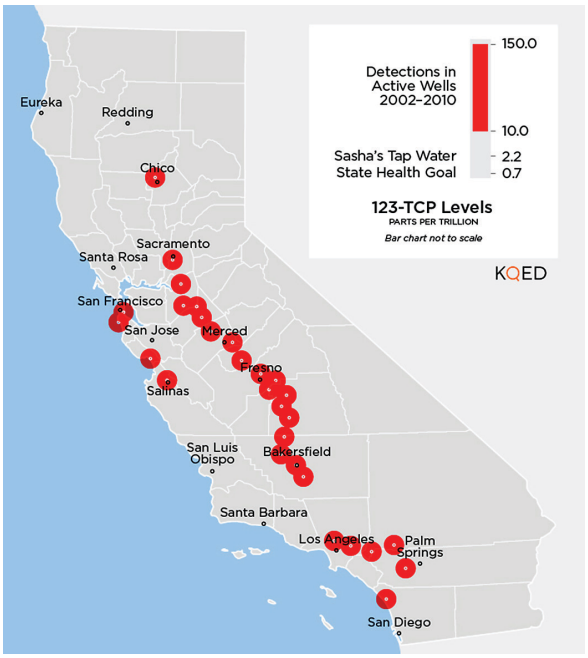
1,2,3-Trichloropropane (1,2,3-TCP)

1,2,3–TCP is a *man-made* chemical contaminating 372 known drinking water sources in California.[1] While it has a variety of industrial uses, the main way it entered the California environment is as an unnecessary by-product in commonly used soil fumigants sold by Shell and Dow Chemical to kill nematodes in soil. This impurity in the products provided no benefit to farmers and could have been removed. Instead, severe damage was done. While 1,2,3–TCP containing pesticides have not been used for many years, it still persists in the drinking water of some of California's agricultural regions.

Environmental Effects

1,2,3–TCP can break down in sunlight and is apparently not taken up in food sources such as plants or fish. However, when it is injected into the ground it does not bind to the soil, but instead will sink into groundwater where is can persist for many years.



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Health Impacts

1,2,3–TCP was added to California's Proposition 65 list of chemicals known to the State of California to cause cancer.[2] Short-term effects of high exposure include irritation to the skin, nose, eyes, and throat and possibly drowsiness or liver and kidney damage.

Exposure to 1,2,3–TCP occurs primarily from drinking or cooking with contaminated water or through inhaling its steam, such as while showering or washing dishes. There is some evidence that exposure may also occur from skin contact, but it appears that the chemical does not concentrate in food, such as plants or fish. The California Office of Environmental Health Hazard Assessment has set a Public Health Goal (PHG) for 1,2,3,–TCP in at .0007 parts per billion.[3] A PHG is the level of a contaminant in drinking water at which no significant public health effects would be expected.[4] A PHG is not a legally enforceable standard.

How Is 1,2,3,–TCP removed from Contaminated Drinking Water?

There are a number of "in situ" technologies to reduce 1,2,3–TCP in soil and groundwater, but the most common method of treating drinking water extracted from contaminated wells is to filter it through granulated activated carbon.[5]

What is Clean Water Action Doing about 1,2,3–TCP?

Clean Water Action is committed to ensuring that communities affected by 1,2,3,–TCP have access to safe drinking water and are protected from further exposure. To do this, and to hold Shell and Dow accountable for the costs of water treatment, the State must establish an enforceable drinking water standard, also known as the Maximum Contaminant Level (MCL). Under Californian law, an MCL must be set as close to the PHG *as is technically and economically feasible*.[6] Though California has had a PHG since 2009, no action has been taken until now to regulate it so that public water systems know to what level they must treat it in order to protect consumers.

CLEAN WATER ACTION

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Early in 2016 Clean Water Action launched its 1,2,3–TCP campaign. We are working with our allies at the Community Water Center and others to accomplish two objectives:

1) To ensure the State Water Resources Control Board's Drinking Water Division establishes an MCL for 1,2,3–TCP by mid-2017.

2) Ensure that the MCL is set at 5 parts per trillion, which is the recognized detection limit for 1,2,3–TCP, and thus the most protective standard that is currently possible.

We have already had a great deal of success. Thanks to our collaborative's advocacy, the Drinking Water program has hired additional staff and begun work on the technical and economic analyses of 1,2,3,–TCP necessary to set a drinking water standard. Their target is to have a draft of the MCL out later in 2016 for public comment and to finalize it by April of 2017. Clean Water Action and our allies, including impacted water systems and community members have also publicly testified that the cost of treatment should not be considered a limiting factor in setting a health protective MCL since Dow and Shell are responsible parties that can be held legally accountable for the costs of water treatment.

For related stories on 1,2,3–TCP, see:

http://ww2.kqed.org/science/2016/03/07/theres-a-cancer-causing-chemical-in-my-drinking-water-but-california-isnt-regulating-it/

http://rbwaterlaw.com/wp-content/uploads/2015/10/Fresno-Bee_4.21.12_Garbage-Chemical-TCP-Threatens-Valley-Water.pdf

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1 http://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/123TCP.shtml, Cheremisinoff, N.P. and Paul E. Rosenfeld, *Handbook of Pollution Prevention and Cleaner Production: Best Practices in Agrochemical Industry*. Elsevier, 2011, p. 233.

2 http://oehha.ca.gov/prop65/prop65_list/files/P65single052413.pdf

3 http://oehha.ca.gov/water/phg/123tcp082009.html

4 To learn more about PHGs and how they are established in California, go to http://oehha.ca.gov/water/phg/pdf/OEHHA_PHGguide2015.pdf

5 Cheremisinoffi and Rosenfeld, p. 243.

6 For information on how the State of California establishes MCLs, go to http://www.cleanwateraction.org/page/how-drinking-water-standards-are-created-california. Another source is http://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/MCLsandPHGs.shtml

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