



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
WASHINGTON OPERATIONS OFFICE
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Lacey, Washington 98503**

March 27, 2019

David Bowen
Washington State Department of Ecology
Central Regional Office
1250 W. Alder Street
Union Gap, Washington 98903-0009

Dear Mr. Bowen:

Thank you for the opportunity to comment on the draft Lower Yakima Valley Groundwater Management Area (GWMA) program. The Lower Yakima Valley Groundwater Advisory Committee (GWAC) was formed in 2012 to develop a program that would achieve the goal of reducing nitrate levels in groundwater, which consistently exceed the United States Environmental Protection Agency's (EPA) health-based drinking water standard of 10 milligrams per liter (mg/L). The GWAC is comprised of representatives from a variety of groups, including local, state, and federal government agencies; local citizens; dairy producers and other farmers, and agronomists; irrigation districts; conservation districts; environmental groups; and other vested parties. An EPA representative has served on the GWAC since its inception in 2012, and I became the primary representative in the fall of 2015.

Developing the GWMA program has been an ambitious project, requiring significant data gathering, complex technical and policy analysis, and a robust stakeholder process. The EPA commends Yakima County, the federal, state, and local agencies, as well as the community members for their commitment and perseverance in developing this draft program. We offer the following comments intended to strengthen the final program to protect public health.

The Washington State Department of Agriculture's report titled "Estimated Nitrogen Available for Transport in the Lower Yakima Valley Groundwater Management Area -- A Study by the Washington State Department of Agriculture and Yakima County," (June 2018) is an integral part of the GWMA program as it estimates nitrogen availability in the geographic area. It is currently presented as a separate document in Volume III, "member contributions." We recommend that its data and information be incorporated directly into the body of the final GWMA plan to ensure transparency.

The EPA continues to believe that the final GWMA plan would be improved by including a more thorough accounting of the sources and amounts of nitrogen in the GWMA by using scientific data from additional sources. The current draft contains information from the important collaborative work carried out by local, state and federal agencies in 2010, "Lower Yakima Valley Groundwater Quality." Data from other scientific studies are also available. Taking advantage of as much quality-assured/quality controlled available data and information as possible would strengthen the foundation of the report, its policy recommendations and most importantly, its ability to protect and improve the safety of drinking water. A few examples to draw upon include:

- United States Geological Survey (USGS): “Particle tracking for selected groundwater wells in the lower Yakima River Basin, Washington,” 2015. The USGS assessed nitrate sources in specific geographic areas within the GWMA with groundwater contamination and identified associated likely nitrogen source areas. <https://pubs.er.usgs.gov/publication/sir20155149>
- The EPA: “Relation Between Nitrate in Water Wells and Potential Sources in the Lower Yakima Valley, Washington,” 2013 contains soil information such as permeability data from lagoons, and nitrogen concentrations in manured dairy crop fields. <https://www.epa.gov/wa/lower-yakima-valley-groundwater>
- Since a Consent Order was signed with three Lower Yakima Valley dairies in 2013, these dairies have made great strides in reducing the amount of nitrogen accumulating in their fields. In reports submitted under the EPA Consent Order and approved Quality Assurance Project Plan (QAPP), there are several years of biannual data from fields prior to the AOC-required limitations of field applications of manure and the subsequent transition to the present conditions. These dairies are also providing post-harvest data that can inform soil concentration estimates in the draft GWMA Plan. <https://www.epa.gov/wa/lower-yakima-valley-groundwater>

These reports contain information on soil permeability, lagoons, and post-harvest deep soil sampling that can contribute to the data in the GWMA program and strengthen its findings.

Uncertainty is inherent in almost every scientific endeavor, especially one of this magnitude and complexity. Considering this, several GWAC members requested that the program include a section that discusses the intrinsic uncertainties in the relevant variables. The EPA appreciates the work to develop this, which is provided in the current draft as a supporting document. Given its importance to understanding the plan, we recommend that it be added to Volume 1, and describe opportunities for additional research to reduce uncertainty.

The EPA also offers a few additional suggestions for the implementation phase of the program. First, it is important to ensure that QAPPs are developed for any new work that includes data collection. The development of sound QAPPs will ensure that the information gathered can be used to make scientifically-defensible decisions.

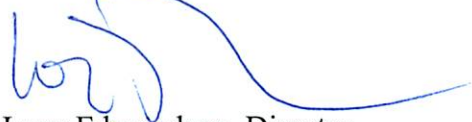
Second, results from the next steps in the U.S. Geological Survey work listed above could be very useful to implementing the GWMA program. The next phase would be to conduct a reverse-loading analysis based on the 2015 particle tracking study, to estimate how much reduced nitrogen loading would need to occur to decrease nitrate concentrations in downgradient residential wells to meet the drinking water maximum contaminant level. These findings could be used to refine and focus efforts to implement the final GWMA program in the coming years.

As you know, this year, the Washington State Conservation Commission awarded competitive grants for demonstration projects statewide to test various technological approaches to recapture or recycle nutrients, including one in the Yakima Valley. The results of these projects could be useful in the implementation phase and EPA encourages the state and county to consider that information moving forward.

In closing, new information pertaining to both understanding the nature of groundwater contamination and strategies to reduce it will continue to emerge from research, data gathering, and technology demonstration projects nationwide. EPA hopes that you will continue to take advantage of this information in your work to reduce excess nitrogen loading in the Lower Yakima Valley's groundwater.

Thanks for the opportunity to comment.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Lucy Edmondson', with a long, sweeping horizontal line extending to the right.

Lucy Edmondson, Director
Washington Operations Office