December 15, 2021

Maria Powell's thoughts about proposed standards WY-23-19, Surface Water Standards for PFOS and PFOA.

(Background is in regular font, comments and questions are in bold font.)

In the March 23, 2020 Stakeholder Group Meeting, PFOS & PFOA Surface Water Criteria), based on NR 105, DNR's toxicologist calculated bioaccumulation factors for PFOS and PFOA using actual fish and water PFAS data from Wisconsin, Minnesota, Michigan, and Ontario. Based on this, she determined that the "likely range of PFOS and PFOA surface WQC to protect human health" should be 2 ppt for PFOS and 35-45 ppt for PFOA. For Midwest fish, her specific calculated standards were 1.59 ppt for PFOS and 35.2 ppt for PFOA. (Oddly, this presentation is not on the DNR's webpage describing the rule making process.)

However, by summer/fall 2021, in the "draft economic impact analysis," the proposed levels had increased to 8 ppt for PFOS (with exceptions for "waters that do not support fish" that don't lead to other waters that support fish), 20 ppt for PFOA if the waterway is a drinking water source and 95 ppt if not. Between the March 2020 presentation of the proposed standards and fall 2021, there were no public comment periods.

Given the content of this EIA, it seems likely that entities that discharge PFAS into Wisconsin waterways, including industries, wastewater utilities, etc. lobbied DNR to increase the proposed standards significantly (perhaps after DNR's testing in prior months showed that discharge levels for many of these entities would be above the originally proposed standards).

What entities lobbied DNR to increase these standards up to four times the originally proposed levels, and how and where did they lobby? There are no comments leading up to this EIA (after the original standards were proposed) on the DNR page describing the rule making process on the draft EIA. Are the communications and discussions between DNR and entities affected by these proposed standards and rules—industries, corporations, utilities, municipalities (and their lobbying organizations)—available to the public? Where?

One reason offered for the proposed standards at the Dec. 10, 2021 public meeting was that the PFOS value of 2 ppt was "close to background levels" and "Values would likely result in variances for permittees, slow reductions in effluent concentrations."

This is a regressive (backwards), not progressive, approach to setting environmental chemical standards. PFAS is already all over the place from releases over the last several decades, resulting in "*background*" levels in state surface waters that are *already at levels at the threshold above which DNR's own toxicologist calculated will result in fish levels harmful to human health.* So DNR is proposing that we allow *more* PFAS in these waters than these background levels? Using this approach, as more and more PFAS is allowed in waters, background levels considered "normal" will keep going up and up in the future, and regulators will rationalize setting even higher PFAS standards. Industry loves this "compare to background" approach and it is becoming more and more common in environmental regulations.

The 2nd part of this—"values would likely result in variances" implies that the DNR is preemptively developing weaker standards in order to fend off expected pushback from polluters, industries, legislators, etc.

Further, the technical document explaining the proposed standards says that Minnesota's PFOS criteria is 0.05 ng/L (ppt) and that "Minnesota's administrative code provides the flexibility to implement SSCs without going through rulemaking." How can Minnesota's criteria be so much lower than Wisconsin's when they share borders with the Mississippi? Whose standards will apply there?

Again, is Wisconsin proposing a significantly weaker standard than it originally proposed and than Minnesota's standard because it knows that, unlike in Minnesota, it has to go through rulemaking and the utility and municipal lobbies, Wisconsin Manufacturers and Commerce, and the Republican legislators will fight it—so they might as well make it less stringent right from the get-go? Or is it that these entities have already weighed in with DNR and successfully convinced them to propose these standards?

The DNR's technical document explaining the rationale for the proposed standards also explains that the agency toxicologist's original standards (calculated per NR 105) aren't being proposed because they decided to use NR 102 instead "because PFOS public health significance levels are more closely correlated with the issuance of fish consumption advisories than the ch. NR 105 numeric criteria would have been."

It's hard to interpret this, but it seems the agency is using "narrative standards" under NR102 so it has defined "public health significance" by relying on fish advisories to control exposure levels. In other words, the agency has decided that the originally proposed levels, calculated to protect public health under NR105, can be much higher *as long as people don't eat too many fish.*

Relying on fish advisories to control exposures is a very problematic approach and will not protect public health, especially the most vulnerable people. Whether or not people know about and understand fish advisories, whether they are followed, etc., are shaped by economic, social, political and cultural factors--and many societal race and class disparities. What about the people who rely on fish as food sources? What about the people, such as Indigenous people, to whom fishing is deeply culturally important? What about people who don't know about the fish advisories?

Further, what about the fact that educational, public health, and regulatory institutions meager (or no) resources into informing and engaging people about fish advisories? The DNR's proposed approach depends on these institutions to assure that exposures will not be "of public health significance." In fact, we know from decades of experience that these institutions put almost no resources into fish advisory communications and engagement, especially with diverse subsistence anglers.

Unless the DNR and other agencies plan to put significantly more resources into this, this approach is throwing the most vulnerable fish consumers, often low income BIPOC, under the bus.

Instead of using NR 105, the agency is proposing standards that meet Section NR 102.04(1)(d) Wis. Adm. Code: "*Substances in concentrations or combinations which are toxic or harmful to humans shall not be present in amounts found to be of public health significance, nor shall substances be present in amounts which are acutely harmful to animal, plant, or aquatic life*."

The agency didn't consider at what levels PFOS and PFOA levels would be "acutely harmful to animal, plant, or aquatic life." Given that, how can the agency say the proposed standards meets NR 102? What about wildlife that will be exposed to PFOA and PFOS via consumption of fish and/or other aquatic organisms? What about wildlife exposed via other pathways? What about the people who hunt and eat this wildlife?

As for fish consumption by humans, the document recognizes that the agency's fish and PFAS data analyses showed that "PFOS builds up in fish tissue even when it is not detected in water." Moreover, it noted that "PFOS is a highly bioaccumulative compound…and suggests that exposure to PFOS via fish consumption is likely to provide a substantive contribution to overall body burdens of PFOS…fish consumption is overwhelmingly the dominant PFOS exposure pathway." "The DNR "therefore chose to define a public health significance threshold for PFOS using water concentrations that are associated with certain fish tissue concentrations (described below) in order to protect Wisconsin's public health and welfare designated use." "Thus, for the purposes of narrative criteria under NR102.04, it is reasonable to define public health significance as a PFOS water concentration that will not result in the issuance of a 1 meal per month PFOS-based fish consumption advisory for any species taken from that surface water. In other words, the proposed definition of public health significance aims to ensure that levels of PFOS in fish will be such that people can consume fish at a frequency of up to one meal per week (32 grams/day)[6] without exceeding EPA's non-cancer toxicity RfD of 2 x 10-5 mg/kg-day.

This proposed level of "public health significance" excludes many people who eat fish more than once a week, such as many low income, minority, and Indigenous anglers in the state. If they eat fish from many state waters, even those with under 8 ppt PFOS, they will be ingesting far more than the levels DNR has deemed of "public health significance." What will be done to protect these people? How do the proposed standards address that?

NR 102 also says "Substances in concentrations or combinations which are toxic or harmful to humans *shall not be present in amounts found to be of public health significance."*

The proposed standards for PFOS do not consider "combinations" of substances that are toxic to humans. Most fish in the state have much just PFOS in them—PFOA and numerous other PFAS compounds as well as many other toxic chemicals and metals. These standards do not consider that.

Related to the above, footnote #6 says: "The department recognizes that due to concentrations of other contaminants, such as mercury and polychlorinated biphenyls (PCBs), the recommended meal frequency for some species from some waterways may be less than 1 meal per week regardless of the PFOS level." "While there are some fish species that sensitive populations (i.e., women under 50 and children under 15) are

always advised to consume no more than 1 meal/month, a special advisory is more stringent than the general statewide Safe Eating Guidelines and applies to everyone."

Again, this approach assumes that these vulnerable groups—a significant proportion of the population—will be protected as long as they follow fish advisories. What about the women under 50 and children under 15 who don't know about these advisories? Or whose husbands catch the fish and don't tell them about the advisories? As I already wrote, if the DNR is going to use fish advisories to control exposures to keep them below "public health significance," it should address this in some way—and the agency should work to get more funding for engaging people who eat fish and especially subsistence anglers.

DNR used the "ROC Curve Tool" to predict the water concentration where most fish tissue concentrations exceed 50 ng/g PFOS, the level determined by the Great Lakes Fish Consortium as safe for once a week consumption. The document says: "The water concentration value where the two curves converge is 8 ng/L PFOS. This means that at a water concentration of 8 ng/L PFOS, we are ~78% sure that fish tissue concentrations below that point are actually lower than 50 ng/g, and fish tissue concentrations above that point are actually greater than 50 ng/g…" and then concludes that "Thus, the department proposes that public health significance is defined as 8 ng/L PFOS in order to protect all people from adverse effects of PFOS in surface waters via consumption of fish taken from those surface waters."

The agency is "78% sure? How does this "protect all people?" Yet again--what about the people who eat fish more than once a week? Further, how do these proposed standards pertain to waters that are already heavily polluted with PFOS at levels that are far over 8 ppt—such as in Starkweather Creek and stormwater discharges into it, where PFOS was found at hundreds of times more than this? The DNR toxicologist's bioaccumulation factors (BAFs) calculated for Midwest fish ranged up to over 12,000 and the mean BAF was 3,418. If I am understanding this correctly, this means that the PFAS levels in Starkweather Creek waters may result in levels in some fish that on average have 3,418 times higher PFAS levels than in the water—and some may be over 12,000 higher. Given that DNR testing found up to 17,500 ppt in stormwater discharging into the creek, and up to 240, 400 and 3,700 ppt in the creek itself, clearly levels in some fish will be well over 50,000 ppt; they could be into the millions of ppt.

Yet as far as I know, neither DNR, DHS, nor PHMDC have issued "do not eat" advisories for fish and wildlife from these Starkweather Creek, even for "sensitive groups" (woman of childbearing age, children, etc). How are these people being protected?

The "narrative" text with the PFOS standard says: "For PFOS, the proposed level of public health significance is 8 ng/L for all waters *except those that cannot naturally support fish and do not have downstream waters that support fish."* If waterways meet this definition, there is no limit for PFOS.

I queried DNR on how the agency defines "waters that cannot naturally support fish and do not have downstream waters that support fish." For the first part, staff pointed to NR 104. At the very beginning, this code says: "It is...the goal of the state of Wisconsin that, wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish and wildlife and provides for recreation in and on the water be achieved by 1983. . ." s. 283.001 (1) (b), Stats…. "Most surface waters within the state of Wisconsin already meet or exceed the goals specified above. However, certain waters of the state may not meet these goals for the following reasons: (a) The presence of inplace pollutants; (b) Low natural

streamflow; (c) Natural background conditions, and (d) Irretrievable cultural alterations. (1m) Where it is determined that one or more of these factors may interfere with the attainment of the statutory objectives, a variance from the criteria necessary to achieve those objectives is provided."

In other words, if waterways are already extremely degraded, via NR104 the agency can give the discharger a variance (exception) to pollute them further at levels exceeding existing standards.

The language with the current proposed PFOS standard seems to build a similar type of variance right into the standard. I asked DNR staff if they could provide examples of Wisconsin waters that *cannot naturally support fish and do not have downstream waters that support fish.* Based on my understanding, this is scientifically impossible, since all waters eventually lead to other waters somewhere that support fish. Staff said they would consult agency biologists for examples. I have not heard back.

Given that the DNR can't point to any examples of waters in the state that do not naturally support fish and do not lead to downstream waters that support fish, why is this clause there at all? Can the agency provide any examples? If not, why is it included, other than to give PFAS dischargers and their attorneys/consultants leeway to argue that they should be allowed to discharge more than 8 ppt PFAS?

Even if a particular waterway (or ditch, or pond) doesn't support fish, it can seep down into groundwater and drinking water—or be drawn down by municipal and private well pumping. Given this, how can DNR propose to allow what is essentially a variance for unlimited levels of PFOS in any waterways (per this narrative exception)? How can it allow 95 ppt PFOA in surface waters, even if they are not a drinking water supplies?

The proposed changes to WPDES permits, based on these proposed standards for surface water, includes "PFAS minimization plans." The DNR explains that "codifying a method for developing PFAS minimization plans will reduce the administrative burden and permitting timelines that would have been associated with processing a large volume of variance requests expected as a result of the criteria developed using the procedures outlined ch. NR 105, Wis. Adm. Code. The department believes that public health significance thresholds combined with PFAS minimization plans will result in more timely reductions in levels of PFOS, PFOA and all other parameters regulated in WPDES permits, as permittees exceeding the proposed public significance thresholds will begin PFAS minimization plans immediately upon permit reissuance rather than after a prolonged variance application and review process and potential litigation. The department expects that the selected approach will be effective at reducing sources of PFOS and PFOA in areas of the state where PFOS or PFOA concentrations in wastewater are elevated."

Of course, "source reduction" and "pollution minimization" should always be a top priority via regulations or other mechanisms. I know there are currently no great solutions on PFAS mitigation and where to put PFAS-contaminated carbon filters from treatment systems. But is this really the only solution? Allowing wastewater treatment plants and other polluters to continue to discharge PFOS and PFOA into waterways and fish, exposing people and wildlife to further pollution? Because PFAS dischargers don't want to pay for other solutions?

Further, the DNR proposes to allow dischargers "up to 84 months to complete" their PFAS minimization plants. That's <u>seven years</u>. While these dischargers are allowed to try to minimize the PFAS they discharge, people will continue to eat toxic fish and feed it to their children. Babies will be exposed in utero. Wildlife will be exposed. Why are we giving all this leeway to polluters,

because they don't like the expense, while people no choices except to follow fish advisories (if they know about them) and wildlife have no choices at all?

Last but not least, the DNR goes into much detail articulating the costs to POTWs and small businesses to meet the proposed regulations. But it says nothing at all about the health costs (extra health problems, diseases, and deaths caused, etc among people who eat fish from PFAS-contaminated waters) by allowing 8 ppt PFOS (and perhaps more in some waters) and up to 95 ppt PFOA in surface waters as compared to 2 ppt and 35-45 ppt, the originally proposed levels per NR105.

This all reflects so clearly the priorities of our society as well as the broken regulatory system which is captured by corporations and other polluters and ignores environmental justice.

Thanks you for reading.

Sincerely,

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