



Have Microscope Will Travel

**OSMA, Inc.**

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**Report of Findings and Recommendations**

Based on Visual Inspection for Water Damage  
and Limited Microbial Assessment

Sample Customer  
123 Main Street  
Fort Lauderdale, Florida 33324

Reference Number # 0102051

Submitted By:  
Jane Microbiologist, M.T.  
January 3, 2005



## **Overview and Terms and Conditions**

OSMA, Inc. was contracted by Disaster Insurance to perform a water damage assessment/mold analysis and to provide a remediation protocol the home of Sample Customer at 123 Main Street, Fort Lauderdale Florida 33324 on January 2, 2005. Microbiologists Anna Collins and Juan Lopez performed the inspection for water and mold damage. Moisture level readings were obtained throughout the premises. Temperature and humidity readings were obtained both indoors and outdoors. One indoor and one outdoor air sample plus six swab surface samples total were taken and analyzed at OSMA, Inc.'s laboratory. All samples were analyzed using light-phase microscopy at 400x to 800x magnification. The laboratory results represent only those molds present at the time and place the samples were taken; other types of molds may appear subsequently to the samples taken on this date.

According to information provided to OSMA, Inc., the property in question sustained water damage from a leak that had occurred in the washing machine hose at the property in question approximately two weeks ago. This may have caused abnormal mold growth in the premises. The washer hose had been replaced and ServPro of Broward County had removed the floodwaters. A minor roof leak had occurred approximately two months ago during Hurricane Wilma affecting the kitchen and south bedroom.

Mr. Customer has been experiencing respiratory problems and a skin rash while inside the property since these water incidents occurred.

While performing a visual inspection of the interior of the property, OSMA, Inc.'s inspectors noticed water damage in the following locations:

- South bedroom ceiling southwest corner
- Laundry room west wall by baseboards
- Laundry room south wall behind washing machine
- Kitchen upper north wall above cabinets



OSMA, Inc.'s inspectors also noticed probable mold growth in the following locations:

- Laundry room south wall behind washing machine
- Laundry room north wall by baseboards
- Laundry room east wall behind washing machine

Laboratory results and recommendations are listed within this report. This report has been FAXed to Disaster Insurance at 954-555-1234 and emailed to Mr. And Mrs. Sample Customer at customer@aol.com. All information is confidential and designed solely for the parties listed above.

The inspection is limited to visible areas that are deemed by the inspector as readily accessible, and does not pose a physical hazard to the inspector or damage or alter the structure or its contents, including, but not limited to, attic space, crawl space, or roof access. OSMA, Inc. does not move or alter any contents of the structure to gain access for inspection. The results and recommendations made in this report are applicable to the single structure that was inspected. Detached structures should be inspected and reported separately. Inspections performed pursuant to industry standards rely upon the opinion, judgment, and experience of OSMA, Inc.'s microbiologists, and are not intended to be technically exhaustive. Based on the opinion, judgment, and experience of OSMA, Inc.'s microbiologists, recommendation of additional investigation may be appropriate based on factors outside of the data interpretation contained in this report. In the event a law, statute, or ordinance prohibits a procedure recommended in this report, OSMA, Inc. is relieved of the obligation to adhere to the prohibited action.

OSMA, Inc. is not affiliated with any particular mold remediation company. No statements made by OSMA, Inc. should be construed as medical diagnosis of any symptoms any persons are suffering. If anyone is experiencing any illness a physician should be consulted with regard to the symptoms. These laboratory results may be helpful in the proper treatment of the medical problem.



None of OSMA, Inc.'s employees, agents, contractors or attorneys (OSMA, Inc.-related party) makes any determinations as to the safety or health condition of a property in this report. The client is solely responsible for the use of, and any determinations made from this report, and no OSMA, Inc.-related party shall have any liability with respect to decisions or recommendations made or actions taken by the client based on the report. Each OSMA, Inc.-related party disclaims any and all representations and warranties of any kind or nature, whether express, implied or statutory, related to the testing services or this report. In no event will any OSMA, Inc.-related party be liable for any special, indirect, incidental, punitive, or consequential damages of any kind regardless of the form of action whether in contract, tort (including negligence), strict product liability or otherwise, arising from or related to the testing services or this report. The aggregate liability of the OSMA, Inc.-related parties related to or arising from this report, whether under contract law, tort law, warranty, or otherwise, shall be limited to direct damages not to exceed the fees actually received by OSMA, Inc. from the client in the report.

The invalidity or unenforceability, in whole or in part, of any provision, term or condition herein shall not invalidate or otherwise affect the enforceability of the remainder of these provisions, terms and conditions.



## Mold Analysis Results

Client Name: Sample Customer

Sample Location Address: 123 Main Street, Fort Lauderdale Florida 33324

Sample Collection Date: January 2, 2005

Analysis Date: January 2, 2005

### Swab Surface Samples Analyzed by: Anna Collins, M.T.

Mold surface samples are useful for confirming and identifying mold growth. OSMA, Inc. follows standard industry guidelines and relies on non-invasive and non-destructive tests therefore cannot guarantee that hidden mold problems will be detected and reported. Results apply only to the locations sampled, not to the entire building or any other rooms.

All samples were analyzed by direct microscopic examination using light-phase microscopy at 400x to 800x magnification. This method of analysis is an effective means of determining whether or not mold is growing on surfaces, and if so, what kinds of molds are present. Indicator molds, typically found in areas of chronic high moisture are noted with an asterisk (\*). The laboratory results represent only those molds present at the time and place the samples were taken; other types of molds may appear subsequently to the samples taken on this date. Other microscopic organisms such as bacteria, pollen, algae, and dust mites are reported if deemed necessary for the overall conclusion following analysis.

Quantity Rating Key: + (slight), ++ (moderate), or +++ (most severe)

<u>Sample #</u>	<u>Mold Found</u>	<u>Quantity of Mold</u>
1. North wall by baseboards in laundry room	<i>Aspergillus*/Penicillium-like sp.*</i>	++
	<i>Stachybotrys sp.*</i>	+++
	<i>Chaetomium sp.*</i>	++
	<i>Memmoniella sp.*</i>	+
	Hyphae	+



2. East wall behind washing machine in laundry room	<i>Stachybotrys sp.*</i> <i>Chaetomium sp.*</i> <i>Scopulariopsis sp.*</i> <i>Curvularia sp.</i>	++ +++ + +
3. Baseboard in hallway south wall	<i>Stachybotrys sp.*</i> <i>Chaetomium sp.*</i> <i>Curvularia sp.</i>	+ +++ +
4. Laundry room west wall behind electrical outlet	<b><i>Aspergillus*/Penicillium-like sp.*</i></b> <i>Chaetomium sp.*</i> <i>Cladosporium sp.*</i> <i>Scopulariopsis sp.*</i> <i>Paecilomyces sp.*</i> <b>Basidiospores</b> Hyphae	+++ + + + + ++ +
5. South bedroom south wall behind left side electrical outlet	<b><i>Aspergillus*/Penicillium-like sp.*</i></b> <i>Cladosporium sp.*</i> <i>Mucor sp.* / Rhizopus sp.*</i> <i>Curvularia sp.</i> <i>Paecilomyces sp.*</i>	++ + + + +
6. Kitchen cabinets on north wall	<b><i>Aspergillus*/Penicillium-like sp.*</i></b> <i>Stachybotrys sp.*</i> <i>Mucor sp.* / Rhizopus sp.*</i> <i>Nigrospora sp.</i>	++ + + +



## Air Sample Results

Air samples are useful in measuring airborne mold levels. Industry standards (IESO 1210) require at least one indoor and one outdoor air sample be taken and analyzed in order to make indoor/outdoor comparisons and assessments of airborne mold levels. Additional indoor air samples are warranted for each additional floor or level of a structure and for each additional central air-handling unit. Windows and doors were closed for at least 30 minutes prior to collecting indoor air sample(s). The outdoor sample was collected no less than 10 feet away from the exterior of the structure.

Sample Type: Allergenco D™ by Environmental Monitoring Systems, Inc.

Sample Duration: 5 minutes at 15 liters per minute

Analyzed by: Juan Lopez, B.B.S.

The weather conditions were sunny, calm and dry

### Debris Level Ratings

- 1 = 1 - 25% of the spores are obscured by background debris
- 2 = 26 - 50% of the spores are obscured by background debris
- 3 = 51 - 75% of the spores are obscured by background debris
- 4 = 76% - 99% of the spores are obscured by background debris
- 5 = 100% or overloaded and unreadable

High background concentrations of 4 or 5 may obscure seeing smaller spores such as *Aspergillus/Penicillium*-like sp. and the actual concentrations may be higher than those reported.



**Indoor Levels:** Location: Laundry room Serial # 012345 Debris Level: 1

<u>Identified Mold</u>	<u>Spore Count in ct/m<sup>3</sup></u>
<i>Aspergillus*/Penicillium-like sp.*</i>	2,086
<i>Chaetomium sp.*</i>	356
<i>Cladosporium sp.*</i>	317
<i>Curvularia sp.</i>	40
<i>Mucor sp.* / Rhizopus sp.*</i>	132
<i>Nigrospora sp.</i>	66
<i>Stachybotrys sp.*</i>	396
<b>Total spore count</b>	<b>3,393</b>
Basidiospores *	264
Hyphae	13

**Outdoor Levels:** Location: Back Patio Serial # 012346 Debris Level: 1

<u>Identified Mold</u>	<u>Spore Count in ct/m<sup>3</sup></u>
<i>Aspergillus*/Penicillium-like sp.*</i>	79
<i>Cladosporium sp.*</i>	92
<i>Curvularia sp.</i>	66
<i>Mucor sp.* / Rhizopus sp.*</i>	13
<i>Nigrospora sp.</i>	53
Smuts/Myxomycetes/ <i>Periconia sp.</i>	13
Total spore count	<b>316</b>
Ascospores	132
Basidiospores *	79
Pollen	53



The outdoor air sample establishes a baseline for comparative evaluation of the indoor air samples. There are currently no federal standards for mold spore count levels in residences, schools, or other buildings. The Indoor Air Quality Association (IAQA) provides basic standards for sample collection and the assessment of indoor environments for mold contamination.

The mold inspection industry utilizes NYCDOH (New York City Department of Health) Standards and the ACGIH (American Conference of Governmental Industrial Hygienists) guidelines. Total spore count indoor concentrations should, in general, be lower than total spore count outdoor concentrations. ACGIH states that the indoor air quality is compromised if the individual mold spore count is ten times or greater indoors than outdoors. On the above date, the indoor mold spore counts for the molds (we would name the individual molds here) are significantly higher than the outdoor mold spore counts. The indoor air quality is positive for mold and is therefore degraded.

### **Moisture Levels on Date of Mold Inspection**

Results of the moisture levels within the ceiling, wall cavities and floors using a BD-2100 Penetrating Moisture Meter and an Accuscan Pinless Moisture Meter indicated the following:

High moisture level readings were detected in:

- Laundry room east wall to right of washing machine
- Hallway south wall from floor level to one foot up from baseboards

Moderate moisture level readings were detected in:

- Laundry room east wall from floor level to one foot up from baseboards
- Hallway floor by south bedroom

All other moisture level results were within normal limits. Limitations of these moisture meters are that they cannot detect moisture levels where carpeting is present or at depths deeper than 3/4 of an inch.



## **Temperature and Humidity on Date of Mold Inspection**

	<b>Inside</b>	<b>Outside</b>
<b>Temperature</b>	75.8°F	77.2°F
<b>Humidity</b>	41%	45%

The American Society of Heating Refrigeration and Air Conditioning Engineers (ASHRAE) Standard 62-2001 states that indoor relative humidity should be maintained within 30% to 60%. Ideally, relative humidity should be kept at or below 50% otherwise dust will absorb water that may allow for the growth of mold. The indoor humidity readings results were within normal limits. Ideally, relative humidity should be kept at or below 50% otherwise dust will absorb water that may allow for the growth of mold.

ASHRAE Standard 55-1992 also states that the indoor temperature should be between 73°F and 81°F if the outdoor temperature is above 50°F and between 68°F and 76°F if the outdoor temperature is below 50°F. The indoor temperature readings results were within normal limits. Temperature results that fall outside normal range do not adversely affect mold growth.

### **Recommendations Based on Visual Findings and Laboratory Results**

Mold growth can deteriorate building materials resulting in structural damage. An individual's reaction to mold exposure can vary greatly from person to person. Certain persons such as those with compromised immune systems (such as chemotherapy patients), children under age 5, and the elderly have been shown to experience adverse health effects in buildings with chronic high moisture problems. This type of environment also promotes mold growth. Identification of mold in the environment by OSMA, Inc. is only the first step in correcting this environmental health concern.



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 level, 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 residential indoor environments. 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.

Visual observations and laboratory results exhibited elevated indoor fungal conditions. Due to these findings, it is recommended that a professional mold remediation company be employed to return the premises back to a normal building condition. It is advised to follow the protocol provided in this report (pages 12-20). It is imperative that any water intrusion problem and/or plumbing leak be rectified prior to any mold remediation. If not properly corrected, the mold can regrow.

Our opinions are based on visual findings, laboratory data and upon our professional expertise with no warranty or guarantee implied herein. OSMA, Inc. generated this mold report at the request of, and for exclusive use of, the OSMA, Inc. client named on this report. OSMA, Inc. cannot release this report or any part thereof to any third party other than the party responsible for payment of this mold inspection/analysis without prior consent from the client.

OSMA, Inc. has prepared this analysis for the use of those listed on the report. This analysis performed by OSMA, Inc. is not a medical recommendation and does not take the place of advice of a medical physician. The analysis performed is of the samples collected at a specific time and location; therefore subsequent sampling may yield differing results.



## **Scope of Work – Mold Remediation Plan**

This Scope of Work is based on a limited investigation of conditions existing at the time and date of the OSMA Inspection/Analysis. The extent of water damage and/or mold infestation may or may not be fully delineated. Therefore, this Scope of Work may change as new information is obtained before or during remediation.

This Scope of Work is based on the assumption that conditions that caused excessive moisture and resulting mold growth have been corrected.

The following is the area that is designated to be an individualized instruction book (protocol) for the customer based on our laboratory data and visual findings. It is written in the following format:

### **Room: Laundry Room**

1. Detailed description of work to be done:
  - Laundry room east wall
2. Detailed description of work to be done:
  - North wall by baseboards in laundry room

We also provide photos of the actual molds discovered (taken under the microscope of the samples collected), photos of the areas of sample collection, photos of visible mold growth and water damage, and moisture readings documentation photos.

All customers receive a referral list of companies that may be of service to them (e.g. mold remediation companies, air conditioning contractors, plumbers, roofing contractors, general contractors, etc.).

