

Hello, Neighbor:

The Linn Sanitary District and the Geneva Lake Environmental Agency thank all those who participated in our well-testing program and the Town of Linn and the Chapel on the Hill for the use of their facilities. Also, a big thanks to the Wisconsin State Lab of Hygiene for its cooperation and for making a discounted cost available for our program.

In this final issue of our groundwater informational series, we will discuss the results of the August private well-testing and ways to protect groundwater. Although drinking water standards are enforceable for public or municipal drinking water supplies, exceeding these levels in your private drinking water wells will not trigger enforcement. It is recommended for your health that these standards be used for assessing your drinking water. If your well exceeds any of the drinking water standards, it is recommended that you take appropriate action to reduce the levels to at least the standard.

Parameters Tested In Our Well-Water Testing Program

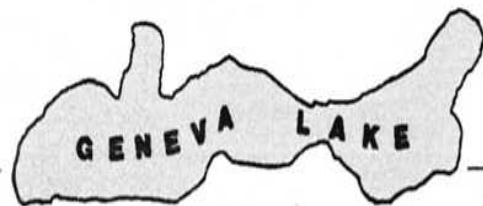
Four parameters were initially sampled: total coliform, arsenic, nitrate nitrogen, and chloride. If total coliform was present in a sample, it was further analyzed for E-coli, a type of fecal coliform.

Total coliform in your drinking water can indicate that a pathway exists for surface water and shallow groundwater to enter into your drinking water. The presence of **E-coli** indicates that your well is contaminated by fecal material, and other more harmful pathogens may be present.

Arsenic is a heavy metal that can cause both short-term and long-term impacts to the human body. In the Geneva Lake area most arsenic in wells is naturally occurring in the deep aquifer.

Chloride is a common ion found in the natural environment and human body. An excessive amount can interfere with many biochemical processes. Sources of chloride are, road deicers, softeners, and waste.

Nitrate is a major nutrient for growth. High levels can indirectly lead to blood disorders.



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This Groundwater Information, Education and Well Testing Program is brought to you and funded by the Linn Sanitary District and the Geneva Lake Environmental Agency.

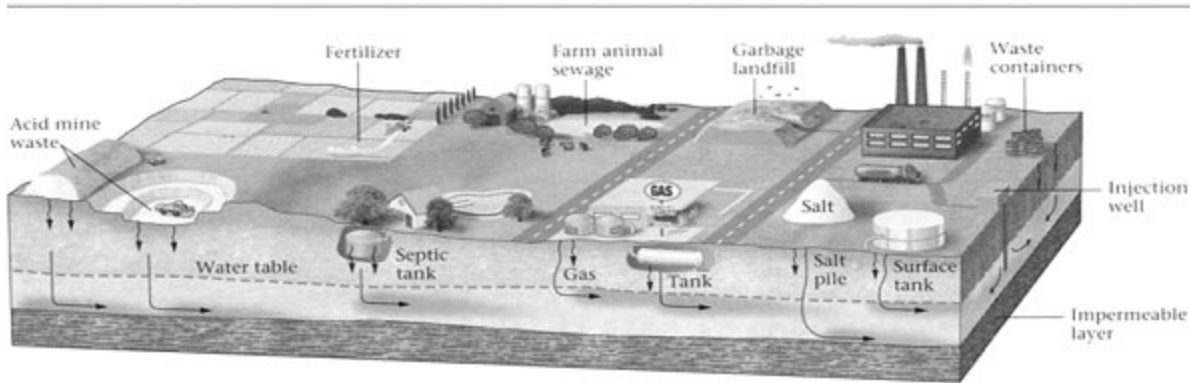


Geneva Lake Environmental Agency

Village of Fontana • City of Lake Geneva • Town of Linn
Town of Walworth • Village of Williams Bay

PROTECTING OUR GROUNDWATER, WHAT YOU CAN DO

It is often thought that because groundwater is beneath the surface it is always “clear and pure.” Although groundwater tends to be less polluted than many surface waters, groundwater can be polluted by people and natural causes. Groundwater pollution caused by people can be from surface (visible) and subsurface sources (out of sight).



Improper disposal and storage of sludge and wastewater from municipal wastewater plants and septic systems can leach into the groundwater and pollute it with nutrients and biological and inorganic pollutants. Feedlots, manure, and whey storage and spreading from agriculture practices can pollute groundwater. Above and on-the-ground storage piles of fertilizers, silage, snow, salt, and tailings all can contribute pollutants into the groundwater. Junkyards, landfills and failing septic systems can leach metals, nutrients, and complex pollutants into the groundwater.

Other sources of groundwater pollution are leaking underground tanks, pipelines, infiltration and seepage ponds, sanitary sewers, improperly constructed and abandoned wells, and old landfills. Over-pumping of wells can induce pollution by pulling pollutants into the underground areas to compensate for the loss of the pumped water.

Natural causes of groundwater pollution can be native soils and rock buried in the soil. Most of the arsenic problems in the drinking water wells around the Geneva Lake area are the results of a natural process that takes place in the deeper bedrock found in the area.

WHAT YOU CAN DO TO PROTECT GROUNDWATER.

- ◆ Maintain your septic system.
- ◆ Use fertilizers and pesticides as recommended.
- ◆ Don't bury garbage or waste products.
- ◆ Properly dispose oils, gas, and cleaning products.
- ◆ Be careful of what goes into your septic system.
- ◆ Minimize impervious areas.
- ◆ Recycle.

Glossary of Terms

Arsenic – A highly toxic metallic element that can restrict the use of the water. In certain areas of Wisconsin the presence of arsenic in drinking water can be from chemical changes in the aquifer. In the Geneva Lake area, the presence of arsenic usually is associated with deep wells.

Coliform bacteria – A collection of relatively harmless microorganisms that live in large numbers in soils, plants, and intestines of warm-blooded (humans) and cold-blooded animals.

E-coli bacteria – *Escherichia coli* bacteria, a specific type of fecal coliform bacteria that lives in the intestines of humans and animals.

Fecal coliform bacteria – A group of coliform bacteria usually found in association with feces of animals, including humans.

Nitrate nitrogen – A form of nitrogen that is often found in water. The presence of nitrogen at high levels can be an indication of pollution and results in restrictions of drinkability. High levels of nitrate in the water are especially a concern for children.

RESULTS OF THE WELL TESTING PROGRAM FOR THE GENEVA LAKE AREA BASED UPON A TOTAL OF 59 WELLS TESTED.

Parameter Tested	Drinking Water Standard	Number of Wells with Parameter	Number of Wells that Exceeded the Standard
Total Coliform	0	13	13
E-coli	0	1	1
Arsenic	10 parts per billion	18	7
Chloride	250 parts per million	59	0
Nitrate	10 parts per million	5	0

Additional comments:

- * The majority of wells tested had good water quality: 78% met drinking water standard for total coliform, 98% met the standard for E-coli, 88% met the standard for arsenic, 100% of wells tested met drinking water standard for nitrate and chloride.
- * 68 % of all tested wells met all the drinking water standards for the parameters tested.
- * All wells tested on the south shore (31 wells) had no detectable nitrate.
- * All 59 wells tested had some level of chloride, but none came close to the drinking water standard.
- * All owners of wells with exceeded values have been contacted and advised of remedial options.

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PLEASE OPEN AND READ

For more information on Groundwater visit:

- Central Wisconsin Groundwater Center
<http://www.uwsp.edu/cnr/gndwater/>
- Wisconsin Department of Natural Resources (WDNR)
<http://dnr.wi.gov/org/water/dwg/>
- United States Geological Survey (USGS)
<http://water.usgs.gov/ogw/>
- Wisconsin Geological and Natural History Survey (WGNHS)
<http://www.uwex.edu/wgnhs/>
- United States Environmental Protection Agency (USEPA)
<http://www.epa.gov/>
- University Of Wisconsin—Extension
<http://www.uwex.edu/>
- Geneva Lake Environmental Agency (GLEA)
<http://www.genevaonline.com/~glea/>
- Linn Sanitary District (LSD)
<http://www.townoflinn.com/Sanitary.htm>
- Wisconsin State Lab of Hygiene (WSLH) for testing
<http://www.slh.wisc.edu>

