

**Water Quality Fact Sheet**  
**Summaries of Known Health Effects of Waterborne Contaminants**  
**Detected in Water Sources on the Navajo Nation**

Compiled by Navajo Birth Cohort Study Staff from information provided by U.S. Environmental Protection Agency (USEPA), Centers for Disease Control and Prevention (CDC), and Agency for Toxic Substances and Disease Registry (ATSDR)

<b>Contaminant (Chemical Symbol)</b>	<b>MCL or SDWS</b>	<b>Description and Known Health Effects</b>
Bacteria: <i>E Coli</i>	Present	<i>E. Coli</i> is a class of bacteria whose presence indicates that the water may be contaminated with human or animal waste. Microbes in this waste can cause short-term health problems, such as diarrhea, cramps, nausea, headaches or other symptoms.
Bacteria: Total Coliforms	Present	Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other more potentially harmful bacteria may be present.
Arsenic (As)	0.01 mg/l	Arsenic is a metalloid. Exposure to arsenic has been linked to skin pigment effects; increased risks of skin, lung, bladder cancers; interaction with UV; nerve damage; and nervous system, kidney, cardiovascular system effects.
Conductivity, Salinity and Specific Conductance	~780 $\mu$ S $\approx$ 500 mg/l	Conductivity and Specific Conductance are measures of the ability of water to conduct an electrical charge. Conductance increases with increasing Salinity, which is a measurement of the salt content – called “dissolved solids” – in the water.
Fluoride (F)	4 mg/l	At high doses, fluoride causes mottling of teeth and disturbs bone formation; at low doses, F is added to water to promote dental health.
Gross alpha radioactivity	15 pCi/l	This is the measure of the total concentration of alpha-emitting radioactive substances in water; gross-alpha activity increases cancer risks, with the organ systems affected depending on specific radionuclide emitting alpha particles.
Lead (Pb)	0.015 mg/l	Lead is a heavy metal linked to kidney problems, high blood pressure in adults; and learning disabilities in children.
Nitrate (NO <sub>3</sub> )	10 mg/l	Both nitrate and nitrite block delivery of oxygen to tissue; infants up to 6 months old who drink water containing high levels of nitrate or nitrite may turn blue from lack of oxygen.
Nitrite (NO <sub>2</sub> )	1 mg/l	
Mercury (Hg)	0.002 mg/l	Mercury is a heavy metal that causes kidney damage, among other effects.
pH	6.5-8.5 units	pH stands for “potential hydrogen”. It is the measure of extreme acidity (pH = 1) to extreme alkalinity (pH = 13), with 7-7.5 considered “neutral” or natural water.
Selenium (Se)	0.05 mg/l	Selenium is an essential nutrient at low doses, but at high doses, is linked to bone disease and fingernail loss, circulation effects (numbness in fingers and toes), irritability, and GI distress.
Radium (Ra)	5 pCi/l	Radium (total), a naturally radioactive element, causes cancer and tooth decay in humans.
Uranium (U)	0.03 mg/l	Uranium is a heavy metal associated with kidney toxicity and increased cancer risks as an alpha-emitting radioactive element.

**Abbreviations:** MCL = maximum contaminant level. SDSW = Secondary Drinking Water Standard. mg/l = milligrams per liter of water, which is a measure of the level of dissolved solids of each contaminant in a liter of water. pCi/l = picoCuries per liter, a measure of radioactivity in the water.  $\mu$ S = microSiemens, a measure of level of salinity, or salt content, in the water.