FOTC Comment I re a proposed Nitrate Reduction Plan for the Lower Yakima Valley

October 28, 2026

Friends of Toppenish Creek is pleased to present this first installment of our comments regarding the Lower Yakima Valley Groundwater Management Area Implementation Committee's *Nitrate Reduction Plan for the Lower Yakima Valley*.

In brief, FOTC believes the Nitrate Reduction Plan does not adequately address groundwater pollution from manure lagoons. Pollution from manure lagoons is significant and ongoing.

One of the alarming findings when the U.S. Environmental Protection Agency conducted research on groundwater pollution on the LYV "dairy clusters" was a 2014 reading of 234 mg/L for Nitrate-N in monitoring well CD-03.[1]

In 2022 the EPA traced the source of that nitrate to a leaking manure lagoon. This finding came when Henry Bosma Dairy/Liberty Dairy decommissioned a series of lagoons that had nestled in a gully for decades. That decommissioning found large quantities of nitrate-n in soils beneath the lagoons and lateral to lagoon walls. [2, 3]

This confirmation upset years of reassurances from supposed experts. Twenty years ago, Gordon Kelly from the Yakima Health District advised this writer that LYV manure lagoons do not leak because local soils compact to form impervious surfaces.

Guidance from the Natural Resources Conservation Service (NRCS) regarding construction of manure storage ponds has changed over the years and become more restrictive. Please see page 31/42 from NRCS Technical Note 23 below.

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[1] US Environmental Protection Agency, Region X. Second Quarter 2021 Groundwater Monitoring Data Report, Yakima Valley Dairies. Page 101/125. Available at Index of /region10/sites/yakima/Consent_Order_Deliverables/06__Groundwater

[2] Anchor QEA. H&S Bosma Dairy Lagoon No. 3 Abandonment Plan. Available at Bosma Lagoon 3 Abandonment Plan_20220118.pdf

[3] We question whether a permit should have been issued for this series of lagoons in the first place since lagoons were constructed in a gulley with a seasonal stream.

Earth pond construction dimension criteria for all WSP practices and all revisions: April 1979 to December 2004						
Practice Standard Code/Name	PS 425 Waste Storage pond			PS 313 Waste Storage Facility		
Release Date	1979, April			2000, February	2001, June	2004, December
Supplement Release Date		1987, February	1994, January			
1. Embankment Height.	35 feet or Less	35 feet or Less	35 feet or Less	35 feet or Less	35 feet or Less	35 feet or Less
2. Failure of WSP would result in damages limited to farm buildings, Ag-Land, or country roads.	N/A	N/A	N/A	Yes	Yes	Yes
3. WSP Embankment Elevation above Floodplain?	25 Yr	25 Yr	25 Yr	25 Yr	25 Yr	25 Yr
4. Inlet permanent and resists; corrosion, plugging, freeze damage and is UV protected?	Yes	Yes	Yes	Yes	Yes	Yes
5. Emptying features are provided and are protected against erosion and accidental release?	Yes	Yes	Yes	Yes	Yes	Yes
6. Liquid Storage Ramp slope.	4:1	4:1	4:1	4:1	4:1	4:1
7. If the WSP creates a safety hazard fencing is necessary for protection of Humans and livestock.	Yes	Yes	Yes	Yes	Yes	Yes
8. WSP Embankment protected against erosion.	Yes	Yes	Yes	Yes	Yes	Yes
9. Separation distance from WSP Bottom and SHGWT.	0 Inches	6 inches	6 inches	24 inches	24 inches	24 inches
10. Liner	Only if Self Sealing is not anticipated	Required for all foundation material, except glacial till, when closer than 300 feet to a domestic well.	Required for all WSP's	Required for all WSP's	Required for all WSP's if wetted surface permeability rate is less than $1x10^{-6}$ cm/s	Required for all WSP's if wetted surface permeability rate is less than $1x10^{-6}$ cm/s

In 1979 the bottom of Waste Storage Ponds could touch the top of the seasonal high water table. After 2000 the distance became a mandatory 24 inches.

In 1979 there were no requirements for lagoon liners unless "soil sealing is not anticipated". After 2000 NRCS required liners when wetted surface permeability rates were $< 10^{-6}$cm/sec.[4]

Currently in the LYV, manure lagoons that were constructed before changes to NRCS guidelines receive grandfather status. There are no requirements for upgrades other than requests for voluntary improvements. Consequently many, many LYV CAFO dairies operate with aging, leaking lagoons that add significant contamination to groundwater every year.

In 2015, as part of the LYV GWMA studies and in response to ongoing litigation, WSDA launched a project to evaluate all manure lagoons in the state using NRCS Tech Note 23. The project began in Yakima County where almost all manure lagoons were evaluated.

After reviewing inspection reports it became apparent to FOTC that there were problems.[5] WSDA had inspected 130 LYV lagoons using Tech Note 23. Out of that 130 only 65 had both site risk assessments and structure assessments. For those 65:

- Six were missing depth to water table.
- Liner thickness was shown for only ten of the lagoons.
- Date of design and year of construction were documented for only 15 lagoons.
- Distance between the bottom of the lagoon and the seasonal high groundwater table was only documented for 15 lagoons.

FOTC reported our concerns to WSDA[5]. Deputy Director Patrick Capper responded in December of 2021 saying[6],

> *DNMP has communicated concerns over their use of the TN23 assessment tool and the accuracy of the information contained within to Friends of Toppenish Creek, within WSDA, the Washington State Department of Ecology's (Ecology) Concentrated Animal Feeding Operation section, and with Washington Natural Resources Conservation Services (NRCS). After discussions with multiple agencies, DNMP determined that they would no longer conduct TN23s due to lack of accurate information available necessary to conduct an accurate assessment, as well as the lack of job approval authority within the team.*

WSDA promised a new tool for manure lagoon assessments. To date there is none. When WSDA inspects lagoons and ponds during routine dairy inspections there is simply a walk-

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[4] Tech Note 23 is available at Microsoft Word - Engineering Technical Note 23 - Assessment Procedure for Siting or Evaluating Existing WSP's - FINAL 07-24-201

[5] See Tech Note 23 FOTC Comments at Tech Note 23 FOTC Comments II August 2021.pdf

[6] See Tech Note 23 Capper Response at TN 23 Capper WSDA Reply_FOTC Letter to WSDA DNMP December 8 2021.pdf

around that looks for weeds growing on embankments. There are no detailed examinations to identify cracks in liners, thinning of liners, or erosions at inlets and outlets.

Only one of the 39 actions proposed in the *Nitrate Reduction Plan for the Lower Yakima Valley* specifically addresses manure lagoons. Section 5.1.2.9 Inspection Emphasis on AFO and CAFO Waste Storage Ponds has an objective to "Evaluate dairy AFO and permitted CAFO waste storage ponds (WSPs) to ensure that they meet design standards to protect groundwater."

Here is the proposed schedule for that action:

- Short-term (2026 – 2031): Develop a risk assessment tool for use by WSDA to identify high-risk WSPs.
- Short-term (2026 – 2031): Pursue funding resources for producer cost share to support capital projects where WSP replacements are needed.
- Short-term (2026 – 2031): Conduct outreach to dairy AFOs about WSP requirements.
- Short-term (2026 – 2031): Conduct risk assessments for all WSPs in the LYV GWMA, identify high-risk WSPs, and ensure compliance actions prioritize repairs, or replacements.

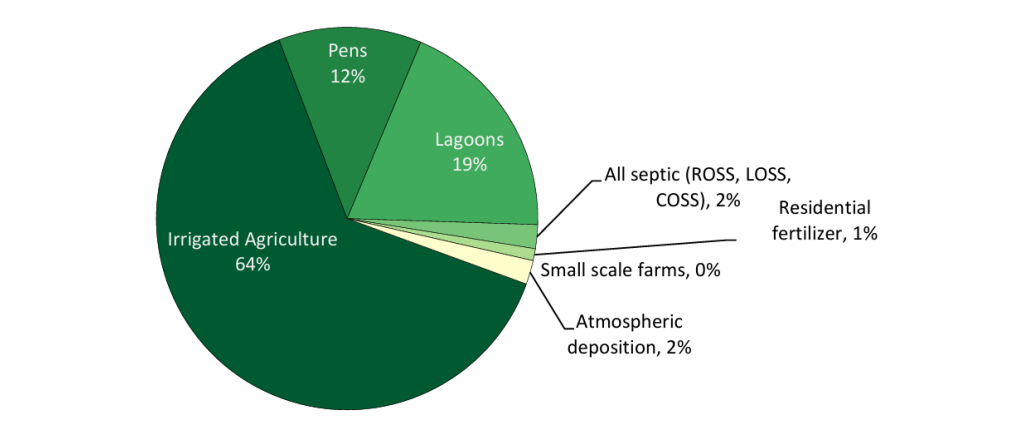
Apparently WSDA and Ecology propose to assess all waste storage ponds in the LYV by 2031, which is fifteen years after a previous assessment failed to deliver accurate data. Fifteen years is a long time to wait, and we worry that further delays will follow.

We question whether the WSDA will be able to complete a risk assessment tool by 2031 given the historically slow rate of action for such projects. How far along is the project at this time? Has WSDA developed a QAAP for the project? If not, how long will that take? Does the WSDA plan to open the tool for public comments? If so, how long will that take? Will the tool be peer reviewed? If so, by whom?

The LYV GWMA Final Report and the WSDA Nitrate Availability Assessment found that lagoons account for about 19% of nitrate pollution in LYV groundwater. Please see the diagram below from page 29/132 of the Final Report.[7]

[7] LYV GWMA Final Report. Volume I. Available at GWMA Volume I

Figure 4 – Nitrogen sources

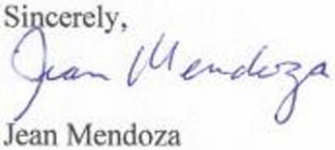


The *Nitrate Reduction Plan for the Lower Yakima Valley* presents an opportunity to address this major source of groundwater pollution in a comprehensive manner. But the plan does not do that. The plan appears to assume that manure lagoons are here to stay, and officials must work within that reality. That is not the case. Here are two scenarios that a comprehensive plan should consider:

- In 2013 the Environmental Protection Agency offered dairies on the "Dairy Cluster" the option of providing documentation showing that lagoons were constructed according to NRCS guidelines in place at the time of construction, or lining lagoons with synthetic liners. The dairies opted to line their lagoons. This could be done again. FOTC, farmers, and other clean water advocates are painfully aware of the high costs involved in properly lining lagoons but there are also huge costs to the public from ongoing groundwater pollution.
- Recent discussions regarding the contribution of methane emissions from anaerobic lagoons to global warming bring into question whether solid manure management might be preferable to liquid manure management. Is it more cost effective to incentivize dairies to convert to solid manure management and phase out reliance on lagoons for manure storage, rather than dedicating public monies toward projects that perpetuate the use of lagoons?

FOTC respectfully asks for a serious consideration of our comments regarding pollution from LYV manure lagoons. To date we have been shut out of discussions. We are more than ready to participate in analysis of this complicated problem. We ask the LYV GWMA Implementation Committee to both analyze pollution from manure lagoons in more detail and to include the public in analysis.

Sincerely,



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