

NITRATE & NITRITE

What You Need to Know

What is nitrate?

Nitrate (NO₃) and Nitrite (NO₂) are forms of nitrogen in the environment, both natural and human-made. Nitrogen is present in fertilizers, human sewage, and animal waste. Nitrate can contaminate a private well through groundwater movement, surface water seepage, and water run-off. Large amounts of nitrate in drinking water can be harmful to a person's health because nitrate can change into nitrite in the human body.

Who is affected by high levels of nitrate?

Swallowing high amounts of nitrate and/or nitrite can cause methemoglobinemia, commonly called 'blue baby syndrome'. This condition affects the blood's ability to carry oxygen. Infants younger than 6 months of age and pregnant women are at higher risk of developing this condition. Those with certain genetic conditions or reduced stomach acidity can also be affected.

There are also studies that suggest an association with nitrates and certain cancers in adults.

Can I tell if my water contains high levels of nitrate?

Nitrate contamination can't be identified by tasting, smelling, or looking at the water. The only way to identify nitrate contamination is to have the water tested. Sample results for nitrate above 10 parts per million (mg/L), or nitrite results above 1 mg/L can be dangerous to infants and pregnant women. The Oakland County Health Division recommends your well be tested at least annually for the presence of nitrate and nitrite. Regular inspections of the well may identify damage that allows contaminants to enter the well.

What can be done with water that has an elevated nitrate level?

Water treatment can remove nitrates from the water. Reverse osmosis, ion exchange, and distillation are effective in nitrate removal; however, they may be expensive and require regular maintenance to remain effective. Boiling water is not a solution, as it will concentrate the nitrates. Standard activated carbon filters, like those in pitchers, do not remove nitrate from water. Until the problem is fixed, use another source of water (such as bottled water) for preparing infant formula, cooking, and drinking. If treatment units are not installed and maintained as directed by the manufacturer, it could allow nitrates/nitrites to pass through the filter. Constructing a new well, connecting to a public water supply, or correcting the source of nitrate contamination may be better solutions.

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