

INFRASTRUCTURE BRIEFING

Thursday 8th July 2021

*NITRATES IN DRINKING
WATER*

- ▶ Local and international studies have found an association between nitrates in drinking water supplies and colorectal cancer.
- ▶ New Zealand has rates of colorectal cancer twice the global average.
- ▶ The Highest rates in New Zealand are found in the Canterbury, Southern, Taranaki, and Nelson Marlborough District Health Board Areas.

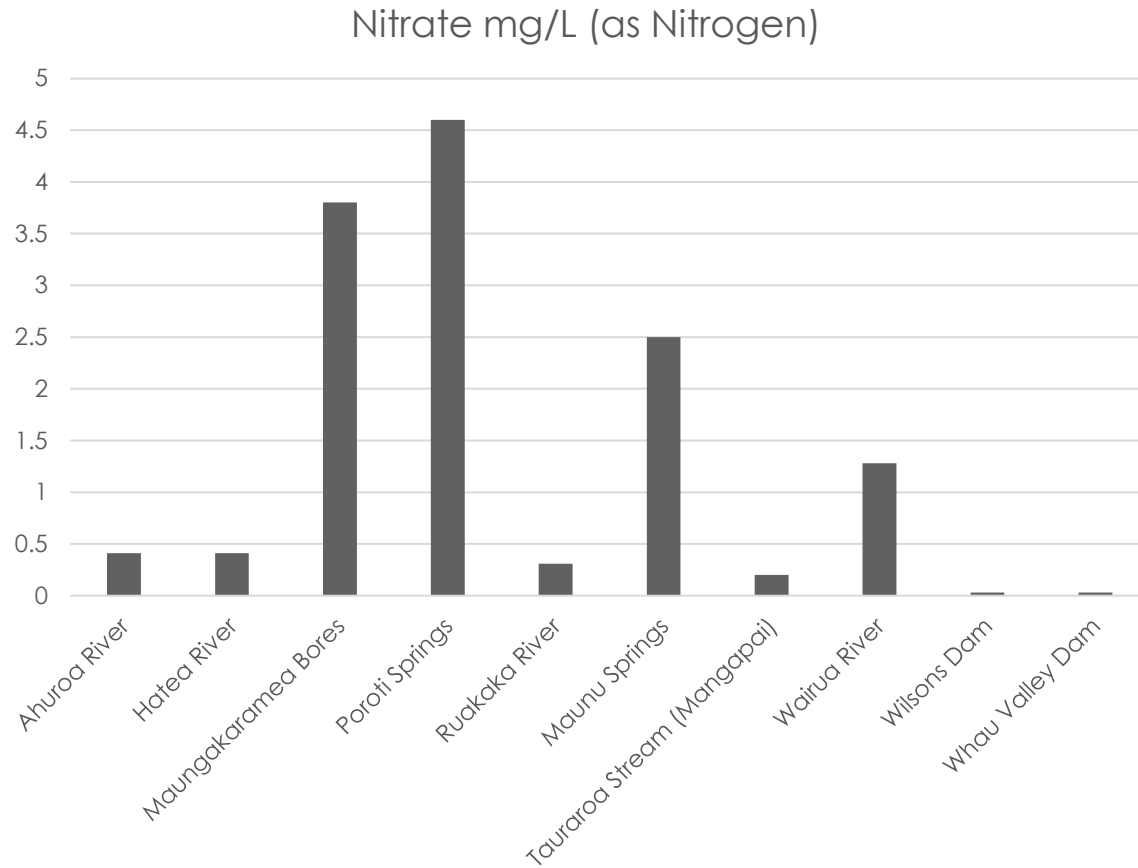
STUDIES

- ▶ Naturally Occurring – Normally fairly low levels
- ▶ Inorganic Fertilizers and Herbicides
- ▶ Animal waste
- ▶ Sewage overflows
- ▶ Industrial and food processing waste

CAUSES OF NITRATES IN DRINKING WATER

- ▶ New Zealand follows World Health Organisation Guidelines
- ▶ Current World Health Organisation guideline value is 11.3 mg/l (measured as Nitrogen)
- ▶ The US Environmental Protection Agency standard is 10mg/l
- ▶ Following the studies some experts are suggesting that a level as low as 1 mg/l may be more appropriate.

MAXIMUM ALLOWABLE VALUES



WDC WATER SOURCES

- ▶ The chemical properties of Nitrate makes it difficult to treat with conventional processes. More complex processes are often required.
- ▶ Blending Sources
- ▶ Ion Exchange
- ▶ Reverse Osmosis
- ▶ Distillation



TREATMENT OPTIONS

- ▶ No issues at Whau Valley, Ahuroa, Ruakaka or Mangapai
- ▶ Possible future concerns for ground water sources if standards change
- ▶ Poroti – Space left in new plant design
- ▶ Ruddells – Relocate treatment plant
- ▶ Maungakaramea – Connect to City Supply

WDC TREATMENT PLANTS

QUESTIONS?