



## General Guidelines for Mold Test Results Interpretation

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### **Overview**

Mold is everywhere. Our planet could not survive without molds. Generally speaking, the interior air should be representative of what is called a “normal fungal ecology”. A normal fungal ecology essentially means that interior air should be statistically consistent with what we would expect to see in a non-water damaged and environmentally well-maintained structure, and reflective of the ecological and climatic elements of the region in which the building is located. Of particular concern is the presence of wet molds, such as *Stachybotrys* mold, commonly called “Black Mold”. Other wet molds include *Chaetomium*, *Memnoniella*, *Ulocladium* and *Pithomyces*. These molds are the result of significant or chronic high moisture intrusion.

### **Mold Movement**

There is a negative pressure in buildings that will pull endotoxins and mycotoxins from the hidden areas into the air of the living space of the home. This negative pressure is naturally created as air moves from lower cooler areas to higher warmer areas. Dispersion, HVAC operation, external weather conditions and thermal gradients are other ways that mold toxins are spread throughout a building.

### **Outside Control**

We look at the exterior spore count to tell us what is “normal” for that day, time and geographic location. We then use that information to help understand the interior mold results. This information is used as a calibration factor. If a mold is particularly high in the exterior, it will have an impact on the interior mold readings. That impact can vary depending upon weather conditions and the type of mold.

### **Mold Remediation is a Science**

Mold growth can be viewed as a science experiment. Picture a garden with weeds. Pulling the weeds that are visible today will only result in new growth if the root problem is not killed. The same can be said for mold growth. We need to change the conditions that resulted in mold growth. As a guideline, we want indoor air humidity to be less than 40% to 50% with all cavities and surfaces free of wetness. All water leaks and events need to be promptly addressed, corrected and resolved. Surfaces and materials that may be a substrate for mold growth should be avoided along with any other conditions that allow mold growth. It is important to consult with a mold professional to understand if any of these conditions exist.

### **Need for a Professional**



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Gathering air test results from the lab is just one piece to the puzzle. It is equally important that a qualified environmental analyst reviews the site conditions gathered at the time of the test to give context and proper interpretation of the lab results. It is also important to note that a medical professional is required to determine an individual's threshold of tolerance for the levels of mold found within the exposure referenced in these test results.

### **Remediation Overview**

#### **Choosing Remediation Systems and Reliable Professionals**

We know that finding the right professional can be a challenge. TestAll Environmental Analysts are available by phone to further discuss your questions and concerns. These Analysts are certified to discuss mold treatment systems and can help locate preferred mold remediators in your area. There are many mold treatment systems available that range from complete demolition and reconstruction to those that encompass a wide range of chemicals of varying toxicity. With that said, here are some things to consider when choosing a treatment system:

1. Some available treatments can be very dangerous to health and safety. The goal is selecting a treatment system that is both very effective on mold, yet is also safe for occupants, contents and the mold technicians doing the application.
2. Treatments should have a degree of continued effectiveness and yet be safe for occupant exposure. Just killing mold is not enough. Either it's allergenic components need to be rendered inert or the dead spores removed. As an example, is the use of an enzyme-based treatment system.
3. Any treatment system chosen should be applied as directed by trained professional technicians utilizing proper procedures and protective equipment, ensuring both safety and effectiveness.
4. IS RECOMMENDED THAT YOU HAVE A MOLD SPECIALIST INVESTIGATE AND IDENTIFY THE UNDERLYING CAUSES FOR MOLD GROWTH BEFORE CHOOSING A TREATMENT.

#### **Safety is a Top Priority**

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**Containment:** In areas of significant disturbed mold contaminated materials, the area of work may need protected with an airlock. Contaminated materials need to be wrapped and carried out of the building while enclosed or wrapped to keep the mold contaminated materials from harming others.

**Negative Air:** In situations where there is risk for mold to be drawn from the contaminated area into other areas of the building, the work area needs to be placed under a negative pressure. That means the air is drawn from that area and sent to the exterior. This prevents disturbed mold spores from being pushed into the rest of a property and creating mold problems in additional areas.

**Air Scrubbing:** The process of mold spores going into the air is accelerated when disturbed during remediation. The mold floating in the work area can be collected into a filter by an air scrubber. This is a highly efficient air filter designed to capture the small particles such as mold.

**Air Movement:** Forced air heating systems are another place that needs professionally considered to avoid moving mold through the rest of the building. Ductwork may need sealed or cleaned within work areas to avoid the furnace or AC blower pushing mold through the building.

**Dehumidification:** A low moisture level is required for effective mold remediation. Portable commercial dehumidifiers are often used in the remediation process for that purpose.

**Post Remediation Verification Testing (PRV):** At the end of the work, you should have proof that the work was effective in removing the mold. This is done by conducting a clearance test also known as a PRV. You can access the network of certified PRV testers by requesting a professional test from SpecQuest LLC.

## Test Methods and Information

### Air Testing

Air testing is conducted to tell us both the type and amount of mold present in the sampled area. The amount of mold is expressed as spores of mold per cubic meter of air.

Picture that you have thousands of red balls, yellow balls and green balls and throw them randomly into a room. If we want a good idea of how many balls are in the room, we can count the balls in 1/4 of the room and multiply that number by 4. We could also count the number of each type of ball in 1/2 of the room and multiply by 2. The lesson is that if we have a fixed sized sample, we can calculate approximately how many balls that we have in the entire area.



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In air testing, we count the mold spores of each type in any fixed portion of the room, and by doing this, we can identify the concentration of mold spores in the environment. These results are interpreted to obtain a general idea of the potential for health implications created by the amount and types of molds found.

This information along with site information is used to consider the need for remediation. The number of spores captured from the air tests will give us an indication of mold activity. The type of mold often helps identify the source and conditions that need to be corrected to avoid return of mold after successful remediation. It is important for a mold professional to visit a site to consider the conditions through an assessment or mold investigation.

### **Swab Testing and Tape Lifts**

These tests can be used to identify the type of mold at a point of contact that is tested. It ONLY tells us of the mold on the tested area and is not necessarily representative of the overall conditions in a building. These tests are useful when we have hidden areas or extremely wet areas with mold. Some of the more toxic molds such as *Stachybotrys* produce very few spores in the air. Swabbing the suspect areas in these instances is an important tool when used along with air testing. Swabs and tape lifts have limited use as a stand-alone test. These tests do not provide the context of the overall conditions. We often need to require additional testing when only swab or tape lift tests results are provided.

Swabs and tape lifts do not quantify the amount of mold; they only qualify the type of mold in a defined spot. The air test quantifies and qualifies but can miss or undercount the contamination of hidden or high moisture molds. A good testing strategy considers many site conditions to obtain the most meaningful results for a proper assessment.

### **The Role of the Assessment in Interpreting Test Results**

Site conditions such as interior temperature, open windows and heating system operation can affect test results. The role of the assessment professional is to obtain and provide site condition information so that a proper interpretation of test results is possible.

### **Type of Testing**

#### **Limited Sampling Purpose**

To detect the presence of mold in client chosen areas within the Subject Property.



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### **Limited Sampling Scope**

Consists of a visual assessment for mold problems in area(s) designated by the client to test, collect and analyze sample(s) in these designated area(s). Further, the objective of Limited Mold Sampling is to determine whether mold problems exist in the designated area(s) sampled at the time the Limited Mold Sampling is performed. As such, the results of Limited Mold Sampling are not a guarantee that mold does or does not exist in the Subject Property. The results are indicative only of the presence or absence of mold in the areas sampled at the time of the Limited Mold Sampling. Limited Mold Sampling is narrower in scope than other mold inspections and strategies that are available. TestAll Certified Mold Inspectors mold inspections will be conducted only in the client-defined areas and may not be considered a complete assessment of the Subject Property.

### **Mold Screening Purpose**

To test areas of suspect mold contamination based upon a visual inspection. This is done to detect the presence of a microbial problem in the inspected areas of the Subject Property and is not a comprehensive testing of all areas.

### **Mold Screening Scope**

Consists of a visual inspection in readily accessible area for mold and/or conditions that may indicate the presence of mold. For example, musty odor and/or evidence of water penetration. In the instance of multiple areas of mold concerns, the client will be advised and offered the chance to have additional samples collected in any and all identified areas (Additional Sampling). Finally, if the client should so elect, the inspector may only take samples in areas designated by the client (Limited Mold Sampling). The objective of the Mold Screen is to determine whether mold problems exist in the readily accessible area(s) sampled at the time the Mold Screen is performed. As such, the results of Mold Screen are not a guarantee that mold does or does not exist in the house. The results are indicative only of the presence or absence of mold in the areas sampled at the time of the Limited Mold Sampling

### **Additional Important Information and Limitations**

**Sampling:** The inspector will not be able to determine the extent or type of microbial contamination from the results of the Visual Assessment. An appropriate number of samples must be collected, as determined by the Visual Assessment, before mold in the designated area(s) can be identified. Clients have the opportunity to have samples taken in areas of the Subject Property that they can designate, to establish the presence and type(s) of microbial contamination. The inspector will send samples to an



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approved Lab that will analyze them for the presence of mold. The Lab will then issue a report that the client will receive that is detailing the presence and type(s) of mold, if any, found in the samples.

**The Inspector is a generalist:** The inspector is not a Certified Industrial Hygienist or expert in any specific craft or trade. If the Inspector or report recommends further action, including but not limited to consulting with a specialized expert(s), you must do so at your own expense or otherwise assume all risks associated with failure to do so. This inspection is not technically exhaustive. The fee charged for this Inspection is substantially less than that of a technically exhaustive inspection.

**Visual Assessment:** The purpose of the visual assessment is to identify visual mold contamination or conditions that may be conducive to microbial growth, for example, musty odor and/or evidence of water penetration, in the area(s) the client designates.

**The sole purpose of the visual assessment:** Assessments are intended to detect the presence, or likely presence of mold in the designated area(s); therefore, the Inspector will not be liable for failure to discover any conditions other than readily apparent and accessible mold, including, but not limited to, water penetration. Following the visual assessment, sample collection and lab results, the Client will be provided with a written report stating whether mold or conditions indicating mold were found in the designated area(s). Scope of Visual Assessment/ Exclusions. THE SCOPE OF THE VISUAL ASSESSMENT IS LIMITED TO READILY ACCESSIBLE AREAS DESIGNATED BY THE CLIENT ONLY.

**The assessment is non-invasive:** TestAll inspectors do not remove floor and wall coverings or move furniture, open walls or perform any type of destructive inspection. Certain structural areas are considered inaccessible and impractical to inspect including but not limited to: the interiors of walls and inaccessible areas below; areas beneath wood floors over concrete; areas concealed by floor coverings; and areas to which there is no access without defacing or tearing out lumber, masonry, roofing or finished workmanship; structures; portions of the attic concealed or made inaccessible due to construction; interiors of enclosed boxed eaves; portions of the sub area concealed or made inaccessible by ducting or insulation; enclosed bay windows; portions of the interior made inaccessible by furnishings; areas where locks prevented access; areas concealed by appliances; areas concealed by stored materials; and areas concealed by heavy vegetation. Note: There is no economically practical method to make these areas accessible. However, they may be subject to attack by microbial organisms. NO OPINION IS RENDERED CONCERNING THE CONDITIONS IN THESE AFOREMENTIONED OR OTHER INACCESSIBLE AREAS.

**Additional Suggested Resources:** Potential indoor air contaminants are known to be health risks in certain individuals. Medical professionals should be consulted if mold is suspected or found to be present in an environment.