



ENVIRONMENTAL

INSPECTION & CONSULTING

Mold Assessment Performed on 1/28/2022
Report Finalized on 2/1/2022

Project #JL-25975

Property Inspected

**1608 Cataluna Place
Palos Verdes Estates, CA 90274**

Property Type: Single Family Residence

Report Prepared By

JLM Environmental
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Lawndale, CA 90260-2018
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www.JLMEnvironmental.com

JLM Environmental was contracted to perform a limited microbial investigation of the subject property.

The focus of this environmental investigation is to locate and identify potential areas of mold contamination at the property.

PROPERTY INFORMATION

Property Address

1608 Cataluna Place
Palos Verdes Estates, CA 90274

Property Photo



Inspector Name

Daniel Limon

Property Type

House

Property is Currently

Vacant

Property Size (sq. ft.)

2,204

Number of Stories

2

Age of Property (Year)

1962

Weather

Clear

Temperature

60 F

Children Present

No

Client Present

Yes

Scope of Inspection

Real Estate

Inspection performed for

Buyer

Inspection Type

Limited to the client's areas of concern, the dining room, living room, and bedrooms.

Property is in close proximity to the coastline.

Yes

OBSERVATIONS

Areas of concern detected	Yes
Observations	No musty odors were detected in areas inspected. All plumbing lines were found to be intact with no signs of current water leaks. All building materials in this area were observed to be dry.
To qualitatively and quantitatively determine the identification of molds present, sampling is recommended.	The client has accepted the recommendations. The results of the sample collected can be found in the Lab Results section of this report.
Exterior baseline air sampling recommend to client	Accepted by client
During sample collection windows and doors were closed	Yes
Dusty/dirty conditions recommend thorough house cleaning.	Yes
Notes	The property is currently in the process of a real estate transaction. During JLM Environmental's inspection, several areas of concern were detected. The home has been recently/partially renovated with a thin layer of dust or paint overspray present throughout the entire lower level. Original/older carpet was observed throughout the home and is believed to be contributing the above average spore concentration in several rooms. It is recommended to remove the carpet and carpet pad throughout the home and perform a thorough housecleaning of all horizontal surfaces using a mild solvent to reduce resting spore concentrations.

In all cases where indoor mold growth is a factor, individual responses vary with individual sensitivities. JLM Environmental is not qualified to make any statements whatsoever regarding health conditions, symptoms, or reactions to mold exposure. Occupant concerns about these test results in relation to health issues should be discussed with a qualified healthcare professional.

DETAILS: On January 28th, 2022, JLM Environmental conducted the field investigation on the subject premises. **The sample results show elevated fungal spore concentrations. Therefore, in the judgment of the inspector, response actions are recommended as indicated below.**

Equipment and Materials Utilized in this Inspection:

- Buck BioAire Bioaerosol Sampling Pump 8520
- Allergenco-D bioaerosol cassette – collects airborne particles for analysis
- BBLTM swabs - physically collects specimens of suspected microbial contamination
- Flir E8 Thermal Imaging Device
- Delmhorst BD-2100
- Protimeter Mini moisture meter – measures moisture levels on wood and sheetrock
- Extech hygrometer/thermometer – measures relative humidity and temperature

For all structures built pre 1978: For all areas recommended for remediation below, asbestos and lead paint testing is recommended per Federal, State, and/or Local Guidelines. Please view www.jlmenvironmental.com for more information.

Location

Master Bedroom

Humidity

50%

Elevated moisture levels detected.

No

Elevated moisture levels conducive to fungal growth were detected.

No

Visible mold growth observed in this area requiring remediation.

No

Plumbing corrosion observed.

No

Musty odors detected upon entry to the area?

No

Visible growth observed.

No

Visible water damage observed.

Yes, at corner of room (on fireplace wall)

Visible stain observed.

No

Dusty/dirty conditions recommend thorough house cleaning.

Yes

Exhaust fan present.

Yes

To qualitatively and quantitatively determine the identification of molds present, sampling is recommended.

The client has accepted the recommendations. The results of the sample collected can be found in the Lab Results section of this report.

Air Sample Collection

Air Sample 01 - Master Bedroom

Sample results indicated the presence of elevated spore counts of allergenic mold types identified: **Stachybotrys** and above average concentrations of **Chaetomium**.

Therefore, in the judgment of the inspector, response actions in this area are recommended as indicated below.

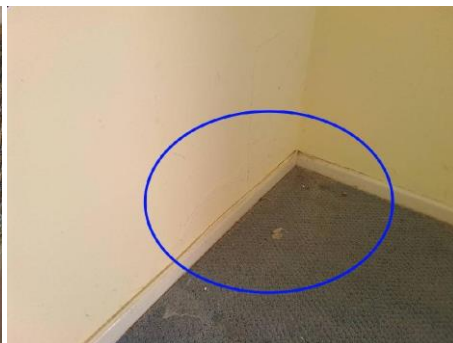
Adverse weather or outdoor conditions were noted at the time of the inspection.

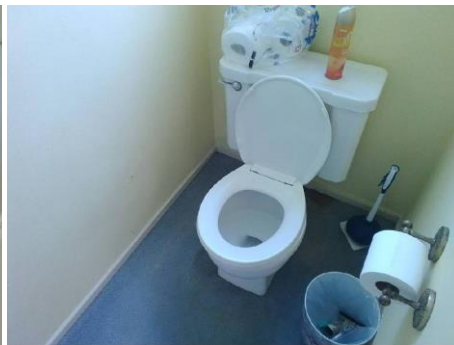
No

Windows and doors closed during sampling.

Yes

Photos





Notes

At the time of JLM Environmental's inspection, visible water damage was observed in the corner of the bedroom on the fireplace wall believed to be the result of a prior water intrusion. No elevated moisture levels were detected in this area at the time of the survey. On the exterior of this area, visible patching of the stucco where the chimney is connected to the structure was observed; at the time of inspection, a thin crack was observed running through the patchwork. In the master bathroom, no active leaks or elevated moisture levels were detected at the time of the

inspection. An ambient air sample was collected in the master bedroom to assess the current air quality conditions.

Recommendations

Consult with a contractor to

Evaluate exterior stucco, waterproofing, chimney, and gutter system above master bedroom door.

- **Any personal items, clothing, furniture that have visible signs of moisture, water-damage, and mold amplification should be cleaned, treated, laundered, or dry-cleaned. Items, which cannot be sufficiently cleaned/treated, should be properly disposed.**
- **Upon completion of removal and cleaning activities and prior to post-remedial activities, HVAC ducting, registers and returns should be cleaned. Any HVAC filters should be replaced. The objective of the cleaning is to remove excess dust and residual mold spores.**
- It is the responsibility of the client to verify that the moisture intrusion or water leak in the affected area listed above has been repaired.
- Set up a containment accompanied with negative air pressure to completely isolate the master bedroom from the rest of the property where remediation will take place
- Post warning signs at all locations of ingress and egress to the decontamination locations. Access to this area will only be permitted for properly trained and certified personnel.
- Be certain to seal all air vents, windows, exhaust fans, etc. with proper tape and polyethylene sheeting. Negative air pressure must be maintained throughout the duration of the entire remediation project.
- Remove lower 2' of plaster and baseboard from the chimney wall corner (circled in blue above), extending 4' in each direction
- Remove carpet and carpet pad
- Remove and dispose of insulation and any debris found within exposed cavities. Removal of affected materials should extend 2 feet beyond all visibly impacted areas.
- Exposed wooden structural members exhibiting staining should be sanded, wire, brushed, HEPA vacuumed, and damp wiped with a fungicide.
- HEPA vacuum all horizontal and vertical surfaces that may be impacted by aerosolized mold spores inside of the containment area.
- Fog the containment.
- Encapsulate the exposed wood framing and cavities.
- Containment and critical barriers must be maintained **until JLM Environmental can issue final clearance.**
- Contact JLM Environmental after completion of abatement to perform a visual inspection of the abatement area and microbial air sampling to evaluate the air quality inside the containment. For further information see section below "**The Remediation Process and Post Remediation Testing**"

Location	Front Guest Bedroom
Visible signs of water staining, water damage or suspect fungal presence observed in the accessible areas.	No
Humidity	50%
Elevated moisture levels detected.	No
Visible mold growth observed in this area requiring remediation.	No
Musty odors detected upon entry to the area?	No
Visible growth observed.	No
Visible water damage observed.	No
Visible stain observed.	No
Dusty/dirty conditions recommend thorough house cleaning.	Yes
To qualitatively and quantitatively determine the identification of molds present, sampling is recommended.	The client has accepted the recommendations. The results of the sample collected can be found in the Lab Results section of this report.

Air Sample Collection

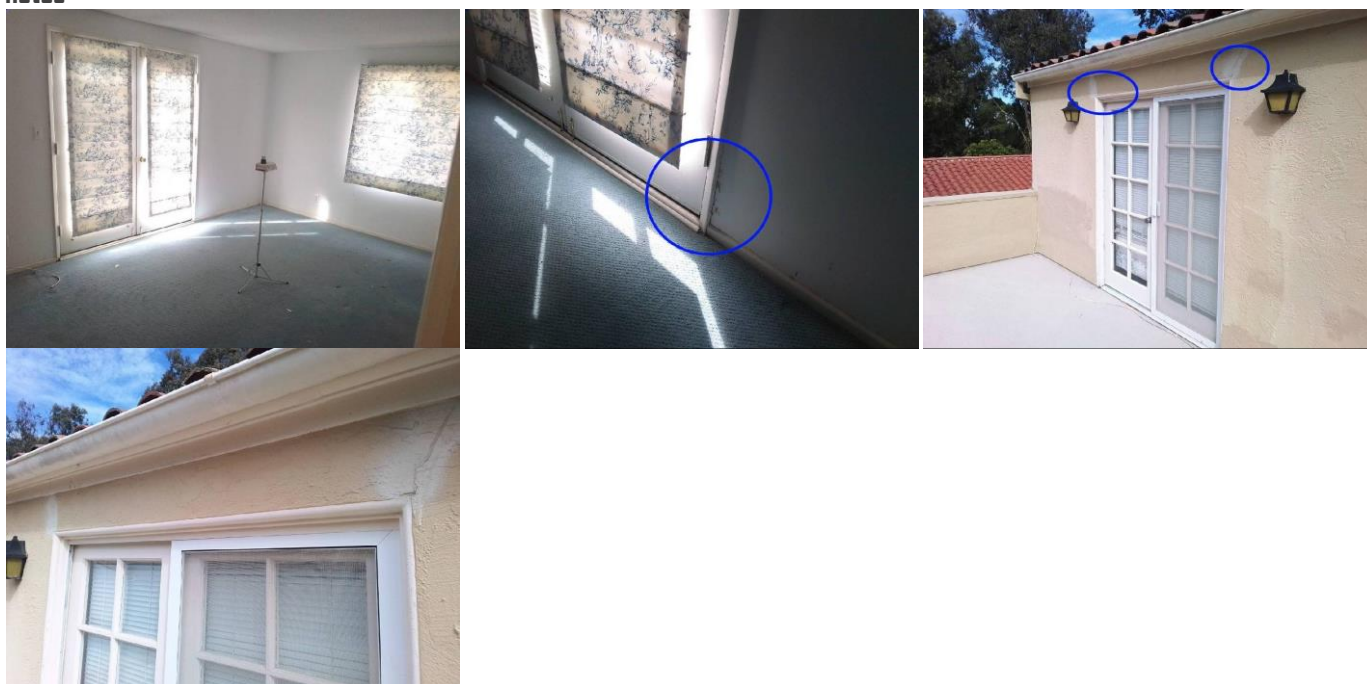
Air Sample 02 – Front Guest Bedroom

Sample results indicated the presence of above average spore counts of allergenic mold types identified: **Stachybotrys**

Adverse weather or outdoor conditions were noted at the time of the inspection. No

Windows and doors closed during sampling. Yes

Photos



Notes

At the time of JLM Environmental's inspection, cracking was observed at the bottom interior of the French door where the frame has partially separated from the wall. On the exterior, settling cracks were observed at the corners of both doors. No elevated moisture levels were detected at the time of the inspection. An ambient air sample was collected from the front guest bedroom to assess the current air quality conditions.

Recommendations

Consult with a contractor to

Evaluate French door frames, exterior stucco, and waterproofing; prep and repaint as desired.

- **Any personal items, clothing, furniture that have visible signs of moisture, water-damage, and mold amplification should be cleaned, treated, laundered, or dry-cleaned. Items, which cannot be sufficiently cleaned/treated, should be properly disposed.**
- **Upon completion of removal and cleaning activities and prior to post-remedial activities, HVAC ducting, registers and returns should be cleaned. Any HVAC filters should be replaced. The objective of the cleaning is to remove excess dust and residual mold spores.**
- It is the responsibility of the client to verify that the moisture intrusion or water leak in the affected area listed above has been repaired.
- Set up a containment accompanied with negative air pressure to completely isolate the master bedroom from the rest of the property where remediation will take place
- Post warning signs at all locations of ingress and egress to the decontamination locations. Access to this area will only be permitted for properly trained and certified personnel.
- Be certain to seal all air vents, windows, exhaust fans, etc. with proper tape and polyethylene sheeting. Negative air pressure must be maintained throughout the duration of the entire remediation project.
- Remove plaster from right side of French door (extending 3' up and 2' to the right)
- Remove carpet and carpet pad
- Remove and dispose of insulation and any debris found within exposed cavities. Removal of affected materials should extend 2 feet beyond all visibly impacted areas.
- Exposed wooden structural members exhibiting staining should be sanded, wire, brushed, HEPA vacuumed, and damp wiped with a fungicide.
- HEPA vacuum all horizontal and vertical surfaces that may be impacted by aerosolized mold spores inside of the containment area.
- Fog the containment.
- Encapsulate the exposed wood framing and cavities.
- Containment and critical barriers must be maintained **until JLM Environmental can issue final clearance.**
- Contact JLM Environmental after completion of abatement to perform a visual inspection of the abatement area and microbial air sampling to evaluate the air quality inside the containment. For further information see section below **"The Remediation Process and Post Remediation Testing"**

Location **Rear Guest Bedroom**

Visible signs of water staining, water damage or suspect fungal presence observed in the accessible areas. Yes, in closet

Humidity 50%

Elevated moisture levels detected. No

Elevated moisture levels conducive to fungal growth were detected. No

Musty odors detected upon entry to the area? No

Visible growth observed. Yes

Visible water damage observed. No

Visible stain observed. No

Dusty/dirty conditions recommend thorough house cleaning. Yes

Air Sample Collection

Air Sample 03 – Rear Guest Bedroom

Sample results indicated the presence of above average spore counts of allergenic mold types identified: **Stachybotrys**
Cavity Sample 08 – Rear Guest Bedroom (Closet Wall)

Cavity Sample Collection

Due to the high presence of drywall dust and debris, a quantitative analysis of the cavity sample could not be completed; a qualitative analysis of spore types present was performed instead. The cavity sample results indicated the presence of spore counts of allergenic mold types identified: **Aspergillus/Penicillium**. **Therefore, in the judgment of the inspector, response actions in this area are recommended as indicated below.**

Adverse weather or outdoor conditions were noted at the time of the inspection. No

Windows and doors closed during sampling. Yes

Photos



Notes

At the time of inspection, white paint (possibly spray paint) was observed on the rear guest bedroom's closet wall; the paint appears to be covering dark colored spotting on the wall. At the time of survey, no elevated moisture levels were detected. A cavity sample was collected from within the wall to assess the current conditions within the concealed cavity. An ambient air sample was also collected in the middle of the bedroom to assess the current air quality conditions.

Recommendations

- **Any personal items, clothing, furniture that have visible signs of moisture, water-damage, and mold amplification should be cleaned, treated, laundered, or dry-cleaned. Items, which cannot be sufficiently cleaned/treated, should be properly disposed.**
- **Upon completion of removal and cleaning activities and prior to post-remedial activities, HVAC ducting, registers and returns should be cleaned. Any HVAC filters should be replaced. The objective of the cleaning is to remove excess dust and residual mold spores.**
- It is the responsibility of the client to verify that the moisture intrusion or water leak in the affected area listed above has been repaired.

-
- Set up a containment accompanied with negative air pressure to completely isolate the master bedroom from the rest of the property where remediation will take place
 - Post warning signs at all locations of ingress and egress to the decontamination locations. Access to this area will only be permitted for properly trained and certified personnel.
 - Be certain to seal all air vents, windows, exhaust fans, etc. with proper tape and polyethylene sheeting. Negative air pressure must be maintained throughout the duration of the entire remediation project.
 - Remove carpet and carpet pad
 - Remove plaster from wall with spray paint/spotting (approx. 10 sq. ft.)
 - Remove and dispose of insulation and any debris found within exposed cavities. Removal of affected materials should extend 2 feet beyond all visibly impacted areas.
 - Exposed wooden structural members exhibiting staining should be sanded, wire, brushed, HEPA vacuumed, and damp wiped with a fungicide.
 - HEPA vacuum all horizontal and vertical surfaces that may be impacted by aerosolized mold spores inside of the containment area.
 - Fog the containment.
 - Encapsulate the exposed wood framing and cavities.
 - Containment and critical barriers must be maintained until JLM Environmental can issue final clearance.
 - Contact JLM Environmental after completion of abatement to perform a visual inspection of the abatement area and microbial air sampling to evaluate the air quality inside the containment. For further information see section below "The Remediation Process and Post Remediation Testing"

Location	Living Room
Visible signs of water staining, water damage or suspect fungal presence observed in the accessible areas.	No
Humidity	50%
Elevated moisture levels detected.	No
Elevated moisture levels conducive to fungal growth were detected.	No
Visible mold growth observed in this area requiring remediation.	No
Plumbing corrosion observed.	No
Musty odors detected upon entry to the area?	No
Visible growth observed.	No
Visible water damage observed.	Yes, on wood windows
Visible stain observed.	Yes, on wood windows
Dusty/dirty conditions recommend thorough house cleaning.	Yes
To qualitatively and quantitatively determine the identification of molds present, sampling is recommended.	The client has accepted the recommendations. The results of the sample collected can be found in the Lab Results section of this report.

Air Sample Collection

Air Sample 04 – Living Room

Sample results indicated the presence of above average spore counts of allergenic mold types identified: **Stachybotrys**

Adverse weather or outdoor conditions were noted at the time of the inspection.	No
Windows and doors closed during sampling.	Yes

Photos





Notes

At the time of inspection, visible water damage and staining were observed on the living room window; the conditions observed are believed to be from condensation forming on the glass and coming into contact with the track and frame over the years. An ambient air sample was collected in the living room to assess the current air quality conditions.

Recommendations

Consult with a contractor to

Evaluate the living room windows

In older homes with single pane windows or non insulated walls it is common for the glass or wall to be much colder than the air inside the home. When the warmer air comes into contact with the colder materials, condensation can sometimes form on the walls or glass. This is the same concept of room temperature air coming into contact with a cold soda can, with condensation building up on the outside of the cold can. This is very common in older homes especially by the beach and happens in the colder parts of the year or during the rainy season.

Yes

Personal contents can be cleaned as normally would be done. Items directly impacted by mold contamination should be discarded if deemed unsalvageable. Other items can wiped down with a damp cloth and mild detergent. Clothes can be laundered or dry cleaned as deemed appropriate.

Yes

Perform thorough housecleaning by vacuuming carpet, wiping down horizontal surfaces with damp cloth and mild detergent to reduce levels of resting spores. Clean furniture. Laundering clothes are also helpful for eliminating resting spores.

Yes

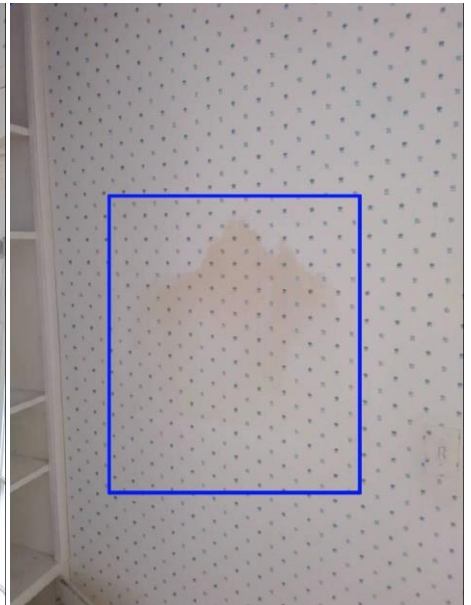
Remove

As a precaution, recommend to place an additional HEPA air scrubber in this area while remediation is being performed in other areas of the home.

Carpet and carpet pad

Yes

Location	Dining Room
Humidity	50%
Elevated moisture levels detected.	No
Elevated moisture levels conducive to fungal growth were detected.	No
Musty odors detected upon entry to the area?	No
Visible growth observed.	Yes
Visible water damage observed.	No
Visible stain observed.	Yes
Dusty/dirty conditions recommend thorough house cleaning.	Yes
To qualitatively and quantitatively determine the identification of molds present, sampling is recommended.	The client has accepted the recommendations. The results of the sample collected can be found in the Lab Results section of this report.
Air Sample Collection	Air Sample 05 – Dining Room
	Sample results indicated the presence of above average spore counts of allergenic mold types identified: Stachybotrys
Cavity Sample Collection	Cavity Sample 07 – Dining Room (Built-In Bookshelf Wall)
	The cavity sample results indicated the presence of elevated spore counts of allergenic mold types identified: Aspergillus/Penicillium . In addition, above average spore concentrations of Stachybotrys were also detected.
	Therefore, in the judgment of the inspector, response actions in this area are recommended as indicated below.
Adverse weather or outdoor conditions were noted at the time of the inspection.	No
Windows and doors closed during sampling.	Yes
Photos	



Notes

At the time of JLM Environmental's inspection, a large stain was observed on the rear dining room wall; based on the inspector's observations, it appears that the staining is limited to just the wallpaper. Inside the built-in bookshelf, spray paint was observed on the rear wall, covering what appears to be dark colored spotting; on the bottom cabinet, no spray paint is present but visible brown spotting/growth was observed. All building materials in the dining room tested dry at the time of the inspection. An ambient air sample was collected from the middle of the dining room to assess the current air quality conditions; a cavity sample was collected from the rear wall of the built-in bookshelf to assess the current conditions within the concealed cavity.

Recommendations

Consult with a contractor to

Prep and repaint/re-wallpaper stained wall

- **Any personal items, clothing, furniture that have visible signs of moisture, water-damage, and mold amplification should be cleaned, treated, laundered, or dry-cleaned. Items, which cannot be sufficiently cleaned/treated, should be properly disposed.**

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- **Upon completion of removal and cleaning activities and prior to post-remedial activities, HVAC ducting, registers and returns should be cleaned. Any HVAC filters should be replaced. The objective of the cleaning is to remove excess dust and residual mold spores.**
 - It is the responsibility of the client to verify that the moisture intrusion or water leak in the affected area listed above has been repaired.
 - Set up a containment accompanied with negative air pressure to completely isolate the master bedroom from the rest of the property where remediation will take place
 - Post warning signs at all locations of ingress and egress to the decontamination locations. Access to this area will only be permitted for properly trained and certified personnel.
 - Be certain to seal all air vents, windows, exhaust fans, etc. with proper tape and polyethylene sheeting. Negative air pressure must be maintained throughout the duration of the entire remediation project.
 - Remove built-in bookshelf to provide full access to the plaster behind
 - Remove the plaster from behind the lower right corner of the bookshelf, extending 3' off corner (toward the window) and extending 5' up (approx. 15 sq. ft.) where the spray paint is located on the wall
 - Remove and dispose of insulation and any debris found within exposed cavities. Removal of affected materials should extend 2 feet beyond all visibly impacted areas.
 - Exposed wooden structural members exhibiting staining should be sanded, wire, brushed, HEPA vacuumed, and damp wiped with a fungicide.
 - HEPA vacuum all horizontal and vertical surfaces that may be impacted by aerosolized mold spores inside of the containment area.
 - Fog the containment.
 - Encapsulate the exposed wood framing and cavities.
 - Containment and critical barriers must be maintained until JLM Environmental can issue final clearance.
 - Contact JLM Environmental after completion of abatement to perform a visual inspection of the abatement area and microbial air sampling to evaluate the air quality inside the containment. For further information see section below **"The Remediation Process and Post Remediation Testing"**

Moisture Content: The determination of moisture content is performed to detect building materials containing greater than 15% humidity for wood materials and greater than 1.0% humidity for drywall.

Relative Humidity: Habitable spaces maintain a relative humidity between 30% and 60% to minimize the growth of most type of mold. JLM Environmental recommends maintaining the humidity between 30% and 60%. If the relative humidity is in excess of 60 percent an environment is created that allows fungi to potentially amplify and flourish. If this condition exists it is strongly recommended that measures be taken to lower this humidity to acceptable levels.

AIR SAMPLING

JLM Environmental conducted air samples in the interior and exterior of the home. EPA guidelines state that **"the kinds and concentrations of mold and mold spores in the building should be similar to those found outside"**, and further state that **"In cases in which a particularly toxic mold species has been identified or is suspected...a more cautious or conservative approach to remediation is indicated"**. In light of this guidance, JLM Environmental has adopted the standards below in attempting to make reasonable determinations about air sample results.

Air samples are typically evaluated by means of fungal type identified and by comparing indoor and outdoor concentrations, complaint to non-complaint areas, or area of concern to areas of non-concern. In general, the levels and types of fungi in the indoor air (in non-problem buildings) should be similar to or lower than those found in the outdoor air. Higher levels of spore (order of magnitude) found inside may indicate that moisture sources and resultant fungal growth are present.

We use the following guidelines when interpreting the results:

- I. The composition and diversity of fungi in indoor, non-problem buildings should be similar to that of the outdoor air.

2. Compare spore count concentrations indoors and outdoors. Elevated indoor concentrations may indicate indoor fungal growth. Be aware that this is not always consistent and additional sampling may be needed.
3. Certain fungi are very good indicators of water damage. The presence of these spores, even in small quantities, indicates the presence of water damage. These indicator fungi include, but are not limited to, Chaetomium, Fusarium, Stachybotrys (including Memnoniella), and Ulocladium.
4. Different types of fungi grow at different levels of biologically available water. These differences in fungal growth suggest the degree of water damage or saturation. For example, Stachybotrys is an indication of short term, severe, or prolonged water damage over time.

Fungal spores are found everywhere. Whether or not symptoms develop in people exposed to fungi depends on the nature of the fungal material (e.g., allergenic, toxic, or infectious), the exposure level, and the susceptibility of exposed persons. Susceptibility varies with the genetic predisposition (e.g., allergic reactions do not always occur in all individuals), age, pre-existing medical conditions (e.g., diabetes, cancer, or chronic lung conditions), use of immunosuppressive drugs, and concurrent exposures. These reasons make it difficult to identify dose/response relationships that are required to establish "safe" or "unsafe" levels (i.e., permissible exposure limits).

It is generally accepted in the industry that indoor fungal growth is undesirable and inappropriate, necessitating removal or other appropriate remedial actions. The EPA Guidelines for Mold Remediation in Schools and Commercial Buildings define the conditions warranting mold remediation. Always remember that water is the key. Preventing water damage or water condensation will prevent mold growth.

The mold report is not intended to provide medical advice or advice concerning the relative safety of an occupied space. Always consult a physician in regarding health issues. For more information on this topic and for state guidelines regarding mold, please visit www.epa.gov/mold

Common biological dust components such as fungi are not regulated and have no mandated permissible exposure limits (PEL). According to current industry guidelines, concentrations of airborne fungi found indoors, which exceed concentrations of airborne fungi found outdoors and/or demonstrate a difference in hierarchy of fungi detected, suggest an indoor fungal reservoir and should be considered positive. Positive samples may warrant additional inspection, supplemental testing, or corrective measures

Air Sample Results:

Test Report: Allergenco-D™ Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number:	332202224-0001			332202224-0002			332202224-0003		
Client Sample ID:	1			2			3		
Volume (L):	75			75			75		
Sample Location:	Master bedroom			Front guest bedroom			Rear guest bedroom		
Spore Types	Raw Count	Count/m ³	% of Total	Raw Count	Count/m ³	% of Total	Raw Count	Count/m ³	% of Total
Alternaria (Ulocladium)	2	80	1	6	200	2.4	2	80	1.4
Ascospores	5	200	2.5	7	300	3.6	5	200	3.5
Aspergillus/Penicillium	66	2700	33.6	66	2700	32.5	54	2200	38.9
Basidiospores	9	400	5	6	200	2.4	4	200	3.5
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	3	100	1.2	-	-	-	-	-	-
Cladosporium	69	2800	34.8	102	4190	50.4	59	2400	42.4
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	2	80	1	-	-	-	-	-	-
Ganoderma	3	100	1.2	-	-	-	2	80	1.4
Myxomycetes++	7	300	3.7	8	300	3.6	4	200	3.5
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	3	100	1.8
Stachybotrys/Memnoniella	15	620	7.7	7	300	3.6	2	80	1.4
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Botrytis	-	-	-	2	80	1	2	80	1.4
Oldium++	-	-	-	-	-	-	-	-	-
Stemphylium	-	-	-	-	-	-	-	-	-
Torula++	-	-	-	1	40	0.5	1	40	0.7
Trichoderma	15	620	7.7	-	-	-	-	-	-
Zygosporium	1	40	0.5	-	-	-	-	-	-
Total Fungi	197	8040	100	205	8310	100	138	5660	100
Hyphal Fragment	5	200	-	12	490	-	5	200	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	1	40	-	1	40	-	-	-	-

Lab Sample Number:	332202224-0004			332202224-0005			332202224-0006		
Client Sample ID:	4			5			6		
Volume (L):	75			75			75		
Sample Location:	Living room			Kitchen/dining room			Exterior baseline		
Spore Types	Raw Count	Count/m ³	% of Total	Raw Count	Count/m ³	% of Total	Raw Count	Count/m ³	% of Total
Alternaria (Ulocladium)	1*	10*	0.2	1*	10*	0.3	2	80	1
Ascospores	3	100	2.5	4	200	5.8	3	100	1.3
Aspergillus/Penicillium	28	1100	27	25	1000	29.1	12	490	6.2
Basidiospores	4	200	4.9	2	80	2.3	1	40	0.5
Bipolaris++	1*	10*	0.2	-	-	-	-	-	-
Chaetomium++	1	40	1	-	-	-	-	-	-
Cladosporium	55	2300	56.5	47	1900	55.2	152	6240	79.4
Curvularia	-	-	-	1*	10*	0.3	-	-	-
Epicoccum	-	-	-	-	-	-	1*	10*	0.1
Ganoderma	-	-	-	1*	10*	0.3	-	-	-
Myxomycetes++	2	80	2	3	100	2.9	10	410	5.2
Pithomyces++	1*	10*	0.2	-	-	-	-	-	-
Rust	1*	10*	0.2	-	-	-	10	410	5.2
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	2	80	2	2	80	2.3	-	-	-
Unidentifiable Spores	1	40	1	1	40	1.2	2	80	1
Botrytis	2	80	2	-	-	-	-	-	-
Oidium++	1*	10*	0.2	-	-	-	-	-	-
Stemphylium	-	-	-	1*	10*	0.3	-	-	-
Torula++	-	-	-	-	-	-	-	-	-
Trichoderma	-	-	-	-	-	-	-	-	-
Zygosporium	-	-	-	-	-	-	-	-	-
Total Fungi	103	4070	100	88	3440	100	193	7860	100
Hyphal Fragment	9	400	-	11	450	-	12	490	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	2	80	-	-	-	-	17	700	-

Lab Sample Number:	332202224-0007			332202224-0008			
Client Sample ID:	7			8			
Volume (L):	30			30			
Sample Location:	Dining room wall - cav			Rear guest bedroom closet wall -			
Spore Types	Raw Count	Count/m ³	% of Total	Raw Count	Count/m ³	% of Total	
Alternaria (Ulocladium)	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	-
Aspergillus/Penicillium	1990	204000	99.2	Present	Present	-	-
Basidiospores	4	400	0.2	Present*	Present*	-	-
Bipolaris++	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-
Cladosporium	11	1100	0.5	Present	Present	-	-
Curvularia	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-
Myxomycetes++	1*	30*	0	-	-	-	-
Pithomyces++	-	-	-	-	-	-	-
Rust	-	-	-	Present*	Present*	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	2*	70*	0	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-
Botrytis	-	-	-	-	-	-	-
Oidium++	-	-	-	-	-	-	-
Stemphylium	-	-	-	-	-	-	-
Torula++	-	-	-	-	-	-	-
Trichoderma	-	-	-	-	-	-	-
Zygosporium	-	-	-	-	-	-	-
Total Fungi	2008	205600	100	-	-	-	-
Hyphal Fragment	3	300	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-

Sample Comments: 332202224-0008 Overloaded

Understanding the Air Sample Results: Each sample has 3 columns of information provided. The left is the raw count which is the number of spores for that fungal type detected on the trace. The middle column is the count per cubic meter (Count/m³) which is the raw count converted based on the total volume pulled for that sample. It represents the number of spores that should be expected in a cubic meter of air from the location in question if the spores were distributed evenly throughout the air.

Legend (Count/m³):

0-50 spores - These are only trace levels and are not an issue. Even Stachybotrys is not considered an issue at these levels if the sample does not also contain water markers like Chaetomium and Fusarium or high levels of Penicillium/Aspergillus.

50-200 spores - These are still very low levels. The toxic mold species *Stachybotrys* and *Memnoniella* are just about the only species that are considered an issue at this level.

200-500 spores - Up to this point, the most common species (*Penicillium/Aspergillus*, *Cladosporium* and *Curvularia*) are still not an issue and are in the normal range.

500-1500 spores - Sometimes the *Penicillium/Aspergillus* & *Cladosporium* levels are in this range and there is not an issue that needs to be remediated. If no water intrusion or mold issue is found during the inspection, these levels can be caused by normal life in an enclosed environment.






1500-3000 spores - This is where the grey area begins. When levels reach this point there may be an issue that needs to be addressed unless there is a corresponding number in the outdoor sample. If no water intrusion or mold issue is found during the inspection these levels can be achieved by a dusty home or A/C system.










3000-10,000 spores - Unless there is a corresponding number in the outdoor sample, this is the point where some remediation may be necessary. If a mold spore source has been identified, then clean up of that area is needed. If there was no water intrusion or mold issue found, the home may need to be cleaned and the duct system should be evaluated.








10,000-25,000 spores - Unless there is a corresponding number in the outdoor sample, a mold spore source has usually been identified and remediation of the area is needed. If there was no water intrusion or mold issue found, the duct system may need to be cleaned and/or a general "Spring Cleaning" of the home.





25,000-75,000+ spores - When spore levels are at this point, a mold issue will be easy to identify. Clean up will be required and should be performed by a Professional Mold Remediator.


75,000-1,000,000+ spores - When spore levels are at this point a mold issue will be evident. Remediation will be required and needs to be performed by a Professional Mold Remediator.

Fungi	Environmental Indicator		Typically Found
Hyphal/Mycelia			<i>Hyphal/Mycelia</i> are components of fungal growth (similar to the roots and branches of a tree); it is common to find small hyphal fragments in outdoor air and possibly in indoor dust. Their presence indoors, if in quantity or in large segments, suggests an active fungal colony in the building or that fungal material has been disturbed.
Alternaria			<i>Alternaria</i> is one of the more common fungi found in nature. It is found growing indoors on a variety of substrates including wallboards, painted walls, etc.
Pithomyces/Ulocladium			<i>Pithomyces</i> is commonly found on grass and decaying plant material and are rarely found growing indoors. <i>Pithomyces</i> and <i>Ulocladium</i> have a high water requirement and therefore colonize continuously damp materials such as damp wallboard and fabrics.
Arthrinium			<i>Arthrinium</i> is a saprobe and is found on plants. It is rarely found growing indoors.
Ascospores			<i>Ascospores</i> are ubiquitous in nature and are commonly found in the outdoor environment. Some fungi that belong to the ascomycete family include the sexual forms of <i>Penicillium/Aspergillus</i> , <i>Chaetomium</i> , etc. that may be frequently found growing on damp substrates.
Aureobasidium			<i>Aureobasidium</i> is commonly found in a variety of soils. Indoors, it is commonly found where moisture accumulates, especially bathrooms, and kitchens, on shower curtains, tile grout, windowsills, textiles, and liquid waste materials.

Aspergillus/Penicillium			<i>Penicillium</i> and <i>Aspergillus</i> are ubiquitous in environment. <i>Aspergillus</i> tends to colonize continuously damp materials such as damp wallboard and fabrics. <i>Penicillium</i> is commonly found in house dusts, wallpaper, decaying fabrics, moist clipboards, etc.
Basidiospores			<i>Basidiospores</i> are Saprophytes and plant pathogens and are commonly found in gardens, forests, and woodlands. They also include organisms that are the agent of "dry rot," and other fungi that cause white and brown wood rot, which may grow and destroy the structural wood of buildings.
Bipolaris/Dreschlera			<i>Bipolaris</i> and <i>Dreschlera</i> are usually found associated with plant debris, and soil. They are plant pathogens of numerous plants, particularly grasses. <i>Bipolaris</i> and <i>Dreschlera</i> can grow indoors on a variety of substrates.
Chaetomium			<i>Chaetomium</i> is often found on materials containing cellulose such as sheetrock paper, or other wet materials.
Botryotrichum			<i>Botryotrichum</i> can be found worldwide and is commonly associated with sand, salt marshes, plants, paper products, textiles, animal excrements, and wastewater.
Cladosporium			<i>Cladosporium</i> is a common outdoor mold. They are commonly found on dead plants, food, textiles, and a variety of other surfaces. Indoors, they can grow on a variety of substrates including textiles, wood, moist windowsills, etc. It can grow at 0°C and is associated with refrigerated foods.
Curvularia			<i>Curvularia</i> is found on plant materials and is considered a saprobe. Indoors, they can grow on a variety of substrates.
Epicoccum			<i>Epicoccum</i> is a saprophyte and considered a weekly parasitic secondary invader of plants. They tend to colonize continuously damp materials such as damp wallboard and fabrics.
Fusarium			<i>Fusarium</i> requires very wet conditions and is frequently isolated from plants and grains. They colonize continuously damp materials such as damp wallboard and water reservoirs for humidifiers and drip pans.
Ganoderma			<i>Ganoderma</i> can be used in the wood or paper industry and has been used in traditional Chinese medicine as an herbal supplement. <i>Ganoderma</i> naturally grows on conifers and hardwoods worldwide, causing white rot, root rot, and stem rot. This fungus is related to <i>Basidiospores</i> .
Memnoniella			<i>Memnoniella</i> can be found growing on a variety of cellulose-containing materials.
Penicillium/Talaromyces			<i>Penicillium/Talaromyces</i> are fungi that can naturally occur in soil, seed, or cereal crops and may be found indoors generating from house dust, fabrics, leather, wallpaper, and wallpaper glue.
Rusts			<i>Rusts</i> are plant pathogens and only grow on host plants.
Smuts/Periconia/Myxomycetes			<i>Smuts</i> and <i>Myxomycetes</i> are parasitic plant pathogens that require a living host. <i>Smuts</i> do not usually grow indoors. <i>Periconia</i> are rarely found growing indoors. <i>Myxomycetes</i> are occasionally found indoors, but rarely growing.
Scopulariopsis			<i>Scopulariopsis</i> is a large group comprised of a number of species commonly found in soil, decaying wood, and various other plant and animal products. In indoor environments it is found on damp walls, cellulose board, and wallpaper; wood; floor and mattress dust. Species of <i>Scopulariopsis</i> has also been isolated from carpets, hospital floors, swimming pools, wooden food packing, shoes and wood pulp. <i>Scopulariopsis</i> species are sometimes encountered growing on meat in storage.
Stachybotrys			<i>Stachybotrys</i> are commonly found indoors on wet materials containing cellulose, such as wallboard, jute, wicker, straw baskets, and other paper materials.
Stemphylium			<i>Stemphylium</i> is either parasitic or saprophytic and is rarely found growing indoors.
Torula			<i>Torula</i> can grow indoors on cellulose containing materials such as wallboard, jute, wicker, straw baskets, and other paper materials.

Trichoderma			<i>Trichoderma</i> naturally occurs on dead plant material and soil and can grow indoors on paper, textiles, and wet wood materials.
Other brown/colorless			An uncharacteristic fungal spore that does not lend itself to classification via direct microscopy.
Ascotricha/Dicyma			<i>Ascotricha</i> naturally occurs on decaying timber and soil. <i>Ascotricha</i> can be found indoors on wet sheetrock, straw, and wood. <i>Dicyma</i> can be generated around plant matter and can be found indoors on cardboard, wallboard, or wood.
Nigrospora			<i>Nigrospora</i> is especially abundant in warm climates and is rarely found growing indoors.
Zygomycetes			<i>Zygomycetes</i> naturally occurs from decaying plant matter or decaying animal matter. <i>Zygomycetes</i> can be found indoors on fruits and vegetables.
Botrytis			<i>Botrytis</i> is commonly found in tropical and temperate climates growing on vegetative matter. They may be found indoors in conjugation with indoor plants, fruits and vegetables.
Fusicladium/Venturia			<i>Fusicladium/Venturia</i> is a common plant pathogen most often observed outdoors.
Oidium			<i>Oidium</i> species are plant pathogens causing powdery mildew diseases found on leaves, stems, flowers, and fruits of living higher plants.
Ophiostoma/Ceratocystis			<i>Ophiostoma/Ceratocystis</i> belong to the class ascomycetes, commonly known as "lumber mold" and usually found on freshly cut lumber. They do not cause decay of the wood but reduce the aesthetic value.
Acremonium			<i>Acremonium</i> need high moisture content to grow and reproduce and are common on wet environments. They can be found in soil and plant debris. They are also known to occur in indoor specially wet cellulose-based building materials.
Myxotrichum			The natural habitat for <i>Myxotrichum</i> is soil. It can also be found regularly on paper substrates, damp drywall, decomposing carpets.
Polyschema			<i>Polyschema</i> is commonly found in soil and decaying wood.
Rhizopus			<i>Rhizopus</i> naturally occurs on soils, dung, and vegetables and can be used in manufacturing to ferment rice or soybeans.
Triadelphia			<i>Triadelphia</i> is a hyphomycete that has been found in soils contaminated by bat guano. On very rare occasions it may affect immunocompromised individuals.
Cercospora			<i>Cercospora</i> is a plant parasite causing leaf spot diseases on higher plants and can be associated with high humidity conditions.
Beltrania			<i>Beltrania</i> is often associated with leaf litter of tropical plants; commonly found in dead leaves and plant debris in subtropical to tropical areas.
Monodictys			This mold can be found on dead vegetation, damp linoleum, or paper materials such as drywall or paper lined insulation.
Spegazzinia			<i>Spegazzinia</i> is an extremely rare fungi; its habitat is usually plants and soils. It is not known to grow indoors.
Polythrincium			<i>Polythrincium</i> naturally occurs from leaves.
Cheiromycella			<i>Cheiromycella</i> is a common, widespread hyphomycete mainly on coniferous wood
Bispora			<i>Bispora</i> is a fungus that is found on decaying wood. <i>Bispora betulina</i> is found in buildings on wood in wet areas.
Paecilomyces			<i>Paecilomyces</i> naturally occurs outdoors from decaying plant matter or soil but can be found indoors on mattresses, carpets, leather, paper, jute fibers, tobacco.
Yeast			<i>Yeast</i> can be found in a wide variety of habitats. It is commonly found on plant leaves & flowers, soil and running water, mud & salt water. Some species of <i>yeast</i> are opportunistic pathogens that can cause infection in individuals with compromised immune systems.
Sporidesmium			<i>Sporidesmium</i> are mostly saprophytic, as many occur on woody plant parts, dead twigs, and branches, and a few occur on leaves and less woody portions of plants. A few species

			are similar in overall morphology to <i>Dreschlera/Bipolaris</i> . The color range can be almost colorless to dark brown, olive brown or reddish brown.
Arthrospores			<i>Arthrospores</i> are a very primitive spore type, formed by the breaking up or disarticulation of fungal mycelia. They can be found indoors on paper, soil, or textiles. Some specific species of <i>Arthrospores</i> may be allergenic to some individuals. These organisms require a series of biochemical tests for definitive identification.
Arthrobotrys			<i>Arthrobotrys</i> belongs to a group of hyphomycetes that can be found in soil. Although it is an outdoor fungus, species of <i>Arthrobotrys</i> have been reported from some indoor environments.
Cephalotrichum			<i>Cephalotrichum</i> is a common indoor wood saprophyte.
Sterigmatobotrys			<i>Sterigmatobotrys</i> is a somewhat common indoor spore that is a saprophyte found primarily on wood.
Cunninghamella			<i>Cunninghamella</i> is a filamentous fungus found in soil and plant material, particularly at Mediterranean and subtropical zones. It can also be associated with animal material, cheese, and Brazil nuts.
Tritirachium			<i>Tritirachium</i> can be found naturally from decaying plant matter, insects, and soils. Indoors, this spore can thrive on jute, paper, and textiles.
Zygothia/Schizothyrium			<i>Zygothia/Schizothyrium</i> is naturally associated with plants, on leaves, twigs and fruits of numerous trees and shrubs. One sub-species causes flyspeck disease, which causes blemishes of apple and pear fruit that cosmetically damage the cuticle, which result in fruit that are unacceptable to consumers.
Mucor			<i>Mucor</i> is a very fast growing fungus that can be found in soil, plant debris, and dung. In indoors, <i>Mucor</i> may occur in vegetables, decaying fruits, and wet surfaces.
Rhinocladiella			<i>Rhinocladiella</i> is a slow growing fungus that can be found naturally in soil, herbaceous substrates, and decaying wood; indoors it can be found on wood components. One species of <i>Rhinocladiella</i> is called the cellar fungus as it is most commonly found indoors on brickwork and adjacent timber in wine cellars.
Graphium			<i>Graphium</i> belongs to the group hyphomycetes and has about 20 different species. It can be found in soil, plant debris, woody substrate, manure, and polluted water. There are no reports of illness due to <i>Graphium</i> .
Gonatobotryum			<i>Gonatobotryum</i> belongs to the group hyphomycetes and is a mitosporic fungi. Most homes built with lumber have areas of growth of both <i>Ophiostoma / Ceratocystis</i> and <i>Gonatobotryum</i> on wood framing inside walls. Usually all lumberyards have some percentage of boards with areas of this black/brown mold growth. Other natural habitats of this fungus include soil, and rotten wood, and parasitic on certain other plants.
Scolecobasidium/ Ochroconis			<i>Scolecobasidium</i> species comprise a very small proportion of the fungal biota. This genus is distantly related to <i>Ochroconis</i> and <i>Dactylaria</i> . There have been several reports of opportunistic infections caused by these genera, but a true pathogenic role has not been firmly established. No information is available regarding upper respiratory health effects, or toxicity. Allergenicity has not been studied. Natural habitat includes soil and decaying leaves.
Wallemia			<i>Wallemia</i> belongs to the group hyphomycetes and has been found to be very common in the agricultural environments. In outdoor, it is known to occur in soil and hay. It can be isolated from hypersaline water of man-made salterns on different continents. It is a xerophilic fungus, requiring very low moisture content. The fungus is known to produce mycotoxins, but their effects on humans are not known. Inhaling spores may cause hay fever or asthma symptoms.

Myrothecium		<i>Myrothecium</i> belongs to the group hyphomycetes and has about 8 different species. It is found in soil, plants, and grasses. The fungus is occasionally found in indoor environment and grows on building materials made of cellulose.
Pestalotia/Pestalotiopsis		<i>Pestalotia/Pestalotiopsis</i> are Saprophyte fungi that are naturally found on dead leaves of different plants. Some are plant pathogens that attack foliage or fruit of different plant species. Some require a living plant host for growth for indoor environments.
Pyricularia		<i>Pyriculariás</i> is a fungus naturally found on leaves of different grasses and sometime other plants. Commonly causes leaf spot diseases on foliage.
Phialophora		<i>Phialophora</i> species comprise a small proportion of the fungal biota. This genus is most closely related to Exophiala and Fonseca. Some species are plant pathogens; others cause soft-rot on wood. <i>Phialophora</i> verrucosa is one of the main agents of chromoblastomycosis in tropical and subtropical regions. Other health effects caused by <i>Phialophora</i> species include rare cases of mycetoma and phaeohyphomycoses. No information is available regarding toxicity. Allergenicity has not been studied.
Trichothecium		<i>Trichothecium</i> is a fungus widely distributed on decaying vegetation and in the soil. <i>Trichothecium</i> causes pink rot of apples and is a parasite of fleshy fungi. No human or animal diseases due to <i>Trichothecium</i> have been reported.

 Potential Water Intrusion/Indicator Mold Capable of Mycotoxin Production

 Potential Water Intrusion/Indicator Mold

Exposure Guidelines

In the U.S. there are no Federal guide lines at this time regarding mold. This is due to the wide variety of molds (somewhere between 50-250 Thousand) and the human response range varies greatly from one individual to another, it is not possible to collect and evaluate all molds using a single sampling method and the information relating mold to health effects is generally insufficient to describe all the different responses possible.

At this time it is common industry practice to test the interior and exterior air and compare them as supported by the American Conference of Governmental Industrial Hygienists (ACGIH), the American Industrial Hygiene Association and the Environmental Protection Agency (EPA) guidelines. Generally speaking, and under normal circumstances, the indoor air mold spore quantity should be lower than, but qualitatively similar (genus and species) to, that of outdoor air. All occupant health inquiries should be referred to a physician knowledgeable in health effects of environmental mold exposures.

The Remediation Process and Post Remediation Testing

Most mold issues found in a home are relatively easy to repair (remediation). Seldom is there a need to panic or assume the house is contaminated forever. The mold is removed from the contaminated structure and the air is cleaned. The most important aspect is to determine the source of the moisture and abate the water intrusion issue. Once the moisture source is abated and the area is cleaned of the existing contamination, there should be no further mold problems (unless the moisture returns). JLM Environmental does not perform any remediation. JLM Environmental is a independent testing company. **Please keep in mind post remediation testing and clearances is not included with the original inspection report. Post remediation requires additional fees for lab analysis and reporting.**

During the remediation process an air tight containment is built out of plastic sheeting. HEPA air scrubbers are placed inside of the containment creating negative air pressure inside of the containment during the entire remediation process preventing the travel of spores outside of the containment. Dehumidifiers are placed inside the containment to drywall all buidilng materials to 15% or less to industry standards. Once the professional remediation is completed, and while the containment is still up, testing can be performed to verify that the remediation was effective. The testing is done **BEFORE** the area is put back together (renovation work is performed). Remediation companies, under some circumstances, may perform remediation or destructive testing without a protocol and simpl follow the mold until the extent of the contamination is determined. Normal guidelines call for at least 2 feet of additional clean material removed beyond the end of the visible contamination. It is recommended that the homeowner or client is provided with documentation from the remediator about the extent of the work performed.

Following verification of successful remediation, JLM Environmental will issue to the client documents verifying that the remediation process was effective. This is not a document declaring the dwelling to be "mold free". Simply put, it relates only to the areas inside the containment that were remediated. These documents are generated, recorded and dated only after the results and payment are received by our office.

The results belong only to the client. Please do not ask us to disseminate this information to other people. You are at liberty to share the information with anyone you wish. This simply states that if anyone wants to know about your results, they cannot get them information from us without a subpoena. This includes real estate agents, lawyers, sellers, buyers etc. Unless you authorize us to release information specifically on the original agreement, you will be the only recipient of the information.

Interpreting results:

There are no state or federal standards for airborne or surface mold concentrations at this time. Therefore, prevent education, professional training and years of experience are ultimately very important and your best assurance of a successful investigation. Whether or not a certificate of remediation is issued is based on the judgement of the consultant. This includes evaluating all of the criteria listed on the site conditions and evaluation of the complete microbial results. Please provide a copy of this information to the professional remediation company of your choice.

ASBESTOS AND LEAD HAZARD INFORMATION

If the subject property was built before 1978, we strongly recommend that the property be tested for asbestos and lead prior to remediation to determine if hazardous materials are present. Because of the age of the home, any activities that disturb the finish materials or other suspect asbestos-containing materials require the testing of those items prior to demolition or repair. Surfaces/materials that are painted should also be tested for lead-based paint. Determining the presence of hazardous materials including but not limited to lead and asbestos that may be disturbed during the mold remediation process is required. Per South Coast Air Quality Management (SCAQMD) Rule 1403 it states, "**The affected facility or facility components shall be thoroughly surveyed for the presence of asbestos prior to any demolition or renovation activity**" (this includes mold remediation). Therefore, if asbestos building materials or lead based paints are thought to exist within the premises, these issues should be addressed by a **state licensed asbestos and lead inspection company**. Any materials that will be disturbed which are found to contain asbestos and/or lead would need to be abated by a licensed/certified asbestos and lead abatement contractor.

Asbestos and lead testing is beyond the scope of this mold investigation. JLM Environmental holds state licensing requirements to perform both asbestos and lead testing. Please contact JLM Environmental to perform necessary assessments prior to remediation.

UNDERSTANDING MOLD

Fungi are a large group of organisms that include mold. In nature, fungi and mold help breakdown and recycle nutrients in the environment. Molds are microscopic organisms that live on plants, in the soil, and on animals, in fact almost anywhere food and moisture are available. Mold is present everywhere in the outdoor and normal indoor environments. It is in the air and on surfaces as settled dust. Exposure to mold is inevitable in everyday life. Thus, exposure to mold is considered part of normal activity for most people. Only environments for which extraordinary preparations have been taken don't have mold present in the air or on surfaces. The conclusions drawn in this report are intended to provide some basic information using certain assumptions and facts that have been extracted from a number of reliable sources. In the absence of set standards, the user of this information must determine the applicability of this report to each individual situation. Detection of the presence of a particular mold in an indoor environment does not necessarily mean the occupants inside a home are or are not being exposed to unhealthy or dangerous conditions. Under the right conditions (moisture, a food source, and time) will allow mold to grow, multiply and produce spores. Mold grows throughout nature as well as the built environment. Mold reproduces by microscopic cells called "**spores**" that can be spread easily through the air. Mold spores are always present in the indoor and outdoor air. There are molds that can grow on any organic substrate including wood, paper, carpet, food, ceiling tiles, or any surface where dust has accumulated. When excessive moisture or water accumulates indoors, mold growth will often occur, particularly if the moisture problem remains undiscovered or un-addressed. There is no practical way to eliminate all mold spores in the indoor environment. The way to control indoor mold growth is to control the amount of moisture available to the mold.

Mold growth can become a problem in your home or building where there is sufficient moisture and the right food source available. The key to preventing mold growth is to prevent all moisture problems and/or water intrusions. Since mold growth can occur within 24 - 48 hours of water intrusion conditions identifying and eliminating the source of moisture and removing any remaining moisture needs to occur as soon as

possible. Of course, in some cases, hidden mold can grow when there is water available behind walls, sinks, floors, etc. and further intrusive investigation is warranted. Indications of hidden moisture problems might be discoloration of ceiling or walls, warped flooring or condensation on the windows or walls. Even if mold has gone dormant from a lack of moisture or organic food, it needs to be cleaned because once moisture returns it will resume growth.

SCOPE OF INSPECTION

The scope of this mold assessment includes a comprehensive visual inspection of all visibly and physically accessible areas inside of the subject property, moisture analysis of accessible building materials, collection of necessary/contracted samples, and explanation of laboratory data. This inspection documents conditions present at the specific time and date of the inspection. JLM Environmental assumes no responsibility for future mold contamination issues that may impact the residence at a later date. A written report of our finding and recommendations are presented to our client upon completion, which fulfills our contractual obligations with our client. In this report, our conclusions are based upon our visual observations and samples collected specifically at the time and date of inspection and collection of limited data from the inspection site. This inspection should not be considered a complete guarantee that all areas of mold contamination have been identified inside of the residence. Mold contamination can be hidden or concealed from view inside of wall cavities, inaccessible to JLM Environmental investigators. Waterproofing forensics is beyond the scope of this investigation; therefore, we will make no statements with regard to the cause of any observed microbial contamination present, or attempt to locate the location of any water intrusion. If the client has concerns regarding drainage, water intrusion, waterproofing, or any other related matter, we recommend consulting a waterproofing expert, plumber or other qualified professional to offer insight into these matters.

OCCUPANT HEALTH INFORMATION

It should be noted that any persons experiencing adverse health effects should consult their physician. This report is not meant to diagnose or address any health-related issues. **Note:** If the clients have health issues/concerns such as allergies to mold, dust, pet dander or asthma, then JLM Environmental recommends that the HVAC system be professionally cleaned e.g. duct, coils, registers and plenum. It is recommended that the filter for the furnace be changed to a High Efficiency Particulate Absolute filter (H.E.P.A.). This is a higher quality air filter and is preferred for better air quality. Or at minimum an allergen type filter that can actually filter out mold spores, allergens and particulates should be used. With heating and cooling the filter should be changed four times per year. California legislation has enacted Senate Bill 732 (SB 732), that passes the "Mold Protection Act," which is intended to protect the public from adverse health effects related to the presence of mold(s) in residential and commercial properties. This bill outlines specific requirements of property owners (to be regulated by the Department of Health), and adds mold to the list of substances or materials that may be an environmental hazard.

MOLD SAMPLING METHODS

The goal of sampling is to learn about the levels of mold growth and amplification in buildings. There are no EPA or OSHA standards for levels of fungi and mold in indoor environments. There are also no standard collection methods. However, several generally accepted collection methods are available to inspectors to study mold in indoor environments. Comparison with reference samples can be a useful approach. Reference samples are usually taken outdoors and sometimes samples can be taken from "non-complain" areas. In general, indoor fungal concentrations should be similar to or lower than outdoor levels. High levels of mold only found inside a building often suggest indoor amplification of the mold or fungi. Furthermore, the detection of water indicating fungi, even at low levels, may require further evaluation. There are several types of testing methods that can detect the presence of mold. They can be used to find mold spores that are suspended in air, in settled dust, or mold growing on surfaces of building materials and furnishings. There are different methods that can identify types of live mold and dead mold in a sampled environment. Mold spores can be allergenic and toxic even when dead. Methods utilized during this inspection are as follows:

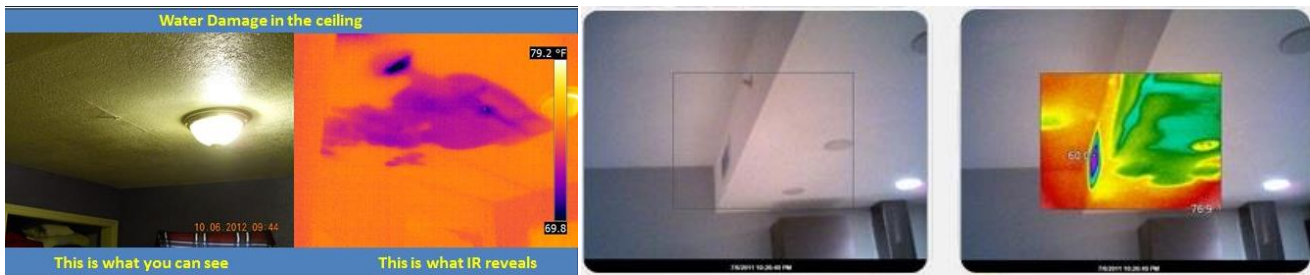
Temperature, Relative Humidity & Moisture Detection

A hand-held thermometer/hygrometer is used throughout the residence to record measurements for a short period of time. Measurement and recording of the air temperature and relative humidity is used to determine the presence of a current moisture problem or standing water. A non penetrating moisture meter and an invasive moisture meter is applied to building materials (walls, cabinetry, etc.) throughout the project site. The determination of moisture content is performed to detect building materials containing greater than 15% humidity for wood materials and greater than 1.0% humidity for drywall. **Fungi that feed on building material such as drywall or lignin of the wood must have each of three requirements for growth: moisture (moisture content greater than approximately 15% for wood, 1% for drywall), air, and favorable temperatures. All of these items are required for microbial amplification to occur.**

Exposure to the weather (alternate wetting and drying) can set up the conditions necessary for decay and microbial amplification to develop. For this evaluation, we report those building materials, which at the time of the investigation appeared to us or demonstrated elevated moisture levels. It should be noted that certain building materials (hidden metal, fiberglass, etc.) may affect our moisture detection equipment and may provide false readings. At times, we must perform an intrusive inspection to confirm the presence or absence of these materials. Habitable spaces maintain a relative humidity between 30% and 60% to minimize the growth of most type of mold. JLM Environmental recommends maintaining the humidity between 30% and 60%. If the relative humidity is in excess of 60 percent an environment is created that allows fungi to potentially amplify and flourish. If this condition exists it is strongly recommended that measures be taken to lower this humidity to acceptable levels. If this is not practical then sanitation and cleanliness of the area is critical to reduce potential fungi growth. It is noted that mold is almost everywhere in normal living conditions. Under ideal condition mold can actually double in 24-48 hours. *****Important: Consistently wet building materials can lead to and support Mold growth.**

Thermal Imaging

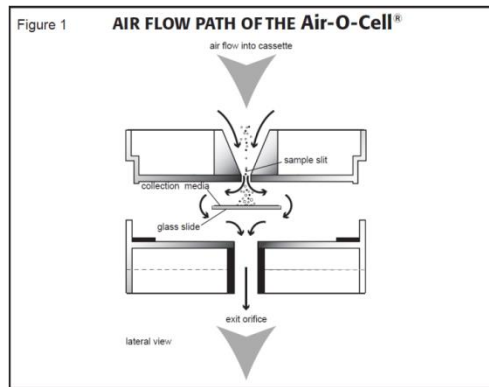
Thermography is the use of an infrared imaging and measurement device to "see" and "measure" thermal energy emitted from an object. Thermal, or infrared energy, is light that is not visible because its wavelength is too long to be detected by the human eye; it's the part of the electromagnetic spectrum that we perceive as heat. Unlike visible light, in the infrared world, everything with a temperature above absolute zero emits heat. Even very cold objects, like ice cubes, emit infrared. The higher the object's temperature, the greater the IR radiation emitted. Infrared allows us to see what our eyes cannot. Infrared thermography devices produce images of invisible infrared or "heat" radiation and provide precise non contact temperature capabilities. Thermal imaging is used in conjunction with conventional moisture detection equipment to offer the most comprehensive moisture assessment available inside of a residence. Below are examples of what a thermal imaging device can show to our inspector (please note: these photos are not from your property, but are only examples):



Air Samples

Air samples are possibly the most common type of environmental sample that investigators collect to study bioaerosols (mold, pollen, particulates). At this time it is common industry practice to test the interior and exterior air and compare them as supported by the Environmental Protection Agency (EPA) guidelines. Generally speaking, and under normal circumstances, the indoor air mold spore quantity should be lower than, but qualitatively similar (genus and species) to, that of outdoor air. All occupant health inquiries should be referred to a physician knowledgeable in health effects of environmental mold exposures. Spore traps are a unique and effected sampling device designed for the rapid collection and analysis of a wide range of airborne particulates, including fungal spores. The air samples are collected using Zefon Analytical Accessories Air-O-Cell™ cassettes connected to an electronically powered air pump calibrated at 15L/min. Calibration is conducted by a field rotometer. Samples are analyzed via light microscopy at 600X magnification, with the entire trace (100% of the sample) being analyzed. The results are reported as total, meaning they include both viable and non-viable fungal spores. Unfortunately, this technique does not allow for differentiation between *Aspergillus* and *Penicillium* spores.

The Air-O-Cell operates on the well-established principle of inertial impaction. Particles in the air stream are accelerated as they approach the tapered inlet opening and drawn through a small slit aimed directly at a glass slide. This glass slide contains a sticky and optically clear sampling media which can permanently collect and hold particles. As the particles come through the slit, the air velocity forces the particles to impact into the sampling media, while the air stream makes a sharp 90 degree turn and proceeds around the slide and out of the cassette. The air flow path through the Air-O-Cell cassette is illustrated below in Figure 1.



Conditions & Limitations of the Inspection:


JLM Environmental LLC has performed the tasks set forth above in a professional manner, consistent with industry standards, however JLM Environmental can neither guarantee and does not warrant, that this limited assessment has revealed all adverse environmental conditions affecting the site. It is the responsibility of the property owner to disclose all known issues of prior water intrusion events and/or microbial contamination issues. JLM Environmental cannot assume responsibility for investigation of any unknown issues, which are not brought to our attention prior to the commencement of the survey, or issues that we are not authorized to investigate. The results reported and any opinions set forth herein are solely for the benefit of our above named client and may not be quoted or used by third parties without the express written consent of JLM Environmental. The results and opinions set forth in this report will be valid as of the date of this report only. This inspection is a non-intrusive microbial site investigation performed to verify the absence or presence of mold spore amplification associated with moisture intrusion. It is a visual inspection and not a physical survey of the systems, structures and components. The inspection does not constitute a warranty, an insurance policy or a guarantee of any kind. The report contained herein is confidential and is given solely for the use and benefit of the client, and is not intended to be used for the benefit of or relied upon by any other client or other third party. This report is intended to identify issues relating to moisture visible to the inspector at the time of the inspection only and act as a general guide to help the client make his or her own evaluation of the overall condition of the home or building. The report expresses the personal opinions of the inspector, based upon his visual impressions of the conditions that existed at the time of the inspection only. The inspection and report are not intended to be technically exhaustive, or to imply that every possible defect was discovered. No disassembly of equipment, opening of walls, moving of furniture, appliances or stored items, or excavation was performed. All components and conditions which by the nature of their location are excluded. JLM Environmental cannot warrant that the assessment requested would satisfy the dictates of, or provide a legal defense in connection with, environmental laws or regulation. The results and opinions set forth by JLM Environmental in its report will be valid as of the date of the report. JLM Environmental assumes no obligation to advise you of any changes that may later be brought to our attention.



310.978.8281

WWW.JLMENVIRONMENTAL.COM

State of California
Division of Occupational Safety and Health
Certified Asbestos Consultant



Jonathan Massey
Name

Certification No. **11-4813**

Expires on **11/16/22**

This certification was issued by the Division of Occupational Safety and Health as authorized by Sections 7180 et seq. of the Business and Professions Code.

OCA CONTRACTORS STATE LICENSE BOARD
DEPARTMENT OF CONSUMER AFFAIRS ACTIVE LICENSE

License Number **949259** Est. INDIV

Business Name **MASSEY CONSTRUCTION**

Classification(s) **B**

Expiration Date **06/30/2022** www.cslb.ca.gov



Health Science Associates

This certifies that
JONATHAN MASSEY
has successfully completed an intensive course of instruction in:
SAMPLING & EVALUATING AIRBORNE ASBESTOS DUST
Equivalent to NIOSH 582
provided by
Health Science Associates at
10771 Noel St., Los Alamitos, CA 90720 on
May 7-10, 2012.

Certificate No.: 120289LA-01

Kathy S. Jones
Kathy S. Jones, Training Director

www.healthscience.com

American Home Inspectors Training Institute, Ltd.
awards 300 Education Hours &
Certificate of Satisfactory Completion
to
Jonathan Massey
for the successful completion of
Home Study Home Inspection Course
Completed this 26th of January 2015



Patrick Sheehan Director 01/26/2015

IICRC Be it known that
JONATHAN L. MASSEY
is certified in these areas:

**WATER DAMAGE RESTORATION
APPLIED MICROBIAL REMEDIATION**

179334 Register Number

4/30/2022 Expiration Date

THE NATIONAL RADON SAFETY BOARD
Certified Radon Professionals
Certifies that
Jonathan L. Massey
Has Successfully Met The Established & Published Requirements for Certification by The National Radon Safety Board as a
Radon Measurement Specialist

13SS057
Certification Number
8/30/2023
Expiration Date

Kehaulani Kekoa
Certification Coordinator

NRSB
National Radon Safety Board

This certificate is the property of The National Radon Safety Board

The National Environmental Trainers
(WWW.NATLENTTRAINERS.COM)

Jonathan Massey
has satisfactorily passed an exam and completed an 8-hour annual refresher training course entitled
"HAZWOPER 8 Hour Annual Refresher - 1910.120 (e)"
meeting the requirements identified in Title 29 CFR 1910.120.

Date
04/05/2021


#188572

Paul J. Colangelo
Paul J. Colangelo
Training Facilitator

California Department of **PublicHealth**

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC HEALTH

LEAD-RELATED CONSTRUCTION CERTIFICATE

INDIVIDUAL:	CERTIFICATE TYPE:	NUMBER:	EXPIRATION DATE:
 Jonathan Massey	Lead Inspector/Assessor	LRC-00002199	7/22/2022
	Lead Supervisor	LRC-00002198	7/22/2022

Disclaimer: This document alone should not be relied upon to confirm certification status. Compare the individual's photo and name to another valid form of government issued photo identification. Verify the individual's certification status by searching for Lead-Related Construction Professionals at www.cdph.ca.gov/programs/clpph or calling (800) 597-LEAD.



LEAD-RELATED CONSTRUCTION CERTIFICATE

INDIVIDUAL:



Daniel Limon

CERTIFICATE TYPE:

Lead Sampling Technician

NUMBER:

LRC-00009111

EXPIRATION DATE:

8/18/2022

Disclaimer: This document alone should not be relied upon to confirm certification status. Compare the individual's photo and name to another valid form of government issued photo identification. Verify the individual's certification status by searching for Lead-Related Construction Professionals at www.cdph.ca.gov/programs/clppb or calling (800) 597-LEAD.

CERTIFICATE # 06172021


JLM

ENVIRONMENTAL
INSPECTION & CONSULTING

This certifies that Daniel Limon has successfully
completed an intensive course of in-house instruction in

Moisture Mapping & Thermal Imaging
Microbial Sample Collection

Issued: June 16th, 2021


Jonathan Massey, President