Fillmore County: Overview of Nitrate Levels in Private Wells (2017)

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 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.

Fillmore County Highlights

- **# of Vulnerable Townships Tested: 24**
- **Households Receiving Kits: 4,400**
- **# of Wells Tested: 1,477**
- **% of Wells Over the Health Standard: 16.9%**

The MDA and the Fillmore Soil and Water Conservation District worked together to select townships and implement the nitrate testing project. Because of the complexity of the karst geology in Fillmore County, all townships were included in the testing. The initial sampling in Fillmore County started in 2017 and follow-up sampling is scheduled for 2018.

Results

The initial well dataset contains all wells tested (1,477) regardless of well construction issues and sources of nitrate. The Health Standard for nitrate-N in drinking water is 10 mg/L. The results from the initial well dataset are summarized in the table and map on the next page.

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). The Fillmore County Final Report will be available in 2019.

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.

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Table: Fillmore County Initial Well Dataset Results, 2017.

Township	Number of Wells Tested	Min	Max	Mean	Median	Percent of Wells ≥10 mg/L
		Nitrate-N mg/L or PPM				
Amherst	63	<0.25	18.8	5.4	3.10	23.8%
Arendahl	60	<0.25	29.6	6.4	3.65	26.7%
Beaver	46	<0.25	17.0	1.3	<0.25	4.3%
Bloomfield	54	<0.25	17.4	6.1	6.85	33.3%
Bristol	57	<0.25	18.9	4.6	1.79	22.8%
Canton	56	<0.25	29.7	5.6	4.56	10.7%
Carimona	54	<0.25	25.7	4.6	2.58	13.0%
Carrolton	76	<0.25	22.1	3.8	3.34	9.2%
Chatfield	87	<0.25	20.0	3.9	2.41	10.3%
Fillmore	65	<0.25	25.8	4.3	1.90	12.3%
Forestville	67	<0.25	16.6	4.1	1.67	16.4%
Fountain	39	<0.25	16.5	5.6	3.71	20.5%
Harmony	42	<0.25	22.0	5.9	3.88	28.6%
Holt	50	<0.25	39.9	6.0	3.96	18.0%
Jordan	53	<0.25	11.8	2.5	<0.25	5.7%
Newburg	78	<0.25	23.6	6.1	5.85	20.5%
Norway	44	<0.25	28.0	6.3	1.94	25.0%
Pilot Mound	61	<0.25	45.1	5.9	2.89	24.6%
Preble	44	<0.25	28.4	7.1	4.51	38.6%
Preston	54	<0.25	12.7	4.6	4.70	7.4%
Rushford Village	128	<0.25	21.3	1.8	0.51	3.1%
Spring Valley	85	<0.25	16.8	3.9	1.58	12.9%
Sumner	48	<0.25	16.0	3.3	0.14	16.7%
York	66	<0.25	20.6	5.6	3.74	30.3%
Total	1,477	<0.25	45.1	4.6	2.52	16.9%

**Includes all well types.*

Figure: Fillmore County Initial Well Dataset Map, 2017.