

Dave Letts has agreed to head up this committee. Thanks Dave.

### Background:

Given that our water is one of the primary reasons people live and visit here and the PFAS is a growing concern – we decided to make PFAS testing part of our annual plan. At the same time, the U of M biological station at Douglas Lake decided to get out of the water sampling and analysis business for private groups like the LCIA. We will now get our sampling and analysis done by LSSU's newly formed Cannabis Lab.

Once a year – in July when water temperature and usage are at their peak – we go out in a boat with students from their lab trained in sampling methodology to collect samples. We collect three samples from each of 5 locations: Hessel Bay near the marina entrance, Musky Bay, Cedarville Bay near town, Government Bay, and McKay Bay near the quarry docks. The locations were selected based on high usage and potential external risk. The samples collected are taken back to the lab at LSSU where they are evaluated and results reported.

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### A little help understanding the PFAS results:

- The first column shows the sample locations. TS-2 is Hessel Bay, TS-4 is Musky Bay, TS-5 is Cedarville Bay, TS-6 is Government Bay and TS-9 is McKay Bay. L, R and C denote the 3 samples taken at each location.
  - We have GPS coordinates for each to ensure year to year consistency.
  - Anecdotally, the students who came down for the sampling commented that LCI was the clearest water they had ever sampled in.
- The 9 columns under 'Analyte Concentration' are the PFAS compounds tested and numbers in each cell are the results.
  - PFAS is a family of thousands of compounds – each with their own chemical composition and name. LSSU does testing for numerous other organizations like the LCIA across the Midwest and these 9 are commonly tested in waterways.
  - The units are nanograms per liter. 1 nanogram per liter is 1000 part per TRILLION (ppt).
  - No test can prove 0. Every test has a detection limit – so when a test fails to find any, the number reported isn't 0, it is < the detection limit. The detection limit for LSSU's equipment and methodology is 1.25 ng/l or 1250ppt.
- You can see in the chart that only 5 of the 135 samples detected any PFAS compound.
  - All three samples in Cedarville Bay detected low levels of PFAS, as did one in Musky Bay and one in Hessel Bay.
  - The levels detected could be from the water, they could be from contamination during handling the samples, or they could be measurement error. There is quite likely no statistical difference between any the readings we got – so a take-away should NOT be to 'stay out of Cedarville Bay'.
- So how much PFAS is too much in recreational waters?
  - There are NO government standards for this because the State's view is that PFAS is NOT readily absorbed through the skin, so it presents little risk and needs no standard.
  - Government standards for PFAS compounds in municipal drinking water are typically 5-10 parts per TRILLION. Detection at these levels requires different equipment than LSSU has. Remediation for drinking water is filtration.
  - Government standards for PFAS in consumer goods (like textiles and garments) is emerging in some states with California taking the lead. Their limit currently is 100 parts per MILLION moving to 50 in 2027. This limit is usually applied to situations where PFAS containing components are intentionally added in the manufacturing process (like waterproofing a raincoat or non-stick on a fry pan) – but today States vary some on this. Recall that LCI's highest sample reading was 2790 parts per TRILLION – not MILLION.

- What about all that foam I see on the water or along the shore? Isn't that PFAS?
  - PFAS isn't visible.
  - Foam in our waters is the result of proteins being released as plants in the water die. Different plants die at different times thru-out the summer. Those proteins can get frothed by the wind & resulting wave action.
  - This is no different than the foam on a latte. Hi protein milk will foam when agitated. Lo protein milk won't foam as much or not at all. Protein content of milk can and does vary seasonally based on what the dairy herd feeds on. Fat content is not what foams milk.
- Got it, but what about eating fish caught in the water?
  - When fish ingest PFAS compounds, it appears to metabolize as PFOS.
  - The DNR already has limits on fish meat consumption and offers guidance on how to clean fish driven by heavy metal concentrations. In their view this is sufficient for PFAS as well.
  - That said, the Watershed Council and LCIA are working with the DNR to add PFOS testing to fish meat caught during the DNR's annual fish population netting program.

Jim Keighley, 2/23/25