

Central Valley Regional Water Quality Control Board

**Meeting Summary
FOOD SAFETY
EXPERT PANEL – ROUNDTABLE MEETING
8 November 2018
10 a.m. to 3 p.m.**

Attendees

Panel Member	Title & Affiliation
Dr. Gabriele Ludwig	Director of Sustainability, Environmental Affairs - Almond Board of California
Dr. Barbara Petersen (by phone)	Principal Scientist, Chemical Regulation and Food Safety, Exponent
Dr. Bruce Macler	Toxicologist, U.S. Environmental Protection Agency (US EPA)
Dr. Andrew Gordus	Toxicologist, California Department of Fish and Wildlife (CDFW)
Dr. Stephen Beam	Branch Chief, California Department of Food and Agriculture (CDFA)
Dr. David Mazzera	Branch Chief, Department of Public Health, Food and Drug Branch
Dr. Seth Shonkoff	Executive Director, PSE Healthy Energy
Dr. Ken Kloc (by phone)	Toxicologist, Office of Environmental Health Hazard Assessment
Mr. Mark Jones	Toxicologist, US Army Corps of Engineers
Affiliated Parties	Title & Affiliation
Dr. Karl Longley (by phone)	Chair, Central Valley Regional Water Quality Control Board (Regional Board)
Clay Rodgers	Assistant Executive Officer, Regional Board
Rebecca T. Asami	Engineering Geologist, Regional Board
Josh Mahoney	Water Resource Control Engineer, Regional Board
Dr. William Stringfellow	Science Advisor, University of the Pacific, LBNL
Dr. Bernard Beckerman	Consultant, GSI Environmental
Dr. Robert Scofield	Consultant, GSI Environmental

*Panel member Mark Jones was unable to attend

Action Items

1. Regional Board staff to compile water quality data and fruit analytical data.
2. Regional Board staff will coordinate a trip to irrigation districts and a water treatment facility for the Food Safety Expert Panel (Panel).
3. Regional Board staff to send Panel members a list of crops for consumption estimates.
4. Regional Board staff to collect Panel recommendations on the white paper.
5. GSI Environmental, Inc. to share list of constituents.
6. Regional Board staff to schedule the next public meeting.
7. Regional Board staff to contact oil operators about obtaining continuous data on: flow, conductivity, and fluorescence.
8. Regional Board staff to reach out to additive suppliers to request additive mass data.
9. Panel to provide criteria for water use and monitoring parameters.
10. Panel to provide Regional Board staff with questions regarding the Food Safety Project.

Introductions and Agenda Review

Regional Board staff opened the meeting with introductions from the Panel and reviewed the agenda.

Proposed New Projects

Clay Rodgers stated that a new Food Safety related project has been proposed to Regional Board staff. The project proposes to use water from the Edison Oil Field. The project is only in the preliminary steps. A report of waste discharge has not been filed yet with the Regional Board.

Another project, which was presented to the Panel during a public meeting, is an expansion of a project. If approved, another reservoir will be built for use by the Kern-Tulare Water District.

A separate project, which was presented to the Panel during a public meeting, is an entirely new project that proposes to recycle produced water from the Poso Creek Oil Field. This project differs from other projects because there is no proposal to blend the produced water with other water sources. The water quality appears to be good.

Regional Board staff asked the Panel if there were specific criteria to consider before the water should be considered for a recycling project.

Comments and discussion points on the proposed new projects are summarized below:

- Water in Kern County is limited.
- If the projects are allowed to go forward, there will be more land irrigated with produced water (projected to grow grains and nuts).
- There may be other usable sources of produced water, but it is probable that Kern County is getting to the upper limits of what is usable as far as produced water goes.
- There is a need to consider constituents in the water that may not have toxicological data or known analytical procedures.
- For an important chemical, it might be worth it to have a toxicological study done.
- There may be some questions that can be answered by mass data.
- For toxicological data, there is a resource to consider: screening values from Texas Environmental Quality.
- The list of additives used by the oil companies can change, but the Regional Board is aware of changes because additives are reported to the Regional Board every quarter.
- It may be important to consider reference doses.
- It may be good to consider Title 22 criteria, which is municipal water reuse criteria. Agricultural water is not the same as municipal water, but those criteria could be helpful.

Crop Sampling

Clay Rodgers of the Regional Board discussed crop sampling with the Panel. He stated that unless data issues have been identified, there may not be a good reason to continue sampling some of the crops. The exception may be that there are a few crops that have not been tested and some that have only been tested once. There is a need to complete the Memorandum of Understanding (MOU) Tasks 1-2. Clay Rodgers asked the Panel for input.

Discussion points and comments on crop sampling are summarized below:

- There is a need to show that due diligence has been done.
- There might be a data gap that can only be filled with crop sampling.
- Crop sampling may help answer questions about plant uptake.
- There is a need to pin point laboratory holding times for fruits and nuts.
- The Panel is interested in taking a tour of a facility and observe water treatment.
- It might be useful to look at water quality data and crop sampling data to see if there are any correlations.

- At some point there may be a need to resample all crops, especially after the MOU Tasks are completed.
- It may be useful to look at available continuous water quality data.

Food Safety Project Update Presentation – GSI Environmental, Inc.

Dr. Bernard Beckerman of GSI Environmental, Inc. (GSI), gave a presentation on the completion of the MOU Tasks (Tasks 1-2). Dr. Beckerman stated that GSI has been working on the list of chemicals of interest. GSI has been working on evaluating toxicity values for constituents on the additive list. GSI stated that many of the constituents have no toxicity data, and GSI is looking at potential surrogates for those constituents. GSI has identified some basic categories: chemicals that are not of a concern, chemicals that do not have any information that could be used to assess chronic toxicity from oral exposure, chemicals that were reviewed for toxicity but do not have any health risk requirements, and the last category is comprised of chemicals that have known toxicological estimates.

Of those with toxicological estimates, GSI divided them into basic groups: chemicals that will not biodegrade, chemicals that are poorly biodegradable, those that are readily biodegradable, and those that have not been assessed for fate and transport. The next step in this task is to focus on those constituents with unknown toxicity data. GSI will separate the chemicals into categories and identify which categories pose concerns.

Discussion points and comments are summarized below:

- The US Environmental Protection Agency has guidelines on some chemical groups (such as polymers).
- When considering plant uptake, there are many unknowns.
- Most of the constituents on the list of chemicals that have toxicity data and are known to be persistent are already being monitored in the wastewater.
- As far as those with limited toxicity data, which have known analytical methods? That is a question that needs to be answered.

List of Questions Assembled by the Panel

In January 2017, the Panel put together a list of questions as part of a discussion about a proposed sampling approach. The list of questions was assembled to help the Panel pinpoint goals and identify background information. While the list pertains to crop sampling, it also encompasses general questions that the Panel has about the Food Safety Project. The questions were put into three different categories: need to know, want to know, and needed background information.

A summarized list of the questions follows:

- Is the food safe to consume by humans?
- Are the constituents accumulating in the soils?
- Do we have analytical methods for all constituents?
- What concentrations of constituents are of a concern?
- What are the chemicals of concern?
- Are chemicals of concern detectable in the water at the point of irrigation?
- Do chemicals accumulate in the plant material?
- What is the quality of other irrigation water sources?
- What soil types are associated with the crops?
- Which crops are grown and where are they grown?
- How long have areas been exposed to produced water?

The Panel revisited the list to assess the progress of the Food Safety Project.

Discussion points and questions from the Panel are summarized below:

- Some Panel members suggested doing a baseline test on soils and retest soils after produced water has been applied for a time (suggested time was 5 years). The problem is that irrigators have been using produced water for thirty years. It will be difficult to get a baseline level.
- Some Panel members suggested conducting a study in some of the sites that have been proposed for new Food Safety related projects. Or consider adding soil sampling to monitoring and reporting programs.
- Several Panel members stated that it may be more worthwhile to focus the Food Safety Project on water and fruit.
- Some Panel members stated that the soil sampling plan would have to cover such a large area that soil sampling is impractical.
- Constituents, notably polycyclic aromatics compounds, have been found in both treated and control samples. There is a need to see if they are accumulating in the soil.
- Several Panel members stated that soil sampling does not need to be conducted under the guise of the Panel and that soil sampling should be a research question. Soil sampling should be presented as a data gap covered in the white paper.
- Consider that some constituents may be in the soil but not being taken up by the plant. Also, some constituents may be found in the soil but not in the water.
- How should the Regional Board deal with new crops or new sources of water?
- Regional Board staff asked the Panel to provide additional questions, that would help focus the project and reach project goals.
- Regional Board staff asked the Panel to provide input on criteria for water use, fruit sampling, and monitoring programs.

Culmination of the Food Safety Project, and the Food Safety White Paper

Panel members and Regional Board staff discussed the culmination of the Food Safety Project. Regional Board staff envision the white paper being the conclusion of the Food Safety project. The white paper will summarize all the individual research projects that have composed the Food Safety Project and include Panel recommendations. The white paper will need to be presented to the Board for approval. The Panel reviewed a draft outline of the white paper. Some Panel members provided comments and suggestions.

Discussion points and questions from the Panel are summarized below:

- The Panel charter states that the primary focus of the Food Safety Project is to address food safety at the point of harvest. Therefore, we should consider including a risk assessment as a part of the white paper.
- In conducting the risk assessment, we should consider using standard hazard risks, such as cancer risks, etc.
- One Panel member offered to conduct the risk assessment. Regional Board staff agreed to send the Panel member a list of crops irrigated by produced water.
- There is a need to look at detection limits in the crop sampling results to ensure that the limits meet risk assessment needs.
- Regarding the white paper outline, the crop sampling report section and the discussion section needs to be expanded. There should be a section added for consumption data and risk assessment.
- An Executive Summary section needs to be added to the beginning of the white paper.
- The draft paper outline should state clearly what is known, what is not known, and why it is ok not to know certain things.
- There is a need to identify next steps for regulating the sites and what should be done before the Regional Board considers adopting new permits related to the Food Safety Project.
- Regional Board staff asked the Panel to provide comments and suggestions on the white paper.

Next Steps

Regional Board staff stated that there is a need to hold another public meeting of the Panel. Regional Board staff will also work on scheduling a tour of irrigation districts and a water treatment plant.

Close of Meeting

Clay Rodgers of the Regional Board thanked the Panel for their time and closed the meeting.