

Otter Tail County: Overview of Nitrate Levels in Private Wells (2015)

The Minnesota Department of Agriculture (MDA) created the Township Testing Program to help identify where elevated nitrate levels in private wells may exist. The MDA has identified approximately 250-300 townships around the state where groundwater contamination is likely to occur due to geologic conditions in tandem with substantial row crop acres.

The MDA worked with the Otter Tail Soil and Water Conservation District to identify sensitive townships and then implement a successful nitrate testing strategy. In Otter Tail County, the following townships met the criteria: **Amor, Aurdal, Bluffton, Butler, Clitherall, Compton, Corliss, Dora, Eagle Lake, Eastern, Edna, Effington, Elmo, Everts, Gorman, Hobart, Inman, Leaf Lake, Leaf Mountain, Maine, Newton, Nidaros, Oak Valley, Otter Tail, Otto, Parkers Prairie, Perham, Pine Lake, Rush Lake, Scambler, Tordenskjold, and Woodside.**

This overview provides the nitrate results termed “Round One”. “Round One” basically describes the nitrate results from virtually all of the participating wells including those impacted by point sources such as nearby septic tanks, feedlots and other nitrogen sources.

In 2015, homeowners with a private well in the selected townships received a test kit in the mail. Homeowners played a key role since they were responsible for collecting the water sample and sending it to the certified lab. Homeowners also provided some important information about their well. The following map and table provides results from Round One.

Otter Tail County Highlights

- # Vulnerable Townships Tested: 32
- Households Receiving Kits: 12,645
- Number of Wells Tested: 4,536
- % Wells Over the Health Standard: 4

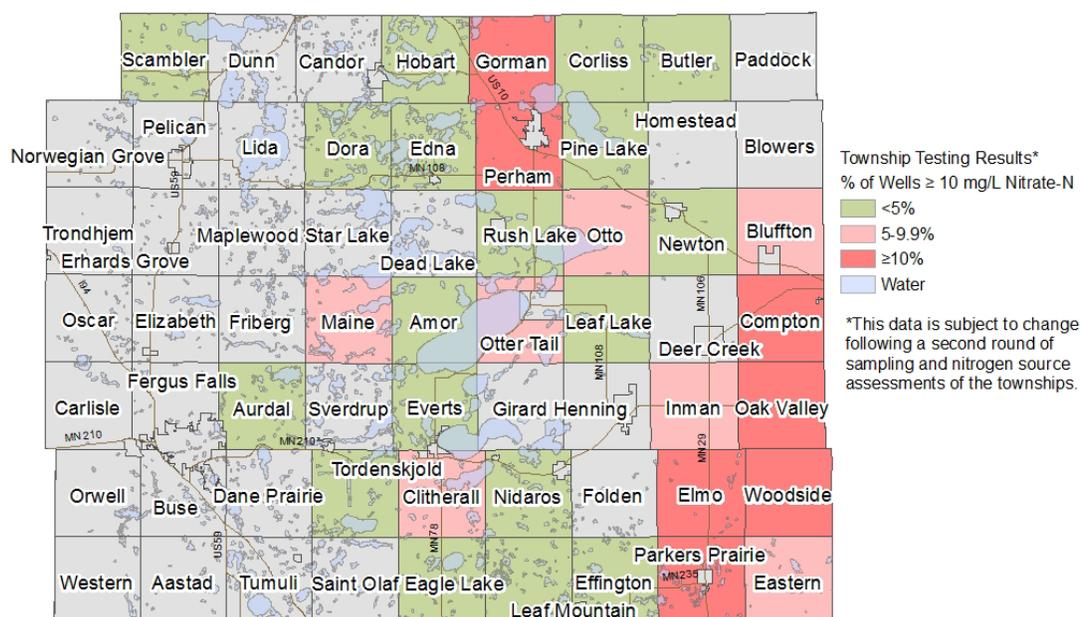




Table: Otter Tail County Round One Nitrate Results in 2015

Township	Total Wells**	Nitrate-Nitrogen mg/L or parts per million (ppm)				Percent of Wells ≥ 10 mg/L
		Min	Max	Mean	Median	
Amor	211	<0.03	39.2	1.3	<0.03	4.3%
Aurdal	205	<0.03	36.0	0.3	<0.03	0.5%
Bluffton	40	<0.03	10.5	1.7	<0.03	5.0%
Butler	23	<0.03	28.2	1.8	<0.03	4.3%
Clitherall	193	<0.03	32.1	2.3	<0.03	9.8%
Compton	85	<0.03	35.8	3.9	<0.03	15.3%
Corliss	123	<0.03	36.4	1.4	<0.03	4.1%
Dora	294	<0.03	32.0	1.1	<0.03	3.1%
Eagle Lake	130	<0.03	17.8	1.0	<0.03	3.8%
Eastern	38	<0.03	19.4	1.3	<0.03	5.3%
Edna	313	<0.03	15.6	0.3	<0.03	0.3%
Effington	34	<0.03	4.6	0.2	<0.03	0.0%
Elmo	44	<0.03	30.1	3.5	<0.03	13.6%
Everts	360	<0.03	17.2	0.4	<0.03	0.3%
Gorman	113	<0.03	26.2	2.6	<0.03	11.5%
Hobart	228	<0.03	27.4	0.7	<0.03	1.3%
Inman	36	<0.03	21.3	2.4	<0.03	5.6%
Leaf Lake	140	<0.03	30.0	1.1	<0.03	2.9%
Leaf Mountain	63	<0.03	7.0	0.5	<0.03	0.0%
Maine	202	<0.03	26.3	1.6	<0.03	5.0%
Newton	100	<0.03	12.2	0.8	<0.03	1.0%
Nidaros	128	<0.03	14.9	0.7	<0.03	2.3%
Oak Valley	42	<0.03	15.3	2.6	<0.03	14.3%
Otter Tail	251	<0.03	44.0	2.3	<0.03	7.6%
Otto	121	<0.03	23.3	1.4	<0.03	5.0%
Parkers Prairie	56	<0.03	41.1	4.4	<0.03	17.9%
Perham	152	<0.03	35.9	3.0	<0.03	11.8%
Pine Lake	192	<0.03	14.0	0.5	<0.03	2.1%
Rush Lake	267	<0.03	15.2	0.6	<0.03	2.6%
Scambler	178	<0.03	16.7	0.3	<0.03	0.6%
Tordenskjold	139	<0.03	5.2	0.1	<0.03	0.0%
Woodside	35	<0.03	40.7	3.7	<0.03	14.3%
Total	4,536	<0.03	44.0	1.6*	<0.03*	4.1%*

*Represents an average. **All well types included.



Why is there a "Round Two"?

Frequently nitrate is detected because of either well construction issues or a localized area is impacted from a point source such as a septic tank or nearby feedlot. Round Two was offered to homeowners when measurable nitrate was detected during the first sampling. Trained MDA staff visited willing homeowners to resample the well and then conducted a site assessment. The assessment helps identify well results impacted by obvious construction issues and/or non-fertilizer sources of nitrogen such as septic systems.

Round Two sampling is scheduled for completion by the end of 2016. It is common for 5 to 10% of the wells to eventually be removed from the original data set. Once Round Two 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). The Otter Tail County Final Report will be available in 2018.

The final results will indicate the severity and magnitude of nitrate in groundwater in the township. These results will help guide the decision making process in the event that corrective actions are needed. These actions are described in Minnesota's Nitrogen Fertilizer Management Plan (NFMP). Find more information about the NFMP on the MDA website at www.mda.state.mn.us/nfmp.

Funding Acknowledgement

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

