelia fragments	1+		
Pollens	3+	1+	
OTHER NOTES		Sporulating Aspergillus structures seen.	
RESULTS SUGGEST	Fungal Growth or Contamination in Vicinity.	Fungal Growth.	Fungal Growth.

The following scale is used to estimate the amount of mold seen in the sample: 1+= trace; 2+= few; 3+= moderate; 4+= many; 5+= heavy

* Aspergillus/Penicillium types are small, round spores that are difficult to distinguish by direct microscopy alone. A culture would be required for a more definitive identification. Fungal genera that may fall into this category include Aspergillus, Penicillium, Acremonium, Trichoderma and Gliocladium.

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Client: **Air and Mold Assessment**
10806 Haskins Street
Lenexa, KS **66210-3710**

Job Site: Franklin CCH
Batch ID: 16271T
Lab tech: SFlappan

Sample Date: 8/12/2016
Date of Receipt: 8/13/2016
Report Date: 8/17/2016

	4
	Room 204, 2nd floor, pipe casing at south wall
Mold genus	
Alternaria	
Ascospores	
Aspergillus/Penicillium types*	
Basidiospores	
Bipolaris/Drechslera group	
Cercospora/Pseudocercospora	
Chaetomium	
Cladosporium sp.	
Cladosporium sphaerospermum	5+
Curvularia	
Epicoccum	
Fusarium	
Helicospores	
Myxomycetes/Periconia/Smuts	
Nigrospora	
Other clear	
Other pigmented	
Paecilomyces	
Pithomyces	
Rusts	
Scopulariopsis	
Stachybotrys	
Ulocladium	
Mycelia	5+
Mycelia fragments	
Pollens	1+
OTHER NOTES	
RESULTS SUGGEST	Fungal Growth.

The following scale is used to estimate the amount of mold seen in the sample: 1+= trace; 2+= few; 3+= moderate; 4+= many; 5+= heavy

* Aspergillus/Penicillium types are small, round spores that are difficult to distinguish by direct microscopy alone. A culture would be required for a more definitive identification. Fungal genera that may fall into this category include Aspergillus, Penicillium, Acremonium, Trichoderma and Gliocladium.

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Client:	**Air and Mold Assessment**	**Job Site:** Franklin CCH	**Sample Date:** 8/12/2016
	10806 Haskins Street	**Batch ID:** 16271T	**Date of Receipt:** 8/13/2016
	Lenexa, KS 66210-3710	**Lab tech:** SFlappan	**Report Date:** 8/17/2016

Notes:
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There are thousands of mold spore types. Some of the less commonly encountered spores may be reported as 'other pigmented' or 'other clear'.

Indicator spores are fungi whose presence indicates excessive moisture, and includes the fungal genera Stachybotrys and Chaetomium.

Cladosporium sp. is commonly found in both indoor and outdoor air samples. However, Cladosporium sphaerospermum is uncommon in the outdoor air and is the predominant species of Cladosporium growing inside buildings.

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Laboratory Director, PAACB Certified Spore Analyst I #03050083

8/17/2016
Date

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QuanTEM LABORATORIES
2933 Heritage Park Dr, Oklahoma City, OK 73120 | 1.800.822.1650

Microbiology Analytical Report (Results)

QuanTEM Lab ID:	268136	**Client:**	Air & Mold Assessment, LLC Jerry Bascombe 10806 Haskins St Lenexa KS, 66210
Date Received:	08/15/2016		
Received By:	Rachel Brooks		
Analyzed By:	Robin Brady Naik		
Date Analyzed:	08/16/2016	**Account Number:**	C046
Methodology:	Spore Trap, Quantitative NonCulturable, MM001	**Project:**	Franklin Co Courthouse - Phase 1
		Location:	Ottawa, Kansas
AIHA ID Number:	101352	**Project No:**	160812A

QuanTEM Sample ID	268136-001	268136-002	268136-003	268136-004	268136-005	268136-006
Client Sample ID	Outside	Flr3 NE Rm	Flr3 NW Rm	Flr 3 FCHS	Flr3 SE Rm	Flr3 Crtrm
Volume (L)	75	75	75	75	75	75
Detection Limit	13	13	13	13	13	13
	Results Counts/m³	Results Counts/m³	Results Counts/m³	Results Counts/m³	Results Counts/m³	Results Counts/m³
Alternaria		13				
Ascospores	9600	27	13			
Aspergillus/Penicillium Group	200	1573	30400	1893	573	
Basidiospores	187					
Cercospora	53					
Cladosporium	280				120	
Helicosporium	40					
Periconia/Myxomycetes/Smuts	40					
Pithomyces/Ulocladium	13	27				
Pollen	80					
No Mold Detected						X
Total Results (Counts/m³)	10493	1640	30413	1893	693	
Percent Coverage (%)	3	1	1	1	1	1
Comments						No Mold Detected

2933 Heritage Park Dr, Oklahoma City, OK 73120 | 1.800.822.1650

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Received By:	Rachel Brooks		
Analyzed By:	Robin Brady Naik		
Date Analyzed:	08/16/2016	**Account Number:**	C046
Methodology:	Spore Trap, Quantitative NonCulturable, MM001	**Project:**	Franklin Co Courthouse - Phase 1
		Location:	Ottawa, Kansas
AIHA ID Number:	101352	**Project No:**	160812A

QuanTEM Sample ID	268136-007	268136-008	268136-009	268136-010	268136-011	268136-012
Client Sample ID	Flr 3 SW Rm	SW Office	Flr2 Rm209	Appraiser	Flr2 NW Rm	Room 202
Volume (L)	75	75	75	75	75	75
Detection Limit	13	13	13	13	13	13
	Results Counts/m³	Results Counts/m³	Results Counts/m³	Results Counts/m³	Results Counts/m³	Results Counts/m³
Ascospores	27	40	13	40	40	13
Aspergillus/Penicillium Group	2493	40	24640	707		1347
Basidiospores		13		13		
Cladosporium			1720	13		13
Hyphal Fragments					27	13
Periconia/Myxomycetes/Smuts			13			
Pithomyces/Ulocladium		13		13		13
Pollen						13
Rusts		13				
Total Results (Counts/m³)	2520	119	26386	786	67	1412
Percent Coverage (%)	1	1	3	3	3	3
Comments						

2033 Heritage Park Dr, Oklahoma City, OK 73120 | 1.800.822.1650

Microbiology Analytical Report (Results)

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Date Received:	08/15/2016		
Received By:	Rachel Brooks		
Analyzed By:	Robin Brady Naik		
Date Analyzed:	08/16/2016	**Account Number:**	C046
Methodology:	Spore Trap, Quantitative NonCulturable, MM001	**Project:**	Franklin Co Courthouse - Phase 1
		Location:	Ottawa, Kansas
AIHA ID Number:	101352	**Project No:**	160812A

QuanTEM Sample ID	268136-013					
Client Sample ID	Room 203					
Volume (L)	75					
Detection Limit	13					
	Results Counts/m³					
Periconia/Myxomycetes/Smuts	67					
Total Results (Counts/m³)	67					
Percent Coverage (%)	3					
Comments						

2033 Heritage Park Dr, Oklahoma City, OK 73120 | 1.800.822.1650

Microbiology Analytical Report (Counts)

QuanTEM Lab ID:	268136	**Client:**	Air & Mold Assessment, LLC Jerry Bascombe 10806 Haskins St Lenexa KS, 66210
Date Received:	08/15/2016		
Received By:	Rachel Brooks		
Analyzed By:	Robin Brady Naik		
Date Analyzed:	08/16/2016	**Account Number:**	C046
Methodology:	Spore Trap, Quantitative NonCulturable, MM001	**Project:**	Franklin Co Courthouse - Phase 1
		Location:	Ottawa, Kansas
AIHA ID Number:	101352	**Project No:**	160812A

QuanTEM Sample ID	268136-001	268136-002	268136-003	268136-004	268136-005	268136-006
Client Sample ID	Outside	Flr3 NE Rm	Flr3 NW Rm	Flr 3 FCHS	Flr3 SE Rm	Flr3 Crtrm
Volume (L)	75	75	75	75	75	75
	Counts	Counts	Counts	Counts	Counts	Counts
Alternaria		1				
Ascospores	720	2	1			
Aspergillus/Penicillium Group	15	118	2280	142	43	
Basidiospores	14					
Cercospora	4					
Cladosporium	21				9	
Helicosporium	3					
Periconia/Myxomycetes/Smuts	3					
Pithomyces/Ulocladium	1	2				
Pollen	6					

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Microbiology Analytical Report (Counts)

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Date Received:	08/15/2016		
Received By:	Rachel Brooks		
Analyzed By:	Robin Brady Naik		
Date Analyzed:	08/16/2016	**Account Number:**	C046
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		Location:	Ottawa, Kansas
AIHA ID Number:	101352	**Project No:**	160812A

QuanTEM Sample ID	268136-007	268136-008	268136-009	268136-010	268136-011	268136-012
Client Sample ID	Flr 3 SW Rm	SW Office	Flr2 Rm209	Appraiser	Flr2 NW Rm	Room 202
Volume (L)	75	75	75	75	75	75
	Counts	Counts	Counts	Counts	Counts	Counts
Ascospores	2	3	1	3	3	1
Aspergillus/Penicillium Group	187	3	1848	53		101
Basidiospores		1		1		
Cladosporium			129	1		1
Hyphal Fragments					2	1
Periconia/Myxomycetes/Smuts			1			
Pithomyces/Ulocladium		1		1		1
Pollen						1
Rusts		1				

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Microbiology Analytical Report (Counts)

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Methodology:	Spore Trap, Quantitative NonCulturable, MM001	**Project:**	Franklin Co Courthouse - Phase 1
		Location:	Ottawa, Kansas
AIHA ID Number:	101352	**Project No:**	160812A

QuanTEM Sample ID	268136-013					
Client Sample ID	Room 203					
Volume (L)	75					
	Counts					
Periconia/Myxomycetes/Smuts	5					

2033 Heritage Park Dr, Oklahoma City, OK 73120 | 1.800.822.1650

Microbiology Analytical Report (Signature Page)

QuanTEM Lab ID:	268136	**Client:**	Air & Mold Assessment, LLC Jerry Bascombe 10806 Haskins St Lenexa KS, 66210
Date Received:	08/15/2016		
Received By:	Rachel Brooks		
Analyzed By:	Robin Brady Naik		
Date Analyzed:	08/16/2016	**Account Number:**	C046
Methodology:	Spore Trap, Quantitative NonCulturable, MM001	**Project:**	Franklin Co Courthouse - Phase 1
		Location:	Ottawa, Kansas
AIHA ID Number:	101352	**Project No:**	160812A

Unless otherwise noted, upon receipt the condition of the sample was acceptable for analysis.

Percent coverage = amount of particulate matter. With 25-50% coverage, results may be underestimated; with 50-70% coverage, results will be underestimated; with >70% coverage, slides are designated overloaded (too dirty to count).
The results taken from your home, building, etc. cannot be interpreted without physical inspection of the contaminated area or without considering the building's characteristics and the factors that led to the present condition. Interpretation of results is the responsibility of the company or individual who conducted the investigation.
This report shall not be reproduced except in full, without the written approval of the laboratory.
This report may not be used to claim endorsement by AIHA or any other agency of the U.S. Government.

Approved: _____

Robin Brady Naik, Analyst

MICROBIOLOGY CHAIN OF CUSTODY

QuanTEM LABORATORIES
www.QuanTEM.com
2033 Heritage Park Drive, Oklahoma City, OK 73120-7502
(800) 822-1650 • (405) 755-7272 • Fax (405) 755-2058

LEGAL DOCUMENT - PLEASE PRINT LEGIBLY

For Lab Use Only	
Lab No:	2168513 LP
Accept	Reject

Contact Information			
Company: Air & Mold Assessment LLC		Phone:	785-331-6690
Contact: Jerry Bascombe		Cell Phone:	
Account #: A050		E-mail:	air.mold@yahoo
SAMPLED BY:	Name: Jerry Bascombe	Date:	8/12/2016

Project Information	
Project Name:	Franklin Co Courthouse - Phase 1
Project Location:	Ottawa, Kansas
Project ID:	160812A
PO Number:	

Report Results (☑ one box)	
☐	QuanTEM Website
☑	Email air.mold@yahoo.c
☐	Other _____

RELINQUISHED BY	DATE & TIME	VIA	RECEIVED BY	DATE & TIME
Jerry Bascombe	8/13/16 - 1600	FedEx	[illegible]	8/15/16 10:30

REQUESTED SERVICES (Please ☑ the Appropriate Boxes)

Fungal Analysis (non-culture)		Fungal Analysis (non-culture)		Fungal Analysis (culture based)		Bacterial Analysis		TURNAROUND TIME	
☑	Spore Trap	☐	Bulk/Swab	☐	Impaction Plate	☐	Water Screen	☐	Rush
☐	Spore Trap (Detailed)	☐	Bulk/Swab (Quantitative)	☐	Sedimentation Plate	☐	Sewage Screen	☐	Same Day
☐	Tape Lift	☐	Other (Specify in Comments)	☐	Bulk/Swab - Genus ID	☐	Heterotrophic Plate Count	☑	24 - Hour
☐	Tape/Lift (Quantitative)			☐	Bulk/Swab - Genus ID & Enumer.	☐	Heterotrophic Plate count with ID	☐	3 - Day
				☐	Other (Specify in Comments)	☐	Other (Specify in Comments)	☐	5 - Day
								☐	14 - Day (Cultures)

No.	Sample ID (10 Characters Max)	Description	Volume / Area (as applicable)	Media / Comments / Notes
1	Outside	West exp., hot, overcast, calm	15 L/m	5 minute sample (AP Buck Bio-slide)
2	Flr3 NE Rm	3rd floor, East corridor, CASA corner room	15 L/m	5 minute sample (AP Buck Bio-slide)
3	Flr3 NW Rm	3rd floor, East corridor, CASA Main office	15 L/m	5 minute sample (AP Buck Bio-slide)
4	Flr 3 FCHS	Franklin Cnty Historical Society Archives	15 L/m	5 minute sample (AP Buck Bio-slide)
5	Flr3 SE Rm	Corner workout/exercise room	15 L/m	5 minute sample (AP Buck Bio-slide)
6	Flr3 Crtrm	3rd floor walkway in Courtroom	15 L/m	5 minute sample (AP Buck Bio-slide)
7	Flr 3 SW Rm	3rd floor, West corridor, Record Books	15 L/m	5 minute sample (AP Buck Bio-slide)
8	SW Office	3rd floor Appraiser's office area	15 L/m	5 minute sample (AP Buck Bio-slide)
9	Flr2 Rm209	Small conference room	15 L/m	5 minute sample (AP Buck Bio-slide)
10	Appraiser	County Appraiser's office, 2nd floor	15 L/m	5 minute sample (AP Buck Bio-slide)

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Lab No. 21-03136
Accept Reject

Project Information
Company: Air & Mold Assessment LLC
Project Name:
Project Location:

No.	Sample ID (10 Characters Max)	Description	Volume / Area (as applicable)	Media / Comments / Notes
11	Flr2 NW Rm	County Real Estate Appraisers	15 L/m	5 minute sample (AP Buck Bio-slide)
12	Room 202	Paul's office (Maintenance)	15 L/m	5 minute sample (AP Buck Bio-slide)
13	Room 203	Cartagraphy	15 L/m	5 minute sample (AP Buck Bio-slide)
14				
15				
16				
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SATURDAY FEDEX SAMPLE DELIVERY - CALL TO SCHEDULE • Use this address for Saturday Delivery only: 4220 N. Santa Fe Ave., Oklahoma City, OK 73105-8517 • Mark Package "Hold for Saturday Pickup"
Please Note - UPS and USPS are NOT available for Saturday Delivery

Air & Mold Assessment LLC

Environmental Sampling & Consulting

Environmental Survey

Fungal Report

Conducted August 12 & 15, 2016 at the

Franklin County Courthouse
315 S. Main Street
Ottawa, KS 66067

Contact:
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1.0 Introduction and Background

Thank you for choosing Air & Mold Assessment LLC. Our mission is to provide an industry leading standard of quality for the assessment and reporting of mold in the indoor environment.

Mold spores are ubiquitous. They are present in virtually all environments, both indoors and outdoors, with a few notable exceptions such as industrial clean rooms and hospital organ transplant rooms. In "normal" or "clean" indoor environments, indoor spore levels are typically lower than outdoor levels. However, simple interpretation of ratios between “inside” and “outside” levels is not always appropriate for determining whether there is a source of mold growth indoors. A misinformed diagnosis or assessment without all the facts may lead to false or misleading results. One reason these simple methods do not always work is because both outdoor and indoor spores levels vary widely due to factors such as weather conditions and activity levels within the room. For example, even in a "normal" home, spore levels can be higher than outdoors at certain times, such as after vacuuming (when airborne indoor levels could be unusually high) or after a heavy snow (when outdoor levels could be unusually low).

Upon request, Jerry Bascombe (IAQCP #1071) and Joan Bascombe from Air & Mold Assessment LLC (IAQA #2977) performed limited mold sampling, including representative IAQ readings on Friday, August 12, 2016 and Monday, August 15, 2016 at the Franklin County Courthouse, 315 S. Main Street located in Ottawa, Kansas.

This survey was initiated because of visible moisture damage and mold growth observed in several areas of the building. Building materials were visibly damaged. A “musty” odor was evident some areas of the courthouse.

The purpose of the survey was to identify mold types and evaluate mold levels in the courthouse, assess air quality (carbon dioxide and carbon monoxide content), measure humidity levels, and make recommendations for remediation (clean-up and removal).

The investigation and assessment were obtained in two phases. Phase 1, the third and second floors, was done on Friday, August 12, 2016. Phase 2, the basement and first floor, was done on Monday, August 15, 2016.

Seventeen representative indoor (plus two outdoor control) air samples in total were obtained to evaluate airborne mold levels in the courthouse at the time of sampling.

Eight representative tape lift samples in total were also taken to identify suspect staining in order to confirm or rule out the presence of mold.

2.0 Process / Methodology

2.1 Visual Inspection Process

The first step in properly evaluating a potential mold problem is the visual inspection. Throughout this phase an inspector is looking for three things: evidence of previous moisture intrusion, evidence of mold growth, and areas with a potential for future mold amplification. An interior assessment typically covers the area(s) of concern, but often will include the total

living space, basement, attic and/or crawl space. Exterior surfaces are also examined for evidence of water damage / intrusion and potential for future problem areas.

If mold growth is found, regardless of the magnitude of the growth, it is recommended that the growth be physically removed using appropriate controls and precautions. In addition to locating and removing the mold growth, it is also important to identify and correct the source of moisture or dampness that allowed the mold to grow. If the affected area becomes moist again, mold growth will occur again. We recommend that you consult a professional if you are not familiar with how to safely remove mold growth or how to correct moisture problems that may exist.

2.2 Air Sampling

Air sampling is the most effective method for determining whether a mold infestation is potentially creating an unsafe living environment. Our sampling procedure incorporates the Allergenco gel impact slides. Air quality is tested by drawing 15 cubic liters of air per minute and impacting the airborne particles over a gel substrate. Typically the process runs for 5 to 10 minutes for ambient air samples producing a sample size of 15 liters for each minute of sampling. Next, the slides are sent to a laboratory where the spores are identified and counted.

These numbers alone do not give us enough information to accurately determine the level of contamination. Outside control samples are needed to identify the quantity of mold found in the natural environment. Indoor levels are normally found at approximately 50% or less of outside sample levels.

2.2.1 Sample clarity and visibility

Air samples collect dirt and debris in addition to mold spores. The debris level is classified as background level from “1+” to “5+” (low to high). The higher levels of background make analysis more difficult, because they obscure the analyst's view of spores and may lead to undercounting of the mold spores present. When sample clarity and visibility is rated “4+” or “5+” (high), the analytical results should be regarded as minimal and actual counts may be higher than reported.

2.3 Surface Sampling

Surface sampling is used to confirm or identify a mold type at a specific location. This technique is also useful in ruling out possible discolorations or staining that sometimes exhibit mold-like characteristics. Typically, a piece of clear tape (e.g., MOLDetect®) is used to collect a small quantity of material. The tape slide is analyzed by direct microscopy. An independent laboratory performs the analysis for these samples.

2.4 IAQ Metrics

Air characteristic measurements are taken in various locations to determine temperature (T °F), relative humidity (%RH), carbon monoxide (CO), and carbon dioxide (CO_2) levels to evaluate the quality of the indoor air and determine the adequacy of environmental ventilation.

Carbon dioxide (CO_2) is a heavy (*about one and one-half times as dense as air*), odorless, colorless, tasteless, invisible gas that's formed by respiration, as a product of combustion of carbonaceous fuels (e.g., coal, coke, fuel oil, gasoline, and cooking gas), and by decomposition of organic substances. It is absorbed from the air by plants for photosynthesis. Although it is not a poison, it can cause death by suffocation if inhaled in large amounts.

Because humans breathe out carbon dioxide as a basic byproduct of metabolism, levels can increase if there is poor or no ventilation to the outside air.

When the CO_2 level in the air increases:

- **600 parts per million** (ppm), people notice the air is "stuffy."
- **1000 ppm** (0.1%) and up, some people may begin to feel the classic symptoms of carbon dioxide asphyxiation: shortness of breath, difficulty in breathing, rapid pulse rate, headaches, hearing loss, hyperventilation, sweating, and fatigue.
- **5000 ppm** (0.5%). Prolonged exposure to levels above 5000 ppm is regarded as potentially dangerous to human health, especially if accompanied by reduced oxygen levels.
- **15,000 ppm** (1.5%). At this level, people can suffer symptoms within an hour or two.
- **30,000 ppm** (3.0%) and up, people can suffer serious symptoms, including nausea, dizziness, mental depression, shaking, visual disturbances and vomiting. If exposure persists, people may pass out, and if levels continue to increase, they may die.

Reference: http://www.accessexcellence.org/AE/mspot/arp/highco2.htm

Carbon monoxide (CO) is an odorless, tasteless, invisible, yet potentially deadly gas that's produced wherever there's incomplete combustion. Since combustion is never 100% efficient, any combustion appliance can pose a threat. Low-level carbon monoxide (CO) poisoning often goes unrecognized, since its symptoms resemble those of flu and colds.

Sources of Carbon Monoxide (CO) include unvented kerosene and gas space heaters; leaking chimneys and furnaces; back-drafting from furnaces, gas water heaters, wood stoves, and fireplaces; gas stoves; generators and other gasoline powered equipment; automobile exhaust from attached garages; and tobacco smoke. Incomplete oxidation during combustion in gas ranges and unvented gas or kerosene heaters may cause high concentrations of CO in indoor air. Worn or poorly adjusted and maintained combustion devices (e.g., boilers, furnaces) can be significant sources, or if the flue is improperly sized, blocked, disconnected, or is leaking. Auto, truck, or bus exhaust from attached garages, nearby roads, or parking areas can also be a source.

Health Effects Associated with Carbon Monoxide (CO), even at low concentrations, include fatigue in healthy people and chest pain in people with heart disease. At higher concentrations symptoms of impaired vision and coordination; headaches; dizziness; confusion; nausea can occur. Carbon monoxide CO poisoning can cause flu-like symptoms that clear up after leaving home. Acute effects are due to the formation of carboxyhemoglobin in the blood, which inhibits oxygen intake. At moderate concentrations, angina, impaired vision, and reduced brain function may result. At higher concentrations, CO exposure can be fatal

Average levels in homes without gas stoves vary from 0.5 to 5 parts per million (ppm). Levels near properly adjusted gas stoves are often 5 to 15 ppm and those near poorly adjusted stoves may be 30 ppm or higher.

No standards for CO have been agreed upon for indoor air. The U.S. National Ambient Air Quality Standards for outdoor air are 9 ppm (40,000 micrograms per meter cubed) for 8 hours, and 35 ppm for 1 hour.

Reference: http://www.epa.gov/iaq/co.html

3.0 Observations and Comments

♦ "Red" indicates visible fungal or water damage requiring immediate attention

♦ "Yellow" indicates an issue for concern or prevention

Interior:

♦ Signs of visible mold and/or moisture damage and/or other issues were observed at the following locations:

Basement (*Phase 2 Sampling*):
Photos: Phase 2: #145 - #195

- Women's restroom ceiling tiles (see representative photos 148-145).
- Auto Tag licensing dept. ceiling tiles (see representative photos 155-157).
- Window frames in hall from licensing dept. to historical documents vault (see representative photos 158-166).
- Auto Tag licensing dept. vault content surfaces (see representative photos 167-172).
- Room 4, basement employee lounge, chipping paint (see representative photos 175-177 & 185).
- Room 4, basement employee lounge, window wells show moisture damage to trim (see representative photos 180-183).
- Room 4, basement employee lounge, water damage to the sink cabinet base (see representative photos 188-191).
- The supply air registers and/or return air grilles showed signs of moisture damage and/or an accumulation of dust (see representative photos 192 & 195).

First Floor (*Phase 2 Sampling*):
Photos: Phase 2: #1 - #144

- Dust accumulation on room 104 (mail room) window sills, baseboard, and other surfaces contain mold spores, verified by surface tape sampling (see representative photos 2-10).
- Dust accumulation on room 103 (Register of Deeds) window sills, baseboard, and other surfaces (see representative photos 16-23 & 25-34).
- Dust accumulation on Room 102 (voting machine storage) contents and building materials (see representative photos 43-48 & 53-54).
- Window trim separating from wall in room 201 (see representative photos 49-51).
- Ceiling is breaking loose in room 102 (see representative photos 51-52 & 55-56).

- Holiday decoration storage and records archive room had an accumulation of dust and visible mold present (see representative photos 57-71).
- The bathroom before the holiday storage room had an accumulation of dust and visible mold in the sink base cabinet (see representative photos 75-83).
- In the Treasure Office, room 107, there were damaged ceiling tiles (see representative photos 92-95, 97-105, & 112-115).
- Dust accumulation on room 107 (Treasurer Office) window sills, baseboard, and other surfaces (see representative photos 107-112)
- Dust accumulation on room 106 (Clerks Office) window sills, baseboard, and other surfaces (see representative photos 124-126 & 131-132).
- Ceiling tiles in room 106 were damaged (see representative photos 127-130 & 133-135).
- North wall of NE hall off Treasurer showed signs of efflorescence (see representative photos 137-140).
- The vault room of NE hall show signs of accumulated dust (see representative photos 142-144).

Second Floor (*Phase 1 Sampling*):

Photos: Phase 1: #174- #272

- Fungal growth on drafting table in 2nd floor elevator lobby, verified by sampling (see representative photos 175-180).
- Second floor elevator lobby ceiling tiles (see representative photos 181-184).
- Room 205 conference room showed signs of accumulated dust likely containing elevated spores (see representative photos 185-216).
- West wall behind heater show extensive moisture damage (see representative photos 200-207).
- Contents in room 205 showed signs of fungal growth (see representative photos 208-210).
- County Appraiser ("jury") office showed some signs of dust accumulation on baseboard and HVAC grille (see representative photos 220-222).
- NW corner room and room to the east had little airborne spore counts, but the room to the east had fungal growth as indicated by surface tape sampling. The south wall had fungal growth and the surface of the pipe at the south door to the hall had growth (see representative photos 243-244 & 247-249).
- Room 203, cartography room, has accumulated dust and moisture damage in areas (see representative photos 252-272).

Third Floor (*Phase 1 Sampling*):

Photos: Phase 1: #3 - #173

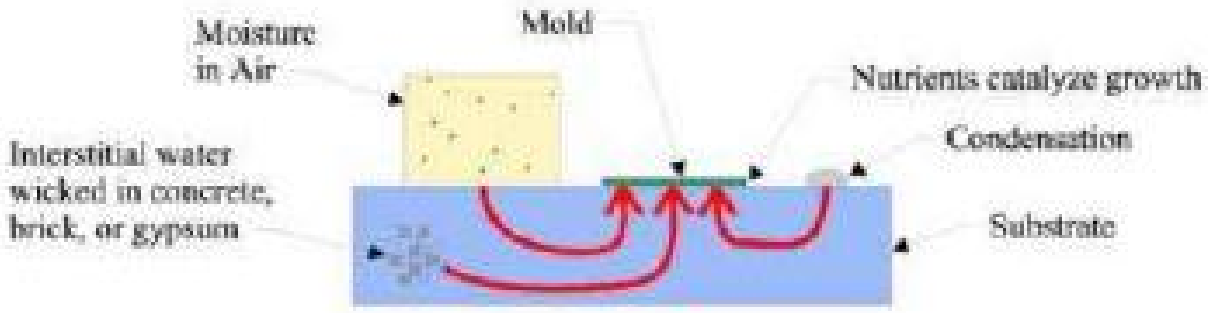
- The light cover in the east "Ladies" storeroom, located in the east CASA room corridor, showed signs of extensive water damage (see representative photos 13-14).
- Dust accumulation on both CASA room window sills, baseboards, and other surfaces contain mold spores, verified by sampling (see representative photos 16, 20, 22-27, 31-44. & 46-58).
- Stains on walls and dust accumulation in the "FCHS Archives" room indicated the presence of elevated levels of mold spores, verified by sampling (see representative photos 62-94).

- Dust accumulation in the SE exercise room indicated the presence of elevated levels of mold spores, verified by sampling (see representative photos 95-106).
- Dust accumulation in the SW storage room indicated the presence of elevated levels of mold spores, verified by sampling (see representative photos 108-131).
- Dust accumulation in the west third floor elevator lobby indicated the likely presence of elevated levels of mold spores (see representative photos 133-146).
- Dust accumulation in the NW Appraiser Offices indicated the presence of elevated levels of mold spores, verified by sampling (see representative photos 147-170).

♦ The supply air registers and return air grilles showed signs of an accumulation of dust throughout the courthouse (see representative Phase 2 photos 35-36, 116-118, 192).

♦ Relative humidity (RH) levels in the Courthouse exceeded 50% in all tested locations, reaching as high as 84.5% in one storage area and averaging 58% throughout the courthouse. Consider the use of a <u>controlling the sources of moisture</u> to reduce the indoor humidity levels and minimize the potential for future mold growth.

♦ Moisture in basements, or high humidity slab floor locations, can penetrate porous material stored on the floor and potentially create both an ideal environment and hiding place for mold (see illustration below). Consider maintaining relative humidity in the basement below 50%.



4.0 Sampling Results

Air & Mold Assessment LLC uses a laboratory chain-of-custody to document sample data and to provide procedural continuity to the laboratory report.

The only way to determine the genera of a given mold is through laboratory analysis. Laboratory analysis is also used to confirm or rule out the presence of mold at a specific sampling location.

4.1 Sample Locations

#	Type	Location	Description
Ph1-1	Air	Outside	West exposure, hot, overcast, calm
Ph1-2	Air	Flr3 NE Rm	3rd floor, NE CASA room
Ph1-3	Air	Flr3 NW Rm	3rd floor, NW CASA room
Ph1-4	Air	Flr3 FCHS	"Franklin County Historical Society" room, storage, toys
Ph1-5	Air	Flr3 SE Rm	3rd floor, SE corner, workout room
Ph1-6	Air	Flr3 Crtrm	Courtroom, upper balcony walkway
Ph1-7	Air	Flr3 SW Rm	3rd floor, SW corner records room, odor
Ph1-8	Air	SW Office	3rd floor appraiser's support staff office
Ph1-9	Air	Flr2 Room 209	2nd floor room 209, conference room
Ph1-10	Air	Flr2 Appraiser	2nd, floor, County Appraiser's office
Ph1-11	Air	Flr2 NW Room	2nd floor, real estate, county appraiser, NW corner
Ph1-12	Air	Flr2 Room 202	2nd floor, Paul Golden's office
Ph1-13	Air	Flr2 Room 203	2nd floor, Cartography
Ph2-1	Air	Outside	West exposure, warm, cloudy, slight breeze
Ph2-2	Air	Flr1 Room 104	1st floor, mailroom
Ph2-3	Air	Flr1 Room 103	1st floor, Register of Deeds office area
Ph2-4	Air	Flr1 Room 102	1st floor voting machines storage room
Ph2-5	Air	Flr1 Restroom	1st floor restroom
Ph2-6	Air	Flr1 SW Storage	1st floor storage room off rest room
Ph2-7	Air	Flr1 Room 107	1st floor Treasurer's room
Ph2-8	Air	Flr1 Room 106	1st floor Clerk
Ph2-9	Air	Flr1 Room 105	1st floor conference/interview room
Ph2-10	Air	Basement	Basement corridor
Ph2-11	Air	Janitorial	Basement Janitorial room, ice machine area
Ph2-12	Air	Ladies Room	Basement Ladies restroom
Ph2-13	Air	Men's Room	Basement Men's restroom
Ph2-14	Air	License Room	Basement auto license department room
Ph2-15	Air	Vault Room	Vault room off license department room
Ph2-16	Air	Lounge	Basement employee lounge

#	Type	Location	Description
Ph1-1	Tape	Flr2 Appraiser R/A	Return air vent in appraiser's office
Ph1-2	Tape	Drafting table dust	2nd floor elevator foyer, drafting table crossbar
Ph1-3	Tape	Room 204 E. wall	2nd floor County Appraiser's office 204, east wall
Ph1-4	Tape	Room 204 pipe stain	2nd floor office 204, pipe casing, south wall
Ph2-1	Tape	Room 103 dust	1st floor, west window sill dust
Ph2-2	Tape	Voting room dust	1st floor, dust on the floor heating vent
Ph2-3	Tape	Flr1 storage rm stain	1st floor, west wall between windows in storage rm
Ph2-4	Tape	License vault dust	1at floor, dust on Book #3, 1971 in license dept vault

4.2 Air Samples

See attached laboratory test results in appendix A1.

Normally, indoor mold levels are less than the outdoor levels unless there is/was an indoor source of mold amplification. To determine if there could be a source of indoor mold amplification, compare the indoor to the outdoor spore counts (both the total counts and in each individual mold category).

Phase 1 Sampling: Floor 3 and Floor 2

Significant Spore Count Concerns:

Counts in spores/m³

Sample #	Location	*Asp/Pen*	Mycelia frag.	Totals
Ph1-1	Outside	200	0	**10,493**
Ph1-2	Flr3 NE Rm	**1,573**	0	1,640
Ph1-3	Flr3 NW Rm	**30,400**	0	**30,413**
Ph1-4	Flr3 FCHS	**1,893**	0	1,893
Ph1-5	Flr3 SE Rm	**573**	0	693
Ph1-6	Flr3 Courtroom	0	0	0
Ph1-7	Flr3 SW Rm	**2,493**	0	2,520
Ph1-8	SW Office	40	0	119
Ph1-9	Flr2 Room 209	**24,640**	0	**26,386**
Ph1-10	Flr2 Appraiser	**707**	0	786
Ph1-11	Flr2 NW Room	0	27	67
Ph1-12	Flr2 Room 202	**1,347**	13	1,412
Ph1-13	Flr2 Room 203	0	0	67

RED indicates level of concern

Asp/Pen = Aspergillus/Penicillium

Phase 2 Sampling: Floor 1 and Basement

Significant Spore Count Concerns:

Counts in spores/m³

Sample #	Location	*Asp/Pen*	Mycelia frag.	Totals
Ph2-1	Outside	53	120	24,305
Ph2-2	Flr1 Room 104	0	13	39
Ph2-3	Flr1 Room 103	**67**	13	132
Ph2-4	Flr1 Room 102	**133**	27	253
Ph2-5	Flr1 Restroom	**133**	0	133
Ph2-6	Flr1 SW Storage	**38,800**	0	**38,960**
Ph2-7	Flr1 Room 107	**667**	0	693
Ph2-8	Flr1 Room 106	**93**	0	119
Ph2-9	Flr1 Room 105	13	27	80
Ph2-10	Basement	**227**	0	267
Ph2-11	Janitorial	**387**	0	466
Ph2-12	Ladies Room	**5,080**	0	5,093
Ph2-13	Men's Room	0	0	0
Ph2-14	License Room	0	0	66
Ph2-15	Vault Room	**80**	0	119
Ph2-16	Lounge	0	0	39

RED indicates level of concern
Asp/Pen = Aspergillus/Penicillium

4.3 Tape-Lift Surface Samples

See attached laboratory test results in appendix A2.

Surface sampling can be useful for differentiating between mold growth and stains, for identifying the type of mold growth present (if present), and, in some cases, identifying signs of mold growth in the vicinity. Surface sampling can improve the accuracy of the results and interpretation of the inspected environment.

Phase 1 Surface Tape Sampling:

There is 1+ *Alternaria*, 2+ *Aspergillus/Penicillium*, 1+ *Chaetomium*, 1+ *Cladosporium sphaerospermum*, 1+ *Pithomyces*, and 1+ mycelia fragments on the tape lift sample from the Appraiser's office return air vent, which indicates fungal growth or contamination in the vicinity.

There is 1+ *Alternaria*, 5+ *Aspergillus/Penicillium*, 2+ *Chaetomium*, 2+ *Cladosporium sphaerospermum*, and 4+ mycelia fragments on the tape lift sample from the dust on the drafting table in the 2nd floor elevator foyer, which indicates **fungal growth**.

There is 5+ *Cladosporium sphaerospermum* and 5+ mycelia fragments on the tape lift sample from the east wall stain in room 204, which indicates **fungal growth**.

There is 5+ *Cladosporium sphaerospermum* and 5+ mycelia fragments on the tape lift sample from the pipe casing at the south wall in room 204, which indicates **fungal growth**.

Phase 2 Surface Tape Sampling:

There is 2+ *Aspergillus/Penicillium*, 1+ *Chaetomium*-like, 3+ *Cladosporium sphaerospermum*, 1+ *Pithomyces*, and 1+ mycelia fragments on the tape lift sample from the dust on the west window sill in room 103, which indicates fungal growth or contamination in the vicinity.

There is 1+ *Alternaria*, 1+ *Aspergillus/Penicillium*, 3+ *Cladosporium sphaerospermum*, 1+ *Pithomyces*, and 1+ mycelia fragments on the tape lift sample from the dust on top of the baseboard heater in the voting machine storage room, which indicates fungal growth or contamination in the vicinity.

There is 3+ *Aspergillus/Penicillium*, 5+ *Cladosporium sphaerospermum*, and 3+ mycelia fragments on the tape lift sample from the west wall stain of the SW 1st floor storage room, which indicates **fungal growth**.

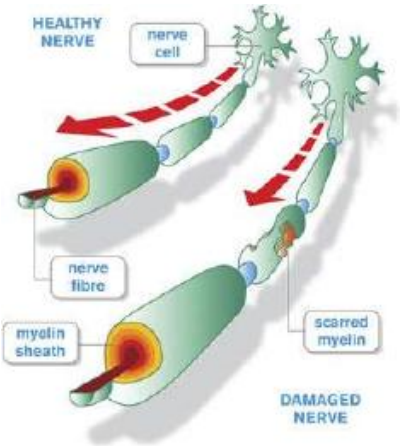
There is 1+ *Alternaria*, 2+ *Aspergillus/Penicillium*, 1+ *Chaetomium*, 1+ *Cladosporium sphaerospermum*, 1+ *Pithomyces*, and 1+ mycelia fragments on the tape lift sample from the book #3 (1971) in the basement license vault, which indicates fungal growth or contamination in the vicinity.

4.4 Relevant Mold Spore Summary Descriptions

Alternaria (*all-ter-nair-ee-ah*) is extremely widespread and ubiquitous. It is found indoors in carpets, textiles, and on horizontal surfaces such as window frames. The species *Alternaria alternata* is capable of producing tenuazonic acid and other toxic metabolites which may be associated with disease in humans or animals. It has been associated with hypersensitivity pneumonitis, sinusitis, deratomycosis, onychomycosis, subcutaneous phaeohyphomycosis (below the skin abscesses), and invasive infection. It is a common cause of extrinsic asthma (immediate-type hypersensitivity: type I).

Aspergillus (as-per-jill-us) and *Penicillium (pen-uh-sill-ee-um)* mold spores are allergenic and many species within these two genera are capable of producing mycotoxins (toxins), under the right environmental conditions. A high exposure to *Aspergillus* can cause aspergillosis (an invasive lung disease or lung infection) in those who are immuno-suppressed (e.g., chemotherapy, cortisone treatments) or immuno-compromised (e.g., AID's, some cancers).

Chaetomium (kay-toe-me-um) is an "indicator" spore that represents contamination from indoor mold growth as a result of significant sustained moisture. Some strains of *Chaetomium* mold can produce mycotoxins. Unlike most other mold pathogens, there is medical evidence to suggest that people who are exposed to Chaetomium may be predisposed to permanent neurological damage of the myelin sheath. **(**Myelin is an insulating layer, or sheath, that forms around nerves, including those in the brain and spinal cord. It is made up of protein and fatty substances. The purpose of the myelin sheath is to allow electrical impulses to transmit quickly and efficiently along the nerve cells.) Therefore, a noticeably high incidence of autoimmune diseases have been linked to exposure of this mold such as Multiple Sclerosis, Lupus, etc. It has also been linked to certain forms of Cancer.



http://www.nlm.nih.gov/medlineplus/ency/article/002261.htm

Cladosporium sphaerospermum (klad-oh-spore-ee-um - sfeer-oh-sperm-um) is an allergen (causing hay fever and asthma) found on wet building materials such as sheet rock. It may also be found indoors in carpet, mattress dust, and in ventilation systems.

Pithomyces (pith-oh-my-sees) grows on dead grass and plants. Prolonged exposure can cause facial eczema. It causes type II allergies (hayfever type symptoms, asthma)

Mycelia (my-see-lee-uh) and mycelia fragments are the filamentous, vegetative part of the fungus. The spores, which are the reproductive parts, emerge from the mycelia or hyphae. Appearance of mycelia or mycelia fragments is often an indication of mold growth. Differentiation of mycelia into a genus is not possible.

4.5 IAQ Metrics

Temperature (°F), Relative Humidity (%RH), Carbon Dioxide (CO_2), Carbon Monoxide (CO)

Refer to Section 2.4 above

Location	°F *Dry Bulb*	CO_2 *<1000 ppm*	°F *Saturation*	% RH *30 - 50%*
Outside (*8/12/16*)	81.2	411	74.1	79.0
NE CASA Room	69.1	583	61.2	76.1
NW CASA Room	71.0	534	67.5	88.8
FCHS Archives	68.6	694	59.1	71.5
3rd Floor Workout	68.8	528	63.3	82.5
Outside (*8/15/16*)	81.4	400	66.0	59.7
Rm 104, mailroom	74.1	547	60.5	62.5
Register of Deeds	72.7	598	61.5	68.0
Voting Room	71.8	562	61.0	68.7
SW Restroom	65.7	530	52.0	61.1

ppm = parts per million

RED indicates level of possible concern

5.0 Conclusions

Limited sampling and non-destructive visual inspection may not detect all areas of fungal amplification (mold growth). For example, fungal growth may be hidden behind walls and exploratory removal of material in suspect areas, such as baseboards, is necessary to confirm or rule out the presence of mold growth.

A Condition Three contamination condition per IICRC S520 Standard is present in the courthouse (*the presence of actual mold growth and associated spores*), which defines actual growth and includes growth that is active or dormant, visible or hidden (refer to Recommendations below).

Visible observation of fungal growth (mold growth) indoors is sufficient evidence to warrant remediation.

Airborne spore counts in some areas were at levels above the normally accepted range in comparison to the outside spore counts at the time of sampling.

Normally indoor mold levels are less than the outdoor levels, unless there is/was an indoor source of mold amplification.

The sampling results confirm visual observation and showed that fungal growth exists in some areas and some of the mold spores have become aerosolized. An elevated level of *Aspergillus/Penicillium* was observed from some indoor air samples, which is indicative of indoor fungal amplification (mold growth).

Indicator *Chaetomium* spores were detected on three different surface tape samples.

The relative humidity was high (61.1%-88.8%) in all sampled locations. Note: relative humidity goes UP as temperature goes DOWN.

The tape lift samples taken from return air vents, which is a collection of particulate circulating through the HVAC system since the last time the vents were cleaned, indicates fungal growth or contamination in the vicinity was present at the time of sampling.

The building has significant mold damage. Proper mold remediation protocol is in order to contain and remove mold damaged materials.

Following remedial cleanup, retesting is recommended prior to the reinstallation of new materials to determine if the counts return to normal (or near normal).

Due to the nature of necessary daily business performed by the Courthouse personnel, the work can be partitioned and accomplished with a minimum of inconvenience to employee operations and public convenience. Normally, remediation work will start at the lowest level (basement) and proceed to highest level (3rd floor) to completion because of "stack effect" thermal currents (hot air rises).

NOTE: Mold spores are still allergenic if not viable (alive). It is not enough to just kill mold spores. They must also be REMOVED.

6.0 Recommendations

HEPA = **H**igh **E**fficiency **P**articulate **A**ir (**A**rrestance in some references)
HVAC = **H**eating, **V**entilating, and **A**ir **C**onditioning

6.1 General

"The goal of remediation is to remove or clean contaminated materials in a way that prevents the emission of fungi and dust contaminated with fungi from leaving a work area and entering an occupied or non-abatement area, while protecting the health of workers performing the abatement." NYC Guidelines for the Remediation of Fungi in Indoor Environments, 2002. (Http://www.ci.nyc.ny.us/html/doh/html/epi/moldrpt1.html).

- ***IICRC S520,*** *Standard and Reference Guide for Professional Water Damage Restoration.* Institute of Inspection, Cleaning and Restoration, 2008. www.iicrc.org

  The standard clearly defines three Contaminant Conditions critical to application of the standard. Condition One is normal fungal ecology - "an indoor environment that may have settled spores, fungal fragments or traces of actual growth, whose identity, location and quantity is reflective of a normal fungal ecology for a similar indoor environment." Condition Two is settled spores - "an indoor environment which is primarily contaminated with *settled spores* that were dispersed directly or indirectly from a Condition 3 area, and which may have *traces of actual growth."* Condition Three is actual growth - "an indoor environment contaminated with *the presence of actual mold growth and associated spores.* Actual growth includes growth that is *active or dormant, visible or hidden."* (*Abstracted from IICRC Presentation at ACGIH Conference in Orlando*)

Additionally, as a supplement to the IICRC 520, recommendations should be done in accordance with the *NYC Guidelines For The Remediation Of Fungi In Indoor Environments* (reference Supplement 7: *New York City Guidelines*), which includes the following:

- *Use appropriate personal protective equipment, including respiratory protection, eye protection, gloves, disposable protective clothing, and shoe and head coverings.*
- *Clean and remove all items (e.g., furniture, personal possessions, etc.) from the work area.*
- *Install critical barriers (with plastic sheeting and tape) around the work area to contain and prevent the spread of contaminants.*
- *Maintain HEPA-filtered negative pressure inside of work area. Make-up air should be from a non-contaminated source.*
- *Seal ventilation ducts/grills in the work area and areas directly adjacent with plastic sheeting to prevent additional contaminants from entering into the ventilation system.*
- *Dust suppression methods are recommended.*
- *After removal of contaminated materials, clean all surfaces inside the containment area with a HEPA vacuum and/or damp cloth.*
- *HEPA filter the work area for at least 48 hours after the clean-up has been completed.*

1. Remedial procedures should be performed as soon as is practical or feasible.
2. Ensure moisture problems have been or will be resolved.

6.2 Specific

The simplest and most expedient remediation that reasonably, properly and safely removes fungal contamination should be used. [The listed remediation methods are not meant to exclude other similarly effective methods.]

1. Post "No Entry" signs. Only approved worker entry is authorized during all work. All documentation should be present at the job site at all times that work is being done.
2. Remediation firm shall comply with both the OSHA General Industry Standards and the Construction Industry Standards.
3. **Turn off the water supply to the remediated (removed, moved) plumbing fixtures and appliances**.
4. Damaged contents, fixtures, furniture, appliances and personal belongings shall not be discarded without documentation and permission from the owner. Materials for disposal or transport for cleaning shall not be left unsecured.
5. **CAUTION:** Turn off electrical service to the remediated walls. **Disconnect electrical power to all electrical outlets, switches, and fixtures that will be exposed, moved, or removed from the work area.**
6. Operate HEPA filtered air "scrubbers" on all levels during, and for 48 hours following, the remediation effort.
7. Operate dehumidification equipment on all levels to reduce relative humidity to near 30% at 67°F (humidity ratio: 0.0042; dew point temp: 34.6 °F; wet bulb temp: 50.8 °F).
8. Wood moisture content should be monitored to reduce all sites to less than 15% moisture content prior to installation of new building material.

6.2.1 Basement: Including, but not limited to… Men & Women's Bathrooms; Lounge; License Area; License Vault; Janitorial Area Behind Elevator; Mechanical Room;

9. Remove (dispose or clean and restore) all content items (e.g., furniture, equipment, supplies, personal possessions, etc.) from the work areas pursuant to guidelines in Supplement 3: *Cleaning of Possessions*. Valuable or irreplaceable documents that cannot be cleaned or decontaminated may be encased, laminated or otherwise sealed.
10. Under HEPA filtered (negative pressure if feasible) full-scale containment (critical barriers) and using appropriate personal protective equipment (PPE), start in the basement (may be done area-by-area) and remove all mold covered porous building material (Plaster, sheetrock/dry wall, carpeting, carpet pad, carpet tack, ceiling tile, etc.) up to a point two (2) feet beyond visible growth. This may include walls and ceilings that have not been tested (refer to Section 3, *Observations and Comments* above).
11. All books in the License Vault must be HEPA vacuumed on all 6 sides and wiped down with a damp disinfectant. Note: If a fogging technique is used to destroy mold spores, the books must still be HEPA vacuumed on all 6 sides.
12. Make up air for negative pressure containment should be from a non-contaminated source (e.g., up-wind of contaminated remediation debris stored outside).
13. Remove all affected insulation behind the walls, in the ceiling, and at the rim joists if present.
14. Discard all porous materials with fungal growth.
15. Contaminated material should be bagged (in plastic) at the site and discarded.

16. Wood studs, sub-flooring, and foundation walls that have been damaged should be damp sanded to a level where the mold has not penetrated (chemical extraction with an EPA approved product may be done as an alternate).

    Note: it is normally not economically feasible to sand and refinish damaged baseboard and trim around doors and/or windows. Unless instructed otherwise by the owner, damaged trim and baseboard may be discarded.
17. Painted wood trim that has been damaged should be assumed to contain lead unless tested negative. DO NOT SAND PAINTED SURFACES. If the painted surfaces cannot be adequately cleaned as a non-porous surface using chemical extraction with an EPA approved product, they must be treated following the *HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing*.
18. Non-porous items (e.g., finished wood, metal, glass, ceramics, porcelain, vinyl, or hard plastic) having visible mold growth should be examined first for unrestorable water damage (e.g., etched or stained glass or plastic, corroded metal, etc.). Restorable items can be cleaned with a disinfectant (use an effective surfactant agent or detergent solution), ultrasonic cleaning, or HEPA vacuuming plus damp wiping.

19. Scrub and disinfect the floors to help remove microbials that likely are present there (use an effective disinfecting agent or solution).
20. After removal of all damaged materials, thoroughly HEPA vacuum and damp wipe with a disinfectant (use an effective disinfecting agent or solution) **all surfaces** in the basement (including door and window frames, baseboards, exposed piping and ducting, etc.).
21. The carpet (if not removed) should be thoroughly steam cleaned using a quick drying method.

6.2.2 1st (Main) Floor: Including, but not limited to… Register of Deeds; Treasurer; Clerk; Restroom; Mail Room; Voting Machine Storage Room; Area Behind Elevator;

22. Remove (dispose or clean and restore) all content items (e.g., furniture, equipment, supplies, personal possessions, etc.) from the work areas pursuant to guidelines in Supplement 3: *Cleaning of Possessions*. Valuable or irreplaceable documents that cannot be cleaned or decontaminated may be encased, laminated or otherwise sealed.
23. Under HEPA filtered (negative pressure if feasible) full-scale containment (critical barriers) and using appropriate personal protective equipment (PPE), start in a convenient room and remove all mold covered porous building material (plaster, carpeting, carpet pad, carpet tack, ceiling tile, etc.) up to a point two (2) feet beyond visible growth. This may include walls and ceilings that have not been tested (refer to Section 3, *Observations and Comments* above).
24. Continue until all rooms on the first floor have been completed.
25. Special care should be taken in the SW storage area behind the elevator. The spore counts were excessive in that area. There was visible fungal growth along the window trim at the west wall.
26. Make up air should be from a non-contaminated source (e.g., up-wind of contaminated remediation debris stored outside).
27. Remove all affected insulation behind the exterior walls and in the ceiling if present.
28. Discard all porous materials with fungal growth.

29. Contaminated material should be bagged (in plastic) at the site and discarded.
30. Wood lathe, studs, joists, rafters, sheathing, and sub-flooring that that have been damaged should be damp sanded to a level where the mold has not penetrated (chemical extraction with an EPA approved product may be done as an alternate).
31. Painted wood trim that has been damaged should be assumed to contain lead unless tested negative. DO NOT SAND PAINTED SURFACES. If the painted surfaces cannot be adequately cleaned as a non-porous surface using the EPA approved disinfectant product, they must be treated following the *HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing* by those certified to handle and dispose of lead paint products.
32. Non-porous items (e.g., finished wood, metal, glass, ceramics, porcelain, vinyl, or hard plastic) having visible mold growth should be examined first for unrestorable water damage (e.g., etched or stained glass or plastic, corroded metal, etc.). Restorable items can be cleaned with a disinfectant (use an effective surfactant agent or detergent solution), ultrasonic cleaning, or HEPA vacuuming plus damp wiping.

33. Scrub and disinfect the hard surface floors to help remove microbials that likely are present there (use an effective disinfecting agent or solution).
34. After removal of all damaged materials, thoroughly HEPA vacuum and damp wipe with a disinfectant (use an effective disinfecting agent or solution on non-porous surfaces and an EPA approved sanitizer to treat semi-porous and porous materials) **all surfaces** on the first floor and in each containment area.

6.2.3 2nd Floor: Including, but not limited to… Courtroom; Paul's Office; Cartography; Real Estate Appraiser's Office; Conference Room; Area Behind Elevator; Elevator Foyer

35. Remove (dispose or clean and restore) all content items (e.g., furniture, equipment, supplies, personal possessions, etc.) from the work areas pursuant to guidelines in Supplement 3: *Cleaning of Possessions*. Valuable or irreplaceable documents that cannot be cleaned or decontaminated may be encased, laminated or otherwise sealed.
36. Under HEPA filtered (negative pressure if feasible) full-scale containment (critical barriers) and using appropriate personal protective equipment (PPE), start in a convenient room and remove all mold covered porous building material (plaster, carpeting, carpet pad, carpet tack, ceiling tile, etc.) up to a point two (2) feet beyond visible growth. This may include walls and ceilings that have not been tested (refer to Section 3, *Observations and Comments* above).
37. Continue until all rooms on the second floor have been completed.
38. Special care should be taken in the room 209. The spore counts were excessive in that area.
39. Make up air should be from a non-contaminated source (e.g., up-wind of contaminated remediation debris stored outside).
40. Remove all affected insulation behind the exterior walls and in the ceiling if present.
41. Discard all porous materials with fungal growth.
42. Contaminated material should be bagged (in plastic) at the site and discarded.
43. Wood lathe, studs, joists, rafters, sheathing, and sub-flooring that that have been damaged should be damp sanded to a level where the mold has not penetrated (chemical extraction with an EPA approved product may be done as an alternate).

44. Painted wood trim that has been damaged should be assumed to contain lead unless tested negative. DO NOT SAND PAINTED SURFACES. If the painted surfaces cannot be adequately cleaned as a non-porous surface using the EPA approved disinfectant product, they must be treated following the *HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing* by those certified to handle and dispose of lead paint products.
45. Non-porous items (e.g., finished wood, metal, glass, ceramics, porcelain, vinyl, or hard plastic) having visible mold growth should be examined first for unrestorable water damage (e.g., etched or stained glass or plastic, corroded metal, etc.). Restorable items can be cleaned with a disinfectant (use an effective surfactant agent or detergent solution), ultrasonic cleaning, or HEPA vacuuming plus damp wiping.

46. Scrub and disinfect the hard surface floors to help remove microbials that likely are present there (use an effective disinfecting agent or solution).
47. After removal of all damaged materials, thoroughly HEPA vacuum and damp wipe with a disinfectant (use an effective disinfecting agent or solution on non-porous surfaces and an EPA approved sanitizer to treat semi-porous and porous materials) **all surfaces** on the second floor and in each containment area.
48. Special care should be taken in the room 204. The mold growth was significant on the east wall and the utility pipe near the south door.

6.2.4 3rd Floor: Including, but not limited to… CASA Room NE; CASA Room NW; FCHS Archives Room; Exercise Room; Appraiser's Staff Office; Area Behind Elevator;

49. Remove (dispose or clean and restore) all content items (e.g., furniture, equipment, supplies, personal possessions, etc.) from the work areas pursuant to guidelines in Supplement 3: *Cleaning of Possessions*. Valuable or irreplaceable documents that cannot be cleaned or decontaminated may be encased, laminated or otherwise sealed.
50. Under HEPA filtered (negative pressure if feasible) full-scale containment (critical barriers) and using appropriate personal protective equipment (PPE), start in a convenient room and remove all mold covered porous building material (plaster, carpeting, carpet pad, carpet tack, ceiling tile, etc.) up to a point two (2) feet beyond visible growth. This may include walls and ceilings that have not been tested (refer to Section 3, *Observations and Comments* above).
51. Continue until all rooms on the first floor have been completed.
52. Special care should be taken in the NW CASA room. The spore counts were excessive in that area.
53. Make up air should be from a non-contaminated source (e.g., up-wind of contaminated remediation debris stored outside).
54. Remove all affected insulation behind the exterior walls and in the ceiling if present.
55. Discard all porous materials with fungal growth.
56. Contaminated material should be bagged (in plastic) at the site and discarded.
57. Wood lathe, studs, joists, rafters, sheathing, and sub-flooring that that have been damaged should be damp sanded to a level where the mold has not penetrated (chemical extraction with an EPA approved product may be done as an alternate).
58. Painted wood trim that has been damaged should be assumed to contain lead unless tested negative. DO NOT SAND PAINTED SURFACES. If the painted surfaces cannot

be adequately cleaned as a non-porous surface using the EPA approved disinfectant product, they must be treated following the *HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing* by those certified to handle and dispose of lead paint products.

59. Non-porous items (e.g., finished wood, metal, glass, ceramics, porcelain, vinyl, or hard plastic) having visible mold growth should be examined first for unrestorable water damage (e.g., etched or stained glass or plastic, corroded metal, etc.). Restorable items can be cleaned with a disinfectant (use an effective surfactant agent or detergent solution), ultrasonic cleaning, or HEPA vacuuming plus damp wiping.

60. Scrub and disinfect the hard surface floors to help remove microbials that likely are present there (use an effective disinfecting agent or solution).
61. After removal of all damaged materials, thoroughly HEPA vacuum and damp wipe with a disinfectant (use an effective disinfecting agent or solution on non-porous surfaces and an EPA approved sanitizer to treat semi-porous and porous materials) **all surfaces** on the second floor and in each containment area.

6.2.5 Inside, General:

62. HEPA vacuum and damp wipe all surfaces with a disinfectant, especially door and window trim.
63. Scrub and disinfect the hard-surface floors to help remove microbials that likely are present there (use an effective disinfecting agent or solution).
64. Carpeting should be thoroughly steam cleaned using a quick drying method.
65. The last step of the remediation process is to have the ventilation systems (grilles, registers, ducts, furnace cabinet, etc.) thoroughly cleaned by a qualified company performing pursuant to NADCA certification standards, utilizing wire brushes (agitation) when and where appropriate and HEPA filtered suction. Clean HVAC units with special attention given to the cooling coils and drain pans.
66. Replace all condensation drain lines (A/C), if applicable, with new clear tubing.
67. Replace (media) or clean (replaceable) return air (furnace) filters.

All fungal growth should be removed:

"Fungal growth in buildings is undesirable and may cause health problems for building occupants. Although it may be difficult to establish that exposure to fungal aerosols occurs or that exposure presents a hazard, indoor fungal growth is inappropriate and should be removed. Further, steps should be taken to correct conditions that led to fungal growth so that it does not recur. Visible contamination that is confirmed by source sampling to be fungal growth is evidence of indoor contamination." (Bioaerosols: Assessment and Control, ACGIH, 1999)

7.0 Report Intent and Limitations

The study and understanding of molds is a progressing science. Because different methods of sampling, collection and analysis exist within the indoor air quality industry, different inspectors or analysts may not always agree on the mold concentrations present in a given environment. Additionally, the airborne levels of mold change frequently and by large amounts due to many factors including activity levels, weather, air exchange rates (indoors), and disturbance of growth sites. It is possible for report interpretations and ranges of accuracy to vary since comprehensive,

generally accepted industry standards do not currently exist for indoor air quality inspections of mold in indoor environments.

This report is intended to provide an assessment and recommendation based upon analysis of samples taken at the site at the time of the inspection. Mold levels can and do change rapidly, especially if home building materials or contents remain wet for more than 24 hours, or if they are wet frequently.

The assessment and this report are not intended to provide medical or healthcare advice. All allergy or medical-related questions and concerns, including health concerns relating to possible mold exposure, should be directed to a qualified physician.

General Guidelines for Prevention of Future Moisture and Mold Infestations

Interior

- Monitor humidity levels, keeping the relative humidity below 50%, running a dehumidifier if necessary. Hygrometers can be purchased at a local hardware store.
- Encourage active airflow throughout the building. Open windows and/or utilize/add roof top ventilation.
- Utilize bathroom and kitchen fans. Make sure they vent to the outside, not simply the attic.
- Ventilate dryer exhaust outside.
- Maintain air gap between furniture and exterior walls.
- Clean and dry windows often, especially single pane, aluminum frame style typically found in basements.
- Periodically check plumbing fixtures for signs of water leaks.
- Maintain comfortable temperatures in all living quarters, including basement. As temperatures drop the potential for localized condensation increases.
- Insulate basement walls and piping.
- In older homes insulate the exterior walls.

Exterior

- Prevent sprinklers from hitting your home.
- Keep vegetation 6” to 12” away from the structure to prevent excessive moisture.
- Clean gutters regularly and check downspouts for proper draining.
- Clean and inspect roof regularly.

Post remedial testing can be performed to ensure remediation successfully removed abnormal quantities and types of microbial contaminants.

Please call if you have further questions at 785-331-6690.

Thank you,

Jerry Bascombe, MBA, IEP, CMI, IAQCP, RMI
Board Certified Master Inspector
Member IAQA, IIAQC, EEF, AARST, NEHA
September 15, 2016

CMI – Certified Master Inspector
IEP – Indoor Environmental Professional
IAQCP - Indoor Air Quality Certified Professional
RMI – Registered Mold Inspector
IAQA – Indoor Air Quality Association
IIAQC - International Indoor Air Quality Commission
EEF – Environmental Education Foundation
AARST – American Association of Radon Scientists and Technologists
NEHA – National Environmental Health Association

This environmental health evaluation reports only on conditions that existed at the point in time of the assessment. Prior environmental conditions and post-assessment environment conditions are excluded from this study and report. Only readily accessible parts were tested. Representative samples were taken from areas deemed to reveal pertinent information to the diagnosis of indoor environmental conditions.

Air & Mold Assessment LLC has performed this evaluation in a professional manner consistent with industry standards. Air & Mold Assessment LLC cannot guarantee and does not warrant that this limited assessment has revealed all adverse environmental conditions affecting the site.

Appendix A1: Laboratory Results
Air Sample Report

QuanTem Laboratory Report:

Appendix A2: Laboratory Results
Surface Tape Sample Report

Flappan Consulting Laboratory Report:

Appendix B: Photo Documentation

Photos

Photos:

Appendix C: Instrumentation Used / Interpretation of Results

Air Samples

A P Buck BioSlide B1020 Sampling Pump

The Buck BioSlide B1020 is a highly efficient volumetric air sampler (*spore trap*) that collects a single discrete sample at 15 Liters/minute onto a grease coated microscopic slide. In the lab, the slide is stained with fungal solution and a cover slip is applied. A count and an identification of spores are performed by direct microscopy under oil immersion (*1000X*) magnification. This type of sampling allows observation or the mold spores present regardless of viability (*or ability to grow in culture*).

Identification of spores (*by genus*) is based on the following visual characteristics: shape and size; color [*hyaline (clear), light brown, dark brown, etc.*]; surface texture; internal morphology; septations (*internal wall divisions*); presence/absence and location of attachment scars. Quantification of mold spores present per cubic meter is calculated using a formula that incorporates raw spore counts, the flow of the machine (*15 liters per minute*), the percentage of the sample read, and the amount of time sampled.

Normally indoor mold levels are less than the outdoor levels, unless there is/was an indoor source of mold amplification. To determine if there could be a source of indoor mold amplification, compare the indoor to the outdoor spore counts (*both the total counts and in each individual mold category*).

Surface Dust Tape Lift Samples

Surface dust samples are used to supplement information provided by the volumetric air sampler. At the lab, the tapes are lifted in place and stained with fungal solution. The window area is scanned using a high precision microscope under high-dry magnification to observe general areas of deposition. The window area is then read under 1000X magnification (*oil immersion*).

A semi-quantitative estimate is recorded (*identified to the genus level*) according to the following scale from 0 – 5+, as follows:

0 = none 1 = Scant 2 = Few 3 = Moderate 4 = Many 5 = Heavy

Representative samples were taken from areas deemed to reveal pertinent information to the diagnosis of indoor environmental conditions.

Mold spores are identified based on comparison with known reference atlases. Parameters used in the identification of mold spores include, but are not limited to, the following: *Shape and size; color [hyaline (clear), light brown, dark brown, etc.]; surface texture; internal morphology; septations (internal wall divisions); presence/absence and location of attachment scars.*

IAQ Metrics (Temperature, CO, CO_2 and % RH Readings)
Safety Palm IAQ Meter SP-IAQ4-DLDSCC

The SafetyPalm simultaneously monitors four parameters: carbon monoxide (CO), carbon dioxide (CO_2), relative humidity (%RH) and temperature (To). The instrument displays instantaneous readings on an LCD display. By taking measurements in various locations, the SafetyPalm is used to evaluate the quality of the indoor air and determine the adequacy of the ventilation system.

Features:

- Simultaneous monitoring
- Sampling Method: Diffusion (standard)
- Sensing Technologies:
  - Electrochemical (CO)
  - Infrared (CO_2) RTD (Temperature)
    - Operating Temperature: 23 °F to 122 °F / -5 °C to 50 °C
  - Capacitive polymer (relative humidity)
    - Humidity Range: 0-95 % non-condensing

Moisture:
Tramex Moisture Encounter PLUS

The Tramax Moisture Encounter PLUS uses a non-destructive method to measure moisture levels on or behind building materials, such as wood, sheetrock, brick, plaster or roofing. There are two conductive pads on the back of the instrument that transmit low-frequency electronic signals. Moisture levels are found by measuring the amount of resistance between these two pads.

- Readings in the **GREEN** (0% - 14%) area of the analog dial indicate the material is dry.
- Readings in the **YELLOW** (14% - 18%) area of the analog dial indicate that more drying is necessary.
- Readings in the **RED** (18% - 30%+) area of the analog dial indicate high moisture content capable of supporting microbial growth.

Supplement 1: Exposure Guidelines

There are currently no governmental or industrial regulations or standards regarding acceptable levels of microorganisms in the indoor environment, primarily because of the wide variance of susceptibility in the population. There are established criteria, however, for determining if the indoor environment could have mold amplification or the abnormal presence of fungal contaminants growing inside.

To evaluate whether there is indoor mold growth, four basic factors must be examined:

a) The presence of visible mold growth is an obvious sign that there is a problem. Visible indoor mold growth is inappropriate and should be remediated, according to authoritative sources such as the EPA and IAQA.

b) The total mold count indoors should be compared to the total count outdoors. In healthy indoor environments, the indoor count is lower than the outdoor count.

c) The indoor mold counts for each individual genus (mold type) should be less than that same genus found in the outdoor count.

d) The indoor presence of "indicator spores", or spores rarely seen in the outdoor environment which require substantial amounts of moisture in order to grow, means that substantial water damage has taken place indoors with resultant mold amplification. Mold types in this category include *Stachybotrys*, *Chaetomium*, *Memnoniella*, *Trichoderma* and *Aspergillus versicolor*.

The NYC Guidelines recommend that Level II precautions be taken when mold contaminated areas include 10-30 square feet of building material, that Level III precautions be followed when there is 30-100 square feet involved, and that Level IV precautions be followed when there is more than 100 square feet involved. The NYC Guidelines suggest that "personnel trained in the handling of hazardous materials and equipped with respiratory protection, (e.g., N95 disposable respirator), in accordance with the OSHA respiratory protection standard (29 CFR 1910.134)" do Level III remediations. The work area and areas directly adjacent should be covered with a plastic sheet(s) and taped before remediation, to contain dust/debris. The work area and areas directly adjacent should be unoccupied. Further vacating of people from spaces near the work area is recommended in persons having undergone recent surgery, immune suppressed people, or people with chronic inflammatory lung diseases (e.g., asthma, hypersensitivity pneumonitis, and severe allergies).

Mold growth can occur on building materials within 48 hours of water damage. http://www.epa.gov/iaq/molds/table1.html. Thus, all porous building materials, including water-damaged sheetrock, insulation, damaged ceiling tiles, paneling, carpeting, carpet padding and baseboards that have been wet for more than 48 hours will need to be removed (plus an additional 2 feet past the visible mold), bagged at the site and discarded [unless the material has been proven to be mold-free by testing].

Supplement 2: Health Effects

Quoted from the NYC Guidelines http://www.nyc.gov/html/doh/html/epi/moldrpt1.shtml#remed

"Inhalation of fungal spores, fragments (parts), or metabolites (e.g., mycotoxins and volatile organic compounds) from a wide variety of fungi may lead to or exacerbate immunologic (allergic) reactions, cause toxic effects, or cause infections.

Illnesses can result from both high level, short-term exposures and lower level, long-term exposures. The most common symptoms reported from exposures in indoor environments are runny nose, eye irritation, cough, congestion, aggravation of asthma, headache, and fatigue.

The presence of fungi on building materials as identified by a visual assessment or by bulk/surface sampling results does not necessitate that people will be exposed or exhibit health effects. 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 or not 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 the genetic predisposition (e.g., allergic reactions do not always occur in all individuals), age, state of health, and concurrent exposures. For these reasons, and because measurements of exposure are not standardized and biological markers of exposure to fungi are largely unknown, it is not possible to determine "safe" or "unsafe" levels of exposure for people in general."

Typical Health Problems Caused By

Animal Dander, Molds, Dust Mites, Other Biologicals

Key Signs/Symptoms

- recognized infectious disease
- exacerbation of asthma
- rhinitis (*inflammation of nasal mucus membrane*)
- conjunctival inflammation (*eyes*)
- recurrent fever
- malaise (*vague feeling of bodily discomfort*)
- dyspnea (*difficulty in breathing*)
- chest tightness
- cough

Supplement 3: General Cleaning of Possessions

Porous Materials

Some porous items may require special attention; however, in general the following applies:

Cloth materials including linens (washable or dry-cleanable): If visible mold is present or the items smell musty, they should be discarded since they cannot be adequately cleaned.

If the items have been in a moldy environment but do not smell moldy or have visible mold, they can be machine-washed in Borax or regular detergent with heavy agitation or dry-cleaned as appropriate for the garment.

Upholstered furniture and mattresses: It is unlikely that mold remediation efforts will be successful if these items are growing mold or smell musty. If the furniture is of great value, removal of the upholstery, remediation of the frame, and re-upholstering is an option. Other items of lesser value should be discarded and replaced.

[If an attempt is to be made to restore upholstered materials, first thoroughly HEPA Vacuum. Water should not be used.]

If the upholstered items were stored in a moldy environment, but they do not smell moldy or have visible mold growth, they can usually be cleaned, depending on the level of mold it was stored in and the length of time it was there. In low level mold environments, thorough HEPA vacuuming of all surfaces are recommended. In moderately contaminated environments, thorough steam cleaning with deep extraction and a quick drying technique may be recommended. With heavily contaminated environments or long term exposure situations, recommendations may be to discard the items. This is because it is not possible to extract all of the spores that likely settled within the cushions or mattress.

Recommendations are usually made on a case-by-case basis using the above criteria for guidelines.

Cardboard Boxes: Discard if they have been wet or have visible mold. If they have been stored in a moldy environment and they are tightly sealed up, they can be HEPA vacuumed on the outside.

Papers, Paper Products, Books and Magazines: If items are growing mold or smell musty, they should be discarded. Documents or photographs can be copied if necessary by placing into a plastic coversheet and Xeroxing.

If the item was stored in a moldy environment but does not smell musty and does not have visible mold growth, it may be cleaned. A cleaning station consisting of a HEPA filtered negative air machine set up with flex duct blown air or a slotted cleaning table, and a HEPA Vacuum should be used to HEPA clean these materials. The six sides of a book or magazine and each page should be passed over the cleaning slot on each side to get vacuumed. If done outside, no containment is needed. If done inside, a special contained HEPA area should be

established. For many of these types of items, the cost of cleaning may exceed the value of the items.

After cleaning, store paper items in a clean environment or in plastic bags.

Wood and Non-Porous Materials

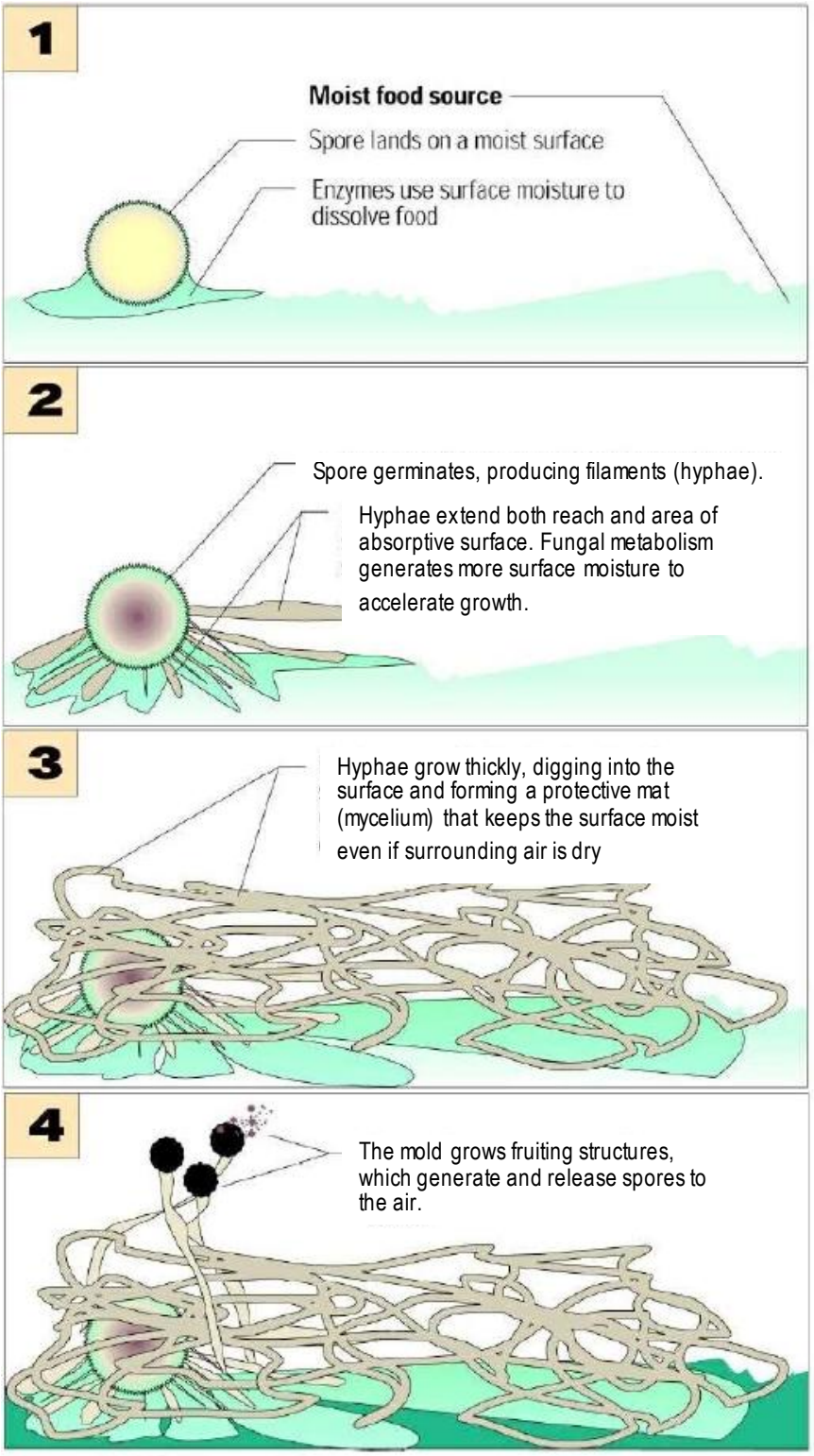
Some non-porous items may require special attention; however, in general, when there is visible mold they can be handled as follows:

Hard surfaces (appliances, counter tops, light fixtures, vinyl flooring, metal, hard plastic) can be damp-wiped with a disinfectant (e.g., Lysol®, disinfecting detergent solution, etc.). Internal components, if applicable, should be inspected for damage and to determine feasibility of cleaning.

Electronic devices should have settled dust in interior parts cleaned out by blowing compressed air inside (under containment adjacent to a HEPA Filter). This includes computers, televisions, stereos, etc.

Wooden items that are structurally sound and have visible mold damage should be damp-wiped with a disinfectant and sanded to a level where the mold has not penetrated. If the mold damage has penetrated the wood to a point where sanding may render the item structurally unsound or aesthetically damaged for its intended use, it should be discarded.

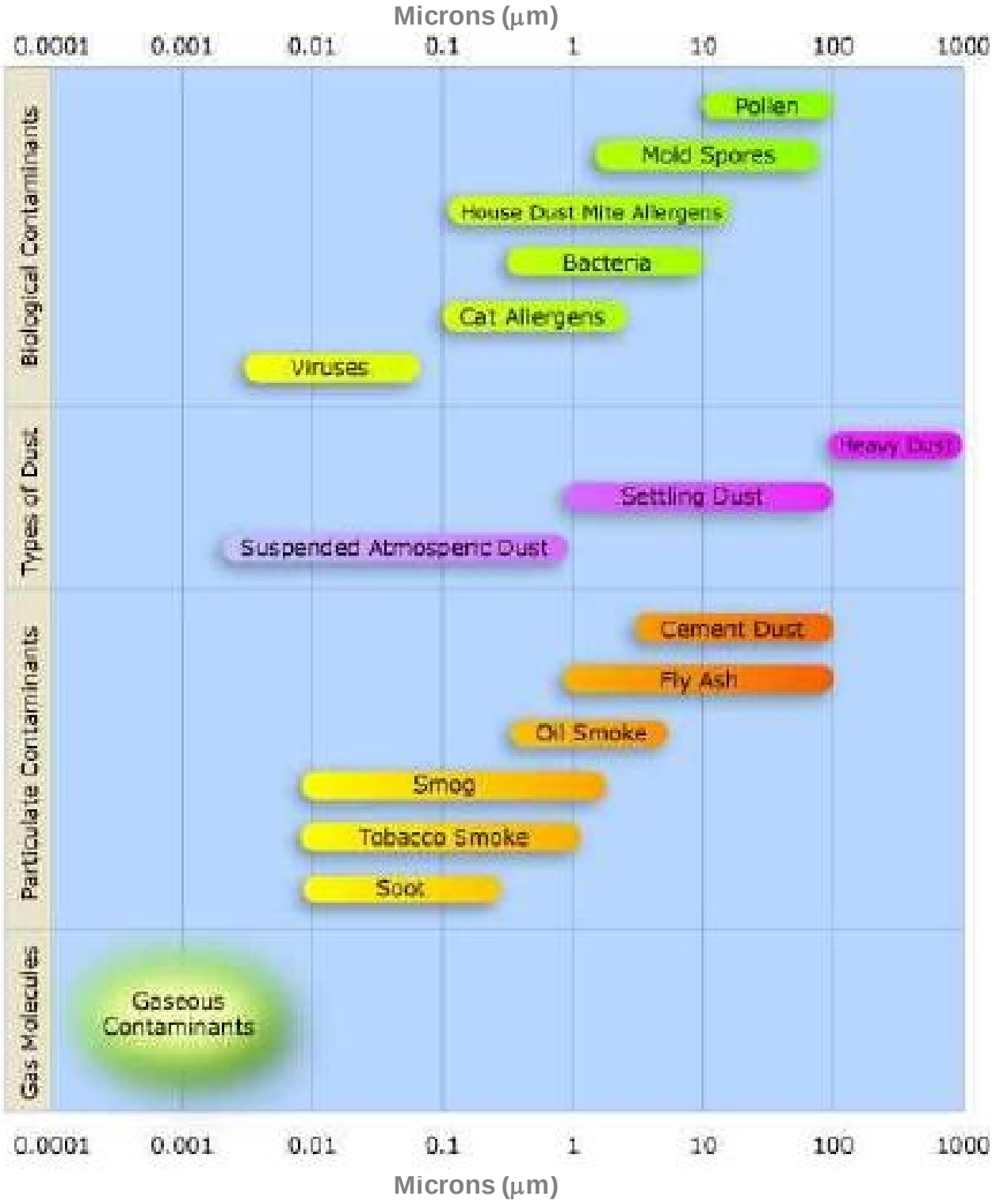
Supplement 4: Mold Growth Cycle



Reference:

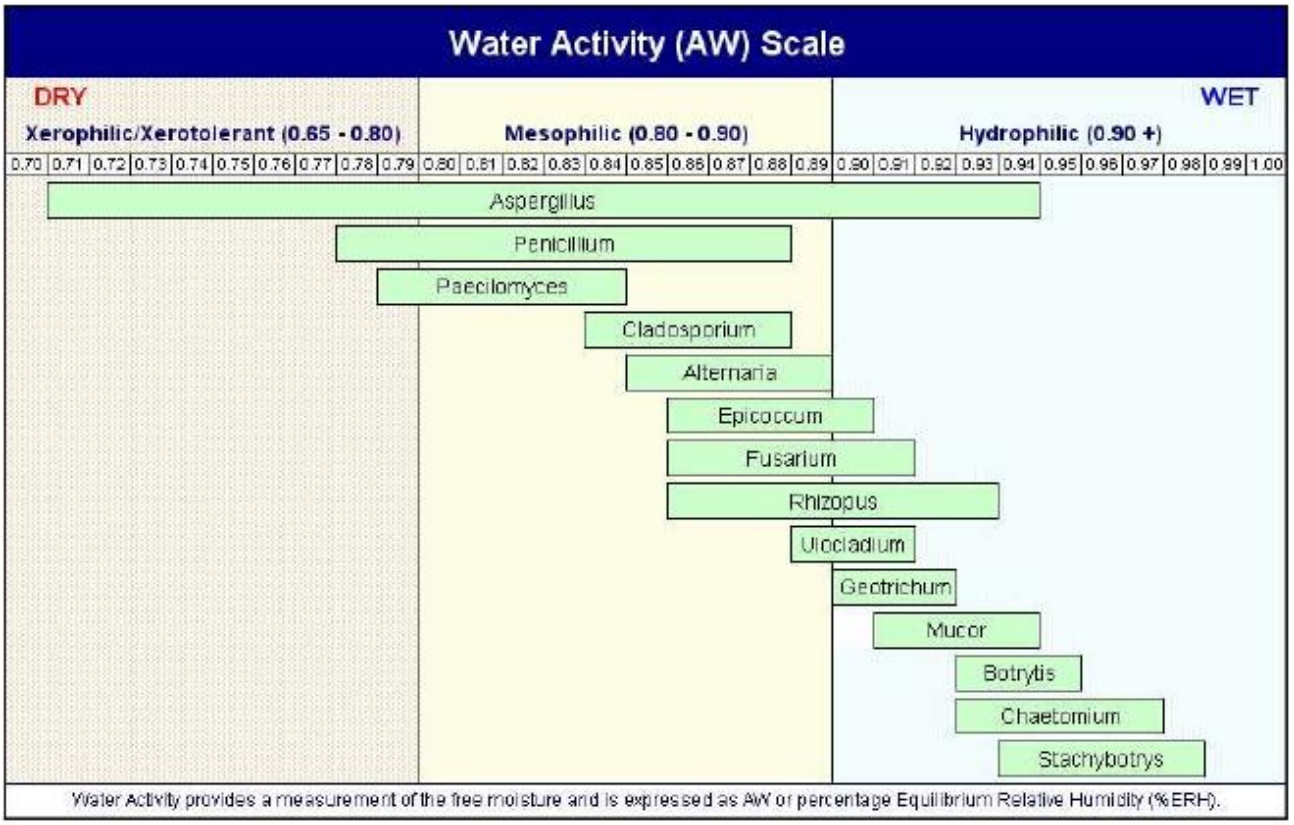
Preventing Mold by Keeping New Construction Dry, By Lewis G. Harriman III, Member ASHRAE, Donald Schnell, and Mark Fowler, ASHRAE Journal, September 2002

Supplement 5: Particle Size Reference Chart



(Average size of human hair is 100 microns)

Supplement 6: Mold AW Chart



Water Activity
A measurement of water available to fungi is water activity.

Aw = vapor pressure of water in substrate / vapor pressure of pure water

$$\mathbf{Aw = (P/P_0) = (N_1/N_1+N_2) = (ERH/100)}$$

Aw = water Activity
P = Vapor Pressure of Water in Substrate
P_0 = Vapor pressure of pure water
N_1 = Number of moles of solvent
N_2 = Number of moles of solute
ERH = Equilibrium relative humidity

A measurement of available substrate moisture: Aw – the decimal equivalent of the RH% inside the contained area. A volume of air measured inside a small contained area, at equilibrium with the material. Simulated equilibrium RH (ERH), not RH.

Reference
American Association of Building Inspectors & Environmentalists (AABIE), http://testopharm.com/p3616.html

Supplement 7: NYC Remediation Guideline Summary

	Level I	Level II
Definition	**Small Isolated Areas** (10 sq. ft or less) - e.g., ceiling tiles, small areas on walls	**Mid-Sized Isolated Areas** (10 - 30 sq. ft.) - e.g., individual wallboard panels.
Remediation Personnel	Remediation can be conducted by regular building maintenance staff. Such persons should receive training on proper clean up methods, personal protection, and potential health hazards. This training can be performed as part of a program to comply with the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200).	Remediation can be conducted by regular building maintenance staff. Such persons should receive training on proper clean up methods, personal protection, and potential health hazards. This training can be performed as part of a program to comply with the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Critical Barriers	Containment of the work area is not necessary. The work area should be unoccupied. Vacating people from spaces adjacent to the work area is not necessary but is recommended in the presence of infants (less than 12 months old), persons recovering from recent surgery, immune suppressed people, or people with chronic inflammatory lung diseases (e.g., asthma, hypersensitivity pneumonitis, and severe allergies).	The work area should be covered with a plastic sheet(s) and sealed with tape before remediation, to contain dust/debris. The work area should be unoccupied. Vacating people from spaces adjacent to the work area is not necessary but is recommended in the presence of infants (less than 12 months old), persons having undergone recent surgery, immune suppressed people, or people with chronic inflammatory lung diseases (e.g., asthma, hypersensitivity pneumonitis, and severe allergies).
Respirator	Respiratory protection, (e.g., N95 disposable respirator), in accordance with the OSHA respiratory protection standard (29 CFR 1910.134), is recommended.	Respiratory protection, (e.g., N95 disposable respirator), in accordance with the OSHA respiratory protection standard (29 CFR 1910.134), is recommended.
Protective clothing	Gloves and eye protection should be worn.	Gloves and eye protection should be worn.
Work Practices	Remove source of water accumulation. Dust suppression methods, such as misting (not soaking) surfaces prior to remediation, are recommended. Contaminated materials that cannot be cleaned should be removed from the building in a sealed plastic bag. There are no special requirements for the disposal of moldy materials. The work area and areas used by remedial workers for egress should be cleaned with a damp cloth and/or mop and a detergent solution. All areas should be left dry and visibly free from contamination and debris.	Remove source of water accumulation. Dust suppression methods, such as misting (not soaking) surfaces prior to remediation, are recommended. Contaminated materials that cannot be cleaned should be removed from the building in sealed plastic bags. There are no special requirements for the disposal of moldy materials. The work area and areas used by remedial workers for egress should be HEPA vacuumed (a vacuum equipped with a High-Efficiency Particulate Air filter) and cleaned with a damp cloth and/or mop and a detergent solution. All areas should be left dry and visibly free from contamination and debris.

REFERENCE: http://www.ci.nyc.ny.us/html/doh/html/epi/moldrpt1.html

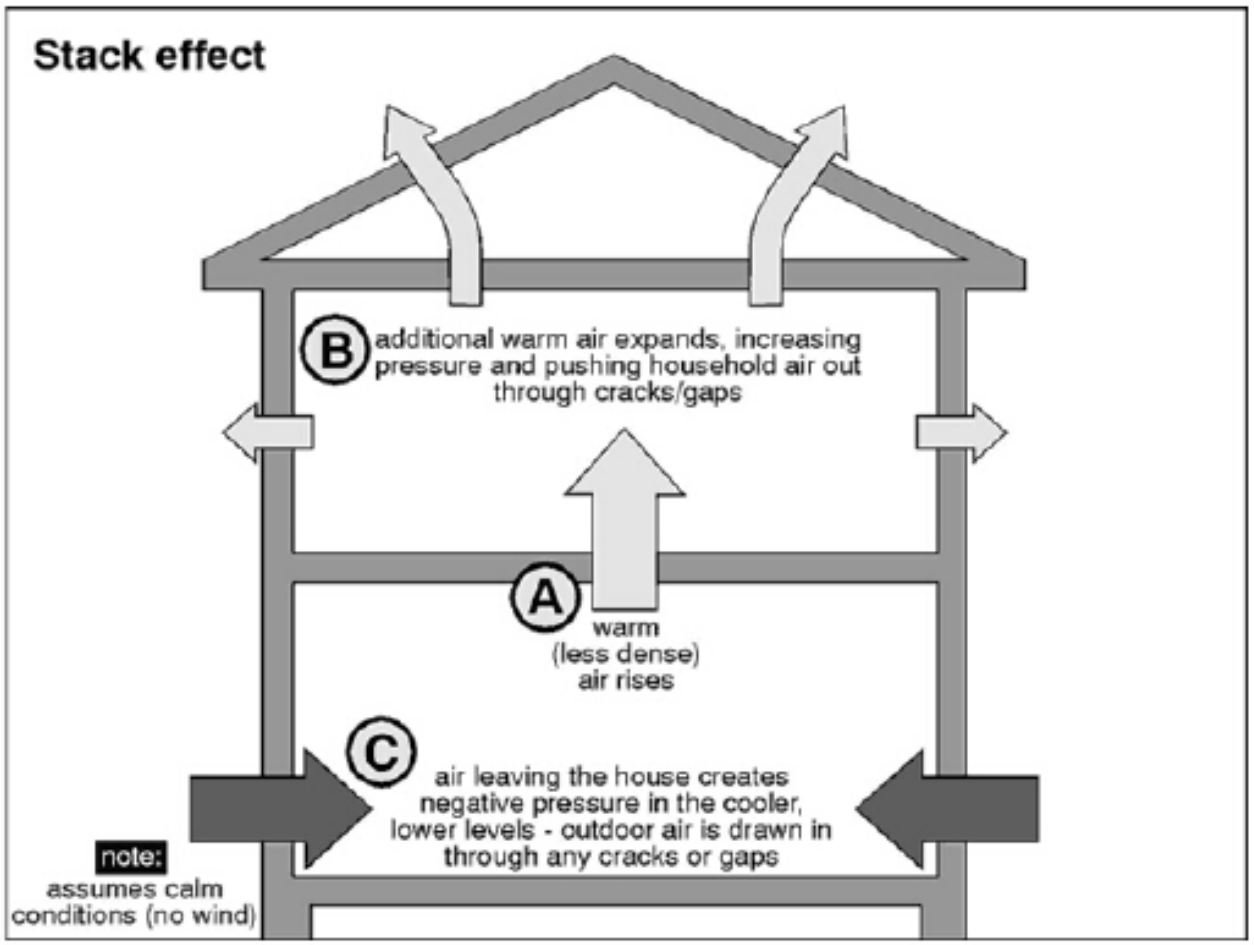
	Level III	Level IV
Definition	**Large Isolated Areas** (30 - 100 square feet) - e.g., several wallboard panels. **(NOTE:** *If abatement procedures are expected to generate a lot of dust (e.g., abrasive cleaning of contaminated surfaces, demolition of plaster walls) or the visible concentration of the fungi is heavy (blanket coverage as opposed to patchy), then it is recommended that the remediation procedures for Level IV are followed.*)	**Extensive Contamination** (greater than 100 contiguous square feet in an area)
Remediation Personnel	A health and safety professional with experience performing microbial investigations should be consulted prior to remediation activities to provide oversight for the project.	A health and safety professional with experience performing microbial investigations should be consulted prior to remediation activities to provide oversight for the project. Remediation should be performed by personnel trained in the handling of hazardous materials.
Critical Barriers	The work area and areas directly adjacent should be covered with a plastic sheet(s) and taped before remediation, to contain dust/debris. Seal ventilation ducts/grills in the work area and areas directly adjacent with plastic sheeting. The work area and areas directly adjacent should be unoccupied. Further vacating of people from spaces near the work area is recommended in the presence of infants (less than 12 months old), persons having undergone recent surgery, immune suppressed people, or people with chronic inflammatory lung diseases (e.g., asthma, hypersensitivity pneumonitis, and severe allergies).	Complete isolation of work area from occupied spaces using plastic sheeting sealed with duct tape (including ventilation ducts/grills, fixtures, and any other openings); The use of an exhaust fan with a HEPA filter to generate negative pressurization; Airlocks and decontamination room; Vacating people from spaces adjacent to the work area is not necessary but is recommended in the presence of infants (less than 12 months old), persons having undergone recent surgery, immune suppressed people, or people with chronic inflammatory lung diseases (e.g., asthma, hypersensitivity pneumonitis, and severe allergies).
Respirator	Respiratory protection, (e.g., N95 disposable respirator), in accordance with the OSHA respiratory protection standard (29 CFR 1910.134), is recommended.	Full-face respirators with high efficiency particulate air (HEPA) cartridges.
Protective clothing	Gloves and eye protection should be worn.	Disposable protective clothing including gloves covering head, hands, and shoes.
Work Practices	Remove source of water accumulation. Dust suppression methods, such as misting (not soaking) surfaces prior to remediation, are recommended. Contaminated materials that cannot be cleaned should be removed from the building in sealed plastic bags. There are no special requirements for the disposal of moldy materials. The work area and surrounding areas should be HEPA vacuumed and cleaned with a damp cloth and/or mop and a detergent solution. All areas should be left dry and visibly free from contamination and debris.	Remove source of water accumulation. Contaminated materials that cannot be cleaned should be removed from the building in sealed plastic bags. The outside of the bags should be cleaned with a damp cloth and a detergent solution or HEPA vacuumed in the decontamination chamber prior to their transport to uncontaminated areas of the building. There are no special requirements for the disposal of moldy materials. The contained area and decontamination room should be HEPA vacuumed and cleaned with a damp cloth and/or mop with a detergent solution and be visibly clean prior to the removal of isolation barriers. Air monitoring should be conducted prior to occupancy to determine if the area is fit to reoccupy.

REFERENCE: http://www.ci.nyc.ny.us/html/doh/html/epi/moldrpt1.html

	Level V	
	Remediation of HVAC Systems	
	Level V - 1	Level V - 2
Definition	**A Small Isolated Area of Contamination** (<10 square feet) in the HVAC System	**Large Areas of Contamination** (>10 square feet) in the HVAC System.
Remediation Personnel	Remediation can be conducted by regular building maintenance staff. Such persons should receive training on proper clean up methods, personal protection, and potential health hazards. This training can be performed as part of a program to comply with the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200).	A health and safety professional with experience performing microbial investigations should be consulted prior to remediation activities to provide oversight for remediation projects involving more than a small isolated area in an HVAC system. Remediation should be performed by personnel trained in the handling of hazardous materials.
Critical Barriers	The work area should be covered with a plastic sheet(s) and sealed with tape before remediation, to contain dust/debris.	Complete isolation of work area from the other areas of the HVAC system using plastic sheeting sealed with duct tape; The use of an exhaust fan with a HEPA filter to generate negative pressurization; Airlocks and decontamination room if contamination is greater than 30 square feet.
Respirator	Respiratory protection (e.g., N95 disposable respirator), in accordance with the OSHA respiratory protection standard (29 CFR 1910.134), is recommended.	Respiratory protection (e.g., N95 disposable respirator), in accordance with the OSHA respiratory protection standard (29 CFR 1910.134), is recommended. Full-face respirators with HEPA cartridges and disposable protective clothing covering both head and shoes should be worn if contamination is greater than 30 square feet.
Protective clothing	Gloves and eye protection should be worn.	Gloves and eye protection should be worn.
Work Practices	The HVAC system should be shut down prior to any remedial activities. Remove source of water accumulation. Dust suppression methods, such as misting (not soaking) surfaces prior to remediation, are recommended. Growth supporting materials that are contaminated, such as the paper on the insulation of interior lined ducts and filters, should be removed. Other contaminated materials that cannot be cleaned should be removed in sealed plastic bags. There are no special requirements for the disposal of moldy materials. The work area and areas immediately surrounding the work area should be HEPA vacuumed and cleaned with a damp cloth and/or mop and a detergent solution. All areas should be left dry and visibly free from contamination and debris. A variety of biocides are recommended by HVAC manufacturers for use with HVAC components, such as, cooling coils and condensation pans. HVAC manufacturers should be consulted for the products they recommend for use in their systems.	The HVAC system should be shut down prior to any remedial activities. Remove source of water accumulation. Growth supporting materials that are contaminated, such as the paper on the insulation of interior lined ducts and filters, should be removed. Other contaminated materials that cannot be cleaned should be removed in sealed plastic bags. When a decontamination chamber is present, the outside of the bags should be cleaned with a damp cloth and a detergent solution or HEPA vacuumed prior to their transport to uncontaminated areas of the building. There are no special requirements for the disposal of moldy materials. The contained area and decontamination room should be HEPA vacuumed and cleaned with a damp cloth and/or mop and a detergent solution prior to the removal of isolation barriers. All areas should be left dry and visibly free from contamination and debris. Air monitoring should be conducted prior to re-occupancy with the HVAC system in operation to determine if the area(s) served by the system are fit to reoccupy.

REFERENCE: http://www.ci.nyc.ny.us/html/doh/html/epi/moldrpt1.html

Supplement 8: Stack Effect - Basement



Stack Effect (Natural Ventilation)

The air in a basement is in the building envelope. It gets in the upper living areas in one of two ways: through the HVAC system, or the stack effect. The stack effect is when warm air moves upward through the house. It's like the house is sucking on the ground in the basement. As we all know, heat rises and that air needs to be replaced with air from somewhere else. One major source for that air comes from the basement because it is cooler than the rising warm air. This is what creates problems in a home because moisture is constantly being sucked up into the living area. **Moisture control is the key**.

Franklin County
Agenda Cover Sheet

To: Franklin County Board of County Commissioners
From: Derek Brown
Department: County Counselor
Date: 10/3/2016

AGENDA ITEM NARRATIVE

Discussion of appointing an Interim County Administrator and the process for selecting a long term successor.

BACKGROUND

SPECIFIC ACTION REQUESTED

ATTACHMENTS