

## Goodhue County: Overview of Nitrate Levels in Private Wells (2017)

The Minnesota Department of Agriculture (MDA) determines current nitrate-nitrogen concentrations in private wells, on a township scale, through the Township Testing Program. The MDA has identified townships throughout the state that are vulnerable to groundwater contamination and have significant row crop production. The MDA plans to offer nitrate testing to 70,000 private well owners in over 300 townships by 2019.

Each selected township is offered testing in two steps, the “initial” sampling and the “follow-up” sampling. In the initial sampling, all township homeowners using private wells are sent a nitrate test kit. If nitrate is detected in their initial sample, the homeowner is offered a follow-up nitrate test, pesticide test and well site visit. Trained MDA staff visit willing homeowners to resample the well and then conduct a site assessment. The assessment helps to identify possible non-fertilizer sources of nitrate and to see the condition of the well. A well with construction problems may be more susceptible to contamination.

The MDA and the Goodhue Soil and Water Conservation District worked together to select townships and implement the nitrate testing project. Because of the complexity of the karst geology in Goodhue County, all townships were included in the testing. The initial sampling in Goodhue County started in 2017 and follow-up sampling is scheduled for 2018.

### Results

The initial well dataset contains all wells tested (2,071) regardless of well construction issues and sources of nitrate. The Health Standard for nitrate-N in drinking water is 10 mg/L. The results from the initial well dataset are summarized in the table and map on the next page.

### Next Steps

Once the follow-up sampling is completed, the MDA conducts an analysis of the results and prepares a final report for each county (visit [www.mda.state.mn.us/townshiptesting](http://www.mda.state.mn.us/townshiptesting)). The Goodhue County Final Report will be available in 2019.

The MDA uses the final results to determine if additional action is needed, as described in the Minnesota Nitrogen Fertilizer Management Plan (NFMP). Find more information about the NFMP on the MDA website at [www.mda.state.mn.us/nfmp](http://www.mda.state.mn.us/nfmp).

### Funding Acknowledgement

*Funding for this project is provided by the Clean Water, Land and Legacy Amendment*



## Goodhue County Highlights

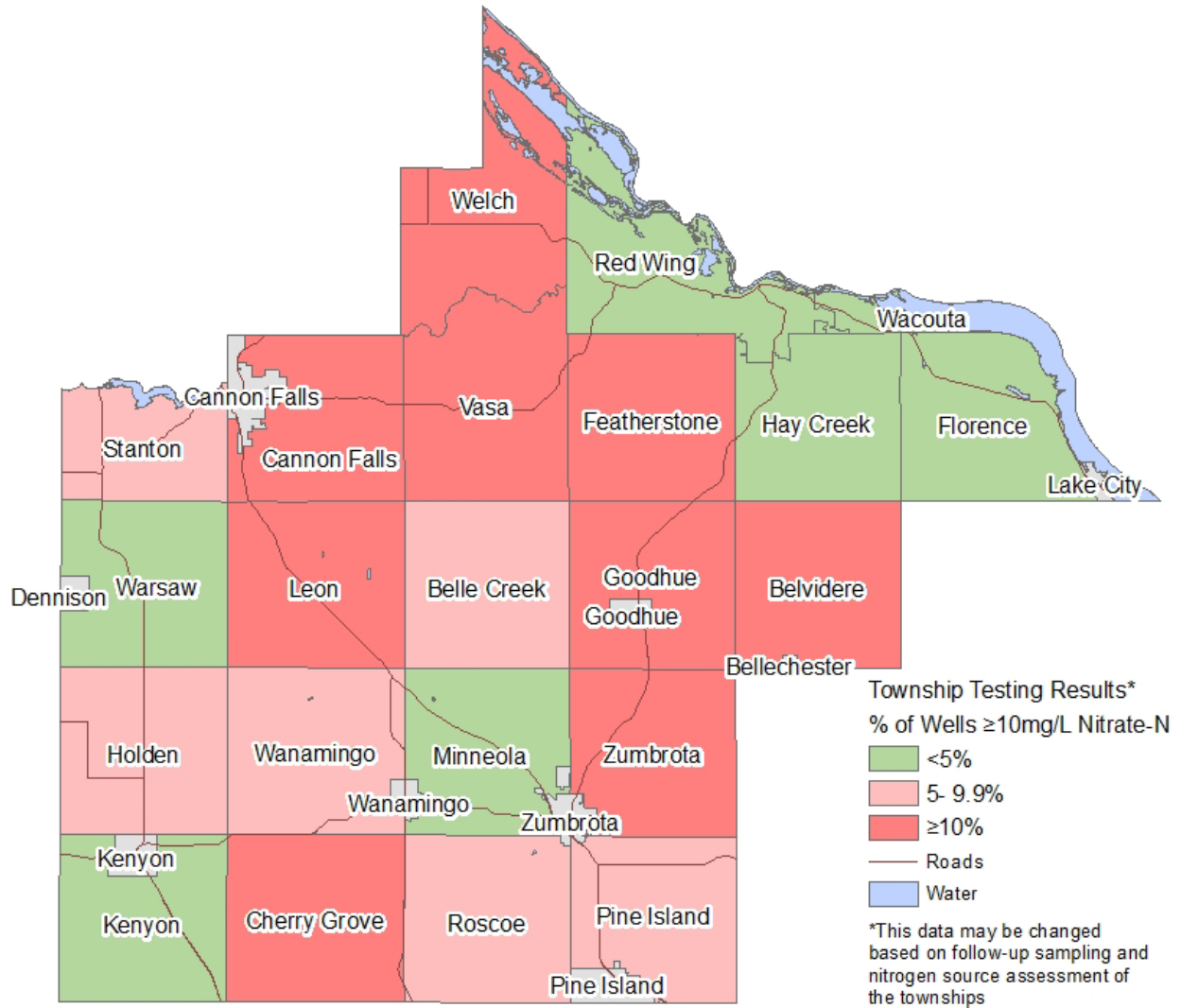
- **# of Vulnerable Townships Tested: 22**
- **Households Receiving Kits: 5,361**
- **# of Wells Tested: 2,071**
- **% of Wells Over the Health Standard: 10%**

Table: Goodhue County Initial Well Dataset Results, 2017.

Township	Number of Wells Tested	Min	Max	Mean	Median	Percent of Wells $\geq 10$ mg/L
		Nitrate-N mg/L or PPM				
Belle Creek	57	<0.03	50.2	3.7	1.6	7.0%
Belvidere	67	<0.03	25.6	6.3	4.5	23.9%
Cannon Falls	147	<0.03	23.2	3.2	0.4	11.6%
Cherry Grove	47	<0.03	18.6	2.5	<0.03	10.6%
Featherstone	116	<0.03	45.6	5.2	3.0	13.8%
Florence	232	<0.03	39.0	2.3	0.7	3.0%
Goodhue	70	<0.03	19.7	7.2	8.0	30.0%
Hay Creek	111	<0.03	17.4	2.0	<0.03	3.6%
Holden	69	<0.03	18.0	1.6	<0.03	8.7%
Kenyon	58	<0.03	21.5	0.7	<0.03	3.4%
Leon	141	<0.03	36.6	3.3	0.1	12.8%
Minneola	75	<0.03	14.8	1.8	<0.03	2.7%
Pine Island	72	<0.03	15.7	4.4	3.5	9.7%
Red Wing City	50	<0.03	5.8	0.8	<0.03	0.0%
Roscoe	106	<0.03	16.3	2.7	0.3	7.5%
Stanton	127	<0.03	25.3	2.9	<0.03	9.4%
Vasa	122	<0.03	33.8	5.9	3.9	27.0%
Wacouta	71	<0.03	7.7	0.9	0.1	0.0%
Wanamingo	67	<0.03	27.5	2.0	<0.03	7.5%
Warsaw	82	<0.03	16.4	1.2	<0.03	3.7%
Welch	97	<0.03	27.4	5.8	3.9	16.5%
Zumbrota	87	<0.03	25.9	5.6	5.9	16.1%
Total	2,071	<0.03	50.2	3.3	0.6	10.4%

\* Includes all well types.

Figure: Goodhue County Initial Well Dataset Map, 2017.



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