BEWARE WHAT LIES BENEATH: VAPOR INTRUSION INCREASES POTENTIAL LIABILITY FOR PAST AND PRESENT OWNERS AND OPERATORS

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Between November 2012 and January 2013, employees at two buildings in a Google office complex in Mountain View, California were exposed to hazardous chemical vapors in indoor air at levels that exceeded site-specific limits set by the U.S. Environmental Protection Agency (EPA). More than 1,000 employees reportedly work in those buildings.

Google did not cause the pollution. Chemical vapors entered the buildings from decades-old contamination of soil and groundwater under the buildings. Google’s office complex is located at a Superfund site impacted by former semiconductor manufacturing and other operations. Two other semiconductor manufacturing facilities and a U.S. Navy installation also used to be located nearby and caused contamination. Each of those facilities is also a Superfund site. Together, these four sites comprise hundreds of acres where numerous businesses currently operate. The chemical has also migrated in groundwater under nearby residences and has been detected in area groundwater at levels 22,000 times higher than the EPA groundwater cleanup level.

In Minneapolis, Minnesota, excessive levels of hazardous chemicals have been detected in indoor air of homes and other buildings near a former General Mills research facility. The company reportedly dumped about 1,000 pounds of these chemicals at the site yearly between 1949 and 1962. Testing has been done under more than 250 area properties. General Mills has agreed to pay for systems to protect building occupants from the chemical vapors at about 150 buildings. And that may only be the beginning.

The culprit in Mountain View and Minneapolis? Vapor intrusion. Vapor intrusion occurs when certain chemicals released to the ground or subsurface contaminate soil or groundwater. Gases from evaporation of those chemicals migrate up through the soil and into buildings and homes via basements, crawl spaces, foundations, and gaps around utility lines. Chemicals that cause vapor intrusion have ominous-sounding, hard-to-pronounce names like trichloroethylene (TCE) and tetrachloroethylene (PCE). These solvents have been commonly used at dry cleaners and as industrial degreasers. Historically, regulators were primarily concerned with chemical impacts to groundwater that might be used for drinking. But some of that focus is now shifting to vapor intrusion as chemical vapor health impacts are better understood and testing equipment can measure ever-smaller concentrations.

TCE in particular raises serious vapor intrusion concerns. A draft 2011 EPA guidance document, which may soon be finalized, indicates that even extremely low levels of TCE in indoor air – as low as 2.1
micrograms per cubic meter – present an unacceptable risk to sensitive occupants such as children, pregnant women, sick people, and the elderly. The document states those low levels can damage developing fetal hearts when pregnant women breathe the impacted air. For perspective, one microgram per cubic meter is roughly equivalent to a thimble of liquid in an Olympic-size swimming pool. However, this concentration is extremely low and subject to controversy. The level EPA adopts could be more or less stringent.

Vapor intrusion problems may be widespread. Properties contaminated with the same chemicals causing problems at the Google buildings and General Mills facility, as well as other hazardous chemicals, are located throughout California and the nation. Much of that contamination stems from historical business operations as varied as electronics manufacturing, metal barrel refurbishing, and dry cleaning. Some of these operations date back more than a century, when little was known about the potentially harmful health effects of exposure to very low levels of these chemicals. In those early periods, it was common and sometimes legal to dispose of these chemicals and associated wastes by discharging them into unlined ponds or even simply dumping them on the ground. Nevertheless, those companies remain responsible under environmental laws and sometimes lease provisions to address their historical impacts to human health and the environment.

Addressing potential vapor intrusion issues at buildings that may be impacted can be complicated and expensive. It starts with assessment work. This can entail testing soil, soil gas, and groundwater under and near buildings and sampling indoor and ambient outdoor air to determine chemical concentrations. Contaminants in soil and groundwater that exceed regulatory levels may need to be cleaned up, which can eliminate the source material and reduce vapor intrusion problems.

If chemical vapors are detected in indoor air above levels determined safe by regulators, the fix can include installing mitigation devices such as vapor barriers under the building that prevent vapor from migrating upward into the building, subslab depressurization systems that suck vapors from beneath the building and vent them outdoors so they do not enter the building, and passive venting systems that accomplish the same objective without suction and associated electricity costs. Operating a building’s heating, ventilation, and air conditioning (HVAC) system to create positive pressure inside the building can also divert vapors away from the building interior. But the system must be operated properly. An environmental report determined the issue at the Google buildings arose when the HVAC system was switched from automatic mode, which was supposed to be used to keep vapors out, to manual mode to maintain building temperature.

In many cases, the properties that are now posing vapor intrusion risks were thought to be cleaned up. In fact, some of them have received a clean bill of health from regulators. For example, more than 100,000 pounds of chemicals have been removed from groundwater at the Superfund sites under and near the Google offices since the 1980s, although that cleanup is ongoing. But regulatory cleanup agreements and judicially-approved settlements for sites thought to be cleaned up include reopen clauses that allow regulators and other parties to require additional work based on discovery of new contamination or environmental or health impacts. In the wake of the General Mills issue, the
Minnesota Pollution Control Agency is revisiting hundreds of sites state-wide with former operations ranging from dry cleaners to a U.S. Air Force base to toy manufacturing to assess whether chemicals are causing vapor intrusion problems in buildings despite regulators previously determining contaminants were adequately cleaned up or contained underground. Vapor intrusion is being addressed at more than 50 of those sites and review is ongoing at dozens more.

The federal government is also scrutinizing this issue more closely. An EPA representative recently stated EPA plans to “take a more aggressive approach to ensure prompt action” when TCE concentrations exceed levels the agency deems safe at the Superfund site where the Google offices are located. EPA’s final issuance of its TCE guidance will probably cause even more attention to vapor intrusion issues by regulators, citizens, and lawyers.

What does this mean for current building owners and occupants and former property owners and operators? Regulators’ focus on vapor intrusion creates new avenues of potential liability. Sites once thought closed through a “no further action letter” or its equivalent may now be reopened. Regulators could require property owners and operators to investigate and take measures to mitigate impacts from vapor intrusion. Former owners and operators who thought that they had cleaned up a contaminated site may face lawsuits from parties seeking to recover the costs incurred dealing with vapor intrusion.

Property owners may also have to notify tenants and building occupants of the potential health risks associated with the vapor intrusion. Owners and operators may face common law, Proposition 65, and other statutory lawsuits from impacted tenants, building occupants, and residents. Vapor intrusion may also adversely impact property values and will need to be considered when prospective purchasers conduct their due diligence, particularly given that the recently issued ASTM standard for Phase I environmental site assessments specifically requires assessing vapor intrusion. Given these potential risks, any party facing a potential vapor intrusion risk should contact competent counsel or an environmental professional. Sometimes the threat you cannot see is the most dangerous.

Brian Moskal represents clients in environmental litigation and counseling matters with a focus on contaminated sites and water and wastewater issues. Brian provides litigation and counseling support to industrial companies, property owners, and municipalities regarding matters arising under the Clean Water Act (CWA), Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Resource Conservation and Recovery Act (RCRA), and California law.

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