

Research Department

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Minnesota House of Representatives

January 3, 2017

TO: Representative Wagenius

FROM: Colbey Sullivan

RE: Groundwater sampling data, estimates

Per your request, I used the Township Testing Program data provided by the Minnesota Department of Agriculture (MDA) on December 13, 2016, to estimate the total number of private wells with Nitrate-N > 3 mg/L and Nitrate-N > 10 mg/L in the townships where MDA tested the well water of participating homeowners.

These extrapolations rest on the assumption that the tested wells are representative of all wells in the same townships. MDA provided the “estimated number of (private) wells” figures and most of the other data in the attached table. Data resulting from my calculations are in bold.

One additional caveat is the possibility of sampling bias, i.e., that the homeowners who voluntarily submitted their samples to MDA may be different from the homeowners in those same townships who did not participate (e.g., in their proximity to farms or other potential nitrate sources, etc.).

CS/rk

Attachment: Table 1

Table 1

Counties	Number of Townships in County	Number of Townships Tested	Estimated Number of Wells (in townships where testing occurred)	Number of Wells Tested	% of Total Estimated Wells Tested	Number of Wells ≥3 mg/L Nitrate-N	% of Number of Wells Tested	ESTIMATE: Total # of Wells with Nitrate-N ≥3mg/L in Townships Where Testing Occurred	Number of Wells ≥10 mg/L Nitrate-N	% of Number of Wells Tested	ESTIMATE: Total # of Wells with Nitrate-N ≥10mg/L in Townships Where Testing Occurred	Year(s) Tested
Benton	12	3	1451	488	34%	148	30%	440	44	9%	131	2013-2014
Dakota*	15	15	5162	1380	27%	651	47%	2435	364	26%	1362	2013-2014
Morrison	30	11	3680	1208	33%	373	31%	1136	178	15%	542	2013-2015
Olmsted	18	11	3310	1057	32%	255	24%	799	50	5%	157	2014
Ottertail	62	32	12285	4536	37%	443	10%	1200	186	4%	504	2015
Pope	20	6	937	303	32%	35	12%	108	19	6%	59	2015
Sherburne	10	6	7670	2070	27%	416	20%	1541	198	10%	734	2014-2015
Stearns	34	14	6505	1883	29%	395	21%	1365	137	7%	473	2014
Wadena	15	4	890	269	30%	64	24%	212	32	12%	106	2013-2014
Washington *	7	2	1347	526	39%	256	49%	656	116	22%	297	2014
Grand Total	223	104	43237	13720	32%	3036	22%	9568	1324	10%	4172	2013-2015
* Dakota includes two cities, Washington includes one city												