Mold Assessment Summary

Client Name	**Ilia Belov**
Project Address	**2003 Canterbury Street ~ Austin, TX 78702**
Date of Inspection	**November 21, 2022**
Scope	**Entire Structure**

Summary of Findings and Lab Results

My inspection revealed the following suspect conditions:

- Visible mold-like growth
- Elevated moisture content
- Water damage or staining

Samples were recommended according to the conditions observed and/or the reported complaints or concerns.

Surface samples were collected from areas of visible mold-like growth, and laboratory analysis **confirmed the presence of mold** on the areas sampled as follows:

- Crawlspace – Floor Truss
- Primary Bedroom – Wall drywall
- Kitchen – Ceiling Drywall

Air samples were collected from the following areas, and laboratory analysis indicated the airborne mold spore concentration levels to be **statistically elevated when compared to the outdoor air** sample collected at the same time and place. Based on these results, there is a high likelihood that an indoor source of mold growth in the tested area is amplifying the indoor levels as follows:

- Kitchen
- Primary Bedroom
- Primary Bathroom
- Living Room

Final Conclusion

Based on the findings of the visual inspection and/or the lab results of the samples collected, mold remediation is needed.

Recommendations

1. Engage Mold Inspection Sciences to write a Mold Remediation Protocol for the remediation project which is to include the following areas:
    - Living Room (<25 SF)
    - Kitchen (<25 SF)
    - Primary Bedroom (<25 SF)
    - Primary Bathroom (<25 SF)

    If less than (< 25 SF) 25 SF of visible mold growth was present, according to the Texas Mold Assessment and Remediation Rules (*Rules*), Exceptions and Exemptions, (b) Minimum area exemption, "A person is not required to be licensed under this subchapter to perform mold remediation in an area in which the mold contamination for the project affects a total surface area of less than 25 contiguous square feet." In this case, a Licensed Mold Remediation Contractor is not required, but we strongly recommend hiring a licensed company.

NOTICE: According to the Texas Mold and Remediation Rules (*Rules*): Regardless of the size of the area affected by mold contamination, if a licensed Mold Remediation Contractor is hired by the consumer, the Mold Remediation Contractor must follow the *Rules*. This includes developing a work plan which follows a protocol developed by a licensed Mold Assessment Consultant.

A Mold Remediation Protocol is a detailed scope of work for the mold remediation work that is needed.

1. If concerned about hidden mold growth, consider engaging a Licensed Mold Remediation Company to perform invasive exploration in these areas as follows:
    - **Laundry Room – Wet ceiling**

    NOTICE: If mold growth is discovered, TMARR becomes applicable, and all mold regulations must be followed prior to any mold remediation.
2. Engage a licensed professional to evaluate and **repair, as necessary, all water intrusion and/or excess moisture issues** discovered.
3. Engage a water restoration company to properly **dry-out all areas/materials** which we found to have excess moisture content.
4. HVAC Problems - Engage a licensed HVAC contractor to evaluate and repair as necessary. The following items should be included:
    - Check the HVAC system for proper functioning and airflow balancing
    - Identify the cause of excessive condensation and/or high relative humidity associated with the system

CAUTION: Any time water infiltrates ceilings and/or wall cavities and/or under/behind cabinetry or flooring, hidden mold growth is possible. Inform non-licensed contractors of the possibility of hidden mold growth.

Report Contents

Section I – Limited Mold Inspection Report
Section II – Independent Lab Results

Charles Pratz

By Charles Pratz

MAT: TDLR License #MAT1363, Exp. 09/07/2023

For Mold Inspection Sciences Texas, Inc. a Licensed Mold Assessment Company
TDLR License # ACO1001, Expiration Date: 03/20/2023

Mold Inspection Sciences Texas, Inc.
Mailing Address: 10403 Quail Ridge Dr. ~ Austin, TX 78758
Austin Corporate Office: (512) 535-2493
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www.MoldInspectionTexas.com

Mold Inspection Report

2003 Canterbury Street ~ Austin, TX 78702

Prepared for Ilia Belov
Date of Inspection - Monday, November 21, 2022

Mold Inspection Sciences Texas, Inc.
Mailing Address: Mailing Address: 10403 Quail Ridge Dr. ~ Austin, TX 78758
Austin Corporate Office: (512) 535-2493
Dallas Office: (214) 774-4380 • Ft. Worth Office: (817) 719-1842 • Houston Office: (281) 652-5353 • San Antonio Office: (210) 568-7725
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Section 1: Mold Inspection Information

Site Description and Scope of Project

Construction Type – Pier and Beam foundation, Wood Siding exterior, Drywall Interior Finish, Metal roof
Age of Structure – 112 years
Building Type – Single Family Home
Size – 686 square feet
Scope – Entire structure

Purpose, Limitations, and Inspector/Client Responsibilities

If any item or comment in this report is unclear, you should ask the inspector or project manager to clarify the findings. It is very important that you carefully read ALL this information.

This Mold Assessment was subject to the Texas Mold Assessment and Remediation Rules (16 Tex. Admin. Code, Chapter 78), Administrative Rules of the Texas Department of Licensing and Regulation, see https://www.tdlr.texas.gov/mld/mldrules090118.pdf

Mold Inspection Sciences Texas, Inc. (MISTX) performed a "limited" mold inspection at the subject property in accordance with the *TDLR Administrative Rules* and generally accepted professional practices. A Mold Assessment addresses only those building materials and conditions that are present, visible, and accessible at the time of the inspection. This report and associated conclusions are based on the visible conditions of the inspected areas and materials and information reported by the client. The inspector does not climb over obstacles, move furnishings or stored items, or go into any area that might present a safety hazard.

MISTX makes no guarantees or warranties, express or implied, regarding the condition of the property. MISTX reserves the right to revise opinions and conclusions if necessary and warranted by the discovery of new or additional circumstances. This report is specific and "limited" in nature and shall not be relied on as a statement that no mold exists in this property. It is always possible that hidden mold growth exists beyond the visibly accessible areas.

This inspection did not include locating/testing of asbestos materials or lead-based paint.

Although some preventative maintenance issues may be noted in this report, this inspection was not a safety or code inspection or a leak detection inspection, and the inspector is not required to identify all potential issues.

Items identified in this Report do not obligate any party to make repairs or take other actions; however, failure to address water intrusion or moisture issues or wet materials noted in this report, may lead to mold growth and/or further damage of the structure. This service does not include follow-up inspections or testing to verify that proper corrections have been made.

This report is provided for the specific benefit of the client named above.

Section 2: Observations and Readings

Areas/Issues Noted for Microbial Sampling

LIVING ROOM [NORTH] [MS-1]

Water damage and/or staining was observed on windowsill and/or around and/or below window.

This condition may indicate a moisture problem that could lead to microbial growth.

Moisture Content: Dry

Humidity this area: 72%
Humidity Outdoor: 89%

Area Affected: 4 LF

Suspected source(s)/cause(s): Exterior Leak around window and/or condensation

*** Humidity level for this area is above the ASHRAE recommended level for habitable spaces. Preferable level is between 30% and 60%.**

LIVING ROOM [NORTH] [MS-3]

Staining or visible signs of water damage was/were observed in this area.

This condition may indicate a moisture intrusion problem. Moisture can lead to microbial growth.

Moisture Content: Dry

Humidity this area: 72%
Humidity Outdoor: 89%

Area Affected: 2 SF

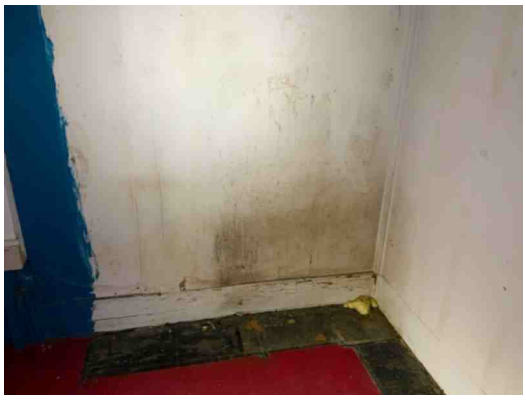
Suspected source(s)/cause(s):
Exterior Roof leak

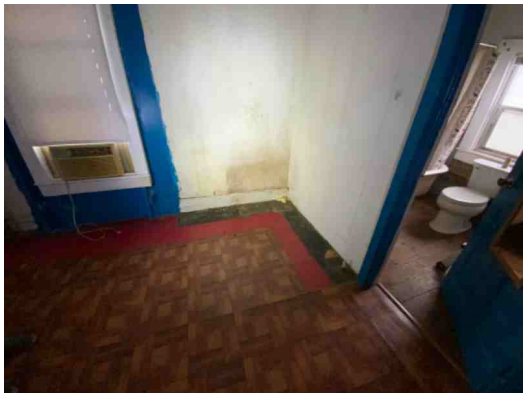
*** Humidity level for this area is above the ASHRAE recommended level for habitable spaces. Preferable level is between 30% and 60%.**

PRIMARY BEDROOM [NORTH] [MS-5]

Suspect mold growth was observed in this area.

Surface sample analysis can confirm the presence of mold and determine what type(s) of mold is/are growing on the material.





Moisture Content: Dry

Humidity this area: 76%
Humidity Outdoor: 89%

Area Affected: 12 SF

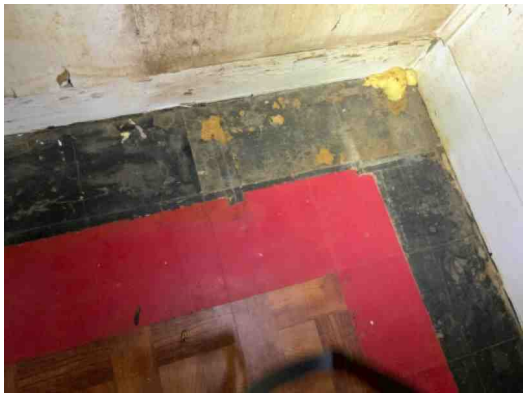
Suspected source(s)/cause(s):
Exterior siding

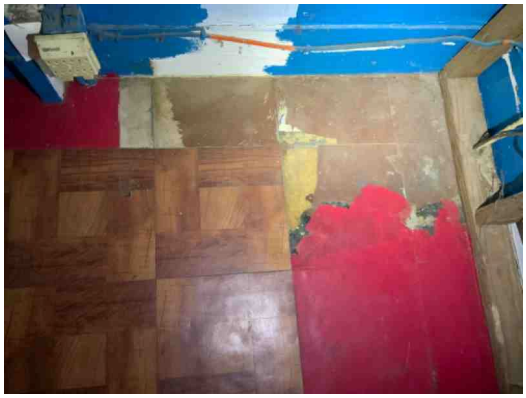
*** Humidity level for this area is above the ASHRAE recommended level for habitable spaces. Preferable level is between 30% and 60%.**

PRIMARY BEDROOM [NORTH] [MS-7]

Stained and/or water damaged flooring was observed in this area.

This condition is an indicator of a past or present water/moisture problem. Moisture on/under floors can lead to microbial growth.





Moisture Content: Dry

Humidity this area: 76%
Humidity Outdoor: 89%

Area Affected: 12 LF

Suspected source(s)/cause(s):
Exterior siding

* Humidity level for this area is above the ASHRAE recommended level for habitable spaces. Preferable level is between 30% and 60%.

PRIMARY BEDROOM [NORTH] [MS-8]

Water damage and/or staining was observed on windowsill and/or around and/or below window.

This condition may indicate a moisture problem that could lead to microbial growth.

Moisture Content: Dry

Humidity this area: 76%
Humidity Outdoor: 89%

Area Affected: 5 SF

Suspected source(s)/cause(s): Exterior Leak around window and/or condensation

* Humidity level for this area is above the ASHRAE recommended level for habitable spaces. Preferable level is between 30% and 60%.

PRIMARY BATHROOM [NORTH] [MS-9]

Stained and/or water damaged flooring was observed in this area.

This condition is an indicator of a past or present water/moisture problem. Moisture on/under floors can lead to microbial growth.

Moisture Content: Dry

Humidity this area: 77%
Humidity Outdoor: 89%

Area Affected: 2 SF

Suspected source(s)/cause(s):
Plumbing leak

* Humidity level for this area is above the ASHRAE recommended level for habitable spaces. Preferable level is between 30% and 60%.

KITCHEN [NORTH] [MS-10]

Suspect mold growth was observed in this area.

Surface sample analysis can confirm the presence of mold and determine what type(s) of mold is/are growing on the material.

Moisture Content: Dry

Humidity this area: 76%
Humidity Outdoor: 89%

Area Affected: 12 SF

Suspected source(s)/cause(s):
Exterior Roof leak

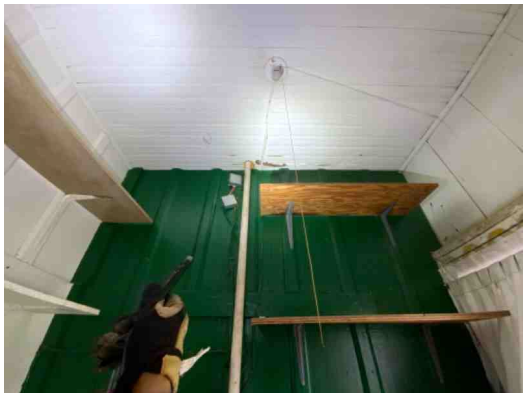
*** Humidity level for this area is above the ASHRAE recommended level for habitable spaces. Preferable level is between 30% and 60%.**

LAUNDRY ROOM [NORTH] [MS-12]

Actively wet building materials present in this area.

This condition indicates an active water intrusion issue.

NOTICE: All wet materials should be dried out within 24-48 hours to prevent mold growth.



Moisture Content: Wet

Humidity this area: 80%
Humidity Outdoor: 89%

Area Affected: 3 LF

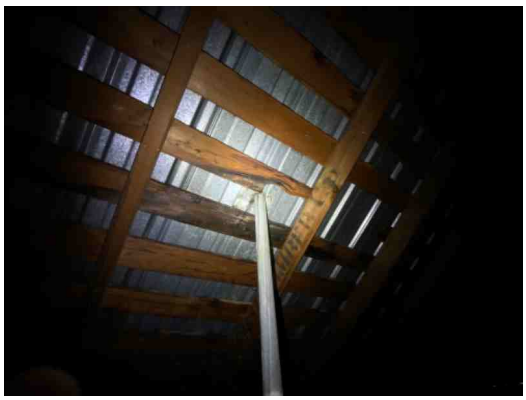
Suspected source(s)/cause(s):
Exterior Roof leak

* Humidity level for this area is above the ASHRAE recommended level for habitable spaces. Preferable level is between 30% and 60%.

ATTIC [MS-13]

Actively wet building materials were observed under the structure.

Wet building materials within a structure provide a perfect environment for microbial growth.



Moisture Content: Wet

Humidity this area: 66%
Humidity Outdoor: 89%

Area Affected: 4 SF

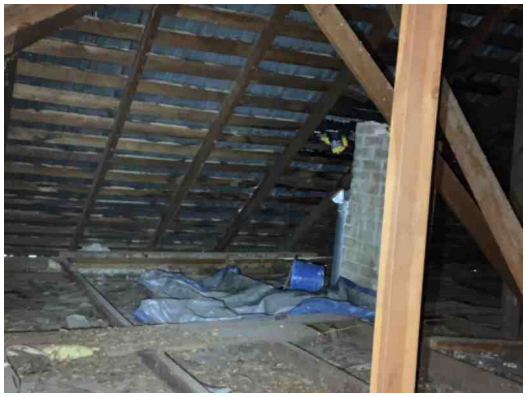
Suspected source(s)/cause(s): Exterior Gutter or roof drain leak

ATTIC [MS-14]

Actively wet building materials present in this area.

This condition indicates an active water intrusion issue.

NOTICE: All wet materials should be dried out within 24-48 hours to prevent mold growth.



Moisture Content: Wet

Humidity this area: 66%
Humidity Outdoor: 89%

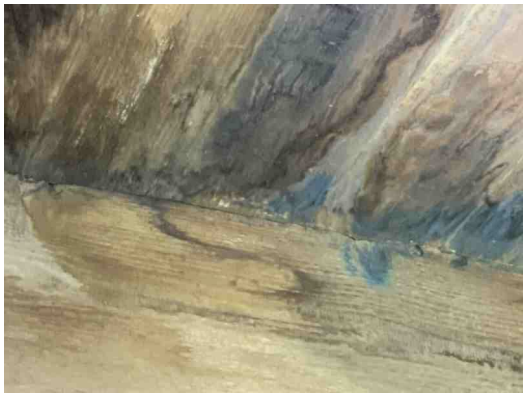
Area Affected: 12 SF

Suspected source(s)/cause(s):
Exterior Roof leak

CRAWLSPACE [NORTH] [MS-15]

Suspect mold growth was observed in this area.

Surface sample analysis can confirm the presence of mold and determine what type(s) of mold is/are growing on the material.



Moisture Content: Dry

Humidity this area: 72%
Humidity Outdoor: 89%

Area Affected: 1 SF

Suspected source(s)/cause(s):
Condensation

EXTERIOR [NORTH] [PM-1]

Splitting/bowing, water damaged and/or deteriorated siding materials were observed on exterior walls.

This condition can allow water to infiltrate the interior of the structure and lead to excessive moisture and microbial growth.

Consider contacting a licensed contractor to assess the condition of the siding materials on the exterior walls.

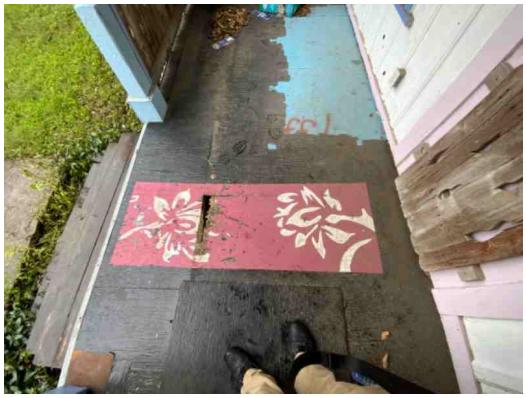
Humidity Outdoor: 89%

EXTERIOR [NORTH] [PM-2]

Humidity Outdoor: 89%

Stained and/or water damaged flooring was observed in this area.

This condition is an indicator of a past or present water/moisture problem. Moisture on/under floors can lead to microbial growth.



EXTERIOR [NORTH] [PM-3]

Humidity Outdoor: 89%

Damaged window frames was/were observed.

Windows should be properly sealed to prevent water from entering the living spaces of a structure. Excessive water in a structure's building materials can lead to microbial growth.

This issue was noted for preventative maintenance purposes. Consider consulting a licensed contractor for evaluation and correction or repair.

EXTERIOR [NORTH] [PM-4]

Humidity Outdoor: 89%

Plants/trees are coming into contact with the roof/walls.

Plants/trees excrete enzymes that can deteriorate building materials. In addition, they can trap water against the structure. This can create an environment conducive to microbial growth.

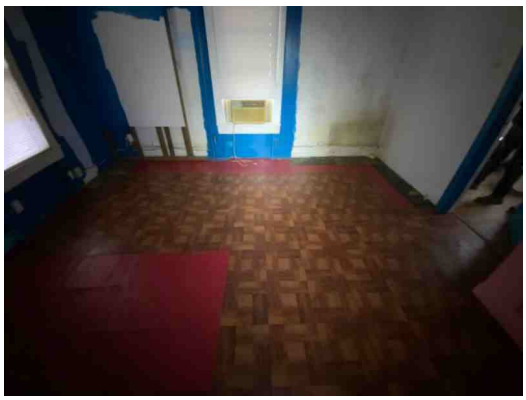
Consider trimming back trees/plants and removing any plants growing directly on the exterior.

PRIMARY BEDROOM [NORTH] [PM-5]

Floor appears to be sloped and/or uneven.

Sloping and/or uneven floors may be an indication of a subterranean moisture problem that could compromise the structure and provide an environment for microbial growth.

This issue was noted for preventative maintenance purposes. Consider consulting a licensed contractor for evaluation and correction or repair.



Moisture Content: Dry

Humidity this area: 76%
Humidity Outdoor: 89%

Area Affected: 12 LF

Suspected source(s)/cause(s):
Floor joists

* Humidity level for this area is above the ASHRAE recommended level for habitable spaces. Preferable level is between 30% and 60%.

Section 3: Mold Samples

Currently, there are no generally accepted standards or government regulations for "normal" or "safe" airborne mold spore exposure levels. As such, spore counts are compared to a baseline, outdoor sample. In general, indoor spore counts should be statistically similar to the outdoor counts and proportionately similar in terms of spore types.

- If the indoor results are **statistically similar** to the outdoor results, we consider the airborne mold spore levels to be normal.
- When the airborne mold levels indoors are not statistically similar, the results may indicate an **indoor source** of mold, which is amplifying the airborne levels of one or more types of mold.
- If there are **water marker mold types (Stachybotrys, Chaetomium, Ulocladium, and Memnoniella)** present in an indoor air sample, this is usually a clear indicator of a moisture and mold concern in the area tested.
- When the indoor levels of one particular type of mold are **significantly higher** than the outdoor levels of the same mold type, this is usually a **clear indicator** of a mold concern in the area tested.

Air Samples

Lab Code	Location	Comments
OS01	**Outdoor Control Sample**	**Recommended by inspector and approved by client**
ST01	**Kitchen**	**Recommended by inspector and approved by client**
ST02	**Primary Bedroom**	**Recommended by inspector and approved by client**
ST03	**Primary Bathroom**	**Recommended by inspector and approved by client**
ST04	**Living Room**	**Recommended by inspector and approved by client**

Surface samples should be understood as either present or absent. It is not the amount of mold detected or not detected on a surface sample that indicates a concern, but whether or not mold growth is present. The EPA states that mold should not be growing inside a structure; therefore, when mold growth is found inside a structure, the goal should be to remove the mold and remedy the cause.

Surface Samples

Lab Code	Location	Comments
DE01	**Kitchen (Ceiling)**	**Recommended by inspector and approved by client**
DE02	**Primary Bedroom (Wall)**	**Recommended by inspector and approved by client**
DE03	**Crawlspace (Floor truss)**	**Recommended by inspector and approved by client**

For detailed sample results, please see the attached independent laboratory report.

Section 4: Methodologies

General Methodology

A mold assessment normally includes the following:

- Visual inspection and procedural assessment focused on the discovery of signs of mold growth and moisture intrusion
- Use of a moisture meter to help locate areas of actively wet building materials and to test suspect areas
- Analytical analysis by collection of microbial samples requested by client and submission of samples to a licensed microbiology lab for analysis
- Provision of a written report of the limited mold inspection findings and, where applicable, a lab report of the sample analysis

Laboratory Services

Microbial samples collected by MISTX are submitted under chain of custody to a laboratory licensed by the state of Texas. If samples were collected, the laboratory's report is included as an attachment to this report.

Sampling Methodologies

Air Samples – Air sampling for total fungi is designed to count and identify the presence of total fungal material (i.e. culturable and non-culturable spores) in a measured volume of air. The air samples are collected via the spore trap method with the use of a Zefon Air-O-Cell. Airflow through the cassette is produced by an electrically powered air-sampling device set and calibrated to a flow rate of 15 liters per minute. The sample cassettes are then sealed and submitted to the laboratory via a chain of custody for analysis.

Wall/Ceiling Cavity Samples – Cavity samples are collected by drilling a small (1/4") hole into the drywall or other material, then inserting a plastic tube into the hole through which an air sample is pulled. The cavity air sample is collected using the same media and method as stated above for standard air sampling.

Surface Swab Samples – Surface swab samples are collected using sterile swabs enclosed in sterile tubes which contain a transport media solution. These samples are collected by moistening the swab with the provided solution and then swabbing the suspect area. The swabs are then inserted into the sterile tubes, sealed, and submitted to the laboratory via a chain of custody for analysis.

Surface Tape Samples– Surface tape samples collected using a forensic tape lift kit. These samples are collected by pressing the tape media slide to the surface of a building material. The Bio-Tape slide is then sealed in its included case and submitted to the laboratory via a chain of custody for analysis.

Relative Humidity Readings

Relative humidity (RH) readings were obtained from both the interior and exterior of the property. The RH was measured and recorded to determine the potential effect it may have on microbial amplification.

Guidance on RH in occupied buildings is provided by the American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE) in the ANSI/ASHRAE Standard 62.1-2016, *Ventilation for Acceptable Indoor Air Quality*. The RH in habitable spaces preferably should be maintained between 30% and 60% to minimize the growth of allergenic and pathogenic organisms (e.g., dust mites, fungi and associated mycotoxins).

Moisture Content Readings

A moisture meter was utilized on this project to measure the moisture content (MC) of certain building materials (walls, ceilings, flooring, etc.) throughout the structure, especially areas suspect of water intrusion. Measurement and recording of MC is performed to detect building materials containing unacceptable levels of moisture.

Fungal growth requires moisture, a food source, and fungal spores. Thus, wood and building materials that are continuously dry should not promote microbial growth. Construction materials with elevated MC are likely to promote fungal growth. It is recommended that the source of moisture be located and corrected immediately.

NOTE: When a moisture meter is used in a non-penetrating manner, it is possible to obtain a reading of "Red" even if there is no excessive moisture. This can occur when there are certain types of materials below the surface being measured; such as metal. Moisture readings should be used as a guide for further testing and investigation only.

Infrared Camera Readings

An infrared camera was utilized on this project to measure temperature anomalies in certain building materials (walls, ceilings, flooring, etc.) throughout the structure, especially areas suspect of moisture or water intrusion. Thermography is performed to assist in locating moisture issues in the structure.

Section 5: Applicable Regulations

Asbestos Containing Materials in Single Family Dwellings

Single family dwellings, that are to remain single family dwellings, do not fall under the definition of a "public building" or "commercial building" as defined in the Texas Asbestos Health Protection Rules (TAHPR). Therefore, TAHPR does not require suspect materials to be sampled prior to disturbance or removed. However, federal Occupational Safety and Health Administration (OSHA) and Environmental Protection Agency (EPA) regulations concerning asbestos do apply, and any contractor that will disturb the material must be advised that it contains asbestos. Materials such as sheet rock wall and ceiling systems, and flooring materials and mastics are just some examples of materials that could contain asbestos.

Texas Mold Regulations

Under the *Rules* for Mold Assessors and Remediators, *Administrative Rules* of the Texas Department of Licensing and Regulation, 16 Texas Administrative Code, Chapter 78 (Effective November 1, 2017), https://www.tdlr.texas.gov/mld/mldrules090118.pdf, all companies and individuals who perform mold-related activities must have the appropriate licensing from the TDLR. For more information about mold and the *Rules* for Assessors and Remediators, visit the TDLR website: https://www.tdlr.texas.gov/mld/mldrules.htm.

NOTICE: This Report is NOT A MOLD REMEDIATION PROTOCOL. If there is less than 25 contiguous square feet of visible mold growth, hiring a licensed Mold Remediation Contractor is not required by the Texas *Rules*.

However: All licensed Mold Remediation Contractors must follow a Mold Remediation Protocol, and the Mold Remediation Contractor must follow all *Rules*. This includes developing a work plan which follows a Protocol developed by a licensed Mold Assessment Consultant," per the *Rules*. A Mold Remediation Protocol is a detailed scope of work for the mold remediation work that is needed.

If desired, MISTX can write a Mold Remediation Protocol for this project upon request. Fees are based on the size of the project, the estimated time it will take to write the Protocol and manage the project.

Mold Inspection Sciences Texas, Inc.
Lab Report
PO Box 270664
Louisville, CO 80027 USA
(512) 535-2493

INSPECT. ANALYZE. INTERPRET.

MoldREPORT™

Eurofins EMLab P&K

www.MoldREPORT.com

info@MoldREPORT.com

Approved by:

Regional Vice President
Dr. Kamash Pillai

Dates of Analysis:
MoldReport Spore trap: 11-23-2022

Service SOPs: MoldReport Spore trap (EM-MY-S-1038)
AIHA-LAP, LLC accredited service, Lab ID #193549

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. Due to the nature of the analyses performed, field blank correction of results is not applied. The results relate only to the samples as received and tested. Information supplied by the client which can affect the validity of results: sample air volume.

The analytical sensitivity is the spores/m^3 divided by the raw count, expressed in spores/m^3, per spore and per sample.

Client: Mold Inspection Sciences Texas, Inc.
Contact: Lab Report
Project: 20221121_ILIA-BELOV_2003-CANTERBURY-ST; 2003 Canterbury St Austin, TX 78702
Date of Sampling: 11-21-2022
Date of Receipt: 11-22-2022
Date of Report: 11-23-2022

MoldREPORT
Eurofins EMLab P & K
3113 Red Bluff Road, Suite B, Pasadena, TX 77503
(800) 651-4802 Fax (623) 780-7695

Laboratory Results

MoldREPORT: Spore Trap Analysis

Location:	OS01: Outdoor Control Sample 35238070		ST01: Kitchen [North] 35238084		ST02: Primary Bedroom [North] 35238073	
Comments (see below)	A		B		C	
Lab ID-Version‡:	14920964-1		14920965-1		14920966-1	
Analysis Date:	11/23/2022		11/23/2022		11/23/2022	
Spore types detected:	raw ct.	per m3	raw ct.	per m3	raw ct.	per m3
Aureobasidium	-	-	-	-	-	-
Basidiospores	-	-	-	-	1	53
Chaetomium	-	-	2	27	-	-
Cladosporium	2	110	15	240	3	160
Fusarium	-	-	-	-	-	-
Penicillium/Aspergillus types	-	-	51	680	10	130
Scopulariopsis	-	-	-	-	-	-
Stachybotrys	-	-	28	370	18	240
Trichoderma	-	-	-	-	-	-
Ulocladium	-	-	-	-	-	-
Others	16	290	10	170	9	160
§ Total:		400		1,500		750
Additional Information:						
Hyphal fragments	40		27		27	
Skin cells	13 - 67		80 - 4,000		80 - 4,000	
Pollen	< 13		27		< 13	
Background debris (1-4)†	2		2		2	
Limit of detection	13		13		13	
Sample volume (liters)	75		75		75	

Comments: A) Analysis of replicate sample is delayed. B) 14 of the raw count *Cladosporium* spores were present as a single clump. 51 of the raw count *Penicillium/Aspergillus* type spores were present as a single clump. Analysis of replicate sample is delayed. C) 10 of the raw count *Penicillium/Aspergillus* type spores were present as a single clump. Analysis of replicate sample is delayed.

‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".
† Background debris is an indication of the amounts of non-biological particulate matter present on the slide (dust in the air) and is graded from 1 to 4 with 4 indicating the largest amounts.

The analytical sensitivity is the spores/m^3 divided by the raw count, expressed in spores/m^3, per spore and per sample.

§ Total has been rounded to two significant figures to reflect analytical precision.

Client: Mold Inspection Sciences Texas, Inc.
Contact: Lab Report
Project: 20221121_ILIA-BELOV_2003-CANTERBURY-ST; 2003 Canterbury St Austin, TX 78702
Date of Sampling: 11-21-2022
Date of Receipt: 11-22-2022
Date of Report: 11-23-2022

MoldREPORT
Eurofins EMLab P & K
3113 Red Bluff Road, Suite B, Pasadena, TX 77503
(800) 651-4802 Fax (623) 780-7695

Laboratory Results

MoldREPORT: Spore Trap Analysis

Location:	ST03: Primary Bathroom [North] 35238040		ST04: Living Room [North] 35238101	
Comments (see below)	D		A	
Lab ID-Version‡:	14920967-1		14920968-1	
Analysis Date:	11/23/2022		11/23/2022	
Spore types detected:	raw ct.	per m3	raw ct.	per m3
Aureobasidium	-	-	-	-
Basidiospores	1	53	-	-
Chaetomium	-	-	1	13
Cladosporium	16	370	4	210
Fusarium	-	-	-	-
Penicillium/Aspergillus types	77	1,100	-	-
Scopulariopsis	2	27	-	-
Stachybotrys	13	170	38	510
Trichoderma	-	-	-	-
Ulocladium	-	-	-	-
Others	2	27	4	53
§ Total:		1,700		790
Additional Information:				
Hyphal fragments	80		-	
Skin cells	80 - 4,000		80 - 4,000	
Pollen	< 13		< 13	
Background debris (1-4)†	2		2	
Limit of detection	13		13	
Sample volume (liters)	75		75	

Comments: D) 12 of the raw count *Cladosporium* spores were present as a single clump. 76 of the raw count *Penicillium/ Aspergillus* type spores were present as a single clump. Analysis of replicate sample is delayed. A) Analysis of replicate sample is delayed.

‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".
† Background debris is an indication of the amounts of non-biological particulate matter present on the slide (dust in the air) and is graded from 1 to 4 with 4 indicating the largest amounts.

The analytical sensitivity is the spores/m^3 divided by the raw count, expressed in spores/m^3, per spore and per sample.

§ Total has been rounded to two significant figures to reflect analytical precision.

Laboratory Results

Basidiospores (basidiomycetes): Basidiospores are extremely common outdoors and originate from fungi in gardens, forests, and woodlands. It is rare for the source of basidiospores to be indoors. However, basidiospores may be an indicator of wood decay.

Cladosporium: One of the most commonly found molds outdoors and frequently found growing indoors. Spores from Cladosporium are generally present in outdoor and indoor air, even in relatively clean, mold-growth-free, indoor environments. Levels vary based upon activity levels, weather conditions, dustiness, outside air exchange rates, and other factors.

Penicillium/Aspergillus types: Penicillium and Aspergillus are among the most common molds found growing both indoors and outdoors (even in relatively clean, mold-growth-free, indoor environments). Levels vary based upon activity levels, dustiness, weather conditions, outside air exchange rates, and other factors.

Stachybotrys and other marker types: Certain types of mold, such as Aureobasidium, Chaetomium, Fusarium, Trichoderma, and Ulocladium, are generally found in very low numbers outdoors. Consequently their presence indoors, even in relatively low numbers, is often an indication that these molds are originating from growth indoors. When present, these mold types are often the clearest indicator of a mold problem.

Others: Molds in the "Others" category are generally found outdoors in moderate numbers, and are therefore not considered markers of indoor growth.

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Thank you for choosing MoldREPORT™ from Eurofins EMLab P&K. Our mission is to provide industry leadership for the assessment of mold in the home indoor environment.

Your MoldREPORT™ is designed and intended for use by professional inspectors in office and residential home inspections to help in the assessment of mold growth in the living areas sampled by professional inspectors. Our laboratory analysis is based on the samples submitted to Eurofins EMLab P&K. Please read the entire report to fully understand the complete MoldREPORT™ process. The following is a summary of the report sections:

1. Detailed Results of Sample Analysis - Laboratory results from the samples collected at the site.

2. Understanding Your Sample Analysis Results - Detailed summary of how to understand the analytical results from the air samples and/or surface samples including interpretive guidelines.

3. Important Information, Terms and Conditions - General information to help you understand and interpret your MoldREPORT™, including important terms, conditions and applicable legal provision relating to this report.

4. Scope and Limitations - Important information regarding the scope of the MoldREPORT™ system, and limitations
of mold inspection, air sampling, and surface sampling.

5. Glossary - Definitions and descriptions of frequently used terms and commonly found mold.

6. References and Resources - Literature, websites, and other materials that can provide more in-depth information about mold and indoor air quality.

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Summary of Sample Analysis Results

Do not take any action based on the results of this report until you have read the entire report.

Air Sample Summary:

The MoldSCORE™ was in the HIGH range for the following area(s): ST01, ST02, ST03, ST04. A high MoldSCORE™ indicates a high likelihood of mold growth in the area tested at the time of the inspection. If mold growth is in fact present, it should be cleaned or physically removed using appropriate controls and precautions by a trained professional and any associated water source that led to the problem should also be corrected.

Please see the sections titled "Detailed Results of the Air Sample Analysis" and "Understanding Your Air Sample Analysis Results" for important additional information.

Location	MoldSCORE™		Exposure Level		
	Lower <110 — 200 — Higher 300	Mold Score	Lower <200 — 1K — 10K — Higher >70K	Location spores/m3	Outside spores/m3
ST01: Kitchen [North] 35238084 * see p. 4 for details		300		1,490	400
ST02: Primary Bedroom [North] 35238073 * see p. 5 for details		297		742	400
ST03: Primary Bathroom [North] 35238040 * see p. 6 for details		286		1,746	400
ST04: Living Room [North] 35238101 * see p. 7 for details		300		786	400

Surface Sample Summary:

The surface sample results of DE01, DE02, DE03 indicated mold growth on the surface(s) sampled at the time of sampling.

Please see the sections titled "Detailed Results of the Surface Sample Analysis", "Understanding Your Surface Sample Analysis Results", "Important Information, Terms and Conditions" and "Scope and Limitations" for additional information.

Location	Mold Growth	Dominant Types
DE01: Kitchen (Ceiling) [North] * see p. 12 for details	Mold Growth	Stachybotrys species
DE02: Primary Bedroom (Wall) [North] * see p. 13 for details	Mold Growth	Cladosporium species Papulaspora-like species
DE03: Crawlspace (Crawl space) [North] * see p. 14 for details	Mold Growth	Colorless spore type, ID unknown Brown hyphae with no associated spores, ID unknown.

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Detailed Results of the Air Sample Analysis

Location	Overall Mold Source Assessment* (Likelihood spores originated inside) Mold Score	Overall Exposure Level (Shown on a log scale) Location spores/m3	Outside spores/m3
ST01: Kitchen [North] 35238084	300	1,490	400

Indicators of Mold Growth Indoors

	Indicator Mold Source Assessment* (Likelihood spores originated inside) Mold Score	Indicator Exposure Level (Shown on a log scale) Location spores/m3	Outside spores/m3
A) Penicillium/Aspergillus types**	201	680	< 13
B) Cladosporium species spores	114	240	110
C) Basidiospores	100	< 13	< 13
D) "Marker" spore types***	300	397	< 13

"Markers" with MoldSCORE™ > 100 (maximum of three listed): 1)Stachybotrys 2)Chaetomium

E) "Other" spore types***,****	130	120	186

"Others" with MoldSCORE™ > 100 (maximum of five listed): 1)Smuts, Periconia, Myxomycetes 2)Alternaria 3)Curvularia 4)Bipolaris/ Drechslera group 5)Torula

Other Sample Information

Sample clarity & visibility

	Good	Moderate	Poor
Location		X	
Outside		X	

"Good" = background debris is light enough to pose no difficulty in analyzing air samples.
"Poor" = background debris so heavy that it poses a significant difficulty in analyzing the air sample accurately. Results are most likely lower limits.

Other "normal trapping" spores

Exposure Level (Highly unlikely to be from indoors) Location spores/m3	Outside spores/m3
53	110

	Location	Outside
Sample volume (liters)	75	75

Comments

Location	14 of the raw count *Cladosporium* spores were present as a single clump. 51 of the raw count *Penicillium/Aspergillus* type spores were present as a single clump. Analysis of replicate sample is delayed.
Outside	Analysis of replicate sample is delayed.

* Rated on a scale from low to high. A MoldSCORE™ rating of <150 is low and indicates a low probability of spores originating inside. A MoldSCORE™ rating of >250 is high and indicates a high probability that the spores originated from inside, presumably from indoor mold growth. A MoldSCORE™ between 150 and 250 indicates a moderate likelihood of indoor fungal growth. Eurofins EMLab P&K's MoldSCORE™ analysis is NOT intended for wall cavity samples. It is intended for ambient air samples in residences. Using the MoldSCORE™ analysis on other samples (like wall cavity samples) will lead to misleading results.

** The spores of *Penicillium* and *Aspergillus* (and others such as *Acremonium* and *Paecilomyces)* are small and round with very few distinguishing characteristics. They cannot be differentiated by spore trap sampling methods. Also some species with very small spores are easily missed, and may be undercounted. The *Penicillium/Aspergillus* indicator operates on the assumption that the majority of the spores in this category are, in fact, *Penicillium* or *Aspergillus.*

*** The spores reported in this category come from many different mold types. As a result, the mold types represented by the counts for the "Location" sample may be different than the mold types represented by the counts for the outside sample.

**** The spores of smuts, *Periconia*, and myxomycetes look similar and cannot generally be distinguished by spore trap analysis. Smuts are plant pathogens and are not likely to be on indoor surfaces. *Periconia* is rarely found growing indoors. However, myxomycetes, the spores of which look similar, can occasionally grow indoors. Because there is a small probability of indoor sources, these spore types are indicated in the "other" spore types category. False positives may result if the spores are smuts, not myxomycetes.

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Detailed Results of the Air Sample Analysis

Location	Overall Mold Source Assessment* (Likelihood spores originated inside) Mold Score	Overall Exposure Level (Shown on a log scale) Location spores/m3	Outside spores/m3
ST02: Primary Bedroom [North] 35238073	297	742	400

Indicators of Mold Growth Indoors

	Indicator Mold Source Assessment* (Likelihood spores originated inside) Mold Score	Indicator Exposure Level (Shown on a log scale) Location spores/m3	Outside spores/m3
A) Penicillium/Aspergillus types**	121	130	< 13
B) Cladosporium species spores	109	160	110
C) Basidiospores	106	53	< 13
D) "Marker" spore types***	297	240	< 13

"Markers" with MoldSCORE™ > 100 (maximum of three listed): 1)Stachybotrys

E) "Other" spore types***,****	122	106	186

"Others" with MoldSCORE™ > 100 (maximum of five listed): 1)Smuts, Periconia, Myxomycetes 2)Alternaria 3)Bipolaris/Drechslera group 4)Nigrospora

Other Sample Information

Sample clarity & visibility

	Good	Moderate	Poor
Location		X	
Outside		X	

"Good" = background debris is light enough to pose no difficulty in analyzing air samples.
"Poor" = background debris so heavy that it poses a significant difficulty in analyzing the air sample accurately. Results are most likely lower limits.

Other "normal trapping" spores

Exposure Level (Highly unlikely to be from indoors) Location spores/m3	Outside spores/m3
53	110

	Location	Outside
Sample volume (liters)	75	75

Comments

Location	10 of the raw count *Penicillium/Aspergillus* type spores were present as a single clump. Analysis of replicate sample is delayed.
Outside	Analysis of replicate sample is delayed.

* Rated on a scale from low to high. A MoldSCORE™ rating of <150 is low and indicates a low probability of spores originating inside. A MoldSCORE™ rating of >250 is high and indicates a high probability that the spores originated from inside, presumably from indoor mold growth. A MoldSCORE™ between 150 and 250 indicates a moderate likelihood of indoor fungal growth. Eurofins EMLab P&K's MoldSCORE™ analysis is NOT intended for wall cavity samples. It is intended for ambient air samples in residences. Using the MoldSCORE™ analysis on other samples (like wall cavity samples) will lead to misleading results.

** The spores of *Penicillium* and *Aspergillus* (and others such as *Acremonium* and *Paecilomyces)* are small and round with very few distinguishing characteristics. They cannot be differentiated by spore trap sampling methods. Also some species with very small spores are easily missed, and may be undercounted. The *Penicillium/Aspergillus* indicator operates on the assumption that the majority of the spores in this category are, in fact, *Penicillium* or *Aspergillus.*

*** The spores reported in this category come from many different mold types. As a result, the mold types represented by the counts for the "Location" sample may be different than the mold types represented by the counts for the outside sample.

**** The spores of smuts, *Periconia*, and myxomycetes look similar and cannot generally be distinguished by spore trap analysis. Smuts are plant pathogens and are not likely to be on indoor surfaces. *Periconia* is rarely found growing indoors. However, myxomycetes, the spores of which look similar, can occasionally grow indoors. Because there is a small probability of indoor sources, these spore types are indicated in the "other" spore types category. False positives may result if the spores are smuts, not myxomycetes.

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Detailed Results of the Air Sample Analysis

Location	Overall Mold Source Assessment* (Likelihood spores originated inside) Mold Score	Overall Exposure Level (Shown on a log scale) Location spores/m3	Outside spores/m3
ST03: Primary Bathroom [North] 35238040	286	1,746	400

Indicators of Mold Growth Indoors

	Indicator Mold Source Assessment* (Likelihood spores originated inside) Mold Score	Indicator Exposure Level (Shown on a log scale) Location spores/m3	Outside spores/m3
A) Penicillium/Aspergillus types**	246	1,100	< 13
B) Cladosporium species spores	122	370	110
C) Basidiospores	106	53	< 13
D) "Marker" spore types***	286	197	< 13

"Markers" with MoldSCORE™ > 100 (maximum of three listed): 1)Stachybotrys 2)Scopulariopsis

E) "Other" spore types***,****	109	26	186

"Others" with MoldSCORE™ > 100 (maximum of five listed): 1)Curvularia 2)Nigrospora

Other Sample Information

Sample clarity & visibility

	Good	Moderate	Poor
Location		X	
Outside		X	

"Good" = background debris is light enough to pose no difficulty in analyzing air samples.
"Poor" = background debris so heavy that it poses a significant difficulty in analyzing the air sample accurately. Results are most likely lower limits.

Other "normal trapping" spores

Exposure Level (Highly unlikely to be from indoors) Location spores/m3	Outside spores/m3
< 13	110

	Location	Outside
Sample volume (liters)	75	75

Comments

Location	12 of the raw count *Cladosporium* spores were present as a single clump. 76 of the raw count *Penicillium/Aspergillus* type spores were present as a single clump. Analysis of replicate sample is delayed.
Outside	Analysis of replicate sample is delayed.

* Rated on a scale from low to high. A MoldSCORE™ rating of <150 is low and indicates a low probability of spores originating inside. A MoldSCORE™ rating of >250 is high and indicates a high probability that the spores originated from inside, presumably from indoor mold growth. A MoldSCORE™ between 150 and 250 indicates a moderate likelihood of indoor fungal growth. Eurofins EMLab P&K's MoldSCORE™ analysis is NOT intended for wall cavity samples. It is intended for ambient air samples in residences. Using the MoldSCORE™ analysis on other samples (like wall cavity samples) will lead to misleading results.

** The spores of *Penicillium* and *Aspergillus* (and others such as *Acremonium* and *Paecilomyces)* are small and round with very few distinguishing characteristics. They cannot be differentiated by spore trap sampling methods. Also some species with very small spores are easily missed, and may be undercounted. The *Penicillium/Aspergillus* indicator operates on the assumption that the majority of the spores in this category are, in fact, *Penicillium* or *Aspergillus.*

*** The spores reported in this category come from many different mold types. As a result, the mold types represented by the counts for the "Location" sample may be different than the mold types represented by the counts for the outside sample.

**** The spores of smuts, *Periconia*, and myxomycetes look similar and cannot generally be distinguished by spore trap analysis. Smuts are plant pathogens and are not likely to be on indoor surfaces. *Periconia* is rarely found growing indoors. However, myxomycetes, the spores of which look similar, can occasionally grow indoors. Because there is a small probability of indoor sources, these spore types are indicated in the "other" spore types category. False positives may result if the spores are smuts, not myxomycetes.

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Detailed Results of the Air Sample Analysis

Location	Overall Mold Source Assessment* (Likelihood spores originated inside) Mold Score	Overall Exposure Level (Shown on a log scale) Location spores/m3	Outside spores/m3
ST04: Living Room [North] 35238101	300	786	400

Indicators of Mold Growth Indoors

	Indicator Mold Source Assessment* (Likelihood spores originated inside) Mold Score	Indicator Exposure Level (Shown on a log scale) Location spores/m3	Outside spores/m3
A) Penicillium/Aspergillus types**	100	< 13	< 13
B) Cladosporium species spores	112	210	110
C) Basidiospores	100	< 13	< 13
D) "Marker" spore types***	300	523	< 13

"Markers" with MoldSCORE™ > 100 (maximum of three listed): 1)Stachybotrys 2)Chaetomium

E) "Other" spore types***,****	118	53	186

"Others" with MoldSCORE™ > 100 (maximum of five listed): 1)Nigrospora 2)Alternaria

Other Sample Information

Sample clarity & visibility

	Good	Moderate	Poor
Location		X	
Outside		X	

"Good" = background debris is light enough to pose no difficulty in analyzing air samples.
"Poor" = background debris so heavy that it poses a significant difficulty in analyzing the air sample accurately. Results are most likely lower limits.

Other "normal trapping" spores

Exposure Level (Highly unlikely to be from indoors) Location spores/m3	Outside spores/m3
< 13	110

	Location	Outside
Sample volume (liters)	75	75

Comments

Location	Analysis of replicate sample is delayed.
Outside	Analysis of replicate sample is delayed.

* Rated on a scale from low to high. A MoldSCORE™ rating of <150 is low and indicates a low probability of spores originating inside. A MoldSCORE™ rating of >250 is high and indicates a high probability that the spores originated from inside, presumably from indoor mold growth. A MoldSCORE™ between 150 and 250 indicates a moderate likelihood of indoor fungal growth. Eurofins EMLab P&K's MoldSCORE™ analysis is NOT intended for wall cavity samples. It is intended for ambient air samples in residences. Using the MoldSCORE™ analysis on other samples (like wall cavity samples) will lead to misleading results.

** The spores of *Penicillium* and *Aspergillus* (and others such as *Acremonium* and *Paecilomyces)* are small and round with very few distinguishing characteristics. They cannot be differentiated by spore trap sampling methods. Also some species with very small spores are easily missed, and may be undercounted. The *Penicillium/Aspergillus* indicator operates on the assumption that the majority of the spores in this category are, in fact, *Penicillium* or *Aspergillus.*

*** The spores reported in this category come from many different mold types. As a result, the mold types represented by the counts for the "Location" sample may be different than the mold types represented by the counts for the outside sample.

**** The spores of smuts, *Periconia*, and myxomycetes look similar and cannot generally be distinguished by spore trap analysis. Smuts are plant pathogens and are not likely to be on indoor surfaces. *Periconia* is rarely found growing indoors. However, myxomycetes, the spores of which look similar, can occasionally grow indoors. Because there is a small probability of indoor sources, these spore types are indicated in the "other" spore types category. False positives may result if the spores are smuts, not myxomycetes.

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Understanding Your Air Sample Analysis Results

Description of the Air MoldREPORT™ Analysis
Mold spores 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. Generally, in "normal" or "clean" indoor environments, indoor spore levels are lower, on average, than outdoor levels. However, even the most simple rules (such as "inside/outside" ratios) are not always appropriate for determining whether there is a source of mold growth indoors, and may provide 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).

MoldREPORT™ is designed and intended to provide an easily understood report for residential home inspections to help in the assessment of mold growth in the living areas sampled. MoldREPORT™ relies on non-invasive and non-destructive tests, so it cannot guarantee that hidden mold problems will be detected and reported. MoldREPORT™ results apply only to the rooms or areas tested, at the time of sampling. Factors taken into consideration include, but are not limited to, the distribution of spore types, absolute levels inside and outside, relative levels inside and outside, the range and variation of spore levels that normally occur outside, and the types of spores present.

Providing you with a helpful, understandable and top quality interpretation requires special expertise. Eurofins EMLab P&K recognizes this and has taken the following steps to provide the best possible interpretation of your air sampling results.

1. Your samples were analyzed by Eurofins EMLab P&K,

2. We utilize the proprietary MoldREPORT™ analysis system, which was developed by a team including leading professionals in the indoor air quality (IAQ) industry.

MoldSCORE™
The MoldSCORE™ indicates the likelihood, based upon the air sample laboratory data, that there is unusual or excessive mold growth in the properly sampled indoor area(s). It is calculated using Eurofins EMLab P&K's proprietary MoldREPORT™ system, based upon the indicator scores described in the following paragraphs. When the on-site inspection and sampling are done properly, MoldREPORT™ is less likely to give false results than other, simpler methods of interpretation often employed for routine home inspections, such as ratio analysis. It is important to bear in mind that any analytical method, findings, and interpretation should be used with a degree of caution and common sense. Any decisions related to health should be made in consultation with a medical doctor, and nothing in this report is intended to provide medical advice or indicate whether a medical or safety problem exists.

Descriptions of the indicators:

Quantity and concentration of *Penicillium/Aspergillus* spore types
This score indicates the likelihood that spores of *Penicillium* or *Aspergillus* present in the indoor sample originated from indoor sources. A high score suggests that there is a high probability that *Penicillium* or *Aspergillus* is originating indoors, such as from active mold growth. A low score indicates that the spores present are more likely to have originated from outdoor sources and come inside through doors and windows, carried in on people's clothing, or similar methods. *Penicillium* and *Aspergillus* are among the most common molds found growing indoors and are one of the more commonly found molds outside as well. Their spores are frequently present in both outdoor and indoor air, even in relatively clean, mold-growth-free, indoor environments. Additionally, their levels vary significantly based upon activity levels, dustiness, weather conditions, outside air exchange rates, and other factors.

Understanding Your Air Sample Analysis Results (continued)

Quantity and concentration of *Cladosporium* spores
This score indicates the likelihood that spores of *Cladosporium* present in the indoor sample originated from indoor sources. A high rating indicates that there is probably a source of *Cladosporium* spores in this location. *Cladosporium* is one of the most commonly found molds outdoors and is also frequently found growing indoors. Even more so than *Penicillium* and *Aspergillus*, spores from *Cladosporium* are generally present in outdoor and indoor air, even in relatively clean, mold-growth-free, indoor environments. Its levels also vary based upon activity levels, weather conditions, dustiness, outside air exchange rates, and other factors.

Quantity and concentration of basidiospores
This score indicates the likelihood that basidiospores present in the indoor sample originated from indoor sources. Basidiospores are extremely common outdoors and originate from fungi in gardens, forests, and woodlands. It is rare for the source of basidiospores to be indoors because basidiospores are produced by a group of fungi that includes mushrooms and other "macrofungi" (and are not technically molds). Their concentrations can be extremely high outdoors during wet conditions such as rain. Nevertheless, in certain conditions basidiospores can be produced indoors, and a high rating indicates that there is probably a source of basidiospores indoors. One reason basidiospores are important is that they can be an indicator of wood decay (e.g. "dry rot"), a condition that can dramatically reduce the structural integrity of a building.

Quantity and concentration of "marker" spore types
This score indicates the likelihood that certain distinctive types of mold present in the indoor sample originated from indoor sources. Certain types of mold are generally found in very low numbers outdoors. Consequently, their presence indoors, even in relatively low numbers compared to *Penicillium*, for example, is often an indication that these molds are originating from growth indoors. When present, these mold types are often the clearest indicator of a mold problem. Note, however, that the absence of marker spore types does not mean that a mold problem does not exist in a house; it just means that if a problem is present, it either involves types of mold that are more commonly found both indoors and outdoors, or that the spores from these molds were not airborne at the time of sampling.

Quantity and concentration of "other" spore types
This score indicates the likelihood that other types of mold present in the indoor sample originated from indoor sources. This score includes a heterogeneous group of genera that are not covered by any of the scores discussed above, and so it is difficult to make generalizations about this group. Molds in the "other" category are generally found outdoors in moderate numbers, and are therefore not considered markers of indoor growth. They are frequently found indoors but in lower numbers compared to *Cladosporium* and *Penicillium/Aspergillus* spores.

Other Sample Information:

Sample clarity and visibility
Air samples collect dirt and debris in addition to mold spores. Higher levels of debris make analysis more difficult, because they obscure the analyst's view of spores and can therefore lead to undercounting of the mold spores present. When sample clarity and visibility is rated "poor", the analytical results should be regarded as minimal and actual counts may be higher than reported.

Other "normal trapping" spores
Some molds do not grow on wet building materials and, consequently, are not usually indicative of building problems, or growth on building surfaces. Strict plant pathogens, for example, even if present in high numbers indoors, are not an indication of a building leak or mold growth on a wall or carpet. This section of the report focuses on the exposure level that may be due to these spore types.

Understanding Your Air Sample Analysis Results (continued)

Sample volume
The "sample volume" indicates the volume of air sampled and is reported in liters. A high volume indicates a greater sensitivity, but is more likely to result in poor sample clarity and visibility. A low volume is more likely to have good sample clarity and visibility, but has less sensitivity.

Comments
This is where analysts can comment on unusual details or add additional information that is not captured by the other areas of the air sampling report.

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Contact: Lab Report
Project: 20221121_ILIA-BELOV_2003-CANTERBURY-ST; 2003 Canterbury St Austin, TX 78702
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Date of Receipt: 11-22-2022
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MoldREPORT
Eurofins EMLab P & K
3113 Red Bluff Road, Suite B, Pasadena, TX 77503
(800) 651-4802 Fax (623) 780-7695

Interpretive Guidelines to MoldSCORE™ Levels

MoldSCORE™ Level: LOW
A low MoldSCORE™ indicates the air sample did not detect, relative to the outside air, the presence of indoor mold growth in this room at the time of sampling. This result, by itself, is evidence for, but does not prove, the absence of indoor mold growth in the location sampled.

Mold is a living organism that can grow very rapidly under certain conditions. If any portion of the room tested is, or has been, damp for an extended period since the time of testing, the likelihood of mold growth may have increased substantially since the time of the inspection.

MoldSCORE™ Level: MODERATE
The air sampling MoldSCORE™ indicated the possibility of mold growth indoors. Generally, a MODERATE level means that the results are inconclusive, and suggests that a more detailed inspection may make sense if there are any other reasons to believe that mold growth could be a problem in this location. Indoor mold growth is a possibility, but was not confirmed in the areas sampled at the time of the inspection. Factors such as recent cleaning, HVAC cycles, high winds, rain, or other indoor or outdoor conditions could have contributed to a MODERATE result in the absence of indoor mold growth. 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. If mold has been located and removed, 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 locate and safely remove mold growth or how to identify and correct moisture problems that may exist.

Mold is a living organism that can grow very rapidly under certain conditions. If any portion of the room tested is, or has been, damp for an extended period since the time of testing, the likelihood of mold growth may have increased substantially since the time of the inspection.

MoldSCORE™ Level: HIGH
The air sampling MoldSCORE™ indicated a high likelihood of mold growth in the area tested at the time of the inspection. This result is NOT necessarily an indication that any such mold growth was extensive. 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. If mold has been located and removed, 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 locate and safely remove mold growth or how to identify and correct moisture problems that may exist.

Health concerns
Neither this report nor any MoldSCORE™ rating is intended to provide medical advice, nor shall it be interpreted as an indicator of potential medical or safety problems. If you have concerns or questions relating to your health, please contact your physician for advice.

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Detailed Results of Surface Sample Analysis

Location:	DE01: Kitchen (Ceiling) [North]
Sample Type:	Swab sample

Mold growth present*: Low=small amounts of mold growth present High=large amounts of mold growth present	No growth found	Low			High
Acremonium species					
Alternaria species					
Aspergillus species					
Aureobasidium species					
Chaetomium species					
Cladosporium species					
Penicillium species					
Stachybotrys species					
Trichoderma species					
Ulocladium species					

Miscellaneous spores present: Indicative of normal conditions**	Very few

Background debris:	Light

Other comments:	Analysis of replicate sample is delayed.

* Quantities of molds seen growing are graded Low to High with High denoting the highest numbers.

** Indicative of normal conditions, i.e. seen on surfaces everywhere. Includes basidiospores (mushroom spores), myxomycetes, plant pathogens such as ascospores, rusts and smuts, and a mix of saprophytic genera with no particular spore type predominating. Distribution of spore types seen mirrors that usually seen outdoors.

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Detailed Results of Surface Sample Analysis

Location:	DE02: Primary Bedroom (Wall) [North]
Sample Type:	Swab sample

Mold growth present*: Low=small amounts of mold growth present High=large amounts of mold growth present	No growth found	Low			High
Acremonium species					
Alternaria species					
Aspergillus species					
Aureobasidium species					
Chaetomium species					
Cladosporium species					
Papulaspora-like species					
Penicillium species					
Stachybotrys species					
Trichoderma species					
Ulocladium species					

Miscellaneous spores present: Indicative of normal conditions**	Very few

Background debris:	Moderate

Other comments:	Analysis of replicate sample is delayed.

* Quantities of molds seen growing are graded Low to High with High denoting the highest numbers.

** Indicative of normal conditions, i.e. seen on surfaces everywhere. Includes basidiospores (mushroom spores), myxomycetes, plant pathogens such as ascospores, rusts and smuts, and a mix of saprophytic genera with no particular spore type predominating. Distribution of spore types seen mirrors that usually seen outdoors.

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Detailed Results of Surface Sample Analysis

Location:	DE03: Crawlspace (Crawl space) [North]
Sample Type:	Swab sample

Mold growth present*: Low=small amounts of mold growth present High=large amounts of mold growth present	No growth found	Low			High
Acremonium species					
Alternaria species					
Aspergillus species					
Aureobasidium species					
Brown hyphae with no associated spores, ID unknown.					
Chaetomium species					
Cladosporium species					
Colorless spore type, ID unknown					
Penicillium species					
Stachybotrys species					
Trichoderma species					
Ulocladium species					

Miscellaneous spores present: Indicative of normal conditions**	Very few

Background debris:	Moderate

Other comments:	Analysis of replicate sample is delayed.

* Quantities of molds seen growing are graded Low to High with High denoting the highest numbers.

** Indicative of normal conditions, i.e. seen on surfaces everywhere. Includes basidiospores (mushroom spores), myxomycetes, plant pathogens such as ascospores, rusts and smuts, and a mix of saprophytic genera with no particular spore type predominating. Distribution of spore types seen mirrors that usually seen outdoors.

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Understanding Your Surface Sample Analysis Results

Analysis by direct microscopic examination
Each surface sample was analyzed by direct microscopic examination. This method of analysis is an effective means of determining whether or not mold is growing on the surface sampled, and if so, what kinds of molds are present. A direct microscopic examination, in the absence of evidence of growth on the surface sampled, may also occasionally pick up indications of mold growth in the vicinity based upon the mix of spore types present in the sample. Most surfaces collect a mix of spores that are normally present in the environment. At times it is possible to note a skewing of the normal distribution of spore types, and also to note marker genera that may indicate indoor mold growth. Note that locating an area of mold growth indoors using surface samples does not provide information regarding airborne spore levels.

Mold growth present
Samples are examined for the presence of mold growth, as indicated by groups, clumps, and/or chains of single spore types, usually accompanied by intact mycelial and/or sporulating structures. These areas of growth are then identified to genus name, if possible. Quantities are estimated and are graded on a scale from "Low" to "High," with "High" denoting the highest amount.

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. If mold has been located and removed, 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 locate and safely remove mold growth or how to identify and correct moisture problems that may exist.

Miscellaneous spores present
This is a measure of the mix of spores that are present and are indicative of normal conditions, in other words, seen normally on surfaces almost everywhere. This includes basidiospores (mushroom spores), myxomycetes ("slime molds"), plant pathogens such as rusts and smuts, and a mix of saprobic mold with no particular spore type predominating. The distribution of these spore types resembles that seen outdoors.

Background debris
Background debris is an indication of the amounts of non-biological particulate matter present. This background material is graded and described as light, medium, heavy, or very heavy. Very heavy background debris may obscure visibility for the analyst. Bulk samples are not graded in this category.

Other comments
Additional relevant information is provided, such as the presence of marker genera or the abnormal distribution of spore types. Bacteria may be noted, as well as significant numbers of other biological particles such as algae, lichen, dust mites, etc. In addition, when deemed to be helpful, non-biological particles are also described.

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Important Information, Terms and Conditions Relating to your MoldREPORT™

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 residential indoor environments. MoldREPORT™ is intended to provide an analysis based upon 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. MoldREPORT™ is 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. If this report indicates scores that are higher than in typical indoor living spaces relative to the outdoor environment, or indicates any findings that are of concern to you, further evaluation by a trained mold professional or a Certified Industrial Hygienist (CIH) may be advisable.

Warranties, legal disclaimers and limitations
MoldREPORT™ is designed and intended for use only in residential home inspections to help in the assessment of mold growth in the living areas sampled. Our laboratory analysis and report are based on the samples submitted to Eurofins EMLab P&K. The inspection(s) and sampling should be performed only by a licensed and professional home inspector, environmental mold specialist, industrial hygienist or residential appraiser trained and qualified to conduct mold inspections in residential buildings. Client agrees to these conditions for the on-site project inspection.

This MoldREPORT™ is generated by Eurofins EMLab P&K at the request of, and for the exclusive use of, the Eurofins EMLab P&K client named on this report. The analysis of the test samples is performed by Eurofins EMLab P&K. Eurofins EMLab P&K's policy is that reports and test results will not be released to any third party without prior written consent from Eurofins EMLab P&K's client. This report applies only to the samples taken at the time, place and location referenced in the report and received by Eurofins EMLab P&K, and to the property and weather conditions existing at that time only. Please be aware, however, that property conditions, inspection findings and laboratory results can and do change over time relative to the original sampling due to changing conditions, the normal fluctuation of airborne mold, and many other factors. Client and reader are advised that Eurofins EMLab P&K does not furnish, and has no responsibility for, the inspector or inspection service that performs the inspection or collects the test samples. It is the responsibility of the end-user of this report to select a properly trained professional to conduct the inspection and collect appropriate samples for analysis and interpretation by MoldREPORT™. None of Eurofins EMLab P&K, Eurofins EMLab P&K or their affiliates, subsidiaries, suppliers, employees, agents, contractors and attorneys (each an "Eurofins EMLab P&K-related party") are able to make and do not make any determinations as to the safety or health condition of a property in this report. The client and client's customer are solely responsible for the use of, and any determinations made from, this report, and no Eurofins EMLab P&K-related party shall have any liability with respect to decisions or recommendations made or actions taken by either the client or the client's customer based on the report.

Except as expressly provided for hereunder, each Eurofins EMLab P&K-related party hereby expressly 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. Additionally, neither this report nor any Eurofins EMLab P&K-related party make any express or implied warranty or guarantee regarding the inspection or sampling done by the inspector, the qualifications, training or sampling methodology used by the inspector performing the sampling and inspection reported herein, or the accuracy of any information provided to any Eurofins EMLab P&K-related party serving as a basis for this report. Eurofins EMLab P&K reserves the right to change its scoring method at any time without notice. Eurofins EMLab P&K reserves the right to dispose of samples two weeks after analysis unless otherwise specified by the client. If the client chooses to have Eurofins EMLab P&K continue to retain the samples after this two week period, the client must provide written notification to Eurofins EMLab P&K of this request. Eurofins EMLab P&K reserves the right to charge for the additional sample storage.

In no event will any Eurofins EMLab P&K-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 Eurofins EMLab P&K-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 Eurofins EMLab P&K from the client for 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.

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Scope and Limitations of Report and Analysis

The scope of the MoldREPORT™ system is limited to Eurofins EMLab P&K's proprietary MoldSCORE™ analysis of the air and surface samples taken at the time of the inspection. Eurofins EMLab P&K cannot be liable, in any form of action, for any items that are not included within the scope of the MoldREPORT™ system.

MoldREPORT™ Inspection Limitations
MoldREPORT™ results are based upon mold air and surface samples. Mold surface samples are useful for confirming and identifying mold growth while air samples measure airborne mold levels.

This report provided by Eurofins EMLab P&K is based upon the assumption that the information provided by the inspector is true and correct, that a sufficient number of mold and air samples were collected at all the appropriate locations following proper inspection and sampling protocols, and that the mold samples collected represent normal conditions at the site sampled. Eurofins EMLab P&K is not able to, and cannot, guarantee the skill level or experience of the inspector performing the MoldREPORT™ inspection, nor can it guarantee that the samples have been properly collected at the site or are representative of normal conditions since many factors outside of Eurofins EMLab P&K's (and the inspector's) control can and do substantially affect mold levels. Consequently, Eurofins EMLab P&K cannot guarantee the accuracy of the interpretation provided herein. It is the responsibility of the inspector to insure that the mold samples were collected properly. MoldREPORT™ relies on non-invasive and non-destructive tests, so it cannot guarantee that hidden mold problems will be detected and reported. MoldREPORT™ results apply only to the rooms sampled, not to the entire building or any other rooms. It is the responsibility of the property owner, potential purchaser or other end-user of this report to select a properly trained and qualified inspector.

About Air Sample Sampling and Analysis
Eurofins EMLab P&K requires at least one outdoor air sample and one indoor air sample in order to make indoor/outdoor comparisons and assessments of airborne mold levels, which are an integral part of the Eurofins EMLab P&K MoldREPORT™ system. The indoor air samples taken can be representative of the airborne mold present in the area sampled. The analysis and interpretation of these air samples is proprietary and is based upon: relative levels of spores present, quantities and concentration of *Penicillium/Aspergillus* type spores, quantity and concentration of *Cladosporium* spores, quantity and concentration of basidiospores, quantity and concentration of "marker" spore types, quantity and concentration of "other" spore types, and the distribution of mold spore types. Spore identification is performed visually by trained analysts according to industry norms. Using visual identification, most mold spores lack sufficient distinguishing characteristics to allow for species identification, so the MoldREPORT™ analysis is generally performed at the genus level. Currently there are no generally-accepted protocols or regulations regarding air sampling for molds, in large part due to the inability of any single technique to provide a complete analysis of all mold spores and mold growth in an area. Air sampling for MoldREPORT™ can be performed using any standard "spore trap" method, which are also called "non-viable air sampling methods" because spore traps do not require the germination and growth of the spores before identification. Commonly used spore trap equipment for performing air sampling for mold includes Zefon Air-O-Cell™ Cassettes, Burkard™ samplers, and Allergenco™ samplers.

About Surface Sampling and Analysis
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. Although not required, surface sampling can improve the accuracy of the results and interpretation of the inspected environment if sampled correctly. Eurofins EMLab P&K accepts surface samples in the form of swabs, tapes, or bulks in order to perform a direct examination of a specific location. The MoldREPORT™ analysis system uses the direct examination data in addition to the MoldREPORT™ air sample analysis.

Glossary

Background Debris - Material(s) found on the air sample other than mold spore(s) or mycelia. Examples include skin cells, insect parts, and fibers.

False Positive - A test result that incorrectly indicates mold growth, when in reality there is none. For example, an air sample test result indicating indoor mold growth, when no mold growth is actually present is a "False Positive."

False Negative - A test result that shows no mold growth, when in reality mold growth is present. For example, an air sample test result indicating no indoor mold growth, when mold growth is actually present.

Fungi - A kingdom that includes yeasts, molds, smuts, and mushrooms. Fungi are not animals, plants or bacteria, but their own kingdom.

HVAC - Heating, Ventilation, and Air Conditioning (HVAC) systems are possible reservoirs for mold growth.

IAQ - Indoor Air Quality (IAQ) is the main focus of Eurofins EMLab P&K and the majority of its customers.

Industrial Hygienist - A professional who monitors exposure to environmental factors that can affect human health. Examples of environmental factors include chemicals, heat, asbestos, noise, radiation, and biological hazards.

Marker Spores - Spore types, such as *Chaetomium* and *Stachybotrys,* that when found indoors, even in moderate numbers are an indication of indoor mold growth.

Note: This glossary is intended to provide general information about commonly occurring molds, and is not intended to be a complete source.

Alternaria:
Distribution: *Alternaria* is one of the most common molds and is abundant worldwide. This genus contains around 40 to 50 different species, only a few of which are commonly found indoors.
How it is spread: *Alternaria* spores are easily dispersed through the air by wind.
Where it is found outdoors: *Alternaria* is common outdoors in soil, dead organic debris, foodstuffs, and textiles. It is also a plant pathogen and is frequently found on dead or weakened plants.
Where it is found indoors: *Alternaria* can grow on a variety of substrates indoors when moisture is present.

Acremonium:
Distribution: *Acremonium* is a common mold, including about 80 to 90 different species.
How it is spread: *Acremonium* produces wet slimy spores and is normally dispersed through water flow or droplets, or by insects. Old dry *Acremonium* spores can sometimes be dispersed through the air by wind.
Where it is found outdoors: *Acremonium* is found in soil, on dead organic material and debris, hay, and foodstuffs.
Where it is found indoors: *Acremonium* can be found anywhere indoors, but requires very wet conditions in order to proliferate. The spores probably require active disturbance for release.

Aspergillus: (see *Penicillium/Aspergillus)*

Glossary (continued)

Basidiospores:
Distribution: Basidiospores are produced by a very large and diverse group of fungi called basidiomycetes, which contains over 1000 different genera. This group includes many well-known macrofungi, such as mushrooms. Basidiospores are often abundant in outdoor air and sometimes in indoor air.
How they are spread: Many types of basidiospores are actively released into the air during periods of high humidity or rain. Once the spores are expelled into the air, they are dispersed easily by wind.
Where they are found outdoors: Basidiomycetes are very common outdoors and can be found in gardens, forests, grasslands, and anywhere there is a substantial amount of dead organic material. They are also found on or near plants and some are known to be plant pathogens.
Where they are found indoors: Basidiospores found indoors typically come from outdoor sources and are carried inside by airflow or on clothing. Certain kinds of basidiomycetes can grow indoors, such as those that cause "dry rot", which can cause structural damage to wood. Occasionally, other basidiomycetes such as mushrooms can be found indoors, but this is not common. Generally, basiodiomycetes require wet conditions for prolonged periods in order to grow indoors.

Bipolaris / Dreschlera:
Distribution: *Bipolaris* and *Dreschlera* are two separate genera of molds that are so visually similar that they are commonly discussed together as a group. Both genera include around 30 - 40 different species.
How they are spread: *Bipolaris / Dreschlera* spores are easily dispersed through the air by wind.
Where they are found outdoors: *Bipolaris / Dreschlera* type spores are most abundant in tropical or subtropical climates. They can grow in soils, on plant debris and grasses, and are known to be plant pathogens.
Where they are found indoors: *Bipolaris / Dreschlera* can grow on a variety of indoor substrates when moisture is present.

Ceratocystis / Ophiostoma:
Distribution: *Ceratocystis / Ophiostoma* are two separate genera of molds that are so visually similar that they are commonly discussed together as a group. These genera contain around 50 to 60 different species.
How they are spread: *Ceratocystis / Ophiostoma* produce wet slimy spores and are normally dispersed through water flow, droplets, or by insects. These spores are rarely identified in air samples.
Where they are found outdoors: *Ceratocystis / Ophiostoma* are very common in commercial lumberyards and forests.
Where they are found indoors *Ceratocystis / Ophiostoma* are abundant on wood framing material in the home, although the spores are rarely found in air samples. This mold is sometimes called "lumber mold".

Chaetomium:
Distribution: *Chaetomium* is a common mold worldwide. This genus contains around 80 - 90 different species.
How it is spread: *Chaetomium* spores are formed inside fruiting bodies. The spores are released by being forced out through a small opening in the fruiting body. The spores are then dispersed by wind, water drops, or insects.
Where it is found outdoors: *Chaetomium* can be found in soil, on various seeds, cellulose substrates, dung, woody materials and straw.
Where it is found indoors: *Chaetomium* can grow in a variety of areas indoors, but is usually found on cellulose-based or woody materials in the home. It is very common on sheetrock paper that is or has been wet.

Glossary (continued)

Cladosporium:
Distribution: *Cladosporium* is an abundant mold worldwide and is normally one of the most abundant spore types present in both indoor or outdoor air samples. This genus contains around 20 - 30 different species.
How it is spread: *Cladosporium* produces dry spores that are formed in branching chains. Spores are released by twisting of the spore-bearing hyphae as they dry. Thus, the spores are most abundant in dry weather.
Where it is found outdoors: *Cladosporium* is found in a wide variety of soils, in plant litter, and on old and decaying plants and leaves. Some species are plant pathogens
Where it is found indoors: *Cladosporium* can be found anywhere indoors, including textiles, bathroom tiles, wood, moist windowsills, and any wet areas in a home. Some species of *Cladosporium* grow at temperatures near or below 0(C) / 32(F) and can often be found on refrigerated foodstuffs and even frozen meat.

Curvularia:
Distribution: *Curvularia* is a cosmopolitan fungus and includes approximately 30 different species.
How it is spread: *Curvularia* produces dry spores that are formed in fragile chains and is very easily dispersed through the air by wind.
Where it is found outdoors: *Curvularia* is most common in tropical or subtropical regions. It is found in soil and on debris of tropical plants.
Where it is found indoors: *Curvularia* can be found growing on a variety of substrates indoors.

Epicoccum:
Distribution: *Epicoccum* is a cosmopolitan mold that includes only two species.
How it is spread: *Epicoccum* produces large dry spores that are easily dispersed through the air by wind.
Where it is found outdoors: *Epicoccum* can be found in soils or on plant debris.
Where it is found indoors: *Epicoccum* is commonly found on many different substrates indoors including paper, textiles, and insects.

Memnoniella:
Distribution: *Memnoniella* is a cosmopolitan mold genus that includes approximately five species. It is frequently found in conjunction with *Stachybotrys* species due to its similar ecological preferences.
How it is spread: *Memnoniella* produces dry spores that are easily dispersed through the air by wind.
Where it is found outdoors: *Memnoniella* can be found outdoors in soil, in plant debris or litter, and as pathogens on some types of living plants.
Where it is found indoors: *Memnoniella* can grow on a variety of substrates indoors, but mainly can be found on wet cellulose-based materials, such as wallboard, jute, wicker, straw baskets, paper and other wood by-products.

Paecilomyces:
Distribution: *Paecilomyces* is ubiquitous in nature and includes between 9 and 30 different species, depending on the taxonomic system used. Its spores are visually similar to *Penicillium / Aspergillus* types of spores.
How it is spread: *Paecilomyces* produce dry spores that are easily dispersed through the air by wind.
Where it is found outdoors: *Paecilomyces* is found outdoors in soils and decaying plant matter, composting processes, legumes and cottonseeds. Some species parasitize insects.
Where it is found indoors: *Paecilomyces* can be found on a number of materials indoors. It has been isolated from jute fibers, papers, PVC, timber, optical lenses, leather, photographic paper, cigar tobacco, harvested grapes, bottled fruit, and fruit juice undergoing pasteurization.

Glossary (continued)

Penicillium / Aspergillus:
Distribution: *Penicillium / Aspergillus* are two separate genera of molds that are so visually similar that they are commonly discussed together as a group. Together, there are approximately 400 different species of *Penicillium / Aspergillus.*
How it is spread: *Penicillium / Aspergillus* produce dry spore types that are easily dispersed through the air by wind. These fungi serve as a food source for mites, and therefore can be dispersed by mites and various insects as well.
Where it is found outdoors: *Penicillium / Aspergillus* are found in soils, decaying plant debris, compost piles, fruit rot and some petroleum-based fuels.
Where it is found indoors: *Penicillium / Aspergillus* are found throughout the home. They are common in house dust, growing on wallpaper, wallpaper glue, decaying fabrics, wallboard, moist chipboards, and behind paint. They have also been isolated from blue rot in apples, dried foodstuffs, cheeses, fresh herbs, spices, dry cereals, nuts, onions, and oranges.

Stachybotrys:
Distribution: *Stachybotrys* is ubiquitous in nature. This genus contains about 15 species.
How it is spread: *Stachybotrys* produces wet slimy spores and is commonly dispersed through water flow, droplets, or insect transport, less commonly through the air.
Where it is found outdoors: *Stachybotrys* is found in soils, decaying plant debris, decomposing cellulose, leaf litter and seeds.
Where it is found indoors: *Stachybotrys* is common indoors on wet materials containing cellulose such as wallboard, jute, wicker, straw baskets, and other paper materials.

Torula:
Distribution: *Torula* is a cosmopolitan microfungus and includes approximately eight different species
How it is spread: *Torula* produces dry spores that are easily dispersed through the air by wind.
Where it is found outdoors: *Torula* is most common in temperate regions and has been isolated from soils, dead herbaceous stems, sugar beet roots, groundnuts, and oats.
Where it is found indoors: *Torula* is common indoors on wet materials containing cellulose, such as wallboard, jute, wicker, straw baskets, and other paper materials.

Ulocladium:
Distribution: *Ulocladium* is ubiquitous in nature and includes approximately nine different species.
How it is spread: *Ulocladium* produces dry spores that are easily dispersed through the air by wind.
Where it is found outdoors: *Ulocladium* is common outdoors in soils, dung, paint, grasses, wood, paper, and textiles.
Where it is found indoors: *Ulocladium* is common indoors on very wet materials containing cellulose such as wallboard, jute, wicker, straw baskets, and other paper materials. *Ulocladium* requires a significant amount of water to flourish.

References and Resources

References:

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Biological Contaminants in Indoor Environments, Morey, Feeley, Otten, Editors. 1990. ASTM, 1916 Race Street, Philadelphia, PA 19103. STP 1071.

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Indoor Air and Human Health, Gammage & Kaye. 1985. Lewis Publishers.

Microfungi, S.G. Gravesen, J.C. Frisvad, & R.A. Samson, published by Munksgaard.

Useful Websites:

www.acgih.org
American Conference of Governmental Industrial Hygienists - information on IAQ and useful links.

www.aiha.org
American Industrial Hygiene Association - general IAQ information

www.calepa.ca.gov
California Environmental Protection Agency - California IAQ resources

www.emlab.com
Eurofins EMLab P&K

www.epa.gov
Environmental Protection Agency - information regarding prevention and remediation of mold

www.health.state.ny.us
New York State Department of Health - New York state recommendations for IAQ, indoor mold inspections, remediation, and prevention

www.moldreport.com
MoldREPORT™ - online store, and other information about MoldREPORT™

www.nih.gov
National Institutes of Health - information regarding environmental health issues, including IAQ

www.niehs.nih.gov
National Institute of Environmental Health Sciences - information on mold