

Indiana IAQ

September/October 2010 Issue

About Indiana IAQ:

This is *the* newsletter for those interested in Indoor Air Quality (IAQ). This newsletter is developed from the many questions and concerns received from its readers. 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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Inside This Issue of Indiana IAQ

Recently a question arose asking, “Should I be concerned with having an indoor environmentalist on my fire restoration process?” The question was furthered, “How do I know who is qualified to do fire damage restoration and who isn’t?” Two very good questions.

As many of you know, I have been in the mitigation, restoration, remediation and indoor air quality industries for over seventeen years. While I can not say that I have seen it all, I can say that I have seen enough—enough to tell you that health and safety professionals, like indoor environmental consultants, are a very important element in assuring no one gets hurt, ill and the structure is returned to “pre-loss condition” (a term used regularly by insurance companies to define the purpose of restoration).

In this issue I will illustrate the need for these professionals by sharing with you two experiences that I have witnessed over the years. While these case studies may not answer all of your questions nor define all of the hazards associated with fire damaged structures, they will highlight some of them and the consequences of improper perspectives toward fire damaged structures and their restoration.

As always, I welcome any of your comments and questions. You can contact the newsletter at IndianaIAQ@solutionsiec.com or me directly at jasony@solutionsiec.com. Have a blessed day!

— Jason Yost



Case Study I: The Fire After the Fire!

Late one night a call came into a local restoration company from a person that had experienced a house fire. They wanted to secure the structure while they waited for their insurance company’s clearance of coverage; they also wanted an estimate for the restoration of their home. That night the “on-call technician” responded with plywood boards, screws and his battery-

powered drill to “board-up” the house.

The next day the house rekindled and burned the rest of the structure. There was nothing left to restore.

Overnight and during the early hours of the next day, the boarded-up home increased in temperature, as hidden, . . .

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Combustible Dust Believed to Have Caused Explosion at Canadian Nursery

A recent explosion at a plant nursery in New Brunswick, Canada is believed to have been caused by peat moss dust. An explosion was heard by employees that resulted in a fire that burned down 3 buildings and caused close to \$1 million in damages. It took almost 100 fire-fighters from 25 fire departments to put out the blaze.

Explosions caused by dust igniting have been reported in many industries across North America. There have been countless deaths and injuries associated with many of these blasts and subsequent fires.

In March of 2008 OSHA issued Directive #: CPL 03-00-008, Subject: *Combustible Dust Emphasis Pro-*

gram. The purpose of the program is to inspect facilities that generate or handle combustible dusts and make recommendations that will reduce the risk of fire hazard which could result in bodily injury, loss of life and property damage.

The OSHA directive covers a wide range of materials used in many application areas across almost all of the major industrial and agricultural sectors. Industries that handle combustible dusts include agriculture, chemical, textile, forest and furniture product, wastewater treatment, metal processing, paper product, pharmaceutical and recycling operations (metal, paper and plastics) industries.

Last year EMSL Analytical, one of the nation's largest environmental and materials testing laboratories, began offering

testing solutions for the OSHA compliance directive for combustible dusts. "When major property damage and life are at stake it's important to do everything possible to prevent these types of tragedies," reported Joe Frasca, Executive Vice-president at EMSL Analytical. "It is imperative to have testing done and to use a laboratory that has the expertise, equipment and reliability to get the job done right," Frasca continued.

Author: EMSL Analytical, Inc. is a nationally recognized and locally focused provider of quality environmental and materials testing services and products. The company has an extensive list of accreditations. For more information on EMSL Analytical, Inc. visit their website at www.emsl.com or call (800) 220-3675 .

Case Study I: The Fire After the Fire!

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... kindling debris released heat into the enclosed space. The boards, placed on the damaged windows and doors around which the worst of the fire took place, acted as a fuel for the heat, igniting under the pressure of accumulative heat. This spread to other areas of the structure not previously (directly) affected by the original fire (flame), causing the home to burn completely to the ground. (There was no one living in the home to contact emergency crews in a timely fashion that allowed them to arrive before the home was a complete loss.)

The accumulating heat created internal dehumidification (dehydration) of the boards, drying them out and making them more vulnerable to the heat and ignition. The boards used were not fire-retardant. They had low flash points, making them more susceptible to combustion, and, during installation, a lot of dust was generated close to the structure, which fueled the kindling building

components immediate fuel for ignition.

I might add that while water was used to put this fire out, the quick boarding up of this structure created an encapsulated structure where,



once the heat was trapped indoors (it could no longer exchange its heat with the external environment without passing through the building components), the ambient air's thirst rose – that is, it was able to hold more moisture in grains of moisture per pound of air. This increased the

rate of evaporation from the surface debris – that is the debris located nearest the ambient air. The quicken rate of evaporation began to pull moisture from all of the building components as did the surface heat encourage. The release of this moisture created a situation where oxygen levels were increasing without outside exchange. All of this took place (in spots) around these boards, fuel for fire, causing the fire to rekindle.

This is a good example of what happens when an undirected technician responds to a fire without foreknowledge of the potential hazards and the property damage that that response can cause. In our next Case Study we will take a look at an example of physical harm as a result of non-direction in response to a fire damage.

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Case Study 2: Inhalation Hazards After the Fire

I came into the restoration industry as many other do—fresh out of school with no real, practical experience. On the job training was the way to do it back then, and I was totally dependant on the protocols of my previous employer.

During this time I came across a situation where I was asked to work with a crew on a “smoke damage” (that is what they called it). There was no indoor environmental evaluation prior to mitigation and restoration. We were told that this was “just a smoke damage” (all quotes, without further citing, are their words – for purpose of confidentiality I am not citing who they are) and to clean it as we would any other structure with heavy debris.

We were not told to wear Personal Protective Equipment (PPE—and we didn’t);

We were not pre-cleaning de-briefed on potential hazards or cleaning procedures;

We were given concentrated chemicals and empty bottles (with no labels) to work with;

We were instructed not to use Air Filtration Devices (AFDs) during cleaning, but to wait until after cleaning to install an ozone machine; and,

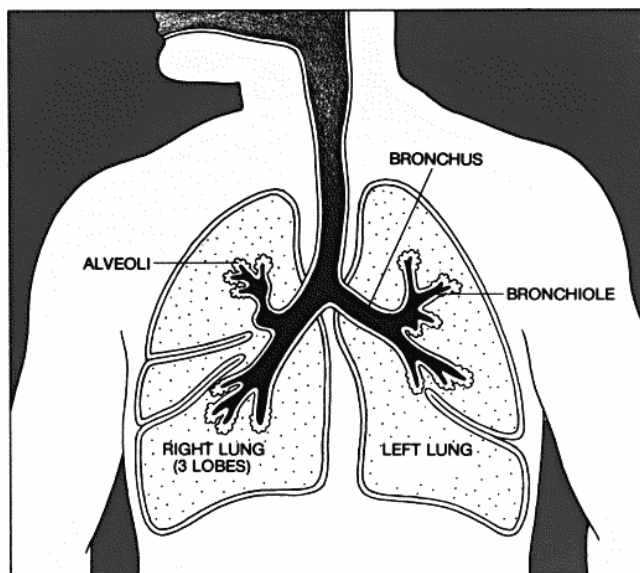
We were instructed not to remove any of the building components for substrate cleaning.

At the time I was very young and did not know better than to just do what I was told, so I did what I was told to do. While working inside the structure one of my cleaning partners became fatigued and found it hard to breath, saying they felt a tightness in their chest. (This guy was a five year veteran with this company, an important note to remember later in this discussion.) I suggested he take a break, not saying what the proper break would be (I didn’t know what that was then), and he did so, removing himself from the structure to the company van outside (which was full of our concentrated cleaning products, another important note to remember later in this discussion).

Well, his symptoms never improved. While he tried to return to work (fifteen minutes later), the tightness in his chest persisted (within and without the structure, during breaks). He mentioned that he thought he was having a heart attack and called the main office for permission to leave the property, which we did upon authorization – twenty minutes later.

He was brought to the office for questioning then sent to an Urgent Care Center locally. Once there they performed tests on him and found that, due to long-term exposure to chemicals and smoke/fire damaged structures, that there was a chemical and particulate build up in the

bronchiole of his lungs. This build-up, it was said, was due to the absorption of chemicals and gases around them (the particulate that he had breathed) both within the damaged structures and in the applications of cleaning agents within those structures.



Carbon particles from these fire damaged structures absorb gases and chemicals that they are exposed to, carrying them deep into the lungs (depending on the size of the particulate these things can be carried all the way to the alveolar sacs where gas exchange takes place). In the case of my co-worker, he was told that the particulate was not only collecting gases and chemicals from the fire damaged structure but was also collecting the chemicals he was breathing, to some degree, during cleaning *and* while traveling inside the work van.

This guy had to lay off work for three weeks while he took medication to break up the deposits in his lungs. I was not told about the long-term effects of his exposures, but I am certain that the breaking up of this blockage meant that (to whatever medically altered state) the clogging debris had to be processed by his body to completely rid it of this debris.

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“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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We’re on the web!
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!



When a Fire Damage Occurs

When a fire occurs the by-products can travel great distances. From a localized fire over the stove, smoke and other particulates can be transported throughout the structure; and, from adjacent burning structures or systems, throughout the housing structure and outside—where it can affect systems and structures in the community. Where ever the source and whatever the situation, understanding the physical effects of a fire on a localized building and its components should be part of the investigation process. By-products like char, soot, ash and Volatile Organic Compounds (VOCs) can have a harmful effect on the indoor air quality.

Whether there is a need to test a structure for proof of damage and justification of restoration procedures or there is just a genuine concern of cleanliness after a fire and/or its restoration procedures, having a qualified inspector that can evaluate, investi-

gate, sample and generate a protocol aids in the protection of occupant safety and health.

SOLUTIONS—Indoor Environmental Consulting is a truly experienced business that, with over seventeen years of mitigation, remediation, restoration and hygiene practices, can assist you in determining the condition of the damaged structure; develop a Protocol that is real and specific to the structure; and can provide expertise beyond just an home 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 a fire damage put you and others at risk, and don’t let it control how you do business. Empower your-

self with SOLUTIONS—Indoor Environmental Consulting—today!



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