



COUNTY OF MONTEREY HEALTH DEPARTMENT

ENVIRONMENTAL HEALTH BUREAU

FAQs About Nitrates in Drinking Water

Q. How do Nitrates get into drinking water?

A. Fertilizers such as potassium Nitrate and ammonium Nitrate are a primary source of Nitrates in drinking water. When applied to fields, Nitrates easily leach into soil and ultimately into water aquifers. In areas of heavy fertilizer usage, as in the strawberry fields of northern Monterey County and parts of the Salinas Valley, Nitrate contamination of aquifers is of serious concern. Also, in areas of concentrated belowground sewage disposal, Nitrate-rich seepage from septic systems is a significant contributor to the problem of groundwater pollution.

Because they do not evaporate, Nitrates are likely to remain dissolved, and to concentrate, in groundwater.

Q. Why are Nitrates being regulated?

A. In 1974, Congress passed the Safe Drinking Water Act. This law requires the Environmental Protection Agency (EPA) to determine safe levels of chemicals in drinking water that may cause health problems. These drinking water standards, and the regulations for ensuring these standards are met, are called National Primary Drinking Water Regulations. All public water supplies must abide by these regulations.

A Maximum Contaminant Level (MCL) for each chemical found in drinking water is determined, based on possible health risks and exposure. **The MCL for Nitrates has been set at 45 mg/l or 45 ppm (tested as Nitrates), and 10 mg/l or 10 ppm (tested as nitrogen).** The EPA believes, given present technology and resources, this is the lowest level to which water systems can reasonably be required to remove this contaminant.

Q. What are the health effects of Nitrates in drinking water?

- Excessive Nitrates in drinking water can interfere with the oxygen-carrying capacity of the blood. This condition (*methemoglobinemia*) can be so acute that health deteriorates rapidly over a period of days. Symptoms include shortness of breath and blueness of the skin. Infants under six months of age are especially at risk of developing serious health problems.
- Because of changes in body chemistry when a woman becomes pregnant she is particularly susceptible to methemoglobinemia and should be sure that the water she drinks has an acceptable Nitrate level.
- According to the EPA, a lifetime exposure to Nitrates at levels above the MCL has the potential to cause diuresis (excessive urination) and hemorrhaging of the spleen.

Q. How are Nitrates detected in drinking water?

A. A public water system is required to collect water samples at least once a year and analyze them to find out if Nitrates are 50% or more of the MCL. If Nitrates are present above 50% of the MCL, the water system must continue to monitor the contaminant level every 3 months. If Nitrate levels are found to exceed the MCL, the water system must notify the water users and must take steps to reduce the amount of Nitrates so that they are consistently below that level. Additional actions, such as providing alternative drinking water supplies, may be required.

FAQs About Nitrates in Drinking Water

If drinking water comes from a private well it should be tested at least once each year. The Monterey County Health Department certified laboratory provides sampling containers and can test the water sample, or the Environmental Health Bureau can refer you to a commercial *certified laboratory* that can test your water for Nitrate. These tests cost about \$30.

- If the Nitrate level is **close** to the MCL:

Do not use well water to make formula for infants under six months old, and do not drink it if you are pregnant.

- If the Nitrate level **exceeds** the MCL:

Use bottled water for drinking and cooking.

Boiling the water does not help—this will actually *increase the concentration* of Nitrates.

Q. How can Nitrates be reduced?

A. The continued use of bottled water for household consumption is *never* a permanent solution to the problem of high Nitrates.

- Nitrates in drinking water can be reduced by the use of treatment methods such as ion exchange or reverse osmosis. These techniques require a significant investment and have continuing costs related to maintenance. Information about these and other treatments can be obtained from the [Certified Residential Water Treatment Devices](http://www.waterboards.ca.gov/drinking_water/certlic/device/wtd_manufacturers.shtml) website of the California State Water Resources Control Board, Division of Drinking Water (DDW).

http://www.waterboards.ca.gov/drinking_water/certlic/device/wtd_manufacturers.shtml

- Drilling a deeper well is expensive and may not succeed in producing water with a lower Nitrate contaminant level. Retrofitting an existing well is rarely a feasible alternative.

- **As a permanent solution to high Nitrates in drinking water**, the California State Water Resources Control Board, Division of Drinking Water (DDW) encourages users relying on individual wells to connect to a public water system, and recommends that impacted water systems consolidate with other water systems that *can* supply water that meets the drinking water standards for Nitrates. The economy of size—many residents addressing the issue of high Nitrates together—offers the best prospects of successfully maintaining a healthy water supply.

Note that a water system may not alter a water source, or use treatment of any kind without prior approval from the Health Department's Environmental Health Bureau.

If you have any questions please call the Health Department's Environmental Health Bureau's Drinking Water Protection Services at 755-4507.

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