

Evaluation of Chemicals in Groundwater Auburn and Algona, King County, Washington



Chemicals released in years past at the Boeing Commercial Airlines Fabrication Division Plant in Auburn (Boeing Auburn site) has led to some chemicals reaching groundwater in parts of the valley near the site. With oversight from the Department of Ecology, Boeing is conducting an ongoing investigation of groundwater around its Auburn site. Ecology asked the state Department of Health to do a health consultation to see if chemicals found in groundwater in the area are a health threat to people. This fact sheet summarizes the results of the health consultation report.

What is a health consultation?

The Department of Health looks at a variety of information when doing health consultations. To find out if there is a health threat from using or drinking groundwater, the following is considered:

- The type of chemical (for example, trichloroethylene and tetrachloroethylene).
- Where a person might come into contact with the chemical.
- How a person may be exposed to the chemical (for example, drinking, skin contact, or breathing in).
- How long a person may be exposed to a chemical.
- How much of the chemical a person may be exposed to.

What We Found

Deep below the ground is an old volcanic mudflow called the Osceola Mudflow. The mudflow divides the water underground above and below it into the upper and deeper aquifer. We looked at water quality data from monitoring wells and public drinking water wells in the upper aquifer. We also looked at where drinking water wells are located in the area. The information from the monitoring wells shows part of the upper aquifer has some chemicals in it, including trichloroethylene (TCE), tetrachloroethylene (PCE), and chemicals formed when TCE and PCE break down, such as vinyl chloride. Based on this information, we concluded:

- People are not using or drinking the water from the area where chemicals are found. Because this water is not being used, the TCE, PCE, and related breakdown chemicals in the groundwater will not harm people's health.
- We don't know if TCE, PCE, and related breakdown chemicals are in the groundwater below the Osceola Mudflow. There are no monitoring or drinking water wells pulling water from the deeper aquifer below or adjacent to the Boeing Auburn site. However, contamination of the deeper aquifer is unlikely. Water quality data from wells in other parts of the valley that draw from the deeper aquifer do not currently have TCE, PCE or related breakdown chemicals in them.
- More information must be collected in shallow groundwater. This will show if chemicals in groundwater can evaporate, move through the soil, and get into indoor air through cracks in foundations or into confined underground spaces. Past modeling suggested that no harm was expected to occur to people using buildings on or adjacent to Boeing's Auburn property. More information about the shallow groundwater and building characteristics will help confirm this conclusion.

Next Steps

Boeing and the Washington State Department of Ecology will continue to collect more information about the chemicals in groundwater at this site, including:

- More monitoring and sampling to see if the levels of chemicals in groundwater go down. This will help determine how far from the Boeing Auburn Plant the chemicals in groundwater extend.
- Completing a survey to find the locations of private wells that may be within the known area of the chemical plumes.
- Collecting more information about chemical levels in the shallow groundwater and surface water near the Boeing Auburn site.
- Evaluating information about the buildings that lie over the shallow groundwater containing chemicals. This may include sampling indoor air quality in some buildings.
- Working with the City of Auburn to determine if more information is needed to better understand the Osceola Mudflow in this area.

As more data are collected, Department of Health will work with Ecology and Boeing to evaluate potential exposures and harm to people's health.

Information About Chemicals

Trichloroethylene (TCE) is a colorless liquid mainly used to remove grease from metal parts. TCE is also used to make other chemicals. It is found in some household products such as paint removers, spot removers, and glues. TCE is a common environmental contaminant found in groundwater. It can evaporate easily into the air. It breaks down to form other chemicals, such as vinyl chloride.

Tetrachloroethylene (PCE), also known as perchloroethylene or perc, is a manufactured chemical used for dry cleaning and 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 and evaporates easily into the air. PCE breaks down into TCE, vinyl chloride, and other chemicals.

Vinyl chloride is a breakdown product of TCE and PCE. Vinyl chloride is also used to make poly vinyl chloride (PVC) found in a variety of plastic products including pipes, wire, cable coatings, and packaging materials. It can evaporate easily into the air.

For More Information

Human Health: Washington State Department of Health, 1-877-485-7316. Health consultation reports are online at www.doh.wa.gov/consults.

Remedial Investigation: Washington State Department of Ecology, Robin Harrover, 425-649-7232 or robin.harrover@ecy.wa.gov.