

California Home

Tuesday, May 25, 2010

[OEHHA Home](#)[Air](#)[About OEHHA](#)[Children's Health](#)[Ecotoxicology](#)[Fish](#)[Pesticides](#)[Proposition 65](#)[Public Information](#)

- [Media Advisories](#)
- [Public Meetings](#)

[Risk Assessment](#)[Water](#)

OEHHA

Office of Environmental Health Hazard Assessment

Public Information

FOR IMMEDIATE RELEASE:

Release No. 05- 02

April 1, 2005

CONTACT:

Allan Hirsch
(916) 324-0955www.oehha.ca.gov
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State's Drinking Water Goal For Perchlorate Consistent With Findings Of Major Federal Study

SACRAMENTO – The California Environmental Protection Agency's Office of Environmental Health Hazard Assessment (OEHHA) today announced that the state's Public Health Goal (PHG) for perchlorate in drinking water is consistent with the findings of a recent report on the chemical by the National Academy of Sciences (NAS). In light of the favorable NAS findings, OEHHA has determined that the PHG does not need to be revised.

The PHG, which was published in March 2004, identifies 6 parts per billion as a level of perchlorate in drinking water that does not cause or contribute to adverse health effects. Perchlorate is primarily produced for use in rocket fuel, explosives, fireworks, road flares and air-bag inflation systems, and has been detected in a number of California drinking water sources.

"The National Academy of Sciences report on perchlorate provides strong support for the approach that we took in developing our public health goal," OEHHA Director Dr. Joan E. Denton said. "The federal report, along with earlier peer reviews of our perchlorate assessment by University of California scientists, reinforces the solid scientific foundation that underlies California's efforts to safeguard drinking water from threats posed by perchlorate."

The NAS report, released in January 2005, evaluated the U.S. Environmental Protection Agency's 2002 Draft Toxicological and Risk Characterization for Perchlorate. In its report, the NAS examined scientific issues that were relevant to OEHHA's PHG for perchlorate. When it published the PHG in 2004, OEHHA announced it would review the NAS report upon its completion and, if necessary, revise the PHG. OEHHA has concluded no revision is needed because of the consistency between the NAS

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findings and OEHHA's assessment of perchlorate.

The key NAS findings were:

- The health effects of perchlorate should be assessed using data from clinical studies involving humans, rather than laboratory animals. The NAS specifically recommended the use of a well-regarded 2002 study in which healthy volunteers were administered perchlorate. OEHHA used that same study to assess perchlorate's health effects and develop the PHG.
- The perchlorate health effect of primary concern is the reduction of the uptake of iodide, an essential nutrient, by the thyroid gland (a butterfly-shaped gland in the throat). While not harmful by itself, inadequate iodide uptake may lead to the harmful disruption of proper thyroid function. The NAS report said that the initial reduction of iodide uptake "is the key event that precedes all...effects of perchlorate exposure," and that focusing on the reduction of iodide uptake "is the most health protective and scientifically valid approach." OEHHA's perchlorate assessment similarly focused on the reduction of iodide uptake as the critical health effect.
- The fetuses of pregnant women are "the most sensitive population" to perchlorate's health effects, the NAS report said. OEHHA similarly concluded that pregnant women and fetuses were most sensitive to perchlorate after evaluating the chemical's health effects on adults, infants and lactating women, as well as pregnant women and fetuses. To ensure that a perchlorate assessment does not underestimate the chemical's effects on pregnant women and fetuses, the NAS recommended the same approach that OEHHA used in developing its PHG.

OEHHA did not identify any findings or recommendations in the report that conflicted with its PHG assessment. OEHHA and the NAS chose different methods for identifying general levels of perchlorate exposure that would not cause health effects, but the NAS report did not disagree with the method used by OEHHA. The NAS report did not calculate a safe level of perchlorate in drinking water, as this was outside the request made to the NAS.

In publishing the PHG, OEHHA used data from the 2002 study cited by NAS to identify 6 parts per billion as a level of perchlorate in drinking water that is protective of human health, including the health of pregnant women and fetuses. Impairment of thyroid function in pregnant women may affect the fetus and result in delayed development and decreased learning capability.

In a parallel development, OEHHA announced that a newly released study of perchlorate levels in human breast milk did not produce sufficient information to justify any revisions to the PHG. The study, published in February 2005 and authored by three Texas Tech University researchers, found elevated levels of perchlorate in breast milk samples from throughout the United States, including California. While important, the study did not find any correlation between perchlorate levels in the breast milk and drinking water of study participants, and was not designed

to identify the sources of the perchlorate found in breast milk.

OEHHA will continue to monitor new scientific developments concerning perchlorate. State law requires OEHHA to review and, as necessary, update each PHG every five years.

State law next requires the California Department of Health Services (DHS) to set a regulatory drinking water standard for perchlorate that is as close to the PHG as is economically and technically feasible. A PHG is not a regulatory requirement, and it is not a boundary between “safe” and “dangerous” levels of a chemical in drinking water. PHGs are health-protective goals for drinking water contaminants that DHS uses in establishing drinking water standards. OEHHA develops PHGs for all regulated drinking water contaminants.

The Office of Environmental Health Hazard Assessment is one of six entities within the California Environmental Protection Agency. OEHHA's mission is to protect and enhance public health and the environment by objective scientific evaluation of risks posed by hazardous substances.

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