

## Township Testing Program Update-February 2017

The Minnesota Department of Agriculture (MDA) conducted a major revision of the Nitrogen Fertilizer Management Plan (NFMP) in March of 2015. The plan calls for an assessment of nitrate conditions at the township scale. The 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. More than 70,000 private well owners will be offered nitrate testing in over 300 (35 to 59 townships per summer) townships by 2019 (Figure 1).

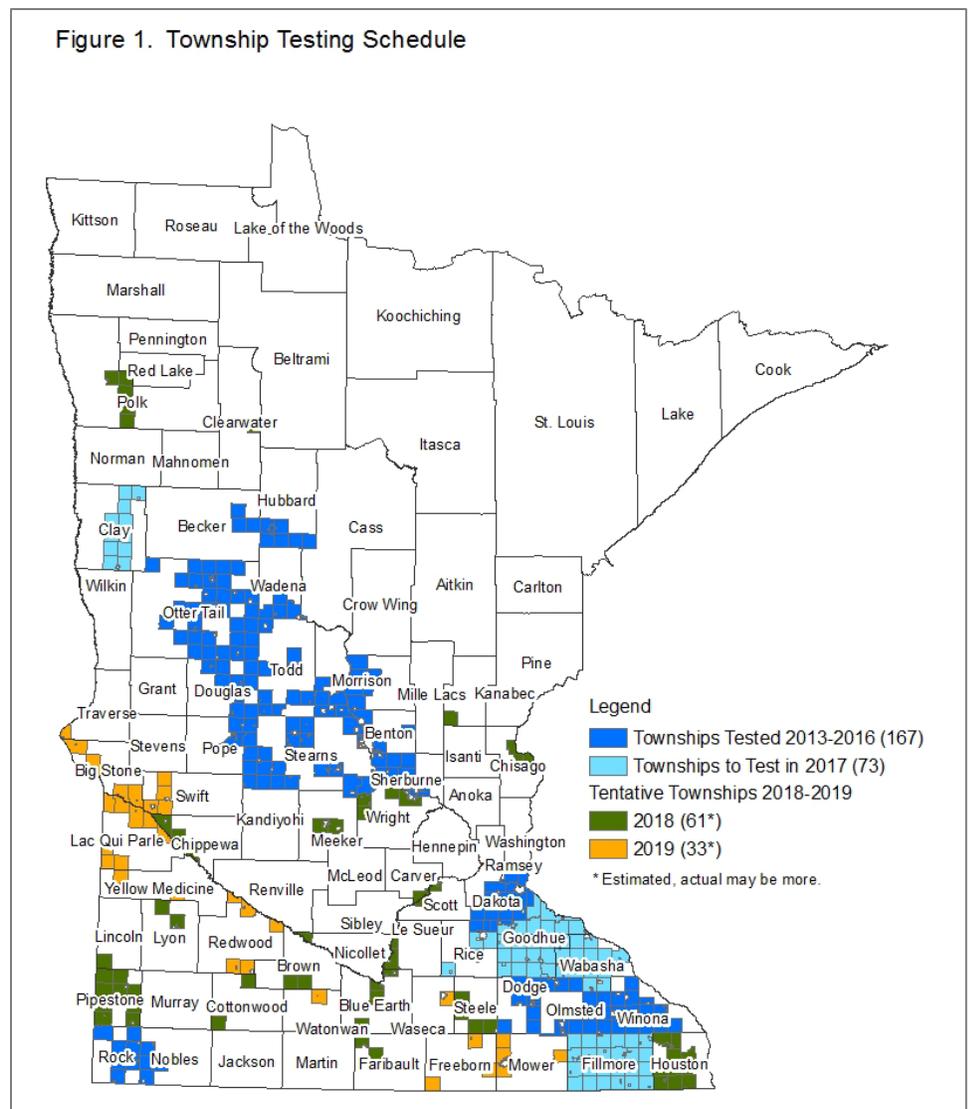
### How does it work?

The MDA works with local partners such as counties and soil and water conservation districts (SWCDs) to coordinate private well nitrate testing using Clean Water Funds. The map in Figure 1 serves as a starting point for planning sample locations and is modified based on local expertise from the counties or SWCDs.

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

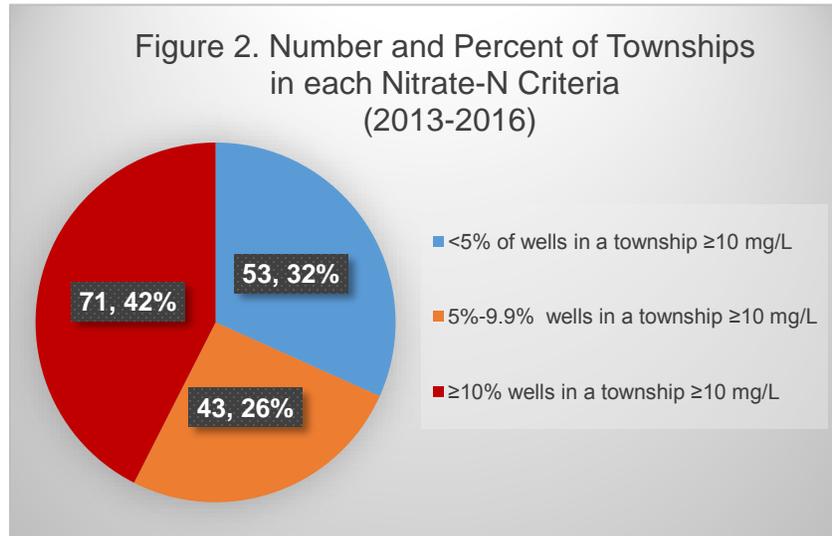
Figure 1. Township Testing Schedule



more susceptible to contamination. It is common for the TTP to sample 50 to 150 wells per township.

Approximately 10 townships in the Red River Valley will be tested in order to evaluate whether the Beach Ridge sand and gravel deposit is creating a narrow band of vulnerable groundwater in that region.

## Results



As of January 2017, 167 vulnerable townships from 19 counties participated in the TTP from 2013 to 2016 (Figure 2). In the 167 townships tested, 71 (42%) have 10% or more of the wells over the 10 milligram per liter (mg/L) Health Risk Limit (HRL) for Nitrate-N. In contrast, it was determined that in 53 townships less than 5% of the wells were over the HRL for Nitrate-N.

Overall, 9.5% (1,912) of the 20,042 wells exceeded the HRL for Nitrate-N (Table 1). Figure 3 shows the percentage of wells over the HRL for each township during the initial sampling. These results have yet to be analyzed for possible nitrogen sources, so the final percentage of wells over the HRL from a non-point source may change based on follow-up sampling.

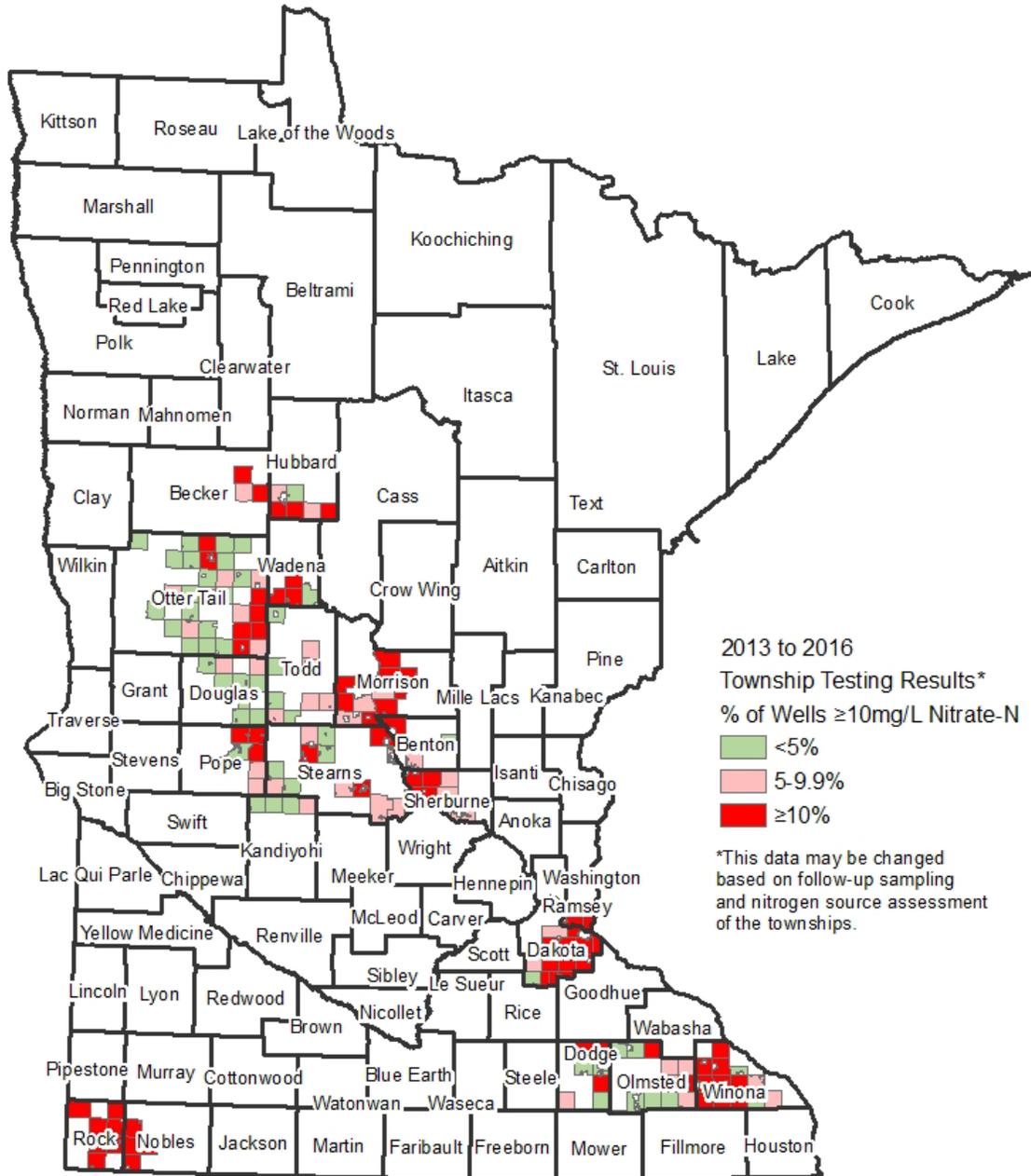
## Next Steps

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 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).

Table 1. Townships Tested 2013-2016	<3	3<10	$\geq$ 10	$\geq$ 10
	Nitrate-Nitrogen mg/L (ppm)			
	Number of Wells			Percent
Total Wells	15,721	2,409	1,912	9.5%

Figure 3. Initial Township Testing Results.



Updated February 13th 2017