

Learn about all the services of your state laboratory
by visiting our website: shl.uiowa.edu

Order a water sample collection kit

- **Online:** shl.uiowa.edu/env/privatewell
- **E-mail:** ask-shl@uiowa.edu
- **Phone:** 800-421-4692

Water collection bottle(s), instructions for collecting samples,
appropriate sample collection form and the current fees
will be included with the sample collection kit.

Information on our website regarding water quality

Go to the Well Water section of our website
(shl.uiowa.edu/env/privatewell)

- County Sanitarians
- Flood Health and Safety
- Well Water Quality and Treatment
- Sample Collection Instructions
- Additional Water Quality Tests
- Frequently Asked Questions

Three convenient locations for sample testing

State Hygienic Laboratory
University of Iowa Research Park
2490 Crosspark Road
Coralville, IA 52241-4721
319-335-4500

Hours: Monday-Friday 8 a.m.-5 p.m.; Saturday 9 a.m.-Noon

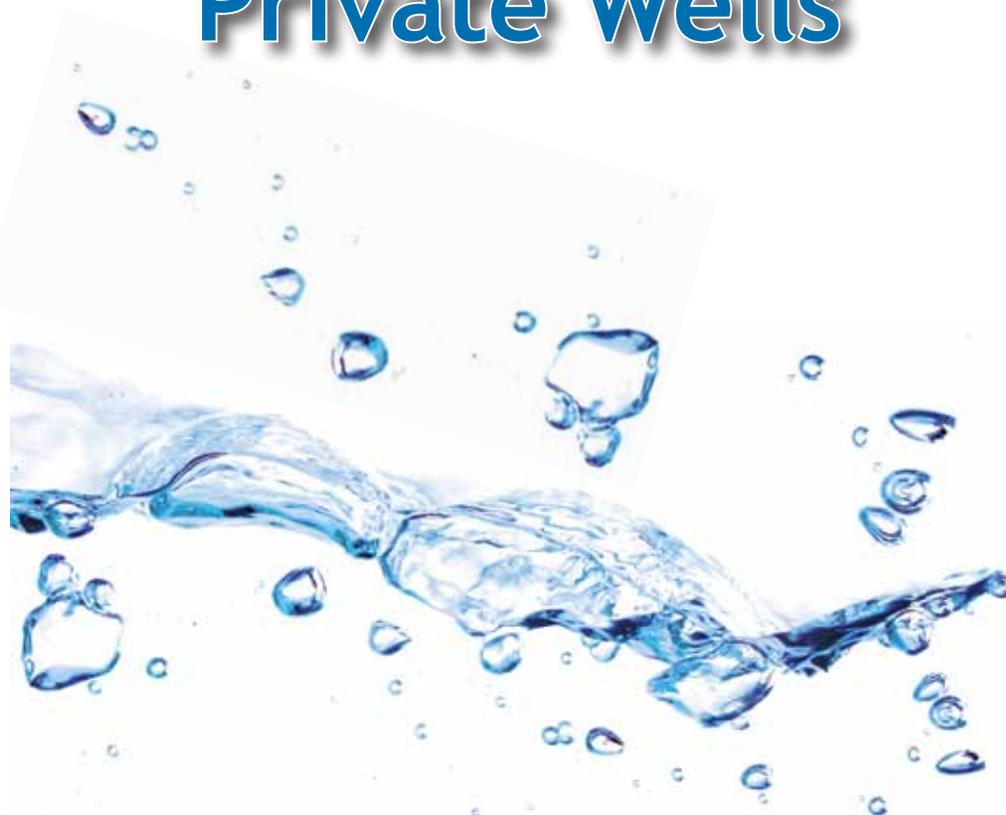
Ankeny Laboratory
2220 S. Ankeny Blvd.
Ankeny, IA 50023-9093
515-725-1600

Hours: Monday-Friday 8 a.m.-5 p.m.

Iowa Lakeside Laboratory
1838 Highway 86
Milford, IA 51351
712-337-3669

www.lakesidelab.org
Hours: Monday-Friday 8 a.m.-5 p.m.

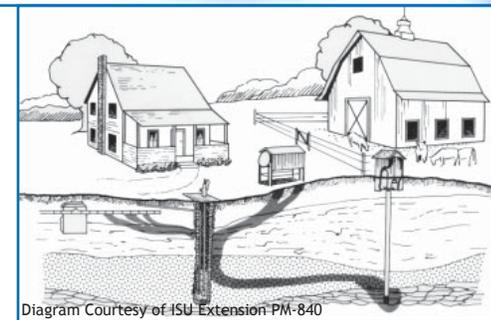
Drinking Water Analysis for Private Wells



STATE HYGIENIC LABORATORY
AT THE UNIVERSITY OF IOWA

Iowa's Environmental and Public Health Laboratory

Private well owners can protect their drinking water supply by performing a routine maintenance check on the water system and correcting any structural defects that may allow surface water or shallow groundwater to enter. Assistance may be available from county health departments, ISU extension services, and certified well drillers and pump installers. Part of this check should include a yearly water test for total coliform bacteria (and *E.coli*) and nitrates in the spring or fall.



Total Coliform Bacteria: Because total coliform bacteria are microorganisms that are present in soil and sewage, they are present in all surface water and very shallow groundwater (that is under the influence of surface water). As surface water percolates downward through the soil, a natural filtration process takes place which normally removes microorganisms (including coliform bacteria) UNLESS a pathway exists which bypasses this natural filtration process. The presence of coliform bacteria in drinking water indicates a possible **sanitary defect** in the drinking water system that could provide a pathway of entry for contamination into the well **OR** the distribution system (plumbing into the home). This pathway may provide an opportunity for harmful material to enter the drinking water, and this represents a **potential health hazard**.

Drinking water which is bacterially unsafe should NOT be used for human consumption unless properly disinfected before use (e.g., boiled for one minute) OR drinking water may be brought in from a known safe source (e.g. public water or bottled water for drinking purposes).

A sanitary survey of your water system and remediation assistance may be available from your local county health department, ISU extension services and certified well drillers and pump installers.

***E.coli* Bacteria:** *Escherichia coli* (*E.coli*) bacteria are a group (subset) of total coliform bacteria which are present in sewage material. The presence of *E.coli* bacteria in drinking water indicates that a pathway (defect) exists from a relatively fresh waste source such as animal feedlot runoff, septic tank or cesspool leakage, etc. Their presence also indicates that the water may be

contaminated with microorganisms that can cause disease which represents a **serious health concern**. Drinking water which contains *E.coli* should NOT be used for human consumption unless properly disinfected before use as described above.

Nitrate: Nitrate is a water soluble molecule made up of nitrogen and oxygen. Infants less than six months of age who are fed formula or juice made with water that contains elevated levels of nitrate could develop a life-threatening illness called methemoglobinemia. This condition is also called “blue-baby syndrome” because the infant’s skin appears blue-grey in color caused by a lack of oxygen in the blood. The level of nitrate contamination in well water depends on the well depth, construction and location (close proximity to sources with elevated levels of nitrogen compounds such as fertilizer, animal wastes and septic tanks). Federal regulations state the maximum contaminant level for nitrate in public water supplies is 10 mg/L (as $\text{NO}_3\text{-N}$) or 45 mg/L (as NO_3). This level is used as an infant health advisory for private well water.

Other Tests for Water Quality

Additional water quality testing is available from the State Hygienic Laboratory as needed on a case-by-case basis. We cannot perform other tests from the bottles sent for testing coliform and nitrate. Other tests will need their own specialized sample containers. Please visit the following web page for common concerns and the tests used to help identify the problem: shl.uiowa.edu/env/privatewell.