

Central Valley Regional Water Quality Control Board

Roundtable Meeting Summary FOOD SAFETY EXPERT PANEL

January 19, 2017

9:00 a.m. to 2:00 p.m.

Central Valley Water Board – Training Room
11020 Sun Center Drive, Suite 200
Rancho Cordova, CA 95670-6114

Attendees

Panel Member	Title & Affiliation
Patrick Kennelly	Chief, Food Safety Section, California Department of Public Health-Food and Drug Branch (CDPH-FDB)
Dr. Stephen Beam	Branch Chief, California Department of Food Agriculture (CDFA)
Dr. Andrew Gordus	Staff Toxicologist, Department of Fish and Wildlife (DFW)
Dr. Gabrielle Ludwig	Associate Director, Environmental Affairs - Almond Board
Dr. Seth Shonkoff (by phone)	Executive Director, PSE Healthy Energy; Visiting Scholar, Environmental Science, Policy and Management, UC Berkeley; Affiliate, Lawrence Berkeley National Laboratory, Energy Technologies Area
Dr. Barbara Petersen	Principal Scientist, Chemical Regulation and Food Safety, Exponent
Dr. Bruce Macler	Toxicologist, U.S. Environmental Protection Agency (EPA)
Dr. William Stringfellow (by phone)	Professor, University of the Pacific—Stockton Director, Lawrence Berkeley National Laboratory, Environmental Measurements Laboratory
Affiliated Parties	Title & Affiliation
Denise Kadara	Vice-Chair, Central Valley Regional Water Quality Control Board (Central Valley RWQCB)
Dr. Karl Longley	Chair, Central Valley RWQCB
Clay Rodgers	Assistance Executive Officer, Central Valley RWQCB
W. Dale Harvey	Supervising Engineer, Central Valley RWQCB
Josh Mahoney	Water Resource Control Engineer, Central Valley RWQCB
Rebecca T. Asami	Engineering-Geologist, Central Valley RWQCB
Dave Ceppos	Associate Director, Center for Collaborative Policy (CCP)
Alex Cole-Weiss	Assistant Facilitator, CCP

Note: Panel member Mark Jones was unable to attend.

Introductions and Agenda Review

CCP facilitator Dave Ceppos opened the meeting with introductions from Food Safety Expert Panel (Panel) members, Water Board staff, and CCP staff. He reviewed the agenda and asked for any additional items. Water Board staff expressed interest to have the Panel discuss an idea to conduct an epidemiological study associated with the use of petroleum production water by agriculture. Mr. Ceppos suggested adding this discussion to the proposed sampling approach agenda item and the group concurred.

External Panel Communications Update and Discussion

Mr. Ceppos explained he was contacted by freelance journalist, Justin Bass, for an interview. Mr. Ceppos accepted and conducted the interview on November 22, 2016. In the course of the interview and general conversation, Mr. Bass communicated several suggestions and comments that he requested be shared with the Panel. In executing his due diligence to the public process, Mr. Ceppos wrote a short memo documenting the comments he received from Mr. Bass, which was circulated to the Panel before the start of the meeting. Mr. Ceppos requested the memo be posted to the Food Safety Panel website as part of the public record.

Other Panel members also mentioned they had been contacted by Mr. Bass, explaining they had referred him to speak with press contacts for their organizations or to the Water Board. One Panel member requested suggestions for handling interviews.

Mr. Ceppos suggested this might be something to address in the Panel Charter, which is scheduled to be revised by CCP and provided in revised draft form to the Panel at the next meeting.

Water Board staff explained Panel members are free to exercise discretion in regards to communicating with the press. They requested Panel members please notify the Water Board about press communications given certain reporting requirements. Additionally, the Water Board requested Panel members communicate the tenor of the conversation as a courtesy to the Board to keep them apprised of potential issues. Water Board staff reminded Panel members that being on the Panel is a matter of public record, but emphasized that external conversations are Panel members' decisions and members are under no obligation to disclose their communications.

Water Board staff mentioned they have been contacted by Mr. Bass. One Panel member advised discretion in communicating with the press, noting however there are journalists who are doing excellent work.

Review of October Public Meeting

Mr. Ceppos informed the Panel the previous meeting summaries were still being revised due to contracting issues that prohibited CCP from working on the project out of contract, but would be distributed soon. He emphasized the Panel will receive all future meeting notes within ten days, with action items to be sent out within a few days of each meeting. Mr. Ceppos then asked if there were any comments about the October public meeting. There were none.

Proposed Sampling Approach

Note: Hard copies of the following documents were distributed to Panel members in the room.

- Water Board communication memo to operators and producers regarding the timeline for completing the Memorandum of Understanding
- Preliminary draft outline from CSU Fresno researcher Dr. Florence Cassel titled "Contaminant accumulation assay in citrus irrigated with oil field produced water: Protocol Development"
- Draft Scope of Work for Tasks 1 and 2 (developed by Panel member Mark Jones)

Mr. Ceppos asked Mr. Clay Rodgers, Water Board Assistant Executive Officer, to provide an update to the Panel on Water Board discussions with operators and water districts, State and Federal Agencies, and researchers regarding the proposed sampling approach.

Update on Memorandum of Understanding (MOU) Progress with Producers and Operators

Mr. Rodgers reminded the Panel in August they had discussed six tasks for the Panel to address, Task 1 being a literature review for the chemicals of interest, and Task 2 being a hazard assessment of chemicals used by oil companies. Mr. Rodgers said Water Board staff was in communication with producers and operators using the water about the work that needs to be done, and work that will be funded by the producers and operators. However, since there is a need for transparency in the process, the State will exercise technical control over the project.

Mr. Rodgers said the Water Board is attempting to secure a MOU between 18-20 entities and the Board, but that the process has lagged, partly since the Water Board is adding another task to the MOU that addresses produce testing protocols.

He explained that Cawelo Water District (District) had already completed some produce testing, and while people in the State approved of the produce testing, many agreed it should not be done by producers and operators and the State should assume oversight and control moving forward. The Water Board is working with their attorney and a technical person from Chevron to figure out how to share costs in regards to adding a task to address produce testing. Mr. Rodgers noted there has been a lot of discussion on cost sharing responsibilities amongst the parties, and the legal details of the MOU language.

Given the time pressure for executing the project, the Water Board Executive Officer sent a letter dated January 18 notifying the group of operators and producers of a February 15 deadline for completing and signing the MOU. The letter states that if the MOU is not in place by that point, Water Board will issue orders. Mr. Rodgers noted the letter was addressed to Abigale Auffant (Chevron) and David Ansolabehere (District), but the orders would apply to all producers and operators using produced water.

Comment: The deadline reads incorrectly; the Board should send a revised letter with the correct date for the record.

Question: Is the intention that the studies will be done with a contract or will State labs get involved?

Response: The intention is for studies to be done through a contract. The vision is that oil companies will have the contract and pay for it, but with Water Board and Panel input. Ultimately the contract will be executed to the Board and Panel's satisfaction. There is a precedent to this type of contract in the Division of Water Rights, wherein the dischargers pay the bills, but the State oversees improvement and approval of the work.

Question: How will this contract work?

Response: The Water Board will develop and approve the study design. All changes to a Scope of Work and work plan will have to be approved. Ideally the State would reserve technical control over the project. However, a contractor must be chosen and both sides prefer to retain right of refusal.

Follow-up question: Is there a possibility to pick the contractor together?

Response: From Mr. Rogers' perspective, either way is acceptable if there is a competent and sound approach moving forward, and if the contractor does not have a predetermined idea of what the results should be.

Mr. Ceppos reminded the Panel of the potential need to ask Dr. Stringfellow and Dr. Shonkoff to recuse themselves in the event of the conversation leading to a discussion of Scope of Work details for a future sampling-related contract. He explained Water Board staff had reached out to these two members to let them know this was a possibility. Mr. Ceppos then asked Mr. Rodgers to continue.

Update on Shift in Produce Testing Oversight and Protocol Development

Mr. Rodgers said the Water Board received direction that the State will take over sampling of produce, and that this will be done as soon as possible. However, there is a need to develop sampling and analysis protocols and to address many questions, such as where to sample, how large of a sample size is defensible, and which produce to sample. The Water Board would like to have a work plan to set up a sound scientific study. The Board needs to be in a defensible position in regards to the sampling, and while there is a need to move quickly, it is crucial to move in an orderly, progressive fashion. Mr. Rodgers explained the Water Board wants to hire someone to develop the sampling protocol using contracting funds from the oilfield program. The Board has approximately two hundred thousand dollars to put towards protocol development.

Question: Please clarify—in regards to the State taking over the fruit sampling, I originally thought that there was a State agency that wanted to jump in. Is that so?

Response: In these types of situations, civil servants are always consulted first. However, there is no State agency currently available to do this work. Therefore, we will proceed with a contract to set up a study to determine what produce needs to be sampled. This will hopefully be paired with the analyses being done on the produced water, and could include soil sampling. First we will develop the sampling protocol plan, and then put a separate contract in place to implement that plan. There are advantages in having the same entity develop and implement the plan, however the State will most likely contract out in two parts. The State is looking at operators and water users to pay for the initial produce sampling study. The Water Board will be including the plan for funding implementation in the MOU.

Question: The two hundred thousand dollars is for the sampling protocol development?

Response: Correct. That amount should be enough to put together a fairly detailed protocol plan.

Mr. Rodgers went on to explain the Water Board reached out to relevant parties about developing the protocol, including Dr. Florence Cassel from California State University, Fresno, who is on a research team with others from California State University, Bakersfield and University of California, Merced. The

team is looking at the uptake of oilfield constituents from produced water in fodder crops. Water Board staff received a draft outline of a produce sampling protocol plan from Dr. Cassel the day before the meeting. The Water Board also spoke with Dr. Stringfellow and Dr. Shonkoff about preparing the plan, which would mean they could not continue to be on the Panel.

Comments:

- The eventual sampling study is going to span from field to lab and there is a need for wide expertise. The work being done by the CSU Fresno research team needs to be evaluated to see if it can be expanded upon with more funding, to look at other crops and use their labs to do the analytical work on a comprehensive project like that we've proposed.
- The Water Board could set up the contract as collaboration with a science advisor, who would confer with Dr. Cassel and others in the field on similar studies and protocols. The science advisor would help generate ideas about what should be done with input from a wide variety of sources. The Panel's role would be to review and provide the context to make the action plan.
- The Panel should generate a set of questions to be answered, which could be included in a Request for Proposals (RFP). Issues related to plant physiology must be included (as is reflected in Dr. Cassel's focus on uptake in fodder crops).

Water Board staff responded with a reminder that any contract must go through the State process. Contracts with some entities, like universities, go through an expedited process, but private contracting can take a year's time. Universities outside of California are also subject to the private contracting process. The funding for the sampling protocol development is only available this fiscal year (until June 30, 2017), and the Board has a concern about the timeline.

Panel members reiterated the need to clarify the questions for the sampling protocol. Mr. Ceppos asked the group for responses to the suggestion that they discuss research questions and any comments about Panel members needing to recuse themselves.

Dr. Shonkoff said he would defer to the Panel and Water Board on the issue, noting that depending on the potential nature of the work, there might be perceived conflicts. Water Board staff emphasized if any member were to be under contract, they could not continue to be on the Panel.

Comments:

- The sampling protocol should not be more complicated than necessary. The key questions are about chemistry and uptake, and sensitivity of the methods. The District's sampling protocol can inform the new protocol, as well as work done on pesticide safety.
- There is more to address in a risk assessment context, which could be done by bringing in a science advisor to lead a team and execute the project.

Mr. Ceppos noted as a point of clarification that sampling protocols, procedures, and approaches are not the same as a risk assessment. He asked Panel members to address what they meant by "field to lab," and if the group was discussing just a sampling approach, or an eco-toxicological risk assessment.

Comment: Risk assessment is a related but separate item from a sampling protocol, although risk-based information is part of a sampling study. "Field to lab" means the study design needs to include approaches that are analytically substantiated. The sampling protocol plan should specify the analytical approaches for assaying fruits, vegetable and other environmental media.

Mr. Ceppos asked the Panel member to clarify if his comment was related to assuring the process is fully defensible.

Response: Yes. Additionally, the protocol should compare results against health based standards to assess where hazards might become risks. This comparison would be broader than a risk assessment.

Comments:

- My original understanding of the protocol was something more limited in scope. Please clarify what the sampling protocol needs to address (from the Water Board's perspective). Is the protocol primarily for the State or is the goal to also satisfy the larger California community? We need to address what level would be desirable. It can be difficult to fund a full risk assessment, but it is important to assess broader risk implications, such as pathways and long-term consequences of the practice.
- The Panel and Water Board needs to decide which questions to answer. Botanical fats (i.e. nuts) can pose difficulties for chemical analysis. It is clear that the Water Board prefers a university partner to contract with to develop the protocol.

Water Board staff emphasized that keeping the protocol simple would be ideal, and suggested the Panel identify the questions and the approach. The Water Board stated that sole sourcing the work with a State entity will be the necessary process moving forward due to time constraints with competitive bids and contract execution, and if that would be a contract with one or more Panel members, they would need to recuse themselves.

Mr. Ceppos outlined a few side boards to consider, including the budget, the obligation date for the funding, and the State's contracting limitations. He raised the issue of scale for the Panel to consider, including how big of a sampling study and who would be involved.

Comments:

- There is a need to engage with the broader scientific community in some form, be that formal peer review or something less formal. Publishing and scrutiny are key issues.
- The sampling protocol plan needs to be robust and defensible, but also generate the sample data quickly for analysis.
- Scale is a perennial issue in this discussion. There is a need to look at present and future issues, but it comes down to addressing if what is currently in the market safe, and using that as a way to look forward.

Water Board staff expressed that their vision of the scope encompasses the whole area currently receiving produced water, includes all the producers and irrigators, and addresses current conditions. If there is a change, for example oil companies change the chemicals they use, that will generate new questions about the appropriate response and if additional work should be done.

Comment: The Panel should anchor any discussions of future conditions in the cases and data that are currently available, such as the body of data on the North Kern and Cawelo Water Districts. In terms of applicability into the future, there is a lot for researchers to discuss about knowns and unknowns.

Question: What is the objective of the Water Board? Is this project about addressing an imminent food safety concern, or is the goal to understand the overall safety of produced water? The design of the protocol and sampling study depends on the scale and objective.

Response: The critical issue is smaller in scope, i.e. what is the safety of the food being consumed, which needs to be answered as far as possible. However, even if tests of current conditions demonstrate the food is safe to eat, there are more questions about future conditions that might be nice to answer. The Water Board looks to the Panel to make recommendations about what should be answered in relation to the main food safety concern. The Water Board wants to know if that is that, the only question we should be asking based on expertise and experience.

Comments:

- Answering if the product is safe to eat requires data, a protocol, a list of products, and a list of chemical constituents. The type of analysis needs to be determined, and the lab or individuals who will perform the analysis. Soil and water tests are part of an ecological risk assessment and should be done with another panel.
- Since the sample size is determined by the amount of funding, the budget is the biggest restriction on scale.
- If the Water Board contracts with a university, the professor is the expert, so there is no reason to form an additional panel of scientific experts under a science advisor.
- Although questions have come in from the public about worker health and safety, this is not the primary task or focus of the Panel. The Panel should stay focused on the primary mission to identify the chemicals of concern, their concentrations, and uptake in the crops.
- After identification of the chemicals, it would be helpful to use the limits the EPA has set to prioritize the analytical budget. The majority of the budget should go towards chemical analysis.

Mr. Ceppos said he heard a preference for a smaller scale study to address the food safety issue. In moving the group on to address questions for a Scope of Work that might lead to an RFP, he asked the Panel if it was necessary to know if Dr. Stringfellow and Dr. Shonkoff would pursue the RFP or not.

Dr. Shonkoff and Dr. Stringfellow asked for further clarification on the focus and scale of the study, asking if the Panel will only address questions about sampling fruit, and if the Water Board will do a full study or simply a monitoring plan. Dr. Stringfellow expressed interested in doing the former, but not the latter.

Question: What will be included in the full scientific study?

Response: The difference is in scale. There are a few scientific mistakes in only focusing on the chemical compounds in fruit. My suggestion would be to take a mass balance approach, including soils and uptake. A more regulatory approach is similar to what the District has done but more thorough.

Question: How is answering what is in the soil, in the plant, going to help with the larger question?

Response: There is a mass of material coming into this system. Chemical concentrations are going to be below drinking water limits but still can accumulate. Examining the soil and the plants addresses accumulation, which could pose a potential risk long-term. In the short term it might look safe, but if the conclusion is about long-term safety of the practice, I would prefer higher level of certitude from a technical point of view.

Comment: There are certain parts of Cawelo Water District that have been irrigated with produced water for decades and others are more recently irrigated. The study design should address those differences in the context of accumulation, and address short vs. long-term risk.

Question: Are you saying there is a need to study crops that have been irrigated for a long time and compare those with crops that have been irrigated for shorter time?

Response: The study does not have to include that, but it would be responsible to do so. It is fine to compare in a binary study design, but examining multiple increased exposures over time can help to arrive at more robust results. Only sampling fruit does not address all the issues.

Comment: Recent testing from the District found Polycyclic Aromatic Hydrocarbons (PAHs) on the fruit from the fields and had chemical compounds associated with produced water, while the control crop did not. These tests do show some evidence of contamination.

Question: Addressing that assertion, can you give more clarity on that attribution?

Response: One of the indicators the District found in the water was a PAH. I believe they found some evidence of associated compounds in or on the fruit. When District staff went back out and wiped down the leaves they did not find anything.

Water Board staff commented in regards to the data; the District said there might have been cross contamination of the nonedible parts of the plant as a result of exposure to diesel fumes. The Panel agreed to have Water Board staff review the data and report back at the subsequent Panel meeting.

Mr. Ceppos asked the group if they were talking about a regulatory sampling plan to answer the food safety question versus a broader question of what is in the soil, water, accumulation, and comparison.

Comments:

- The two can be differentiated as a regulatory versus a scientific study, a difference which comes down to the size of the budget.
- Please clarify what is meant by definition of a regulatory study.
- A regulatory study is testing the fruit and comparing results against regulatory standards.
- Water Board staff observed that any regulatory study must be rooted in good science and did not see why such a differentiation was necessary.
- Data associated with regulatory decision from the EPA is the same as in a scientific study.
- The sampling protocol should definitely address what is present in the edible portions of crops, and should probably go a little further than existing sampling, like in the District, with a possibility to compare areas.

Mr. Ceppos checked with the Panel to see if it was appropriate to move the discussion forward with the participation of Dr. Stringfellow and Dr. Shonkoff. Dr. Stringfellow stated he was not interested in pursuing the project as outlined. Water Board staff commented that conflict of interest arises upon selection to do the research, and a Panel member added that from a State agency perspective, potential partners cannot participate in the development of the Scope of Work (SOW). The Panel agreed to limit discussion to the development of questions and to address the SOW/RFP language at a later date.

Discussion of Key Food Safety Research Questions

Mr. Ceppos asked Panel members to generate a list of questions for the overall sampling protocol to address; he asked the members to qualify their questions as “need to know” or “want to know.” Background information and questions were also listed.

- Need to know
 - Is the food safe to consume by humans? (Adulterated levels measured against existing standards)
 - Are the constituents attributable to the produced water accumulating in soils?
 - Given the known list of chemicals, do we have analytical methods for food (edible parts) and water?
 - Are all oilfield constituents being tested for?
 - What are the levels of constituents of concern in the edible parts of the crops of interest? (should reflect expected likely sources in sample sets)
 - Are there effective barriers in place to prevent contamination of the edible parts of the crop?
- Want to know
 - Are produced water constituents of concern detectable in water at the point of irrigation of crops of interests?
 - Do perennial crops incur bioaccumulation in the plant material?
- Background Information needed
 - Detailed maps of which crops are grown where, and how they are being irrigated
 - Geographic data on application and duration of produced water or lack thereof
 - Quality of other irrigated water
 - Does applied water migrate?
 - Define source attribution in conjunctive use system (i.e. what percentage of irrigated water is produced water at any given time in a particular geographic area?)
 - What are the soil types associated with tested crops?

Comments:

- Safe is determined by adulteration standard and does not mean there is no presence of chemicals, but that they do not rise above certain levels. Measured against existing standards.
- Testing for all oilfield constituents and/or compound groups is required now.
- Initial analysis on some of the data has shown that it can be difficult to figure out what all the compounds are.
- Chevron and the District are running analysis for whole compound groups for some of the compounds that are protected under trade secret status.
- Dilution and natural remediation are examples of barriers to contamination, and there might be other active treatments for effective remediation. For example, compounds enter the soil but are not taken up. There is a need to understand more about the chemicals, and whether there are a few compounds known to accumulate.
- Since the produced water has been used on crops for a while, testing the fruit may be a good indication of the efficacy of accumulation barriers.
- The sample protocol should outline where the samples are collected from—have to be careful about older fields versus newer fields.
- In regards to irrigation, the majority of crops are permanent crops and are irrigated with micro-sprinklers, and if rotational crops, mostly are subsurface drip.
- The District is a conjunctive use system and it will be very difficult to figure out which water is going where at what time.
- Clarifying note: water migration is likely of concern to organic farmers.
- Currently there is no testing for compounds at the point of application of the produced water.

- In regards to accumulation in annual crops: depending on the part of the plant consumed and the time frame, there would most likely be very little opportunity for accumulation. However, if certain parts of annual crops do experience accumulation and then are reincorporated into the soil there could be continued uptake. Anything that would show up in an annual crop would most likely show up in the soil first.
- It is important to consider the worst case situation, and if that worst case is demonstrated to have no impact, then that is good.

Question: In regards to examining the potential fruit sample, are we talking about average fruit consumed or most exposed fruit?

Response: Those are detailed questions that a chemical risk assessment will address. It is standard procedure to determine which percentile to analyze on the exposure side for risk assessment, and typically it is towards the high end of realistic exposure. Another aspect of exposure in food is how much is eaten. In the realm of pesticide exposure research, there are data collection methods to track food intake.

Question: Does the Water Board expect to encounter resistance from farmers' in terms of proprietary information?

Response: Yes, but we have some ability to respond with orders.

A Panel member raised the possibility of putting the study out for review by external reviewers. Water Board staff mentioned they have started the process for State peer review of the District's data and report, which typically takes about thirty days. The Water Board hopes to have those reviews in a few months and may need to follow up with Panel members to speed it along.

Discussion of Epidemiological Questions and/or Study

Mr. Rodgers explained that a question has been asked about whether an epidemiological study would be of benefit and asked the Panel to provide some guidance as to whether this is an appropriate step. The Water Board recognizes that crops are widely distributed. They noted there is the potential for greater consumption of fruit at the local level or amongst field worker populations. There might be a small community that conceivably is consuming more of the crops than average. There would be some value to do a study, especially since the Board continues to receive questions about occupational health and safety, questions about workers, which are not within the sphere of the Water Board's responsibility.

Question: Would the study focus on the eventual health outcome?

Response: Yes, eventual health outcome would be the focus. There is always a question of how far to look.

Comments:

- There are potential analogies to this situation, for example the EPA looks at subsistence fishers, who consume fish at a higher rate than the average population.
- It would be interesting to set up a few studies, but the health endpoint would have to be carefully identified, especially in working with disadvantaged communities.
- It is very hard to do an epidemiological study and parse out correlation versus causation.
- It is difficult to adequately assess the field worker population, which is often migratory and reluctant to release health information. Other potential variables include drinking water quality

and exposure to dust, and it would be difficult to know if a certain outcome was directly related to food crop intake.

- It is premature to move forward with anything now, since the levels and risks of exposure are unknown. The first step is to establish exposure and risk of exposure. A traditional chemical pathway study would help establish if there is anything to be concerned about.

Water Board recognized the Panel's recommendation to consider an epidemiological study as a secondary step if there were issues of concern following produce sampling analysis.

Funding and Schedule for Sampling

Water Board staff reminded the group of Dr. Stringfellow and Dr. Shonkoff's list of constituents of concern and asked if there was a plan to revisit that list, given the work they did to put together a preliminary hazard assessment report. It was clarified that the draft SOW put together by Panel member Mark Jones for Task 1 and 2 built off that list and report, and suggestions from Panel members. Water Board staff explained producers and operators partnering in the MOU want a clearer SOW.

Question: What is the status of Task 1 & 2?

Response: The Water Board communicated to the producers and operators that those are two tasks they need to fund, but the SOW needs revisions and additions.

Mr. Ceppos suggested the Panel review and consolidate the new list of questions generated by the Panel, the outline of Task 1 and 2 put together by Panel member Mark Jones, and Dr. Cassel's protocol proposal. Mr. Ceppos asked if the Board would go back to Dr. Cassel for a full protocol. The Board responded potentially yes, if there was a good solid plan.

Comment:

- The Water Board needs to have the study protocol and identify who will implement. The Panel should develop and/or review the study plan. The existing plan drafted by Dr. Cassel looks good - other crops are easily added.
- The study protocol should probably be a twenty-five-page plan with a background, questions, methods, and analysis section.

Water Board staff reviewed the three tasks the Panel is working on: Task 1, Selection of Chemicals for Further Evaluation, Task 2, Literature Review, and Task 3, Testing Protocol. The Board asked the Panel if Tasks 1 and 2 need to come before Task 3. Water Board staff noted the importance of collecting citrus samples this season.

Comments:

- It is possible to develop a protocol for fruit samples to be tested at a later date, or could collect now to preserve for analysis.
- Dr. Cassel's sampling proposal is a good start. The Panel should look at a more detailed plan to suggest changes and raise particular questions.
- The Water Board should focus on the capacity of contract partners to conduct chemical analysis and prioritize analysis in the budget.

Mr. Ceppos suggested CCP support the Panel to chart a critical path forward to meet the fiscal deadline. He also recommended the Water Board relay the expedited nature of the project to Dr. Cassel. Panel

members expressed their support for the initial draft from Dr. Cassel, and suggested the Board share the preliminary hazard report with her to review and incorporate. The Water Board clarified there will be a different process for selecting who would implement the protocol.

Question: Will the protocol be open to public review and comment? Are the operators and producers (i.e. funders of the study) going to be allowed to review and comment?

Response: The protocol is a public document, so the Water Board will hold a public meeting for review. The Board may also invite producers and operators to a meeting, public or otherwise.

Question: Knowing that we want something more detailed, what is the value of submitting comments on the current version of Dr. Cassel's proposal?

Discussion and Response: Panel members expressed interest in reviewing the proposal, and refining the primary research questions. Members also suggested working in pieces of the draft SOW on Task 1 and 2 to Dr. Cassel's proposal.

Water Board staff emphasized the need for strong technical and scientific justification of chosen samples and chemicals.

Short and Long Term Panel Schedule

Mr. Ceppos noted the spring schedule will need to be revisited in light of research protocol proposals and the development of the critical path.

Next Steps and Action Items

Action Items

- **CCP** to distribute Food Safety Expert Panel (Panel) roster to members by 5 pm Friday, 20 January 2017.
 - **CCP** to send out Facilitator cell phone numbers by 5 pm Friday, 20 January 2017.
 - **CCP** to confirm the availability of electronic versions of the following documents and distribute to Panel.
 - o Draft Scope of Work (prepared by Panel member Mark Jones)—Tasks 1 and 2
 - o Draft Protocol Development from Dr. Florence Cassel
 - o Water Board letter to operators and producers regarding MOU deadline
 - o Draft research questions prepared by Panel during the roundtable meeting to consider for sampling protocol
 - **Panel members** to review and provide comment on the following documents by 5 pm Thursday February 2. Send comments to CCP and Water Board Staff.
 - o Draft Scope of Work—Tasks 1 and 2
 - o Draft Protocol Development from Dr. Florence Cassel
 - o Draft research questions to consider for sampling protocol
- *Note: Panel members should use Word Track Changes or Adobe PDF comment tool and rename edited document to include member initials. Example: Existingfilename (ab).docx
- **Water Board staff** to consolidate Panel comments on draft Scope of Work, Protocol Development, and Research Questions to inform next steps on developing sample protocol.

- **CCP** to prepare draft critical path for sampling protocol contract development and execution, and associated Panel meetings and Panel public meetings by the end of next week.
- **CCP** to work with Water Board to revise Panel Charter and circulate to Panel in advance of next meeting.
- **Water Board Staff** to review Cawelo Water District data regarding PAH level in fruit and report back to Panel at next meeting.
- **Water Board staff** to circulate draft peer review request document for comment by the Panel (upon draft completion).
- **Water Board staff** to share report by Dr. Stringfellow and Dr. Shonkoff regarding chemicals of concern with Dr. Cassel in advance of meeting with her to discuss protocol revisions.

Recommendations

- The Panel agreed the Water Board should hold off on pursuing an epidemiological study until further information on exposure risk is available and adequately analyzed.
- Water Board staff should send a revised MOU deadline letter with the correct date for the record.