

**THOMAS DOUMA**  
**Residential and Commercial Property Inspections**  
**A Member of the Hawaii Inspection Group, Inc.**  
**www.hawaiiinspectiongroup.com**

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**MOLD COLLECTION ORDER INFORMATION**

|  |            |              |                           |   |            |
|--|------------|--------------|---------------------------|---|------------|
| Date: January 5, 2006                    |            | Time: 11:30  |                           | Report Number: Revised 1/10/2006                            |            |
| Address: Court House                     |            |              | Cross Street: Main Street |   |            |
| City:                                    |            | State: HI    | Zip:                      | Approx. SqFt:   |            |
| Client's First Name: Court Administrator |            | Last:        |                           | Listing Insp: <input type="checkbox"/> (Due within 90 days) |            |
| Agent's First Name: Bob                  |            | Last: Halley |                           | Phone:  | Ext:       |
| Office:                                  |            |              | Fax:                      |   |            |
| Amount: 1,800.00                         | Add: 74.99 | For: Get     | Billing Fee: 0.00         | Total:  | \$1,874.99 |

**MAKE CHECKS PAYABLE TO:**

|                                      |  |                    |                      |
|--------------------------------------|--|--------------------|----------------------|
| Payee: Hawaii Inspection Group, Inc. |  | Amount: \$1,874.99 |                      |
| Address: Post Office Box 60          |  | City: Kihei        | State: HI Zip: 96753 |

**NOTES:**

Please, read the entire report and especially page 8, and the "Mold Report Overview and Understanding Types of Mold" for instructions in how to read the lab results. The client may wish to consult and get advice from an Industrial hygienist or other mold professional for guidance.

**BILLING INSTRUCTIONS**

|  |   |          |           |
|--|---|----------|-----------|
| Paid on Site? <input type="checkbox"/> | *(All amounts are subject to BILLING FEE unless paid on site) |          |           |
| Escrow Company:                        |   |          |           |
| Escrow Number:                         |   | Officer: |           |
| Address:                               |   |          |           |
| City:                                  | State: HI   | Zip:     |           |
| Phone:                                 | Ext:  | Fax:     |           |
| Date Report Sent by Mail:              | Fax:  | E-mail:  | Invoiced: |
| Delivered in person on:                |   |          |           |

**HAWAII INSPECTION GROUP, INC.**  
 Residential and Commercial Property Inspections  
**1-808-879-6000**  
 www.hawaiiinspectiongroup.com

**MOLD COLLECTION REPORT**

Address: Court House

Report Number: Revised 1/10/2006

City:

Inspection Date: January 5, 2006

Client's First Name: Court Administrator

Last:

Listing Insp:  (Due in 90 days)

Agent's First Name: Bob

Last: Halley

Phone:

Ext:

Office:

Fax:

Inspector: THOMAS DOUMA

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**ADDITIONAL RESOURCES**

The Hawaii Inspection Group, Inc. and its inspectors are not affiliated with any of the listed resources. These resources are provided as an informational service and do not give approval or recommendation for any institution or service provider listed herein. The client is strongly advised to check the references of these resources personally.

These resources may provide different services and information related to mold and can range from clean up, removal, abatement, prevention, and/or health recommendations, etc. and are listed here due to their proximity and/or ease of contact or access to or from this area.

HVAC Duct Cleaning Guidelines  
<http://www.epa.gov/iaq/pubs/airduct.html>

Industrial Hygienists:  
 Vuich Environmental (808) 572-1166  
 Contact: John Vuich

EPA Mold Guidelines  
[www.epa.gov/iaq/molds/intro.html](http://www.epa.gov/iaq/molds/intro.html)

Remediation Contractors:

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## Hawaii Inspection Group, Inc.

### SCOPE OF MOLD COLLECTION SERVICE

The scope of this service to the client is that of collection of possible mold samples. The collector is not performing a survey to detect mold contamination or mold conditions and is not performing any testing or analysis himself. This service is designed to collect only visible samples, and provide an initial sampling of the property, and is not intended to be definitive.

This visual evaluation of the property is to look for condensation, hummed, damp, and/or standing water conditions which could aid in the possible development of mold growth, and is limited to the visible areas of the windows, bathrooms, kitchen, laundry room, crawl space, and the exterior perimeter of the foundation. This collection service is above and beyond terms of any property inspection report. As part of this evaluation, the collector will not drill into walls, dismantle heating or air conditioning units, test pipes, operate valves, bathroom fixtures, shower stalls, windows, or other household fixtures for condensation that may cause or contribute to a mold conditions.

The collector urges the client to contact and consult with professionals in this field to interpret the results of the test such as a microbiologist, industrial hygienist, an Environmental Protection Agency, or other expert in this area. The collector is not an expert in mold or hazardous substances, is not a microbiologist or an industrial hygienist. This collection and testing is not designed to act as your only information on the subject. The specimen will be collected in strict accordance with the PRO-LAB Manufactures printed directions and guidelines for collection and shipment, and will be sent to PRO-LAB for analysis. In no event does the collector warrant the analysis performed by the laboratory, which is an independent company. The testing results are not intended to be definitive.

The number and types of samples collected are being taken in strict accordance with the client's instructions. The client has requested to have \_\_\_\_\_ samples taken and sent for laboratory analysis. The total cost for this evaluation, sample collection, and laboratory analysis is \$\_\_\_\_\_. The test results are received in an average of seven business days from the date of the collection. The collector will forward the tests results from the laboratory to the client along with a report and photos of the areas where the samples were collected.

### Arbitration Clause

It is hereby agreed by and between the parties herein, [Client and Collector] that any and all disputes arising from this agreement and the collection of the specimens shall be resolved by binding arbitration in lieu of civil court action pursuant to the rules of the American Arbitration Association. In any proceeding in law or equity, the prevailing party shall be entitled to recover its reasonable attorney's fees and court costs that are incurred. By signing below, the client acknowledges receipt of this document and understands its terms.

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|                  |      |               |           |
|------------------|------|---------------|-----------|
| Property Address | Date | Client's Name | Signature |
|------------------|------|---------------|-----------|

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## Hawaii Inspection Group, Inc.

### GENERAL COMMENTS

#### WHAT IS MOLD?

Molds are microscopic organisms found virtually everywhere, indoors, and outdoors. Mold spores are tiny, lightweight, and easily detached by airflow, vacuuming, walking on a carpet or sitting on a couch. In indoor environments, they grow in air-conditioning ducts, carpets, pots of houseplants, etc. They produce and release millions of spores, which are small enough to stay airborne threatening to invade the human respiratory system. Mold growth can often be seen in the form of discoloration, ranging from white to orange and from green to brown and black. In large quantities, molds can cause allergic symptoms similar to those caused by plant pollen. In order for mold to grow, it needs food sources (such as leaves, wood, paper, or dirt), a source of moisture, and a place to grow.

#### HOW DO YOU COME INTO CONTACT WITH MOLD?

Mold spores are found in all homes and offices, and grow rapidly from excess humidity. The following are some sources of indoor moisture that may cause mold problems in a home or office: flooding, leaky roofs, humidifiers, damp basements or crawl spaces, constant plumbing leaks, house plants, steam from cooking, shower/bath steam and leaks, wet clothes, bathroom towels, pets, sweaty sneakers indoors, dirty HVAC systems, spilled liquids on carpeted surfaces and clothes dryers vented indoors.

#### WHAT CAN MOLD DO TO YOU?

Exposure to mold is not healthy for anyone, but the following individuals are at a higher risk for adverse health effects: infants, children, elderly, immune compromised patients, pregnant women, and individuals with existing respiratory conditions. When inhaled, even in small amounts, mold can cause a wide range of health problems including respiratory problems (wheezing), nasal and sinus congestion, watery and red eyes, nose and throat irritation, skin irritation, aches and pains, fevers, and in some cases even death.

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### CAUSES OF INDOOR MOLD GROWTH.

High moisture is the major contributor to indoor microbiological activity (mold growth). This is due to nutrients for spore germination and growth being readily available in most household constituents. These household constituents can be dirt, dust, wood, paper, adhesives, acoustical fiber, paint, textiles, stored material, carpets, floors, and much more. The actual germination of fungal spores and mold growth is influenced by several factors. These factors are as follows:

**Time Reaming Wet:** The longer the material stay wet, the higher probability of biopollution (Example: It takes 2-3 days for microorganisms to start growing in a petri dish).

**Water Source Contamination:** The greater the water sources, the greater the microbiological activity. (Example: Loose toilets, pipe condensation, pipe leaks, foundation leaks, crawl space leaks, ice dams, and etc.)

**Substrate:** Fungi prefer natural materials. Some fungi will grow on almost anything.

**Light:** Most molds thrive in dark places. (Example: closets, attics, basements, inside walls, behind wallpaper, behind refrigerators.

**Temperature:** Temperatures between 68 and 85F are the optimal temperatures for microbiological activity.

**Air Velocity:** Microbiological activity is preferred in stagnant areas. This is why you see more mold in closets, attics and inside walls.

**Nutrients:** Organic material such as drywall, wood, ceilings, adhesives, paper, plasters, leather, and cloth are ideal for growth. (Example: No desirably clean homes have more dust and debris than that of clean homes and will most certainly produce more microbiological growth.)

**Humidity:** Anything above 50% RH (relative humidity) is desirable for mold growth.

**Moisture:** When substrates are wet or damp the opportunity for microbiological activity is great. Moisture content 18% or greater can cause mold growth. (Example: Basement drywall, basement wood paneling, drop ceiling material after it gets wet, cardboard boxes on the basement floor, etc.)

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## Hawaii Inspection Group, Inc.

### WARNING SIGNS OF POSSIBLE MOLD GROWTH.

**TREE ROOTS** have been known to infiltrate into storm and sanitary drain lines. When these conditions arise, sewer back up and basement wall moisture are usually the outcome. Tree roots also have a tendency to damage pavements and foundations, which could lead to moisture in basements and crawl spaces. We strongly urge you to question the past owner if past seepage or sewer back up has existed, if it has, future maintenance will be probable, and biohazards may exist. Moss, mold, or mildew on the foundation or on the foundation grading is an indication of poor grading, shading, overflowing gutters, runoff, or other conditions that allows this area to be wet, moist, or humid.

**A ROOF** may show evidence of past or present leaks or may soon develop leaks that can cause mold growth. Poor roof venting and sometimes tree shading can decrease the overall life expectancy of the roofing system and cause mold growth. Shingles that are uplifting or have popping nails are indicators of potentially undesirable attic moisture conditions. Shingles that are clawing or fish mouthing are indicators of poor attic ventilation.

**EFFLORESCENCE** (white powdery substance) and staining of the chimney is an indication of moisture penetrating the system.

**CHIMNEY FLASHING**, roof penetrations, other flashings, changes in roof elevation, all have the potential of future maintenance when downspouts and gutters are not properly maintained on garages and dwellings, poor drainage can cause seeping into the dwelling. All gutters and downspouts should be free of debris and properly installed. Penetrations at vents, chimneys, and roof flashing should be inspected periodically for deterioration and possible leaks. Overflowing gutters, downspouts, leaking roofs, and leaking flashing can cause mold growth.

**EXTERIOR WOOD SURFACES** should be treated every 3-5 years. When wood is untreated, it has the potential to develop mold growth that will cause deterioration or possibly enter the dwelling. Untreated wood used for porches, deck columns, and fence posts which are buried in the ground, have a tendency to deteriorate rapidly from mold. Siding should be properly sealed and should have existing weep holes. Foundations that have cracks or problems can cause moisture seepage into dwellings.

**DRYWALL** nail pops or rusted drywall nails may be the cause of high indoor humidity or possible past/present leaks that may cause mold to grow on exposed or not exposed surfaces. These types of conditions should be controlled. Many times homeowners patch and paint past ceiling or wall leaks. At these locations, we cannot tell if future seepage is expected, unless, it is actually wet or leaking at the time of inspection. Mold is often found in walls behind drywall or behind wallpaper. Cleaning carpets often causes high humidity in homes leading to mold growth under the carpet.

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## Hawaii Inspection Group, Inc.

**ATTIC TEMPERATURE** that is greater than 30 degrees from exterior ambient temperature should have venting or an attic fan installed. When mold/mildew or dark staining is seen in accessible locations, on or in the sheathing, deterioration may exist. These conditions may be the cause of: condensation during winter months, ice dams, poorly vented bathrooms or kitchen, poor attic venting, insulation choking air flow, roof or penetration seepage, and repairs are advised. Most attics are only partially inspected due to constraints such as height, tight, missing flooring, area cluttered, covered, and difficult entry. Attic moisture stains should be monitored for future activity and repaired if active, so further damage or mold growth will not occur. Moisture stains may appear to be dry at the time of inspection due to: dry weather conditions, hot summer heat, and winter months.

**HUMIDIFIERS** on furnaces if not properly used will cause condensation on sheathing in the attic. This condensation will result in a black mold appearance. Mold growth on attic sheathing is not desirable and not healthy if mold spores from the attic enter the dwelling. You may wish to seal off attics with these conditions and call professionals to help in the remediation or interim control progress. Leaking basements and leaking crawl spaces can also cause this black mold in attic sheathing, other high humidity causing variables that exist in the dwelling. Humidifiers, furthermore, are known to contain microbiological growth within their operating housing. Ductwork in dwelling has a high probability to contain dust, debris, and possible microbiological growth. It is recommended to have all ductwork and humidifiers professionally cleaned. The furnace filters need to be cleaned or replaced periodically according to the manufacturer specifications. You may wish to install HEPA or high density filters to help in the control of filtering out microbiological airborne particles, dust, etc.

**DISCLOSURES:** Ask if any past seepage or flooding existed from: sewers, storms, and run-off. Basements and crawl spaces have a high probability of containing humid conditions that are desirable for mold growth. Wood products, cellulose products, boxes, paneling, and drywall are not recommended in basements that do not have controlled moisture and humidity. Generally, if you see mold on the bottom of cardboard boxes you may have a serious mold condition. A high probability exists that mold may be behind drywall or wood paneling if the area is not 100% dry. Any wood paneling, drywall, or ceiling tiles that are in contact with water, high moisture, flooding, or seepage should be removed within 24 hours after getting wet. Furthermore, it is recommended that at least an additional 12 inches of material past and away from the moisture stains or water damaged area is removed.

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## Hawaii Inspection Group, Inc.

### COMMENTS & RECOMMENDATIONS:

As a result of the visual inspection and moisture content sampling on January 5, 2006, I have the following observations.

1. The relative humidity in the various rooms was a consistent 64% except for the Attorney Conference Room 4C), while the relative humidity of the exterior of the unit was 66%.
2. The moisture content of the walls, floors, and ceiling was a consistent 6.8% to 12% (within normal standards) except in the Attorney's Conference Room 4-C sheetrock walls and carpeting, Court Room 4-C carpeting and walls adjacent to the entry, and in Witness Room 3-A. In these rooms, moisture content of the walls exceeded the 30% moisture content needed to propagate mold spores.
3. There was a distinct "musty" odor in Court Room 4-C, Attorney Conference Room 4-C, Jury Room 4-C, and Witness Room 3-A
4. There was still water on the floor from the repairs to overhead drainage line.
5. There appeared to be visible mold in the Recorders office on the fabric wall, and on the doors of some of the rooms facing the public corridor on the Fourth Floor.

As a result of these observations, I have the following interim recommendations from the mold sampling:

1. Expedite the drying, and treat the carpeting with a fungicide in Court Room 4-C and Attorney Conference Room 4-C.
2. Run dehumidifiers in the above four rooms through the weekend of January 7th and 8th.
3. Wipe down all surfaces with a fungicide in Court Room 4C. For fabric covered wall surfaces, treat with an air born fungicide.
4. Replace the sheetrock wall on the corridor side of Witness Room 3A, and both small rooms on either side of the entrance to Court Room 4C. After removal of the sheetrock, sterilize all exposed wall cavities with a fungicide.
5. Replace the carpeting in the two small rooms on either side of the of the entrance to Court Room 4C at this time, and sterilize the exposed subflooring under the carpet.
6. Replace the carpeting in Court Room 4C as soon as can be arranged, though this does not appear urgent form the sampling result. However, there are likely dormant spores in the carpeting and padding.
7. Treat the fabric wall covering and the inside and outside of the doors for all the room facing the public corridor on the Fourth Floor.
7. On a long run basis, consider replacing the fabric wall covering in the rooms that face the public corridor. These room are experiencing low level condensation as the warm exterior air meets the cooler air conditioned air in these room. This has allowed some low level mold growth on the doors and wall fabric.



## REMEDATION PROCEDURES-GENERAL

All mold remediation work shall conform to the Institute of Inspection Cleaning and Restoration Certification (IICRC), specifically IICRC s520- Standard Reference Guide for Professional Mold Remediation.

1. Containment chambers- shall be installed as required in order to provide an isolation chamber, for access and egress, between the contaminated areas and the non-contaminated area.
2. Containment barriers- engineering controls shall be installed as required in order to isolate work areas from non-work areas, a negative pressure shall be established with the work area so as not to allow spores to contaminate non-containment areas
3. Protection- runners and sticky mats shall be installed as required in the walkways that access the main work areas
4. Negative air machines (air scrubbers)- negative air machines shall normally be installed. Each of these machines shall be capable of exchanging 600 to 2000 cubic feet of air per minute, and process the air through a three stage filtering process with the final filter being a HEPA capable of removing 99.97% of all particles in the air.
5. All HVAC systems shall be turned off, and all vents sealed during the remediation.
6. When specified, a wipe down of exposed surfaces shall be performed using Fiberlocks's IAQ 2500 microbial disinfectant or equal
7. Carpeting in the general living areas shall be HEPA vacuumed a minimum of three times back and forth, side to side, and diagonally.
8. All debris and excess material shall be bagged under containment and properly disposed of.

# PHOTOS PAGE I



PHOTO 1: Corridor ceiling as seen on 1/6/2006

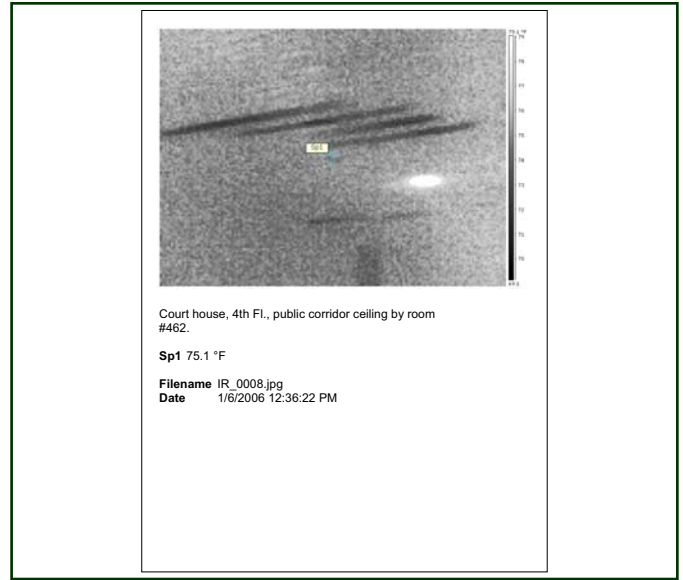


PHOTO 2: Corridor ceiling showing residual moisture in the ceiling panels on 16/2006



PHOTO 3: Air sample in corridor

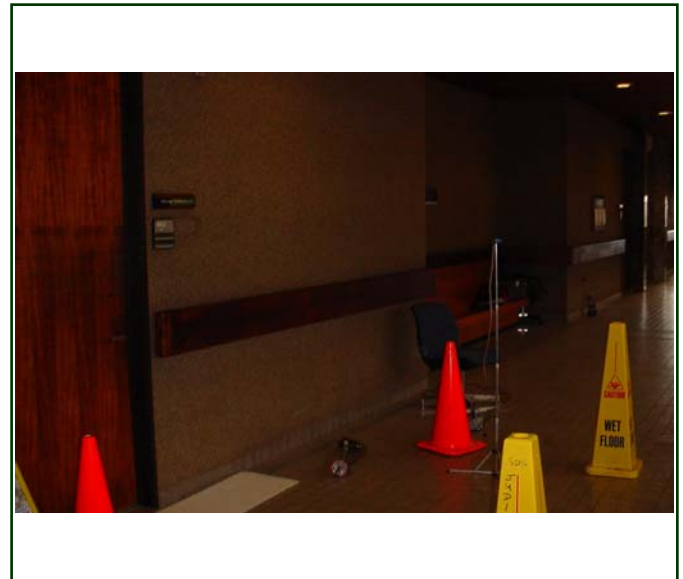


PHOTO 4: Air sample in corridor

## PHOTOS PAGE II



PHOTO 5: Air sample in corridor



PHOTO 6: Air sample in corridor



PHOTO 7: Air sample Court Room 4C



PHOTO 8: Air sample interior hallway

**PHOTOS PAGE III**



PHOTO 9: Air sample at Attorney Conference Room 4C



PHOTO 10: Air sample at Jury Room 4C



PHOTO 11: Petri dish sample Court Room 4C



PHOTO 12: Petri dish sample Court Room 4D

## Mold Report Overview

The mold(s) identified in this report are often associated with soils, moisture enriched environments, water, and deteriorating materials such as cellulose (paper) based products. Mold is naturally present in outdoor environments and can be a problem in indoor environments at high levels. Mold can grow on virtually any organic substance, as long as moisture and oxygen are present. When excessive moisture accumulates in buildings or on building materials, mold growth will often occur, particularly if the moisture problem remains undiscovered or unaddressed. It is impossible to eliminate all molds and mold spores in the indoor environment. Since mold requires water to grow, it is important to prevent moisture problems in buildings. Some moisture problems in buildings have been linked to changes in building construction practices during the 1970s, 80s, and 90s. Some of these changes have resulted in buildings that are tightly sealed, but may lack adequate ventilation, which will potentially lead to moisture buildup. Building materials, such as drywall, may not allow moisture to escape easily. Moisture problems may include roof leaks, plumbing leaks, landscaping or gutters that direct water into or under the building, and unvented combustion appliances.

Building materials supporting mold growth must be cleaned or replaced as quickly as possible in order to ensure a healthy environment. Specific methods of assessing and remediating mold contamination should be based on the extent of visible contamination and the cause of the damage. The simplest and quickest way to safely clean up (remediate) the mold contamination should be used. The use of respiratory protection, gloves, and eye protection is recommended. Extensive contamination, particularly if heating, ventilating, air conditioning (HVAC) systems or large occupied spaces are involved, should be assessed and remediated by professionals with training and experience handling environmentally contaminated materials. Smaller areas of contamination can usually be assessed and remediated by building maintenance personnel. Homeowners should address common household sources of mold, such as mold found in bathroom tubs or between tiles with household cleaners.

Active mold growth in indoor environments is inappropriate and may lead to exposure and adverse health effects. The most common symptoms of mold exposure are runny nose, eye irritation, cough, congestion, and aggravation of asthma. Individuals with persistent health problems that appear to be related to mold or other types of air quality contaminant exposure should see their physicians for referral to professionals who are trained in occupational/environmental medicine or related specialties and are knowledgeable about these types of exposures. Decisions about removing individuals from an affected area must be based on the results of such medical evaluation, and be made on a case-by-case basis. Except in cases of widespread mold contamination that are linked to illnesses throughout a home or building, evacuation is not necessary.

### UNDERSTANDING TYPES OF MOLD

**Allergenic** molds are normally not dangerous in low amounts, but they can cause allergenic or asthmatic symptoms such as wheezing or runny nose. These molds can be abated safely with the assistance of gloves and the use of respiratory protection, such as a disposable particulate-removing respirator.

**Mycotoxic** molds can cause serious health effects in humans and animals. Health effects range from short-term irritation to immunosuppression to cancer and even death. If any toxic molds are identified, it is suggested that you seek advice from an Industrial Hygienist or other mold professional for guidance. The average homeowner should NOT attempt the removal of these types of mold.

**Pathogenic** molds can cause serious health effects in persons with suppressed immune systems, those taking chemotherapy, those with HIV/AIDS, or autoimmunity disorders. If any pathogenic molds are identified, it is suggested that you seek advice from an Industrial Hygienist or other mold professional for guidance. The average homeowner should NOT attempt the removal of these types of mold.

Results relate only to item(s) analyzed. This report shouldn't be reproduced by the client or anyone without the permission from PRO-LAB. All samples will be stored for a period of one month, and then discarded properly. Our laboratory uses Carl Zeiss microscopes and is technically competent to perform the analyses of Indoor Air Quality Samples: Microscopy of Dusts, Fungi (mold) and Pollen spores. All laboratory analytical mycologists are research trained, certified, and have successfully completed an intensive course of instruction for Fungi and Pollen identification from McCrone Research Institute. PRO-LAB also participates in the AIHA EMPAT program.

For additional Information regarding mold and remediation procedures  
Please visit [www.epa.gov/iaq/molds/intro.html](http://www.epa.gov/iaq/molds/intro.html) or <http://www.nyc.gov/html/doh/html/ei/eimold.html>

## **INDOOR MOLD INFORMATION**

### **CLADOSPORIUM**

Commonly found on dead plants, woody plants, food, straw, soil, paint, and textiles. Common cause of extrinsic asthma (immediate-type hypersensitivity: Type I). Acute symptoms include edema and bronchospasms; chronic cases may develop pulmonary emphysema. Reported to be allergenic.

### **STACHYBOTRYS**

Several strains of this fungus (*S. Atra*, *S. Chartarum* and *S. Alternans* are synonymous) may produce a trichothecene mycotoxin - satratoxin H - which is poisonous by inhalation. The toxins are present on the fungal spores. This is a slow growing fungus on media. It does not compete well with other rapidly growing fungi. The dark colored fungi grows on building material with a high cellulose content and a low nitrogen content. Individuals with chronic exposure to the toxin produced by this fungus reported cold and flu symptoms, sore throats, diarrhea, headaches, fatigue, dermatitis, intermittent local hair loss, and generalized malaise. The toxins produced by this fungus will suppress the immune system affecting the lymphoid tissue and the bone marrow. The mycotoxin is also reported to be liver and kidney carcinogen. Affects by absorption of the toxin in the human lung are known as pneumomycosis. This organism is rarely found in outdoor samples. It is usually difficult to find in indoor air samples unless it is physically disturbed. The spores are in a gelatinous mass. The spores will die readily after release. The dead spores are still allergenic and toxigenic.

### **CHAETOMIUM**

Commonly found on a variety of substances containing cellulose including paper and plant compost. It can readily be found on the damp or water damaged paper in sheetrock. Should be considered allergenic. The thermophilic, neurotropic nature of this organism suggests it is a potentially aggressive pathogen. No toxic diseases have been documented to date.

### **PENICILLIUM**

Commonly found in soil, food, cellulose, and grains. It is also found in paint and compost piles. It may cause hypersensitivity pneumonitis and allergic alveolitis in susceptible individuals. It is reported to be allergenic. Common cause of extrinsic asthma (immediate-type hypersensitivity: Type I). Acute symptoms include edema and bronchospasms; chronic cases may develop pulmonary emphysema.

### **ALTERNARIA**

Extremely widespread and ubiquitous. Outdoors it may be isolated from samples of soils, seeds, and plants. It is commonly found in outdoor samples. It is often found in carpets, textiles, and on horizontal surfaces in building interiors. Often found on window frames. It may be related to bakers asthma. It has been associated with hypersensitivity pneumonitis, sinusitis, dermatomycosis, onychomycosis, subcutaneous phaeohyphomycosis, and invasive infection. Common cause of extrinsic asthma (immediate-type hypersensitivity: Type I). Acute symptoms include edema and bronchospasms; chronic cases may develop pulmonary emphysema.

### **FUSARIUM**

A common soil fungus. It is found on a wide variety of plants. The fungus also has been found in humidifiers. Symptoms may occur either through ingestion of contaminated foods or inhalation of spores. In severe cases, the fungus can produce hemorrhagic syndrome in humans. It is characterized by nausea, vomiting, diarrhea, dermatitis, and extensive internal bleeding. Reported to be allergenic. Frequently involved in eye, skin, and nail infections.

### **STEMPHYLLIUM**

Isolated from dead plants, cellulose material, soil and common in air samples in the late summer and fall. Certain species can occur as leaf-spotting parasites of hosts such as tomatoes and other plants. Reported to be allergenic. Often the cause of sinusitis, hay fever and asthma. Can also cause keratomycosis, skin infections, osteomyelitis, pulmonary disease and nasal septum infections.

### **ULOCLADIUM**

Reported to be allergenic. Isolated from dead plants, cellulose materials, and textiles. Causes type II allergies (hay fever, flu-like symptoms).

### **BOTRYTIS**

It is parasitic on plants, vegetables, and soft fruits but may also be found in soil. Reported to be allergenic. No toxic or invasive diseases have been documented to date.

### **CURVULARIA**

Reported to be allergenic. It may cause corneal infections, mycetoma and infections in immune compromised hosts.

**EPICCOBUM**

A common allergen found in plants, soil, grains, textiles, and paper products. Secondary invader of damaged plant tissue. Common cause of Type I allergies (hay fever, asthma). No cases of infection have been reported in humans or animals.

**NIGROSPORA**

Rarely found growing indoors. Often found on decaying plant material and soil. Reported to be allergenic. Common causes of Type I allergies (hay fever, asthma).

**GEOTRICHUM**

A common contaminant of grains, fruits, dairy products, paper, textiles, soil and water, and often present as part of the normal human flora. The species *geotrichum candidum* can cause a secondary infection (geotrichosis) in association with tuberculosis. This rare disease can cause lesions of the skin, bronchi, mouth, lung, and intestine.

**RHIZOMUCOR / MUCOR**

This fungus is reported to be allergenic. It may cause mucorosis in immune compromised individuals. The sites of infection are the lung, sinus, brain, eye, and skin. Infection may have multiple sites.

**RHIZOPUS**

This fungus is reported to be allergenic. It may cause mucorosis in immune compromised individuals. It is often linked to occupational allergy. The sites of infection are the lung, nasal sinus, eye, and skin. Infection may have multiple sites.

**AUREOBASIDIUM**

A cosmopolitan fungus with the main habitat apparently on the aerial parts of plants. Frequently found in moist environments. This fungus should be considered allergenic. This species have been associated with dermatitis, peritonitis, pulmonary infection, and invasive diseases in AIDS patients. Probably acquired by traumatic implantation. May be recovered as a contaminant from human cutaneous sites. No toxic diseases have been documented to date.

**RHODOTORULA**

Rhodotorula is commonly identified in indoor air samples. Rhodotorula is reported to be allergenic. They can cause problems if a person has had previous exposure and developed hypersensitivity. Yeast can be allergenic to susceptible individuals when present in sufficient concentrations.

**BIPOLARIS**

A widespread fungus that is most frequently associated with grasses, plant material, and soil. Should be considered allergenic. Has also been reported as an infrequent agent of phaeohyphomycosis, particularly fungal sinusitis. It can occasionally cause a corneal infection of the eye.

**PITHOMYCES**

Grows on dead grass and plants. Prolonged exposure can cause facial eczema. Reported to be allergenic. Causes Type II allergies (Hay fever type symptoms, asthma).

**PRICONIA**

Most commonly identified as outdoor fungi. The outdoor numbers reduce in winter. Often found indoors in numbers less than outdoors. It is a common allergen. It is commonly found on the surface of fiberglass duct liner in the interior of supply ducts. A wide variety of plant life are food sources for this fungus. It is found on dead plants, woody plants, food, straw, soil, and textiles. Common cause of extrinsic asthma. Acute symptoms include edema and bronchospasms; chronic cases may develop pulmonary emphysema.

**TRICHODERMA**

It is commonly found in soil, dead trees, pine needles, paper, and unglazed ceramics. It often will grow on other fungi. It produces antibiotics that are toxic to plants. It has been reported to be allergenic. It readily degrades cellulose.

**ASPERGILLUS**

This species is considered common to indoor environments. It is widespread in the soil and on plants and is also considered a common contaminant of food. It has a musty odor. It is reported to be allergenic. It is commonly being implicated in pulmonary disease in immunocompromised hosts. It has also been reported to cause skin infections.