

# Indiana IAQ

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## About Indiana IAQ:

A new kind of newsletter that addresses the concerns of everyone interested in Indoor Air Quality (IAQ) in Indiana. From the many questions and concerns received this newsletter and the ones to follow are developed from specific concerns. Information is collected and applied this way to the articles published.

Who can write in? *Anyone!* Contractors, mitigation technicians, restoration and remediation technicians, real estate professionals, banks, doctors, lawyers, insurance professionals, investors, anyone with an interest in IAQ.

To submit an idea for an article, write to:

IndianaIAQ@solutionsiec.com.

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## Procedures for Processing a Water-damaged Environment

Water damage can occur quickly and without warning from many sources, such as leaking plumbing, sewage back-ups, vandalism, hail, clogged guttering, natural disasters, hydrostatic pressure, leaking or congested crawl spaces and attics, and more. Whatever the water's source, prompt and thorough attention must be given to protect the building's integrity and the integrity of the Indoor Air Quality (IAQ).

When proper and prompt attention is not given to a water damage, regardless its source, contaminants can thrive and over power the IAQ, leading to occupant discomfort and disease. Over the past seven-teen years I have wit-

nessed many cases of indoor environmental pollution due to a lack of prompt and thorough attention.

One such example was a home in Nashville, Indiana. This home was put on sale after years of crawl space neglect. The previous home owner looked at the crawl space as an area "out of sight; out of mind". As a result, when the home inspection was performed, moisture damage and mold growth were noted and the sale of the home was hindered.

Hindered, but not stopped. Despite the lack of proper procedure initially, eventually the proper professionals were called in to diagnose

and remediate the area. The end result was the home did sale, but not without a lot of confusion and unnecessary financial burdens.



Picture of the contaminated crawl space.

Had the people around this home known the proper procedure to preventing and processing the damages, a lot of the expense and confusion (if not all) could have been avoided. (read more on page 3)

## World Health Organization Releases New Guidelines on Indoor Air Quality

Recently the World Health Organization (WHO) released its first guidelines on Indoor Air Quality (IAQ), addressing dampness and mould. (Read the guidelines here: <http://euro.who.int/document/E92645.pdf>) The book is a first of a series of

planned guidelines for indoor air quality.

These guidelines were developed by the WHO Regional Office for Europe in collaboration with WHO headquarters as part of the WHO pro-

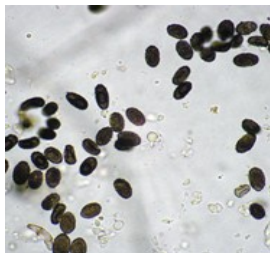
gramme on indoor air pollution. However, they are intended for worldwide use, to protect health under various environmental, social and economic conditions. Future publications addressing selected chemicals and ... (read more on page 2)

## Should You Trust a Laboratory to Interpret Your Mold Results?

Indoor air quality as a scientific discipline is evolving as our knowledge of the subject increases. We know that sample results for fungi and fungal spores are highly variable even under the most controlled sampling conditions. Given the complexity of interpreting your results, can you really rely on a lab doing this for you?

### Here are some reasons not to:

**1.** Laboratory results by themselves should not be used alone to form the basis of your data interpretation. Visual inspection of the site, site location and nearby land use, understanding the site history, identifying indoor micro-climates, and interviews



Stachybotrys mold.

with affected occupants should play a major role in your result interpretation.

**2.** Fungal counts have spatial, geographic, local land use, seasonal and diurnal variability just to name a few. This variability can be orders of magnitude different in samples that are taken a few minutes apart! An interpretation of your samples that is based on subjective, un-validated internal criteria developed by a laboratory is a great way to make incorrect conclusions!

**3.** We know that different sampling devices result in different collection efficiencies that depend on the spore size. This variation is significant when comparing sampling devices. These collection efficiency differences are not taken into account by labs offering this type of data interpreta-

tion! What are you really getting? The sole purpose of a laboratory is to provide you with independent, objective, and scientifically defensible data.

Labs that offer you “statistical data interpretation”, a score, or tell you whether your samples have elevated mold levels are jeopardizing your reputation and exposing you to professional liability. No one can afford that kind of service.

Author: EMSL Analytical, Inc. is a nationwide, full service, analytical testing laboratory network providing Asbestos, Mold, Indoor Air Quality, Microbiological, Environmental, Chemical, Forensic, Materials, Industrial Hygiene and Mechanical Testing services. Visit EMSL at [www.emsl.com](http://www.emsl.com).

## WHO's Guidelines on Indoor Air Quality

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combustion products are being prepared. Together, the guidelines will comprise the first-ever comprehensive evidence-based recommendations to tackle indoor air pollution, one of the major causes of death and disease worldwide.

*"As people spend most of their daily lives in homes, offices, schools, health care facilities or other buildings, the quality of the air they breathe indoors is critical for their health and well-being,"* says Dr Srdan Matic, Unit Head, Noncommunicable Diseases and Environment at the WHO Regional Office for Europe. *"For the first time, these guidelines offer guidance to public health and other authorities on how to ensure safety and healthy conditions in buildings. We believe that this work will contribute to improving the health of people around the world."*

Microbial pollution is a key element of indoor air pollution. It is caused by hundreds of species of bacteria and fungi, in particular filamentous fungi (mould), growing indoors when sufficient moisture is available. This document provides a comprehensive review of the sci-

entific evidence on health problems associated with building moisture and biological agents.

*"In the absence of clear evidence, building standards and regulations have not sufficiently targeted prevention and control of excess moisture. The new guidelines are essential, as they provide reference criteria for what constitutes healthy indoor air,"* concludes Dr Michal Krzyzanowski, Regional Adviser, Noncommunicable Diseases and Environment at the WHO Regional Office for Europe, and the leader of the WHO project to draw up the guidelines. *"More than 100 studies on the health effects of damp environments were reviewed in the preparation process. This body of evidence forms the basis of the guidelines and provides a solid foundation for action."*

*"The quality of the air they breathe is critical for their health and well-being."*

The WHO guidelines come just prior to the United State's (U.S.) call to action for healthier homes. Several agencies of the U.S. Government, including the Surgeon General's Office, the Centers for Disease Control, and the Department of Housing and Urban Development (HUD), are teaming up to raise public awareness of the health effects of poor IAQ.

Indiana IAQ will keep updated on the new call to action and these new guidelines and regulations as they develop and bring them to you here.

Author: Jason Yost, CIEC, CMRS, WRT, is owner and operator of SOLUTIONS IEC, and has been in the cleaning, restoration, remediation, mitigation, and IAQ industry for over seventeen years. Jason is an individual member of the Indoor Air Quality Association and a board member of the American Indoor Air Quality Council. Visit Jason's IAQ PRO.FILE at: [http://www.iaqa.org/profile\\_agreement.asp?id=223](http://www.iaqa.org/profile_agreement.asp?id=223).

## Procedures for Processing Water-damaged Environments

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The Institute of Inspection, Cleaning and Restoration Certification (IICRC) in their S500, Standard and Reference Guide for Professional Water Damage Restoration states, “*it is important to begin mitigation procedures as soon as safely possible following the initial loss, as the quality of water is likely to deteriorate over time. As the quality of water deteriorates, the greater damage to the structure and contents, along with increased environmental hazards, are likely to develop.*” It goes on to say, “*If increased water activity and/or ERH [Equilibrium Relative Humidity] (from high relative humidity, leaks and floods) is allowed to exist for more than 24 hours, the high moisture condition changes the normal stable ecology of either a part of the indoor environment or of the entire building.*”

In other words if there is moisture present long enough, contamination of the moisture is likely, and, if this happens, the IAQ can be compromised.

So, what do you do to avoid and respond to a water damage? First, keep up your routine check-ups—including those areas you don’t normally occupy; second, make sure that your check-ups include all systems that control moisture and temperature—like the Heating, Ventilation & Air-Conditioning (HVAC) system, sump pumps, drains, etc.; third, if you find a water intrusion, contact your local indoor environmentalist and discuss immediate response procedures, damage assessment, and a scope of work; fourth, after the initial assessment with your indoor environmentalist, contact a

mitigation specialist—someone who will work alongside you and your indoor environmentalist; finally, once the initial drying and processing of the environment is completed, have your indoor environmentalist confirm it with the appropriate tests—prior to construction. For more information visit: [www.solutionsiec.com/water\\_damage.html](http://www.solutionsiec.com/water_damage.html).

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## Ozone Generating Air Cleaners

Within the past year ozone generating air purifiers or cleaners have been under regular attack. Claims of their cleaning ability verses their effects on the Indoor Air Quality (IAQ) have been intensely investigated and criticized, leading to new regulations asking manufacturers to release certain information about their products and/or reduce or eliminate the ozone generating capabilities of the air cleaning devices. In fact, according to the Environmental Protection Agency (EPA—see <http://www.epa.gov/iaq/pubs/ozonegen.html#how%20is%20ozone%20harmful>) “*manufacturers and vendors of ozone devices often use misleading terms to describe ozone.*”

Ozone, simply put, is three atoms of oxygen joined together into one molecule. The air we normally breathe is comprised of two atoms joined into a molecule. When three atoms join together the potential for a reaction with other chemicals can increase. This potential chemical reaction is the basis that most manufacturer’s make reference when discussing the effectiveness of

their products.

While some manufacturers make claims that that their devices have been approved by the federal government the EPA says that “*no agency of the federal government has approved these devices for use in occupied spaces.*” To the contrary, some states, like California, have begun to ban ozone generating devices or regulate their ozone generating emissions (see the California Air Resources Board’s <http://www.arb.ca.gov/research/indoor/ab1173/finalreport.htm> and <http://www.arb.ca.gov/research/abstracts/01-336.htm>.)



Ozone generating air purifier.

Why all of the fuss?

*“The same chemical properties that allow high concentrations of ozone to react with organic material outside the body give it the ability to react with similar organic material that makes up the body, and potentially cause harmful health consequences.*”

*When inhaled, ozone can damage the lungs (see - “Ozone and Your Health” - [www.epa.gov/airnow/brochure.html](http://www.epa.gov/airnow/brochure.html)). Relatively low amounts can cause chest pain, coughing, shortness of breath, and, throat irritation. Ozone may also worsen chronic respiratory diseases such as asthma and compromise the ability of the body to fight respiratory infections. People vary widely in their susceptibility to ozone. Healthy people, as well as those with respiratory difficulty, can experience breathing problems when exposed to ozone. Exercise during exposure to ozone causes a greater amount of ozone to be inhaled, and increases the risk of harmful respiratory effects. Recovery from the harmful effects can occur following short-term exposure to low levels of ozone, but health effects may become more damaging and recovery less certain at higher levels or from longer exposures.”* (EPA)

But what about the manufacturer’s claims of their product’s safety? Are ozone generating air cleaners effective in controlling indoor air pollution?

The EPA responds, ...

(read more on page 4)





*“Don’t let problems with poor indoor air quality take control of your life. Empower yourself with SOLUTIONS—Indoor Environmental Consulting—today!”*

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[www.SolutionsIEC.com](http://www.SolutionsIEC.com)

SOLUTIONS IEC is a truly experienced business that, with over seventeen years of mitigation, restoration, remediation and hygiene practices, can assist you in determining the Category and Condition of the damaged structure; develop a protocol that is real and specific to the structure; and can provide expertise beyond just an inspector’s role. Our staff of professionals have been recognized in both indoor environmental consulting (Council-certified Indoor Environmental Consultants) and microbial remediation supervision (Council-certified Microbial Remediation Supervisors) - two of the most prestigious awards in the industry today! Don’t let poor IAQ take control of your life. Empower yourself with SOLUTIONS—Indoor Environmental Consulting—today!

Serving the Indiana and Illinois states!



## Ozone Generating Air Cleaners

(CONTINUED FROM PAGE 3)

1. *“Available scientific evidence shows that at concentrations that do not exceed public health standards, ozone has little potential to remove indoor air contaminants”*
2. *“There is evidence to show that at concentrations that do not exceed public health standards, ozone is not effective at removing many odor-causing chemicals”*
3. *“If used at concentrations that do not exceed public health standards, ozone applied to indoor air does not effectively remove viruses, bacteria, mold or other biological pollutants”*

A lot of factors influence the amount of ozone produced by ozone generators. Size of the device, its ability to produce a given amount of ozone, the size of the room compared to the ozone generator used, closed doorways, building furnishing and materials that could react with ozone present (to name a few) can have an impact on ozone concentration.

Exposure can vary depending on an occupant’s proximity to the ozone device and the concentration in the air.

While some say that you can use your nose to warn you if ozone levels are too high, that may not be true. The ability to smell ozone varies per person *“and one’s ability to smell ozone rapidly deteriorates in the presence of ozone”* (EPA).

For years restoration professionals have made use of these devices in unoccupied spaces, utilizing them on everything from fire damage to mold infestation. Because little is known about the chemical by-products left behind, care should always be given to their use. Conditions should always be controlled to sufficiently assure that no person or pet becomes exposed. *“Ozone can adversely affect indoor plants, and damage materials such as rubber, electrical wire coatings, and fabrics and art work containing susceptible dyes and pigments.”*

When concerned with removing an indoor air pollutant, the EPA recommends three steps:

1. Eliminate or control the source of pollution;
2. Dilute and exhaust pollutants through outdoor air ventilation; and,
3. Remove pollutants through proven air cleaning methods.

*“Of the three, the first approach -- **source control** -- is the most effective.”* (EPA)

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