

Considerations when preparing a legal case involving mold

Attorneys are often involved with litigation resulting from mold growth and quite often from bad faith mold clean-up (remediation.)

Although molds themselves are quite simple organisms, legal cases involving mold can be difficult. The main reasons being:

- There are no hard and fast rules about permissible levels of indoor mold and so the interpretation of test results can be less than straightforward;
- Some people are affected by mold while many others are not. Why this is so is not clear although we do know that there are certain classes of sensitive people including the aged, immuno-compromised, asthmatics and the young;
- The industry is filled with experts that only have taken a 2-3 day course.

Mold Testing

Point 1. The nature and quantity of contaminants present at, and released from, sites of mold growth are typically dynamic and complex. When mold grows and multiplies indoors, it can be very expensive to characterize because its concentration in the air may vary over time and space based on the following:

- A. Both the types of mold and their absolute and relative numbers in air or on surfaces are likely to vary with an array of potentially changing micro-environmental factors such as temperature, relative humidity, surface water activity level, type of substrate, nutrient availability, presence of competing micro-organisms, amount of light.
- B. The amount of mold products released to the air from a site of growth and how they are distributed can change dramatically over short periods of time.
- C. The mixture of contaminants in the air can be influenced by factors such as ventilation patterns, air speed and occupant activities, and will change over time and location as the spores of some species settle out at different rates.
- D. The deposition and accumulation of mold particles onto surfaces can depend on releases from growth sites, airborne transport patterns, effectiveness of removal mechanisms and frequency of resuspension caused at least partly by occupant activities such as foot traffic or cleaning.

Point 2. Mold testing is incapable of completely characterizing and measuring the contaminant mixture produced by most indoor mold problems. Because there are fairly reliable, practical and cost-effective investigation techniques which don't require mold testing, the following are reasons to question the usefulness of mold testing in many situations:

- A. Any test method is selective in which molds it can possibly detect out of the broader universe of those molds that may be present – consequently, testing results cannot be relied upon to give a complete picture of all types of mold present.
- B. The quantities of mold detected (both the total numbers and relative frequencies) are not precise counts; that is, the numerical results can vary by the sampling and analytical method used, and should be regarded as fairly crude estimates at best.
- C. The results for any particular sample are only applicable to the specific time and location of the sample – test results only represent a “snapshot” in time. They cannot be assumed to estimate the contaminant load at a another nearby location from where the sample was taken and do not necessarily represent past or predict future conditions.

Point 3. It is fundamentally impossible to rule out mold-related health risks by any currently available environmental testing methods. Even if it were practical to collect enough data to identify and quantify all the mold present for a specific time and location, health risks and occupant safety would not be fully understood or predicted due in part to the following:

- A. The identity of most mold species, and even strain or isolate, does not adequately predict the amount or types of potentially harmful agents produced. A particular mold that can produce harmful substances does not always do so – and the types and amounts it produces may change over time and from one location to another.
- B. Mold fragments are not detected by analysis of air samples performed at conventional laboratories and may be the cause of health problems.
- C. Mold produced toxins can attach themselves to dust particles and as such would never be detected by air samples analyzed at conventional laboratories. Dust particles laden with mold produced toxins may be the cause of health problems.
- D. Molds may produce agents which have not yet been identified or are not currently recognized as harmful.
- E. Mold testing results alone are not adequate to represent a person's exposure to mold particles or to the mold's harmful products.
- F. Much remains unknown about how and why some individuals are af-

ected by mold when others are not, and what factors particular to the agent, the exposure, and/or the person lead to health problems.

- G. Numerical criteria are not appropriate for determining if a health concern exists, because there is no agreement on what minimum level of any specific mold, much less a complex mixture of various organisms and their product, is safe or will cause health effects.

More on the Health Effects of Mold

Many molds can produce a variety of allergenic substances, odorous chemicals, and toxic metabolites. The specific agents produced by mold that can affect human health are not always predictable; they may vary in type, quantity, and strength from species to species and even from one strain or isolate to another of the same mold species.

For example, a colony that is producing specific harmful agents at one time might not produce the same agents if the conditions where it is growing change, or if it spreads to a new location with a different set of micro-environmental conditions. The situation is further complicated by the fact that multiple species of mold are often present when an indoor mold problem exists, and each species may be influenced differently from the others as micro-environmental factors change.

In order for mold to affect health, it must contact or enter the body. People are mainly exposed to mold by inhaling spores and by skin/eye contact. Mold also releases a mixture of various volatile organic chemicals into the air that people breathe.

When people are exposed to high levels of mold, especially when it proliferates indoors, a spectrum of health effects may occur. Allergic symptoms are the most common problems, such as mucous membrane irritation, rhinitis, and rashes. More severe effects, such as asthma attacks, hypersensitivity pneumonitis, infections, or toxic reactions may also occur. However, since susceptibility to the effects of molds varies in the population, health impacts from similar exposures can vary greatly from person to person and may not be readily predictable for some individuals and situations. Persons who are most likely to be susceptible include those with respiratory problems such as allergies or asthma, a compromised immune system, the elderly and the very young.

Even when an indoor mold problem has been characterized as well as is possible, there will always be uncertainty regarding if or how the health of occupants may be affected. In fact, for a number of practical and logical reasons, the possibility that some portion of any group exposed to molds will suffer adverse health effects can never be ruled out when mold is found growing in occupied areas. Given that there is considerable uncertainty about the health consequences of exposure to contaminants from indoor

mold problems, it is recommended that any mold growing inside be regarded as a sign of a potential (current or future) health hazard that should be corrected properly as soon as possible.

Conduct a study of the building – Attorneys should bring in expert investigators to conduct a thorough investigation of the building and initially characterize the mold problem. A thorough visual inspection can reveal extensive information about the source, location, and nature of the problem. As an example, mold growth only in exterior walls often is due to window or wall leaks, while mold growth on furnishings is often related to humidity control.

An experienced investigator will take photographs, make notes and take direct measurements (air samples; lift tapes; swabs) that will be essential as evidence for characterizing the problem in court and for identifying the sources of the problem.

Identify to the species level – Culturable air, bulk and dust samples may be analyzed at the genus or species level. Most laboratories automatically identify to the genus level only, unless species-level identification is specifically requested. Species-level identification costs a little more and takes a bit longer, however, it is important information when it comes down to determining whether or not the mold in the building is similar to molds commonly found in the outdoor air in that area.

Mold spores are ubiquitous and are found in air and on surfaces, both indoors and outdoors. Certain genera of mold may be commonly found outdoors in particular regions and these may be the same molds identified in the building. Genus-level identification of mold in a building is not sufficient information to indicate anything abnormal. However, different species under a common genus of mold may thrive in very different environments. For example, *Penicillium citrinum* is an extremely common mold and is not unusual in any sample. However, *Penicillium chrysogenum* is a common colonizer on some water-damaged building materials and may indicate a problem. In this way, species-level identification provides additional detail about the potential source of mold.

Look for colonization – A critical piece that many attorneys overlook when investigating a building is the importance of mold colonization as opposed to the presence of mold spores. Because mold spores are found everywhere, even in extremely dry and clean environments, demonstrating the mere presence of mold is not sufficient to prove abnormal conditions in the building. Attorneys must determine whether or not there is actually mold colonization in the building. If mold has colonized in the building, there has to have been water present that enabled spores to germinate and colonize materials.

Experienced scientists can collect bulk samples and prove colonization by examining the fruiting structures of the mold under a microscope. Failure to prove colonization of mold in the building could result in an argument that maintains that mold contamination is everywhere.

Compare buildings – A comparison of similar buildings in similar locations is important to understanding the extent of the differences in air quality. In many cases, attorneys must demonstrate that there either is or isn't a significant difference between the conditions in the building in question and other buildings in the area. Experienced investigators will know to collect samples, not only in areas with suspected colonization, but also in surrounding dry areas and outdoors to allow for comparison. Attorneys may wish to select a similar building for comparison's sake and conduct an investigation in a "control" location as well as the building in question to unearth similarities and differences.

In personal injury cases, it may also be helpful to sample the plaintiff's home and work location in order to compare conditions and levels of exposure in the two buildings where she/he spends most of his/her time. This can help ascertain whether or not conditions at the complaint location are vastly different from the conditions in a non-complaint location to which the individual has also been exposed.

Be strategic about working with "hired guns"

Some investigation firms have a reputation for being "hired guns," working primarily for either plaintiffs or defendants. When selecting litigation support or expert witnesses, it is important to select a firm that has experience working on behalf of **both** plaintiffs and defendants. This ensures that the investigation firm is not cross examined in court to reveal a purely one-sided history of conclusions.

Select experienced investigators

It is critical that building owners and managers select building investigators that have the experience and expertise to manage even the most complex cases. Selection can be difficult, given the fact that there are no established or even agreed upon investigation methods or regulatory agencies overseeing the industry. It is a good idea to select a firm that has significant experience in both investigations and litigation support. Every mold case is different, as is every building. The more types of buildings and the more scenarios that an investigator has seen, the more experience he has to draw from when resolving mold problems. Investigators should also have a good understanding of when sampling is appropriate and how to perform sampling thoroughly, so that there is ample data to present in court without over sampling and wasting clients' money. A good consultant is focused on complete data integrity and selects sampling methods and laboratories ac-

cordingly.

A good investigator must also be willing and able to work with legal counsel. An investigation firm asked to contribute to a case should be able to provide an objective assessment of their strengths and weaknesses compared with those of another investigator, representing another party. While all information should be kept objective, a good investigator presents the facts with the comprehensiveness and detail that allows for the attorneys to prepare their defense or prosecution for court.

Because of the complexity of the interpretations, many cases come down to "my expert is better than yours". Carefully check the credentials of the consultant. Someone with twenty years in business cleaning air ducts who now is a mold expert because he took a 2 day course is not at all unusual in this rapidly evolving field.

Certified Mold Free is an indoor air quality consulting firm that provides solutions to create healthy indoor environments and avoid potentially dangerous indoor pollution. We are a leader in providing due diligence for resolution of sick building syndrome, occupant complaints, and mold contamination and corrective strategies.