

Central Valley Regional Water Quality Control Board
Meeting Summary
FOOD SAFETY EXPERT PANEL
PUBLIC MEETING
25 April 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. Seth Shonkoff	Executive Director, PSE Healthy Energy; Visiting Scholar, Environmental Science, Policy and Management, UC Berkeley; Lawrence Berkeley National Laboratory (LBNL), Energy Technologies Area
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	Staff Toxicologist, California Department of Fish and Wildlife (CDFW)
Dr. Stephen Beam	Branch Chief, California Department of Food and Agriculture (CDFA)
Affiliated Parties	Title & Affiliation
Dr. Karl Longley	Chair of the Board, Central Valley Regional Water Quality Control Board (Regional Board)
Patrick Palupa	Incoming Executive Officer, Regional Board
Clay Rodgers	Assistant Executive Officer, Regional Board
Rebecca T. Asami	Engineering-Geologist, Regional Board
Josh Mahoney	Water Quality Control Engineer, Regional Board
Dr. William Stringfellow	Science/Technical Advisor, University of the Pacific, LBNL
Dr. Robert Scofield	Consultant, GSI Environmental
Dave Ceppos	Consensus and Collaboration Program (CCP), College of Continuing Education (CCE), Sacramento State
Alex Cole-Weiss	CCP, CCE, Sacramento State

Note: Panel members Dave Mazzera, Mark Jones, and Ken Kloc were not able to attend.

Action Items

- Regional Board to post Dr. Petersen's presentation on the Food Safety Panel (Panel) Website and to note as draft.
- Regional Board to finalize comments on the 2017 sampling report and share with the Panel members for review.
- Regional Board to finalize the sampling report for the March 2018 citrus sampling and to provide to the Panel by early May and the public by the end of May.
- Regional Board to finalize field notes from recent sampling activities and will post on the project web page once completed.
- Dr. Scofield will check with labs about the analytical methods they are using and how to deal with tentatively identified compounds.
- Dr. Stringfellow will contact Dr. Scofield to update him on work that has already been done and to coordinate next steps. Dr. Stringfellow will provide a written summary of this meeting to the Panel for an update and for the public record.
- CCP to send out calendar invites for the remaining 2018 public Food Safety Panel meetings to Panel members.

Introductions and Agenda Review

Dave Ceppos, CCP reviewed the meeting agenda and conducted introductions. He stated that this is a working meeting of the Panel that is open to the public. Comments and questions can be sent in by email and will be taken at the end of each agenda item.

Materials List

The following items were posted on the Regional Board's Panel [web page](#) and hard copies were made available to participants.

1. [Meeting Agenda](#)
2. [January meeting summary](#)

Review of January Panel Meeting

The Panel held a public working meeting on 24 January 2018. A draft summary of the January meeting was made available on the project web page in advance of the April 24th meeting. Mr. Ceppos asked Panel members if there were any additional comments or revisions that needed to be made on the summary. There were no comments and the summary was adopted as final.

Presentation – Estimated Daily Intake of Select Commodities

A copy of the presentation is available on the project web page [here](#).

By way of introduction, Mr. Ceppos explained that this presentation follows up on Panel conversation on risk and exposure assessment approaches discussed during the January 24th meeting.

Dr. Barbara Petersen, Panel member, gave a presentation to the Panel on estimated daily intake of select commodities of interest to the Panel. She explained that as data are now being collected to

determine the level of compounds present in food crops irrigated with produced water, if any, the next question is how that translates into consumer exposure. It is important to identify robust food consumption data to use in combination with the data from crop sampling. She emphasized this is a draft presentation of data designed to highlight choices that could be made with regard to risk assessment and exposure. The preferred analysis still needs to be determined and additional Panel member input is needed.

Dr. Petersen said there is one primary food consumption dataset that is used to assess national food consumption patterns called, "What We Eat in America (WWEIA)"; this represents the dietary component of the National Health and Nutrition Examination Survey (NHANES). This survey is currently done on a continuous basis, and is statistically representative at the national level. Interview teams representing WWEIA have done extensive testing on how to best retrieve accurate consumption data. The survey is done in a structured format over two 24 hour periods and the interview team gathers detailed information about consumption in that window of time. Since the data is collected in non-consecutive periods, every day of the year is represented in the sample. The NHANES data is used by many partners (e.g. US Department of Agriculture [USDA], US EPA, US Food and Drug Administration [FDA], Center for Disease Control, California State agencies, etc.) for risk assessments, and issues related to nutrition and food security. The NHANES dataset is the primary food survey available to the public. Benefits to using this dataset include its statistical representativeness and the inclusion of populations that are often hard to assess (e.g., teens, low-income communities). All of the data are publicly available and references were provided on the slides.

Over 6,000 foods were reported consumed between 2011 and 2014, including the food crops that are being sampled for the Food Safety Project. One limitation is that these foods are eaten in mixed dishes, which the survey does capture to some extent. However, NHANES no longer releases regional data which means that Californians cannot be differentiated from the national population.

Dr. Petersen said she started with the latest survey data available in a usable format and then pulled data in reverse chronological order to obtain roughly 15,000 individual responses, which provided two complete days of dietary recalls. She explained that she reviewed USDA's Food and Nutrient Database for Dietary Studies from 2013-2014 and 2011-2012, which translates the NHANES food as consumed through its ingredients, to the commodities of interest the Panel is addressing (e.g. almonds, citrus fruit, garlic, grapes). She also looked at data on carrots, which were previously planted in the sample areas but were not planted during the latest period of sampling in 2017 and 2018. She excluded several items from her analysis:

- Codes for which the ingredient of interest was less than 1% (e.g. almond extract in a cake);
- Commercial baby food codes (because they tend to be very small serving sizes and she did not want to force the per user estimates lower unnecessarily).

She commented that the exclusion of this data is an arbitrary decision, but one that many people who use the database also make since baby food tends to be processed differently than other foods.

Using two-day average estimates, she calculated a per capita and per user consumption estimate. Her calculation included the whole U.S. population. Per user means they consumed the ingredient on at least one of the two days. The consumption estimates were presented in grams per day (how much is

consumed when people eat the food) as well as grams per kilogram bodyweight per day (amount of food consumed relative to bodyweight). She commented that bodyweight data used is from the individual's survey response on their actual body weight, and is not an average body weight.

Dr. Petersen explained that the per capita estimate is broadly used to look at food consumption patterns for longer term patterns of exposure (e.g. cancer). The FDA uses 90th percentile calculations for short-term exposure analysis (e.g. contaminants). Consumption estimate data can be matched with the toxicity profiles for the produced water-related compounds of interest to gain a better understanding of potential risk of exposure.

She shared a table of results for foods analyzed thus far (almonds, carrots, citrus, garlic, and grapes). The data in the column titled "N user" reflects the number of people (out of 15,000) who reported eating the food on one of the two days. Her calculations estimate that at the 90th percentile, people consume a little over a gram per day when eating almonds. For citrus, people consume almost half a pound at the 90th percentile. She commented that it is more challenging to establish a framework for the gram per kilogram bodyweight per day consumption patterns, but those data are helpful to use in comparison with toxicology profiles.

In terms of using this information to inform the Food Safety Project, Dr. Petersen commented that one option is to multiply the consumption data by the results of the crop sampling for constituents of concern to look at the toxicological implications. It is possible to use the 90th percentile data (as a "high exposure/worst case scenario") to determine whether or not there is any real risk. She suggested an initial approach could be a scoping project to determine if there are any food products of interest to move forward on.

Questions and Comments from the Panel

- With regard to the data on consumption of almonds per capita – why is the consumption estimate lower in the 90th percentile than the mean consumption estimate?
 - Dr. Petersen: Almonds show highly skewed consumption data. At the 90th percentile the data show 1.2 g/day; at the 95th percentile it is 6.5 g/day, and at the 99th it is 34 g/day. Calculating the mean and 90th on a per capita basis can be difficult, but it is valid at a per user level.
- Can you further explain why you chose to use the 90th percentile?
 - Dr. Petersen: The FDA uses the 90th percentile as an upper limit when they look at contaminants and food additives. Above the 90th percentile, there is a lot of variability in the data. The reliability of the data is better within the 90th percentile.
- This data is important for the project – we need to have risk exposure data in order to complete a risk assessment. These estimates are helpful in determining if there is any risk with regard to the contaminant levels. There is more work to be done, but this is the right direction.
- Is 15,000 a standard number for this type of analysis?
 - Dr. Petersen: 15,000 is rule of thumb for me. I like to have at least a 100 individuals and using that number usually captures food consumption pattern changes over time.

Public Comment

Mr. Ceppos asked for members of the public to comment. There were none.

Update - 2017 Crop Sampling Results & 2018 Sampling

Memorandum of Understanding (MOU) Update

Clay Rodgers, Regional Board, provided an update on the implementation of the MOU. The primary task of the MOU signatories and Regional Board was to secure a contractor to perform crop sampling for 2018, and complete the literature review and toxicological assessment. The environmental engineering and risk management firm GSI Environmental, Inc. was presented to the Regional Board as a potential consultant to do the work.

Regional Board management reviewed the proposed consultants under a short time frame (in order to obtain samples during citrus season). The primary criteria used to review the proposed consultant related to qualifications and integrity with regard to the potential for bias. Mr. Rodgers commented there was an earlier applicant that was put forward but the Regional Board expressed reservations about said applicant. The Regional Board found GSI Environmental, Inc. to be well qualified and unbiased in their approach. Mr. Rodgers said the principal for GSI, Dr. Rob Scofield, has been involved with recent sampling conducted by Regional Board staff and Dr. Stringfellow.

Introduction and Presentation from Dr. Rob Scofield, GSI Environmental

Dr. Rob Scofield, GSI Environmental, introduced himself and provided a short presentation. He said he was honored to have been selected to do this important and interesting work. GSI is an engineering and science consulting firm with a research and development component. GSI has worked closely with the U.S. Department of Defense (among others) on environmental issues, research projects, and software development. The company has 100 employees with office locations in Houston, Austin, Irvine, and Oakland.

Dr. Scofield reviewed his position as the principal at the GSI office in Oakland and highlighted his previous work experience and qualifications in toxicology and human health, including risk-based approaches for petroleum, risk-based corrective action approaches, groundwater remediation, hydrocarbon clean up, and air toxics. He also reviewed the scope of work for GSI, which involves three tasks:

- Task 1: Selection of Chemicals of Interest for Further Evaluation
 - Objective: Identify and create a list of chemicals of interest for further evaluation. This task will be updated to add in the oilfield additive constituents (from AB 1328). Key to this task is the criteria for prioritization.
- Task 2: Literature Review for Produced Water Reuse in Agriculture – this involves the cataloging of factors related to health risks for constituents of concern.
- Task 3: Food Crop Sampling Analysis
 - Objectives: Collect samples and deliver to the lab; review lab results and provide written report.

He reviewed the staff assigned to the project, which include specialists in public health, database analysis, and experts in developing analytical methods for oilfield constituents. He commented that others on the GSI team, especially across the nation and in Texas, have also worked on issues related to oilfields and produced water. With regard to objectivity, Dr. Scofield said his team has a traditional approach: the clear separation of risk assessment and risk management. The team will share the science

and assumptions of the work, but leave the management decisions up to those who have the authority and responsibility to do so. GSI is responsible for the analysis, but not the results.

Questions from the Panel

- What is the plan with regard to the implementation and completion of the tasks?
 - Mr. Rodgers: The Regional Board issued technical information orders to the oilfield chemical suppliers that sell products to the companies who generate produced water. Under the new legislation (Assembly Bill 1328), the Board can now collect trade secreted information and have a pathway to know all of the chemicals being supplied. We just recently posted (on the project webpage) a list of over 260 chemicals that are being used by at least one of the companies supplying produced water. We are close to finalizing the list of chemicals of interest, now that we have this additional data. It has taken longer to generate the list than expected given supply chain dynamics within the oilfield sector. We have had to follow the supply chain to the primary sources and follow up with each with an order to supply information to the Regional Board. We cannot share who is using which compound, which compound is in which product, and how much of the compound (the mass) is in the product. Now that we have this information, we can move forward on Tasks 1 and 2. The Regional Board is working with David Ansolabehere, Cawelo Water District, to make sure agreements are in place to complete that work. We are holding some of the citrus samples from March 2018 to potentially analyze with the list of new compounds, assuming we have appropriate analytical methods.
- Regarding chemical information disclosed under the 13267 orders that were issued in 2016, about 55% of the compounds disclosed at that time did not include Chemical Abstracts Service Registry Numbers (CASRN). What is the timeframe associated with the date obtained under AB 1328? Is it different from the timeframe for 13267 disclosures? Oilfields are dynamic and processes change. How is the work that GSI will do, to take this dynamism into account?
 - Mr. Rodgers: The AB 1328 orders asked for a complete listing going back 2 years (which is a slight overlap with the 13267 orders). Going forward, the products being used have to be reported to the Regional Board periodically. We will be looking at what chemicals are being added and we will ask if new products are being used. We will have to address this moving forward.
 - Dr. Scofield: In the literature review, we may want to use analytical methods for similar chemicals being used. There are major differences between analyzing fruit versus water, and we will address this.
 - Action item: Dr. Scofield will check with labs about the analytical methods they are using and how to deal with tentatively identified compounds (TICs).
- Dr. Stringfellow commented that he will work with GSI to link the work they will do with the work that has already been done and that he will document this discussion for a future panel update

Public Comment

- Keith Nakatani, Clean Water Action.
 - With regard to the lack of CASRN, how will that be addressed?

- Panel member comment: Of the list of chemicals disclosed under AB 1328, 94% also have associated CASRN, which is a major improvement from the last round. Only 60% had a corresponding CASRN during the round of 13267 orders on disclosure.
- Follow up question: Are you satisfied with the situation regarding CASRN disclosure?
 - Panel member comment: Ideally we have CASRN for 100% of the chemicals on the list, but this is an improvement. Would like more information on mass and frequency of use, but that is difficult with the trade secret constraints.
- Mr. Rodgers: The Order sent by the Regional Board required the inclusion of CASRN, so we will follow up for those that are not listed, since those are in violation of the Order. The list is a work in progress.

Several Panel members commented that for some of the items listed - almonds hulls for example – the CASRN does not exist or apply. One Panel member said it would be wise to begin to eliminate items/chemicals from the list that do not pose a real risk in order to hone in on the ones that are important. Mr. Rodgers said that for items such as almond shells or walnuts for filter media, there is no CASRN to identify. However, the Regional Board will follow up when it finds there is missing information for items that should have a CASRN.

Update from Regional Board on Winter Citrus Sampling

Rebecca Asami, Regional Board, gave an update on the sampling efforts. The Regional Board's Science Advisor (Dr. Stringfellow) has developed reports from the 2017 sampling events, which have been discussed at previous meetings. Those reports are currently being reviewed and will be shared with the Panel and posted on the project web page. Board staff have been working to finalize field notes taken during sampling events which will also be posted to the web page once completed.

Another round of sampling began in March 2018. Citrus samples were taken from treated and control sites, including mandarins, lemons, and navel oranges. Samples were taken by a third-party sampling team with Regional Board staff present. Those samples were relinquished to Regional Board staff and submitted to Weck Labs under chain of custody. Weck Labs is currently analyzing the winter citrus samples.

Under Regional Board staff direction, extra samples were taken from each site during the sampling event. This was done to ensure adequate samples exist for potential additional analysis for constituents disclosed under 13267 Orders to dischargers and suppliers to submit information on additives to the Regional Board. To date, Regional Board staff has written approximately 30 Orders, for which the majority of information has been collected.

Going forward, additional sampling will be conducted in later summer and early fall of 2018 and will include pistachios, almonds, garlic, and grapes. Mr. Rodgers added that the Regional Board will review the list of annual crops being planted in areas that are receiving produced water to ensure the right crops are sampled, even if the acreage is small. He commented that after the Regional Board reviews the sampling reports, those will be submitted to the Panel for review, after which it will be shared with

the irrigators, and then made publicly available. He said the Board staff plans to send the report to the Panel within a week with the intent to have the report available publicly within a month.

Public Comments

- Laura Rosenberger Haider (by email): I think the carrot consumption will increase because doctors of Integrative Medicine and Functional Medicine and nutritionists claim that Americans are not eating enough vegetables for optimal health. Grain intake, especially allergenic wheat and corn both with glyphosate herbicide were instructed to be reduced. Many have magnesium deficiency that can be corrected by vegetables. References will be sent later. Nuts were claimed to be healthier sources of oil than processed soybean oil, canola oil, and cottonseed oil. Rice was found to be high in arsenic & and rice protein high in lead especially from China. A new protein source is needed such as nuts.

Update – Food Safety Project

Update on Regional Board Soil Type Analysis

A copy of the presentation is available on the project web page [here](#).

Josh Mahoney, Regional Board, gave an update on Regional Board soil type analysis conducted to date. He reviewed the results of testing for inorganic constituents in crop samples conducted in 2017 and showed a map of sample sites in Cawelo Water District and Kern-Tulare Water District. He reviewed the results of detectable metals in the following crops tested: almonds, citrus, garlic, grape, and pistachio. Of the five inorganic constituents detected at any level, barium and strontium are considered to be constituents of interest with regard to the Regional Board's soil analysis and soil comparison.

There are many potential sources for inorganic constituents in crops, including:

- Herbicides/pesticides
- Fertilizer/nutrient management
- Irrigation water
- Soil classifications (soil types)

Mr. Mahoney reviewed results from water quality testing of irrigation water. Irrigation water sampling shows the highest concentration of barium found in irrigation water does not exceed the maximum contaminant load. Recent sampling results for irrigation water show barium and strontium levels equal to or lower than produced water.

Mr. Mahoney reviewed soil classification maps with crop sample data from treated and control sites superimposed. The results of soil type analyses conducted by Regional Board staff to date indicate there is no correlation between the soil type and crop sample results for barium and strontium. However, there are not enough data points to be statistically significant. The goal of conducting a spatial soil analysis is to generate comparisons between crop samples and soil types to analyze potential trends. The soil analysis is currently on hold given the lack of data points.

Mr. Rodgers commented that since the soil types are highly variable where crops have been sampled for the Food Safety Project, there are not very many data points within one soil type. The Regional Board is examining work completed by Cawelo Water District prior to the Regional Board's involvement in crop

sampling to determine if the Regional Board can use historical sampling data to develop a statistically significant analysis with regard to soil type.

Panel Comments

- Please confirm these results were also presented at the last public meeting in January.
 - Regional Board: Yes.
- It is important to remember the sample sizes are small. It would be helpful to collect more samples if possible. Under the next round of sampling, the number of compounds should expand given the new release of information under AB 1328.
 - Regional Board: For some of the crops, there is not a lot of acreage from which to sample. Also, some crops may not be planted this year or into the future. Additional compounds are being incorporated into the list of constituents of concern.
- What were the levels of statistical significance for the barium and strontium results in the crop sampling?
 - Dr. Stringfellow: 95% statistical significance.
 - Follow up: While barium and strontium were identified as constituents of interest for soil type analysis and comparison, the difference between the levels of barium and strontium detected at treated and control sites are not very compelling at the level of food consumption risk. The data may indicate the levels are different from each other, but those differences do not appear to indicate any risk since they are so low.
 - Regional Board comment: None of the concentrations measured for any of the constituents raised cause for concern.
- Comment from Dr. Scofield: Given the maximum detection level recorded for barium in almonds, an individual would have to eat 7.5 kilos (16.5 lbs) of almonds in one day to get to the reference dose.
- Comment from Dr. Stringfellow: Different groundwater sources are going to have different concentrations of minerals, and there are lot of reasons why there might be differences between fields. Putting these results in context is very important.
- Data released to the public needs clear context so results are not misunderstood.
- The data do not seem to show a very big difference between areas that receive produced water and those that do not.

Public Comment

- Keith Nakatani, Clean Water Action.
 - It sounds like the sample size is small. What is the reason for the small sample size? What is the desired sample size for defensibility? Is this new work, where there are not standards?
 - Dr. Stringfellow: Sample size is not a concern from my point of view, but it can be further addressed. There is comprehensive coverage of the areas in the sampling approach. The results thus far suggest we are in a good sample range. There are reference protocols for pesticide drift which we also looked at to inform the sampling approach. The cost to sample is only one aspect – the availability of crops to sample also plays a big role in determining sample size.
 - Regional Board: Since planted acreage is limited and diminishing, it is difficult to get spatial variability with garlic. We are also building robustness as we sample

over multiple years and add data points. The goal is to have technically sound and defensible data. Funding is not the deciding factor here. We have assembled our team and experts to guide this effort.

- Do Panel members have an opinion on the sample size?
 - Panel member response: There is no smoking gun with the current samples with regard to results for organic compounds. The results show levels that are at orders of magnitude smaller than the toxicological reference doses, which are in and of themselves conservative. Given the data we have, there are no glaring issues or red flags. It is possible the situation may shift with new information from the additional list of compounds.

Update – Report of Waste Discharge Received (RWD): Potential Future Waste Discharge Requirements (WDRs) for Food Safety Related Discharge

A copy of the presentation is available on the project web page [here](#).

Clay Rodgers, Regional Board, provided an overview of two proposed projects related to produced water. The Regional Board has received an application for a report of waste discharge and staff is working on WDRs that would go to consideration by the Board later this year. The Regional Board will be coming to the Panel for comment on these proposals.

The first project involves E&B Natural Resources (oil operator) and Sherwood Hills Water District. Mr. Rodgers showed a map of the proposed project, which includes proposed farmland. The project proposes phasing in approximately 4,500 acres of cropland (citrus, grapes, nuts, silage, and grain). The proposed discharge of produced water is 9,400 acre feet per year. This represents a 25% increase in the volume of produced water used for agricultural crops, and the acreage is not as high as compared to other sites using produced water. The quality of the produced water coming from the Poso Creek oil field is very high and shows higher water quality than some of the other existing produced water suppliers (e.g. Chevron, Valley Water). The project does not propose blending the produced water with other sources, which is different from the other projects the Regional Board has reviewed. The Regional Board is in the process of obtaining additional information from E&B Natural Resources with regard to chemical additive use.

Mr. Rodgers provided an overview of the second proposed project, which is an expansion of existing discharge of produced water. This project involves the oil operator Hathaway, LLC, Kern-Tulare Water District, and Jasmin Ranchos Mutual Water Company. Mr. Rodgers showed a map of the oil production facility in Jasmin oil field and the surrounding reservoirs. The project proposes a small increase in the amount of acre feet discharged per year (i.e. only a 10-15% increase in total amount of water). It includes construction of a new storage reservoir to hold water for a period of time for irrigation use. This project does not propose a significant change in the source of the water from what is currently being used.

Mr. Rodgers highlighted that Regional Board staff is interested in Panel member perspectives on whether it is preferable to blend the produced water with irrigation water. The Regional Board will

provide additional updates on these proposals to the Panel in July, with potential Board review in August.

Panel Comment

- Does the oil operator have technology to treat the water before it is discharged?
 - Regional Board: Our current understanding is yes. We are getting more information about the other potential chemicals used by the company.
- Is this a new water district?
 - Regional Board: No. Sherwood Valley Water District is a very small district owned by a family. Not all of it is under agricultural production. It is in an area with limited water resources.
- Regarding the quality of other groundwater sources blended at Kern or Cawelo Water Districts, there is some variability. In wetter and drier years, it is blended more. The blending hedges against some items for which we may have incomplete toxicological information. With this proposal, a lot of the information needs to be collected. There needs to be an informed monitoring approach. Treatment, filtration, oil/water separation are all key discussion points.
- There is a potential research opportunity here to observe changes over time, given that the land has not received produced water before. There may be an opportunity to address some of the longer term concerns that have come up in Panel discussions.
- It is important to understand all of the factors and to develop a robust and defensible monitoring program. More information and data is needed for further discussion by the Panel.
- Does the Regional Board have reason to expect that more projects will be submitted for review now that the Sustainable Groundwater Management Act is being implemented and people are needing to address groundwater overdraft issues?
 - Regional Board: We expect these project proposals to increase, since there will be a desire to use water of appropriate quality for agricultural and groundwater recharge purposes.

Regional Board staff commented that the proposed amount of discharge of produced water on the crop acreage is not enough to support the proposed crops. It is likely that there will need to be other water sources for the project, but detailed information is not yet available. The Regional Board understands the safety factor with dilution.

Public comments

There were none.

General Public Comment

Mr. Ceppos asked for general public comment from members of the audience.

- David Brawn. Thank you panelists for your involvement in this project. It seems like conclusions have been made that this is a safe process despite lack of information on all potential chemicals in the water. Could the Regional Board please clarify the process thus far regarding testing of constituents and further explain AB 1328?
 - Regional Board: We have been testing the water for a variety of constituents, including volatile and semi-volatile compounds, and metals that are commonly analyzed by labs and in environmental studies. These are constituents that potentially pose significant

impacts to air and water resources. The process has been to identify all the chemicals being used by the oil companies that could potentially be in the water. The new legislation—AB 1328, signed in fall 2017—gave the Regional Board the authority to get information from chemical suppliers that sell to the oil producers and dischargers. The Regional Board has issued orders to the suppliers to obtain information on all the chemicals they have been using, including inert materials, to get a complete listing of compounds.

- Follow up comment: I heard a Panel member state there is “no smoking gun” with regard to the list of chemicals being tested—does that perspective take into account the incomplete review of constituents before AB 1328?
 - The Panel member made it clear that his comment was in relation to the short list of inorganic analytes.
- Follow up comment: If someone was just listening in without context, some of the statements might be misconstrued. I suggest that we consume the fruit we are talking about in the room and drink the water we are talking about. People are very concerned about knowing exactly what is going on with the food and affecting their bodies. When we are proposing at looking at a new field or project, it is important to not just share the location, but the chemical constituents being used. I understand the oil industry’s right to use chemicals, but when it crosses over to impacts on consumption of food by people, we should know the amounts of chemicals being applied. There is an incredible responsibility to know what is going into the water and how much.
- Regional Board: The current monitoring goes far beyond the selected constituents that were discussed today. There is a process for evaluating the list of additional constituents that are being identified as a result of AB 1328 and Regional Board orders. The additional constituents are evaluated for their potential impact on health, and from the large list we narrow in on the primary constituents of concern. The Regional Board looks to the Expert Panel to provide input on key concerns. The Regional Board has not concluded the project yet, and we continue to look at emerging constituents and identify what might merit ongoing study.

Closing

Mr. Ceppos commented that the Regional Board will continue to make sure presentations and meeting materials are posted in advance as per continued requests from the public to improve this timeliness. The next public meeting is July 25 in Rancho Cordova. There may also be periodic internal working meetings of the Panel over the next few months. Mr. Ceppos thanked participants for attending and adjourned the meeting at 2:30 pm.