Dissolved Oxygen- D.O. is important to the health of aquatic ecosystems. All aquatic animals need oxygen to survive. Natural waters with consistently high dissolved oxygen levels are most likely healthy and stable environments, and are capable of supporting a diversity of aquatic organisms. Natural and human-induced changes to the aquatic environment can affect the availability of dissolved oxygen.

The Dissolved Oxygen % of saturation is an important measurement of water quality (Ours was 39%). High levels of bacteria from sewage pollution or large amounts of rotting plants can cause the % saturation to decrease. This can cause large fluctuations in dissolved oxygen levels throughout the day, which can affect the ability of plants and animals to thrive.

Ranking Test Results: 91-110% excellent
71-90% good
51-70% fair
<50% poor ← Our level falls within this category.

Nitrate- Nitrate is a nutrient needed by all aquatic plants and animals to build protein. The decomposition of dead plants and animals and the excretions of living animals release nitrate into the aquatic system (i.e. cows). Excess nutrients, like nitrate, increase plant growth and decay, promote bacterial decomposition, and therefore, decrease the amount of oxygen available in the water. Sewage is the main source of excess nitrate added to natural waters, while fertilizer and agricultural runoff also contribute to high levels of nitrate. Drinking water containing high nitrate levels can affect the ability of our blood to carry oxygen. This is especially true for infants who drink formula made with water containing high levels of nitrate (can cause blue baby syndrome and even death). *You should always have a professional lab test your drinking water for the presence of nitrates.*

Ranking Test Results: **5 ppm** **fair**
20 ppm poor
40 ppm poot

Phosphate- Phosphate is a nutrient needed for plant and animal growth and is also a fundamental element in metabolic reactions. High levels of this nutrient can lead to overgrowth of plants, increased bacterial activity, and decreased dissolved oxygen levels. Phosphate comes from several sources including human and animal waste, industrial pollution, and agricultural runoff.

Ranking Test Results: **1 ppm** **excellent**
2 ppm good
4 ppm fair

PH- pH is a measurement of the acidic or basic quality of water. The pH scale ranges from a value of 0 (very acidic) to 14 (very basic), with 7 being neutral. The pH of natural water is

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usually between 6.5 and 8.2. Most aquatic organisms are adapted to a specific pH level and may die if the pH of the water changes even slightly. pH can be affected by industrial waste, agricultural runoff, or drainage from improperly run mining operations.

Ranking Test Results:		
	4	poor
	5	poor
	6	good
	7	excellent
	8	**good**
	9	poor
	10	poor

Coliform- Fecal coliform bacteria are naturally present in the human digestive tract but are rare or absent in unpolluted waters. Coliform bacteria should not be found in well water or other sources of drinking water. Their presence in water serves as a reliable indication of sewage or fecal contamination. Although coliform bacteria themselves are not pathogenic, they occur with intestinal pathogens that are dangerous to human health. This presence/absence total coliform test detected all coliform bacteria strains and may indicate fecal contamination.

The coliform test in this kit indicated we had above 20 coliform colonies per 100 mL of water. You should always have a professional lab test your drinking water for the presence of coliform bacteria.

Ranking Test Results-		
	Positive (+)	**poor**
	Negative (-)	good

We said this water is safe for swimming but not drinking.

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