



## Evaluation of Indoor Air Settlement Program Data - Schlage Lock Company Security, El Paso County, Colorado

### March 2009

The Colorado Cooperative Program for Environmental Health Assessments has performed a variety of health consultation activities on the Schlage Lock Company site. The purpose of this most recent health consultation was to analyze newly collected indoor air data to determine what, if any, potential adverse health effects could be expected from vapor intrusion at homes and schools near the Schlage Lock site. CCPEHA was requested to complete this review by the project manager of the environmental division at CDPHE as a follow-up activity of the previously published health consultation on the vapor intrusion pathway at the Schlage Lock site.

**What is vapor intrusion?** Vapor intrusion is a way that chemicals in soil or groundwater can get into indoor air. Sometimes, chemicals are spilled on the ground at a factory or leak from an underground storage tank. These chemicals can seep down into the soil and groundwater. Some chemicals can also travel through soil as vapors. These vapors may then move up through the soil and into nearby buildings, contaminating indoor air. Vapor intrusion is uncommon, but should be considered whenever there is a known source of soil or groundwater contamination nearby.

### Site Background

The Schlage Lock Company began operations manufacturing door locks and related hardware in August 1977. From late 1977 until mid 1992, Schlage used PCE as a metal cleaner and degreaser. In mid-July 1987, Schlage discovered PCE contamination in the subsurface soil on their property during an excavation for plant expansion. It was later found that the contaminant had migrated into the Widefield Aquifer. Clean-up and removal of PCE is ongoing, and concentrations of PCE in the aquifer appear to be decreasing. On January 8, 2007, Schlage Lock entered into a class action settlement approved in United States District Court. Under this agreement, a letter was sent to all property owners within the settlement area (approximately 3,000 homes) notifying them of their ability to request an indoor air sample for PCE. This evaluation focuses on the indoor air data that was collected as part of the settlement agreement.

### What did CCPEHA find in the Health Consultation?

- Based on the potential for theoretical cancer risks for current exposure to PCE for individuals occupying all homes and schools sampled in the settlement agreement program, the indoor air quality poses:
  - No apparent public health hazard to residents and/or school children for all current exposures
  - An indeterminate public health hazard for all past and future exposures because of data unavailability
- The theoretical cancer risk for residents of House 19 and House 53 were initially at the high-end of the acceptable cancer risk range. It appears that the major source(s) of PCE in indoor air of these properties are not related to the contaminated groundwater.
- Noncancer hazards are below a level of concern for individuals occupying all homes and schools sampled in the settlement agreement program.

### What's next?

- CCPEHA will collaborate with CDPHE environmental staff to conduct health education and outreach activities, as requested.
- CCPEHA will review any additional indoor air data upon request.

### Where can I find this health consultation?

An electronic copy of this health consultation, as well as all previous Schlage health consultations, can be found at: <http://www.cdph.state.co.us/dc/ehs/healthconsult.html>. Printed copies of the consultation can be found at the Security Public Library, 715 Aspen Dr., Security CO, 80911. To request a free copy of this health consultation, call Shannon Rossiter, Health Educator/Community Involvement Specialist, at 303-692-2617. For more information about the health consultation, please feel free to contact Thomas Simmons, Health Assessor, at 303-692-2961. For other site-related concerns, call Colleen Brisnehan, Project Manager, at 303-692-3357.

## FREQUENTLY ASKED QUESTIONS: Health Consultations and PCE

**What is a health consultation?** A health consultation provides advice on a specific public health issue related to real or possible human exposure to toxic material. A Health Consultation is a way for the Colorado Department of Public Health and Environment to respond quickly to a need for health information on toxic substances and to make recommendations for actions to protect the public's health. Health Consultations may consider: 1. The levels (or "concentrations") of hazardous substances; 2. If and how people might be exposed to contamination (through "exposure pathways" such as breathing air, drinking or contacting water, contacting or eating soil, or eating food); 3. The harm the substances might cause to people (or the contaminants' "toxicity"); 4. If and how working or living nearby might affect people's health; and 5. Other dangers to people, such as unsafe buildings, abandoned mine shafts, or other physical hazards.

**What other health consultations have been completed by CCPEHA for the Schlage lock site?**

- Assessment of Drinking Water Quality, Fountain Municipal Water District, published in 2004
- Assessment of Drinking Water Quality, Security Municipal Water District, published in 2005
- Assessment of Drinking Water Quality, Widefield Water and Sanitation District, published in 2006
- Evaluation of Tetrachloroethene Vapor Intrusion into Buildings Located Above a Contaminated Aquifer, published in 2006
- Exposure and Health Effects Evaluation at Willow Springs Ponds following PCE Contamination of the Widefield Aquifer, published in 2006
- Analysis of Untreated Residential Ground Water Wells in the Widefield Aquifer, published in 2007
- Evaluation of Current and Future Fish Consumption from Willow Springs Ponds, published in 2007

**What are the Agency For Toxic Substances and Disease Registry (ATSDR) public health hazard categories?**

- **A public health hazard:** ATSDR defines a public health hazard as sites where evaluation of available relevant information suggests that, under site-specific conditions of exposure, long-term exposures to site-specific contaminants have had, are having, or are likely to have in the future, an adverse impact on human health that requires one or more public health interventions.
- **No apparent public health hazard:** ATSDR uses this category for sites where human exposure to contaminated media may be occurring, may have occurred in the past, and/or may occur in the future, but the exposure is not expected to cause any adverse health effects.
- **An indeterminate public health hazard:** ATSDR defines an indeterminate public health hazard as a situation in which critical data are insufficient with regard to extent of exposure. This represents a professional judgment that critical data are missing and ATSDR has judged the data are insufficient to support a decision. This categorization does not necessarily imply all data are incomplete, but that some additional data are required to support a decision

**Why is there an indeterminate public health hazard for past and future exposures?** The only data we have available is for 2007. Therefore, the length of time a person could have been exposed to contaminated indoor air is unknown, and the historical concentration of contaminants in the indoor air is unknown. Similarly, although we expect the level of contaminants to decrease as site remediation continues, the future concentration of contaminants is unknown.

**What is tetrachloroethene (PCE)?** Tetrachloroethene is a manufactured chemical that is widely used for dry cleaning of fabrics and for metal-degreasing. It is also used to make other chemicals and is used in some consumer products. It is a nonflammable liquid at room temperature. It evaporates easily into the air and has a sharp, sweet odor.

**How do the site's contaminants affect human health?**

**PCE:** High concentrations of tetrachloroethylene (particularly in closed, poorly ventilated areas) can cause dizziness, headache, sleepiness, confusion, nausea, difficulty in speaking and walking, unconsciousness, and death. Irritation may result from repeated or extended skin contact with it. These symptoms occur almost entirely in work (or hobby) environments when people have been accidentally exposed to high concentrations or have intentionally used tetrachloroethylene to get a "high." In industry, most workers are exposed to levels lower than those causing obvious nervous system effects. The health effects of breathing in air or drinking water with low levels of tetrachloroethylene are not known. Results from some studies suggest that women who work in dry cleaning industries where exposures to tetrachloroethylene can be quite high may have more menstrual problems and spontaneous abortions than women who are not exposed. However, it is not known if tetrachloroethylene was responsible for these problems because other possible causes were not considered. Results of animal studies, conducted with amounts much higher than those that most people are exposed to, show that tetrachloroethylene can cause liver and kidney damage. Although it has not been shown to cause cancer in people, the U.S. Department of Health and Human Services has determined that tetrachloroethylene may reasonably be anticipated to be a human carcinogen. The International Agency for Research on Cancer (IARC) has determined that tetrachloroethylene is probably carcinogenic to humans.