

Olmsted County: Final Overview of Nitrate Levels in Private Wells (2014-2015)

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.

Olmsted County Final Highlights

- Number of townships with 10% of wells over the HRL : **1**
- **134 (13%)** wells removed from initial data set.

The MDA and Olmsted County Environmental Services worked together to select townships and implement the nitrate testing project. The following townships were selected: **Dover, Elmira, Eyota, Farmington, High Forest, New Haven, Orion, Oronoco, Pleasant Grove, Quincy, and Viola**. The initial sampling in Olmsted County started in 2014 and follow-up sampling ended in 2015.

Results

Two datasets, “Initial” and “Final”, are used to evaluate nitrate in private wells. The initial dataset represents private well drinking water regardless of the potential source of nitrate. The final dataset was formed through an assessment process to evaluate wells. In the assessment, wells that had nitrate-nitrogen results over 5 mg/L were removed from the initial dataset to form the final dataset if a potential non-fertilizer source or well problem was identified, there was insufficient information on the construction or condition of the well, or for other reasons which are outlined in the full report (see Appendix E for details). The final dataset represents wells with nitrate attributed to the use of fertilizer. The initial dataset for Olmsted County contains 1,057 wells; the final dataset contains 923 wells. A total of 134 wells (13%) were removed.

The results from the initial and final well datasets are summarized in the following table and figures. In the initial dataset two townships had more than 10% of the wells over the Health Risk Limit of 10 mg/L of nitrate-nitrogen (see map). In the final dataset one of the townships had more than 10%. The final percent of wells over the Health Risk Limit in each township ranged from 0% to 13.9%. The Olmsted County Final Report is available on the MDA website: www.mda.state.mn.us/townshiptesting.

Next steps

The MDA uses the TTP data and assessment process and prioritization guidelines in the Minnesota Nitrogen Fertilizer Management Plan (NFMP) to determine next steps. It is MDA’s intent to implement the voluntary aspects of the NFMP in townships with elevated nitrate with the highest priority placed on areas with high sampling results. Find more information about the NFMP on the MDA website at www.mda.state.mn.us/nfmp.

Table: Olmsted County Private Well Nitrate Results.

Township	Initial Well Dataset		Final Well Dataset	
	Total wells*	Percent of Wells \geq 10 mg/L Nitrate-Nitrogen	Total wells	Percent of Wells \geq 10 mg/L Nitrate-Nitrogen
Dover	49	10.2%	41	2.4%
Elmira	50	6.0%	43	4.7%
Eyota	54	5.6%	48	2.1%
Farmington	56	25.0%	36	13.9%
High Forest	143	1.4%	131	0.0%
New Haven	169	3.6%	159	1.9%
Orion	73	1.4%	70	0.0%
Oronoco	255	2.0%	228	0.4%
Pleasant Grove	100	3.0%	88	0.0%
Quincy	35	8.6%	23	4.3%
Viola	73	6.8%	56	3.6%
Total	1057	5.0%	923	1.7%

* All well types included.

Figure: Olmsted County Initial and Final Well Dataset Map.



In accordance with the Americans with Disabilities Act, this information is available in alternative forms of communication upon request by calling 651-201-6000. TTY users can call the Minnesota Relay Service at 711. The MDA is an equal opportunity employer and provider.