

Building Contamination Assessments

Reuse or demolition of industrial buildings that have been shutdown, idled or abandoned may pose a unique set of potential health issues to construction workers and future occupants. These issues must be considered as the owner or potential buyer determines the fate or reuse opportunity of a building along with the overall planning process. This is particularly true if there was extensive use of chemicals; however, there are many other variables that are of concern and critical in a health risk evaluation assessment, such as



- Toxicity of chemicals
- Presence of asbestos and lead
- Volume of chemical usage
- Penetration into building materials
- Radiological issues in building materials
- Stability of chemicals
- Historic chemical usage
- Microbiological growth
- Contaminant reservoirs
- Cumulative health effects

The first step in the evaluation process is to understand the current and historical manufacturing processes that occurred within the building(s). This may include discussions with past employees, library searches, review of production documents and orders, etc. It is critical that the entire process is well defined in order to thoroughly assess chemical usage. In addition, chemicals used in the building systems, such as asbestos, lead, PCBs and cleaning compounds must all be identified. Occasionally, there may be radiological issues related to masonry building materials and/or other radioactive sources such as measurement gauges.



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Endotoxins: Related to Water Damage

Gram-negative bacteria are common in the environment, particularly in water or on water damaged building materials and in areas where mold growth has occurred. As part of their life cycle, gram-negative bacteria produce endotoxins during growth, division, death and lysis. Consequently, endotoxins are commonly found in water associated with floods and chronic leaks. Additionally, significant levels of endotoxins have been reported in contaminated ventilation systems, sumps, humidifiers, wastewater treatment plants and even in swimming pools.



Levels of endotoxins have been associated with indoor air quality complaints and certain respiratory diseases in many types of buildings. In addition, employees in occupational settings where organic dusts or water-containing endotoxins are aerosolized are at a greater risk of exposure and consequently of contracting certain respiratory diseases.

Inhaled endotoxins have been associated with many pulmonary diseases. Endotoxins have been thought to be responsible for the adverse health effects after inhalation of organic dusts. Some inhalation studies showed that endotoxins can cause fever, cough, dyspnea, headache, nose and throat irritation, diffuse aches, nausea, shortness of breath and chest tightness, acute air flow

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Asbestos and Renovations

If you operate a building built before 1980, you may have asbestos-containing materials that must be managed. These may include floor tiles, mastic, pipe insulation, fittings on fiberglass-insulated pipes, transite panels, roofing materials and others. If the building was built before 1973, there may be surfacing materials such as spray-applied fireproofing, acoustical plaster and other friable materials.



Whatever the types of asbestos materials in your facility, there are several steps that the building manager or facility director can take to prevent asbestos management from becoming an “asbestos problem” prior to or during a renovation project.

Facility Asbestos Survey

An asbestos survey is essential to identify and assess asbestos materials during the early planning of a renovation project. The asbestos survey report is then a tool to use for the operations and maintenance program, hazard communication, coordinating with contractors and planning renovations. The asbestos survey should be completed by an EPA-certified and state-licensed asbestos building inspector. The survey should identify all asbestos-containing material, including friable



materials such as pipe insulation, fittings, tank insulation, fireproofing, and acoustic plaster, as well as nonfriable materials such as floor tiles, mastic, transite panels, exterior siding, etc. Quantities and conditions of accessible asbestos materials should be determined, and the surveyor should note if there

might be concealed asbestos materials above ceilings, in pipe chases, under carpets, etc.

Hazard Communication and Contractor Awareness

The locations and conditions of asbestos materials should be communicated to facility maintenance and custodial staff, and to contractors who may work in the areas containing asbestos materials. Personnel should be able to recognize asbestos-containing materials, know how to prevent exposing themselves and understand what to do if damaged asbestos is discovered in the workplace. Custodial staff should be aware of procedures for maintaining asbestos containing flooring materials and cleaning up small amounts of asbestos debris.

Planning Renovations

Consideration of asbestos is an important aspect of planning mechanical or architectural renovations. Plan to remove asbestos before performing other demolition or construction in the area. Be sure to have enough time in the schedule for a two-week advance notification to local, state and federal authorities; the actual abatement; clearance sampling; and demobilization of the abatement contractor.

Please contact Dan Bruun, CIH at 888-873-9983 ext. 17 to discuss any question you may have regarding asbestos management planning.



Brush Up On Computer Safety

When your child is on a computer, here are some things he or she needs to remember:



- NEVER give out personal information. That means don't give out your name, telephone number or home address. And NEVER send your picture to someone you chat with on the computer.
- If someone makes you feel uncomfortable or scared- NEVER write to them or have contact with them again. And let an adult know how you have been made to feel and why.
- NEVER meet with someone or have that person come to your house without your parents' permission.
- Remember: People on the Internet may not be who they say they are. Just because someone says he or she is a 12-year-old girl, doesn't mean that it's true. It could be an older man. Report anything you suspect to an adult right away.

– Adapted from the FBI Web site

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obstruction and airway inflammation. Endotoxin exposure may also result in reduced lung function. In the indoor environment, chest tightness, mild fever, and flu-like symptoms experienced by building occupants may be associated with endotoxin exposure.

Endotoxins can be isolated from air, water and dusts with air sampling being the most common way to assess exposure.



Endotoxins are very stable in the environment and are not destroyed by heat or chemical treatments. Therefore, controlling water sources and growth of gram-negative bacteria are the primary means of reducing exposure. Removal of contaminated sources and high-efficiency particulate air (HEPA) vacuuming of dusts helps to reduce accumulated endotoxins and to minimize potential health effects.

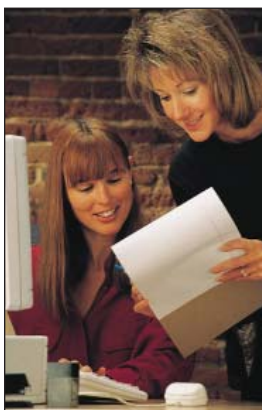
Please contact Harry M. Neill, CIH at 888-873-9983 ext. 15 to discuss any questions regarding endotoxins.



We're Already Working ...

The editors of *The Risk Factor* are already working on future issues. Here are a few of the stories you'll be seeing:

- Pennsylvania AIPP Safety Program
- Sewage Spill Response
- Emergency Response Planning



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The second step is to obtain material safety data sheets (MSDS's) for all the chemical products. If they are not available at the facility, the next best source is



directly from the manufacturer. The MSDS's must be reviewed in detail to identify the chemicals of most significance, i.e., those producing the most serious health effects and dose responses, those with a longer residual life, etc. Once the chemicals are all identified and overlaid with the manufacturing processes, a determination can be made as to those areas of the buildings that may have a higher potential for contamination.

Residual chemicals will often accumulate in areas such as expansion joints, cracks in floors, sumps and porous materials such as concrete and wood. Identification of these accumulation points, or chemical reservoirs, is important as these are the points where samples can be collected if there is further need to define both the chemicals present and their concentrations.

Lastly, microbiological activity related to chronic moisture resulting in wood decay, fungi and endotoxin exposure plays an important role. As such, a detailed assessment of moisture sources and water infiltration should be conducted to define the impact that microbiological activity may have on the building systems as well as the future occupants.

Please contact Chris Schneider, CIH at 888-873-9983 ext. 14 to discuss questions about building contamination assessments as they relate to health concerns.



Don't Forget Safety During Your Holiday Visits

If you will be visiting or having visitors in your home during the holidays, you will want to keep in mind the following tips:

- If you have children in the house, and you've had a party, make sure you clean up immediately. Children can wake up before you do and possibly ingest harmful substances such as alcohol from open bottles left out or tobacco from cigarette butts in an ashtray.
- If you go to someone else's home, survey the environment. Is it childproof? Are there any worrisome problem areas? If so, you may want to block the area from the child's access.



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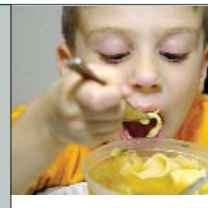
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One-Minute Tip: *Sitting Down Together – It's Healthy!*

Harvard researchers have found that children who sit down and eat dinner with their families are more likely to eat vegetables and fruits than are their peers. Eating dinner at home means that kids are less likely to consume junk foods that are high in fat, salt and sugar. Family dinners might improve kids' diets because they tend to be healthier than grabbing something on the run. The study included more than 16,000 children between the ages of 9 and 14. –Adapted from Modern Sage



Lighting Safety Tips



Here are a few safety tips to keep in mind when there is an electrical storm in your area:

1. Plan in advance your evacuation and safety measures. When you first see lightning or hear thunder, activate your emergency plan. Now is the time to go to a building or a vehicle. Lightning often precedes rain, so don't wait for the rain to begin before suspending activities.

2. If outdoors, avoid water. Avoid high ground. Avoid open spaces. Avoid all metal objects including electric wires, fences, machinery, motors, power tools, etc. Unsafe places include underneath canopies, small picnic or rain shelters, and nearby trees. Where possible, find shelter in a substantial building or in a fully enclosed metal vehicle

such as a car, truck or a van with the windows completely shut. If lightning is striking nearby when you are outside, you should

- A. Crouch down. Put your feet together. Place your hands over your ears to minimize hearing damage from thunder.
- B. Avoid proximity (minimum of 15 ft.) to other people.

3. If indoors, avoid water. Stay away from doors and windows. Do not use the telephone. Take off head sets. Turn off, unplug and stay away from appliances, computers, power tools and TV sets. Lightning may strike exterior electric or phone lines, inducing shocks to inside equipment.

4. Suspend activities for 30 minutes after the last observed lightning or thunder.

5. Injured persons do not carry an electrical charge and can be handled safely. Apply first aid procedures to a lightning victim if you are qualified to do so. Call 911 or send for help immediately.

6. Know your emergency telephone numbers.

– Adapted from the National Lightning Safety Institute

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