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Thank you for participating in FTR's H2Know Your Well Water program. Your participation provides critical data to help prevent contamination of drinking water sources, reduce risk of harm to human health, save taxpayers money on costly remediation, and protect the health of the Teton River and its fishery. Together we can ensure a future of clean water in the Teton River watershed.

Your samples will be analyzed by Zedi Solutions in Riverton, WY. You will receive your test results directly from Zedi Solutions in 6-10 business days via mail or email (self-designated on your Chain of Custody form). If your water sample has coliform bacteria present, you will be contacted within 2 business days of submitting your samples. If you have questions on testing parameters and results, please contact Zedi directly:

Zedi Solutions
29 Country Acres Rd
Riverton, WY 82501
(307) 856-0866

How to interpret your results:

Type of Contaminant	When to Treat
Total Coliform Presence/Absence	Treat any amount
Nitrate + Nitrate as N	If 10 mg/L or higher
Fluoride	If 4.0 mg/L or higher
Chloride	If 250 mg/L or higher
Sulfate	If 250 mg/L or higher
Lead-Dissolved	If 0.015 mg/L or higher
Arsenic-Dissolved	If 0.01 mg/L or higher
pH	If below 6.5 or above 8.5
Total Hardness	No adverse health effects due to total hardness determined but can impact plumbing and fixtures

Please see the following page for additional information on drinking water quality standards for each contaminate and associated health effects.

For additional questions about test results and treatment options, please contact Andy Olson with the Idaho Department of Environmental Quality.

Andy Olson
Water Quality Analyst
(208) 528-2611
andy.olson@deq.idaho.gov



What do your drinking water lab test results mean?

What do your results mean?

Health Effects Coliform bacteria are used as an indicator of water contamination. Though these organisms do not generally cause disease, they indicate that the water is a suitable environment to support the presence of harmful bacteria that can cause gastrointestinal illnesses such as dysentery, hepatitis, typhoid fever, cholera and others. If your water has coliform bacteria in it, it is strongly recommended that the water be treated before continuing use (see the "Bacteria Contamination" section for guidance). A positive coliform result will prompt an immediate check for the presence of E-coli.

Presence of E-coli in your water source indicates contamination from some form of sewage.

DO NOT DRINK THIS WATER!

The water must be treated and the source of the contamination discovered and fixed before this water can be used for consumption.

Fluoride is a chemical that is often added at low levels to municipal water supplies to promote strong teeth, but it can be found naturally in ground water sources. High levels (greater than 4.0mg/L) of fluoride can produce discoloration or pitting of teeth and cause bone disease resulting in pain and tenderness of the bones.

Nitrate (as N) can be dangerous to infants up to 6 months old, causing "Blue-Baby Syndrome" if the recommended limit of 10mg/L is exceeded. Adults can usually tolerate higher levels of nitrates but pregnant women, individuals with reduced gastric acidity, and those with a hereditary lack of methemoglobin reductase should avoid water sources with high nitrate levels.

Sodium does not have any particular health effects except for people with high blood pressure or on a low sodium diet, in which case the EPA recommends a limit of 20mg/L of sodium. Sodium levels in your water should be taken into account when calculating daily intake.

Sulfate can have a laxative effect, especially if a person is not accustomed to high levels of it. A person can become accustomed to high levels by gradually increasing the amount of sulfate intake, and people have been found to be reasonably tolerant of up to 750mg/L of sulfates. Ground water in Wyoming is generally high in sulfates.

Total Dissolved Solids (TDS) are all of the dissolved minerals and organic material in water. As a general rule, as the TDS increases, the quality of the water decreases. A high TDS value is typically not a cause for concern, however, unless there is a significant difference between the amount of minerals measured in the water and the TDS result, suggesting the possible presence of high levels of organic materials that are potentially harmful to a person's health. High TDS values generally contribute more to the taste of a water and how likely it is to leave deposits or create scale buildup. In Wyoming, TDS values of up to 1500 mg/L have been considered acceptable.

Aesthetic Effects (Taste, Appearance, and Effects on Plumbing)

Chloride is an element that is generally an indicator of some form of salt contamination. It can create a salty taste in waters and contributes to corrosion of plumbing at levels above 250mg/L.

pH is a measure of how acidic or basic a water is, and is generally used to determine how corrosive a water is to the plumbing. The more acidic water is (less than pH 7) the more likely it is to corrode pipes and, depending on the type of pipe, leach metals such as copper and lead into your water. Basic waters (greater than pH 7) are more prone to produce scale buildup which clogs pipes. These effects are more likely the further the pH is outside of the recommended limits of between 6.5 and 8.5.

Total Hardness is a measure of the calcium and magnesium in water. No adverse health effects have been determined, but hardness can affect plumbing and fixtures by creating a scale buildup clogging pipes and creating unsightly buildup in sinks and tubs. Also, hardness can affect the efficiency of household cleaners and detergents.

Classification	mg/L or ppm
Soft	0 - 17.1
Slightly hard	17.1 - 60
Moderately hard	60 - 120
Hard	120 - 180
Very hard	180 and Over

What do you do with problem water?

Bacteria Contamination

Well heads, casings, and covers should be checked for damage or possible means of entry for insects and vermin. Broken or missing well caps or well casings that are located beneath the ground can allow surface water to enter causing contamination. Make any necessary repairs to protect your water source from future contamination to make the most of your treatment.

Chlorine treatment is perhaps the cheapest and easiest form of water treatment for a bacteria contamination. Proper dosing is important, however, so contact your local water-well professional for guidance on how to apply chlorine.

Another method of disinfection of drinking water is to install an **ultraviolet (UV) light system**. UV systems kill most kinds of harmful bacteria and viruses without the addition of chemicals which can cause your water to taste bad. Proper continual maintenance of UV systems is essential, however, and they do not protect against all forms of harmful organisms including Giardia or Cryptosporidium cysts.

Mineral Contamination

Water softeners are one of the most common devices for high mineral waters. These are generally used to remove calcium and magnesium and sulfates. However, these systems are “exchange systems” which means that they remove calcium and magnesium by replacing them with other elements such as sodium or potassium. If you are on a low sodium diet, this may not be the appropriate option.

Reverse-osmosis (RO) systems are an effective means of removing most mineral contaminants. Different membranes are available depending on the contaminant of concern. Be aware that very hard water can reduce the effectiveness of an RO system, so a water softener might be needed to soften the water before entering an RO system.

Please note, the information provided above is for informational purposes only and is not designed to be a recommendation for any particular treatment option nor is it a complete listing of all available options. All recommended limits are from EPA recommendations and regulations, which can be found at: <http://www.epa.gov/safewater/contaminants/index.html>