

LINO LAKES

PUBLIC WATER SYSTEM

MANGANESE TEST RESULTS

Background

- The U.S. Environmental Protection Agency (EPA) sets safe drinking water standards
 - City's municipal water supply meets Safe Drinking Water Act standards
 - As tested by the Minnesota Department of Health (MDH)
 - Primary standards
 - Regulated through Maximum Contaminant Levels (MCL)
 - Secondary standards
 - Unregulated contaminants monitored by Public Water Systems (PWSs)
 - The Unregulated Contaminant Monitoring Rule (UCMR)
 - UCMR4 monitoring is currently occurring thru 2020 and includes manganese

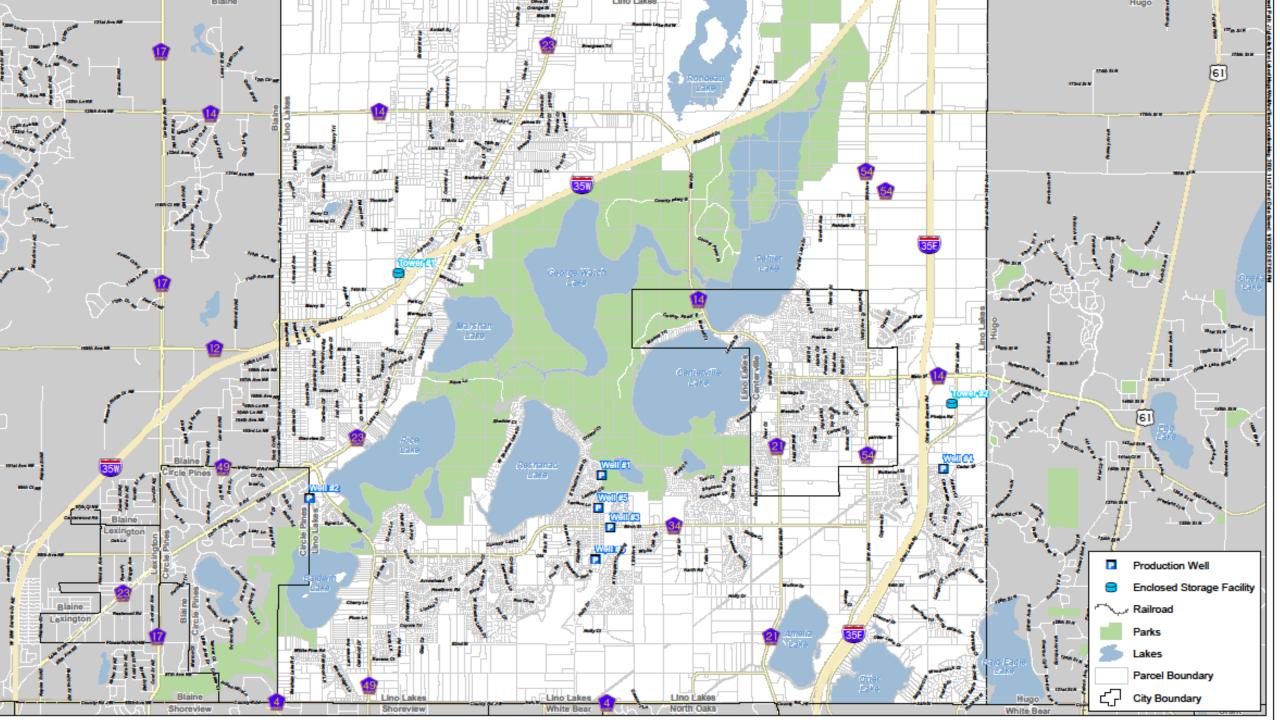


Manganese

- UCMR4 monitoring by the Minnesota Department of Health (MDH)
 - Reviewing developing research on health effects of high levels of Manganese
 - > Recommended safe levels
 - MDH will provide detail
 - > Testing of PWS's
 - Lino Lakes wells tested high
 - Informing the public through direct mailing, website, consumer confidence report "drinking water report"

City Municipal Water System

- Water System
 - > 6 Wells
 - City's wells are deeper than private wells
 - > 2 Water Towers
 - Distribution System
 - Water mixes in the mains and towers and then travels to the customer's taps



City of Lino Lakes Well Testing Results from Minnesota Department of Health

Collected December 16, 2019

City Well Number	Manganese Concentration (micrograms per liter)
1	158
2	527
3	322
4	84
5	143
6	408

City Solution

- Short Term
 - Reduce levels of Manganese by limiting use of wells with high manganese
 - During the summer months, the demand for water will increase, resulting in the need to use water from additional wells. This will likely increase manganese levels. Residents should consider taking actions to protect their health.

Manganese Concentration Level in City Water Supply

Date	Reading (PPB)
Jan 22, 2020	67
Jan 21, 2020	134
Jan 16, 2020	100
Jan 15, 2020	133
Jan 14, 2020	73
Jan 13, 2020	112
Jan 10, 2020	121
Jan 9, 2020	90
Jan 8, 2020	148
Jan 7, 2020	120
Jan 6, 2020	126
Jan 3, 2020	147
Jan 2,2020	118
Dec 30, 2019	161
Dec 27, 2019	139
Dec 26, 2019	126
Dec 23, 2019	117
Dec 20, 2019	129
Dec 19, 2019	135
Dec 18, 2019	149
Dec 17, 2019	123
Dec 16, 2019	149
Dec 13, 2019	128
Dec 12, 2019	133
Dec 11, 2019	128
Dec 10, 2019	142
Dec 9, 2019	160
Dec 6, 2019	147
Dec 5, 2019	172
Dec 4, 2019	331

City Solution

- Mid and Long Term options are being evaluated
 - Modifying the existing watering ban ordinance
 - > Utilizing water from neighboring municipal water systems
 - > Drilling new wells
 - Constructing a water treatment plant

Recommended Actions

- Consider a home water treatment unit
 - Treatment systems designed specifically for manganese removal
 - Water softeners may help reduce levels
- Bottled water for drinking, cooking, and preparing infant formula

Private Well Owners - Some Minnesota groundwater naturally
has levels of manganese higher than the MDH guidance values.
Homeowners with private wells are responsible for having their
wells tested.

Learn More:

- Minnesota Department of Health's website
- Anoka County Tests for Manganese and other metals
 - > pick up test kit
- City website https://linolakes.us/
- City Water Hotline: 651-982-2495

Questions?

Thank you