

Wadena County: Final Overview of Nitrate Levels in Private Wells (2013-2015)

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 more than 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 Wadena Soil and Water Conservation District worked together to select townships and implement the nitrate testing project. The following townships were selected: **Aldrich, Thomastown, Wadena, and Wing River**. The initial sampling in Wadena County started in 2013 and the follow-up sampling was completed in 2015.

Results

Two datasets are used to evaluate nitrate. The initial well dataset contains 252 wells; the final dataset contains 222 wells. Wells that had nitrate-nitrogen results over 5 mg/L were removed from the initial dataset if a non-fertilizer source or well problem was identified, to form the final well dataset. A total of 30 wells (12%) were removed. The results from the initial and final well datasets are summarized in the table below.

In Wing River Township, more than 10% of the wells were at or over the Health Risk Limit (HRL) of 10 mg/L nitrate-nitrogen (map below) for the final well dataset. The percent of wells at or over the Health Risk Limit in each township ranged from 1.6 to 14.4 percent. The Wadena County Final Report will be available on the MDA website: www.mda.state.mn.us/townshiptesting.

Table: Wadena County Private Well Nitrate Results, 2013-2015.

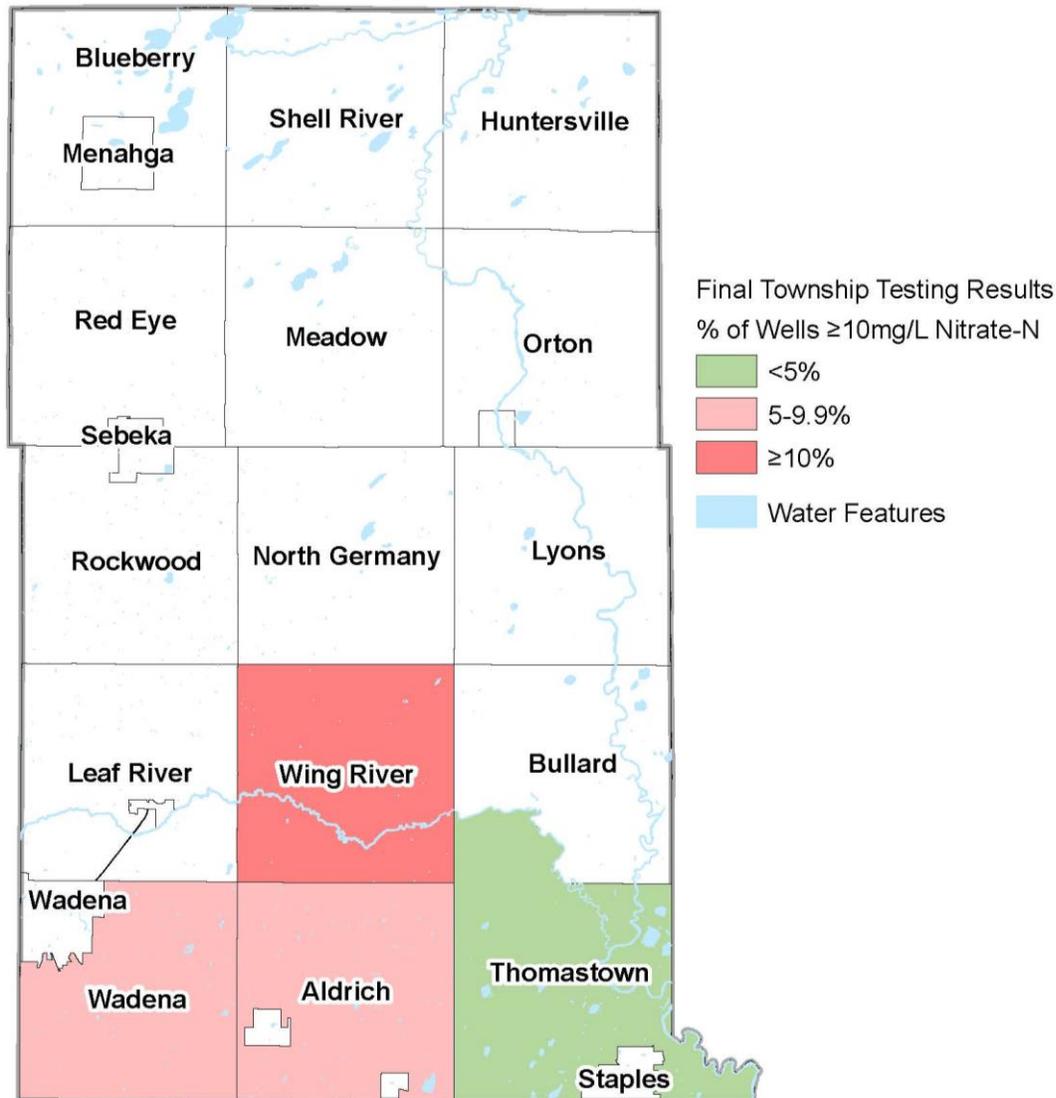
Township	Initial Well Dataset		Final Well Dataset	
	Total Wells*	Percent of Wells ≥ 10 mg/L Nitrate-Nitrogen	Total Wells	Percent of Wells ≥ 10 mg/L Nitrate-Nitrogen
Aldrich	31	19.4%	24	8.3%
Thomastown	99	5.1%	93	1.1%
Wadena	91	19.8%	76	9.2%
Wing River	31	12.9%	29	10.3%
Total	252	13.1%	222	5.9%

*All well types included.

Wadena County Final Highlights

- Number of townships with 10% of wells at or over the HRL : **1**
- **30** (12%) wells were removed from initial data set.

Figure: Wadena County Final Well Dataset Map, 2018.



Next steps

The MDA uses the final well dataset to determine if additional action is needed, as described in the Minnesota Nitrogen Fertilizer Management Plan (NFMP). The MDA uses the assessment process and prioritization guidelines in the NFMP to determine next steps. Find more information about the NFMP on the MDA website at www.mda.state.mn.us/nfmp.

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