

# Township Testing Program Update

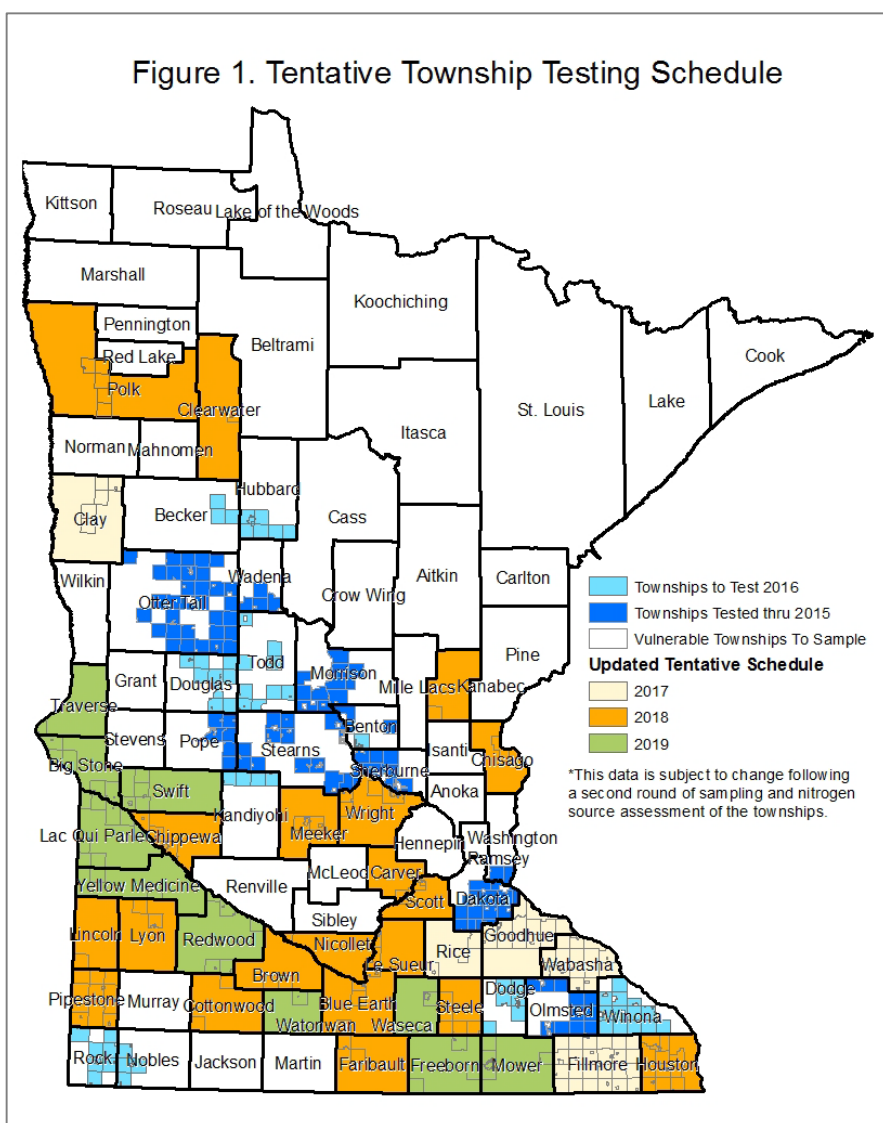
Fertilizer Non-Point Section-MN Department of Agriculture

March 2016

The Minnesota Department of Agriculture conducted a major revision of the Nitrogen Fertilizer Management Plan (NFMP) in March of 2015. The NFMP introduced the Township Testing Program (TTP), which lays out two key processes. The first is the process for identifying agricultural areas at risk due to elevated nitrate-nitrogen concentrations in private wells. Townships with greater than 20% row crop agriculture and vulnerable groundwater (30% or higher) will be considered for comprehensive testing.

The second is the process for the actual testing. Homeowner participation is the cornerstone to the TTP approach. Participating homeowners are responsible for collecting and shipping their water samples. Since the mailing packet includes the sample bottle and a prepaid mailer, it is very easy for the homeowners to participate. Samples are sent to a certified lab. There is no cost to the homeowner.

It is common for the TTP to sample 50 to 150 wells per township. This level of homeowner participation insures that the local groundwater conditions are adequately characterized. Results are then summarized and prioritized for further action as described in the NFMP.



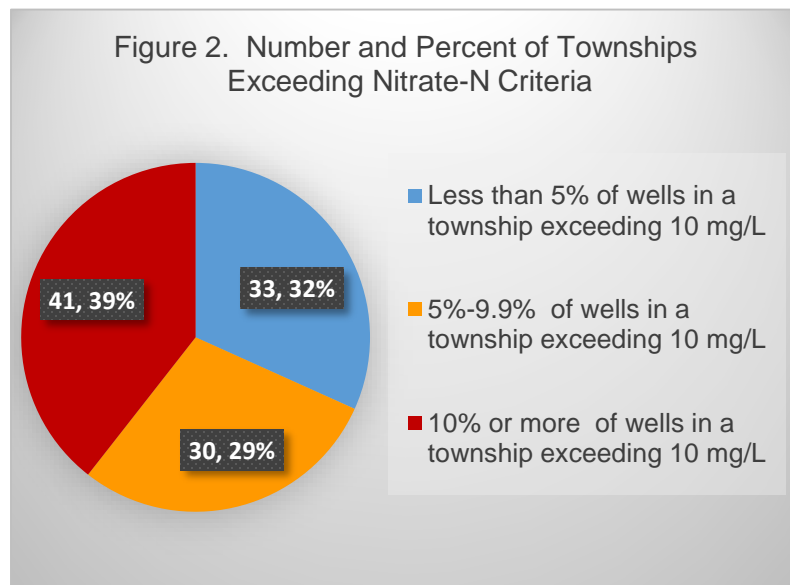
The first round of Township Testing in vulnerable townships will be completed by 2019 (Figure 1). This will include approximately 250-300 townships (35 to 59 townships per summer). Up to 70,000 private households will be offered testing services.

The MDA will offer a second round of testing when nitrate is detected. The second round of testing and the associated nitrate source inventories will occur in the year following the first round sampling for each township.

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 county or SWCDs.

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.

As of March, 2016, 104 vulnerable townships from ten counties participated in the TTP from 2013 to 2015 (Figure 2). In the 104 townships tested, 41 (39%) 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 33 townships less than 5% of the wells were over the HRL for Nitrate-N.

Overall, 10% (1,325) of the 13,737 wells exceeded the HRL for Nitrate-N (Table 1). Figure 3 shows the percentage of wells over the HRL for each township. 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.

A second round of testing will be offered to homeowners using trained MDA staff to resample wells where nitrate is detected, during which time an assessment will be performed to rule out obvious well construction issues and point sources of nitrogen, such as septic systems, livestock, etc. Homeowners with nitrate in their water sample will also be offered a no-cost pesticide sample analysis. Results from the TTP will help guide the type of response necessary to address nitrate in groundwater through the NFMP. For results by county, please visit the Township Testing Program webpage at: <http://www.mda.state.mn.us/townshiptesting>

Table 1. Townships Tested 2013-2015	<3 mg/L	3<10 mg/L	≥10 mg/L	≥10
Total Wells	Number of wells			Percent
13,737	10,700	1,712	1,325	10%

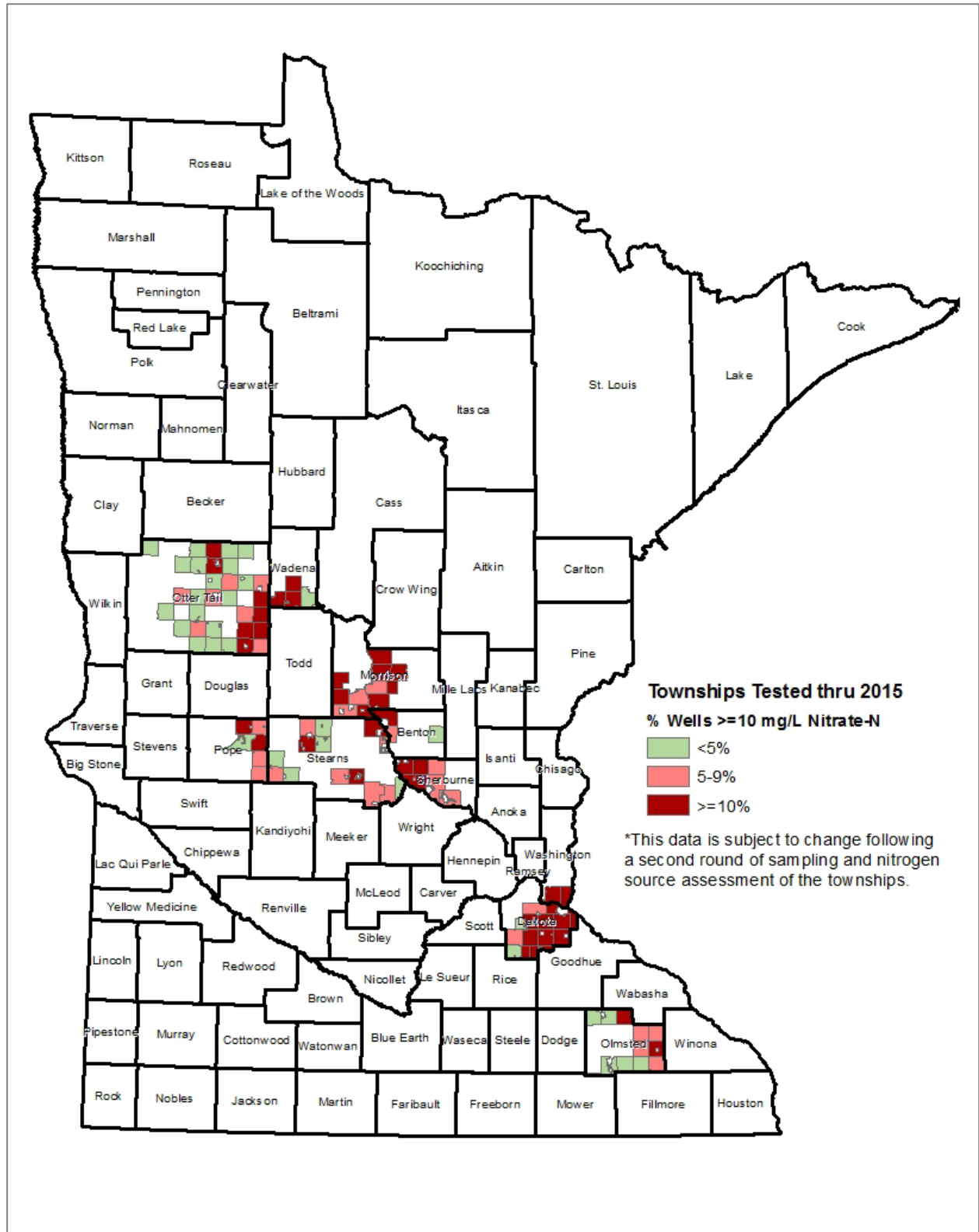


Figure 3. Results by Township through 2015