



Grower-Shipper Association of Central California
"OUR MEMBERS: PARTNERS PRODUCING PROSPERITY"

May 23, 2012

Charles R. Hoppin, Chairman
State Water Resources Control Board
1001 I Street
Sacramento, CA 95814

RE: UC DAVIS REPORT ON NITRATE IN GROUNDWATER

Dear Chairman Hoppin,

Thank you for the opportunity to comment on the UC Davis Report on Nitrate in Groundwater (published March 13, 2012). The letter below outlines process questions, the answers to which we've been unable to find in public notices and records, highlights major questions about the report referenced above, and outlines BMP efforts and improvements being made in the Salinas Valley. Our efforts to highlight challenges to the report in this letter are not meant to diminish the authors or the process, but to provide constructive feedback so that the report may be a better representation of the considerable data not currently included, with further agronomic input and peer review.

Process & Timelines

We've been told that the UC Davis report will be formulated and prepared for legislative review following today's State Water Resources Control Board (SWRCB) hearing. What we've been unable to ascertain is whether there will be peer review of the report before it is sent to the legislature. We also ask what a peer review of this report will look like, and urge the SWRCB to encourage at least three experts, one of whom holds expertise in agriculture, and specifically an understanding of production in the Salinas Valley, to jointly review the document. We would also most appreciate a detailed timeline outlining when the report will be peer reviewed, when it will be submitted to the legislature, and what other opportunities there may be for public comment.

Positive Aspects of the Report

We agree that the seriousness of drinking water is worthy of discussion and appreciate that this report gathered a mountain of data from two waterbodies and attempted to parse it into useable information. This report provides an intelligent discussion of potential solutions, funding and resource limitations, the need for focused research and grower education. These are all worthy topics.

2012-2013 Board of Directors

Margaret D'Arrigo-Martin, Chairwoman • Mark Borman, Vice Chairman • David Hart, Treasurer
Allan Clark • Butch Corda • Mike Costa • Henry Dill • Craig Dobler • Ernie Farley
Bruce Knobeloch • Bob Martin • Steve McIntyre • Sam McKinsey

Major Questions about the Report

Unfortunately, there were several aspects of the report which were puzzling. We found it difficult to understand how information from two separate groundwater basins could be reliably applied to any other groundwater basins of the state. The differences between hydro geological characteristics, political infrastructures and agricultural practices preclude all but general application of the findings or recommendations.

The process by which this report was produced is perplexing and concerning. SWRCB and the authors missed the opportunity to engage with agriculture in a robust dialog about problem solving. Why was there so little input requested from the agricultural industry for a report that will have such long-term ramifications on that community? We would appreciate the opportunity to strengthen and verify the report for agronomic accuracy, especially as it relates to the Salinas Valley basin. While the agricultural community might disagree with aspects of the report, it can vet areas of agreement. Without this opportunity, the likelihood is that salient aspects of the report will now be lost in unproductive, polarized debate.

The report does not appear to be entirely objective. For example, the statement "Nitrate Contamination is widespread and increasing" is confusing. Does the report imply that nitrate is worsening because of cumulative loading over the years or does it mean that each year the loading is becoming greater than the previous year? The first statement would be logical. The second is not supported by evidence that there have been improved management practices.

Likewise, the report provides only one citation for purported and tentatively linked detrimental health effects while omitting other scientific studies which refute these claims. Furthermore, objectivity must be questioned due to the fact that the legislation mandating the report originated with environmental justice interest groups, the report was commissioned by the regulatory agency, and the report was written by academia without any transparent input by agriculture.

The SBX2 1 report could be strengthened if it were to place the findings within a stronger historical and agronomic context. As it is written, the findings are presented in a vacuum.

For example, a detailed discussion of cropping trends, land use patterns and changes in fertilizer usage in the two groundwater basins would have provided a better context for tracking continued legacy loading and project future nitrate loading. Here is what is missing:

- Number of irrigated and dryland acres by crop for reference years: 1920, 1950, 1980 and 2010.
- Livestock population and feed origination statistics for each of the decades within 1900-1950.
- What information about future nitrate loading could be extrapolated from current use.
- UCCE fertilizer and irrigation recommendations by crop by acre for the same respective reference years.
- How changes to harvested nitrate (i.e. increased yields) have impacted loading.
- How changes to cropping and fertilizer use patterns have impacted loading.
- What information about present and future nitrate loading could be extrapolated from these historical data.

Instead there are inadequate discussions about changes in the number of acres and practice improvements in the Salinas Valley. Based upon the way the report is written, is not possible to compare current versus legacy loading or to determine whether current loading is a result of per

acre irrigation and fertilizer (in)efficiencies or if current nitrate loading is a factor of increased agricultural acres or whether both of these factors have contributed to the overall problem.

Similarly, the usefulness of the report is diminished because critical data are presented in aggregate for the "Study Area". There is substantial discrepancy in the cultural, political, hydro-geological and infrastructure makeup of the two regions. The aggregated data is misleading, and in many cases, the generalized data inaccurately portrays the regions. For example, the way the data are presented about the impacts to Susceptible Populations is vague and misleading.

There are Discrepancies between the SBX2 1 Report and Similar Studies

The report calls for extensive monitoring and data collection. Yet, it really doesn't outline what data gaps exist, what data are inadequate, what data are inaccurate, what data are available, and what data are essential versus what data would be "nice-to-know" for problem solving? Those details would be helpful to agriculture and the community as a whole as we begin to focus on solutions.

An example of a discrepancy that should be amended is the fact that the report does not refer to or cite the State Water Resources Control Board "COMMUNITIES THAT RELY ON CONTAMINATED GROUNDWATER", report, published in February 2012.

The Report is Commendable in that it Focuses on Solutions

However, there are issues with solutions offered. The report states that the most practical solutions are tax or market based. However, projected tax revenues are based on current fertilizer use rates. Fertilizer reductions would result in reduced tax revenues and the only way to maintain revenue levels is to increase taxes on growers which will further reduce use and tax revenues. This is exactly the downward spiral playing out in California and Europe and creates an unsustainable model. Taxes and Regulations create an onerous business environment so that businesses close or exit the state. Now, there are shortfalls in projected revenues. This cycle will likely continue as the tax and regulatory burdens increase.

The report does not adequately analyze unintended economic and sustainability consequences. For example, market based incentives which utilize cap and trade and auctions may be inaccessible to marginally capitalized and small growers. This could accelerate large farm consolidation.

The report provides estimates of the cost of treatment yet omits costs associated with proposed solutions such as inter-agency task forces, committees and coalitions, increased research, monitoring, data collection and analysis, and technical education. In our opinion, these investments are of at least equal importance.

One practical yet critical issue is a discussion of how increased liability for nitrate discharges to groundwater will be dealt with by the insurance industry. Will growers continue to be insurable? Will the only growers that will be able to produce be self-insured? Will this be another nail in the coffin of small growers' ability to sustain themselves?

Likewise, what will the designation of "Areas of High Risk to Nitrate Contamination" do to land values in the area? If land values fall, tax revenues fall and fewer resources are available to address the issues.

One solution that was not discussed: why don't we treat nitrate as a misplaced resource that needs to be mined rather than as an expensive waste that needs to be treated? The disadvantaged communities would then "own" a resource that could generate revenue to build self-sustainability. This would require a paradigm shift in thinking and would require that research institutions work in strong interdisciplinary teams committee to finding solutions other than command and control regulation.

Finally, a true sustainability and economic analysis should be conducted that includes the solutions outlined in the report, those detailed in this letter, and more provided by the community as a whole. Without a true sustainability analysis, it is difficult to determine what the proper course of action a society to take should be.

Agriculture's Contribution to Groundwater Improvement in the Salinas Valley

We understand that nitrates can reach groundwater from a number of sources. Farmers continue to adapt to new information, new technology and updated science to address nitrate problems and will work continually to improve that management. At the same time, it's important to make sure that nitrate-management programs look at all possible sources to achieve the goal of safe drinking water.

Farmers and ranchers are certainly aware of the need to manage nitrates carefully and have worked on management for many years. Farming techniques have changed markedly in recent years, as new products, methods and irrigation technology have allowed farmers to apply fertilizer more precisely than ever before. Farmers understand the need to have science and research intersect with agronomy and water quality. To that end, in the Salinas Valley growers are currently looking at pilot projects to allow for a long term sustainable, economically viable industry. Specifically, the Grower-Shipper Association's (GSA) Board of Directors recently agreed to participate in a pilot program focused on measuring Best Management Practice (BMP) efficiencies across multiple watersheds, soil types, commodities, etc. and plan to focus on nutrient management BMPs in the first year. The GSA Board also agreed to invest resources into creating a Cooperative Groundwater Monitoring Program focused on characterizing and monitoring aquifer change over time, likely using a regional monitoring well network in conjunction with grower well testing. Farmers are always looking for better ways to care for the land and water resources we depend on.

In the meeting held on May 18, 2012 by the report authors in the Salinas Valley it was noted that the use of recommended BMPs can have a tremendous impact on the fate of nitrates in groundwater, although it could take decades to see the effects of these practices. Here are a few of the things growers in the Salinas Valley have been doing in the past five, 10 and 20 years to reduce the amount of nitrate traveling past the root zone.

Additional Specific Examples of Grower Actions in the Salinas Valley:

- Farmers have increased split applications of fertilizers. Rather than a big shot early on in the crop, application of fertilizers has become a more precise science because we now have a strong understanding about nitrogen needs in the crop. For instance, we know most vegetable crops need more nitrogen (75% of its total nutrients) in the last 30 days.
- Adoption of drip irrigation has been huge – from the standpoint of delivering small shots of nitrogen and controlled water usage to prevent leaching – and keeping nitrogen in the root zone.
- The development of hybrid plant varieties that have a stronger root zone have been important – they are more efficient in nitrogen uptake and utilization due to a bigger, deeper root zone.
- The use of more slow-release nitrogen – formulating different types of nitrogen helps to prevent nitrogen leaching below the root zone (e.g. liquid additive, polymer form). There's been a focusing on the science of release rates.
- Soil samples have been pulled in the Salinas Valley for 20 years. There's a more enlightened state of understanding about nitrogen, and the need to prevent nitrate leaching. It's also more expensive to operate without that acknowledgement; fertilizer is an asset farmers have to manage just like anything else.
 - Soil samples and quick nitrate tests are gaining more trust and interpretation of the results are being accepted more as the technology is better understood. The use of quick nitrate tests has skyrocketed in the last five years.
- The increased use of soil probes/tensiometers that allow growers to measure the water profile in the soil and better understand how the water is moving through the root zone.

Through the Monterey County Water Resources Agency (MCWRA), in which farmers invest as major rate payers, farmers have been working to improve groundwater quality in the Salinas Valley for the past 20 years, investing millions to generate new water sources and divert nitrates out of the environment.

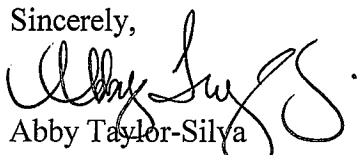
- In 1990 MCWRA created an Ad Hoc Committee to focus on Nitrates.
 - Action: Formation of the Salinas Valley Nitrate Management Committee to assure follow through of the recommendations made in the report
 - Resultant Activities from the Ad Hoc Recommendations relating to nitrates.
 - Adopted Septic Ordinances – MC Environmental Health (MCEH)
 - Adopted Water Well Standards – MCWRA / MCEH
 - Performed Ag. Research and demonstration program – MCWRA & UCCE
 - Research utilized Fertilizer Research and Education Program (FREP) grant funds

- Conducted Irrigation & Nutrient Management Conferences to disseminate proven research – MCWRA & UCCE
- Performed Hydrogeologic Studies – MCWRA / UC Davis / USGS
- Hired Water Conservation Manager – MCWRA
- Adopted Ag. and Urban Extraction and Conservation Reporting Ordinances – MCWRA
- Adopted Urban Water Conservation Reporting Ordinances
- Adopted Groundwater Management Program – MCWRA
- Drilling of Dedicated Monitoring Wells - Coastal and Salinas Valley
- Performed Backflow Prevention Study – MCEH (North County)
- Hired Mobile Ag. Irrigation Lab Team Leader – MCWRA 1991-1999 (9 years @ 30 evaluations per year = 270 evaluations total)

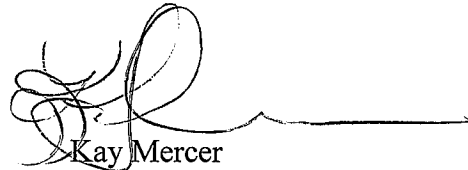
Many projects have been completed which have improved water quality along the Central Coast. However, we acknowledge that agriculture, along with other industries, must be involved in improving the water quality. We ask that you make the following recommendations to the authors of the UC Davis Report on Nitrate in Groundwater:

1. Differentiate the Salinas Valley and Tulare Lake Basins consistently throughout the report.
2. Create a peer-review process that includes at least three colleagues of the original authors, at least one of which possesses an advanced degree coupled with practical and/or production experience in the agricultural industry.
3. While the promising actions in this report are a good start, allow for more review of the report before submitting it to the legislature so that one group's promising actions don't become automatic legislation.
 - a. Allow for more public input on the report, specifically regarding the inclusion of agronomic context (both current and historical), data and reports not included that may influence the report's findings.

Sincerely,



Abby Taylor-Silva
Vice President, Policy & Communications
Grower-Shipper Association of Central California



Kay Mercer
Principal
KMI

cc: Frances Spivey-Weber, Vice Chair of the State Water Resources Control Board
Tam Dudoc, State Water Resources Control Board
Felicia Marcus, State Water Resources Control Board
Steven Moore, State Water Resources Control Board
Thomas Harter, UC Davis
Jay Lund, UC Davis