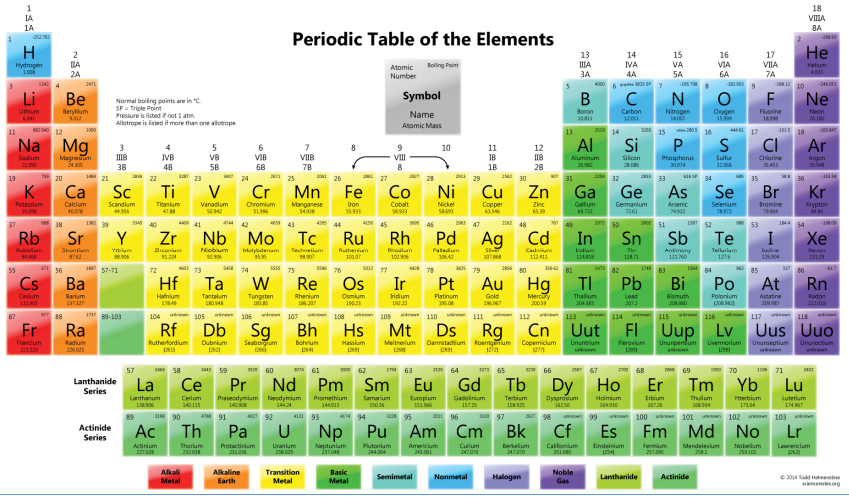



We work with others to protect the health of the people of Washington State by ensuring safe and reliable drinking water.

# MANGANESE IN DRINKING WATER UPDATE AND DISCUSSION

Washington State Department of Health
Office of Drinking Water

# Manganese

25

**Mn**

Manganese

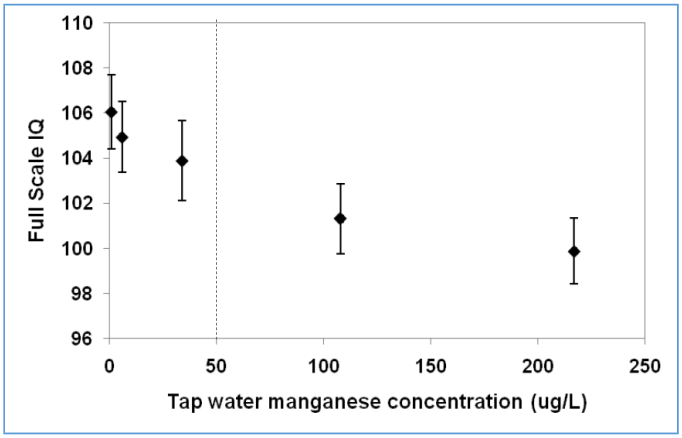
54.938

# Manganese

- Traditional View—Not A Health Concern
  - Aesthetic effects (taste and color)
  - EPA Secondary MCL—0.050 mg/L
- Mn—Recent Health Effects Research
  - Water different than food
  - People under 6—hyperactivity, mental abilities
  - Older people—increased risk of disease similar to Parkinson's
- Regulatory Updates
  - USEPA (2003) Recommended health advisory levels (0.3; 1.0 mg/L)
  - Health Canada (2016)—Proposed maximum acceptable concentration of 0.1 mg/L (100 ug/L) mainly to protect bottled fed infants
  - Minnesota DOH—Advisory level of 100 ug/L for formula fed infants



# Manganese—Effects on Child Development




- Study followed 362 children in southern Quebec, Canada

*Ref. Bouchard et al., 2011*

## Manganese—Summary

1. Maximize treatment effectiveness
   - Treatment goal of 0.020 mg/L (20 ppb) or less
   - Reduce "legacy manganese" risk
2. Plan ahead for changes to
   - Hydraulics
   - Source
   - Treatment
3. Changes in manganese communications
   - Discolored water—Do not tell customer "just a nuisance" unless you are sure
   - Update publications to remove "~~manganese does not pose a threat to human health~~"