

2021 1,4-Dioxane Private Well Testing Update - Gem Lake and the White Bear Area

HEALTH ASSESSMENT SERIES

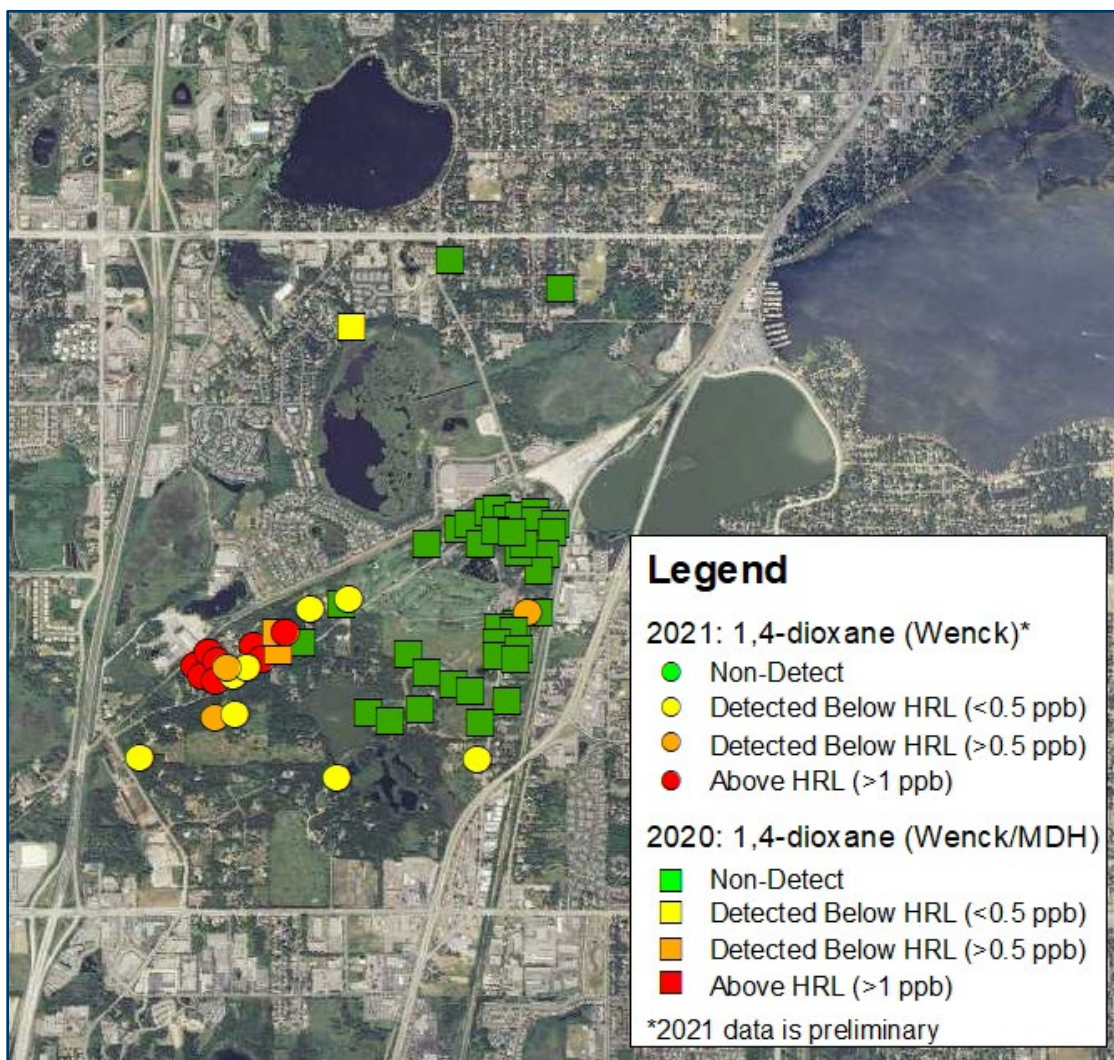
8/24/21

In 2020, 6 private wells out of a total of 54 sampled had detectable levels of the chemical 1,4-dioxane (1,4-Dx). Concentrations in all 6 wells were below the Minnesota Department of Health (MDH) Health Risk Limit (HRL) for drinking water of 1 part per billion (ppb) and were not of health concern.

Follow up sampling began in July 2021. Initial results of the sampling have shown that 8 wells have 1,4-Dx above the MDH HRL, ranging from 1.1 to 3 ppb (see map for general locations below). Affected residents have been contacted and will receive bottled water.

Additional results are still pending and this document will be updated as they are received.

2021 Private well testing results for 1,4-dioxane



July/August 2021 testing

In December 2020, the Minnesota Pollution Control Agency (MPCA) directed Water Gremlin to submit a work plan to sample additional private wells within a one-mile radius of the Water Gremlin facility, including those wells with previous detections of 1,4-Dx. Water Gremlin's environmental consultant, Wenck, sent letters to 129 residents requesting access to collect and test a sample of their well water, including some homes just beyond the one-mile radius to include everyone along Goose Lake Rd, where 1,4-Dx was detected in 2020. Wenck received permission to sample the water from 49 wells on 48 properties.

MDH staff also collected samples at the same time as Wenck from 15 wells to verify testing results. These MDH-collected samples were analyzed at the MDH Public Health Laboratory and several of the sample results are still pending. The samples collected by Wenck were tested by Pace Analytical and results were reported directly to MPCA.

Sixteen wells are being resampled after a quality assurance/quality control issue was identified, so additional results will be forthcoming. MDH will also be collecting additional samples. Currently, results from 33 wells are available. Of those, 1,4-Dx was detected in 20 private well samples: 8 were above the HRL and 12 were below the HRL. The Public Health Lab reported similar results as the lab used by Water Gremlin.

1,4-Dioxane health risks

The 1,4-Dx HRL of 1 ppb represents an amount of a contaminant that poses little or no health risk to those drinking the water daily for a lifetime, including sensitive or highly exposed people. 1,4-Dx is considered a likely human carcinogen, based on studies of animals exposed to very high amounts. Concentrations detected in well water in Gem Lake are just above the HRL and present a low health risk. 1,4-Dx breaks down quickly in the body and is eliminated within several days. For more information about 1,4-Dx exposure and health in Gem Lake, see [1,4-Dioxane in Private Wells - Gem Lake and the White Bear Area \(PDF\)](#)

(<https://www.health.state.mn.us/communities/environment/hazardous/docs/sites/ramsey/wgprtwe/lgemlake.pdf>).

Is the source known for 1,4-dioxane detected in private wells?

The distribution of the 1,4-Dx detections in the private wells makes the source unclear. Additional sampling efforts to identify the source are ongoing. Samples of shallow groundwater (less than 100 feet below the ground surface) were collected from borings drilled on the Water Gremlin property as part of monitoring required in December 2019 and the summer of 2020. This monitoring showed 1,4-Dx at concentrations greater than the HRL.

In January and February 2020, MDH sampled 11 private wells, detecting 1,4-Dx below the HRL in 3 wells. Water Gremlin sampled 44 more private wells in July 2020, but detected 1,4-Dx in only 3 additional wells, also below the HRL. To better understand the occurrence, movement, and the source of 1,4-Dx in the area, additional data collection and analysis is required.

[**Note:** White Bear Lake city water was tested in March 2020 and no 1,4-Dx was detected.]

Next steps

After results from the July/August 2021 sampling round are in, MPCA/MDH will determine the locations of any additional residential well sampling.

Water Gremlin is currently drilling additional monitoring wells near their facility to evaluate the water quality and flow direction in the deeper sand aquifer. This is the aquifer from which most nearby private wells appear to be getting their water (based on the few available well logs for private wells in the area).

Questions?

To contact MDH, call (651) 201-4897 and leave a message or email health.hazard@state.mn.us.

To contact MPCA, call 651-757-2998.

Minnesota Department of Health | Site Assessment and Consultation Unit | www.health.state.mn.us
health.hazard@state.mn.us | 651-201-4897

08/24/21 *To obtain this information in a different format, call: 651-201-4897.*