

1,2,3-Trichloropropane (1,2,3-TCP) and Groundwater

1,2,3-TCP

1,2,3-TCP is a contaminant of soil fumigants that were once used in Minnesota. It is also an organic solvent used in industrial settings as a cleaner, degreasing agent, solvent, and paint/varnish remover.

1,2,3-TCP in Minnesota Waters

The Minnesota Pollution Control Agency (MPCA) found 1,2,3-TCP in only one of 54,288 groundwater samples. The concentration of 1,2,3-TCP in this one sample was 4.3 µg/L*. These samples were taken at closed landfills from 1998-2007. This study used an older, less sensitive, test method.

MDH also conducted a small-scale study using a test method to measure 1,2,3-TCP at very concentrations (0.0007 µg/L). 1,2,3-TCP was not found in the water sources tested.¹

1,2,3-TCP has not been found in drinking water in Minnesota. However, most samples were analyzed using a reporting limit of 0.5 µg/L – which is higher than the level of concern.

*One microgram per liter (µg/L) is the same as one part per billion (ppb).

MDH Guidance Value

MDH developed a guidance value of 0.003 ppb for 1,2,3-TCP in drinking water based on its potential to cause cancer in people.² MDH does not use guidance values to regulate water quality, but they may be useful for situations in which no regulations exist. MDH develops guidance values to protect people who are most vulnerable to the potentially harmful effects of a contaminant. A person drinking water at or below the guidance value would be at little or no risk for harmful health effects.

Potential Health Effects

Some factors that determine if a chemical can affect your health are its potential to harm your body (its toxicity) and how much gets in your body (your exposure). We currently do not know if 1,2,3-TCP is present in Minnesota drinking water. Therefore, we do not know if it poses a health risk. If you drink water containing up to 0.003 ppb 1,2,3-TCP over a lifetime there is little to no health risk of cancer or other effects.

1,2,3-TCP in the Environment

Based on the locations where it has been found, releases of 1,2,3-TCP to the environment are most likely to occur through the use of soil fumigants, and possibly through the disposal in landfills of chemical products containing 1,2,3-TCP.

Health Risk Assessment Unit

The MDH Health Risk Assessment Unit evaluates the health risks from contaminants in drinking water sources and develops health-based guidance values for drinking water. MDH works in collaboration with the Minnesota Pollution Control Agency and the Minnesota Department of Agriculture to understand the occurrence and environmental effects of contaminants in water.

References

1. www.health.state.mn.us/communities/environment/risk/guidance/dwec/specproj.html
2. www.health.state.mn.us/communities/environment/risk/docs/guidance/gw/123triclorp.pdf

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