

Average Manganese Levels since 1978  
as reported on DNR website and results from recent samples

<https://dnr.wi.gov/dwsviewer/ContamResult/Search>

<b>3/1978-1/1988</b>	<b>AVG PPB</b>
Well #3	1710
Well #2	870
Well #1	680
Distribution System	880
<b>11/1993-3/1999</b>	
Well #3	1200
Well #2	810
Well #1	640
<b>3/2008-9/2017</b>	
Well #3	1150
Well #2	700
Well #1	630
<b>10/30/2019</b>	
North Water Tower (Distribution System)	1250
country store (Distribution System)	1230
DNR shop (Distribution System)	1230
mcnally (Distribution System)	1250
parker (Distribution System)	1250
south water tower (Distribution System)	558
high school (Distribution System)	899
hospital (Distribution System)	27
village office (Distribution System)	696
bathhouse (Distribution System)	994
<b>11/6/2019</b>	
Well #3	1340
hospital (Distribution System)	30
<b>11/13/2019</b>	
country store (Distribution System)	932
<b>11/20/2019</b>	
country store (Distribution System)	902
<b>1/22/2020</b>	
country store (Distribution System)	1080
<b>2/10/2020</b>	
country store (Distribution System)	
<b>4/16/2020</b>	
Well #3 PILOT program	less than 10
<b>5/14/2020</b>	
Well #3 2nd PILOT program	not effective
<b>5/27/2020</b>	
country store (Distribution System)	864
<b>6/10/2020</b>	
country store (Distribution System)	768

**11/4/2020**

Well #3	1210
Well #2	810
Well #1	642

**11/25/2020**

Well #3	1070
Well #2	757
Well #1	583

**Dec-20**

303 S Maple St (Distribution System)	24/29
301 S Maple St (Distribution System)	722
544 N Pine St (Distribution System)	68
114 E Olson Dr (Distribution System)	854
238 W WI Ave (Distribution System)	108/18 RO system
325 E Wildwood (Distribution System)	84

## Manganese Timeline Condensed-

**September 2019** At our 3-year Water Distribution System Survey, Ciara Lotzer our Water Supply Engineer with the Wisconsin DNR informed us that our water is over the EPA's Health Advisory limits for 12 months and younger children and one of our wells is over the limit for 12 months and older and adult limit. In email from DNR Rep, '*...the Department is in the process of gathering information from systems across the state to determine the best way forward on this issue. So far, the Department has not issued an official policy on how to handle systems with high manganese, so it has been handled on a case-by-case basis. Until the Department issues a requirement, you do not need to take action...'*.

Began contacting engineers regarding treatment options. Also contacted other municipalities with high manganese regarding their step to resolve the issue and how they notified their water system customers.

**October 2019** A motion was made at the Special Village Board meeting to post and publish a "Drinking Water Advisory". The drinking water advisory was published in the Burnett County Sentinel, posted throughout the Village and on the Village's website.

Contacts were made with St. Croix Regional Medical Center and Burnett Medical Center about the Drinking Water Advisory. The Grantsburg School District Superintendent and local water treatment companies were also contacted regarding the advisory.

Three engineering firms sent in an Intent to Apply (ITA) for a Safe Drinking Water Grant which was due October 31st.

**November 2019** Found that the water distribution system on the North side was 1250ppb, Well #3 was shut off immediately. Hydrants on the north side were flushed to see if samples would improve. Samples were taken throughout the month while well #3 was off. Samples were taken at 200 W Benson Avenue while well #3 was off, results included 1340, 932, 902, and 1080. A sample was also taken at the hospital and their results were 30, which means their building wide filtration system is working to remove manganese from the water. On 11/28 Well #3 was turned back on and the SCADA system was going to be used to automatically turn well #3 on less than the other two. The SCADA system went down and could not be repaired until 12/26/2019.

**December 2019** Took samples at Well #3 as recommended by engineering firm. SCADA system was repaired.

**January 2020** A motion was made at the Special Village Board meeting to approve a contract with Cooper Engineering for Study and Report Services for Manganese Removal at Well No. 3 in the amount of \$6,000. We began doing a PILOT program to help decide the best treatment option for our water.

The SCADA system was repaired for a 2<sup>nd</sup> time to allow Well #3 be used less than the other two wells. The goal is to get Total Manganese on the North Side below 1,000ppm. Samples continued.

**February 2020** Sampled continued. SCADA system went down, will run the wells by hand. During the week continued to run Well #3 for only an hour and the other wells longer.

**March 2020** - A motion was made at the Village Board Meeting to contract with Cooper Engineering for the Well #3 Manganese Removal System for the submission of a Safe Drinking Water Loan application to the WI DNR and with Water Surplus for rental of equipment to be used in a pilot program. The SCADA system up and running again. No tests were taken during this time.

**April 2020** – Started pilot program with Water Surplus. WI DNR online application system opened for Safe Drinking Water Loan Program (SDWLP) applications

**May 2020** – continued pilot program & samples. Village Board approved required Resolutions authorizing SDWLP submission.

**June 2020** - adjusted Well #3. Goal is to have Well #3 run more but keep levels below 1,000 ppm manganese. Cooper Engineering submitted the application to WI DNR for SDWLP.

**July 2020** - WI DNR assigned a plan reviewer for Village's SDWLP application

**August 2020** – WI DNR determined our project is eligible for funding and received scores for the 2021 SDWLP application. WI Public Service Commission (PSC) start review of remodeling project for Well House #3.

**September 2020** – Engineering firm worked with WI DNR to increase our 2021 SDWLP application scores from 87 to 91.

**October 2020** - Received notice from WI DNR project is 2<sup>nd</sup> on the funding priority list and is eligible to received \$440,100 in **principal** forgiveness (grant) and \$293,400 in low-interest loan and received project approval letter from WI DNR

**December 2020** - Switched Well 3 to come on only in emergency situations. Sent out 2<sup>nd</sup> Public Notice with the 4th quarter utility bills. This was a requirement from the DNR after the EPA changed its recommendations stating levels over 1,00ppm are no longer safe for adults over the age of 50. Began testing residences by request throughout the Village. Lead time for filters is 16 weeks from Water Surplus. Received project approval from WI PSC.

## Manganese Timeline-

**9/16/2019** At our 3-year Water Distribution System Survey, Ciara Lotzer our Water Supply Engineer with the Wisconsin DNR informed us that our water is over the EPA's Health Advisory limits for 12 months and younger children and one of our wells is over the limit for 12 months and older and adult limit. In email from DNR Rep, '*...the Department is in the process of gathering information from systems across the state to determine the best way forward on this issue. So far, the Department has not issued an official policy on how to handle systems with high manganese so it has been handled on a case-by-case basis. Until the Department issues a requirement, you do not need to take action...'*.

Village Board members were notified of this, that evening.

**9/17/2019** Notified remaining board member and began researching treatment options and issuing a public notice.

**9/18- 10 /14/2019** Began contacting engineers regarding treatment options. Also contacted other municipalities with high manganese regarding their step to resolve the issue and how they notified their water system customers.

**10/15-16/2019** Contacts were made with St. Croix Regional Medical Center and Burnett Medical Center about the Drinking Water Advisory. The Grantsburg School District Superintendent and local water treatment companies were also contacted regarding the advisory.

**10/15/2019-1/6/2020** Continued work with 3 engineering firms to find the best treatment for our water. All three sent in an Intent to Apply (ITA) for a Safe Drinking Water Grant which was due October 31st.

**10/21/2019** A motion was made at the Special Village Board meeting to post and publish a "Drinking Water Advisory".

**10/23/2019** The drinking water advisory was published in the Burnett County Sentinel, posted throughout the Village and on the Village's website.

**10/30/2019** Took 10 samples (5 North, 5 South) around the distribution system to assess the levels throughout the Village.

**11/5/2019** Received the results from 10/30/19. Found that the water distribution system on the North side was 1250ppb, Well #3 was shut off immediately. An email was sent to the Village President explaining the results and the next steps. The plan was to leave Well #3 off for three weeks and flush the North side hydrants then test throughout the system again. Next, we worked with the SCADA system to run Well #3 less hours than the other two wells and to see if we can still use Well# 3 to assist. We worked a week at a time running Well #3 at different amounts until we are constantly between 800-900.

**11/6/2019** Took an additional sample at Well #3 and the hospital. The hospital utilizes a building wide filtration system that may help lower the levels on manganese in their water.

**11/11/2019** Well #3 results: total 1340ppb and the dissolved was 1230ppb. Hospital results: total 30ppb and dissolved 24ppb.

**11/13/2019** Took samples at 200 W Benson Avenue to check levels since Well #3 had been off for a week.

**11/19/2019** 200 W Benson Avenue results: Manganese total 932ppb, Dissolved 912 ppb.

**11/20/2019** Repeated sample at 200 W Benson Avenue after Well #3 was off for 2 weeks. Results: Total Manganese 902ppb, Dissolved 877ppb.

**11/27/2019** Repeated sample at 200 W Benson Avenue after Well #3 was off for 3 weeks. Results: Total Manganese 1,080ppb, Dissolved 893ppb.

**11/28/2019** Well #3 was turned back on and used the SCADA system to have well 3 run less than the other two wells which did not work. The soonest the SCADA system could be repaired was 12/26/2019.

**12/4/2019** Repeated sample at 200 W Benson Avenue after Well #3 was back on. Results: Total Manganese 1,090ppb, Dissolved 966ppb.

**12/5/2019** Repeated samples at Well #3 as recommended by Cooper Engineering.

**12/10/2019** Repeated samples at Well #3 as recommended by Cooper Engineering.

**12/26/2019** SCADA was repaired to allow Well #3 to be used less than the other two wells.

**1/2/2020** Used SCADA system to set Well 3 to come on and off at 13 and 15 tower height. The goal is have the Total Manganese on the North side below 1,000ppb, will test in one week to confirm levels.

**1/3/2020** SCADA system was not working correctly, contacted company for repair.

**1/6/2020** A motioned was made at the Special Village Board meeting to approve a contract with Cooper Engineering for Study and Report Services for Manganese Removal at Well No. 3 in the amount of \$6,000. We began doing a PILOT program to help decide the best treatment option for our water.

**1/14/2020** SCADA system was repaired to allow Well #3 be used less than the other two wells. The goal is to get Total Manganese on the North Side below 1,000ppm.

**1/15/2020** Samples taken at all three wells as recommended by Cooper Engineering.

**1/22/2020** Repeated samples at 200 W Benson Avenue.

**1/27/2020** 200 W Benson Avenue Results: Total Manganese 1,080ppb and Dissolved is 1,010ppb

**2/5/2020** Repeated samples at 200 W Benson Avenue as it has been three weeks since Well #3 was adjusted.

**2/10/2020** 2020 W Benson Avenue Results: Total Manganese 845ppm and Dissolved is 788ppm.

**2/14/2020** SCADA system went down, will run the wells by hand. During the week we continued to run Well #3 for only an hour and the other wells longer.

**3/10/2020** The SCADA system up and running again. No tests were taken during this time.

**3/23/2020** A motion was made at the Village Board Meeting to contract with Cooper Engineering for the Well #3 Manganese Removal System for the submission of a Safe Drinking Water Loan application to the WI DNR and with Water Surplus for rental of equipment to be used in a pilot program.

**4/3/2020** Ordered testing reagents for the pilot program.

**4/8/2020** Received tester from Wisconsin Rural Water Association to do the tests for the pilot program.

**4/22/2020** WI DNR online application system opened for Safe Drinking Water Loan Program (SDWLP) applications

**4/9/2020** Pilot skid was dropped off at the village.

**4/16/2020** Start pilot program with Water Surplus. Pilot reduced the level down to less than 10ppb manganese.

**5/4/2020** Started the 2nd pilot with different media.

**5/11/2020** Village Board approved required Resolutions authorizing SDWLP submission

**5/14/2020** Stopped the 2nd pilot after two runs as this pilot was not effective.

**5/27/2020** Repeated sample at 200 W Benson Avenue. Results: 864ppb

**6/10/2020** Tested Manganese at 200 W Benson Avenue 768ppb.

**6/12/2020** Adjusted Well 3, changed tower heights from 13 - 15 to 13 - 15.5. Goal is to have Well #3 run more but keep levels below 1,000 ppm manganese.

**6/26/2020** Cooper Engineering submitted the application to WI DNR for SDWLP

**7/16/2020** WI DNR assigned a plan reviewer for Village's SDWLP application

**8/1/2020** WI DNR determined our Manganese Project is eligible for funding

**8/21/2020** Received WI DNR scores for 2021 SDWLP applications

**8/26/2020** WI Public Service Commission (PSC) starting to review application for remodeling of Well House No. 3

**9/1/2020** Received revised WI DNR scores for 2021 SDWLP applications-Village's score increased from 87 to 91 (Cooper Engineering worked with the DNR rep to get our score increased)

**10/2/2020** Received notice from WI DNR project is 2<sup>nd</sup> on the funding priority list and is eligible to received \$440,100 in principal forgiveness (grant) and \$293,400 in low-interest loan

**10/5/2020** Received project approval letter from WI DNR

**12/9/2020** Switched Well 3 to come on only in emergency situations.

**12/17/2020** Sent out 2<sup>nd</sup> Public Notice with the 4th quarter utility bills. This was a requirement from the DNR after the EPA changed its recommendations stating levels over 300ppb are no longer safe for adults over the age of 50.

**12/22/2020** WI PSC has approved Grantsburg Manganese Removal Project at Well No. 3.

**12/29/2020** Began testing residences by request throughout the Village.

**1/8/2021** The lead time for filters is 16 weeks from Water Surplus.