Hello Stuart,

You may be right. This is my problem, not yours. Over the past five years most men on the GWAC have treated me with courtesy and consideration. I am sincerely grateful.

Jean Mendoza

Hello David,

Thank you very much for your thoughtful response. I agree with most of your observations. Here are some comments.

1. The implication of changing a nitrogen loading assessment to a nitrogen availability assessment is that not all available nitrogen reaches the groundwater. No one has come forward to estimate which available nitrogen reaches the groundwater except for Dan DeGroot who says that all nitrogen in septic tanks will eventually reach the groundwater.

This leaves a big margin for error. How will we describe this gap in the final report? Will the GWAC have an opportunity to provide input or will this be added at the last minute with no time for discussion?

2. Regarding the NAA, there are a number of unresolved issues. I don't see how we can use it to formulate a *Problem Definition* until the GWAC agrees on a final document. I seriously disagree with some of the estimates. For example, if the amount of atmospheric deposition was calculated for the entire target area the total would be over twice as high.

If I represented animal agriculture, I would question some of the conclusions as well. For example, there is no correction for lagoons with synthetic liners. Some of these lined lagoons are very large and the NAA assumes that they leak a lot.

3. My <u>opinion</u> is that Yakima County only knows how to operate using a command and control strategy. By its very nature this method marginalizes groups like Friends of Toppenish Creek. After the options are narrowed to choices that are familiar and acceptable to the GWMA leadership we are allowed to present our ideas. People "do their job" by hearing a short summary of our concerns. Too often this is the end of the story.

It appears that others are being treated in a similarly dismissive manner. I agree with Frank Lyall that many people in agriculture have not been heard. Mr. Lyall and Mr. Simpson attended almost every meeting of the GWMA Irrigated Ag work group. When WSDA did their analysis of irrigated agriculture they ignored the many important observations that these two men and others made, over and over again.

Last Thursday, at the GWMA meeting Mr. Davenport told both Kathleen Rogers and Frank Lyall to hurry with their comments. Why?

4. Currently we have GWMA meetings in May and June to complete our work. Over half of the GWMA plan has not even been put on paper. This is a recipe for failure. If I were in charge, which I am not, I would hire a professional facilitator such as the Kittitas-Yakima Conflict Resolution Center to work intensively with the different stakeholders to find some compromise solutions. I truly believe that we have some common ground.

5. FOTC is committed to finding solutions within the guidelines of the Revised Code of Washington and the Washington Administrative Code. It is scary to think that some people believe they are above the law.

My Perception of WAC 173-100-100 requirements

1. We need an *Area Characterization* and the group needs to agree on a description of our community

2. We need a *Problem Definition Section* regarding nitrates in groundwater. We need to come to some kind of agreement on the major causes.

3. We need to agree on specific *Goals and Objectives* for improving the ground water quality. These are objective measurements that will tell us how much progress we are making.

4. We need to propose *Possible Solutions* based on our description of the causes.

5. We need to agree upon and select the most promising solutions.

6. We need to develop an *Implementation Section* that includes detailed work plans for each selected solution, a monitoring plan to evaluate program effectiveness and a process for periodic review and revision of the program.

Logically:

- 2 builds on 1
- 3 builds on 1 & 2
- 4 builds on 2 & 3
- 5 build on 1, 2, 3 & 4
- 6 builds on all others

(Charlie McKinney provided an overview of these requirements plus WAC 175-110 & WAC 173-100-120 to the GWAC on February 18, 2016.)

GWMA History Complying with WAC 173-100-100

WAC 173-100-100(1) *Area Characterization* – In the early stages of the GWMA we all agreed that Area Characterization was a necessary first step for defining and analyzing the problem of nitrates in groundwater. During the first quarter of 2013 Yakima County provided a Table of Contents for *Area Characterization*. In June 2013 Yakima County signed a contract with HDR/PgG to complete an Initial *Characterization*. During the second quarter of 2015 Yakima County presented a Table of Contents for the Lower Yakima Valley Groundwater Management Program that included an *Area Characterization*. Now, in April 2018, we are still editing a draft *Area Characterization*.

WAC 173-100-100(2) A *Problem Definition* Section. The plan was to use a Network of Monitoring Wells, Deep Soil Sampling and a Nitrogen Loading Assessment to accomplish this.

Unfortunately the monitoring wells have not yet been drilled. I don't know what more the GWAC could have done. We evaluated all the plans for monitoring wells and approved the proposals in a timely manner.

The Data Work Group has just begun to study the DSS. There is valid data but it only applies to the fields in the DSS database. There are only enough fields to draw conclusions for triticale, silage corn and perhaps alfalfa. The DSS cannot be applied to the entire GWMA target area.

Initially we were told that the NLA would be complete in July 2015, then in December 2015, then in December 2016. WSDA and Yakima County finally delivered a draft document in April 2017 and it was no longer a Nitrogen Loading Assessment. Several groups, including FOTC, submitted comments and WSDA responded in the fall of 2017. We still do not have a revision of the Nitrogen Availability Assessment so there has been no opportunity for the GWAC to discuss and agree upon the major causes of elevated nitrates in the groundwater.

No one has written a *Problem Definition* Section for the GWMA plan and it appears that this might be added after alternative solutions have already been selected. We could end up with multiple solutions that are pretty much irrelevant to the problem.

WAC 173-100-100(3) *Water Quantity and Quality Goals and Objectives* – At the November 21, 2012 GWMA meeting we were supposed to finalize *Goals and Objectives* in the GWMA Work Plan. There was uncertainty and the decision was postponed. At the December 14,

2012 GWMA meeting proposed *Goals and Objectives* were retained in draft form. This was to be a "living document" with ongoing evaluation and revision. The GWMA Work Plan was approved in February, 2013

During the first Quarter of 2015 the GWAC studied a new GWMA Timeline that built upon the GWMA Work Plan. According to my reading there were over 200 tasks. Only 84 have been completed to date.

We have one overarching goal – *to reduce concentrations of nitrate in groundwater to below Washington State drinking water standards* and we have no plan for measuring success or failure. We have proposed objectives from the GWMA Request for Identification and there are draft strategies from the GWMA Work Plan. See Attachment.

WAC 173-100-100(4) *Alternatives Section* – Yakima County compiled a list of around 260 potential *Alternative Solutions* in mid-2017 and the GWAC discussed these solutions throughout the second and third quarters of 2017. We now have a list of 85 potential master strategies that were more or less agreed upon without the benefit of a problem definition, source prioritization or cost estimates. In April, 2018 with three months to go, we are still waiting for a revised Nitrogen Availability Assessment and for cost estimates.

WAC 173-100-100(5) *Recommendations Section* – It could be argued that the GWAC has already begun selecting recommended solutions without going through the required steps listed in the WAC.

WAC 173-100-100(6) *Implementation Section* – It could be argued that the GWAC has already begun implementation plans for some preferred alternative solutions. It can also be demonstrated that plans for monitoring and evaluation have not even been discussed.

Time is running out. It is not my intent to force feed this information to the GWAC, but we have a big job left to do.

Thanks

Jean Mendoza

Attachment – Goals & Objectives from the GWMA Work Plan

WATER QUALITY GOALS AND OBJECTIVES: The only available goals and objectives are found in the 2012 GWMA Work Plan and the 2011 Request for Identification which is referenced in the Work Plan.

From the *GWMA Work Plan* (Pages 2-3)

Strategies used by the GWAC will include, but not be limited to, the following:

- Compile recently established nitrate mitigation studies and BMPs from other similar studies including GWMAs
- Compile existing soil profile samples developed for nitrate uptake purposes and augment along with current research to determine nitrate level loading
- Perform deep soil samples to determine nitrate levels and extent of deep nitrate migration
- Provide in season sampling of plant tissue of soils to evaluate timing and application efficiency (the amount applied to the amount used by the crop)
- Identify geographic areas vulnerable to nitrate leaching (Leaching Vulnerability Index)
- Identify geographic areas of higher concern
- Identify sources of elevated nitrate levels
- Identify impacted aquifer or aquifer zones
- Provide GWMA baseline conditions and long term monitoring of same
- Estimate nutrient loading budget across the GWMA boundaries
- Identify information gaps and data acquisition needs

The GWMA Program will also recommend projects such as:

- Develop nutrient management guidelines (i.e., reduce the amount of nitrogen fertilizer through optimal timing, placement, and rate of fertilizer application) applicable to Lower Valley hydrology and soil conditions
- Develop irrigation water management guidelines specific to the land use (e.g., livestock, irrigated agriculture, domestic use)
- Develop bulk manure and fertilizer handling and storage guidelines
- Develop wellhead protection plans
- Facilitate implementation of nitrate mangement strategies specific to the farm local conditions
- Provide best management strategies for voluntary implementation

The GWMA Program will identify methods for evaluating the effectiveness of each strategy and methods for evaluating progress I implementing the projects. Quantitative measures

are required to evaluate the baseline and progress and success of the action plan (downward nitrate trend for different sectors). Some of the potential specific goals used to guide implementation of nitrate management strategies are as follows:

1. Trends in nitrate levels and extent of deep nitrate migration

2. Trends in the adoption/implementation of BMPs

3. Trends in the level of public awareness of the causes and health implications of high nitrate levels in groundwater

From the *Request for Identification*

6.1 GWMA Goal

The primary long-term goal of the GWMA is to reduce concentrations of nitrate in groundwater to below Washington State drinking water standards. Reductions in nitrogen loading will be demonstrated within 5 years. Progress towards identifying and reducing the sources of groundwater contamination will be evaluated in 2013 and shared with the public. Specific objectives are listed below.

6.2 Proposed Objectives

Objectives have been divided into six categories: Data and Monitoring, Problem Identification, Measures to Reduce Groundwater Contamination, Education, Drinking Water Systems, and General Objectives. Input from the GWAC and citizen input will be used to refine and prioritize objectives. In general, refinement of objectives in each category will begin with an updated assessment of the current status of work. For instance, pending work includes publication of EPA sampling data and evaluations.

Data and Monitoring

- Collect and incorporate existing nitrate and nitrogen data into a shared data management system or data sharing site to improve understanding of the sources and extent of contamination
- Establish a monitoring program to identify sources of nitrate contamination and their relative importance
- Establish and conduct long-term groundwater quality monitoring program and evaluate progress

Problem Identification

- Characterize the nature and extent of nitrate concentrations in Lower Yakima Valley groundwater
- Identify and rank the sources of elevated nitrate in groundwater, with site-specific characteristics developed for "hot spots" as appropriate
- Identify and describe activities contributing to groundwater contamination based on scientific data and evaluation. Scientific and other data will be shared among the partners to facilitate development of effective programs and strategies

Measures to Reduce Groundwater Contamination

- Develop effective and coordinated best management practices (BMPs) to address specific nitrate sources.
- Develop strategies for implementing best management practices such as technical assistance, education, ordinances and coordination with other regulatory and non-regulatory programs
- Support enforcement of new and existing laws and ordinances

Education

- Establish educational programs to promote the protection of groundwater quality and provide a forum for stakeholders to discuss nitrate reduction methods and improvement of groundwater quality. This will include culturally-appropriate education and outreach
- Establish a clearinghouse for pertinent public health, environmental, and business information
- Educate private well owners on water quality testing methods, frequencies, interpretation of results, and funding sources

Drinking Water Systems

- Provide water quality and hydrogeologic data to assess needs and methods of expanding public water supplies, and provide a forum for initiation of these plans
- Consider options to encourage appropriate expansion of public water supplies to areas that are currently dealing with contaminated private supplies
- Assist residents whose supplies have been contaminated to access safe and reliable water supplies, using culturally-appropriate communications

General

- Pollution prevention will be a guiding principle for all work done by the GWMA
- Participation by the Yakama Nation will be requested and encouraged in a way that is consistent with their sovereignty

- Participating agencies will maintain their regulatory authority using their own discretion as appropriate. They will also seek opportunities to coordinate actions and address regulatory gaps
- The GWMA will seek sustainable funding sources to carry out its mission.

Note: At the November 21, 2013 GWMA meeting Kathleen Rogers asked what is being done to help people with contaminated wells. Vern Redifer replied that Yakima County had successfully secured $150,000 from the DOH Clean Drinking Water Program.