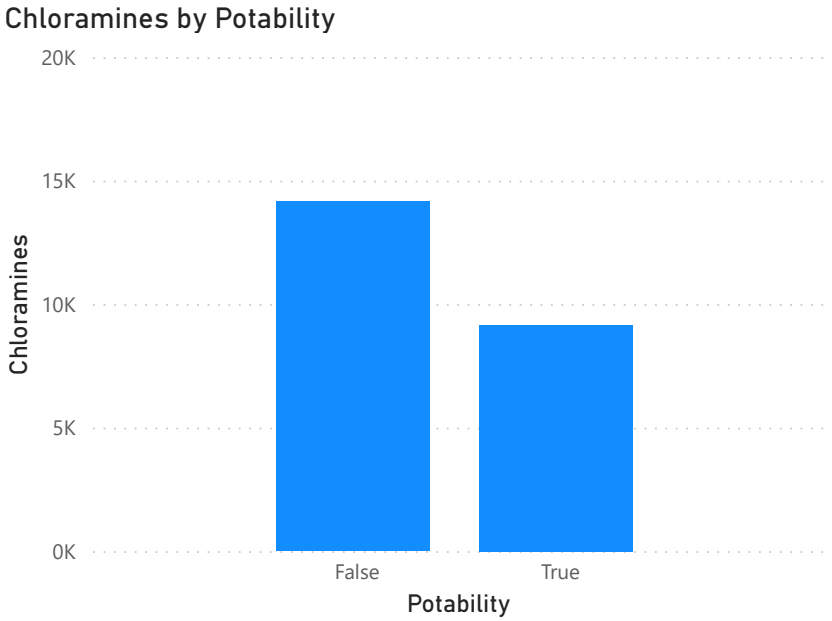


Organic Carbon

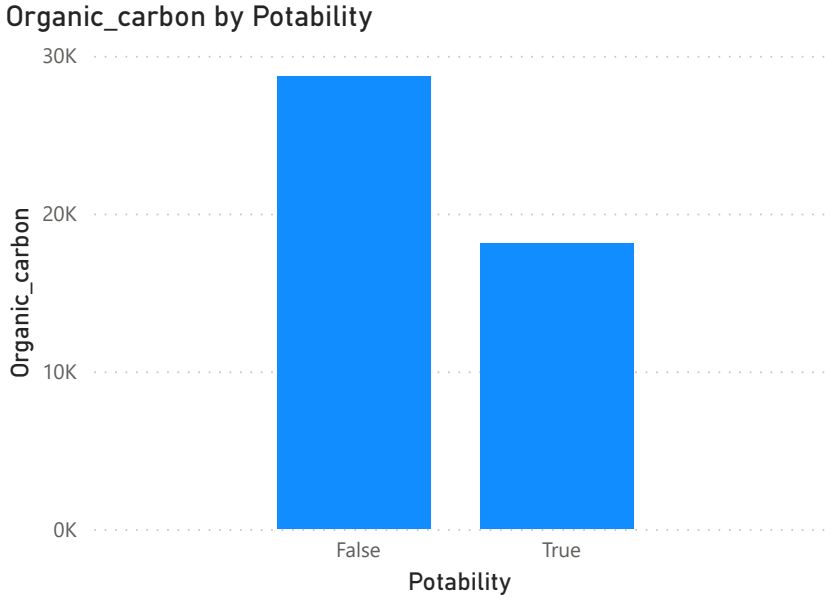
Total organic carbon is organic matter—aka any carbon-based contaminants—in untreated water. It can contain thousands of parts, including macroscopic particles, dissolved macromolecules, colloids, or compounds. Total organic carbon occurs in untreated water, such as lakes and rivers. The TOC in a body of water is impacted by vegetation in the area, the climate, and even treated sewage released into the water. Total organic carbon is generally what naturally occurs in bodies of water, but it also can be affected by human activity.

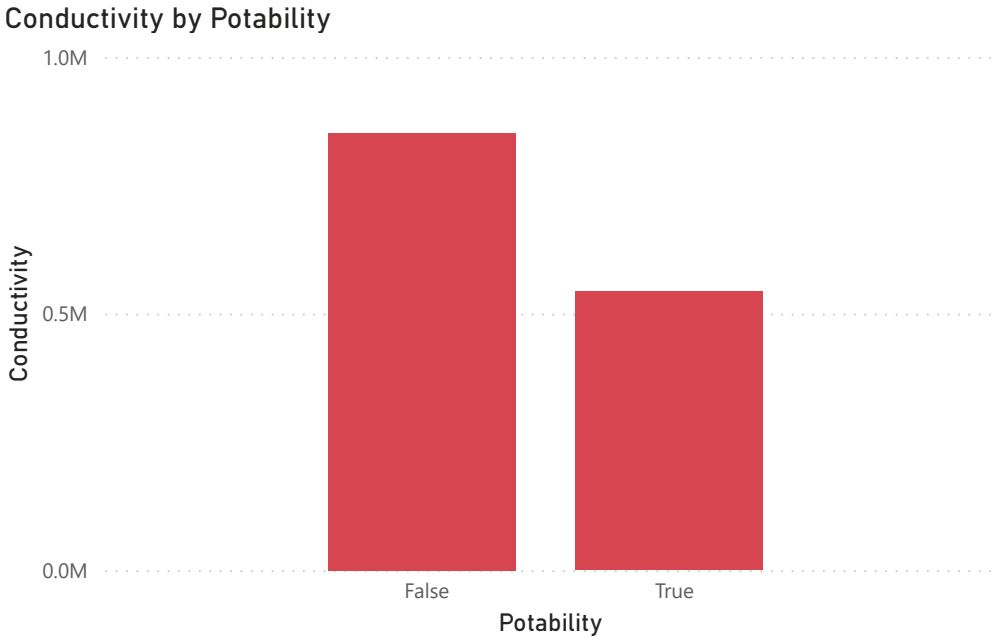
More the organic carbon in the water, less the potability of water

CHLORAMINES

Chloramines are disinfectants used to treat drinking water. Chloramines are most commonly formed when ammonia is added to chlorine to treat drinking water. Chloramines provide longer-lasting disinfection as the water moves through pipes to consumers. This type of disinfection is known as secondary disinfection.

But, the chloramines used for treating drinking water are not consumable in excessive amounts, so as the amount of chloramines increase, the water becomes less potable for consumption.





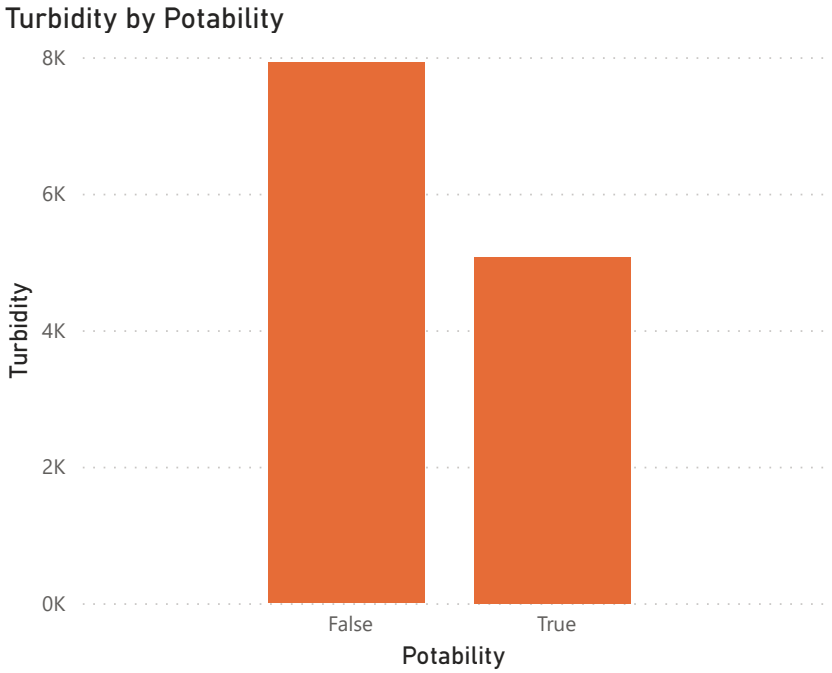
Conductivity

Pure distilled and deionized water has a conductivity of 0.05 µS/cm, which corresponds to a resistivity of 18 megohm-cm (MΩ). Seawater has a conductivity of 50 mS/cm, and drinking water has a conductivity of 200 to 800 µS/cm. The permeate of an RO unit varies based on the feed concentration and operating pressure. Typically, the conductivity of RO water should fall between the value for deionized water and the value for drinking water (0.05 µS/cm-200 µS/cm).

More the conductivity, more the number of harmful electrolytes present, making the water more harmful for consumption.

pH

The pH level of your drinking water reflects how acidic it is. pH stands for “potential of hydrogen,” referring to the amount of hydrogen found in a substance (in this case, water). pH is measured on a scale that runs from 0 to 14. Seven is neutral, meaning there is a balance between acid and alkalinity. A measurement below 7 means acid is present and a measurement above 7 is basic (or alkaline).



Turbidity

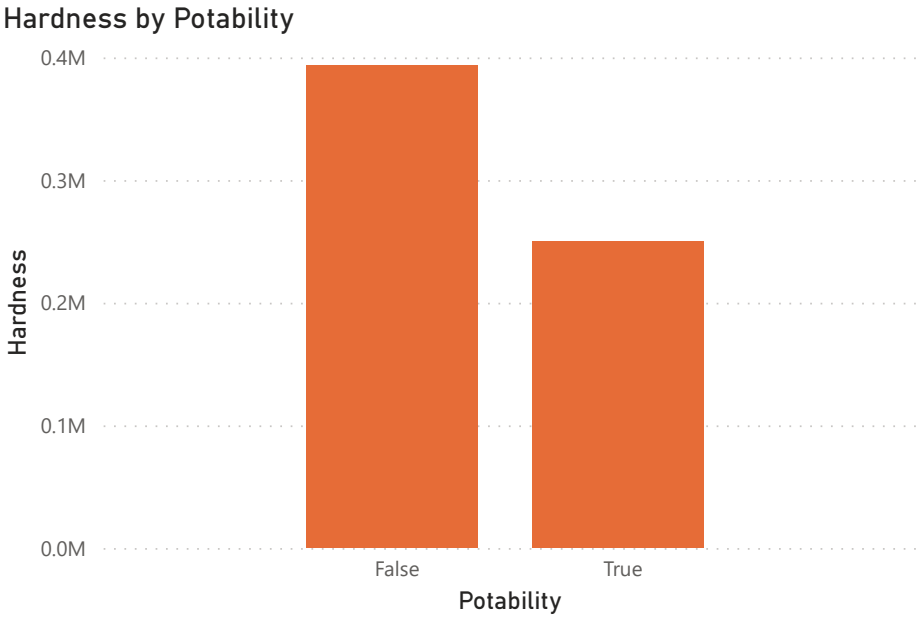
The US Environmental Protection Agency sets the maximum level of turbidity in finished drinking water at 1 NTU and at no time >5 NTU; the vast majority of water treatment plants must be less than 0.3 NTU 95% of the time with a maximum of 1 NTU (United States Environmental Protection Agency 2012).

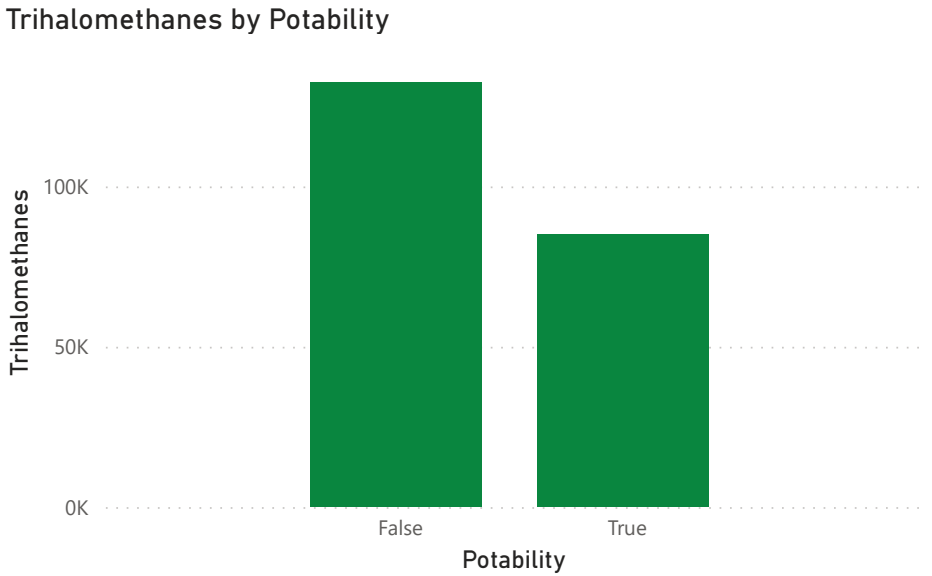
Turbidity reduction is one part of effective water treatment processes in large-scale centralized treatment plants, small community systems, and at the household level. In areas without water treatment systems or with impaired sources of drinking water, water may need treatment at the household level, or point of use (POU) to render it safe to drink.

Hardness

The typical dietary contribution of calcium and magnesium is over 80% of the total daily intake. Of this, approximately 30% of calcium and 35% of magnesium will be absorbed. The bioavailabilities of calcium and magnesium from milk and water are on the order of 50% (Ong, Grandjean & Heaney, 2009). For calcium and magnesium, the typical contribution from water is 5–20% (WHO, 1973; National Research Council, 1977; Neri & Johansen, 1978).

Because of dietary habits in most countries, many people fail to obtain the recommended intakes of one or both of these nutrients from their diets. While the concentrations of calcium and magnesium in drinking-water vary markedly from one supply to another, mineral-rich drinking-waters may provide substantial contributions to total intakes of these nutrients in some populations or population subgroups. Water treatment processes can affect mineral concentrations and, hence, the total intake of calcium and magnesium for some individuals.





Solids

Total dissolved solids (TDS) is the term used to describe the inorganic salts and small amounts of organic matter present in solution in water. The principal constituents are usually calcium, magnesium, sodium, and potassium cations and carbonate, hydrogencarbonate, chloride, sulfate, and nitrate anions.

The presence of dissolved solids in water may affect its taste (1). The palatability of drinkingwater has been rated by panels of tasters in relation to its TDS level as follows: excellent, less than 300 mg/litre; good, between 300 and 600 mg/litre; fair, between 600 and 900 mg/litre; poor, between 900 and 1200 mg/litre; and unacceptable, greater than 1200 mg/litre (1). Water with extremely low concentrations of TDS may also be unacceptable because of its flat, insipid taste.

Trihalomethanes

Total trihalomethanes (TTHM) are a group of disinfection byproducts that form when chlorine compounds that are used to disinfect water react with other naturally occurring chemicals in the water. They are colorless, and will evaporate out of the water into the air. There are four significant TTHM potentially found in disinfected drinking water and their combined concentration is referred to as total TTHM.

Levels of TTHM generally increase in the summer months due to the warmer temperatures, but can also be affected by seasonal changes in source water quality or by changing amounts of disinfection added. Water systems often can experience temporary increases in TTHM due to short-term increases in chlorine disinfection. Chlorine disinfection increases can occur when there is a water main break, when water systems are under repair, or when there is a potential microbial (example: bacteria) problem or threat.

All water systems that use chlorine to disinfect the water are required by federal and state law to sample for TTHM on a regular basis (quarterly, or once every three months).