

F a c t s

NITRATES IN PRIVATE DRINKING WATER SUPPLIES

What are Nitrates?

Nitrates are present in groundwater due to contamination by decaying plant or animal material, manure, fertilizers, domestic sewage, or geological formations containing soluble nitrogen compounds.

Effects of Nitrate Concentrations

There is a causal relationship between the presence of nitrate above 10 mg/L in drinking water and infant methemoglobinemia. Health problems associated with high nitrate levels in drinking water result from the combination of nitrate and anaerobic bacteria in the digestive system. The condition can turn the blood a bluish colour, thus the term "blue baby syndrome". Nitrate poisoning, in terms of methemoglobinemia, from drinking water, appears to be restricted to susceptible infants less than six months, older children and adults drinking the same water appear unaffected.

Consumers should also be aware that some research literature suggests there may be a weak association between gastric cancer and high levels of nitrates in drinking water. Levels greater than 10 mg/L of nitrates as N are considered high.

Alternatives for Safer Drinking Water

The source of nitrate pollution should be determined where possible, and reduced or eliminated, whenever practical means permit. For treatment of high nitrate water, the use of ordinary filters and water softeners, or boiling of water will not reduce nitrates. Boiling will, in fact, increase the level of nitrate as the water evaporates leaving harmful elements behind.

Alternative drinking water supplies, bottled water, or treatment such as reverse osmosis or distillation could be considered.

— *Health & Environment Facts* —

Investigation and Testing for Nitrates

Individuals with private supplies may contact their area public health inspector for further information on nitrate testing in drinking water. Advice can be given as to what treatment methods or alternatives are available to help ensure a safe water supply.