

MID ATLANTIC REAL ESTATE JOURNAL

NEW JERSEY-PENNSYLVANIA-DELAWARE-MARYLAND-VIRGINIA

February 13 - March 12, 2009

Volume 21, Issue 2

ASK AN EXPERT

Ask a Technical Expert

By Darryl Borrelli Manko, Gold, Katcher & Fox, LLP

Last year, New Jersey proposed to phase out the use of perchloroethylene, or PCE, for dry cleaning clothes, beginning with dry cleaners located in residential buildings. Why is the use of this chemical considered to be so unsafe?



Darryl Borrelli

The Environmental Protection Agency (EPA) considers PCE to be a possible to probable human carcinogen or cancer causing substance. Additionally, this chemical is among a group of chemicals known as volatile organic compounds (VOCs) indicating that the chemical's vapor pressure causes it to become a vapor at standard conditions. Because of this attribute, and its widespread use in the dry cleaning business, PCE is also one of the country's top toxic air pollutants.

In dry cleaning operations, PCE, when not handled properly, can cause risks to adjacent tenants and the environment in a variety of ways. Because of the volatile nature of the chemical, and its tendency to off gas from recently cleaned

clothes awaiting pick up, indoor air concentrations of PCE within a dry cleaning space are often very elevated. While these elevated concentrations are considered acceptable for the employees engaged in the dry cleaning process under rules established by the Occupational Safety and Health Administration (OSHA), they are not considered safe for commercial tenants or residential users who are located in spaces adjoining the dry cleaning operation. In some cases, nearby tenant spaces utilize a common heating, ventilating and air conditioning (HVAC) system which can cause the distribution of the chemical to the indoor air in sur-

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rounding spaces. Even where a separate HVAC system services the dry cleaner, the exhaust location for the dry cleaner's HVAC can sometimes be so close to a fresh air intake for HVAC systems servicing surrounding tenants that PCE laden air from the dry cleaner is inadvertently re-circulated to adjoining spaces. Even very small openings between the dry cleaner and adjacent spaces, which may be utilized for common utility runs, or places where interior dividing walls are not completed all the way to the ceiling, have the potential to spread PCE concentrations in indoor air. Common corridors to which the dry cleaner and adjoin tenants have access doors have also been identified as culprits

for causing indoor air issues.

Similarly, PCE which is disposed to the common sanitary sewer can cause indoor air issues in adjoining spaces. In general, plumbing U-traps eliminate the direct spread of PCE if discharged to the sanitary sewer. However, PCE can dissolve glues which are used to connect poly vinyl chloride (PVC) sewer piping, thereby causing leaks of the chemical from the sanitary line. Because the sewer piping is generally placed in a bed of relatively porous sand or gravel, vapors from the released PCE can preferentially migrate along the sewer piping to adjoining interior spaces.

For these reasons, New

Jersey and other states have begun to examine the PCE risks associated with dry cleaners in close contact with residential units and other commercial tenant spaces. Not surprisingly, efforts to ban PCE have come under fire from national dry cleaning trade organizations and many local smaller dry cleaning groups. These groups instead advocate tighter controls on the handling of PCE and use of state of the art dry cleaning equipment to minimize the release of the chemical in the dry cleaning process.

Darryl Borrelli is the senior technical consultant for the environmental law firm of Manko, Gold, Katcher & Fox, LLP. ■