CLIENT INFORMATION
John Doe and Associates, Inc

PROJECT INFORMATION
Jane Doe
222 Main St
Anywhere, Texas 75075
Project No.: 1234

Air Exam Chain of Custody

Test Code 1: Spore Trap -fungal limited
Analysis Method: ASTM Designation D7391-17 (Modified)

This test report contains the following sections: Cover, Snapshot, Glossary and FAQ.

Company Name: John Doe & Associates
Test Kit Serial Number: 101006
moldlab
Project Name/Address: Jane Doe
Contact Name: John Doe
Sample Date: 1-24-2020
Email Address: john@email.com
RUSH ($20/sample) - Same Day Results: YES ☐
Cell Phone (for status notifications): 123-456-7890

FOR AIR SAMPLES ONLY

Sample location description	Flow Rate	Start time	Stop Time
1. Outdoor	15 L/M	13:00	13:05
2. Living Room	15 L/M	13:07	13:12
3. Basement	15 L/M	13:15	13:20
4. Master Bedroom	15 L/M	13:22	13:27

Submitted By: John Doe | *via*: Hand Delivered | Submittal Date: 3/1/2019 | Sample Date: 2/28/2019 | Analysis Date: 3/1/2019 | Report Date: 3/1/2019 | Lab Job No.: 17-1267 | Technician: Sally Scientist

Approved by:

Kristina Rucker, Lab Director

HUB
TEXAS Department of State Health Services
Certified WBENC Women's Business Enterprise
Accredited Laboratory ISO/IEC 17025:2017 AIHA LAP LLC MICROBIOLOGY LABS AIHACCREDITEDLABS.ORG Lab ID # 154782

moldlab
2501 Mayes Rd #110
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Website - www.moldlab.com

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Snapshot

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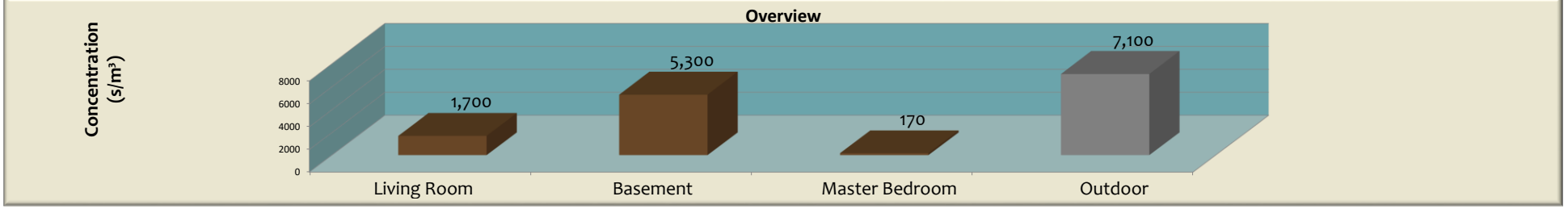
This test report contains the following sections: Snapshot.



Location to Reference Comparison

Identification	Living Room		Basement		Master Bedroom		Compares	Outdoor	
Sample Number	2		3		4			1	
Volume (L)	75		75		75			75	
	Raw	s/m³	Raw	s/m³	Raw	s/m³		Raw	s/m³
Ascospores, non-specified	-	-	-	-	-	-	☞	38	1600
Aspergillus/Penicillium-like	1	43	82	3,500	1	43	☞	15	640
Basidiospores, non-specified	15	640	4	170	-	-	☞	42	1,800
Bipolaris/Dreschslera/Helminthosporium/Exserohi	20	850	-	-	-	-	☞	-	-
Chaetomium	-	-	10	430	-	-	☞	-	-
Cladosporium	5	210	7	300	2	85	☞	54	2300
Epicoccum	-	-	-	-	-	-	☞	2	85
Hyphal Fragments	-	-	1	43	-	-	☞	7	300
Myxomycetes/Periconia/Smut/Rust	-	-	-	-	1	43	☞	8	340
Oidium/Erysiphe types	-	-	-	-	-	-	☞	1	43
Stachybotrys	-	-	21	900	-	-	☞	-	-
Total Fungal Structures	**41**	**1,700**	**125**	**5,300**	**4**	**170**		**170**	**7,100**
Non-Microbial Debris Field Rating	**Light**		**Trace**		**Light**			**Moderate**	

Tech Notes:

Submitted By: John Doe | *via*: Hand Delivered | Submittal Date: 3/1/2019 | Sample Date: 2/28/2019 | Analysis Date: 3/1/2019 | Report Date: 3/1/2019 | Lab Job No.: 17-1267 | Technician: Sally Scientist

If a structure is not listed, or listed with a (-), it was not observed in the sample(s) submitted. Debris rating estimates the total non-fungal particle load on the sample. Ratings of None Detected, Trace (>0 to 5%), Light (>5% to 25%), Moderate (>25% to 75%), Heavy (>75% to 90%), and Occluded (>90%) are used. A rating of Light or higher may have a higher number of structures present than indicated. The higher the rating, the greater the negative bias. A rating of Occluded makes quantitative results impossible; instead, any structures detected will be marked as Detected. Concentrations are rounded to two significant figures. The 'total' field may not add up to sum of individual types due to this rounding. The maximum raw count is 100 due to stopping rules. The calculated concentration for a 100 raw count sample will vary depending on the traverse in which the stopping rule was applied. Yellow highlighted concentrations are higher than the reference. Red highlighted concentrations are 10x higher than the reference.

Samples analyzed by MoldLab, Ltd.

moldlab
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Website - www.moldlab.com

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Air Glossary

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***Diagnosis of health effects should be left to a medical professional. Moldlab is not a clinical laboratory and does not have medical professionals on staff.

Health effects in general are not well studied, and dosage, exposure, and sensitivity thresholds are not well known and can potentially vary tremendously depending on various conditions and on the particular individual. Effects can also vary from species to species within a particular mold genus.
The EPA, OSHA, NIOSH and other occupational health related associations in the U.S. have not yet established permissible exposure levels (PEL), recommended exposure limits (REL), or other limit values for aeroallergens.

Please realize that the evaluation of one's specific results in terms of potential health hazards and subsequent courses of action are beyond the scope of the laboratory analysis.

Pictures / images are for *illustration* purposes only and are NOT of the samples tested.
Terminology:

Allergen- the most common effect, and can range from hay fever and asthma, to a very particular reaction in certain organs or tissues.
Contaminant- something that is present without injuring or benefiting the host; does not cause infection.
Opportunistic pathogen- Causes infection only when the weak or injured condition of the person gives the agent opportunity to infect; rarely infect persons who are otherwise healthy.

Definition	Images

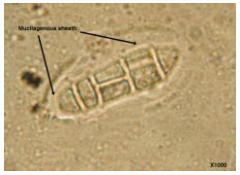
Ascospores, non-specified (ass-co'-spores)

Classification: These are a very large category of spores.

Possible Health Effect: Because so few of the Ascomycetes will grow in the laboratory setting, very little is known about their health effects on humans.

Macroscopic Morphology: Most will appear as specks or spots or bumps on leaves and wood.

Environment: Leaves, Wood. Also, most are plant saprophytes playing the role of “recyclers”. Spores are produced in sac-like structures called asci.



Definition	Images

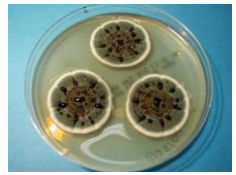
Aspergillus/Penicillium-like (as-per-jill-us) / (pen-uh-sill'ee-um)

Classification: Allergen / Contaminant / Opportunistic Pathogen

Possible Health Effect: Aspergillus is common on tape lift samples and air samples, but its spores are indistinguishable from Penicillium spores in most cases. There are a few exceptions but the species ID must be made from culture, and is still a difficult job. Health effects vary by species, but many are listed as allergens. Some species can produce toxins that may have significant health effects in humans. Aspergillus is listed as one of the most infectious type of mold, but infections are not common in normal healthy immune systems. However, if you are immune suppressed or compromised this should be discussed with your physician.

Macroscopic Morphology: Aspergillus can appear in a wide range of colors from white to purple, yellow to green, see images next to text.

Environment: Commonly found in the environment around the world.



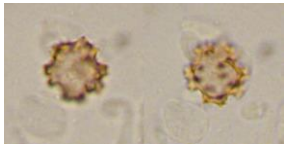
Basidiospores, non-specified (bah-sid-ee-oh'-spores)

Classification: Allergen / Contaminant. Another large general class of spores formed on a structure called a basidium, mushrooms belong to this group.

Possible Health Effect: Allergen and possible poisoning if certain species are ingested.

Macroscopic Morphology: Mushrooms, puffballs and bracket fungi.

Environment: This category of spores is found in the outdoor air make up. This is a common cause of Wood Rot. High concentrations in an indoor air sample might be indicative of water damage or too high humidity. Often abundant at night or pre-dawn hours when there is high humidity.



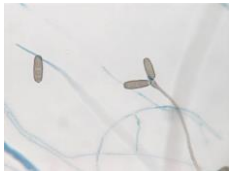
Bipolaris/Dreschslera/Helminthosporium/Exserohilim types (bye-pole-air-us)(dresh-lair'-uh) /

Classification: Contaminant / Opportunistic pathogen

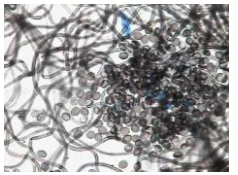
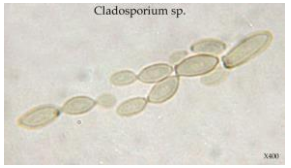
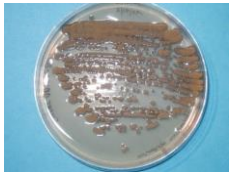
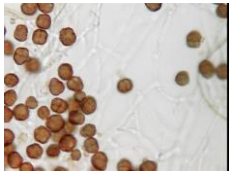
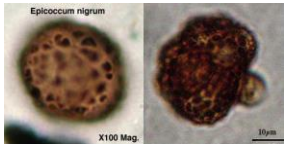
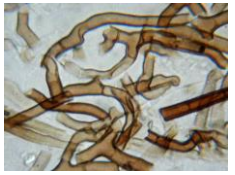
Possible Health Effect: Allergenic and the most common agent for allergic fungal sinusitis. Various but uncommon infections of the eye, nose, lungs and skin in debilitated hosts.

Macroscopic Morphology: The mold will appear brownish / black with a black matted middle and a raised lighter color periphery.

Environment: The fungus is a saprophyte and can be found in soil.

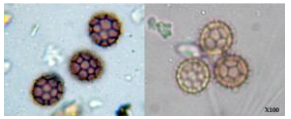


This test report contains the following sections: Cover, Snapshot, Glossary and FAQ.

Definition	Images
Chaetomium (kay- toe-me-um) Classification: Contaminant / some report allergen Possible Health Effect: Rarely involved in systemic and cutaneous disease and sometimes reported to be allergenic. Some species can produce toxins, and there is some research interest on whether these toxins can cause cancer. Macroscopic Morphology: The surface of the mold is cottony, spreading and becomes tan or gray with age. With close examination the surface sometimes will appear to have little black specks like pepper. Environment: Chaetomium is one of the few Ascomycetes that will grow and produce spores indoors. It prefers to grow on cellulose for example paper and wood. Primary IAQ importance is that it will grow in the same conditions as Stachybotrys (wet cellulose) and sheetrock paper. Colonies of Chaetomium and Stachybotrys will be growing on top of one another. Also, found in soil and hay.	 
Cladosporium (clad-oh-spore-ee-um) Classification: Common Allergen/ Contaminant Possible Health Effect: Rarely pathogenic, it is a common agent of hay fever and asthma and other allergy related symptoms. Macroscopic Morphology: Surface of the mold is greenish brown or can appear black in color with age and have heap or folded appearance. Environment: Cladosporium can be found in most air samples most of the time. It is very common. Cladosporium is one of the types of mold found growing on HVAC vent covers and grills. It can grow on leaves, textiles, wood, paper, and decaying vegetation.	 
Epicoccum nigrum (epp-ee-cock'-um nigh-grum) Classification: Contaminant / Allergen Possible Health Effect: It is an allergen but in can in certain rare situations cause infections in the skin. Macroscopic Morphology: The mold will appear yellow or orange with a rough look and will become brown to black with age. Environment: The mold can be found in air, water, soil, and rotting vegetation.	 
Hyphal Fragments (hy-full) Classification: N/A Possible Health Effect: N/A Macroscopic Morphology: Not a type of mold. A hyphal fragment is a small piece or portion of 'root'-like structure called hyphae/mycelia. Hyphal fragments are common in air samples. Mold type cannot be identified by the hyphae alone. Environment: N/A	 

Definition	Images

Myxomycete / Periconia / Smut (mix-oh'-my-seat) / (pare-i-cone-ee-uh) / (smut)



Classification: Generally a plant pathogen

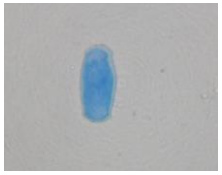
Possible Health Effect: Generally plant pathogens. Some allergenic properties have been reported but generally pose no health concerns to humans.

Macroscopic Morphology: N/A

Environment: This group is associated with living and decaying plants as well as decaying wood. Sometimes can be found indoors.

**myxomycete is technically not a mold but we have included it in this group due to morphological similarities.*

Oidium / Erysiphe types- (oh-id-ee-um) / (er-si-phe)



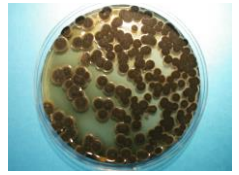
Classification: Saprophyte, plant pathogen

Possible Health Effect: No reports

Macroscopic Morphology: Usually appearing as white growth on plants.

Environment: Parasitic on higher plants, powdery mildew.

Stachybotrys (stack-ee-bought-truss)



Classification: Contaminant / saprophyte / allergenic

Possible Health Effect: Some can produce a toxin, reports of itching, and burning sensation of eye, mouth and throat.

Macroscopic Morphology: At first is white and turns black with age.

Environment: Saprophyte, in decaying wood and soil. Found indoors primarily on wet cellulose containing material. It is the "toxic black mold" that has garnered much media attention in recent years. Some species can produce a potent toxin that is lethal to animals, the dose effect on humans is not clear. Stachybotrys is sometimes difficult to detect indoors because many times it will grow unseen on the back side of walls where the paper backing on sheetrock is located. This is potentially when it is of most health concern when it covers entire wall areas and is constantly producing toxins that go undetected. Airocell and direct exam test usually are the proper method of identification because Stachybotrys does not grow or compete well on most culture plate media.

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Air Exam FAQ

Test Code 1: Spore Trap -fungal limited
Analysis Method: ASTM Designation D7391-17 (Modified)

This test report contains the following sections: Chain of Custody, Report, Glossary and Frequently Asked Questions.

Can you tell me a little more about mold air samples?

This type of sample is a non-cultured air sample, which means the lab did not grow the samples in a Petri dish, and is commonly referred to as a "snapshot" of the air at the exact time of sampling. The test works by pumping a controlled volume of air through a collection container called a spore trap. The spore trap has a sticky substance on its surface which captures any particles from the air, including mold spores. Test results account for both live and dead spores.

Can you explain the Snapshot table?

The snapshot table is a data summary table of all of the information that was gathered from your air samples. The snapshot is designed so that you can easily compare the indoor samples with the outdoor sample. Below is an explanation of each part of the table.

Calculated Concentration

The Calculated Concentration is a measure of the concentration of mold spores in the air, and is listed as spores per cubic meter of air. It is useful for comparing samples and understanding how many spores are in a given section of air. This is calculated based on the air flow rate of the pump, the time the pump was run for, the proportion of the sample enumerated, and the raw count. It is calculated as ((100/Proportion of Sample Analyzed)/(Air Flow Rate * Pump Run Time)*(Raw Count). This number is then rounded to two significant figures.

Raw Count

The 'raw' count is how many spores the technician actually viewed on your sample while looking through the microscope. We use this number to generate the calculated concentration. Moldlab stops counting spores at 100 and reports as the number as greater than 100 aka ">100."

Debris Field Rating

The 'debris field rating' is a visual estimate of how much debris there is on the sample. The rating includes all non-fungal particulate (fibers, debris, pollen, insects, skin, etc.). The scale includes ratings of 'None Detected, 'trace,' 'light,' 'moderate,' 'heavy,' and 'occluded'. 'None detected' means no sample was detected on the slide (possibly due to equipment failure or user error). 'Trace' means there was only a trace amounts of debris present. 'Minor' means small amounts of debris are present. 'Moderate' means an average amount of debris present. 'Heavy' indicates a high concentration of debris present. Lastly, 'occluded' means that the amount of debris on the sample was so concentrated that the technician could not see through it to count and identify the mold spores accurately. This is a common occurrence in wall cavities, construction areas, crawlspaces or other particularly dusty environments. The higher the debris field rating, the greater the negative bias of results.

Minimum Reporting Limit

A minimum reporting limit is exactly what it sounds like- the minimum number that must be reported for the calculated concentration if any spores are detected. All spores types that are not listed as having a raw count of 1 or greater have a calculated concentration of less than the minimum reporting limit. It cannot be said based upon a raw count of zero that the true concentration of that spore type is 0, however, because the testing procedure is not sufficiently accurate. For this reason, the minimum reporting limit gives a useful measure of the minimum detectable concentration of mold types. Bear in mind that any negative bias due to the debris field rating IS NOT accounted for in this minimum reporting limit.

This test report contains the following sections: Chain of Custody, Report, Glossary and Frequently Asked Questions.

How do I know if the air sample results are normal?

The general guideline is that the concentration and types of mold in the inside sample should be similar to or lower than the concentration in the Outside sample.
Currently there are no dose response relationship statistics for allowable or safe levels of aeroallergens.

How do I learn more about the types of mold listed on my report?

Each report comes with its own mold dictionary, called the Glossary. Simply scroll to the Glossary section of your report and each mold type is listed alphabetically. There you'll find helpful information about each mold type.

Do I have the Black Mold?

Usually when a customer asks this question he/she is referring to Stachybotrys. Although Stachybotrys is black in color, so are many other types of mold. Do not discount the importance of other types of mold listed on your report simply because you do not see the word Stachybotrys or Black mold. For more about 'black mold', visit our website at: moldlab.com/black-mold.

How do I get rid of it?

Many molds are allergens and some may be toxigenic. Disturbing the mold with cleaning methods increases the chances of exposure to the particulate. Mold clean up and disposal methods vary greatly from company to company. A good rule of thumb is that if the contaminated area is small and the material is non porous, such as metal, it can be cleaned by traditional methods, taking care to use personal protective equipment. Porous materials on the other hand, such as wood, textiles, or sheetrock, are difficult to clean because of the microscopic holes in the material. The 'root-like' structures of the mold called hyphae/mycelia can grow down into the holes and make it hard to clean effectively. The surface will appear clean but as soon as conditions are favorable the mold can start to grow again. Here is a link to the EPA mold help guide: epa.gov/mold/brief-guide-mold-moisture-and-your-home

Can we still live here?

There are no established 'safe' levels of mold, just as there are no established 'unsafe' levels of mold, and individuals have different resistances and reactions to mold. Persons that are most likely to be adversely affected by mold exposure are: children, elderly, immunocompromised, and persons with respiratory disorders. If you suspect you are experiencing adverse health effects as a result of mold, please consult a medical professional. Please note that Moldlab, Ltd. is not a medical, or clinical laboratory and we do not offer medical consulting or advice.

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