

## COMMON CONTAMINANTS & HEALTH EFFECTS

### Nitrates

Nitrates are our county's most prevalent contaminant. They are found extensively throughout the valley and to a lesser extent in the foothills. The California Department of Public Health (CDPH) sets drinking water standards and has determined that nitrates pose an acute health concern to infants and pregnant women at certain levels of exposure. Nitrates have several sources. They are found in fertilizer, sewage, and waste from humans and /or farm animals.

Methemoglobinemia or Blue Baby Syndrome is a potential condition in infants where nitrate is converted to nitrite in the baby's body. Nitrite interferes with the blood's ability to carry oxygen. Symptoms can develop rapidly in infants and health deteriorates over a period of days. Symptoms include shortness of breath and blueness of the skin. Expert medical advice should be sought immediately if these symptoms occur.

Pregnant women are also at risk of developing the symptoms of methemoglobinemia. During pregnancy it is common for methemoglobin levels to increase from the normal range (0.5 to 2.5% of the total hemoglobin) to a maximum of 10% in the 30<sup>th</sup> week of pregnancy and then decline to normal

levels after delivery. There is, however, no clear evidence that nitrate can be transmitted to the fetus from the pregnant woman.

The maximum contaminant level (MCL) for nitrates (as nitrogen) is 10 parts per million (ppm).

### DBCP

#### (Dibromochloropropane)

For many years the agricultural chemical DBCP was used to kill nematodes. DBCP was banned from use in 1977 but it persists in the environment today.

DBCP has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. People who use water containing DBCP in more than the maximum contaminant level over many years may experience reproductive difficulties and may have an increased cancer risk. CDPH has set the safe drinking water standard for DBCP at 0.2 part per billion (ppb).

### Radiological

**Gross Alpha:** Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. "Radioactive" means that the element is unstable; it is always decomposing to form a more stable state. The MCL for Gross Alpha is 15 picocuries per liter (pCi/l).

**Uranium and Radium 226/228:** Uranium, radium and other radionuclides occur naturally at low levels in many types of rocks and soils and can be present in water due to leaching from natural deposits. The MCL for Uranium is 20 pCi/l and it is 5 pCi/l for Radium 226/228. Over a long period of time, and at elevated levels, radium may increase the risk of bone cancer and uranium may increase cancer risk and illness from kidney toxicity.

### Note

**It is important to remember that the concentration of nitrates, chemicals, and radiological contaminants, increases when water containing these constituents are boiled. Approved treatment options are available to improve the quality and safety of drinking water.**

For additional information:

[http://www.swrcb.ca.gov/drinking\\_water/programs/index.shtml](http://www.swrcb.ca.gov/drinking_water/programs/index.shtml)



**TULARE COUNTY**  
**Environmental Health Services**  
**Water Testing for Individual Water Wells**



In an effort to address private well drinking water potability and to determine the distribution of various contaminants throughout the county, our Division has initiated some changes in the recommendations for private wells. As of **August 1, 2005**, all new or deepened private individual and public domestic well owners (2-4 connections) are encouraged to test for bacteria and nitrates. In addition, depending on location, well water should be tested for DBCP (Dibromochloropropane) in the valley and radiological contaminants in the foothills and mountains. Should any test results exceed the maximum contaminant level, as determined by standards from California Department of Public Health, the owners will be provided with pertinent information on the potential health effects.

**If you have questions, please contact:**

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Monday – Thursday: 8:00 AM – 5:30 PM  
Friday: 8:00 – 12:00 Noon