

Contaminates in Unregulated Drinking Water Systems

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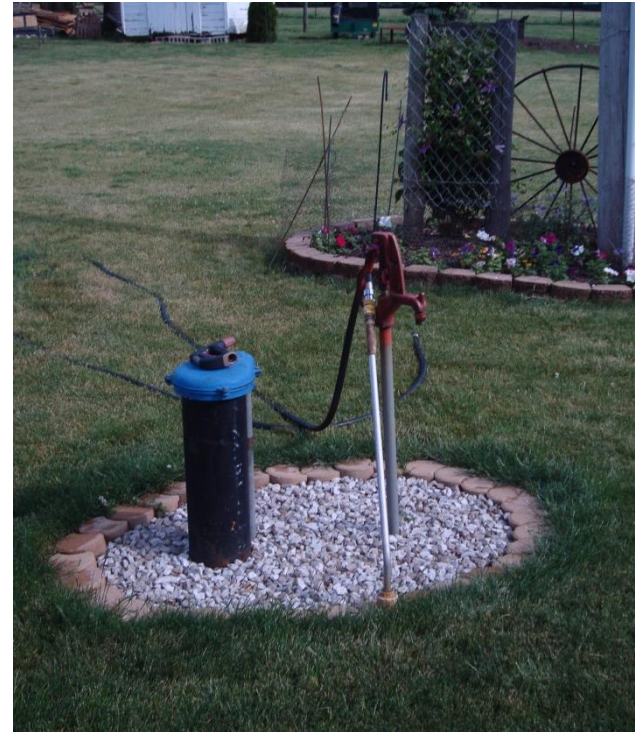
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Unregulated Drinking Water Systems in Cerro Gordo County, IA

- 2,800 Unregulated Drinking Water Systems (UDWS)
- Only tested immediately after drilling
- 1,500 sites have never been tested!



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Common Contaminates in UDWS

- Coliform Bacteria
- Nitrates
- Other Localized Contaminates such as
 - Arsenic
 - Other contaminants recommended to be tested by your state or local Public Health Departments

Testing done by a certified laboratory is the only way to confirm that a UDWS is providing safe water



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Coliform Bacteria

- Not usually found in groundwater – enters from surface source.
- Any present Coliform Bacteria is considered potentially hazardous
- Coliform Bacteria include E. Coli Bacteria
 - E. Coli Bacteria come from human and animal fecal waste
 - diarrhea, cramps, nausea, headaches, or other symptoms.
 - special health risk for infants, young children, and people with severely compromised immune systems.
- Treatment
 - Maintaining a properly sealed well
 - Disinfecting the well when it tests positive for bacteria
 - Use of a chlorination or other disinfection system



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Nitrates

- Runoff from fertilizer use; leaking from septic tanks, sewage; erosion of natural deposits
- Safe Drinking Water Act MCL for municipal water supplies:
 - ≥ 10 mg/L Nitrogen UNSAFE
- Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue-baby syndrome.
- Treatment:
 - Removing source
 - Reverse Osmosis



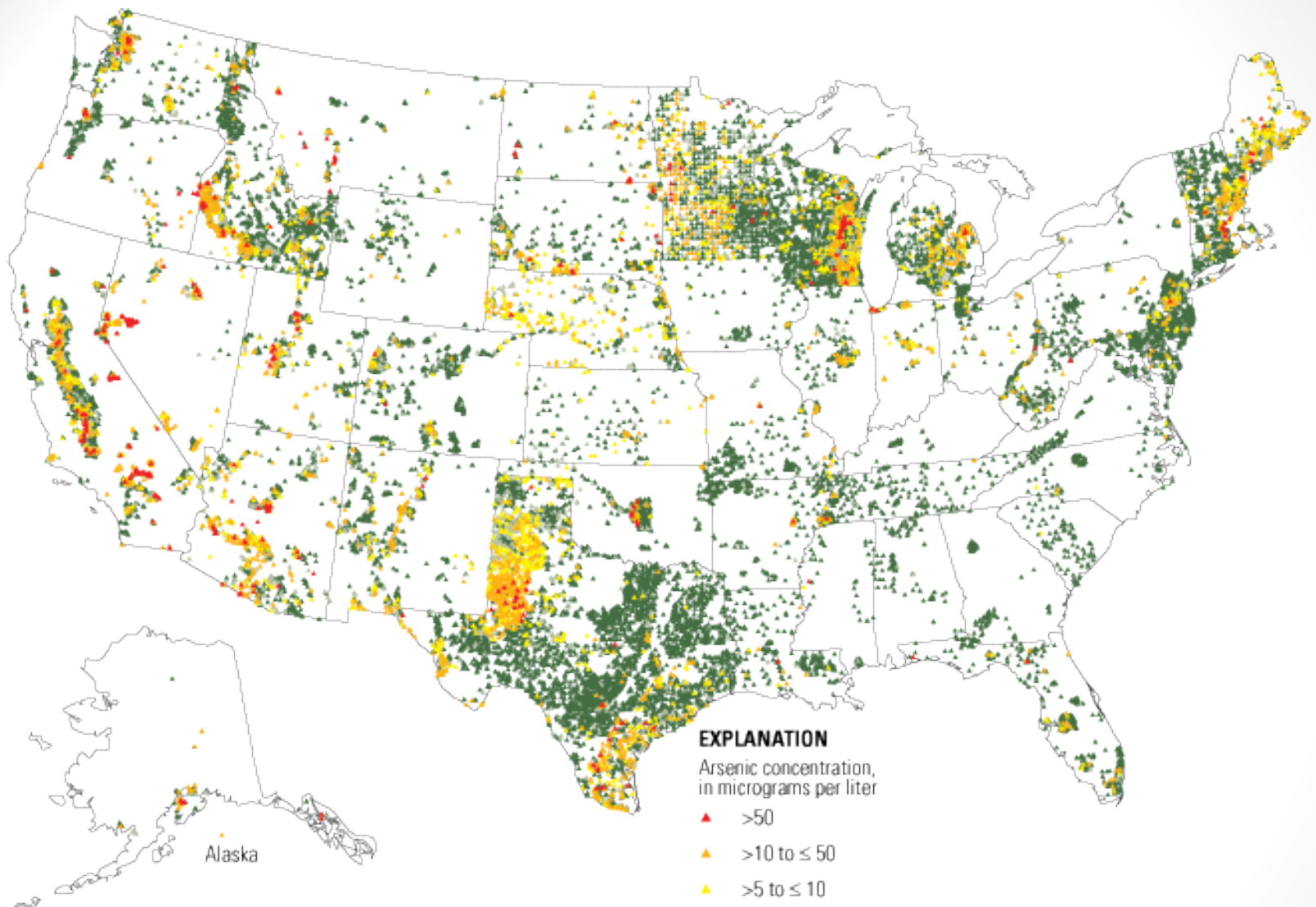
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Arsenic

- Often naturally present in the bedrock or soil, can be runoff from certain industries
- Safe Drinking Water Act MCL for municipal water supplies:
 - ≥ 10 ppb UNSAFE
- Numerous health effects including: cancer, neurological, cardiovascular and skin problems
- Treatment
 - Reverse Osmosis
 - Distillation



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EXPLANATION

Arsenic concentration,
in micrograms per liter

- ▲ >50
- ▲ >10 to ≤ 50
- ▲ >5 to ≤ 10
- ▲ >3 to ≤ 5
- ▲ ≤ 3

USEPA Arsenic drinking water
standard is 10 micrograms per liter

Other Potential Contaminates

- Local to Area
 - Naturally Occurring
 - Chemical/Hazardous Spills
 - Industry
- Check with State or Local Health Departments to see what should be tested



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Recommendations to UDWS Users

- Properly maintain your well and other parts of your UDWS
- Test your UDWS at least once per year
 - Or more often if water quality changes
- If your water tests as UNSAFE, follow the recommendations of your public health agency or laboratory for treatment or use a different source of drinking water



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Resources

- www.privatewellclass.org
- <http://water.epa.gov/drink/contaminants/index.cfm>
- <http://water.usgs.gov/nawqa/trace/arsenic/>



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