

MEETING
STATE OF CALIFORNIA
OFFICE OF ENVIRONMENTAL HEALTH HAZARD ASSESSMENT
ENVIRONMENTAL CONTAMINANT BIOMONITORING PROGRAM
SCIENTIFIC GUIDANCE PANEL

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Dr. Myrto Petreas, Chief, Environmental Chemistry Branch

ALSO PRESENT

Mr. Davis Baltz, Commonweal

Mr. Jim Douglas, Green Earth Cleaning

Mr. John Dunlap, Dunlap Group

Ms. Cheriell Jensen(via webcast)

Mr. Carlos Peza, The Weinberg Group(via webcast)

Dr. Kathleen Plotzke, Silicones Environmental Health &
Safety Council

Mr. Joe Suchecki, Engine Manufacturers

Dr. Rebecca Sutton, Environmental Working Group(via
webcast)

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1 PROCEEDINGS

2 OEHHA DIRECTOR DENTON: Well, I'd like to wish
3 everyone good morning. And my name is Joan Denton. I'm
4 the Director of OEHHA.

5 I'd like to thank the Panel for being here today
6 in spite of the dreadful weather, traffic, and so forth.

7 I'd also like to welcome those on the webcast and
8 the members and the individuals here who are in the room
9 with us today. This is our meeting of the Science
10 Guidance Panel for Biomonitoring. It's a two-day meeting,
11 today and tomorrow. Today's meeting is obviously in this
12 room. Tomorrow's meeting will be across the street in the
13 old city hall. So for those of you who will be attending
14 tomorrow, it will be over there and it will not be webcast
15 tomorrow.

16 Just again a few logistics that we go over every
17 meeting. The restrooms are -- you can go to the right and
18 go to the end of the hall, and the restrooms are over
19 on -- there are restrooms over on the right hall. And
20 there are also restrooms, if you go to the left, go past
21 the big hearing room, and again make another left at the
22 end of that hall, there are restrooms down there. So
23 there are two locations for restrooms on this floor.

24 I'd like to just take a minute to provide an
25 overview of the last Science Guidance Panel meeting that

1 we had in December and then give you a preview of the
2 meeting today and our expectations and goals for today.

3 At the last meeting, which was held in Sacramento
4 on December 4th and 5th, the focus of the meeting was
5 essentially on study design, laboratory capacity, and
6 designated chemicals.

7 To follow up on that meeting and as we're
8 proceeding through this process, this current meeting
9 today -- the goals of the current meeting -- of the
10 meeting today and tomorrow will be to obtain the Panel's
11 recommendations on potential designated and possible
12 priority chemicals, to continue that discussion; to obtain
13 the Panel's recommendations on the next steps for chemical
14 selection for the Program; and then to consult, especially
15 tomorrow, on the Program planning and particularly the
16 study design for the Program.

17 Today's meeting will be -- is scheduled to be
18 held from ten to five and tomorrow from nine to one.

19 There will be opportunities, as we go through the
20 meeting, for panel discussion and questions and public
21 comment. And if you need a copy of the agenda or any of
22 the overheads, the presentations, they're on the
23 back -- they're at the back table.

24 So with that, again I'd like to thank the Panel
25 members. We're expecting Julia Quint shortly. So Julia

1 should be coming in momentarily.

2 And I'd like to turn the meeting over to Dr.
3 Moreno.

4 CHAIRPERSON MORENO: Thank you, Dr. Denton. And
5 it's our pleasure to serve the Department and the Agency
6 as the Panel members.

7 As Dr. Denton mentioned, we will be learning more
8 today about the chemicals for chemical selection and
9 consideration of chemical designation. We'll also be
10 learning more about the planning and later discussions
11 about study design.

12 I want to let the public know that -- and remind
13 the Panel members that at the end of each presentation, we
14 will be able to ask questions, and then there will be
15 public comment. And then following public comment, Panel
16 members will have an opportunity for further discussion.

17 Now, the manner in which we'll handle the -- can
18 you guys hear me okay?

19 Yeah, the manner in which we're going to handle
20 public comment will be similar to our prior meetings, in
21 which members of the public can fill out comment cards and
22 hand it to staff here in the audience. And those comment
23 cards will be provided to me and we will go through those
24 comment cards at the appropriate time.

25 And people who are watching on the webcast can

1 also provide their comments. And those can be submitted
2 to the Biomonitoring Program email address, which is
3 biomonitoring@oehha.ca.gov. And I will read those
4 comments aloud today.

5 We will be limiting the time for comment. But we
6 will review and assess how many comments are to -- how
7 many people wish to provide a comment and how much we had
8 and divide the time up appropriately.

9 We would ask though that the comments be limited
10 to the presentation and the topic at hand.

11 The materials that the Panel members -- that we
12 have today are in the meeting folders. And they are -- we
13 have handouts available. They're also available on the
14 website for the public to access. And I believe we
15 have -- at the back table, we have one complete folder for
16 public review at today's meeting.

17 We're going to take a couple breaks today. Since
18 we're starting at ten, the first break will be for lunch.
19 And the program -- we'll not be able to provide lunch for
20 the audience today. So feel free to grab lunch. And
21 we'll let you know when we need to come back and to resume
22 the afternoon session.

23 I want to mention that Dr. Asa Bradman will not
24 be joining us for today and doesn't expect to make
25 tomorrow's meeting either, and that Dr. Culver has also

1 notified us that he will not be able to attend the
2 meetings.

3 And I myself will not be able to attend
4 tomorrow's meeting. And so Dr. Luderer will be chairing
5 tomorrow's meeting.

6 So with that, are there any questions from the
7 audience?

8 Okay. Well, we have two agenda items -- excuse
9 me. I want to go over the first two agenda items --
10 agenda topics. First will be a presentation on the
11 antimicrobials and hormones used in animal husbandry. And
12 the second will be on cyclosiloxanes. And these are
13 follow-up presentations from presentations that the
14 Panel's heard in prior meetings.

15 And with that, I want to hand it over to Dr.
16 Rachel Roisman, who's OEHHA lead for the Biomonitoring
17 Program.

18 (Thereupon an overhead presentation was
19 Presented as follows.)

20 DR. ROISMAN: Unfortunately, I couldn't figure
21 out a way to get around presenting this topic again since
22 we didn't have time to --

23 MS. HOOVER: I think you need to turn your mike
24 on.

25 DR. ROISMAN: -- fully discuss it at the last

1 meeting. So I'm going to briefly run through some of the
2 key points of the presentation last time. But this is
3 mostly just an opportunity to, you know, let the Panel be
4 able to discuss this topic, since we really didn't have
5 time at the last meeting to go through it.

6 So I'm going to talk first about antimicrobials
7 used in animal husbandry and then hormones -- synthetic
8 hormones used in animal husbandry.

9 --o0o--

10 DR. ROISMAN: A brief review of the criteria that
11 are used for recommending additional designated chemicals.
12 And these are laid out in the legislation: Exposure or
13 potential exposure; known or suspected health effects; the
14 need to assess the efficacy of public health actions; and
15 laboratory issues, including the availability of a
16 biomonitoring method, adequate biospecimen availability,
17 and the analytical cost.

18 And I'll remind the Panel that not all of these
19 criteria need to be met. But these are the criteria that
20 can be used to guide a decision about recommending
21 designated chemicals.

22 --o0o--

23 DR. ROISMAN: So this is a table of some selected
24 antimicrobials that are used in both food and companion
25 animals. There are 12 classes that have been approved for

1 DR. ROISMAN: The first is through consumption of
2 contaminated meat products. And there is testing that
3 goes on by the USDA to determine if, you know, a random
4 selection of samples have -- if the antimicrobials are
5 present and if they're above tolerance levels. But very
6 few samples are taken and violations are rarely detected.

7 The more significant route of exposure is from
8 environmental exposure. And this occurs because a lot of
9 these compounds are not -- are poorly absorbed by the
10 animals. Large quantities are excreted. And the
11 antimicrobials, as well as resistant organisms that can
12 develop in response to the antimicrobials, tend to persist
13 in animal waste.

14 --o0o--

15 DR. ROISMAN: So the issue of health effects is
16 complicated. There really isn't much literature about
17 toxicity to humans from the residues of antimicrobials.
18 There is a lot of literature about transmission of --
19 well, development of resistant organisms in animals that
20 are exposed to these antimicrobials and transmission of
21 the resistant organisms from animals to humans through a
22 variety of mechanisms, through the environment, direct
23 transfer, you know, from people who work with animals.
24 There have been studies showing resistant organisms
25 transmitted through the air, through animal waste, et

1 cetera. So that's the main health concern.

2 --o0o--

3 DR. ROISMAN: In terms of the need to assess the
4 efficacy of public health actions, antibiotic resistance
5 is a pretty -- is a large and growing problem in the
6 United States and worldwide. And, you know, particularly
7 since we're dealing with a lot of chemicals that are used
8 in humans or that are in the same class of antimicrobials
9 that are used in humans, the risk here is fairly
10 significant for transmission of resistant organisms in
11 animals to humans. And so monitoring this could be a
12 fairly useful tool to help reduce nonessential antibiotic
13 use.

14 --o0o--

15 DR. ROISMAN: Lab issues. Didn't find any
16 data -- people were measuring levels of antimicrobial
17 residues in humans. And it's not thought to be a really
18 useful way of monitoring this problem, because a lot of
19 the doses that people are exposed to are very low.
20 They're chronic because of the food they eat and the
21 environmental exposure. But we're talking about very low
22 doses, and a lot of these compounds are water soluble.

23 Furthermore, any monitoring humans would have to
24 take into account whatever antimicrobials that person is
25 taking for another reason. And it's -- from speaking with

1 researchers in the field, it's not thought that this is a
2 really useful way of getting at this issue.

3 --o0o--

4 DR. ROISMAN: What there is a lot of interest in
5 and a lot of research into is biomonitoring for
6 microorganisms and testing for resistance patterns, and
7 then tracing those -- you know, what's found in humans
8 back to animals. And the testing in humans could be done
9 either by examining GI flora in stool cultures or upper
10 respiratory tract flora from nasal swab cultures.

11 Unfortunately, this is not a type of testing
12 that's done by either of the CDPH or the DTSC labs. And
13 it would require collaboration with outside researchers,
14 most likely with academic centers, where people have been
15 doing a lot of this type of research. But it's really not
16 something that our labs can do currently or are -- they're
17 not developing this technique.

18 --o0o--

19 PANEL MEMBER WILSON: Rachel?

20 DR. ROISMAN: Yes.

21 PANEL MEMBER WILSON: Excuse me.

22 I'm wondering, Dr. Moreno, if we could have
23 questions on this issue before we move into biosynthetic
24 hormones, so that we don't get confused. I get confused
25 between the two and some of the issues in reading the

1 documentation. Is that something we can do?

2 CHAIRPERSON MORENO: I think that's a good
3 suggestion.

4 Is that all right with the rest of the Panel?

5 Great.

6 PANEL MEMBER WILSON: Okay. I'm wondering if you
7 could -- by the way, I really appreciated the detail that
8 went into the documentation. It's really -- it was very
9 thorough and very helpful. And I'm just wondering if you
10 could talk a little bit more about the exposure questions
11 that -- and you have a slide on there, exposure in humans.
12 And I think -- your known or suspected health effects, you
13 have a bulleted -- I think it's the next one. The next
14 slide says consumption of contaminated meat,
15 animal-to-human transfer, and environmental transfer.

16 Which one of -- are any of those the primary
17 route of exposure for humans? Or could you just describe
18 those a little more.

19 DR. ROISMAN: Mostly, these have been studied in
20 very small studies, where, you know, they've detected --
21 they found some resistant organism in humans in a small
22 study and then been able to trace it back to some
23 contaminated meat that they ate. Or -- so I would think
24 that the most significant mechanism of these is the
25 environmental transfer, just because I think there's --

1 just in terms of quantity. But there are a lot of small
2 studies looking at all these different mechanisms. So
3 people eating food that contains resistant organisms; or
4 the animal became -- in transfers mostly, you know, people
5 who work with animals. And there have been small studies
6 looking at that, where somebody who works on a farm or,
7 you know, in some hog feeding operation, they are
8 colonized with a resistant organism that can be traced
9 back to something that the animal has.

10 And then the environmental transfer. I mean,
11 they have -- you know, they've detected resistant
12 organisms in a number of environmental media and been able
13 to trace them back to some nearby farm or some other --
14 you know, a cattle feeding operation, something like that.

15 So there's a lot of research that's gone into
16 this. Mostly, you know, small, localized. And some of
17 it's kind of outbreak research when there's one
18 specific --

19 PANEL MEMBER WILSON: Okay. Can I just follow up
20 real quickly.

21 On the environmental -- and can people hear? Do
22 you need to speak into the mike a little more, Rachel? It
23 might be helpful.

24 Yeah, thanks.

25 On the environmental transfer, I guess the

1 question is, if it's in various environmental media, then
2 how does it actually enter people? Is it through water
3 or -- I'm just --

4 DR. ROISMAN: I think that human -- I think
5 humans are mostly through consumption. Not necessarily
6 consumption of contaminated meat but, you know, from
7 eating crops that are grown in soil that's contaminated
8 with these organisms.

9 PANEL MEMBER WILSON: Okay.

10 DR. ROISMAN: So the majority of the researchers
11 are really looking at how these organisms are persistent
12 in the environment, in soil, water, whatever; and then
13 that humans are exposed that way.

14 PANEL MEMBER WILSON: Okay.

15 CHAIRPERSON MORENO: Go ahead.

16 Are you finished on this side?

17 PANEL MEMBER LUDERER: I think another important
18 aspect of the environmental transfer that maybe should be
19 highlighted a little bit more as well is something that
20 you just brought up briefly just now. And, that is, that
21 there have been a few studies in the last, I think about,
22 three or four years showing that plants -- food crops
23 actually do take up some of these antibiotics. And
24 cephalosporins is one I remember, I think, and
25 chlorotetracycline. Not all of them, but so that -- and

1 it's been shown in, I think, a variety of different food
2 crops, including things that are eaten fresh like cabbage
3 and potato tubers and things like that.

4 So there is the potential for humans to be
5 exposed to the actual residues through food that they eat
6 other than meat, as well as being exposed potentially via
7 the environment to organisms that are resistant.

8 And I think another important point to make about
9 this is that there have been a few studies - I think one
10 in Australia looking at the efficacy of banning certain
11 antibiotics and then showing that resistance -- I think it
12 was fluoroquinolone resistance was decreased after the use
13 was banned in food animals for growth promoting purposes.

14 So, yeah, I think it's an important point.

15 PANEL MEMBER MCKONE: Just to reinforce this
16 point on environmental chemistry, because it's going to
17 come up a lot, is it's very -- it was surprising, but I
18 don't think it is now, that a lot of substances end up
19 being captured quite well by the surface -- vegetation has
20 a very large waxy surface. It's a great filter. So the
21 only thing that's going to slow down this transfer -- in a
22 region where you use any chemical with a vapor pressure in
23 a certain range, a certain lipid solubility, it's going to
24 be in the vegetation surfaces, unless there's a photolytic
25 or biodegradation. But plants really don't have

1 biodegradation-type organisms that much on their surface.

2 So we're really relying on sunlight.

3 So if you have a compound with not a strong
4 susceptibility to photolytic decomposition, it will just
5 accumulate through a whole growing season into this waxy
6 layer. It's just basically like putting out a Tenax
7 filter to collect your sample. That's what you're doing
8 when you grow crops, you know, in a way.

9 CHAIRPERSON MORENO: Okay. Dr. Quint.

10 PANEL MEMBER QUINT: First of all, I just found
11 this presentation very -- can you hear me?

12 Okay. I just want to thank you for the
13 presentation and the research that went into it. I found
14 it very provocative. Being immersed in chemicals all the
15 time, I found this completely -- didn't know much about it
16 and found it very educational.

17 A couple of comments though in terms of what you
18 might or might not know about primary controls. We're
19 talking -- we're interested in biomonitoring. And whether
20 or not we recommend this or not, I think this highlights
21 some sort of early warning for public health intervention.
22 So in that realm, the tolerance is, when they do
23 measure -- I know it's sporadic and they don't measure all
24 the time. But we have this situation where when they
25 measure, I guess they find that what they're treating with

1 is not -- is permissible -- you know, they find it okay,
2 is that --

3 DR. ROISMAN: Well, for the most part. And I
4 think in the write-up there -- I believe I might have
5 given some of the numbers. But, you know, they might test
6 300 samples and find 20 violations.

7 PANEL MEMBER QUINT: Right. But there's the
8 thing of what they administer and why they administer it,
9 which is a problem, because it's, you know, for
10 nontherapeutic reasons.

11 DR. ROISMAN: Right.

12 PANEL MEMBER QUINT: But there is also the lack
13 of absorption by the animal and then disappearance from
14 the gut, which leads to environmental contamination. So
15 I'm wondering if there's any sort of action by FDA or
16 others to sort of look at this holistically, you know, why
17 you're treating; and then when you treat, do you take into
18 consideration what actually goes into the animal and how
19 do you project -- you know, try to control on the other
20 end. Because this is sort of one of those life cycle
21 things: You're treating and then you're causing, you
22 know, other problems down the line.

23 So I think to me also the work that we're
24 doing -- that you are doing here on the Biomonitoring
25 Program by, you know, looking at all this information and

1 writing it up and making it so understandable, it isn't
2 the purview of this Program -- oh, certainly you're
3 overworked as it is. But where necessary, I think we
4 should highlight certain things for sort of early warning,
5 whether it's an FYI to another agency or something,
6 because everybody is concerned about this resistance, you
7 know, and being resistant to treatment when you get into
8 hospitals. And I think this is a clear example of how
9 biomonitoring, even if we aren't ready to do it now,
10 certainly we are finding things that are hugely important,
11 and people can understand it. It's very real. It's not a
12 hard-to-pronounce chemical. You know, it's very real.

13 So this is -- I mean, this is just by way of
14 complimenting, I guess, the Program really. But also as
15 we look into these things, to see if we can identify other
16 points of where we can make recommendations or either just
17 say, "Look, this is what we found and here's some primary
18 controls that I think would be important to put into
19 place."

20 Thanks.

21 CHAIRPERSON MORENO: Further questions from the
22 rest of the Panel?

23 Anyone else?

24 Before we let you finish this part of the
25 presentation, I do have one comment. And this is just

1 from a public health perspective, in that my concern -- my
2 interest in this is that there is maybe an ongoing
3 exposure to resistance in the community, but also there's
4 periodic anecdotal experience of disease caused by
5 microorganisms that originated in animal husbandry that's
6 contaminated, for example, green leafy vegetables in, I
7 think, the Watsonville area, that part of California. And
8 so my concern is, from a public health perspective, we
9 have outbreaks and caused by bacteria. And on top of
10 that, what we don't need is a passage of resistance
11 because of these outbreaks.

12 So thanks. I think you have a little more on
13 this presentation, don't you?

14 DR. ROISMAN: Actually, no. To the hormone
15 section.

16 PANEL MEMBER WILSON: Dr. Moreno, Can I ask one
17 other question --

18 CHAIRPERSON MORENO: Yes.

19 PANEL MEMBER WILSON: -- before we move on?

20 So with respect to the criteria for recommending
21 additional designated chemicals under the Program, would
22 you say that we've met three of the -- this particular
23 issue meets three of them, the top three, exposure or
24 potential exposure, known or suspected health effects, and
25 need to assess the efficacy of public health actions? But

1 that where we don't so well is availability of a
2 biomonitoring analytical method, that we don't -- that
3 CDPH or DTSC do not have the method; and that detection is
4 unlikely due to the low doses in water solubility; and
5 that with respect to incremental costs, that it would
6 require contracting, in some way, with a university or a
7 commercial laboratory? Would you agree with that, that we
8 have -- those three are sort of problematic with respect
9 to meeting the criteria?

10 DR. ROISMAN: Yes. I mean, I think it's really
11 the last one that's the -- and, you know, with infinite
12 resources -- so it may be that these -- that it is
13 possible to biomonitor these antimicrobials in humans, but
14 nobody's really done it. And people are telling me that's
15 not the way to go. So it definitely -- I mean, this is a
16 huge problem. It's incredibly unregulated. And if we
17 could biomonitor for resistant organisms, you know, on a
18 statewide level, that would be an incredible program,
19 because it's only being done -- well, there is a national
20 program that's limited, but it's really only being done in
21 these small, you know, sort of case studies. And I think
22 it would have huge public health consequences if people
23 really saw that, you know, you could trace resistant
24 organisms in humans back to the use for non-therapeutic
25 purposes in animals to promote growth, which seems

1 completely unnecessary.

2 But our labs don't have the capacity to do the
3 testing for resistant organisms. And those methods
4 definitely exist. But we'd have to either partner with
5 somebody to have them do it or we'd have to have a lot
6 more money for -- I don't even think our labs would do it
7 with more money. So we'd really have to partner with
8 somebody else to do it.

9 I mean, those methods exist and those
10 biospecimens are available. You know, a nasal swab is a
11 fairly easy thing to do. But with our labs having that
12 capacity and the cost, we would need somebody else to do
13 the testing.

14 Now, there is something to be said for, you know,
15 our Program offering the kind of statewide range, if there
16 were a lab -- somehow that we could partner with a lab to
17 do that. But I imagine that would be a fairly complicated
18 process.

19 PANEL MEMBER WILSON: Okay. Thank you.

20 PANEL MEMBER SOLOMON: Thanks, Rachel.

21 I'd like to actually pick up on the last point
22 that you mentioned, which is about nasal swabs being
23 relatively easy. A lot of these are GI bacteria that we'd
24 be interested in - E. coli and related organisms from the
25 gut - that would not be captured very well on nasal swabs.

1 And so are we -- you know, would we be
2 potentially talking about collecting stool samples from a
3 large population of people in order to implement a program
4 like this? If so, that's a whole other layer of
5 complication.

6 DR. ROISMAN: Yes. I think that's the only way
7 that we could do it.

8 And the other problem, of course, is I think
9 there's a huge -- there's a significant gap in the
10 public's understanding of the difference between
11 colonization with bacteria and, you know, disease
12 associated with it. So if we were going to do a massive
13 statewide, you know, evaluation of people being colonized
14 with bacteria, there would be a significant, you know,
15 public health education component that would have to go
16 along with it, because otherwise we would just be mailing
17 a bunch a people, you know, a list of all the bacteria
18 that were found in their stool. And I think that would
19 cause a huge amount of concern without being associated
20 with a lot of education.

21 CHAIRPERSON MORENO: Dr. Quint.

22 PANEL MEMBER QUINT: Yeah, I was just going to
23 ask about the second criteria, known or suspected health
24 effects. So in this case, we're talking about potential
25 for health being affected if you end up being resistant.

1 So we're not talking about a direct or known suspected
2 health effect from the antimicrobials themselves. I'm
3 just wondering if the -- if, you know, our legislation
4 allows us to make that broad interpretation.

5 DR. ROISMAN: There's very little literature on
6 direct toxic effects of the antimicrobial residues. So,
7 you know, it would be this more indirect issue of --

8 PANEL MEMBER QUINT: Right.

9 DR. ROISMAN: And that might be a question for --
10 because if we --

11 PANEL MEMBER SOLOMON: I know there's a lot of
12 data on the health effects of -- and, you know, being
13 infected by antimicrobial-resistant organisms. And so
14 it's actually pretty well established there. And so if we
15 can -- you know, since it's known or suspected, I think
16 it's probably -- I don't know, it would be sort of a legal
17 question whether that's within the purview.

18 PANEL MEMBER QUINT: Right. I just wanted to be
19 clear on it.

20 Because if you -- I mean, I was trying to
21 distinguish between whether or not you had to have the
22 health effect, if you ever ended up in the hospital and
23 needed to be treated, as opposed to being affected
24 directly with this -- with the antimicrobials. I mean, is
25 there a direct effect of exposure to the antimicrobials?

1 Do you get the distinction I'm -- anyway, it's
2 not a big point, if I think we can assume that this is a
3 big enough problem so that it falls within our purview.

4 DR. ROISMAN: Yeah, I would think that's a
5 strong --

6 CHAIRPERSON MORENO: Excuse me, Rachel. If I
7 could just take a moment to remind our Panel members to
8 identify yourselves when you speak, for the webcast and
9 documentation.

10 Thanks.

11 PANEL MEMBER QUINT: The last voice was Julia
12 Quint.

13 (Laughter.)

14 DR. ROISMAN: I would think that it would not be
15 a difficult case to make that development of resistant
16 organisms in humans is a significant health problem.

17 PANEL MEMBER QUINT: Got it. Okay.

18 CHAIRPERSON MORENO: Yes, other questions?

19 PANEL MEMBER LUDERER: Ulricke Luderer. I
20 just -- one more question.

21 Regarding the effects on the development of
22 resistant organisms in the environment. I don't think you
23 mentioned this specifically, but did you come across
24 evidence - I believe there is evidence - that the
25 resistance genes can be transferred among different

1 organisms, so it doesn't actually even require exposure to
2 the antibiotic in the food animal; but if the food animal
3 then sheds these resistant organisms and they get into the
4 environment, these resistant genes can be transferred
5 among different species of microorganisms as well, which I
6 think is an important --

7 DR. ROISMAN: Yes, that's correct.

8 CHAIRPERSON MORENO: Rachel, before I move on, I
9 just want to also -- you mentioned the importance of
10 education to the public on putting the -- to put, I guess,
11 that type of testing results into context per
12 distinguishing colonization from disease. And I think the
13 Department of Public Health has a lot of experience in
14 providing that public education in having to deal with
15 other conditions of colonization versus disease, for
16 example, with MRSA, just as another example. So there is
17 some experience with that that could go along with the
18 efforts.

19 Okay. Back to you.

20 --o0o--

21 DR. ROISMAN: Okay. So I'm going to move on next
22 to synthetic hormones used in animal husbandry.

23 So there are three synthetic hormones that are
24 used in animal husbandry:

25 Zeranol, which is a synthetic estrogen, and is

1 administered by implantation of a pellet behind the ear
2 that continuously releases the hormone. Zeranol is a
3 little bit complicated, because it shares a metabolite
4 with a fungi that's a common contaminate of corn.

5 Trembolone acetate is a synthetic androgen. And
6 it's also administered in the same way, with this
7 continuously releasing pellet.

8 And melengestrol acetate (MGA) is a synthetic
9 progestin. And that's administered in feed. And it's
10 used for estrus synchronization and suppression, in
11 addition to growth promotion, which is what all of these
12 are used for as well.

13 --o0o--

14 DR. ROISMAN: Exposure. We've run into some of
15 the same problems. Use is not required, so we really
16 don't know how much is used. We know that certainly the
17 vast majority of the cattle are implanted at least once in
18 their lifetime with -- it's usually a mixture of synthetic
19 and natural hormones, and more than one type of synthetic
20 hormone, more than one natural hormone. And many of them
21 get more than one implant. So exposure in humans occurs
22 via the same mechanisms, this consumption of commercial
23 meat products that contain residues from the synthetic
24 hormones and environmental exposure from the hormones in
25 animal waste.

1 you know, a maize crop has been cultivated.

2 --o0o--

3 DR. ROISMAN: And, again, the same issue
4 about the manure -- these things are often applied to food
5 crops as fertilizer. And so people are exposed that way.

6 --o0o--

7 DR. ROISMAN: In terms of the health effects, you
8 know, in general, you know, they have the same -- they're
9 thought to have the same health effects as the natural
10 hormones that they mimic. So there are concerns about
11 cancer, reproductive effects, and endocrine disruption.

12 Zeranol, you know, is an estrogen. It will --
13 well, natural estrogen is a known cause of human breast
14 and uterine cancer.

15 Anabolic steroids are reproductive toxicants and
16 are listed under Prop 65.

17 And progesterone is also listed as known to cause
18 cancer under Prop 65.

19 So there's no reason to think that these
20 synthetic hormones wouldn't have the same effects in
21 humans.

22 --o0o--

23 DR. ROISMAN: There's certainly reasons to be
24 concerned about this issue from a public health
25 standpoint. They're used in large quantities. They tend

1 to persist in the environment. There is known toxicity.

2 Biomonitoring could be useful in terms of
3 highlighting perhaps the, you know, unnecessary use of
4 these compounds in animals and their persistence in the
5 food supply and the environment.

6 But it could be difficult to figure out exactly
7 where they're coming from, even if you detected them. And
8 this is particularly true with zeranol, because it shares
9 the metabolite with the fungi.

10 --o0o--

11 DR. ROISMAN: Lab issues. So again really not a
12 lot of evidence measuring these residues in humans, with
13 the exception of at least one or two studies looking at
14 the zeranol metabolites. But, again, in those cases, the
15 emphasis has really been on the exposure from the fungi
16 that contaminates corn and a little bit less interest in,
17 you know, zeranol as it's used in animal husbandry.

18 There are sensitive methods for detecting their
19 use in animals, and this is because they're not -- they're
20 banned for use in the European Union. So they've
21 developed a lot of techniques for detecting fairly low
22 levels of these in animals in order to detect violations.

23 The lab does have the necessary equipment for the
24 analysis, but it would need new development work to
25 establish and validate the methods, particularly in the

1 setting of there not being a lot of existing human
2 biomonitoring on these.

3 That's it.

4 CHAIRPERSON MORENO: Okay. Thank you, Dr.
5 Roisman.

6 Questions from the Panel?

7 Yes, I'll start over here again.

8 PANEL MEMBER WILSON: Thank you again, Rachel.

9 And I guess the question again on the laboratory
10 considerations, is this, in your view, something that
11 would require the Department to contract out this work to
12 the university or to a commercial lab?

13 DR. ROISMAN: My understanding is no. Perhaps
14 the people from the lab can better answer that question.
15 But unlike with the antimicrobials where it's really a
16 different -- I mean, if they were testing for
17 antimicrobial residue, that's theoretically something the
18 labs could do. But it's the looking for resistant
19 organisms that's really a new thing for them to be doing.
20 And in this case, I would think that detecting residues of
21 the synthetic hormones is the type of analysis that our
22 labs could do. But I don't want to speak for them too
23 much. But it's definitely not something that they're
24 doing now or have done in the past. So it would be a new
25 venture.

1 CHAIRPERSON MORENO: Dr. McKone.

2 PANEL MEMBER MCKONE: Kind of a comment and a
3 question. On the persistence in the environment slide,
4 TBA metabolites are stable in animal waste for 267 days.
5 MGA is present in soil for 195 days. I was just looking
6 up in Canada. Their criteria for persistence is 180 days,
7 so it would fall into that in terms of potential concern.

8 I'm not sure -- I wasn't able to find the
9 Stockholm POPs Convention what they have agreed on.

10 But that puts them in the category of having a
11 public health concern just because of persistence, at
12 least according to international and North American
13 criteria for POPs.

14 CHAIRPERSON MORENO: Dr. Luderer.

15 PANEL MEMBER LUDERER: Thank you again for
16 another excellent presentation.

17 I wanted to ask you actually kind of two
18 unrelated things. One of them was that you mentioned that
19 the European Union had banned the use of these hormones in
20 food animal production. Have they banned only the
21 synthetic steroids or also the natural -- the use of
22 natural steroids as well?

23 DR. ROISMAN: I believe it's both. I believe
24 it's both.

25 PANEL MEMBER LUDERER: Because they're obviously

1 both a concern for the same reason. But the biomonitoring
2 issues raised by the natural ones are much greater of
3 course.

4 And the second question is about the
5 biomonitoring. I was wondering. I think some of these, I
6 think it's the trembolone is used as a drug of abuse
7 basically by athletes, because it's an anabolic steroid.
8 So I'm wondering whether there are human methods available
9 for detecting this trembolone in human samples that have
10 been used for monitoring athletes in competition and
11 things like that.

12 DR. ROISMAN: It is the same or related to some
13 of the steroids that are used in humans for whatever
14 they're used for in humans. And it -- which does raise a
15 question of it would be difficult to tell where the
16 exposure is coming from.

17 But I do think that there are at least some
18 methods for detecting they're present. But I don't know
19 if they're specific to TBA or if it's just to the more
20 common, you know, metabolites that are shared by a couple
21 of parents.

22 CHAIRPERSON MORENO: Dr. Solomon.

23 PANEL MEMBER SOLOMON: In thinking back about why
24 the Panel asked to take a look at these chemicals, my
25 recollection is that we were interested in -- you know,

1 cognizant of the fact that California has a rather large
2 ag industry, that there may be more use of certain
3 agricultural chemicals in this state than in other parts
4 of the country. The industry in California is more dairy
5 than meat cattle.

6 And so I was just wondering if there's any data
7 about whether these hormones are used in the dairy
8 industry or whether it's more in the meat industry.
9 Because my understanding is they're used to sort of fatten
10 up the cows quickly. But if they're also used in the
11 dairy industry, then that would obviously make it of
12 dramatically increased relevance to California.

13 DR. ROISMAN: I'm going to actually, if I can, I
14 might ask Sandy McNeel to comment on that, because that
15 was something we were trying to figure out.

16 PANEL MEMBER SOLOMON: Sorry. I should have
17 thought of that sooner. But it just occurred to me now
18 when I was looking at the presentation.

19 DR. MCNEEL: Okay. There it is.

20 In the dairy industry, synthetic hormones are not
21 used for growth of the animal. I believe there is some
22 use in estrosynchronization in order to appropriately time
23 artificial insemination. But this is an area I'm not
24 entirely familiar with either. So I would feel much
25 better if we research that a little bit and get back to

1 the Panel.

2 But there is much less use -- I do know there is
3 much less use of both synthetic and natural hormones in
4 the dairy than in beef production.

5 CHAIRPERSON MORENO: Okay, thanks.

6 Rachel, just a couple of questions for you.

7 Do you know whether or not the estro -- I think
8 some samples we gave were hormone implants that release --
9 time release. Are those -- is there a minimal time that
10 they have to be removed before the animal is slaughtered
11 and processed?

12 DR. ROISMAN: There is. There's a withdrawal
13 period.

14 CHAIRPERSON MORENO: And the testing that you
15 mentioned occurs at the time of slaughter and then there's
16 random testing of the cattle to test for the levels of the
17 hormone?

18 DR. ROISMAN: (Dr. Roisman nods head.)

19 CHAIRPERSON MORENO: Okay. The other thing I was
20 thinking about with regard to -- was that I'm aware that
21 counties in California have different ordinances that
22 impact the level of protection of the environment from the
23 cattle waste. Some use thicker liners for the water
24 runoff and others have less strict standards, for example.

25 And so something like this, I think, would be --

1 there may be some -- if these were tested for, there might
2 be -- I suspect there might be differences among the
3 representative sample of Californians by geography. But
4 also I was thinking there was questions about whether
5 there are other chemicals that could, I guess, maybe
6 cross-react with the testing for like anabolic steroid
7 use. But I think maybe there are some age groups where we
8 wouldn't expect other exogenous exposure to hormones, that
9 if it was elevated and paired with geographic location,
10 perhaps that would be indicative of sources from animal
11 husbandry.

12 So those were my thoughts on that.

13 Do we have other questions?

14 PANEL MEMBER QUINT: I have one.

15 CHAIRPERSON MORENO: Dr. Quint.

16 PANEL MEMBER QUINT: It just occurred to me when
17 you were talking about the, you know, differences between
18 the counties in terms of how they contain the waste. Is
19 there any law about whether or not this is considered not
20 hazardous waste but, you know, waste of concern or
21 something? I mean, what's the rule about having hormones
22 in waste? Is there any DTSC regulation about this?

23 DR. ROISMAN: I don't believe so, but I certainly
24 am not able to give you a definitive answer.

25 PANEL MEMBER QUINT: Right. I know it doesn't

1 fall under RCRA's, and they were second.

2 I don't know though. I mean, if it's -- well, we
3 don't know, because that could be one way to control some
4 of this.

5 CHAIRPERSON MORENO: Other questions?

6 PANEL MEMBER WILSON: Yes.

7 I guess following up on the question that Gina
8 raised about the source of exposure really in California,
9 and whether meats consumed by Californians are actually
10 grown outside the state and shipped in, versus, you know,
11 dairy farming in the state.

12 Is there evidence that these substances are
13 showing up in public treatment works, for example, in
14 California or in other -- you know, under environmental
15 sampling, to give us a sense of, you know, to what extent
16 are they entering the environment in California?

17 DR. ROISMAN: And I think most of the research
18 that's been done has been done in the Midwest. And
19 offhand, I don't know of a California-specific study. Not
20 to say they don't exist. I just -- I don't know.

21 MS. LEE: I think there has been some limited
22 data --

23 CHAIRPERSON MORENO: And introduce yourself,
24 please.

25 MS. LEE: Hi. This is Diana Lee with CDPH.

1 I believe there is some limited data showing up
2 in sewage sludge and waterways. I know that San Francisco
3 Estuary Institute, for instance, has done some limited
4 studies, and USGS has as well. But I don't think we've
5 done an exhaustive search on it. But I believe it's shown
6 up in sediment and sludge and so on.

7 PANEL MEMBER WILSON: And have those been
8 identified as far as you know to, you know, the cattle
9 industry, or we don't --

10 MS. LEE: That I do not know.

11 PANEL MEMBER WILSON: Uh-huh.

12 MS. LEE: I think even Davis -- UC Davis has done
13 some limited work in this area to show that it's been
14 showing up in the environment, but I don't recall the
15 exact studies.

16 CHAIRPERSON MORENO: Before we take another
17 question, I want to ask staff if there were any requests
18 for public comment provided on cards? Or were there any
19 comments provided via Email from the webcast?

20 MS. DUNN: No, there aren't any comments.

21 CHAIRPERSON MORENO: Okay. Thank you.

22 All right. Further questions from the Panel?

23 Okay. Thank you, Dr. Roisman. Wonderful
24 presentation.

25 And being that there's no comments at this point,

1 I will bring it back to the Panel for a discussion on what
2 was presented.

3 And, Panel members?

4 At this time, the Panel may have a discussion
5 which could include discussions on designating the
6 chemicals that are presented this morning and also
7 discussions on prioritization.

8 Dr. Solomon.

9 PANEL MEMBER SOLOMON: This is actually a tough
10 one for me. And I think, you know, to my mind, much
11 easier to talk about the prioritization question than the
12 designation question. Because at this point, my sense is
13 that, in both cases, there's a lot more that would need to
14 be done to make these priority chemicals, that they're
15 really not there yet.

16 But whether they should be designated chemicals,
17 you know, I think we have different issues with the two
18 different groups. So I'd sort of like to think about them
19 differently.

20 Although, you know, we sort of came at them
21 thinking about the problem of pharmaceutical wastes in
22 water, which is an important public health issue in
23 general, that we were sort of trying to figure out how to
24 get at; and we were also thinking about sort of industrial
25 patterns in California, what might be a little bit

1 different about California than the rest of the country.
2 So that was sort of what the Panel was thinking when asked
3 to -- you know, when we asked staff to look into these.

4 And in the case of the antimicrobials, it's, you
5 know, a huge public health issue and nobody else is really
6 doing a very good job looking at it. And so, in that way,
7 it's very appealing to push those forward. And, you know,
8 as a physician who's definitely worried about
9 antimicrobial resistance in the population, I sort of want
10 to push it forward.

11 On the other hand, I'm seeing a very, very
12 significant laboratory hurdle that, you know, if we were
13 to put these on the designated chemicals list, it would
14 have to be with a, you know, very clear from my
15 perspective, message from the Panel to staff that these
16 would only be pursued, you know, as funding or resources
17 really became available perhaps in sort of, you know,
18 collaborative research proposals with extramural funding,
19 but not in a sort of -- you know, not really designed to
20 go forward into a broad biomonitoring program, at least
21 any time in the near future. So, you know, I would be
22 okay with that.

23 I also could see deciding that we're -- you know,
24 we're really not ready to sort of go to testing for
25 antimicrobial resistance yet, and holding off, with the

1 understanding that as this Program grows, we could always
2 come back to it.

3 With the steroids, it's a lot easier, you know,
4 technical issues are a lot easier. I wish I'd thought of
5 this question about the dairy industry sooner. But it was
6 suddenly just clicking for me when I saw that they're used
7 as growth promoters and there isn't a big meat industry in
8 California. And then I thought, well, do we -- you know,
9 is it something we want to bump up. But there is some
10 meat industry here. And, again, nobody else is looking
11 for these things. And there's a public health reason to
12 be concerned about persistent steroid hormones in the
13 environment and potentially in the food chain. So I guess
14 I'm feeling a little bit closer -- my comfort level's a
15 little higher with designating the synthetic hormones in
16 animal husbandry.

17 So I'm curious what other people think. But that
18 was sort of how I was putting it together.

19 CHAIRPERSON MORENO: Dr. McKone.

20 PANEL MEMBER MCKONE: Yeah. I think I pretty
21 much agree with Dr. Solomon. I think the -- I mean, we do
22 have to come up with priorities. And we have, and we've
23 discussed this a lot. But I do -- and in a way, it looks
24 like we're going to -- you know, we should put out -- I
25 think we should be careful not to give the impression that

1 we're not pushing something forward, that it's off the
2 list completely, that is, we don't really care about it.
3 Unfortunately, there's a lot of things we really wish we
4 could do.

5 But I also -- I was in Washington last week. All
6 I heard was low-hanging fruit. I don't know why that's
7 the big word.

8 (Laughter.)

9 PANEL MEMBER MCKONE: So we've got to go for the
10 low-hanging fruit. I mean, in a way -- and I think you're
11 correct, out of this set, the one that we could hit
12 earliest and have some impact with.

13 And also I think the point about -- persistence
14 cuts two ways. One is it's important -- it makes it
15 important. It also means it's likely we're going to find
16 it if it's persistent. So that gives it an added sort of
17 incentive to put it on the list.

18 PANEL MEMBER WILSON: I guess -- Mike Wilson.
19 And I'm of the same mind, that I think the antimicrobial
20 issue is certainly, I think, as articulated in the
21 documentation, a large and growing problem. But the three
22 problems that I see as actually even designating those as
23 part of this Program are around detecting antimicrobial
24 residues, and that the -- well, and that the State is
25 unable to do the bacterial and resistance testing at this

1 point. And that makes it difficult for me to support the
2 idea of using -- of designating these within the Program.

3 And yet I feel differently about synthetic
4 hormones. That I guess the question of whether or not
5 there's a large meat industry in California, irrespective
6 of that, there's certainly meat consumption going on in
7 the state. And the analytical questions seem to be much
8 more approachable and, you know, doable within our
9 existing analytical sort of methodology.

10 So my tendency would be to lean toward
11 designating these synthetic hormones, but not so with the
12 microbials.

13 CHAIRPERSON MORENO: Dr. Luderer.

14 PANEL MEMBER LUDERER: I would actually argue
15 that the antimicrobial resistance problem is such an
16 important one from a public health perspective, that I
17 would actually be in favor of also designating the
18 antimicrobials. I think -- you know, with the caveats
19 that Dr. Solomon raised. Because I think part of what we
20 should be trying to do, you know, when we're thinking
21 about designating chemicals is thinking, "Well, what are
22 the chemicals that we think might actually have large
23 impacts in public health?" And I don't think that there
24 needs to be necessarily, at this point in time, a method
25 available. Although, depending on how you define

1 availability of a method, clearly there are methods that
2 are well established for detecting antimicrobial
3 resistance. It's just that there isn't the capability in
4 the labs at present.

5 So I think that I would actually be in favor of
6 designating those chemicals.

7 One question that I just had - I think we talked
8 about it briefly at the last meeting - was whether there's
9 a microbiology -- there is a microbiology laboratory
10 within the Department of Public Health, and whether they
11 might have that capability. I don't exactly remember what
12 the outcome of -- or what the answer to that question was.

13 DR. ROISMAN: There is such a lab at the
14 Department of Public Health. But this is not the type of
15 testing they do at all. So I did speak with somebody in
16 their lab, but they don't -- they're usually analyzing
17 organisms that have already been isolated. So they're not
18 doing -- they really have no experience with taking a
19 stool culture and trying to grow, you know, a bunch of
20 organisms there.

21 And then in particular, I think a lot of the
22 research now is on some of the things you mentioned,
23 the -- looking for the resistant genes. And so that's an
24 even more specific type of research. So even in the
25 microbiology section of the DPH labs, this isn't what

1 they're doing.

2 CHAIRPERSON MORENO: Dr. Quint. Then back to Dr.
3 Solomon.

4 PANEL MEMBER QUINT: I have a question. You may
5 have addressed this, Rachel - I'm not sure - and I may
6 have missed it. But with the hormones in animal
7 husbandry, how specific would we -- would we be able to
8 trace -- through biomonitoring, would there be enough
9 specific information to trace it back to that source,
10 given the pharmaceutical waste problem and all of the
11 other synthetic hormone problems, you know, in terms of
12 exposure out there?

13 DR. ROISMAN: In general, I think so. I mean,
14 TBA runs into the issue of it also being used -- or
15 sharing metabolites with things that are used in body
16 builders.

17 And zeranol does have the issue of sharing a
18 metabolite with this fungi that contaminates corn.
19 Although I have spoken with the lab, and they do -- there
20 are methods to distinguish. So it would be -- there's a
21 challenge there. But I think that this is -- the vast
22 majority of synthetic hormone exposure is through use in
23 animal husbandry and environmental transfer. So I think
24 it's --

25 PANEL MEMBER QUINT: I'm just thinking about the

1 intervention. I mean, the information would be useful, no
2 matter what. But in terms of a public health action or a
3 proposed action, then it would be nice to be able to hone
4 in on something specific.

5 So, thanks.

6 CHAIRPERSON MORENO: Dr. Solomon, I just want to
7 check with the Program staff just as a reminder. The
8 Panel can make a determination -- or a recommendation to
9 include chemicals on the designated list and then later
10 make a determination -- a recommendation for
11 prioritization. But the Program has ultimate decision as
12 to whether what program -- what chemicals will be
13 designated; is that correct?

14 CHIEF COUNSEL MONAHAN-CUMMINGS: That's right.

15 CHAIRPERSON MORENO: Yeah. Okay, thanks.

16 Dr. Solomon.

17 PANEL MEMBER SOLOMON: Yes, my question also is a
18 procedural question. I just wanted to be reminded again
19 about what exactly happens when a chemical is designated.
20 Because what I've seen is, you know, what we're looking at
21 as a Panel is, well, you know, do we feel that the
22 chemical arguably meets this list of criteria for
23 designation.

24 The downside, of course, to overdesignating is
25 that we end up with a huge cumbersome list with -- you

1 know, that becomes useless out of its own weight.
2 However, I think we've got a little ways to go before we
3 get there. I mean, we're not -- we don't have an enormous
4 pipeline, and we did hone down in our earlier meeting to,
5 you know, a few categories that were of concern.

6 So the question is if we did, for example,
7 designate chemicals like these antimicrobials where
8 there -- you know, they would not be likely to get onto
9 the priority list, they would sort of sit on that
10 designated chemicals list for awhile - from a public
11 health perspective, I think there could be some utility to
12 that in terms of sending a signal to other programs to
13 maybe helping to justify bringing some funding to this
14 important area of research - but is there a downside and
15 what does it actually do in terms of placing any burdens
16 on the agency?

17 Sorry. Sort of vague.

18 CHIEF COUNSEL MONAHAN-CUMMINGS: Carol
19 Monahan-Cummings, counsel for OEHHA and the Panel.

20 As Dr. Moreno had mentioned, what we're -- what
21 we need the Panel to do is give advice in the
22 recommendations. And the Program itself will make the
23 decisions about what to do with that information. And so
24 by designating something, it doesn't mean that the Program
25 will take any action based on that particular chemical

1 for -- it could be for a variety of reasons, you know,
2 funding being one or expertise lacking or whatever. But
3 it is -- I think, it's very helpful to the Program to know
4 what you all think is important, because you're the
5 experts that have been put on the Panel for that purpose.
6 And so if you wanted to choose to designate a chemical, as
7 long as you understand that that does not automatically
8 mean that it will be biomonitored or that any other action
9 might be taken. You know, that's something that would
10 have to be decided later by the Program.

11 Does that help?

12 PANEL MEMBER SOLOMON: Yes. Thank you.

13 CHAIRPERSON MORENO: Dr. McKone

14 PANEL MEMBER MCKONE: Having heard that, I would
15 suggest that we shouldn't throw -- as I said before, we
16 should -- I think, the sense of the Panel is higher
17 priority to the synthetic hormones. But that doesn't mean
18 throw the animal husbandry -- or the microbial agents out
19 and not put them on. So maybe we have to -- we can
20 actually list these with some of our sense of which ones
21 go higher and lower and can revisit that. It sounds like
22 we can do that.

23 So, again, I don't know if that captures what my
24 sense was, that there was a priority among the two sets,
25 but we didn't want to get rid of the microbials. I mean,

1 we just felt they weren't as high of a priority as the
2 synthetic hormones.

3 CHAIRPERSON MORENO: I just want to share my
4 thoughts. And I know that we are -- the Panel members are
5 very conscientious of the capacity and the limited
6 resources that Program has, but I would ask that the Panel
7 members also consider our capacity and our limited
8 resources. And we're meeting here and we put quite a bit
9 of effort into this and the Program has put quite a bit of
10 effort into presenting this information. And I don't know
11 that this Panel will have more opportunities to come back
12 to this, because I think there's a lot more work ahead of
13 us. And so I think we should give serious consideration
14 to the antimicrobials and resistance issues this morning.

15 So is there further discussion or questions?

16 PANEL MEMBER WILSON: Well, on your last comment,
17 what are you encouraging the Panel to do?

18 CHAIRPERSON MORENO: I'm encouraging the Panel
19 to -- I guess, what I'm encouraging the Panel to do is
20 just realize that if we expect to come back at a later
21 time to address some of these issues, we really may not
22 ever come back to these issues again. So if there's a
23 desire to add these chemicals and groups of chemicals this
24 morning to the designated list, I think that the Panel
25 should give it serious consideration, knowing that we may

1 not come back to it. But also considering that we don't
2 necessarily have to prioritize these issues and it will be
3 finally up to the Program to decide whether or not, based
4 on their resources and capacities and the fiscal climate,
5 whether or not they can pursue these.

6 So further questions or discussions?

7 If not, I will then ask, is there a
8 recommendation from Panel members to make
9 recommendations -- propose recommendations to the Program?

10 PANEL MEMBER WILSON: I would propose that both
11 antimicrobials and synthetic hormones used in animal
12 husbandry be designated under the Program.

13 CHAIRPERSON MORENO: Okay. Ms. Monahan-Cummings.

14 CHIEF COUNSEL MONAHAN-CUMMINGS: Sorry. This is
15 Carol again.

16 If I could just make a suggestion in terms of how
17 to designate if you're -- you know, I think it's a good
18 idea not to go chemical by chemical necessarily, because
19 we could lose, you know, members of the class. But you
20 might want to think about in terms of classes of chemicals
21 that are approved by the FDA. I would assume that FDA is
22 the agency that does the approval for food animals for use
23 in animal husbandry. So that you could kind of pick up
24 any new ones that come in and some, you know, similar
25 chemicals that might be used.

1 So I would suggest you -- if you're going to make
2 a suggestion to designate, that you do so at classes of
3 chemicals that are approved by FDA for use in animal
4 husbandry as antimicrobials or as hormone chemicals.

5 CHAIRPERSON MORENO: Dr. Roisman, do you have
6 comments?

7 DR. ROISMAN: Actually, I'm not sure that the FDA
8 distinguishes between ones that can be used for use in
9 food versus companion animals. So you may need to more
10 just broadly designate the antimicrobials that are
11 approved for use by the FDA in animals, because I don't
12 think they make that -- I'm not sure, but I don't think
13 they make that distinction.

14 CHAIRPERSON MORENO: Okay. Dr. Wilson, are you
15 clear on that? Or would you like to restate your
16 recommendation based on recommendations made by Department
17 staff?

18 PANEL MEMBER McKONE: Can I raise a question?

19 CHAIRPERSON MORENO: Yes, Dr. McKone.

20 PANEL MEMBER McKONE: This is Tom McKone.

21 Since the staff has carefully gone through and
22 tried to come up with information, maybe rather we could
23 specify something in terms of how the information was
24 presented to us. They have -- there's some listing of
25 specific chemicals and some prioritization, because it

1 sounds like the FDA approach isn't going to work very
2 effectively.

3 CHAIRPERSON MORENO: Sorry. Maybe I
4 misunderstood.

5 Dr. McKone and Dr. Wilson, my understanding was
6 that there was just a recommendation to amend your
7 statement. Was there -- Dr. McKone, did you understand
8 that there was a problem with using FDA amendment?

9 PANEL MEMBER MCKONE: Well, I'm wondering if we
10 could specify it in terms of what was presented to us.
11 That is, say, everything on the list presented or the ones
12 that showed up as -- because we don't want to just say all
13 microbials or -- I mean, that's so vague, that it could be
14 hundreds of chemicals and be too generic to be useful to
15 anybody. But there's already been some screening. And I
16 don't know if that screening has been highly specific and
17 careful, so that we can rely on it in terms of designating
18 the set of chemicals listed.

19 PANEL MEMBER LUDERER: I guess the only concern
20 that I would have of that is that there are -- this is a
21 very kind of evolving market and there's always new, you
22 know, antibiotics being introduced and it might be used in
23 food animals in the future. And would we want to limit
24 ourselves just to the current list? That would be my
25 concern with that.

1 PANEL MEMBER MCKONE: I have an idea for an
2 amendment. Maybe we should just specify that we would
3 like to designate antimicrobials, we would like a list of
4 maybe -- a small list of five to ten substances that the
5 staff deems -- anyway, we'll give staff guidance to pick
6 substances and give them constraints on how many. So in
7 other words, we don't want them to come in with 200,
8 because that's not feasible. But we can't -- the Panel is
9 not in a position to specify the exact chemicals at this
10 point.

11 CHAIRPERSON MORENO: Okay. Thank you.

12 Dr. Kavanaugh-Lynch had a comment, I believe, and
13 then -- Sandy, thanks.

14 PANEL MEMBER KAVANAUGH-LYNCH: I was just going
15 to suggest that the materials we received in the
16 antimicrobials and animal husbandry handout, it starts
17 with the sentence, "There are 12 classes of antimicrobials
18 registered for use in livestock and poultry production,"
19 and that that might be the phrasing we want to use.

20 CHAIRPERSON MORENO: Go ahead.

21 DR. McNEEL: This is Sandy McNeel with the
22 California Department of Public Health. And I believe
23 that the last comment is an appropriate one. And, in
24 fact, you know, the use of the term "food animal" for this
25 type of antibiotic use, I think, would be helpful to

1 clarify that the concern is the use of these hormones and
2 antibiotics in food animal production as compared to use
3 in companion animals, which could be a very important
4 distinction. So I would urge using the term "used in food
5 animal production."

6 Thank you.

7 CHAIRPERSON MORENO: Okay. Dr. Solomon, do you
8 have a comment?

9 PANEL MEMBER SOLOMON: Yes, on page four of the
10 write-up on antimicrobials, there's actually 15 classes of
11 antimicrobials that are listed. So, I mean, I think that
12 we also do want to maybe -- so perhaps we should, you
13 know, designate those classes, recognizing that the
14 specific drugs within those classes may change, though
15 it's quite possible that new classes of antimicrobials
16 will be used. When you're testing for resistance, once
17 you have the specimen, it's not that hard to test, you
18 know, for a lot of antibiotics, because, you know, you're
19 just using little disks imbued with each antibiotic and so
20 you can, on the same sample, test multiple.

21 So once you get over the original hurdle, which
22 is finding a lab that could do it and getting the
23 specimens, having multiple drugs is actually minor, I
24 think, compared to the other testing problems.

25 CHAIRPERSON MORENO: Okay. Dr. Wilson, where are

1 you at with the recommendation, at this point?

2 PANEL MEMBER WILSON: Maybe I could restate --

3 CHAIRPERSON MORENO: Sure.

4 PANEL MEMBER WILSON: -- restate it then based on
5 that input, and subject to any editing you might have.

6 That I propose that substances approved for use
7 by FDA for use as antimicrobials or synthetic hormones in
8 animal husbandry for food animal production be listed as
9 designated chemicals under the Biomonitoring Program.

10 CHAIRPERSON MORENO: If I could just ask counsel,
11 is that an appropriately phrased recommendation as
12 consistent with the statute? I know we've been --

13 MS. HOOVER: Maybe a little simpler.

14 CHIEF COUNSEL MONAHAN-CUMMINGS: Let me see if --
15 and this is just generally. Attorneys never do anything
16 simply, but I'll try.

17 Here is my suggestion. I was going to take out
18 the FDA, in case there was some other agency that also
19 approves them. I don't know, there could be a state
20 agency for that matter. In any event, what I came up with
21 was "those classes of antimicrobial chemicals approved for
22 use in food animal production." You do one for that. And
23 then you could do "those classes of chemicals approved for
24 use as hormones in food animal production."

25 MS. HOOVER: Synthetic.

1 CHIEF COUNSEL MONAHAN-CUMMINGS: Synthetic?

2 MS. HOOVER: Synthetic hormones.

3 CHIEF COUNSEL MONAHAN-CUMMINGS: What if you use
4 natural?

5 DR. ROISMAN: Well, we aren't at all discussing
6 natural hormones.

7 CHIEF COUNSEL MONAHAN-CUMMINGS: Okay. So you
8 could use synthetic hormones.

9 But then you do them each separately, and then we
10 can -- you're designating basically two classes or groups
11 of classes of chemicals. And then we can work out their
12 prioritization issues later.

13 Does that make sense?

14 CHAIRPERSON MORENO: Thank you. This is Ed
15 Moreno.

16 So what I noticed in that recommended phrase
17 was -- or language was the removal of the actual
18 regulating agency?

19 CHIEF COUNSEL MONAHAN-CUMMINGS: Right.

20 CHAIRPERSON MORENO: Okay. Further discussion by
21 Panel members?

22 Back to Dr. Wilson.

23 PANEL MEMBER WILSON: Okay. So I guess it would
24 be two separate proposals: One, that those chemicals --
25 those classes of antimicrobial chemicals approved for use

1 in food animal production be listed as designated
2 chemicals under the Biomonitoring Program; and, secondly,
3 those classes of synthetic hormones approved for use in
4 food animal production be listed as designated chemicals
5 under the Biomonitoring Program.

6 Did that capture your comments?

7 CHIEF COUNSEL MONAHAN-CUMMINGS: (Chief Counsel
8 Monahan-Cummings nods head.)

9 CHAIRPERSON MORENO: Okay. So there's a
10 recommendation by one of the Panel members.

11 Further discussion on the recommendation?

12 Do we, at this point -- I just want to make sure.
13 Do we need public comment on that or are we at a point
14 where we can go ahead and make that recommendation?

15 CHIEF COUNSEL MONAHAN-CUMMINGS: I don't think
16 anybody had comment.

17 CHAIRPERSON MORENO: Okay. All right then. In
18 the past, I believe we did have a vote, I think, and just
19 a roll call to see who's in favor and who was not in the
20 recommended action. Shall we go through that again, Panel
21 members?

22 PANEL MEMBER WILSON: You need to call for a
23 second.

24 CHAIRPERSON MORENO: Yes, absolutely. We should.

25 Is there a second for the motion?

1 PANEL MEMBER QUINT: I second the proposal or --

2 CHAIRPERSON MORENO: Dr. Quint --

3 PANEL MEMBER QUINT: -- for the recommendations.

4 CHAIRPERSON MORENO: Dr. Quint seconds.

5 Okay. And further discussion?

6 None.

7 Okay. We'll go ahead and take a vote roll call,
8 starting on my right.

9 And, Dr. Wilson?

10 PANEL MEMBER WILSON: Aye.

11 CHAIRPERSON MORENO: Dr. McKone?

12 PANEL MEMBER MCKONE: I approve.

13 CHAIRPERSON MORENO: Dr. Luderer?

14 PANEL MEMBER LUDERER: I also approve the
15 recommendation.

16 CHAIRPERSON MORENO: This is Ed Moreno.

17 I approve.

18 Dr. Quint?

19 PANEL MEMBER QUINT: Julia Quint.

20 I approve.

21 PANEL MEMBER KAVANAUGH-LYNCH: Mel
22 Kavanaugh-Lynch.

23 I approve.

24 PANEL MEMBER SOLOMON: Gina Solomon.

25 I approve.

1 three in particular.

2 --o0o--

3 DR. ROISMAN: So just a brief reminder of what
4 happened at the December meeting. Program staff presented
5 a summary document and made a presentation on
6 cyclosiloxanes. The cyclosiloxane industry
7 representatives provided written comments and also made a
8 presentation. And the Panel voted four to four to defer
9 decision on whether to recommend cyclosiloxanes as
10 designated chemicals, pending additional information. Our
11 Panel requested that they be provided this additional
12 information in advance of the next meeting, this meeting,
13 and requested that there be time set aside for a follow-up
14 discussion at this meeting.

15 --o0o--

16 DR. ROISMAN: The process since the last meeting.
17 The Silicones Environmental Health and Safety Council
18 submitted written comments and references to the Program.
19 These materials were mailed to the Scientific Guidance
20 Panel and made available to the public in advance of this
21 meeting.

22 Program staff reviewed these materials, as well
23 as some additional materials, and supplied some additional
24 references to the Panel in advance of this meeting.

25 --o0o--

1 DR. ROISMAN: I'm going to not repeat the
2 presentation from last time, but just focus on a couple of
3 key points and highlight some new information that we've
4 received since the last meeting.

5 --o0o--

6 DR. ROISMAN: So in terms of exposure issues,
7 there's little doubt that there's widespread exposure and
8 that use of these chemicals is increasing. There have
9 been several studies that have detected cyclosiloxanes in
10 fish and other aquatic organisms.

11 There was a pharmacokinetic model that's been
12 presented demonstrating how these chemicals are thought to
13 act in humans. And OEHHA reviewed and reran this model
14 prior to publication. And the description of OEHHA's
15 review and rerunning of this model was provided to the
16 Panel on D5 specifically. They found that D5 levels were
17 still increasing in the fat compartment at 15 months and
18 believe that the model does not rule out bio-accumulation
19 of D5.

20 Furthermore, rapid elimination is thought to be
21 less relevant under conditions of constant exposure.

22 --o0o--

23 DR. ROISMAN: No new or suspected health effects.

24 D4's been associated with weak estrogenic
25 effects, including functional and histological

1 abnormalities in rats as well as benign uterine adenomas.

2 D5 has been associated with uterine endometrial
3 adenocarcinomas in female rats. The relevance to humans
4 has been questioned.

5 D5 has also shown effects on the neurotransmitter
6 dopamine and the hormone prolactin.

7 And D6 has been associated with liver and thyroid
8 enlargement and reproductive effects in rats.

9 --o0o--

10 DR. ROISMAN: Laboratory considerations. There
11 are methods available. These chemicals have been
12 biomonitored in humans before in small studies.
13 Contamination and evaporation are potential issues that
14 have been noted in both environmental and human
15 biomonitoring. Although the absence of cyclosiloxanes in
16 certain samples suggest that widespread laboratory
17 contamination is not occurring, because in many of these
18 studies, cyclosiloxanes have been present in some samples
19 and not in other samples.

20 --o0o--

21 DR. ROISMAN: Since the last meeting, Health
22 Canada and Environment Canada came out with their final
23 risk assessments and risk management approaches for these
24 three chemicals. They concluded that D4 has potential to
25 bio-accumulate in biota and high toxicity to sensitive

1 aquatic organisms. Therefore, long-term environmental
2 exposure to D4 may cause adverse effects to aquatic
3 organisms in certain Canadian environments and D4 has the
4 potential to cause ecological harm.

5 D5 was considered to be persistent under certain
6 Canadian water conditions. It has potential to
7 bio-accumulate in biota. Long-term environmental exposure
8 to D5 may potentially cause adverse effects to aquatic
9 organisms in certain Canadian environments.

10 And D6, they concluded, has low bio-availability
11 and low potential for effects and is thought to have low
12 potential to cause ecological harm.

13 For all three of these chemicals, the Canadian
14 government concluded that they are not entering the
15 environment in a quantity or concentration or under
16 conditions that constitute or may constitute a danger in
17 Canada human life or health. And it's important to note
18 that they -- for none of these chemicals did they conclude
19 that they were nontoxic. The emphasis was on the
20 quantities that are entering the environment, and that
21 those quantities are not thought to pose a danger to human
22 life or health.

23 --o0o--

24 DR. ROISMAN: The Canadian government also issued
25 a final risk management document and noted that they'll

1 consider imposing regulations to limit the quantity or
2 concentration of D4 and D5 that may be contained in
3 certain personal care products and other consumer
4 products, and to prevent or minimize releases to the
5 environment from industrial users of these substances.

6 DR. ROISMAN: So in summary, exposure of humans
7 to cyclosiloxanes is significant, ongoing, and increasing.
8 Cyclosiloxanes have been found in aquatic organisms.
9 Studies in laboratory animals have raised toxicity
10 concerns that are relevant to humans. Canada concluded
11 that D4 and D5 warrant risk management; and human
12 biomonitoring studies, while limited, suggest the ability
13 to measure these chemicals in humans.

14 CHAIRPERSON MORENO: Okay. Thank you again,
15 Rachel, for the follow-up presentation.

16 And, at this time, I could bring it back to the
17 Panel for a discussion on what was presented. And remind
18 the public that comments regarding this topic should be
19 placed on the public comment cards and provided to Sandy.

20 Okay. Sandy in the back.

21 And then anyone watching on a webcast can Email
22 comments and we'll read those allowed.

23 So it looks like we have a comment on the right.

24 Dr. McKone.

25 PANEL MEMBER MCKONE: The Canadian study sounds

1 like they base their conclusions primarily on emissions to
2 the outdoor environment, or there's a heavy emphasis on,
3 and aquatic organisms. And it doesn't look like they've
4 spent a lot of time looking at the indoor emissions.

5 And actually bringing this up, I know that in
6 January I gave a -- I concluded a project where we were
7 measuring high emissions from electronic equipment --
8 office equipment, computers and printers, for several, D3
9 through 8. But some of them are very different.

10 So I'm curious. Has anyone looked at the indoor
11 issue? Because, I mean, for me, that would be a lead
12 concern, is, you know, the ability of the indoor
13 environment to trap and retain these compounds. We did
14 not measure that in our study. We just measured large
15 emissions. It was the largest class of compounds coming
16 out of both computers and printers, was right up there
17 with the highest emissions we could measure.

18 DR. ROISMAN: I believe that there have been some
19 measurements, in particular, I believe it was a New York
20 study, which is referenced, if you -- I can find where in
21 the Canadian document it is. But I believe that they
22 based part of their risk assessment in humans on the
23 findings in the indoor environment. And it was mostly
24 inhalation exposure that they were concerned about there.

25 And I don't remember the study offhand. But I'm

1 quite sure I can find it in the -- I believe it's in one
2 of the appendices of the Canadian document.

3 CHAIRPERSON MORENO: Other comments, questions?
4 Dr. Quint.

5 PANEL MEMBER QUINT: I noticed that you did
6 add -- I don't think it was there before -- the toxicity
7 summary that OEHHA prepared for CARB. And also in that --
8 included in that is an interim chronic REL, reference
9 exposure limit, a level for D5. And that is based on
10 liver and spleen changes, which isn't organ system -- you
11 know, damage in animals hasn't been listed in your
12 summary, or they weren't listed in terms of potential
13 toxicity or potential effects on health.

14 And I'm just wondering, since this was done in an
15 earlier assessment by OEHHA and it continues to be
16 presented, whether or not those changes are considered,
17 you know, potential health effects for humans, as well in
18 terms of the potential health effects of D5. And you also
19 list a number of other things that occur. I think the
20 NOEL for that is 40 ppm; and you ended up with a chronic
21 REL of - it's pretty low - I think of 40 parts per
22 billion. So I'm wondering if you could just comment on
23 those, because they don't get highlighted usually in the
24 summary.

25 DR. ROISMAN: There has been a decent amount of

1 attention paid to the liver effects in terms of increased
2 liver weights associated with exposure to several of these
3 chemicals. I believe that one of the authors -- one of
4 the people who worked on the OEHHA document is here to
5 answer additional questions about, you know, that research
6 and toxicity.

7 PANEL MEMBER QUINT: Before that person responds,
8 I just wanted to ask -- this is interim, because it hasn't
9 been, you know, reviewed by your Science Review Panel or
10 whatever that body is. And I'm wondering if there are any
11 plans to send that forward for review, or are we in a
12 holding pattern with it?

13 DR. ROISMAN: I'm actually not sure.

14 MS. HOOVER: Just to clarify, the person who
15 worked on the repro portion of the D5 is here. But the
16 other people are not here that worked on that document.
17 So we'd have to follow up on that specific effect if you
18 wanted to know.

19 PANEL MEMBER QUINT: Okay. That's fine.

20 CHAIRPERSON MORENO: Thank you, Sara.

21 PANEL MEMBER QUINT: Okay.

22 CHAIRPERSON MORENO: Dr. Wilson --

23 PANEL MEMBER QUINT: Well, if you could comment.
24 I would like to hear about the repro effects, because one
25 of them is quite compelling, the difference -- the effect

1 on AGD, anogenital distance.

2 DR. DONALD: Hi. My name's Jim Donald. I'm
3 Chief of the Reproductive Toxicology and Epidemiology
4 Section of OEHHA. With me is Dr. Francisco Moran, who is
5 our expert on reproductive endocrinology, particularly
6 female reproductive endocrinology. So Dr. Moran's going
7 to try and address your questions. But anogenital
8 distance is not either of our particular specialties.

9 PANEL MEMBER QUINT: No, that's fine.

10 DR. MORAN: So could you please repeat what your
11 specific --

12 PANEL MEMBER QUINT: Well, my question was, that
13 in the summary toxicity document prepared by OEHHA, there
14 were a number of adverse effects in animals. I mentioned
15 the organ system effects, which we aren't going to
16 discuss. But also I think you summarized that at, you
17 know, the 160 parts per million other effects in animals
18 were seen, including adverse reproductive effects.

19 And since one of our charges is to, you know,
20 look at suspected health effects, I was wondering if you
21 could comment a little bit more about those findings, you
22 know, the adverse reproductive effects of D5 in animals
23 that's included in your summary document. It doesn't have
24 to be extensive. I just wanted to get some sense of
25 whether or not we're talking about real toxic effects here

1 and what -- put some perspective on the potential for
2 human health problems.

3 DR. MORAN: Always when we use models, animal
4 models to bring in reproductive toxicity issues,
5 translated to human health, there's a problem right there.
6 Everybody understands the model has limitations to
7 replicate or to mimic the primate of human reproductive
8 model -- a reproductive facility model.

9 In particular for this, what I remember on
10 anogenital distance issues or any other outcome, that it
11 was affected by siloxanes. The argument against that was
12 it said probably the mechanism of oxygen of these
13 chemicals are not working the same way in the rodent model
14 as may work in the humans. In that way, we can probably
15 disqualify the chemicals as a potential human adverse
16 effect chemical.

17 But we don't have any specific evidence on the
18 mechanism of action of this chemical to rule out the
19 possibility that either by the same or any other mechanism
20 is working in the same fashion, doing the same effect --
21 having the same effect in the human model and in the human
22 being.

23 So 160 parts per million or any other number may
24 have as much meaning or as little meaning for human health
25 as our model can tell us. But it is -- again, the data is

1 just -- in the rodent we'll have to follow the data.
2 There is an effect. And we don't know, at this point, if
3 that will translate into human health issues.

4 PANEL MEMBER QUINT: Yeah, I think -- yeah, I'm
5 aware of how animal data -- the limitations of animal
6 data.

7 DR. MORAN: Right. Just --

8 PANEL MEMBER QUINT: So I wasn't really asking
9 for you to say whether or not we're going to expect these.
10 Because the premise is usually if you find it in animals
11 without compelling data otherwise, it's, you know,
12 suspected to be caused in humans.

13 I notice that when Rachel presented, she said
14 that the cancer data have been questioned. So based on
15 what you said, does that also apply to the conclusions
16 about the reproductive and developmental data? Because I
17 wasn't aware that that was the case.

18 DR. MORAN: I believe -- there is a challenge
19 there on what is -- this group of chemicals is doing in
20 terms of the mechanism of action. So we can argue that it
21 may inhibit or it might block certain pathways that are
22 particular for rodents. I'm thinking in the dopamine
23 agonist effect. And by that, creating an imbalance in the
24 estrogen-to-progesterone ratio. We have that imbalance
25 having estradiol increasing over progesterone. We may

1 have, you know, what is known effective -- estrogenic
2 effect in the animals. If that is happening in the human,
3 it's still a controversy. I mean, we don't know, because
4 as was -- as it was argued, you know, humans don't have
5 this set of mechanism control of the hormone production.

6 But we have others. And we haven't explored
7 those other mechanisms. So you can say in the animal
8 these chemicals are working in this way, you know, but may
9 be doing something else. We don't have the data.

10 PANEL MEMBER QUINT: Well, could you comment - I
11 don't know if you can - on the fact that even if it's -- I
12 think the proposed mechanism for the increased estrogen in
13 the rats, this mechanism that may not be operative in
14 humans, is that it's acting as a dopamine agonist. Is
15 that of concern, just that action, on this -- you know, D5
16 acting as a dopamine agonist, would that be of concern in
17 and of itself?

18 DR. MORAN: I would answer yes. I mean with the
19 endpoint maybe completely different. But, remember,
20 that dopamine --

21 PANEL MEMBER QUINT: Different endpoints.

22 DR. MORAN: Right, right. Remember that dopamine
23 is also a second messenger or a neurotransmitter in the --

24 PANEL MEMBER QUINT: Exactly, right.

25 DR. MORAN: So it's not only a --

1 PANEL MEMBER QUINT: Yeah. I'm just trying to
2 get a handle on what you have summarized here versus --

3 DR. MORAN: I think Jim Donald wants to add
4 something.

5 DR. DONALD: Yeah, if I could just add. As I
6 know Dr. Quint's aware and probably many of the Committee
7 members are aware, in reproductive and particularly in
8 developmental toxicity, the underlying assumption for
9 doing studies in animals is that effects expressed in
10 animals will be indicative of probable effects in humans.
11 But we do not necessarily assume congruence of effects;
12 that if a chemical causes one manifestation of
13 developmental or reproductive toxicity in an animal model,
14 we would assume it would cause a manifestation in
15 cumulous, but not necessarily the same manifestation.

16 PANEL MEMBER WILSON: Could I have a follow-up
17 question on that.

18 That in the conclusion -- OEHHA's conclusion in
19 response to the Association's letter, the conclusion is
20 that it's half-life in humans is measured in weeks, not in
21 hours. Pharmacokinetic model is also predicted that it
22 may take a year to reach steady state in fat tissue.
23 Thus, D5 persistence in the environment in animal and
24 human tissues is a concern.

25 But then it concludes OEHHA still cannot conclude

1 that D5 is nontoxic.

2 And so my question is, does signaling disruption
3 or -- you know, signaling effects in the -- hormone
4 signaling effects, is that considered a toxic effect by
5 OEHHA or not?

6 DR. MORAN: This is Francisco Moran.

7 I think it's our current argument: If there's
8 any effect -- observable effect, it's adverse. So to make
9 a short answer, I would say no, because the fact that you
10 see an effect doesn't mean that it will be adverse. So we
11 may disrupt endocrine signal. We may disrupt
12 neurotransmission in the brain or any other system. And
13 the sooner you may have, you know, backup systems that
14 they currently have to overcome that effect, so the final
15 will be probably no adverse effect observed.

16 You want to add?

17 CHAIRPERSON MORENO: Why don't we move -- if I
18 can ask Dr. Denton, do you have some thoughts, a comment?
19 And then we'll move on to the other Panel members.

20 OEHHA DIRECTOR DENTON: This is not a new
21 question, because we deal with this in other -- with other
22 chemicals, and it is kind of a case-by-case.

23 In and of itself, hormone disruption we don't
24 consider to be adverse. It depends upon the line of
25 evidence. In some cases, we have thought that in certain

1 situations a hormone disruption leads to toxic effects.
2 But it's not an absolute thing one way or another. It's a
3 case-by-case thing.

4 PANEL MEMBER SOLOMON: Who's next?

5 CHAIRPERSON MORENO: Dr. Solomon, yes.

6 PANEL MEMBER SOLOMON: I just wanted to point out
7 that we have six criteria to look at. And so one of them
8 has something to do with health effects, and it's phrased,
9 "The known or suspected health effects resulting from some
10 level of exposure based on peer-reviewed scientific
11 studies."

12 So I'm not sure if there are folks here on the
13 Panel that really are wondering about whether there are
14 any suspected health effects related to some level of
15 exposure based on peer-reviewed studies.

16 But I also want to be cognizant of the fact that
17 there are a number of other criteria we need to look at
18 and think about, and I'm sure quite a few public comments.
19 And I don't want to get too hung up on the details of the
20 toxicology since, frankly, it's a little bit outside our
21 charge to really try to waive the strength of the
22 scientific data on hazard.

23 CHAIRPERSON MORENO: Dr. Solomon, if you don't
24 mind, do you want to expand a little bit on what those
25 other criteria that you're interested in.

1 PANEL MEMBER SOLOMON: Well, actually my
2 question, if I can move on to that, it was actually for
3 Dr. Roisman, because I was interested in, and a little
4 surprised by, the Canadian conclusion that there was not
5 likely to be any significant exposure.

6 And it's just fascinating going through this pile
7 of articles that were provided to us. I learned a lot,
8 and a very interesting set of chemicals. And one of the
9 things that sort of jumped out at me was this New York
10 State Department of Health survey of these organosilicon
11 compounds in personal care and household products. And
12 the concentrations were rather high and -- you know,
13 81,800 micrograms per gram. So that's 82 milligrams per
14 gram in, you know, sort of the high end in cosmetics. And
15 similarly high levels in skin lotions, hair care products,
16 et cetera. Sanitation products - whatever those are.

17 And so I was just kind of wanting to learn a
18 little bit more about why Canada decided that there's not
19 likely to be any significant exposure. It doesn't jive
20 with the data that I see here, which makes me think that
21 it's reasonably likely to assume that there might be
22 exposure.

23 DR. ROISMAN: I can't answer a lot of questions
24 about the Canadian analysis. I mean, I know what their
25 conclusion was, but we didn't rerun their estimates. So I

1 don't know that if we used, you know, our numbers and our
2 way of interpreting numbers, if we would have come to a
3 different conclusion than they did. All I can really tell
4 you is that that was their conclusion.

5 Now, I don't know if -- I don't know enough about
6 Canada to know if they -- going into their model, if there
7 are many differences in terms of, you know, exposure that
8 they're concerned about, then we would be concerned about
9 in the United States.

10 All I can tell you is that we didn't redo
11 their -- we didn't redo their calculations. So we're left
12 with their conclusion. But it was really based entirely
13 on an exposure, not on a toxicity issue.

14 CHAIRPERSON MORENO: Dr. Kavanaugh-Lynch, did you
15 have a -- oh, okay.

16 Dr. Quint.

17 PANEL MEMBER QUINT: Yeah, I didn't -- my
18 question was not to get into a detailed assessment of
19 toxicity versus, you know, potential health effects. I
20 was just -- when I read the OEHHA toxicity document, I
21 came away with the opinion that there was substantial
22 evidence of toxicity of D5. And I just wanted to make
23 sure that I wasn't coming away with the wrong impression.

24 And I think the issue of saying that it was not
25 nontoxic -- to use two double negatives -- was in the

1 context of use of D5, as in the AB 998, as an alternative
2 to Perc, which was nontoxic. That was the question that
3 this document answered and was very specific to that.
4 Within the realm -- that piece of legislation, it is not
5 considered nontoxic.

6 But, you know, in reading the whole assessment
7 that OEHHA did, I thought they made a good argument for
8 concerns about health -- the potential health effects of
9 D5.

10 And in the Canadian thing, I got the impression
11 that they didn't say that -- I mean, are we saying that
12 their conclusion was that there was no exposure or that it
13 wasn't getting into -- that there were no -- could you go
14 over what that conclusion was from the Canadian, that Gina
15 asked about specifically based on the readings, because I
16 came away thinking --

17 DR. ROISMAN: I think that their calculation --
18 you know, they modeled exposure in humans and decided that
19 the levels that somebody would be exposed to are below
20 levels of concern.

21 PANEL MEMBER QUINT: But no measurements in here?

22 DR. ROISMAN: They didn't do any of their own
23 measurements. It's all modeling and secondary data.

24 CHAIRPERSON MORENO: Okay. Dr. Denton.

25 OEHHA DIRECTOR DENTON: I wonder if George could

1 come to the microphone and just summarize OEHHA's
2 conclusions on D5. That would be helpful.

3 PANEL MEMBER QUINT: It would help me.

4 OEHHA DIRECTOR DENTON: Yeah. I mean, we do have
5 the memo in front of us. We can -- reaches several
6 concerns. Perhaps you could just summarize our
7 conclusion.

8 DR. ALEXEEFF: This is George Alexeeff of OEHHA.

9 MS. HOOVER: Here you go, George.

10 DR. ALEXEEFF: Dr. Quint is exactly correct in
11 terms of the request for us to review D5 was under the
12 statutory responsibility to try to determine alternatives
13 for Perchloroethylene. And the statutory requirement was
14 trying to determine when grants could be provided to
15 Perchloroethylene -- I mean to -- yeah, facilities that
16 dry-clean, and that the grants -- the requirement of the
17 statute is that the grant be provided under those
18 circumstances where the alternative to Perchloroethylene
19 is nontoxic. So that was the question we were asking. So
20 it was all set up in a way for us to address the question
21 as to whether or not D5 could be labeled nontoxic, which
22 from a -- obviously, the statute was not written by a
23 toxicologist, because it would be very difficult to make
24 that kind of determination since a primary, you know,
25 premise is that dose makes the poison. So it's always

1 that kind of a problem.

2 But in any case, the main issue regarding D5 is
3 the positive results under carcinogenicity. And there is
4 a major effort with regards to the industry and U.S. EPA,
5 in terms of evaluating the mode of action, as to whether
6 the mode of action that was -- in which these uterine
7 tumors developed was something that exists or could happen
8 in humans. So that mode of action, as far as we know, has
9 not been -- in other words, a mode of action that does not
10 work in humans -- I hate to -- I'm sorry -- double
11 negatives. Anyway, the mode of action proposed has not
12 been verified by U.S. EPA.

13 So, at this point, what we know is that uterine
14 tumors develop in laboratory rats when exposed to like 160
15 parts per million. And we don't have an explanation as to
16 whether or not these same tumors could occur in humans.
17 So under that presumption, we're cautious, but it's still
18 under investigation. And actually, as Dr. Moran was
19 explaining, when you're talking about other health
20 effects, there is -- the proposed MOA has to do with
21 dopaminergic sort of interactions and changes in the
22 hormonal levels and things like that. So whether or not
23 it would cause other reproductive effects - you know, it
24 would seem that it could be linked, but no one has spent
25 the effort, the time, the experimental, you know, sort of

1 activity to research that - so we don't know the answer to
2 that question.

3 I don't know, I probably have confused you more.
4 But in any case, so the major concern, as far as we know,
5 had to do with the carcinogenicity.

6 CHAIRPERSON MORENO: It's five to twelve, and we
7 do have public comment still. But I know we still have
8 some important questions that the Panel members have.

9 So, Amy, how many public comment cards -- or,
10 Sandy, how many public comment cards do you have?

11 MS. DUNN: We have two.

12 CHAIRPERSON MORENO: Two. Okay.

13 All right. Thanks.

14 Why don't we take some more questions then.

15 Dr. McKone.

16 PANEL MEMBER MCKONE: Yeah, I just want to review
17 our criteria.

18 So exposure -- potential exposure, I think we've
19 heard about that and have heard, you know, sufficient
20 information to sort of suggest that it's there.

21 I think we've covered known or suspected health
22 effects.

23 I think the issue of the need to assess the
24 efficacy of public health actions -- in fact, I think
25 George's point about, you know, the open questions, in a

1 way, is the need, right? I mean, that's -- there is a
2 public health issue here, that if it isn't biomonitored
3 and if it's out there, there are important public health
4 issues that will probably be difficult to answer without
5 the biomonitoring.

6 I guess I can't yet answer availability of
7 analytical methods. I think in Dr. Roisman's
8 presentation, that was, yes, they're there. The
9 availability of specimens I'm not sure about, and the
10 incremental analytical costs. Those are the two we really
11 haven't covered yet. And I don't -- there might be a
12 simple answer to whether those are "yes" or "no" or -- I
13 mean, those were things we were supposed to also consider.

14 DR. ROISMAN: So there have been a small number
15 of human biomonitoring studies, which I think, at least a
16 couple of them, we provided to you. Some of those were
17 done in women who had breast implants. So a lot of
18 discussion at the last meeting about whether, you know,
19 that method of exposure is something that's relevant.

20 Although, you know, we've talked about other
21 chemicals that really haven't been biomonitored in humans
22 at all. So there are certainly methods to look in the
23 environment for them. There's some studies, you know,
24 that have some issues about looking for them in humans.

25 So I think there's, you know, reason to believe

1 that there's a way to biomonitor them in humans. But
2 perhaps --

3 PANEL MEMBER MCKONE: Right. The other one was
4 the incremental analytical cost. And I think we covered
5 that, but I'm forgetting where I read it or what -- it
6 wasn't high, but I just -- can we --

7 DR. ROISMAN: So the equipment that's needed is
8 equipment that the lab has or is in the process of
9 getting. They can be bundled with each other, but they
10 can't be bundled with other chemicals. So it would be --
11 they'd be their own run to look for cyclosiloxanes.

12 I can't tell you more about what the costs would
13 be. It's certainly -- method development is something
14 that the labs would need to do.

15 And it may be that some people here from the lab
16 could more specifically talk about what the costs might
17 be. But I do know they at least have the equipment and
18 methods exist.

19 CHAIRPERSON MORENO: Okay. Dr. Wilson, did you
20 have another question?

21 PANEL MEMBER WILSON: No.

22 CHAIRPERSON MORENO: Okay. Other Panel members?

23 Okay. No more questions from Panel members.

24 I want to open this up to the public. I want to
25 remind the public out there who's watching on the webcast

1 again to submit your comments to
2 biomonitoring@oehha.ca.gov. And make sure to hand your --
3 send your -- hit your "send" button on your Email server
4 to make sure that it's sent to us this morning.

5 We have two people in the -- I'm sorry.

6 Sara.

7 MS. HOOVER: Yeah, I just wanted to let you know
8 that I'm going to pass out to the Panel - and we'll be
9 providing to the public - it's from John Dunlap about the
10 list of Green Earth locations that are in California.
11 It's some information that was requested by the Panel at
12 the last meeting. So I'm going to pass that out now.

13 CHAIRPERSON MORENO: Thank you.

14 Okay. The Panel's received a list of Green
15 Earth -- list of Green Earth locations, Green Earth being
16 a cleaning -- places for dry-cleaning?

17 DR. ROISMAN: Yes, correct.

18 MS. DUNN: D5.

19 CHAIRPERSON MORENO: That use D5. Thanks.

20 MR. DUNLAP: Dr. Solomon asked for this, Mr.
21 Chairman, at the last meeting.

22 CHAIRPERSON MORENO: Okay. Thank you.

23 To be specific, it's a list of Green Earth
24 Cleaning California affiliates, correct?

25 Okay. Thank you.

1 All right. I'd like to first ask Kathy -- is it
2 Plotzke?

3 If you could please come to the podium.

4 Thanks.

5 And if you'd like, please mention your
6 affiliation.

7 DR. PLOTZKE: Hi. I'm Kathy Plotzke and I'm here
8 on behalf of the Silicones Environmental Health and Safety
9 Council. I'm one of the key scientists that have worked
10 on both the health and the environmental aspects of these
11 materials that we're discussing today.

12 And I want to thank you for the opportunity to
13 provide the additional information. I was here at the
14 last meeting, so we had a good discussion. And we have
15 provided you clearly with quite a bit of detail around the
16 work that's been done on these materials.

17 And I think that I can probably answer most of
18 the questions that were already asked today. Then I'll
19 try to follow up on those. If I haven't, please go ahead
20 and try to ask me anything else and I'll try to answer
21 that.

22 What I wanted to do was to follow along really
23 with the presentation as requested and specifically talk
24 first about exposure. So that would be really slide
25 number 5 that was presented on these materials. And I

1 think what's really important to look at from an exposure
2 standpoint - and there were a lot of questions about this
3 earlier around the Canadian assessment - is there's
4 exposure where you're exposed to the materials in
5 applications. We talked about the study. That's been
6 done, looking at the reported concentrations. First of
7 all, that is the reported concentrations of what goes into
8 the formulation. It's not always necessarily what's left
9 in a formulation.

10 There's also quite a bit of work out there that's
11 been done on products, consumer products, actually
12 measuring concentrations. All of that has gone into the
13 exposure assessment conducted by the silicone industry, as
14 well as the UK Environment Agency and Health Group, where
15 they've done a complete assessment on this, as well as
16 Health Canada. So all that information is available.

17 And I think what you will see with these
18 materials is that you will have exposure to these
19 materials. But the next question really becomes, what's
20 your internal exposure, what's your systemic exposure?
21 And I think that's where we're starting to see some
22 differentiation in these reviews by the other regulatory
23 bodies. What they are doing is they are looking at the
24 overall exposure, what do we get exposed to on a regular
25 daily basis. But then taking the rest of the information

1 that has been provided and asking, are we really exposed
2 internally to these materials?

3 There's quite a bit of information in the packet
4 that you received on dermal absorption of these materials.
5 We've done extensive studies on animals, as well as
6 clinical studies on humans. And I think really that is
7 the key study that I can direct you to, to look at
8 exposure to humans in particular.

9 The most relevant route of exposure to humans is
10 dermal. And there are dermal studies out there that show
11 there's very little of these materials that actually get
12 absorbed. And the amount that gets absorbed is quickly
13 eliminated through exhaled air or metabolized and
14 eliminated through the urine. So there's actually very
15 little available to the systemic circulation or inside the
16 body.

17 So I think that's really a key point to look at
18 from an exposure standpoint. And when I talk later on,
19 the other slides about the Health and Environment Canada's
20 assessment, that's really what was key in their assessment
21 of these materials.

22 The other aspect I want to bring up a little bit
23 about exposure is persistence. So there has been some
24 discussion around persistence of materials. And if you
25 have persistence of materials in the environment, does

1 that increase your exposure to humans? Does that have any
2 potential for concern?

3 And I would say with these materials, where we
4 are, at this point in time, is we have some remaining
5 questions around the environment on these materials and
6 their behavior in the environment. And what Canada did --
7 Environment Canada did, as well as the UK has already done
8 this as well, they have looked at the persistence in the
9 environment from looking at it in different compartments.

10 Canada's approach to it is they acknowledge they
11 have taken a very precautionary approach on assessing
12 persistence in the environment. For example, for D5 we
13 presented data to Environment Canada that showed it did
14 not meet their criteria for persistence under most normal
15 conditions.

16 What they did is they looked at the most extreme
17 temperature, extreme pH, and said that it could meet the
18 persistence criteria under those conditions.

19 I can tell you that in interacting with the
20 scientific community on the environmental side - and we
21 just had a meeting last November, the CTAC Group, which is
22 an environmental expert group - experts from around the
23 world, which includes regulatory bodies, have come
24 together and have agreed that the criteria for persistence
25 should be based on a standard set of conditions. Then

1 those half-lives should be factored into overall
2 environmental half-lives. So it should be factored into a
3 model and looked at as to whether you have persistence.

4 When we do that with these chemicals, these
5 chemicals do not meet the persistence criteria. So you
6 may have one compartment in one extreme where you may meet
7 that criteria. But if you look at the over behavior of
8 these materials, they do not meet that persistence
9 criteria.

10 The second important aspect of really looking at
11 it from an environmental perspective is bioaccumulation.
12 And when we were here last time, Environment Canada had,
13 in their preliminary assessment, indicated that these
14 materials could bioaccumulate and it would meet the
15 criteria for bioaccumulation. They have now removed that
16 assessment and have indicated that there's too much
17 uncertainty about whether or not these materials really
18 bioaccumulate in organisms in the environment. And that
19 is based on the data that we provided them looking at how
20 these materials behave in organisms in the environment.

21 And what that data clearly shows is it does not
22 build up in a food chain. And, in fact, the concentration
23 decreases as you go up the order of the food chain. So
24 that by the time you get to humans, there's very little
25 exposure through the environment. So I think that's a

1 critical component into exposure as well.

2 And then looking at exposure overall, what Health
3 Canada did is they looked at all the potential routes of
4 exposure to these materials. So not just what comes from
5 the environment - that was one aspect of it - but they
6 also looked at what's in consumer products, they looked at
7 what's in indoor air.

8 And so all of that was taken into consideration
9 in their exposure assessment of these materials. And they
10 concluded that there is no danger to human health based on
11 this exposure assessment and looking at the effects that
12 are seen in the toxicology data set.

13 And I will talk a little bit more about the
14 effects part of it too.

15 The other thing I want to talk about, from an
16 exposure standpoint, is really the half-life question.
17 And, again, I think the most critical study to look at is
18 really the dermal absorption study in humans and looking
19 at that half-life. You are talking about a half-life of
20 approximately a few hours. And that's capturing it right
21 after they have given a significant exaggerated dose to
22 subjects within that study. And also to have the
23 sensitivity in order to see it, because we've talked a lot
24 about methods, what was used was either a stable isotope
25 or radio-labeled isotope, C14, in order to reduce the

1 background and able to have the sensitivity to actually
2 measure and monitor those concentrations in humans after
3 an exaggerated dose to the skin.

4 So I think that's important to look at, from a
5 suitability for methods, as well as whether or not you're
6 really going to find exposure or concentrations to these
7 materials in the general population.

8 The comment about rapid elimination under
9 constant exposure conditions. I think it's important, and
10 we've already had some discussion here today about animal
11 model versus human. Obviously, the tools that we have
12 available to us to study, to really study the effects of
13 these materials, are animal models. That's where all the
14 initial work is done. And we have a standard approach in
15 the way we do that. We expose them to high concentrations
16 under constant exposure.

17 And then we try to answer the questions: Is it
18 relevant to humans, either from an exposure standpoint or
19 from an effects standpoint? And I think it's important
20 again to note, how are humans really exposed to these
21 materials? And it's not going to be under a constant
22 inhalation-type of exposure, every day, six hours per day.
23 And that's really what that statement is based on, as far
24 as the removal or the rapid elimination. I think if you
25 look at the dermal exposure in humans and even the dermal

1 studies in the animals, it will clearly show these
2 materials are rapidly eliminated from the body and very
3 hard to detect after those type of exposures.

4 I'm going to go on to the known or suspected
5 health effects. And I think what we have here with these
6 materials and this class of chemicals is a very robust
7 data set on the mammalian toxicology. And I think that
8 what you see in the end, when you look at that entire data
9 set, is that you do have a few effects. That's not
10 surprising when you study chemicals at high concentrations
11 in animal models.

12 But what is as important is to go on and then ask
13 those questions of whether or not those effects that you
14 are seeing are relevant, either from an exposure
15 standpoint or even a potential mode of action. And that's
16 what we have done within the silicone industry. We have a
17 robust program underway on these materials. We had work
18 that has been conducted over the past 15 years, from both
19 the health and the environmental, and we still have work
20 underway looking at the mode of action. We have been
21 working with the U.S. EPA to address the questions around
22 the mode of actions.

23 And the other thing I want to point out about the
24 tumors that have been seen within both the D4 and the D5
25 study, you're talking about five animals out of 60 where

1 these effects have been seen. So it's not that you're
2 seeing it in every animal. As well as if you look at the
3 data set as a whole, there are very little other effects.
4 And the proposed mode of action really revolves around a
5 very specific type of life stage within the animal; in
6 particular, the Fischer Rat, where you have an aging
7 process that is quite different than humans, as well as
8 any other rat. And so the dopamine agonist mode of action
9 is very specific to that.

10 Now, you could ask questions about whether or not
11 if you have something that interacts from a hormonal
12 perspective, could you see other effects? And I think if
13 you look at that data set that we have on all those
14 materials, there is no other indication that you're having
15 any type of effects, say, from a dopamine agonist.

16 And really the hypothesis is is that this is
17 occurring at a very late stage, an aged-animal-type of
18 situation that is very specific to the Fischer Rat. And,
19 in fact, the FDA has already accepted that mode of action
20 as not being relevant to humans. The EPA with their new
21 guidelines looking at the framework for identifying 1) a
22 mode of action for animals, and then 2) relevance to
23 humans would like us to work within that framework.
24 That's exactly what we're doing. We're working with the
25 U.S. EPA under now that new framework to provide the

1 experimental data to show 1) the mode of action in the
2 animal, and then 2) to question the relevance to humans.
3 So that part is already well underway.

4 I think what's important again is there's already
5 two regulatory agencies that have reviewed all of this
6 data to date on these materials, and that is the Health
7 Safety Executive within the UK as well as Health Canada.
8 And looking at both exposure and the effects that have
9 been acknowledged with these materials, they have
10 determined that there is no danger to human health from
11 exposure to these materials.

12 So I think that's -- and I think one of the
13 comments that was made earlier, as far as how do we -- how
14 do you, as Panel members, determine whether or not
15 something is put on the designated chemical list, and what
16 I heard was large impact on public health. And I think as
17 you start to look at the whole of this data, what you can
18 begin to see is that there is a serious question about
19 whether there's any impact at all on public health. And
20 two government agencies, regulatory agencies, have already
21 done a very thorough, extensive review and said, "No,
22 there isn't." So I think that's important.

23 I want to follow up on the laboratory
24 considerations and particularly the methods that are
25 available. I agree that there are methods available.

1 However, I would also caution again that most of the work
2 that has been done on these materials, there has to be
3 extreme precaution taken to prevent contamination. We
4 have actually been working with the Norwegian
5 Environmental Agency, as well as the Environment Canada
6 group, and we have a workshop coming up in April to
7 specifically look at the challenges around these
8 materials.

9 We have yet to have methods that can control and
10 eliminate background concentrations. Even those of us
11 within the silicone industry have those same challenges.
12 You have to go to a clean room environment in order to not
13 have background contamination. It's very critical.

14 Just to follow up again, kind of summarize really
15 around the recent conclusions of Health and Environment
16 Canada. I think that it's very clear that both Health and
17 Environment Canada have spent a significant amount of time
18 looking at the information that we have provided to them.
19 We have worked very closely with both agencies to answer
20 any questions. And I think that it's also very clear that
21 Health Canada looking at all that information, the
22 exposure assessment that was done and used by Health
23 Canada was a very extensive exposure assessment looking at
24 all possible routes humans could be exposed to. And
25 combining that with the health effects, they indicated no

1 danger to human health.

2 And Environment Canada, after their initial
3 assessment which indicated these materials may be
4 persistent, bioaccumulative, inherently toxic, where we
5 have ended up is that the D4 and D5 meet their criteria
6 for persistence. And, again, for both of them it's under
7 extreme conditions, and they acknowledge that. And D4
8 meets their criteria for inherently toxic solely based on
9 laboratory studies.

10 D5, the data we provided to Environment Canada
11 showed no toxicity to aquatic organisms. They chose to go
12 precautionary and indicate that it could be IT. You heard
13 the words "potentially may have." There is no data that
14 even suggests that these materials have a toxic effect on
15 the aquatic environment.

16 What we're willing to do and we have been doing
17 is working with Environment Canada. As I indicated with
18 this workshop coming up in April, we're working directly
19 with scientists here to continue an extensive
20 environmental monitoring program that we already have
21 underway, looking at the actual environmental
22 concentrations. What we continue to show is that the
23 actual environmental concentrations are significantly
24 lower than the models predict.

25 And so that raises clear questions, one, about

1 the persistence of these materials in the environment, as
2 well as looking at any kind of risk characterization and
3 using in predicted environmental concentrations.

4 So we're willing to go forward and take a look at
5 that. What Environment Canada has indicated is a very
6 specific concern around the aquatic environment; not
7 humans, not terrestrial, not any other species, but the
8 aquatic environment.

9 What we continue to demonstrate is, one, that
10 there's very little of these materials found in the
11 aquatic environment. They really don't want to stay in
12 water. And, two, we're committed to do additional
13 monitoring to prove that, that you will find very little
14 concentrations in the aquatic environment.

15 So really to summarize from the risk management
16 perspective, we will also be working with Environment
17 Canada and Health Canada on the risk management. They
18 have not identified any specific risk management. At this
19 point in time, it is only a recommendation to go forward
20 and take a look at whether there needs to be any limits
21 set for these materials.

22 So in summary, then I think the real key for me
23 is looking at the health -- the potential for human health
24 impact and public health. And the question is, is there
25 really any data there to suggest that this has a

1 significant human health impact -- or that these materials
2 have a significant human health impact.

3 If there's any other questions I can answer. I
4 tried to touch upon the ones that were raised.

5 CHAIRPERSON MORENO: Thank you.

6 It's 12:15. I'd ask -- I respectfully ask that
7 the Panel members who have urgent questions you want to
8 ask, please ask them.

9 Dr. Quint.

10 PANEL MEMBER QUINT: I want to ask if you -- oh,
11 I'm sorry. Did I interrupt you?

12 Go ahead.

13 PANEL MEMBER LUDERER: Regarding your comment
14 about bioaccumulation, that there's, you know, no evidence
15 that these compounds bioaccumulate. You know, in looking
16 through the Norwegian studies, they found some extremely
17 high levels in biological samples of fish, in particular
18 cod liver and cod stomach contents, you know, in the
19 concentrations in the thousands of nanograms per gram. I
20 was wondering if you could comment on that. I mean, it
21 does suggest that there is some bioaccumulation going on.

22 DR. PLOTZKE: What's important to look at is
23 really what is bioaccumulation? These materials, when you
24 have areas that are highly impacted with wastewater
25 treatment, you will see them. You will find them out

1 there in the environment. They can be taken up into the
2 organism. But what doesn't happen is that the
3 concentrations don't increase up the food web.

4 So you can get exposure, you can find them within
5 organisms. But you don't see effects from them within the
6 organisms and you don't see an increase in the
7 concentration as you go up in the food web.

8 And that's exactly the type of research that we
9 have underway. We've done it within a lake, Lake Pepin in
10 Minnesota, where actually we were out with the Norwegians
11 in November in the Oslo Fjord conducting the same study,
12 looking at whether or not you're seeing increasing
13 concentrations within the food web. And the data that we
14 have to date says, no, you are not seeing that. And
15 that's really the key around bioaccumulation.

16 CHAIRPERSON MORENO: Okay. Other questions?

17 Dr. Quint.

18 PANEL MEMBER QUINT: Yes, I want to thank the
19 group for, you know, contributing to the database on this
20 chemical, because I think you have done a lot and I think,
21 you know, we still could add to that with biomonitoring,
22 in my opinion, which would help.

23 But there are two comments -- you made a comment
24 about the, you know, six hours per day exposure that you
25 do in animals at the high levels and not being relevant

1 to, you know, how humans are exposed. I think the
2 exception to that scenario are workers. The worker
3 exposure scenario is pretty similar to the experimental
4 animal, you know, regime in the sense that they are
5 exposed eight hours a day, five days a week usually to a
6 chemical.

7 And I also noticed that on your material safety
8 data sheets, which do go out to workers - and you have a
9 growing number of dry-cleaning establishments which have
10 switched to D5 - that the permissible -- or your
11 recommended limit of exposure to workers is ten parts per
12 million, it used to be. And that's pretty low for a
13 solvent. Perc is 25. And a number of the solvents are
14 much higher than ten. So in just looking at your
15 recommended level of exposure to workers, it would seem to
16 me it's incongruent with your statement that you don't --
17 you feel so strongly that there are no potential adverse
18 health effects on humans. So I was wondering if you could
19 comment on that.

20 DR. PLOTZKE: Yeah. And thank you, because that
21 reminded me of another point you asked about earlier with
22 the liver effects.

23 And really those guidelines were based very early
24 on when we started to see the liver enlargement. What
25 we've done, since that point, is to look at what is the

1 cause of liver enlargement and show that it is an adaptive
2 response in an animal model to the high exposure
3 concentrations. And I think that if you look at the type
4 of exposures that occur from a worker exposure, you're
5 absolutely right. In fact, the six hours is kind of like
6 a time-weighted average based on breaks and that for an
7 eight-hour working day. And that's really the fundamental
8 premise for studying up a six-hour exposure in an
9 inhalation study.

10 I think the key difference there is the level of
11 exposure. And with the type of personal protective
12 equipment that's in use, as well as the monitoring that
13 has been done from a worker-exposure standpoint, these
14 levels don't even come close to the industrial hygiene
15 guideline of ten parts per million.

16 And so what you really need to do is look at
17 those levels, what are the relevant levels that workers
18 would be exposed to under the constant type of exposure.
19 And, again, it's going to be significantly lower than
20 where you're seeing any effects on these materials.

21 PANEL MEMBER QUINT: Unfortunately, we don't have
22 those data. And also most dry cleaners are small
23 establishments that don't use a lot of personal protective
24 equipment. But, you know, point well taken.

25 And I went back to look at your material safety

1 data sheets, since I have heard the explanation of the
2 adaptive changes in liver. And I don't think you've
3 changed the ten parts per million. I don't know if that's
4 been a recent change.

5 DR. PLOTZKE: That has not changed, that
6 information. All of the data on the materials -- all the
7 materials is under review for that right now.

8 PANEL MEMBER QUINT: Okay. Thank you.

9 CHAIRPERSON MORENO: Okay.

10 DR. PLOTZKE: And I certainly will offer up to
11 the dry-cleaning industry, if they would like to comment
12 on exposure, since they are here today, but we regularly
13 within the silicone industry do workplace exposure
14 monitoring and exposures involved.

15 CHAIRPERSON MORENO: Ms. Plotzke, actually
16 we're -- it's 12:20 and I need to move this forward. And
17 we have another speaker who's requested to speak.

18 So, Panel, I'm going to thank Ms. Plotzke for
19 providing comment. And we need to move forward.

20 Next speaker is Mr. Davis Baltz.

21 MR. BALTZ: Good morning, Dr. Moreno, Dr. Denton,
22 members of the Panel. Davis Baltz with Commonweal. Thank
23 you, as always, for your thoughtful deliberations on these
24 important questions.

25 I just was also taken aback a little bit by some

1 of the Health Canada conclusions. But I'd just like to
2 maybe ask if we have any data about the volume of use of
3 these chemicals. If Health Canada is concluding that, at
4 the moment, there's not cause for concern, that would be
5 based on current production levels. And if these class of
6 chemicals is actually being produced in much larger
7 quantities now, that would presumably have implications
8 down the road for how much is escaping into the
9 environment.

10 Also, I'd like to just point out, as you all well
11 know, that just because a chemical may be rapidly excreted
12 or metabolized would not mean that it wouldn't have a
13 health effect. And the industry spokesperson who talked
14 about the contamination that would be very prevalent in
15 the lab, which actually goes against what staff reported,
16 wouldn't that indicate that there's actually some
17 background exposure that's going on on an ongoing basis to
18 these class of chemicals?

19 I found it very curious that the industry
20 presentation seemed to contradict Dr. Roisman's
21 presentation on several points. And I don't know how we
22 reconcile that. But I hope that you will trust that staff
23 has done their due diligence and presented accurate data
24 for your consideration.

25 One example, the bioaccumulation issue. In fact,

1 it does appear there is evidence of bioaccumulation. And
2 when industry was questioned about that, they actually
3 said, well, "Yes, it does bioaccumulate. But perhaps it
4 doesn't biomagnify up the trophic levels in the food
5 chain." So it's just important to realize that
6 bioaccumulation does appear to be happening with these
7 chemicals.

8 Concerning the Canadian Health Canada risk
9 management steps that are going to be taken, it's true
10 that they haven't imposed any regulations now. But they
11 will consider imposing some to limit concentrations of D4
12 and D5, with the goal to prevent or minimize releases into
13 the environment. So we can't say that Health Canada has
14 taken any steps yet, but they are going to consider some
15 significant rules. And I don't think they would be
16 announcing they'd be considering doing this if they didn't
17 feel that there was some cause for concern.

18 And, finally, I think that, as Dr. McKone pointed
19 out before the public comment period, the criteria for you
20 to consider on whether to designate any of these chemicals
21 that you're looking at have clearly been met. And so from
22 a public interest point of view, I hope that you will go
23 ahead and designate this class of chemicals for the
24 Biomonitoring Program.

25 Thanks for the chance to comment.

1 CHAIRPERSON MORENO: Thank you, Mr. Baltz.

2 Panel members, can I -- I have one more presenter
3 who wanted to speak. I'm going to ask since we -- I
4 wasn't planning on this. Can you limit it to three
5 minutes, your comments, please.

6 MR. DOUGLAS: I will do so.

7 CHAIRPERSON MORENO: Thank you.

8 Are you comfortable announcing yourself?

9 MR. DOUGLAS: My name is Jim Douglas. I'm -- can
10 you hear me here?

11 CHAIRPERSON MORENO: Yes.

12 MR. DOUGLAS: Okay. I'm from Sacramento. I'm
13 the Technical Director for Green Earth Cleaning; also a
14 dry cleaner here in Sacramento. And when we came out with
15 D5, which was roughly about ten years ago, we did the
16 testing here at our facility. And for the first year, we
17 tested at 26 facilities around the nation, both different
18 geographics, different environments. And so we did
19 testing on exposure levels. And the exposure levels that
20 we indicated, the time-weighted average, was less than two
21 parts per million. We had still levels at about six parts
22 per million during certain functions. And that was here
23 in Sacramento and in 25 other facilities around the
24 nation.

25 And I'll be happy to help you -- my knowledge is

1 really dry cleaning. So if I can help you in that area,
2 I'm very happy to.

3 CHAIRPERSON MORENO: All right. Thank you.

4 MR. DOUGLAS: Thank you.

5 One other point. The equipment that we're using
6 today is so different than what it used to be years ago.
7 These are closed-loop machines, where clothes go in dry
8 and they come out dry. So the exposure level, the
9 consumption of D5 is very minimal.

10 Thank you.

11 CHAIRPERSON MORENO: Thank you.

12 All right. I want to bring this -- yes.

13 DR. PETREAS: Can I clarify something?

14 CHAIRPERSON MORENO: Certainly.

15 DR. PETREAS: Myrto Petreas, DTSC.

16 I want to address some of the laboratory issues
17 that were discussed. And nobody actually talked much
18 about that.

19 And let me start by saying that in our lab, we
20 haven't done siloxanes yet, so my comments are more
21 general in nature.

22 But I want to emphasize that the concern about
23 background contamination and quality control in general, I
24 totally agree with that. In fact, we wouldn't be standing
25 here if our labs -- both our labs didn't have very good

1 quality assurance for every kind of analysis. So nothing
2 unique about these type of chemicals.

3 We're very -- those of you who have visited our
4 lab, you may remember, there's a -- we have double air
5 locks and sticky mats to keep down the dust and minimize
6 contamination for certain chemicals that we're trying to
7 find the parts per trillion level, very low levels. So we
8 use it with these challenges.

9 So it's not really unique to siloxanes.

10 In addition though, maybe if it's difficult to
11 measure siloxane percent D5, maybe it's -- I heard it's
12 metabolized. Well, to what? Maybe we can look at the
13 metabolite. A good example is phthalates. Phthalates are
14 ubiquitous. Nobody is looking at phthalates themselves in
15 urine. They look at the metabolite.

16 Similarly if it's exhaled. Perc, interesting,
17 the chemical that it replaced, 95 percent was exhaled.
18 And there are biological exposure indices measuring Perc
19 in exhaled air, in urine, in blood. Same thing with
20 styrene. So having a short half-life doesn't preclude
21 biomonitoring. So challenges are there, but they're not
22 difficult to overcome.

23 CHAIRPERSON MORENO: Okay. Thank you for that
24 clarification.

25 I'm going to close public comment and bring it

1 back to the Panel members.

2 Comments by Panel members at this point?

3 Dr. Solomon.

4 PANEL MEMBER SOLOMON: Yes, I was looking again
5 through the Canadian government proposed risk management
6 approach for D4 and D5. And I'd forgotten - this is the
7 first time around - but they have a section called "other
8 information gathering and research" that talks about how
9 monitoring for D4 and D5 in the environment will be
10 conducted under a more comprehensive monitoring and
11 surveillance strategy.

12 They actually say it's planned that D4 and D5
13 will be monitored in air starting in 2008, which is kind
14 of funny, because the document is from January 2009.
15 "This monitoring will be used to inform the Government on
16 ambient levels of D4 and D5 in the environment.
17 Monitoring will be expanded to additional media in
18 2009-2010 as analytical methodologies become available."

19 So it seems like in some ways -- you know, at
20 first, I was thinking, well, gee, you know, what -- you
21 know, I want to give some deference at least to the
22 thought process of the Canadian government as they looked
23 through this issue. They were looking at a somewhat
24 different set of criteria than we are. And their decision
25 is different than ours. But as regards to what we're

1 looking at, which is, you know, should we be looking for
2 these chemicals, they seem to actually come out kind of
3 where we are, which is, gee, maybe we should be. You
4 know, I'm not talking big red flags necessarily here, but
5 sort of yellow flags, let's kind of keep an eye and let's
6 monitor this issue, which is sort of what I'm thinking we
7 may be at with our decision today. And so I just wanted
8 to raise that for the Panel, as we look at what Canada did
9 and what we're looking to consider.

10 CHAIRPERSON MORENO: Okay. Other comments by
11 Panel members?

12 PANEL MEMBER WILSON: Just a process question.
13 Do you want to conclude the -- do you want to try to
14 conclude this topic before lunch, before we break?

15 CHAIRPERSON MORENO: Yes.

16 PANEL MEMBER WILSON: Okay.

17 MS. HOOVER: Good.

18 CHAIRPERSON MORENO: Thank you.

19 PANEL MEMBER WILSON: All right then. I have,
20 you know, specific concern around this substance being as
21 the potential for a regrettable substitution issue, if you
22 will, with respect to Perchloroethylene in California, and
23 particularly with respect to the bioconcentration factor
24 that was reported in the documents that we received.
25 Where Perc sort of sits at a factor of 26 to 76, D5 was

1 reported to us as being in the range of 2,000 under the --
2 as reported under the hazardous substances database here
3 in the U.S. to 46,000 from Environment Canada.

4 And once you go over 5,000, according to the
5 EPA -- U.S. EPA, you fall into the category of a highly
6 persistent substance in the class of PCBs and DDT. And
7 that would also fall into the class of a substance of very
8 high concern in the European Union.

9 I'm concerned about the effects, not in the part
10 per million level with respect to worker exposures, but in
11 the part per trillion physiologically for signaling
12 disruption. And in looking at the results of the State
13 survey that was conducted by OEHHA, staff across 18
14 different boards, departments, and offices of CalEPA, DIR,
15 Consumer Affairs and the Air Quality and Air Pollution
16 divisions in California, scientists in those entities
17 reported four criteria that would -- that should inform
18 the process of designating substances, in addition to
19 those that are provided by statute.

20 And I think they're just informative. One being
21 chemicals widely used in California. And it would appear
22 to me that this is one, if not now, is certainly
23 approaching that. Chemicals that pose risk for pregnant
24 women, fetuses and children, there are unanswered
25 questions there, but certainly some concern. New and

1 emerging chemicals whose use is expected to increase. I
2 think we meet that criteria. And chemicals that are
3 persistent and bioaccumulative irrespective of toxicity.

4 So I have some fairly serious concerns about this
5 substance and its use in California.

6 CHAIRPERSON MORENO: Dr. Luderer.

7 PANEL MEMBER LUDERER: I also wanted to just talk
8 a little bit about the fact of the different routes of
9 exposure and the fact that biomonitoring can be very
10 useful for looking at cumulative exposures. And it seems
11 to me that we've heard a lot about dermal absorption. But
12 from what Dr. McKone was telling us, there seems to be a
13 significant amount of off-gassing from electronics and the
14 potential for inhalation exposure is potentially high
15 particularly in indoor air.

16 And since we have found that some of the
17 biomonitoring studies that have been done have found
18 concentrations, some quite high, in biota and things like
19 fish, that potentially absorption through the GI tract
20 might be another route of exposure. And I think that when
21 you have multiple routes of exposure like that for a class
22 of chemicals, biomonitoring can be particularly useful to
23 really help you to understand how much internal -- what
24 the internal doses really are. And so I would think that
25 that to me would be another important argument for

1 considering those class of chemicals for biomonitoring.

2 CHAIRPERSON MORENO: Okay. Any other comments
3 from Panel members?

4 If not, I'll ask the Panel members if there's --
5 or the pleasure of the Panel to make a recommendation on
6 this class of chemicals.

7 PANEL MEMBER MCKONE: I'll make the
8 recommendation that we designate this class of chemicals.

9 CHAIRPERSON MORENO: Okay. Counsel, is that --

10 CHIEF COUNSEL MONAHAN-CUMMINGS: Which class of
11 chemicals?

12 PANEL MEMBER MCKONE: How much more specific...

13 CHIEF COUNSEL MONAHAN-CUMMINGS: Your mike's not
14 on.

15 PANEL MEMBER MCKONE: I thought I had it on.

16 There we go.

17 Class of compounds, which I call cyclic
18 siloxanes, but are called -- what are they called here? --
19 cyclosiloxanes, right? -- be added -- or be designated?

20 Is that the terminology? All right.

21 CHAIRPERSON MORENO: All right. Further
22 discussion by Panel members?

23 PANEL MEMBER SOLOMON: This is Gina Solomon.

24 We came to the cyclosiloxanes through - what was
25 it? - Criteria No. 3 about public health actions to reduce

1 exposure, and then sort of thinking about also this issue
2 of chemical substitution and the phaseout of
3 Perchloroethylene in dry-cleaning. And so we focused on
4 D5 and then the cyclosiloxanes.

5 One of the things that was interesting to me, in
6 reading through all this, was learning just a little bit
7 about the linear siloxanes. And I actually began to
8 wonder, gee, you know, is that a class of chemicals we
9 should or shouldn't be looking at? And I was just
10 wondering if any other Panel -- obviously, can't make any
11 decision on those today, because there's far from enough
12 information, you know, here to sort that out. You know,
13 it's just sort of some hints and some of the studies that
14 looked at concentrations. So I was just wondering if
15 there's any interest in also asking for some more
16 information from staff beyond this category.

17 PANEL MEMBER McKONE: Just one. I mean, the
18 class of linear siloxanes is an enormous class of
19 chemicals. And it's not like dioxins where it's 75. It's
20 hundreds and hundreds of compounds. I don't know how much
21 resource they have to pursue that.

22 I agree, that, you know, siloxanes, both linear
23 and cyclic, are a growing -- are becoming a much larger
24 share of market in a number of areas and for a number of
25 reasons, which we don't need to go into. And I think

1 that's -- again, that was a strong motivation, was
2 shouldn't we be looking at emerging chemicals, so we're
3 not always looking backwards? That was a long discussion
4 we had early on.

5 So I'm a little mixed on this. Although, I do
6 worry that the staff will get bogged down with a very
7 large class of chemicals if we say, "Start doing some
8 homework on linear siloxanes."

9 DR. ROISMAN: I just wanted to point out that at
10 the end of the day today, we do have a "next steps"
11 section where we'll be soliciting information -- you know,
12 advice from you all about which chemicals you'd like to
13 hear more about and what kinds of things you'd like to
14 hear about those chemicals. So there's certainly an
15 opportunity later today to talk about the linear siloxanes
16 more.

17 CHAIRPERSON MORENO: Okay. Is that satisfactory,
18 Dr. Solomon?

19 PANEL MEMBER SOLOMON: Yes.

20 CHAIRPERSON MORENO: Okay.

21 All right. Further comments on the
22 recommendation made by Dr. McKone?

23 PANEL MEMBER WILSON: Mike Wilson.

24 My sense is that this class of substances meets
25 the criteria for designated -- designation as a priority

1 class. And I guess I'd like to open discussion about
2 that, for prioritization as compared to designation.

3 CHAIRPERSON MORENO: Looking at, Dr. Wilson, at
4 the time and what we have left on the agenda, we should --
5 your interest in talking about the priority, I think --
6 Dr. Denton, if I could ask you a question at this point.
7 Would it be reasonable to complete the discussion and any
8 recommended action on designation first?

9 OEHHA DIRECTOR DENTON: I think that I would
10 definitely recommend that, that then we move the next
11 actually into -- the afternoon into the prioritization.
12 So I think the designated needs to come first.

13 CHAIRPERSON MORENO: Dr. Wilson, are you okay
14 with that?

15 PANEL MEMBER WILSON: I withdraw the proposal.

16 Thank you.

17 (Laughter.)

18 CHAIRPERSON MORENO: All right. Further
19 discussion on the specific recommendation that Dr. McKone
20 has made?

21 If not, I will go ahead and ask for a second.

22 PANEL MEMBER QUINT: I second the recommendation.

23 CHAIRPERSON MORENO: Second. Okay.

24 And further discussion?

25 If not, we'll start on my left side this time.

1 Those in favor of -- or whether you're in favor
2 or not of the recommendation.

3 Dr. Solomon.

4 PANEL MEMBER SOLOMON: Dr. Solomon in favor.

5 PANEL MEMBER KAVANAUGH-LYNCH: Marion

6 Kavanaugh-Lynch in favor.

7 PANEL MEMBER QUINT: Julia Quint in favor.

8 CHAIRPERSON MORENO: Ed Moreno in favor.

9 PANEL MEMBER LUDERER: Ulricke Luderer in favor.

10 PANEL MEMBER MCKONE: Tom McKone in favor.

11 PANEL MEMBER WILSON: Dr. Wilson in favor.

12 CHAIRPERSON MORENO: Thank you, Panel members.

13 Thank you, staff, for all your hard work.

14 And I want to thank the participants who came to
15 give testimony today. We really do appreciate the time
16 you've taken and the information that you've shared with
17 the Panel. And we'll keep it under advisement. Thank you
18 very much.

19 At this time, we're going to take a break.

20 And is there a recommendation on when to return?

21 OEHHA DIRECTOR DENTON: How about 1:30? We could
22 start at 1:30.

23 CHAIRPERSON MORENO: Okay.

24 OEHHA DIRECTOR DENTON: This will take a little
25 time to get something to eat and to eat and to come back.

1 CHAIRPERSON MORENO: Okay. Back here at 1:30.

2 Thanks.

3 (Thereupon a lunch break was taken.)

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1 AFTERNOONSESSION

2 CHAIRPERSON MORENO: Okay. Well, welcome back to
3 the afternoon portion of today's Scientific Guidance Panel
4 meeting.

5 And, at this point, I'd like to introduce the
6 next item, which will be presented by Dr. Rachel Roisman.

7 (Thereupon an overhead presentation was
8 Presented as follows.)

9 DR. ROISMAN: So this afternoon we're going to
10 start by talking about potential priority chemicals.

11 At the last meeting in December, just as a
12 reminder, the Panel expressed an interest in discussing
13 the priority chemicals at this meeting. And also there
14 was a discussion about possible criteria for a priority
15 chemical discussion. And staff were directed to develop
16 information on a small set of potential priority chemicals
17 that were identified by the Panel. We were requested to
18 provide secondary sources for background information. And
19 laboratory capacity was noted to be of particular interest
20 to the Panel.

21 --o0o--

22 DR. ROISMAN: So since the meeting what we've put
23 together, I'll just review the materials that are
24 available today for this discussion. And there are
25 several tables floating around, so it may be a little bit

1 confusing.

2 But the first one is a table that was not in
3 the -- well, an older version of it was in your binder,
4 but a newer version was just loose. And at the top it
5 says "Chemicals of Interest to the Scientific Guidance
6 Panel based on discussion at the December SGP meeting."
7 And it's a corrected version from February 27th.

8 And I'll go through this in a little bit more
9 detail, but these are the chemicals that were mentioned by
10 the Panel at the last meeting that were noted to be of
11 particular interest, that people wanted to talk about
12 today. And also it includes the chemicals that were added
13 as designated chemicals at the last meeting.

14 The second set of information is the background
15 information. And this was provided in the binders and
16 also made available to the public via the website. So
17 these are the CDC materials, both the components of the
18 third report, as well as a publication subsequent to the
19 third report on these chemicals of interest to the
20 Scientific Guidance Panel, and additional materials on the
21 chemicals that were recommended as designated chemicals at
22 the last meeting, the flame retardants and diesel exhaust.
23 And so those documents that were put together for the last
24 meeting were also supplied to the Panel for this meeting
25 as well.

1 The third set of information that was made
2 available in the binders and on the website are these two
3 reports. The first is a query of State staff on their
4 thoughts about biomonitoring and which chemicals should be
5 included and how they should be picked. And the second
6 report was a public participation report where input from
7 the public was solicited, and through a variety of means,
8 to get their thoughts about what chemicals should be
9 included in the program, why they should be included, how
10 they should be chosen, et cetera.

11 And then the fourth piece of information is this
12 table on State lab capacity for additional chemicals. And
13 this is something that was not in the binder. It was just
14 given to you this morning. And it's a one-page
15 double-sided piece of paper. And the title is additional
16 chemicals that the DTSC and CDPH can measure currently
17 or -- and what this is is chemicals that are on the
18 designated list, so they're available as potential
19 priority chemicals. But they were not specifically
20 mentioned by the SGP at the last meeting of being of
21 particular interest. But they are chemicals that the lab
22 currently have the capacity to measure or will in the near
23 future have the capacity to measure. And the reason why
24 we put this table together was because there was interest
25 in the last meeting at being able to, you know, measure

1 And the fourth criteria is other criteria that
2 the Panel may agree to. And this is there if the Panel
3 feels that these criteria are insufficient in some ways or
4 that there are additional criteria that are necessary to
5 help the Panel make a decision about naming priority
6 chemicals. But the Panel is no way required to add
7 additional criteria. It's just an option.

8 And I will also say about these criteria, they
9 are not joined by "ands". So not all of the criteria need
10 to be met in order for a chemical to be added as a
11 priority chemical.

12 --o0o--

13 DR. ROISMAN: The brief summary of the criteria
14 considerations from the last meeting. There was a
15 discussion about the priority chemical criteria and
16 whether it would be useful to add other criteria. And
17 some of the ideas that were brought up were:

18 A chemical's use or exposure of special interests
19 to California.

20 Testing for tomorrow's chemicals, not yesterday's
21 chemicals.

22 And then laboratory considerations, including
23 near-term State lab capacity and overall feasibility or
24 availability of lab methods.

25 And one thing to keep in mind in thinking about

1 criteria considerations is the extent to which it would be
2 useful to have these or not have the additional criteria
3 in order to make the decision about picking priority
4 chemicals; and also whether these considerations already
5 fit under the existing criteria.

6 --o0o--

7 DR. ROISMAN: A brief update on AB 289. This was
8 brought up at the last meeting. There was interest in
9 finding out a little bit more about this legislation and
10 how it applies to the Biomonitoring Program. AB 289
11 specifies that the State may request information from
12 manufacturers on analytical test methods, some physical
13 chemical properties, and information about fate and
14 transport.

15 Before this information can be requested, the
16 State has to post a web announcement saying what
17 information we're looking for and the reason why; do a
18 search of all, you know, publicly known sources to try to
19 find this information; and also attempt to get this
20 information from the manufacturer, either already
21 available information or any additional information that's
22 needed.

23 --o0o--

24 DR. ROISMAN: Practically speaking, one agency
25 has been using the law to try to get this information.

1 It's been -- the process has taken one year so far. There
2 have been a number of public workshops, and the
3 information is slowly being provided. But the upshot is
4 that although the law is applicable to the Biomonitoring
5 Program, carrying out the requirements of the law will
6 require significant time and resources on the part of
7 staff in order to, you know, do all of the things that are
8 required in order to request the information from the
9 manufacturer.

10 --o0o--

11 DR. ROISMAN: So these are the chemicals that
12 were identified by the Panel at the last meeting of being
13 of particular interest, as well as the chemicals that were
14 newly recommended as designated chemicals. So the metals;
15 pesticides, in particular the pyrethroids; environmental
16 phenols; perchlorate; perfluorinated compounds;
17 phthalates; flame retardants; and diesel exhaust.

18 --o0o--

19 DR. ROISMAN: And this is an excerpt of some of
20 the information that we put together on these potential
21 priority chemicals. This is what can be found in that
22 table titled "Chemicals of Interest to the SGP."

23 And the table is an attempt to provide the panel
24 with the information following the criteria for picking
25 priority chemicals, so that this will aid your discussion

1 of potential priority chemicals. So there's the parent
2 chemical, the lab that would do the analysis, the
3 biospecimen for the analysis, the timeline for lab
4 capability - and this is an important and sort of tricky
5 column. The possible answers in this column are "Now,"
6 meaning that the lab has the capability, they have the
7 methods for doing this testing now; "Soon" means within a
8 year the lab's expected to be able to do this testing;
9 "Later" is more than a year; and "Not yet developed" means
10 that the lab is not currently working on methods for
11 measuring these chemicals.

12 But it's important to keep in mind that this
13 doesn't take resource limitations into account. So the
14 fact that within a year the lab may have methods developed
15 to measure, you know, in this case, a speciated arsenic,
16 doesn't mean that the lab, you know, at the current level
17 of funding, will have full resources in order to do
18 widespread testing for speciated arsenic. It just means
19 that the method will be available and that they can do it
20 to a limited extent. The resource issue is, you know, a
21 bigger issue that's not dealt with in this table.

22 The second to last column attempts to get at the
23 third criterion, you know, is it -- if you biomonitor
24 humans, are you likely to detect these chemicals at
25 levels -- you know, are you likely to find it? So what

1 method -- well, I'll just leave it at that.

2 And then the last group is pyrethroids, which can
3 also be run with one of the specific metabolites for
4 chlorpyrifos.

5 And there's a note up there about two of the
6 environmental phenols, the methyl paraben and butyl
7 paraben. These are not on the designated list. These are
8 not part of the CDC program currently. They haven't been
9 added to the list of designated chemicals by the Panel.

10 But just so you know, if these were chemicals
11 that you were interested in and if they get added to the
12 designated list or become priority chemicals, these can be
13 run with the other phenols.

14 --oOo--

15 DR. ROISMAN: And this final slide is showing the
16 same idea, but with some of the DTSC chemicals. And I
17 think, in this case, it's a little bit less obvious. And
18 this is because, in particular, the category of the
19 brominated and chlorinated organic flame retardants,
20 those, although they are a category of chemicals and were
21 designated as a category, they're not all run together.
22 They're a very diverse group of chemicals. And so you'll
23 note that some of them can be run with PBDEs or with
24 metabolites for organochlorine pesticides and with PCBs;
25 another one of the flame retardants can only be run with

1 one of the PBDEs, one of the -- TBPH needs to be run on
2 its own. So particularly when you're dealing with the
3 flame retardants, they're measured in a variety of
4 different ways and they can't all be measured together.

5 Panel 4 is a mix of environmental phenols and
6 some of the hydroxylated PBDE metabolites and hydroxylated
7 PCB metabolites.

8 And then the last panel is perfluorinated
9 compounds, and those can all be run together.

10 --o0o--

11 DR. ROISMAN: And with that, I just want to turn
12 it back to Dr. Moreno.

13 CHAIRPERSON MORENO: All right. Thank you,
14 Rachel, for another outstanding presentation.

15 And with that, I'll ask the panel if they have
16 questions of Dr. Roisman.

17 PANEL MEMBER WILSON: I have some follow-up
18 questions about the update on AB 289.

19 The first is if the law allows the State of
20 California to make requests for analytical methods on
21 chemical classes or if it requires -- or if it allows only
22 those requests to be made on individual substances?

23 DR. ROISMAN: That's an excellent question, and
24 I'm going to defer to the lawyer.

25 PANEL MEMBER WILSON: Okay.

1 (Laughter.)

2 CHIEF COUNSEL MONAHAN-CUMMINGS: Good afternoon.
3 Carol Monahan-Cummings, counsel for OEHHA and the
4 Committee.

5 I also have Fran Kammerer, who's a staff counsel
6 with us, who actually looked into this issue more than I
7 did. But she wrote an excellent memo that I can read
8 from.

9 (Laughter.)

10 PANEL MEMBER WILSON: Perfect.

11 CHIEF COUNSEL MONAHAN-CUMMINGS: But if she has
12 more to add, I'm sure she will.

13 There is a definition of chemicals in the law,
14 where it's included by reference at least, and it talks
15 about chemicals or chemical substances defined as any
16 organic or inorganic substance of a particular molecular
17 identity, including combinations of such substances or any
18 element or uncombined radical.

19 The term does not include any mixture, any
20 pesticide, any like tobacco or tobacco product, any source
21 material for nuclear material, those kinds of things.
22 Foods, drugs, cosmetics, or devices are also excluded.

23 So there's a number of different things that are
24 not covered. It doesn't really -- as I see it, it doesn't
25 really address the question of a class. Because I think

1 within a class, you can identify individual chemicals that
2 are part of that class. And so those chemicals would meet
3 the definition of a chemical. You would just be, you
4 know, asking, you know, for a whole group.

5 Now, the manufacturer may come back and say, "I
6 don't do these other chemicals. I only do this one. And
7 so I'll give you information about this one that I'm
8 responsible for. And you'll have to get the information
9 from someone else." But I don't think it would preclude
10 us from asking the question.

11 PANEL MEMBER WILSON: So you could pose a
12 question or the request for all halogenated substances,
13 for example, versus for Perchloroethylene only; you could
14 make a request for the former?

15 CHIEF COUNSEL MONAHAN-CUMMINGS: Well, you could,
16 except for that the way that you have to go through the
17 process for this law is pretty involved and you have to do
18 a lot of work in terms of finding information that's more
19 readily available and identifying the likely manufacturers
20 of the product. And so the broader the definition of the
21 chemical, the more difficult it is to apply this law to
22 it, I think, because you have to get very specific before
23 you can ask somebody for the information.

24 PANEL MEMBER WILSON: If I could ask just a
25 follow-up question on that.

1 Is that, you know, what you described to me as
2 time consuming and resource intensive, more so than
3 developing our own method within the State -- or methods
4 for halogenated substances, for example?

5 CHIEF COUNSEL MONAHAN-CUMMINGS: Right. That's
6 one of those questions that crosses over between law and
7 science, I'm sure. But I think that what our feeling was
8 after looking at the law and talking to the folks at DTSC
9 that have tried using it is that it is a possibility to
10 use as kind of a backup to get information, but it
11 wouldn't be the primary way you'd want to do it, because
12 it is a fairly long process. It's labor intensive in
13 terms of just going through the process to ask the
14 questions. And then just from a legal perspective, it's
15 not internally enforceable. There's no enforcement
16 mechanism within this particular law. So if somebody
17 said, "No, go pound sand," you wouldn't be able to do
18 anything about it, unless you used some other law, you
19 know, of more general application to say you're not
20 complying with this one.

21 So it would be -- you know, it's nice -- and I'm
22 not saying that any company would just, you know, say no
23 out of hand. But if they did, you could go through all
24 that work and then they say, "No, I'm not going to do it.
25 Sue me"; and you might have to sue them and go through

1 that whole process. So it's not necessarily the primary
2 method I would recommend this group using.

3 But having said that, if it's not possible to get
4 the information another way or it's very expensive or very
5 difficult, it may be the only way to get at what you
6 really need. So we should keep it in mind, but I wouldn't
7 want to say, well, we'll just use, you know, this law to
8 get that information if we need it.

9 PANEL MEMBER WILSON: Can I ask a final question
10 on that.

11 CHAIRPERSON MORENO: (Chairperson Moreno nods
12 head.)

13 PANEL MEMBER WILSON: It just flew out of my
14 head, but it'll come back in a second.

15 Sorry. Go to the next question and I'll be right
16 back.

17 (Laughter.)

18 PANEL MEMBER WILSON: Thanks, Ed.

19 CHAIRPERSON MORENO: Any other questions?

20 Other questions for Dr. Roisman?

21 PANEL MEMBER WILSON: Oh, I remember now.

22 (Laughter.)

23 PANEL MEMBER WILSON: You almost made it.

24 That is, that if this process that DTSC is
25 undertaking is essentially a test of this piece of

1 legislation and if subsequent efforts will be more
2 streamlined or not?

3 CHIEF COUNSEL MONAHAN-CUMMINGS: Well, it's
4 always possible, because every time there's a new law and
5 you have to work through all the kinks in it --

6 PANEL MEMBER WILSON: Right.

7 CHIEF COUNSEL MONAHAN-CUMMINGS: -- and as we
8 understand it, this is the only agency that has tried it
9 so far. There's a number of agencies that are listed in
10 the legislation that can ask for the information. And
11 others haven't done that yet. And one of the things we
12 were doing is kind of keeping track of how that works for
13 them, so that we can learn from their process and see if
14 we -- you know, we may be able to do it faster, we may
15 not. You know, they have a lot more staff at DTSC than we
16 do. So --

17 PANEL MEMBER WILSON: But you don't have a sense,
18 at this point, if that would be possible or if it would
19 move more quickly in subsequent requests?

20 CHIEF COUNSEL MONAHAN-CUMMINGS: I would think
21 that once people get used to it and the fact that the
22 State asks for this information and we go through this
23 process -- plus, you know, some of the stuff that they're
24 asking for may actually be useful to us in this program.
25 I don't know. But, you know, over time it may become

1 more -- it may become more workable and there may be more
2 of a kind of a database of material that's already been
3 provided that we could use. I'm not sure.

4 PANEL MEMBER WILSON: Okay. Thank you very much

5 PANEL MEMBER QUINT: I thought there was -- there
6 is a question about whether or not companies actually --
7 you know, producers actually have these data as a regular
8 ongoing part of their test -- whatever they do when
9 they're, you know, bringing a chemical to market. So is
10 this, you know, like the octanol water partition
11 coefficient, is this something that they would normally
12 have, you know, these data? I don't know if you know
13 that.

14 And also -- I mean, God, Mike is catching. My
15 question was just there.

16 (Laughter.)

17 PANEL MEMBER WILSON: Sorry. It's contagious.

18 PANEL MEMBER QUINT: Well, I can't think of it.
19 But I'm -- yeah, I just was wondering whether -- oh, I
20 know. It is whether or not they have to -- if you ask, if
21 they don't have it, whether or not they have to develop
22 the information. So you may have answered that at the
23 last meeting. I don't -- I read all of the transcript,
24 but I don't remember whether or not that was a factor.

25 CHIEF COUNSEL MONAHAN-CUMMINGS: I'll take just a

1 minute here and see if there's an easy answer there.

2 Maybe you guys could go ahead and we'll answer it
3 in just a minute.

4 PANEL MEMBER QUINT: That's fine.

5 CHAIRPERSON MORENO: All right. If there -- oh,
6 yes, Doctor.

7 Ms. Kavanaugh-Lynch.

8 PANEL MEMBER KAVANAUGH-LYNCH: This will be an
9 easy one for Dr. Roisman.

10 In going over the tables, there was one thing you
11 mentioned, these chemicals are not on the designated list
12 yet. And I missed what those were.

13 DR. ROISMAN: Oh, let's see. You'll find them on
14 the -- it's actually two of the environmental phenols.
15 And they're listed on this additional chemicals list.
16 They are methyl paraben and butyl paraben. And I just
17 included them on that panel slide, because they can be run
18 with those other environmental phenols that are on the
19 designated list.

20 PANEL MEMBER KAVANAUGH-LYNCH: Okay. Thanks.

21 CHAIRPERSON MORENO: Okay. Other questions?
22 Dr. Quint.

23 PANEL MEMBER QUINT: Although you can run the
24 chemicals in a panel and capture more of them, does that
25 add a lot to the cost and to the sample -- the amount of

1 sample you have to have? I think those are the two
2 constraints we're probably going to be faced most with, is
3 amount of sample and cost of analysis.

4 DR. ROISMAN: My understanding is that it's --

5 PANEL MEMBER QUINT: Minimal?

6 DR. ROISMAN: -- minimal.

7 DR. SHE: At least for the other two chemicals,
8 environmental phenols.

9 PANEL MEMBER QUINT: Good.

10 PANEL MEMBER LUDERER: Could you just clarify.
11 So you said not for those two. But, in general, for the
12 panels that were shown on the slides, would that generally
13 be true, that running the whole panel is not going to add
14 much cost or require much more sample than just running
15 one of those chemicals in any of those panels or two of
16 them.

17 DR. SHE: Jianwen She, DTSC lab -- sorry --

18 (Laughter.)

19 DR. SHE: CDPH lab. I used to work at DTSC.

20 (Laughter.)

21 DR. SHE: Anyway, I don't think if you had them
22 all analyzed in a targeted chemical, you know, in a panel
23 would significantly increase the cost. Most of the time,
24 it's not, because even if you don't -- if that exists, you
25 need the samples. You still need to log they aren't

1 there. Otherwise, they may interfere with the ones you
2 targeted. So, anyway, you need to lower them, so that
3 doesn't add an extra cost.

4 DR. PETREAS: In general, yes. I mean, the
5 incremental cost is small. I mean, it adds more standards
6 and the standards are very expensive, more QC to review
7 every single peak that you're aiming, but the procedure
8 usually and the time it takes to extract and shake and
9 pour is the same.

10 CHAIRPERSON MORENO: All right. If there are no
11 more questions from the Panel members, I'd like to -- oh,
12 yes.

13 CHIEF COUNSEL MONAHAN-CUMMINGS: Just regarding
14 the previous question.

15 CHAIRPERSON MORENO: Sure.

16 CHIEF COUNSEL MONAHAN-CUMMINGS: Carol
17 Monahan-Cummings again.

18 In looking at the language that's used in the
19 statute, I think --

20 CHAIRPERSON MORENO: Could you turn your mike on,
21 please.

22 Thanks.

23 CHIEF COUNSEL MONAHAN-CUMMINGS: Carol
24 Monahan-Cummings again.

25 In looking at the language that's used in the

1 statute, it looks like there is -- it is contemplated that
2 they would have to develop information, even if they
3 didn't already have it. And so it does talk about
4 developing and incorporating in looking at how is the most
5 feasible way to develop the information, which says to me
6 that it's not just things you already have.

7 So, again, it depends on how that works in a
8 practical way. But at least it looks like we could ask
9 for information that hasn't already been developed.

10 CHAIRPERSON MORENO: Okay. Before I move to
11 public comment, Dr. Michael Lipsett had made a request to
12 provide some additional information that would be helpful
13 to the Panel.

14 DR. LIPSETT: Yeah. Thank you, Dr. Moreno and
15 members of the Panel.

16 I just wanted to encourage you during this
17 discussion -- hello.

18 Okay. I just wanted to encourage the Panel
19 during this discussion to actually make some
20 recommendations for priority chemicals for the program.
21 As you saw from Dr. Roisman's presentation, the labs have
22 lots of chemicals that were designated as "soon" in terms
23 of being able to be developed. They have received some
24 equipment that we're going to be talking about in the
25 program update tomorrow. And they -- a number of the

1 laboratory staff are going to be visiting the Centers for
2 Disease Control for training on methods. That has to be
3 done, because of our fiscal year, prior to your next
4 meeting. So it's somewhat urgent for the program for you
5 to make some recommendations about priority chemicals.

6 Thank you.

7 CHAIRPERSON MORENO: Thank you, Michael.

8 All right. I believe we're at public comment.

9 Yeah. So, Amy, do you have -- are there any
10 submittals of request to provide public comment?

11 MS. DUNN: I have one in-person comment and one
12 from the Email. And I'm sure if there might be some
13 other -- anybody else.

14 CHAIRPERSON MORENO: All right. With us today,
15 Joe --

16 MR. SUCHECKI: -- Suchecki.

17 CHAIRPERSON MORENO: I'm sorry?

18 MR. SUCHECKI: Suchecki.

19 CHAIRPERSON MORENO: Suchecki. Thank you.

20 (Thereupon an overhead presentation was
21 Presented as follows.)

22 MR. SUCHECKI: Thank you, Dr. Moreno. I
23 appreciate the opportunity to be here today.

24 And I'm going to start off my comments by
25 probably a deadly sin here. I'm going to disagree with

1 Dr. Denton from this morning's introduction. When I left
2 Chicago it was eight degrees and snowing. So I think your
3 climate and your weather out here is absolutely fine and
4 lovely compared to what we went back through. So you
5 folks have it wonderful.

6 Any, I wanted to talk to you a little bit today
7 about diesel exhaust. And we were not aware that you were
8 considering listing diesel exhaust as a designated
9 chemical before your last meeting, and so we weren't here
10 to discuss that.

11 But I think some of the comments we're going to
12 have today also can inform you with regard to the decision
13 of priorities.

14 And I want to address two issues. One is the
15 issue of the diesel biomarker, and the second is to
16 provide some information about the regulatory climate and
17 also how clean diesel is now. I know a lot of people
18 think of diesel as being dirty and you have all the old
19 health studies. But I want to provide you with some
20 preliminary information that we have on what the new
21 technology is doing.

22 --o0o--

23 MR. SUCHECKI: And just -- let's see. EMA is the
24 trade association representing the Diesel Engine
25 Manufacturers, and we represent the manufacturers with

1 U.S. EPA and CARB. And essentially we're out here in
2 California a lot and we do all the applications, you know,
3 on highway, off-road, stationary engines as well.

4 --o0o--

5 MR. SUCHECKI: Regarding the proposed biomarkers,
6 our point - and I think it was also brought out in the
7 staff presentation last time - is that there's really no
8 biomarkers that are unique to diesel. And all the
9 biomarkers that were talked about at the previous meeting
10 are representative of many emission sources.

11 So, for example, the nitro-PAHs, it's produced
12 in -- emitted by industrial processes, as well as
13 combustion. You know, it's not unique to diesel.

14 The 1-nitropyrene marker was suggested as being
15 something that could be monitored and the metabolites
16 could be measured. And there was a paper that was cited.
17 And that's certainly true, you can do that. But, again,
18 if you're -- you know, if you only have exposure to
19 diesel, then you could do that if you're in an
20 occupational setting or a mine where it's only diesel.
21 But, again, once it would come out into the environment
22 where all the sources - gasoline, cooking, natural gas,
23 everything - has that, so, again, that really can't be
24 used as a diesel marker.

25 --o0o--

1 traffic.

2 Jamie Schauer from the University of Wisconsin,
3 who's one of the experts on source apportionment and doing
4 all the PM studies, he did a paper for -- or a study for
5 the Health Effects Institute on metal emissions from
6 mobile sources.

7 And while vanadium was indicated as, you know,
8 coming from both gasoline and diesel, actually the major
9 emissions of vanadium was not from the exhaust, but was
10 really from brake and tire wear. So, you know, if you
11 have more vanadium coming out of brake and tire wear than
12 you do the exhaust pipe, it's -- you know, really, you
13 can't use vanadium.

14 And the other thing I wanted to talk to you about
15 is current emission standards, a new test, which I'll show
16 you some data on. There's essentially no vanadium coming
17 out of emissions from the new diesels.

18 And with regard to the issue of selective
19 catalytic reduction, we represent all the major
20 manufacturers of the vehicles, the trucks. And no one is
21 going to use vanadium SCR in the 2010 trucks. And the
22 reason for that is because in this country we're so
23 concentrated on particulate matter. And that's really the
24 major issue, to get particulate matter down. All the
25 diesel vehicles, trucks, off road is going to require a

1 you can use. And we don't see any. And those results
2 were also found by the Health Effects Institute in their
3 studies and the Health Canada Institute.

4 --o0o--

5 MR. SUCHECKI: I'll go through these very
6 quickly. But to give you some idea on the other issues
7 about the changing nature of diesels --

8 MS. HOOVER: I need to just pop in here.

9 You had said five minutes. So I would suggest
10 that you -- in looking at your slides, you can just talk
11 about your -- you summarize here and go straight to your
12 summary recommendations. The Panel has all your slides.

13 MR. SUCHECKI: Okay.

14 --o0o--

15 MR. SUCHECKI: Anyway, so, you know, if you take
16 a look at all that information, it's just that the new
17 emissions testing that's being done, there's essentially
18 zero PM emissions, all the PAHs are gone, all the things
19 that you're worried about are gone from the diesel exhaust
20 from the new vehicles, in California, you're not only
21 regulating new vehicles; you're regulating all the
22 existing ones as well.

23 So those current regulations are putting it down
24 to zero, so it really makes no sense to do a biomonitoring
25 program. We have the regulations in place. We have both

1 engine and regulatory requirements to monitor what those
2 emissions are. So it really does not seem like to be a
3 good choice for either a designated chemical or a
4 priority.

5 Thanks.

6 CHAIRPERSON MORENO: Okay. Thank you.

7 We have a second request for a presentation.

8 Mr. Baltz.

9 MR. BALTZ: Davis Baltz of Commonweal again.

10 So, pretty major task now trying to prioritize
11 and actually, you know, come up with a list of those that
12 are going to go in the queue first.

13 And everyone is aware of the budgetary situation.

14 So one thing that just popped into my mind
15 listening to Dr. Roisman's presentation, looking at some
16 of those tables, to the extent that it's feasible to
17 utilize AB 289 to help staff do some of its work and get
18 some of these lab standards developed, perhaps some of the
19 chemicals that are of concern to California, but that we
20 don't have lab capability for yet, could we ask staff to
21 go ahead and start to use AB 289 to sort of jump start
22 that process.

23 And just looking through, you know, something
24 like perchlorate would fall into that category, something
25 that obviously is of interest in California, but we don't

1 have the lab capability yet.

2 A couple of the phthalates also fell in that
3 category, either not developed or later for lab
4 capability. I don't think we can expect the labs to
5 prioritize those right now, unless they receive very
6 strong direction from you.

7 And diesel exhaust is another one that the lab
8 capability isn't developed yet. So could we ask the
9 manufacturers to go ahead and get started on that. And
10 maybe it takes a year, but it would save the State quite a
11 bit of time and effort and hopefully end up with something
12 at the end of the day that the Biomonitoring Program could
13 use without having to develop themselves.

14 Also, I want to just emphasize our interest in
15 the -- one of the criterion that was mentioned is look at
16 the chemicals of the future and not of the past. Of
17 course, we're concerned about all exposures, but there are
18 some specific situations in California, and I'm thinking
19 primarily of the flame retardant situation here right now,
20 where California is, you know, in this unique situation
21 where we have Technical Bulletin 117, which requires
22 California to use flame retardants in volumes that are not
23 required anywhere else in the country. And it's very much
24 in the center of a lot of public policy discussions.
25 Biomonitoring data for not only those that are already on

1 the CDC list, but some of these alternatives would be very
2 helpful to generate further discussion on whether we
3 really need these things and also help to avoid the
4 regrettable substitution situation that's been referred
5 to.

6 I think we want to try to, to the degree
7 possible, you know, pair biomonitoring data with the
8 development of the Green Chemistry Initiative here in
9 California, so that they mutually reinforce each other.

10 And then the last one, which I've mentioned
11 before when I've been here, I think Bisphenol A should be
12 prioritized and tested early. It's a chemical that's
13 produced in huge volumes. And increasingly just over the
14 last few months, we see a lot of new evidence being
15 published about concerns about Bisphenol A. And so I
16 think the Biomonitoring Program could really make a great
17 contribution by starting to biomonitor that on a
18 systematic basis.

19 Thank you.

20 CHAIRPERSON MORENO: Thank you.

21 I do have a couple of comments that were sent in
22 by Email.

23 But, Dr. Lipsett, did you have some more
24 comments?

25 DR. LIPSETT: Yeah, I'm sorry. I'll keep this

1 brief. I'm cognizant of the time pressure that you have.

2 But just in response to Mr. Suchecki's comments
3 about there not being any unique biomarkers for diesel,
4 that's certainly true, but that doesn't mean that methods
5 shouldn't be developed. And, in fact, after your last
6 meeting, which was webcast, we were approached by the Air
7 Resources Board to actually submit an idea for methods
8 development for looking at biomarkers for diesel. And we
9 don't know whether this is something that will end up
10 being ultimately funded. But it is something that is in
11 their hopper. ARB is certainly interested in --

12 OEHHA DIRECTOR DENTON: Michael, is your
13 microphone on?

14 DR. LIPSETT: It looks like it's on.

15 Okay. Sorry.

16 Thanks.

17 Okay. Is that better?

18 Okay. Did you hear anything of what I said
19 before?

20 (Laughter.)

21 DR. LIPSETT: Okay. After you're last meeting,
22 we were approached by staff of the Air Resources Board to
23 submit a proposal to do methods development for one of the
24 ideas that had been mentioned by Dr. Flessel. And we
25 don't know whether it will ultimately be funded, but I

1 just wanted to indicate that just because there are no
2 unique biomarkers at this point, doesn't mean that there
3 isn't room for our staff or others to try and develop
4 these.

5 The other comment just to make with respect to
6 the progress that's been made in terms of diesel
7 emissions, that's certainly true, but the fleet turnover
8 from at least last time I checked for the diesel fleet is
9 not instantaneous. So we're going to have a number of
10 diesel engines -- older engines on the road for years to
11 come. And it is something that we, at least at the staff
12 level, think might be something you want to consider.

13 CHAIRPERSON MORENO: All right. Thank you.

14 I'm going to go through the two Emailed comments
15 first and then --

16 PANEL MEMBER WILSON: Can I have a follow-up
17 question for Dr. Lipsett?

18 CHAIRPERSON MORENO: Sure.

19 PANEL MEMBER WILSON: I want to just follow up
20 your comments about diesel from Davis Baltz's
21 recommendation; that, you know, AB 289 was intended by the
22 Legislature to identify substances of particular concern
23 in California. And I think we have -- you know, have
24 clear evidence that diesel exhaust is a problem and a
25 unique problem to California. So, I guess my question is,

1 if you think it's reasonable for staff to develop the
2 method as you're describing and at the same time request a
3 methods development from the diesel engine industry.

4 DR. LIPSETT: Yeah, it's certainly reasonable to
5 do something like that. I'm not saying staff will develop
6 that method even if it's a priority chemical, because it's
7 something that will require substantial resources. If
8 this is something that the Air Resources Board is
9 interested in funding, then this is something that we can
10 work on.

11 But of the list of priority chemicals -- or
12 potential priority chemicals that you have right now,
13 we're going to have to choose among them as to which get
14 developed first, given what our current resources are.

15 PANEL MEMBER WILSON: I guess what my question
16 is, if it makes sense --

17 PANEL MEMBER SOLOMON: 289 doesn't apply to
18 mixtures. We just heard that. So I think it's off the
19 table. It's a mixture.

20 DR. LIPSETT: Okay.

21 PANEL MEMBER WILSON: It doesn't apply to
22 mixtures.

23 DR. LIPSETT: Okay. There's your answer.

24 PANEL MEMBER WILSON: Okay.

25 DR. LIPSETT: Thank you, Gina.

1 CHIEF COUNSEL MONAHAN-CUMMINGS: The other
2 problem with it is, is that people don't manufacture
3 diesel exhaust. And what you're trying to look at is
4 actual chemicals that are being manufactured by someone
5 who has some level of control over what the chemical is,
6 you know, and has some information about it.

7 So I don't think you would necessarily want to
8 use that particular law when you're talking about some
9 other -- you know, something that is produced through some
10 process that isn't intentionally made. So like diesel
11 exhaust and things like that are just not going to fit
12 into -- a lot of it's talking about a particular chemical
13 manufacturer -- because no one's going to say, "Hi, I'm
14 the diesel exhaust manufacturer person." The fact that
15 some of the folks here do, you know, make the engines is
16 completely separate from what the engines actually
17 produce. So I don't think that it would work for that
18 kind of thing. I would be more, you know, maybe your
19 PBDEs or something like that where somebody is actually
20 intentionally manufacturing a chemical that's being put
21 into commerce.

22 CHAIRPERSON MORENO: Okay. If I may, I want to
23 read these two. And that'll be -- then I'll be closing
24 public comment and bring it back to the Panel.

25 So from Rebecca Sutton -- Dr. Sutton, Senior

1 Scientist, Environmental Working Group. She sends us a
2 message saying:

3 "Environmental Working Group recommends
4 prioritizing method development and biomonitoring for
5 Bisphenol A, flame retardants, and triclosan. The
6 timelines listed in the table for each of these three
7 hormone-active chemicals or chemical families indicate
8 detection methods can be developed promptly."

9 So thank you, Dr. Sutton.

10 And we have another. The second is from Cheriell
11 Jensen. And with regards to -- the comments that pertain
12 to prioritizing chemicals are the following:

13 "The most important substances to be tested for:

14 "#1 Fluorides in the forms applied to water
15 systems, as most California communities and most residents
16 are now subject to fluorides in their water without
17 consent.

18 "#2 The most commonly used pesticides should
19 form the order of priority for inclusion with certain
20 exceptions for the most dangerous such as methyl
21 parathion.

22 "#3 Any pesticide or pheromone that has ever
23 been used by airplane application or general application
24 by truck sprayer on neighborhoods should be included in
25 the testing and people who were in those areas that were

1 subject to those applications should be included."

2 And then I'm going to jump down to another
3 specific insecticide.

4 "Herbicide Roundup should be on the #1 list as it
5 is ubiquitous in the environment and sold over the
6 counter."

7 And lastly, "Chloramines should be included."

8 Stating that "many people are now subject to chloramines
9 against their will and have become disabled as a result."

10 She offers her and her group's assistance to the
11 Panel and that we confirm that we received her Email. So,
12 yes, we did.

13 So I want to thank both those individuals from
14 the public for sending in their comments.

15 So with that, I'm going to close public comment
16 and bring it back to the Panel for further discussion.

17 Dr. Solomon.

18 PANEL MEMBER SOLOMON: I'd like to propose that
19 we think about the priority list in two categories. One
20 category in which we draw largely upon the chemicals that
21 are now or soon to be, you know, where the lab capacity is
22 basically either there or nearly there, and that we
23 select, among those, a small number that we think are high
24 priorities.

25 And then the second category would be chemicals

1 that are not nearly there in terms of lab capacity. They
2 would be sort of an on-deck class or, you know, set of
3 chemicals where further research is required and we think
4 that those are particularly high priority for the methods
5 development.

6 So in other words, we'd have two tracks. One
7 would be chemicals where we're pretty much, you know,
8 shovel -- whatever -- you know, shovel-ready chemicals.
9 And then the others are chemicals where we think that the
10 lab's effort, in terms of method development, should be
11 focused on these.

12 And then, you know, as we sort of go through our
13 discussion, we can figure out which category they fall in.

14 I also would encourage us to keep the list short.
15 It's going to be really easy to come up with a list that's
16 kind of too awfully long. And, you know, I keep finding
17 myself tempted to throw more in. And so I just think that
18 it would be most useful for us to keep the list short.

19 And then with a clear indication to staff that, you know,
20 as their resources permit, to feel free to look at any of
21 the designated chemicals. I certainly feel like anything
22 on the designated list is important, but I think they're
23 looking for it to be really very narrowed down.

24 CHAIRPERSON MORENO: Okay. Thank you.

25 Other thoughts or comments or further discussion

1 on Dr. Solomon's proposed method?

2 Yes.

3 PANEL MEMBER KAVANAUGH-LYNCH: I think what Dr.
4 Solomon said makes a lot of sense. And I would add that
5 it seems to me we should discuss the criteria first and
6 decide on those, which will then make coming up with a
7 list much easier I think.

8 PANEL MEMBER QUINT: Before we get to the
9 criteria, I had a question. Michael indicated that staff
10 will be going to the CDC for training and that time is
11 upon us. And I just had a question about that training.
12 So that's training on CDC methodology. So those are
13 chemicals that the CDC is now measuring that our staff can
14 benefit from.

15 But we are measuring some of the ones at CDC like
16 the flame retardants, some certain classes -- some, right.
17 So within so far the training in terms of -- or there's
18 some "soons" -- in the list of things that are soon to be
19 developed, would that include things that would be -- that
20 the staff would be trained on at CDC? I mean, I was a
21 little bit confused about, you know, whether or not that
22 information about the "soon-to-be-training" was giving us
23 further discussion in terms of priority setting.

24 DR. LIPSETT: I think I should let the lab staff
25 answer your question.

1 PANEL MEMBER QUINT: Okay.

2 DR. PETREAS: They're in Michael's presentation
3 tomorrow.

4 PANEL MEMBER QUINT: Oh, sorry. Okay.

5 DR. PETREAS: I can speak for our lab. I mean,
6 we have the lead to do persistent organic chemicals in
7 blood. So we'll be sending our staff to -- who already do
8 these chemicals somehow, to make sure they do it the CDC
9 way. So we already have exchanged SOP, standard operating
10 procedures, and methodologies. Because when we went to
11 visit the CDC labs, we saw equipment that we wanted to
12 copy. So now that we have this new equipment and we are
13 getting -- we're installing this equipment as we speak, I
14 want to make sure that our staff get trained on the same
15 brand new equipment with the new method that CDC does.

16 So, in our case, the plan was to train staff on
17 the persistent organic chemicals that we already do, some
18 of the flame retardants that we already do. But those are
19 the new flame retardants that we are -- mostly do soon and
20 the fluorinated chemicals that we don't do yet.

21 PANEL MEMBER QUINT: Okay, great.

22 DR. PETREAS: So that's our repertoire.

23 DR. SHE: Yeah, the CDPH lab plan is to train
24 based on some standard we already -- already on hand. So
25 we felt that we can practice. So the chemical we pick up

1 like BPA, Bisphenol A, the triclo -- triclosans, those are
2 the environmental phenol groups. So CDC uses the same
3 exact machine setup as we are, so we think that's a good
4 start.

5 We also try to train in the phthalate metabolite.
6 And we have some standards.

7 CDC already provided a group of standards with an
8 OP metabolite, DAPs, 6-DAP, and a few specific OPs
9 metabolite, like a TCP and other ones, diazinon
10 metabolite. So there's a third group of chemical we try
11 to train.

12 So that method can be used for pyrethroid,
13 because CDC uses the same methods. So we will learn the
14 technique, but we will talk with CDC if we can't get some
15 standard from that.

16 So far Dana Barr is very supportive from CDC. So
17 if we get a standard from it, pyrethroid and other OPs can
18 be covered by this training.

19 Another group of chemicals we plan to be trained
20 is hydroxy PAH -- hydroxy PAH. And the reason we have the
21 machines, CDC have a similar setup. So we may cover too
22 much, but on Wednesday CDC will discuss with us to see if
23 our proposal can fit in together the best benefit from
24 this training.

25 PANEL MEMBER QUINT: Great. Thanks.

1 That's all.

2 DR. LIPSETT: Yeah, so these are what the
3 tentative plans are that the lab people have when they
4 go -- this is going to be in June, if I'm not mistaken.
5 But your input into this process is going to be really
6 important, because if there's certain things that you
7 think are really important priority chemicals that they
8 may not be getting trained on that CDC already has a
9 method for, those are things that could be inserted into
10 their training process.

11 PANEL MEMBER QUINT: Got it. Thank you.

12 CHAIRPERSON MORENO: Dr. Wilson.

13 PANEL MEMBER WILSON: Just a clarifying question.

14 DR. PETREAS: Excuse me. If I can add. This is,
15 of course, a year's training. We plan to have more
16 trainings every year. Whatever we don't cover this year,
17 there will be time for it next time.

18 PANEL MEMBER QUINT: Right. Got it.

19 Thank you.

20 PANEL MEMBER WILSON: Just a clarifying question.

21 On Dr. Solomon's proposal to use sort of the
22 first criteria being laboratory capacity, would
23 that -- would those designated as "now" and "soon" fall
24 into that first category, or is it just "now" -- is it
25 just the "now" classification?

1 PANEL MEMBER SOLOMON: What I was proposing is
2 that we look at the "now" and the "soons" for -- but not
3 pick all of them necessarily, but pick among them, for
4 some of our priority chemicals. And then we look at the
5 rest that remain for a very small number that we want to
6 put forward as high priorities for development,
7 recognizing that each one that we put forward is a high
8 priority for development. So in other words, it's not a
9 "now" or a "soon." It's going to be very labor intensive,
10 but we think, you know, we're presumably communicating
11 that those are important for research purposes for
12 developing methods.

13 PANEL MEMBER WILSON: Thank you.

14 I like -- in response to that, I would concur
15 with that. I think that makes sense; and that perhaps the
16 next bifurcation of the algorithm there would be at
17 substances for which there is evidence of emerging concern
18 in California. And I guess the question of the flame
19 retardants that are unique to our flame retardant standard
20 and a couple of others that have come up, I would propose
21 be the second step of that algorithm.

22 CHAIRPERSON MORENO: Okay. If I could just
23 clarify. Dr. Solomon, your recommendation would utilize
24 the fourth handout that we're using for this discussion
25 provided by staff today titled "Additional Chemicals that

1 DTSC and CDPH laboratories can measure currently"?

2 DR. ROISMAN: There's two.

3 CHAIRPERSON MORENO: Right. But in regards to
4 what we can do right now --

5 PANEL MEMBER WILSON: There's the chemicals of
6 interest one also.

7 CHAIRPERSON MORENO: Okay. The reason I was
8 asking about this single-page handout, because everything
9 on this is either "now" or "soon". And the other list has
10 the "to-be-developed" list.

11 PANEL MEMBER SOLOMON: Yes.

12 DR. ROISMAN: There are "now" and "soons" on both
13 lists.

14 CHAIRPERSON MORENO: Um-hmm, okay. All right.

15 PANEL MEMBER SOLOMON: If I may. I agree with
16 Dr. Wilson's second suggestion, with perhaps a friendly
17 amendment, that looking at chemicals where we have any --
18 you know, we talked when we were coming up with designated
19 chemicals about this idea of changing patterns over time,
20 looking at the effects that policy changes in California
21 may be having or that, you know, sort of to identify
22 trends.

23 And so, for example, with the flame retardants, I
24 think what's particularly appealing or intriguing about
25 them, is that we could potentially watch certain classes

1 of flame retardants decrease, which is interesting, as
2 well as watching for the possibility that newer emerging
3 flame retardants might increase. And so I find -- I think
4 we're both thinking the same thing, that the flame
5 retardants are very interesting, because we could watch
6 different types of trends occurring over time with
7 different subcategories.

8 Does that make sense?

9 PANEL MEMBER LUDERER: And I actually think a
10 similar argument could be made for some of the chemicals
11 that are associated with air pollution, so including
12 diesel, but not specifically necessarily due to diesel.
13 But given all the regulation that's going on around
14 particulate matter and diesel exhaust, it would be
15 interesting maybe to look at the nitropyrene, which I see
16 is listed as "soon," and maybe some of the other -- some
17 of the hydroxylated PAHs, which are known also to be
18 associated with particulate matter air pollution for the
19 same reason, that there's a lot of activity going on
20 around reducing that type of air pollution at present.

21 CHAIRPERSON MORENO: I would just want to also
22 add -- this is Ed Moreno -- that with regards to air
23 pollution and air quality, there's also statewide efforts,
24 legislation dealing with climate change -- the Statewide
25 Climate Change Initiative and also, I think, it's SB 375

1 looking to require regional approaches to transportation,
2 development -- land use and transportation. There's a lot
3 of expectations. And there'd be a few ways to measure
4 outcomes of success for that legislation. And I think
5 this Panel and biomonitoring might serve a role if we do
6 this well.

7 OEHHA DIRECTOR DENTON: This is Joan Denton.

8 Michael, in consideration of your earlier
9 comments that it would be very, very useful for the Panel
10 to opine on some of the priority chemicals now, are there
11 certain -- you know, we have tables here of groups of
12 chemicals and we have Dr. Solomon's suggestion. Are there
13 certain chemical groups here which would have more
14 immediacy than others for the Panel to -- given the
15 laboratory considerations, given the CDC visit, and in
16 sort of trying to consider how to organize this, are there
17 certain categories here that we would benefit most from
18 the Panel's advice, at this point?

19 DR. LIPSETT: Well, I think that the discussion
20 you've had so far has been helpful and useful in this
21 regard, like with the -- based on past discussions that
22 the Panel has had and I think the way the program also
23 feels, that chemicals that are really more important in
24 California than elsewhere, like the flame retardants, I
25 mean that I think from a programmatic standpoint, that

1 would be one of the areas that would be really, really
2 interested in moving forward on.

3 As for the others, I just want to remind the
4 Panel again, although it's been stated earlier today, is
5 that we will be making the decisions internally as to what
6 we're going to be focusing on, given what the resources
7 are to -- in terms of the samples we'll be able to analyze
8 and in terms of the methods that are going to be -- the
9 resources needed to develop the methods.

10 My apologies to the court reporter there.

11 And so it would not hurt for us to have a larger
12 pool of priority chemicals than we can handle right at
13 this time, because we will select among those based on
14 what the resources that we have available.

15 I don't know if -- is that helpful?

16 PANEL MEMBER QUINT: So it's sort of a little bit
17 opposite of -- Julia Quint. Sort of a little bit opposite
18 of what Gina said. You're not looking for the narrowest
19 of lists. You're saying that "give us more than a really
20 narrow list." Am I understanding you correctly, that you
21 want --

22 DR. LIPSETT: I think that's right. I think
23 that's right. But there are certain ones that we would
24 consider, I think, to be of highest priority. And it
25 sounds like our thinking is very similar to what the Panel

1 members have been discussing, that the problems that are
2 really most important to California are the ones that we
3 will be trying to focus on first, assuming the methods are
4 ones that can be -- that are either in place or will be
5 developed within the next few months to a year.

6 PANEL MEMBER QUINT: Okay. But not too big but
7 not too small?

8 DR. LIPSETT: That's right. The Goldilocks
9 approach.

10 PANEL MEMBER QUINT: Just right. Okay.

11 PANEL MEMBER WILSON: Kind of a follow-up
12 question for Dr. Lipsett.

13 You know, we've talked about pesticides, 18 or 20
14 or so, that are used in high volume in California that are
15 not included on the CDC's list. But I'm wondering if
16 there's a reason why those aren't -- why they've been
17 placed on the agenda below this item if -- or if we're
18 able to have that discussion about pesticides as part of
19 the prioritization process.

20 DR. LIPSETT: I think that you can have that.
21 But in response to your first question, I'm going to let
22 Dr. Roisman respond to that.

23 PANEL MEMBER WILSON: Okay.

24 DR. ROISMAN: As mentioned on the -- oh.

25 How's that?

1 PANEL MEMBER WILSON: Perfect.

2 DR. ROISMAN: We didn't -- there was a lot of
3 interest in pesticides at the last meeting, and we did
4 plan to talk about them a lot at this meeting and the next
5 presentation is on pesticides. But since we're focusing
6 on pesticides that weren't already on the designated list,
7 we couldn't bring those pesticides forward for you to
8 consider as priority chemicals, because they're not
9 already designated chemicals.

10 And from the last meeting, the Panel mentioned a
11 couple of categories of pesticides that were of interest
12 for a priority consideration, in particular the
13 pyrethroids. So that's why those are on this list.

14 Does that answer your question?

15 PANEL MEMBER WILSON: Almost. I guess -- is
16 it -- I guess the question is, if we designate pesticides
17 that are unique to California today, in addition to the
18 pyrethroids, I would like that to be part of the
19 discussion on prioritization as well. Or is that --

20 DR. ROISMAN: There's potentially an issue about
21 notice since there -- whether there would need to be
22 notice given of particular classes of pesticides that you
23 would want to consider adding as a priority.

24 CHAIRPERSON MORENO: Okay. Michael, I think
25 maybe also, if I'm correct in clarifying -- maybe

1 clarifying. My understanding of this series of meetings
2 that we, as the Panel, have been having is to move forward
3 with trying to designate. But it's an ongoing process
4 where you designate some chemicals. And then we can have
5 a discussion of prioritizing, based on what we've
6 designated, knowing that we may give direction to staff to
7 go back and do some more research then to bring back more
8 information for us, so that we could make, as yet, further
9 designations. So I think we can do both. As long as the
10 Panel continues to meet, we can plan on either later in
11 other meetings to continue to prioritize additional
12 chemicals beyond what we had agreed to prioritize today.

13 Would that be fair to say? Correct, I guess, to
14 say?

15 CHIEF COUNSEL MONAHAN-CUMMINGS: That's correct.
16 This is Carol Monahan-Cummings again.

17 The concern that I have is with the Bagley-Keene
18 Open Meeting Act that we talked about at the first
19 meeting, that we're required to put -- give notice to the
20 public when the group is going to make a decision on
21 something, not just a discussion item, but a decision.
22 And when you do the notice and you say that you're
23 considering something for designation -- I guess, if we
24 did the notice and said designation and priority, you
25 know, I suppose we could do it that way.

1 But our thought was that you could do
2 designating, say, in one meeting. And if you needed to do
3 priority, you could do that in the next meeting. So that
4 you could allow people to have notice that you aren't
5 presuming that the chemical's going to be designated. So
6 if people don't -- then they know what's actually going to
7 be decided at that meeting, so they know whether they
8 should attend, what kind of materials to provide. And it
9 also gives staff the time to look at the information that
10 is more specific to that decision. Because as you could
11 see, they gave you different kinds of information about
12 designated versus priority.

13 PANEL MEMBER WILSON: I think that makes sense.
14 So thank you.

15 OEHHA DIRECTOR DENTON: Carol, if I can just ask
16 you an additional clarifying question.

17 So we're talking about actually prioritizing this
18 afternoon some of these chemicals. Is that within the
19 scope of the agenda that was released?

20 CHIEF COUNSEL MONAHAN-CUMMINGS: Sure.

21 OEHHA DIRECTOR DENTON: So actually specifically
22 making recommendations on priority chemicals is covered by
23 that agenda item that we're on?

24 CHIEF COUNSEL MONAHAN-CUMMINGS: Certainly that
25 is the intent that the -- the distinction is that it would

1 be prioritizing chemicals that have been designated, not
2 necessarily designated at this meeting. So, say, the
3 chemicals that you did earlier in the morning, you
4 probably -- I would recommend that you not prioritize
5 those, until there's been an adequate notice to people, so
6 that they can respond to that. But you could use -- you
7 could prioritize any of the chemicals that have been
8 designated, including those that this group designated.

9 Does that make sense?

10 PANEL MEMBER WILSON: Designated prior to today?

11 CHIEF COUNSEL MONAHAN-CUMMINGS: Right. And we
12 could look at that in the future, whether we want to try
13 and do both in the same meeting. But I just think that
14 it's awkward to do that.

15 CHAIRPERSON MORENO: Okay. We have -- Dr.
16 Solomon has recommended, if I could call it, a framework
17 of how to approach this.

18 If I may ask, does a Panel member have a
19 suggestion for the actual process? I mean, we could --
20 for example, the process may be Panel members recommend
21 particular chemicals or classes of chemicals within that
22 framework and we go one by one by recommendations, or we
23 could go through the list of laboratory able and
24 laboratory soon-to-be-able to perform these studies and go
25 down the list. So that would be the process.

1 So any suggestions on what process this Panel
2 would prefer to use to approach this?

3 PANEL MEMBER SOLOMON: I think I'd just like to
4 add that I also heard a suggestion from Dr. Wilson that
5 we -- with sort of amendment from him to the process that
6 I suggested, which was to look at chemicals which are
7 changing over time or we think might be changing over time
8 in California as an additional lens or layer, which I
9 think is great.

10 And I would suggest that instead of going through
11 the list, that we just let people throw out some of their
12 suggestions. And I'd be happy to do so. You know, in
13 looking at this list, I think that we would be well served
14 to look at some of the metals, because the methods are
15 available now for cadmium, lead, and mercury, which are of
16 great interest. And mercury is in particular a very
17 significant concern in California, and there are a lot of
18 regulatory activities underway to try to reduce mercury
19 exposure. And so my highest priority among those would be
20 mercury, so that we would actually be able to know if
21 levels in women of reproductive age are, in fact,
22 declining, due to efforts both for public education and
23 exposure reduction.

24 I also think that the flame retardants are of
25 very, very great interest. And since the PBDEs are

1 already measurable, monitorable in our labs, I think that
2 we should take advantage of that.

3 And then the companion piece to that in the
4 research list would be to develop methods as a priority
5 for the newer flame retardants that we designated last
6 meeting.

7 And in addition, I just wanted to go back to Dr.
8 Wilson's questions about the pesticides, because I do
9 think that we have two major categories of pesticides that
10 have already been designated - the pyrethroids and the
11 organophosphates - that although they're not uniquely used
12 in California, are certainly extremely widely used in
13 California. And when you look at, you know, usage data
14 for the U.S., California does dwarf almost all -- well,
15 really all other states, in terms of the use of these
16 insecticides. And so I would propose, since the OPs are
17 already -- you know, are on the "soon" list and Jianwen
18 mentioned the possibility of getting trained on the
19 pyrethroids, I would suggest bringing those forward as
20 well.

21 So those were the things that sort of jumped out
22 at me. And I also -- oh, I wanted to go back to Dr.
23 Luderer's comment on some of the PAHs and any -- and the
24 possibility, as a research priority to generate, the
25 diesel signature biomonitor -- you know, methods, so that

1 we could then track what we hope or assume will be
2 reductions in exposure over time.

3 CHAIRPERSON MORENO: Okay. Thank you.

4 Other Panel members? Some interest will still be
5 here if we start on the end?

6 Dr. Wilson.

7 PANEL MEMBER WILSON: Just a clarifying question.

8 I really like what Dr. Solomon is suggesting
9 here. And I guess just if there's a -- if the Panel --
10 has the Panel designated organophosphates previously?

11 They're on the CDC list. Okay.

12 So there's no need for us to designate them
13 specifically. Okay.

14 CHAIRPERSON MORENO: Dr. McKone.

15 PANEL MEMBER MCKONE: Yeah, I think I agree
16 mostly with the suggestion. I would emphasize in the
17 metals category, I do agree. I think mercury is
18 particularly interesting. We're still seeing legacy of
19 gold mining use of mercury. It's something that's from a
20 number of -- there's a number of things going on that
21 would be very useful to sort out with some biomonitoring.
22 You know, possibly arsenic. But, again, I'd give the
23 highest priority.

24 In the pyreth -- well, diesel exhaust I wouldn't
25 add anything to what Dr. Solomon has said.

1 In the pyrethroids, I think it's important to
2 look at -- particularly pick out -- I can't, off the top
3 of my head, pick out which ones are growing in the market.
4 But in terms of this high priority for change, we have to
5 focus on the ones that are growing market share.

6 Which I'd also bring up is a big issue for the
7 flame retardants, is, I think, we should be looking at the
8 brominated flame retardants to see if they're going down
9 as standards and policies change. But also to be looking
10 at some of the alternatives. And I think some of the --
11 what's entering the market -- so, again, without picking a
12 chemical, it takes a little market research to look at
13 what's entering the marketplace to meet the standards.
14 But those are the ones that we need to give priority to,
15 because those are the ones where somebody's going to say,
16 well, what's -- you know, we switch to this -- I think
17 some of these are organophosphates. And the tris-type
18 compounds, which are going to arrive.

19 Let's see. Other than that -- yeah, same point.
20 I don't think I've added anything too new, just some more
21 points. But especially having -- I think the key is to
22 have some contrasting compounds within a category like
23 pesticides. The market is shifting. We really could gain
24 a lot of knowledge and insight to pick a chemical that we
25 know is dropping in market share and one that's rising,

1 and see what shows up in blood and urine as those events
2 take place.

3 CHAIRPERSON MORENO: Dr. Luderer, do you have
4 some thoughts.

5 PANEL MEMBER LUDERER: Yeah, I also want to say
6 that I agree with the -- sort of the list that Dr. Solomon
7 laid out. I think those are all important ones, classes
8 to look at. I might also think about adding, I guess it
9 would be the -- the panel would be the environmental
10 phenols. And I'm particularly thinking about Bisphenol A
11 as one that we ought to include on our list, because of
12 the -- there have been so many recent studies actually
13 linking Bisphenol A with health effects, including a
14 human.

15 CHAIRPERSON MORENO: Okay.

16 Sure. Dr. Solomon.

17 PANEL MEMBER SOLOMON: I actually am terribly
18 torn about the environmental phenols, because from a
19 public health standpoint, especially BPA, a chemical of
20 great concern, especially for the developing infant. I'm
21 trying to figure out what we would add to the CDC data.
22 And I'm sort of looking for, you know, reason, a
23 hypothesis to sort of drive a prioritization of that
24 chemical in the California program, because it would
25 be -- you know, if we're going to pretty much generate

1 data that look like the CDC data, it's sort of less useful
2 than if we think maybe the patterns of use or exposure to
3 BPA might be different here than in other states or in the
4 rest of the country.

5 So I'm not saying that I'm opposed to
6 prioritizing BPA and that -- actually one very good reason
7 to prioritize it is that the lab is pretty well on the
8 road to being able to run it. And so that would be great.
9 And I hate to get in the way of that.

10 So I just wanted to sort of put that caution out
11 there about how we're setting our priorities.

12 I also wanted to throw one more into the mix,
13 which is perchlorate, because of the especially
14 significant problems that California has had with that in
15 the water supply.

16 CHAIRPERSON MORENO: Okay. If we could just
17 continue.

18 Dr. Kavanaugh-Lynch.

19 PANEL MEMBER KAVANAUGH-LYNCH: Can you come back
20 to me?

21 CHAIRPERSON MORENO: Sure.

22 Dr. Quint.

23 PANEL MEMBER QUINT: I agree with the choices
24 that Dr. Solomon and the rest of the folks have made, with
25 a special emphasis on mercury of the metals, as opposed to

1 cadmium, if we had to chose between them, for the reasons
2 that Dr. Solomon gave, but also because there's an
3 increasing concern about dental amalgams and interest
4 there amongst activists about getting mercury removed from
5 dental amalgams. So I think that that could be of
6 interest as well.

7 The brominated flame retardants and chlorinated
8 flame retardants of course, especially because of what
9 Davis Baltz said about the -- you know, the special needs
10 in -- the special direction that California has in terms
11 of flame retardancy.

12 I'm mixed about perfluorinated compounds. I'm
13 interested in them, but they seem to be, in many ways, on
14 the way out, I think.

15 Phthalates I'm particularly interested in. We
16 may get the same data as CDC. But where we have large
17 Asian populations who may have exposure, I think that may
18 be of interest when we get to a representative sample,
19 because I don't think CDC necessarily breaks out those
20 data. And I think that that would be of interest.

21 Any markers of diesel exhaust would be important.
22 And if we could do triclosan, which people have brought
23 up, I think that would -- that would be of interest to me
24 as well.

25 Thanks.

1 CHAIRPERSON MORENO: Okay. Thanks.

2 I just want to add that, as a pediatrician, I'm
3 still very interested in lead, mercury, I'm interested in
4 arsenic, from a contamination perspective.

5 Organophosphates, which are already designated,
6 and the pyrethroids. My interest there is exposure to
7 those that work in ag industry.

8 And I'm also interested in diesel exhaust,
9 knowing that there are still challenges to overcome. But
10 in terms of something that's particular to California and
11 giving some direction to the program, I think it'd be
12 beneficial to look at prioritizing that as well.

13 And I also agree with, I think, flame retardants
14 and a way -- pursuing a way to prioritize the emerging
15 chemicals use of flame retardants in California.

16 PANEL MEMBER KAVANAUGH-LYNCH: I haven't heard
17 anything I disagree with yet. So I second all those
18 suggestions. I think to add my favorites or give a second
19 vote for some of my favorites.

20 I understand the argument for not doing Bisphenol
21 A, but I would still like to see it on the list because of
22 its importance.

23 And I think there was something else I was going
24 to say, but -- and I absolutely support diesel as one of
25 our long-term projects.

1 And I suppose this is breaking the law that we
2 just set for ourselves, but I'd also put up the long-,
3 long-term wish list, the antimicrobials used in animal
4 products, is something that I think is important to have
5 on the list to signal that if it's not us who develops it,
6 somebody ought to be looking at this issue and figuring
7 out how to monitor it.

8 CHAIRPERSON MORENO: All right. Mike, do have a
9 thought?

10 PANEL MEMBER WILSON: Sure. I have one question
11 maybe for Dr. Denton.

12 You know, one of the continuing problems with the
13 flame retardants, for example, is the emergence of these
14 new substances where, you know, one atom is shifted on the
15 ring and it's a whole new substance. And so is it
16 possible for OEHHA to request from the manufacturers of
17 flame retardants which ones -- which ones are they
18 intending to introduce into California in response to the
19 flame retardancy standard that's come on line now? And
20 really to get a sense of what, in fact, are the substances
21 that are emerging in the state.

22 OEHHA DIRECTOR DENTON: We could certainly look
23 into that. We could certainly review the literature and
24 see what the -- you know, see what the landscape is,
25 potentially ask manufacturers or work with the labs to ask

1 the manufacturers what kinds of alternatives they're
2 looking at. How much information we'd get, we'll have to
3 see. But I think it's something that we could look at,
4 let the Panel know if that's something that the Panel
5 would find as a useful piece of information.

6 PANEL MEMBER WILSON: I guess one of the
7 issues -- sorry, Michael. One of the issues would be if
8 these flame retardants are run in scan mode somehow in
9 your analysis, so that you would pick up ones that aren't
10 specified here or if you're actually doing them as
11 individual species. So in other words, if we're not
12 listing them specifically here, you'll miss them. Is that
13 a --

14 DR. PETREAS: Yes and no.

15 PANEL MEMBER WILSON: I guess that's my question.
16 It becomes more relevant if there's no sort of scan mode
17 occurring in the laboratory for flame retardants, for, you
18 know, halogenated flame retardants.

19 DR. PETREAS: Actually, even the category of
20 flame retardants, the way we have them here, as Rachel
21 explained, is a catchall for many discrete and very
22 different classes of chemicals. So even within these
23 flame retardants, I would again separate some of them.
24 And I think it will be more obvious tomorrow in showing
25 that it can be grouped together. And when you're

1 running -- it's not really a scan mode. But it's a mode
2 where if you know what you're planning, you can see them
3 all in the same run. But others, you have to run them
4 separate, in a different instrument or in a different
5 program, or even a different extraction process.

6 PANEL MEMBER WILSON: Other flame retardants?

7 DR. PETREAS: Yes.

8 PANEL MEMBER WILSON: Outside -- are you saying
9 that the halogenated substances could be run as
10 essentially the batch?

11 DR. PETREAS: No. It's still within the
12 halogenated substances. PBDE is one example for
13 everything is the same chemical structure with different
14 bromine atoms. Same like PCBs.

15 Well, these are not the same. They are very
16 different.

17 So seeing things that may be similar or may react
18 in the same mode during extraction and separation and all
19 these different steps, once you validate the method, yes,
20 you can measure them in the same run. And that's the most
21 efficient way. But many of them we tried, others have
22 tried. They'd have to do a separation or a subanalysis or
23 a different injection. So it's not just one scan.

24 PANEL MEMBER WILSON: Right. So, of course, my
25 concern is that we'll miss those that are emerging as a

1 result.

2 DR. PETREAS: If we don't know, though we may see
3 some peaks, we may want to explore afterwards and see if
4 these chemicals have been extracted in the final extra
5 that we have and we see an known peak, we could go and try
6 to explore what it is and find a standard and confirm it.
7 It's not easy.

8 PANEL MEMBER WILSON: Right. Okay.

9 OEHHA DIRECTOR DENTON: Dr. Wilson, just to --

10 PANEL MEMBER MCKONE: Can I follow up on the same
11 point? Sorry to drag this out.

12 When you say a screen, when you're talking about
13 screening a biological fluid, are you talking about
14 looking at -- because I mean to me, what you ought to
15 first find out is what's in the product. And I don't know
16 if there's a way to figure out who might be -- yeah, first
17 of all, if you could get the manufacturers to tell you
18 what they're putting in, but they may not do, but if you
19 could, that solves that problem.

20 But if you can't, it almost seems like an
21 intermediate step would be finding somebody who could put
22 these in a chamber and heat up the furniture, or whatever
23 component it is you're looking at, and try and drive off a
24 range of compounds and see what you see in that screen,
25 because they'll tell you what you're looking for.

1 DR. PETREAS: That's valid. But here we're only
2 focusing on biomonitoring. So it's human tissues, fluids.

3 PANEL MEMBER MCKONE: I know. It's a lot to do,
4 but if we could find somebody who might be doing that.

5 DR. LIPSETT: Yeah, actually, Tom, you just
6 touched on what I was going to say, is that it is going to
7 be difficult to know what is being added as the new flame
8 retardants. The primary substitutes for the PBDEs, at
9 least initially, were Firemaster 550, which had three -- I
10 think four main components, three of which were
11 proprietary. And that was used for several years. But
12 apparently it's now been replaced by a Firemaster 600,
13 which has another set of proprietary chemicals, and we're
14 not being told what's in it. These are trade secrets. So
15 it does make it somewhat difficult. I mean what Dr.
16 Denton was saying before, we can certainly ask, but I
17 don't think that -- at least under the current state of
18 the law, I don't think that they would be compelled to
19 tell us what the ingredients are at this point.

20 OEHHA DIRECTOR DENTON: You know, one thing we
21 want to -- I think we can keep in mind here is this whole
22 effort on green chemistry. And green chemistry on the
23 alternatives and fire retardants is going to be a big part
24 of this green chemistry. So as that evolves, that would
25 be something, I think, to discuss with the Panel as far

1 as -- you know, as alternatives and things that are coming
2 out. Because that effort will inform the designation, I
3 think, of future chemicals in the flame retardants area of
4 this green chemistry.

5 But I don't know how much information we'd be
6 able to get of -- I mean, a lot of this is proprietary.
7 And so, you know, whether they would be willing to say,
8 well, I kind of doubt it.

9 PANEL MEMBER WILSON: I guess my question then is
10 if that is something that OEHHA could describe to us
11 formally in terms of, you know, in looking at the options
12 that are available to you to gather that information from
13 manufacturers and where the actual legal barriers are, it
14 would be, I think, useful for us to -- and just in terms
15 of understanding the barriers to the program sort of
16 globally, broadly speaking in terms of the intentions of
17 the Legislature and the intentions of the Panel to
18 identify emerging hazards for the state. If that's a
19 -- if that's a barrier, we should know that. And I think
20 it should be articulated.

21 DR. LIPSETT: Just to follow up on what I said
22 before. The ingredients of the Firemaster 550 have been
23 identified by analytical chemists. So we can biomonitor
24 for those. And just because it's a trade secret initially
25 doesn't mean that we can't determine what's in there and

1 develop methods to biomonitor for them. It's just that it
2 makes it -- it's more of a time consuming process than if
3 we had a list of what's actually in there. And the OEHHA
4 attorney pointed out to me that there is a section in AB
5 289 that does allow for treatment of trade secret
6 information. But it will make it somewhat difficult to
7 try and publicize biomonitored results if the ingredients
8 that we find out about are still considered to be trade
9 secrets.

10 So it may be worth a more formal presentation
11 maybe at your next meeting about what the limitations are
12 and maybe if there needs to be some additional legislation
13 to facilitate this process.

14 PANEL MEMBER WILSON: I guess I would propose
15 that at our follow-up -- at the next meeting, that -- or I
16 would ask if that's something that could be provided to
17 us, as Dr. Lipsett is suggesting.

18 CHAIRPERSON MORENO: Mike, I suggest that we
19 maybe hold that for the "next steps" discussion we're
20 going to have after this. If you're okay with that, I
21 would suggest that -- well, I think that would be okay
22 because that group of new emerging flame retardants hasn't
23 been designated, because we don't know what they are, so
24 we can't prioritize them as an outcome of this discussion.

25 But I think I could probably reassure you that --

1 not reassure. It may be -- there may be some emerging
2 flame retardants that are brominated that will fall into
3 this group. And since we designated the class the new
4 emerging ones, there are some of them that will fall into
5 that class. And then the program can go ahead without a
6 meeting of the Panel to determine that that would be
7 another chemical that it would begin to biomonitor among
8 the sample of Californians.

9 PANEL MEMBER WILSON: I think that's a good
10 suggestion.

11 CHAIRPERSON MORENO: All right. What I have --
12 yes, Dr. Solomon.

13 PANEL MEMBER SOLOMON: Just a quick follow-up on
14 the flame retardants issue. I think the Panel is
15 cognizant of the magnitude of the requests to staff of,
16 you know, saying that we would like to set, as a priority,
17 the entire class of emerging halogenated organic flame
18 retardants. And, you know, I think from my perspective,
19 when I'm asking that, I'm not asking that the lab develop
20 methods for every single chemical on this list.

21 But what I am asking is that -- you know, what
22 I'm trying to convey is that I think that it should be
23 very high priority for OEHHA, and its sister boards, and
24 offices, and so forth, to work together to try to figure
25 out which emerging flame retardants are the ones that we

1 should be biomonitoring for, and that the lab should
2 really throw their best efforts into developing methods
3 for the ones that, you know, we think, you know, based on
4 the best information, we can possibly figure out how to
5 obtain, you know, are the major emerging ones.

6 And so it's a somewhat -- I want to sort of focus
7 the task a little bit and yet be clear that, you know, I
8 think what I'm hearing from all of the panelists, that we
9 think this area is extremely important and, therefore, we
10 sort of want to push for both information gathering and
11 methods development in this area insofar as, you know,
12 resources can be directed in that direction.

13 CHAIRPERSON MORENO: Thank you, Dr. Solomon.

14 Well, we have a -- we've gone through the
15 Panel -- I'm sorry. Each Panel member present today has
16 given some opinions on what they would like -- each of
17 them would like to see as a priority. And at this point,
18 well, I could go through and try to come up with a list
19 based on the comments that were provided. Would that be
20 all right? And each of you go through the list with me
21 and see if we can come up with a list.

22 Starting from -- and I'm looking -- as a guide,
23 I'm looking at the document the first handout that was
24 provided to us by staff entitled "Chemicals of interest to
25 the Scientific Guidance Panel based on discussion at the

1 December meeting - corrected February 27th."

2 Going off of that one, I've got quite a bit of
3 interest among -- within the metals for cadmium, lead,
4 mercury; and two Panel members that were interested in
5 arsenic.

6 And so how would the Panel members -- how might
7 that be made as a priority -- or recommendation made as a
8 priority? Would it be each of those chemicals or would it
9 be the group of metals?

10 OEHHA DIRECTOR DENTON: This is Joan. I thought
11 the suggestion was that the highest would be mercury,
12 given the prevalence of mercury in California. At least
13 that was from some of the Panel members.

14 PANEL MEMBER MCKONE: I think it came out in
15 order, yeah. Mercury got so many strong votes, that that
16 would be first. Probably followed by, what, cadmium and
17 arsenic and lead?

18 PANEL MEMBER SOLOMON: Lead as well.

19 We didn't have a discussion on whether to
20 speciate or not, which would be a more involved process.

21 CHAIRPERSON MORENO: Okay. Maybe we could ask
22 the laboratory to review for us, based on the slide that
23 we saw, I think some of these metals are in separate
24 panels. Given the list -- the broad interest here, with
25 an emphasis on mercury, is there a particular panel that

1 would lend itself to doing two or three of these, making
2 them all priorities? And it must include mercury.

3 DR. SHE: Yes, we can do the mercury. I guess
4 you mean, you know, the blood mercury. Actually, you mean
5 in the urine. And we also can do the speciation. And our
6 expert, Dr. Frank, does a lot here. If he's here, he can
7 develop all of this, if you set them as priority
8 chemicals.

9 CHAIRPERSON MORENO: Well, I guess my interest
10 was whether there's a panel for -- I guess, to minimize
11 cost, was there a panel or two panels that can get most of
12 these chemicals?

13 Dr. Quint.

14 PANEL MEMBER QUINT: I think if Rachel would put
15 up her nice colored panel slide, that might help us. It
16 helps you to visualize what panels.

17 DR. SHE: If we do the speciations -- like
18 actually, that's needed to be a method, because it
19 involves a column. Mercury speciation needs a different
20 method. But generally the cost of the metal is a lot so
21 high, compared to the other --

22 CHAIRPERSON MORENO: Okay. There it is.

23 Okay. So looking at panel one on the slide shows
24 cadmium, lead, and mercury, can be run together?

25 DR. SHE: Yes, we can run the cadmium, lead,

1 mercury in whole blood together, yes.

2 CHAIRPERSON MORENO: Okay. Well, then thank you.

3 All right. So could this Panel tentatively agree
4 on cadmium -- sorry -- cadmium, lead and mercury as
5 priority metals?

6 PANEL MEMBER QUINT: I have a question about
7 mercury. I thought I read in some of the documents from
8 last time that if you don't speciate the mercury, you
9 might -- that you need that extra information in order to
10 interpret the results properly. Is that not correct? I
11 mean, do you -- how important is the second panel to
12 interpreting the mercury that you might get from the first
13 panel?

14 DR. SHE: Actually, I think I do not know so much
15 about it to answer this question.

16 PANEL MEMBER QUINT: Okay. That's fine.

17 PANEL MEMBER SOLOMON: I know a little bit about
18 it. This is Gina Solomon.

19 The vast majority of the mercury that is found in
20 blood -- in a blood sample is methyl mercury, organic
21 mercury. So if you're doing something like panel one, you
22 would be getting a very, very close surrogate of methyl
23 mercury in the body.

24 It would be -- if you're interested primarily --
25 you had mentioned the dental amalgam issue, which would be

1 an inorganic form of mercury. And there you would either
2 potentially be more interested in looking at -- my
3 understanding is you'd be potentially more interested in
4 looking at urine or speciating. But I think that does
5 increase the cost quite a bit.

6 So we have to think about that in -- I was
7 thinking about methyl mercury exposure from fish when I
8 was sort of proposing mercury, you know, as being a
9 particular issue here in California. And so that's -- I
10 think we would get that from panel one.

11 PANEL MEMBER QUINT: In that case, I would back
12 off the speciation and just go with the first panel.

13 CHAIRPERSON MORENO: Okay. I'm looking at the
14 Panel members.

15 Any other comments on that one?

16 DR. ALEXEEFF: Dr. Moreno?

17 CHAIRPERSON MORENO: Yeah, sure.

18 DR. ALEXEEFF: George Alexeeff. I'd like to make
19 a comment.

20 While we greatly appreciate all of -- we've heard
21 all of your comments. And I think what Dr. Lipsett was
22 suggesting, if you could just -- if you just designated,
23 let's say, cadmium, mercury and lead and arsenic, we've
24 heard your preferences, the strength of the panel. And
25 then the laboratories could begin to try to figure out,

1 once all the chemicals are designated, which ones they
2 could work on, because it depends upon staffing and that
3 kind of stuff. So I'm just thinking it's not necessary
4 for you to go into such great detail on how the lab
5 capacity can fit into this, because they're going to have
6 to juggle and see what staff they have.

7 PANEL MEMBER SOLOMON: Okay.

8 DR. ALEXEEFF: It might simplify your
9 discussions.

10 CHAIRPERSON MORENO: Yes, it would. Thanks.

11 Okay. Well, based on a suggestion, cadmium,
12 lead, mercury and arsenic as priority chemicals.

13 Okay. Moving on to the next -- I've got diesel
14 exhaust comments from -- at least four Panel members
15 interested in diesel exhaust.

16 Is there a consensus on prioritizing diesel
17 exhaust, knowing the limitations of lab capacity at this
18 time?

19 PANEL MEMBER QUINT: Yes.

20 CHAIRPERSON MORENO: Okay. Sara.

21 MS. HOOVER: Sorry.

22 So we were wondering -- so then is that done,
23 your considering that recommended as priority, or are we
24 going to poll the Panel? Are you going to make the whole
25 list?

1 CHAIRPERSON MORENO: Oh, process. Okay, guys.

2 (Laughter.)

3 CHAIRPERSON MORENO: You can't see us nodding our
4 heads in the dark?

5 (Laughter.)

6 PANEL MEMBER MCKONE: Actually, can we go through
7 it and just do consensus? I don't think we have to --

8 MS. HOOVER: If you make a clear statement and
9 then --

10 CHAIRPERSON MORENO: Let me ask -- thank you.

11 I'm sorry. We were on a roll there.

12 Is the Panel comfortable with -- I'm sorry. Do
13 we have consensus by Panel members that the proposed
14 mechanism of making these recommendations for
15 prioritization is fine?

16 Go through and get consensus?

17 Okay.

18 All right. We'll continue.

19 Mike has a question.

20 PANEL MEMBER WILSON: Well, the only thing was
21 that we had talked about making the first sort of split of
22 the algorithm being the "now" or "soon". Yeah, and
23 they're all designated at least on this -- the chemicals
24 of interest to the Panel as "now" or "soon", with the
25 exception of the pyrethroids. So does that mean that we

1 would --

2 CHAIRPERSON MORENO: My understanding, Mike,
3 is -- according to the recommendation of Dr. Solomon, is
4 that we could still prioritize those. We just recognize
5 that because the capacity doesn't currently exist, it's
6 serving as direction to the program to investigate
7 opportunities to identify ways to include that in
8 biomonitoring.

9 PANEL MEMBER WILSON: Yeah. Okay.

10 CHAIRPERSON MORENO: Is that correct, Dr.
11 Solomon?

12 PANEL MEMBER SOLOMON: Yeah. I'm not so sure my
13 original suggestion of the two categories is working so
14 well. But I think that we can -- yeah, my proposal had
15 been that we could put a small number of ones in the "not
16 developed" or "later" category forward, but recognizing
17 that that means lots of methods development between now
18 and when they would be usable.

19 CHAIRPERSON MORENO: Thank you, Dr. Solomon. I'd
20 say actually it helps me, because it doesn't limit my
21 willingness to prioritize. I recognize I shouldn't let
22 the lack of existing lab capacity limit me from making a
23 recommendation for prioritizing. So thanks.

24 All right. Next there was some interest in the
25 pyrethroid pesticides. Further discussion on that

1 and -- yes, Sara.

2 MS. HOOVER: So just to clarify. So cadmium,
3 lead, mercury, arsenic - do you already feel you have a
4 consensus on those as priority chemicals?

5 CHAIRPERSON MORENO: Yes.

6 MS. HOOVER: Okay. I just wanted to clarify it.

7 CHAIRPERSON MORENO: As long as you stay right
8 there and --

9 MS. HOOVER: Yeah.

10 (Laughter.)

11 MS. HOOVER: And one clarification about
12 pyrethroid pesticides. That's not designated as a class.
13 That whole class is not designated. So that's actually
14 something -- and I'll just raise it now. This was sort of
15 a "next steps" question. But there are certain things on
16 the CDC list where certain chemicals are grouped under
17 categories, but that category itself is not a designated
18 category. The chemicals listed are the designated
19 chemicals. So you could consider, at a future meeting,
20 for example, if you wanted to designate certain of those
21 as classes, like pyrethroid pesticides, that would be an
22 option for you. But you can't call that a priority
23 chemical, the whole class, right now.

24 CHAIRPERSON MORENO: Thank you.

25 All right. So with regards to pyrethroid

1 pesticides, the discussion we had just a few minutes
2 ago -- or the recommendations that came from Panel members
3 was with regards to this class of pyrethroid pesticides
4 and it wasn't a discussion of specific chemicals. So if
5 the Panel's okay and we're going to have more
6 discussion -- or presentations on pesticides, we'll let
7 that one go for now. And we'll come back to that at a
8 later date.

9 There was --

10 PANEL MEMBER SOLOMON: Well -- sorry.

11 I actually think we could talk about the seven
12 chemicals that are listed here, because those are all on
13 the CDC list. So we're basically talking about a
14 subset -- a specified subset of pyrethroid insecticides
15 that we could prioritize, at this point, if we thought
16 that they were important. But, you know, it also would be
17 reasonable for us to, you know, look at others in that
18 class. I just feel like if -- I guess in the near term,
19 whether we put them forward as priority chemicals now or
20 not, I could either way. Though I would like to convey to
21 the lab staff that are going to CDC to definitely train up
22 on that method.

23 So that's I think my only interest in this.

24 CHAIRPERSON MORENO: Well, my interest in
25 recommending that the Panel come back to this is that

1 we're going to have further presentation on pesticides.
2 And as far as give -- this Panel statutorily can give
3 recommendations and guidance to the program, and in this
4 case, on what to focus in on studying and training at the
5 CDC as well. So we can make that clear.

6 But if you guys want to talk about it now, we can
7 do this now.

8 PANEL MEMBER WILSON: I would concur with your
9 suggestion. I think it would be appropriate to have the
10 discussion of prioritizing pesticides after we've had a
11 broader discussion of pesticides used in California. So I
12 would concur.

13 CHAIRPERSON MORENO: Okay. Well, then I will
14 move along with -- let's see. This is just my list - you
15 guys don't have this - my notes.

16 I've got organophosphate pesticides was brought
17 up. And it's already designated.

18 I'm sorry?

19 DR. ROISMAN: It's just -- it's not the class of
20 organophosphates that's designated. But there are a group
21 of specific organophosphates, and also many of them share
22 the same metabolites. And those are listed on the
23 additional chemical list.

24 CHAIRPERSON MORENO: Okay. In that case, would
25 the Panel like to defer that for further discussion after

1 we get the presentation on pesticides?

2 DR. ROISMAN: Let me just clarify something about
3 the pesticide presentation that's coming up. It's not --
4 it hasn't been noticed in such a way that I think that the
5 Panel's really going to be able to designate additional
6 pesticides. The presentation is really a work in progress
7 about the types of information that we found and some of
8 the complexities with bringing pesticides forward.

9 So I think that if the Panel is interested in
10 some of the pesticides that are currently on the CDC list
11 and want them to be paid attention to by the Program, now
12 would be a good time to recommend them as priority
13 chemicals, because the next pesticide discussion is really
14 not even at the level of designated chemicals. It's more
15 kind of an ongoing thing. So just so your hopes aren't
16 too high --

17 (Laughter.)

18 DR. ROISMAN: -- of what's to come.

19 CHAIRPERSON MORENO: Okay.

20 PANEL MEMBER MCKONE: A question on the
21 pyrethroids. How many of these are on the same panel?
22 That is, I know we can't designate them as a class. But
23 is there a standard panel that would pick the big ones?
24 In other words, you don't have to run --

25 DR. SHE: Analytical panels, right.

1 PANEL MEMBER MCKONE: Because one thing I would
2 think is that we want to pull some of these out. And I
3 don't know how to sort through them without knowing, you
4 know, whether they're all on the same panel or on
5 different panels.

6 DR. SHE: All of them on the -- basically, on the
7 CDC's panels, pyrethroids run with a specific OP. So for
8 the cleanup procedure, they're all the same. But on the
9 analytical part, one part is run on the APCI or ESI. So
10 the analytical part is different. But as an example,
11 cleanup is the same. So it is harder to say that exactly
12 all of them are on the same panels. They're on the --
13 basically, I think, I would say they're on the same panel.

14 DR. ROISMAN: The metabolites are measured for
15 the pyrethroids, not the parent compounds, and they share
16 a lot of the same metabolites.

17 PANEL MEMBER MCKONE: It makes it hard to set
18 priorities, other than we could pick the ones that are all
19 with the same families or at least we could be moving in
20 the direction of some pyrethroids.

21 CHAIRPERSON MORENO: Well, some more discussion
22 on the pyrethroids then.

23 OEHHA DIRECTOR DENTON: This is also -- this is
24 an evolving process, so you don't need to make up your
25 decision today. I mean, we can bring it back or whatever.

1 I mean, this is going to be an ongoing prioritization.

2 CHAIRPERSON MORENO: Yes, Gina.

3 PANEL MEMBER SOLOMON: My interest in the
4 pyrethroids is actually in some ways somewhat parallel to
5 my interest in the flame retardants, in that because of
6 regulatory changes at the federal level, there are --
7 there's a lot of pressure on the organophosphates,
8 resulting in some significant reductions in use. And the
9 pyrethroids are coming in in a pretty significant way to
10 replace many of these organophosphate uses, both in the
11 indoor environment - which has pretty much already
12 happened, so I don't know if we'd catch that in
13 biomonitoring - and also in food crops.

14 And since the insecticides, both the
15 organophosphates and the pyrethroids, are especially
16 heavily used in minor crops, in other words, the fruit and
17 vegetable crops, such as those grown in California, if we
18 were going to pick up these kinds of trends, exposures
19 related to reductions in use of the organophosphates and
20 increases in use of the pyrethroids in general, we would
21 expect to see it in Californians more than people -- or
22 possibly also in people in Florida and Texas, because they
23 have somewhat similar pesticide use patterns.

24 And so what I -- my interest, my hypothesis is is
25 that we might see some interesting trends over time, and

1 that we also might pick up increasing body -- you know,
2 body burdens or human exposures to pyrethroids more
3 quickly here in California than the CDC might in their
4 national program, because we would be picking up not only
5 exposure through food, but also exposure to populations
6 living near where these chemicals are used. So that's why
7 I was sort of thinking of them together frankly, the OPs
8 and the pyrethroids, and was interested in them, you know,
9 because of that change.

10 PANEL MEMBER WILSON: All right. Well, where
11 we're at right -- Okay, I --

12 CHAIRPERSON MORENO: Mike, go ahead.

13 PANEL MEMBER WILSON: I guess jumping over to the
14 organophosphates, the two that are listed here.

15 The chlorpyrifos was listed under the materials
16 that were provided to us a couple of sessions ago as a
17 fairly -- as, you know, one of the higher volume OPs
18 applied on food crops in California at one and a half
19 million acres.

20 And diazinon is a sort of medium level OP with
21 just under half a million acres.

22 And these ones have already been designated,
23 right?

24 So we could, if we wanted to proceed with
25 prioritization with those. And I guess I would argue that

1 the two listed here are of unique importance to
2 California.

3 PANEL MEMBER MCKONE: So, maybe the suggestion is
4 that the priorities should be given -- instead of
5 compounds in this case, let's suggest that the set of
6 nonspecific dialkyl phosphate metabolites be a priority,
7 right. That's only eight compounds. It catches most of
8 those. And then TCP and the metabolite of diazinon. So
9 that's only a total of ten. And that would cover, you
10 know, the majority of the organophosphates and give us
11 specific information on the two that are highest used, and
12 give us a little bit of nonspecific data on the whole
13 class. And then we wouldn't be designating specific
14 chemicals. We'd be designating, in this case, priority
15 metabolites. And I think those are -- I mean, the dialkyl
16 phosphates aren't that many, and they're all together or
17 are they in different analyses?

18 DR. SHE: Yes, that's all in one place.

19 PANEL MEMBER MCKONE: Right.

20 So if we could make an equivalent suggestion --
21 and I don't know enough about the chemistry of
22 pyrethroids, whether there's like a couple of major
23 specific metabolites and then a nonspecific class
24 metabolite, and we could make those a priority?

25 DR. SHE: So the sequence of DAP can be run on

1 one method. That's the CDC so far running on high
2 resolution GC-MS. And then also develop a new method of
3 using HPR CMS. But obviously they prefer us to steer
4 around the first method. That's a high resolution GC.
5 And the specific like TCP and the diazinons can be
6 combined with pyrethroid to run on the HPR CMS method.

7 I don't know if I answered your question.

8 PANEL MEMBER McKONE: I mean, again as long as --
9 I don't know if it's appropriate for us, but I think it's
10 easier in this case -- mike, sorry.

11 I think it's useful, in this case, to designate
12 the metabolites as the priorities, because it's a much
13 smaller set. And then we don't have to worry about which
14 pyrethroids we cover, because it's hard to pick which ones
15 are important. The same way with the OPs. But the
16 nonspecific metabolites cover the class fairly well.

17 CHAIRPERSON MORENO: Dr. Kavanaugh-Lynch has a
18 comment.

19 PANEL MEMBER KAVANAUGH-LYNCH: At the moment,
20 we're talking about prioritizing chemicals that are
21 already designated. So we're not designating things right
22 now. We're prioritizing things that are already
23 designated.

24 I have a suggestion to get us out of this
25 quagmire we're in, which is just to say for right now

1 prioritize all the pyrethroids that are on the list and
2 all the organophosphates on the list. I think the staff
3 have probably heard where the interests are. This allows
4 them to go ahead with that suggestion without us getting
5 mired down in what's designated, what's not designated,
6 and just move on with the list. I think it would be good,
7 at this point.

8 CHAIRPERSON MORENO: That would work.

9 Okay. Why don't you go ahead and state that one
10 more time.

11 (Laughter.)

12 PANEL MEMBER KAVANAUGH-LYNCH: I suggest that we
13 designate -- sorry -- for the time being, we prioritize
14 the already designated pyrethroid pesticides and
15 organochlorine pesticides. Not the classes, but the
16 individual pesticides that are already designated, that we
17 prioritize all of them for the time being.

18 CHAIRPERSON MORENO: Which, organophosphate?

19 PANEL MEMBER KAVANAUGH-LYNCH: The organochlorine
20 pesticides and the pyrethroid pesticides.

21 PANEL MEMBER SOLOMON: You mean the
22 organophosphate.

23 PANEL MEMBER KAVANAUGH-LYNCH: Okay.

24 PANEL MEMBER QUINT: She said it right the first
25 time.

1 PANEL MEMBER WILSON: And by that you mean the
2 chlorpyrifos and the diazinon and the metabolites. Is
3 that what you mean, Marion?

4 PANEL MEMBER KAVANAUGH-LYNCH: It's not the
5 metabolite that's designated. Therefore, it's not the
6 metabolite that we can prioritize.

7 PANEL MEMBER WILSON: Thank you.

8 We can prioritize the chemical that's already
9 designated.

10 PANEL MEMBER WILSON: Perfect.

11 PANEL MEMBER KAVANAUGH-LYNCH: And then staff
12 know which metabolites to measure.

13 PANEL MEMBER WILSON: Exactly.

14 DR. ROISMAN: If I could draw your attention to
15 that other table, the designated chemical table, which
16 was -- I think, was in Tab 2 of your binder. That lists
17 the -- under organophosphates, it lists all the parents
18 that are measured as part of the CDC. So if you want to
19 designate -- sorry -- if you want to prioritize
20 organophosphates, I would recommend prioritizing those
21 parent chemicals. They're measured by -- that also gives
22 the lab flexibility to measure them either by the
23 nonspecific DAP metabolites or by specific metabolites,
24 depending on the chemical.

25 PANEL MEMBER WILSON: Rachel, was that on this

1 one?

2 DR. ROISMAN: Correct.

3 PANEL MEMBER WILSON: Okay.

4 PANEL MEMBER MCKONE: But every single one of
5 these has -- oh, excuse me. If I may -- if I can --

6 CHAIRPERSON MORENO: Yes, please, Doctor.

7 PANEL MEMBER MCKONE: Yeah, well, this speaks
8 well to the point. Every single one of these is a
9 dimethyl or a diethylphosphate metabolite. So if we
10 prioritize all organophosphates that have a dimethyl or a
11 diethyl, then it's feasible in terms of the lab because
12 they're all there, right?

13 I mean, again, we shouldn't micro-control this.
14 But it means that if we designate every single chemical
15 listed here, the people in the lab have the option of
16 doing that either with the dialkyl phosphate metabolites
17 only; or if they have enough time and resources, they can
18 go to the more specific ones. And we're not telling them
19 whether or how to do that. But our recommendation to do
20 everything on this list -- prioritize everything on this
21 list is not that challenging in terms of if you're only
22 looking for DMP, DMTP, DMDTP -- there's like six
23 compounds, seven compounds, eight.

24 DR. ROISMAN: Six.

25 PANEL MEMBER MCKONE: I mean, again that's not --

1 but in the lab, it's not a lot of different compounds, but
2 it gives us a broad coverage in this class.

3 CHAIRPERSON MORENO: Okay. So we have a
4 recommendation. Marion made a recommendation.

5 So any further discussion on that?

6 PANEL MEMBER WILSON: How does it justify with
7 what Dr. McKone just said? Would that mean that we would
8 prioritize the whole set of organophosphates?

9 CHAIRPERSON MORENO: Listed here, yes.

10 PANEL MEMBER WILSON: All right.

11 CHAIRPERSON MORENO: So what we're looking for
12 now would be consensus among the Panel members with the
13 recommendation by Marion?

14 Gina?

15 Yes. Okay.

16 Is that clear to --

17 MS. HOOVER: Yes.

18 CHAIRPERSON MORENO: Okay. Excellent.

19 We're getting there.

20 If I move down on this list, there was -- under
21 "Environmental phenols" there was particular interest in
22 Bisphenol A. And those that were interested in that, do
23 you want to make a recommendation?

24 I've got Gina, Ulricke.

25 PANEL MEMBER LUDERER: Yeah, I think there was

1 also interest expressed in triclosan. And I think those
2 would be on part of the same panel, is that correct,
3 asking the lab folks?

4 DR. SHE: BPA and triclosan is on the same panel,
5 yes.

6 CHAIRPERSON MORENO: Okay. So, Ulricke, are you
7 recommending -- what's your recommendation? That we
8 prioritize --

9 PANEL MEMBER LUDERER: That Bisphenol A and
10 triclosan be prioritized.

11 CHAIRPERSON MORENO: Okay. Any further
12 discussion by Panel members?

13 Okay. We're looking for a consensus. Is there a
14 consensus on this item?

15 Yes.

16 And this side of the panel?

17 Okay. So I'm seeing consensus by the Panel for
18 those two chemicals as well.

19 Moving down. I've got brominated and chlorinated
20 organic chemical compounds used as flame retardants. And
21 we have a list of chemicals here. I think there was
22 interest among most or all Panel members for that.

23 So from someone who is interested in that, is
24 there a recommendation?

25 Gina, Julia are a couple people who were

1 interested in this one.

2 PANEL MEMBER SOLOMON: So the recommendation is
3 to prioritize the PBDEs as well as, you know, as a class
4 the brominated and chlorinated organic compounds used as
5 flame retardants, as priorities for biomonitoring, with
6 sort of recognition that this is a large and heterogeneous
7 group and that would -- the Panel is not expecting methods
8 to be developed for every single one of these new and
9 emerging flame retardants, but rather for there to be an
10 effort, you know, to authorize staff to prioritize among
11 them.

12 CHAIRPERSON MORENO: Okay. Thank you, Dr.
13 Solomon.

14 Discussion by Panel members on that
15 recommendation?

16 Mr. McKone -- Dr. McKone.

17 PANEL MEMBER MCKONE: Sort of, I guess,
18 discussion or clarification. I don't know if you -- you
19 didn't specifically mention the phosphates. They're
20 showing up a lot. Again, I think chemically, as I recall,
21 we -- when we did these for electronic equipment, they're
22 all together. The phosphate flame retardants are not
23 separated. I think you can run them all in the same -- or
24 most of them come in the same method. And if they do,
25 then I would say they should be a priority and we can --

1 DR. PETREAS: We haven't looked at the
2 phosphates. But they're not in the same group as the
3 others. But we have --

4 PANEL MEMBER MCKONE: No, but they're in the
5 same -- I mean, all of the phosphates flame retardants are
6 chemically similar. And not that they're -- you're
7 probably not going to have to run more than one method to
8 get them all or to get the big ones. So it would be --
9 you know, we could ask for four chemicals. But, again,
10 it's only one analysis.

11 And, you know, I don't know -- I know in
12 electronic equipment they were very dominant. I don't
13 know how common it is in other types of consumer products,
14 but they were definitely a dominant class of flame
15 retardants. And we didn't see the other chlorinated ones
16 at nearly as high a level.

17 PANEL MEMBER LUDERER: Are you talking about the
18 non-halogenated phosphates or also including the ones that
19 are halogenated, that are on the list already?

20 PANEL MEMBER MCKONE: No, I'm talking -- oh,
21 okay. They're chlorinated too, right. I just wanted to
22 make sure we got the organophosphate, because some of
23 those organophosphates -- they're all chlorinated, I
24 think. I think so. If we do chlorinated --

25 CHAIRPERSON MORENO: Are we still on the

1 brominated and chlorinated organic compounds?

2 PANEL MEMBER MCKONE: Yeah, I'm on this list.

3 Flame retardants.

4 CHAIRPERSON MORENO: Yes. As I recall, the way
5 we designated these, it was -- the designation was
6 brominated and chlorinated organic compounds used as flame
7 retardants, including, but not limited to, and then the
8 list.

9 Or else I'd like to finish up with this class and
10 then we need to take a break.

11 I'm sorry. Who made the recommendation? Gina,
12 did you make it?

13 PANEL MEMBER SOLOMON: I did.

14 CHAIRPERSON MORENO: Okay.

15 PANEL MEMBER MCKONE: I was just assuring that we
16 didn't drop any of the phosphates that might be important.

17 PANEL MEMBER SOLOMON: My understanding is that
18 the chemicals, such as chlorinated tris, that are
19 phosphates as well as halogenated would fall within this
20 recommendation and would definitely be considered to be
21 part of the priority set. However, any phosphate-based
22 flame retardants that are not halogenated, my
23 understanding is that this Committee hasn't yet designated
24 those or hasn't designated those, so those would not be
25 prioritized.

1 PANEL MEMBER MCKONE: Agreed.

2 CHAIRPERSON MORENO: Okay. Given that, is there
3 further discussion by Panel members on this
4 recommendation?

5 No.

6 So I'm looking for a consensus on the
7 recommendation by Dr. Solomon.

8 Recommendation on this side of the Panel?

9 Yes. This side of the Panel, myself, yes.

10 So thank you for that.

11 So that recommendation is -- add that to the list
12 of recommendations.

13 Thank you.

14 We need to take a break. And it's ten to four,
15 Dr. Denton.

16 Okay. Four o'clock then?

17 We'll reconvene at four o'clock.

18 Thanks.

19 (Thereupon a recess was taken.)

20 CHAIRPERSON MORENO: All right. We're going to
21 resume the meeting now. Welcome back.

22 I'm looking at -- oh, I was asked by Program
23 staff to restate the recommendation with regards to diesel
24 exhaust. So we'll do that again just to be clear. I
25 don't remember who made that recommendation.

1 Would someone like to make a recommendation with
2 regards to diesel exhaust?

3 PANEL MEMBER LUDERER: Sure. I recommend that
4 the Panel recommend diesel exhaust for prioritization.

5 CHAIRPERSON MORENO: Okay. Discussion by Panel
6 members?

7 CHIEF COUNSEL MONAHAN-CUMMINGS: We're missing
8 one.

9 CHAIRPERSON MORENO: Can we still make consensus
10 with a quorum?

11 CHIEF COUNSEL MONAHAN-CUMMINGS: Do you know if
12 she left or if she --

13 CHAIRPERSON MORENO: No.
14 We have a quorum?

15 CHIEF COUNSEL MONAHAN-CUMMINGS: You can still --
16 she couldn't necessarily contribute to the conversation if
17 she's not here.

18 CHAIRPERSON MORENO: Oh, she's on the phone.

19 Could you please restate the recommendation.

20 Thanks.

21 PANEL MEMBER LUDERER: Yeah, I'd like to propose
22 that the Panel recommend diesel for prioritization.

23 CHAIRPERSON MORENO: Okay. Discussion?

24 And looking for consensus.

25 PANEL MEMBER WILSON: We mean diesel exhaust.

1 PANEL MEMBER LUDERER: Diesel exhaust.

2 CHAIRPERSON MORENO: Yes. Okay.

3 And consensus?

4 PANEL MEMBER SOLOMON: I actually have a comment
5 on that.

6 CHAIRPERSON MORENO: Oh, sure.

7 PANEL MEMBER SOLOMON: And that is that there are
8 PAHs at least on some of these lists. And from my
9 perspective, I'm not so sure I'm interested in
10 prioritizing PAHs generally. And so I definitely support
11 this proposal to prioritize diesel. And then insofar as
12 there are any of the PAHs that are sort of, you know,
13 potentially good markers to explore, then those presumably
14 would be prioritized under that listing.

15 Does that make sense?

16 You know, I was sort of grappling with whether we
17 were going to be prioritizing certain PAHs or whether we
18 were going to prioritize diesel. So I think we're okay
19 with --

20 CHAIRPERSON MORENO: One of the --

21 PANEL MEMBER SOLOMON: -- doing it this way.

22 CHAIRPERSON MORENO: Well, we have -- after this,
23 we have three more chemicals or classes of chemicals that
24 we're going to briefly discuss and see if there's a
25 recommendation to prioritize. And the PAHs are one of

1 those lists -- are on the list to discuss.

2 Dr. Luderer.

3 PANEL MEMBER LUDERER: Well, I mean, we can
4 discuss them when we discuss those. I was just going to
5 say that because the PAHs also can be markers of other --
6 oh, I guess it's fading here -- can be markers of other
7 types of particulate matter air pollution, so not just
8 diesel, that I think I would still be in favor of
9 designating the -- or not designating -- recommending that
10 the PAHs that are listed on the CDC list be prioritized.

11 CHAIRPERSON MORENO: Thank you.

12 So is there a consensus to recommend that diesel
13 exhaust be prioritized?

14 And on this side of the Panel?

15 Yes. Okay.

16 Staff clear?

17 Okay. Great.

18 I mentioned that I had recognized three other
19 areas. So I'll just go through those so we can -- the
20 Panel knows what I believe we're going to discuss as far
21 as prioritization. One is the PAH, second is perchlorate,
22 and the third -- Dr. Quint was interested in phthalates.
23 So that's my list.

24 Okay. So let's go on to PAHs then.

25 Gina, actually you were interested in that.

1 PANEL MEMBER SOLOMON: Yeah, PAHs are a tough
2 one, because, you know -- I'm interested in -- I mean, the
3 reason that the Panel designated diesel exhaust, or at
4 least is my recollection, is that we thought that it would
5 be an excellent one for - what's the criterion? - the need
6 to assess efficacy of public health actions to reduce
7 exposure to a chemical or, in this case, mixture, because
8 we thought that it would be a great opportunity to
9 potentially observe reductions in human exposure to air
10 pollution as regulatory actions in California kick in to
11 reduce diesel. And so then we were sort of grappling for
12 a good biomarker, realizing that it's not so easy.

13 Inasmuch as that can still be done, that's great.
14 I'm a little worried about going broad with the PAHs,
15 because we start getting into grilled meat very quickly
16 and, you know, sort of -- you know, firsthand and
17 secondhand cigarette smoke and lots of other things. So I
18 would probably suggest stopping at diesel. But I'd be
19 curious what the arguments are on the other side.

20 CHAIRPERSON MORENO: Okay. Further discussion on
21 polycyclic aromatic hydrocarbons?

22 PANEL MEMBER LUDERER: Well, and I guess if we
23 were talking about air pollution generally speaking and
24 particulate matter, other than particulate matter from
25 diesel -- I mean, the PAHs have been associated with a

1 particulate fraction of air pollution quite strongly. So
2 I guess I was thinking just in terms of looking at
3 particulate air pollution more generally, they could be
4 useful that way.

5 PANEL MEMBER QUINT: I like that argument,
6 because we have had a lot of attention to air pollution
7 controls in California and there's a lot of interest in
8 traffic and traffic-related health effects. And
9 particulate matter in particular is a huge problem. So to
10 the extent that -- I would support adding PAHs with that
11 intent of using it as a marker for -- or to help us
12 biomonitor as a surrogate for air pollution, or whatever
13 you said, which made sense to me at the time you said it.

14 (Laughter.)

15 PANEL MEMBER WILSON: I have a question for Dr.
16 Luderer.

17 Is it possible in terms of the state of the
18 science on PAHs and exposure assessment to speciate those
19 that are associated with air pollution? Are we going to
20 get sort of confounding with the other issues that Dr.
21 Solomon raised?

22 PANEL MEMBER LUDERER: I mean, I think like with
23 diesel, that there's not going to be any -- at least from
24 what I understand, there are probably none that are going
25 to be totally specific. So it is going to be probably

1 having -- looking at signature, you know, groups of
2 compounds or some kind of a combination approach like we
3 discussed with diesel last time. I think that's my
4 understanding.

5 CHAIRPERSON MORENO: Yes, Dr. Quint.

6 PANEL MEMBER QUINT: I was looking at the ones on
7 the additional chemicals lists that have "soons" next to
8 them. I think there are four of them. I don't know if
9 there's some way we can hone in on those, if those would
10 narrow the list. There are PAHs, you see --

11 CHAIRPERSON MORENO: Where are those?

12 PANEL MEMBER QUINT: I think there are four, and
13 they're on the additional chemicals that DTSC and CDPH
14 laboratories can measure currently or will be able to
15 measure in the near future.

16 PANEL MEMBER LUDERER: You know, I actually had a
17 question about that list, because one of them is
18 1-nitropyrene, which is -- are we considering that
19 designated, because it's one of the biomarkers for diesel?

20 DR. SHE: The first three we sort of have
21 standards. So far, we are unable to find the standard for
22 the Cambridge isotope. And the CDC has currently models
23 of 23 model hydroxy PAHs. So the other standard is so
24 expansive. It's not available, at least to us. They get
25 some standards from Germany. So this is three by the --

1 has the opportunity we put them there. And a lot means
2 that is significantly related to the air pollution. The
3 last one actually we pick up, because it's an easier
4 issue.

5 CHAIRPERSON MORENO: Okay. This is Ed Moreno.

6 So is nitropyrene currently on the designated
7 list?

8 DR. ROISMAN: Yeah, I think it would be fair to
9 say that, you know, when the Panel recommended designating
10 diesel exhaust, that that was licensed to the lab to
11 investigate it in, you know, whatever manner seemed
12 reasonable. So certainly easily -- the methods that were
13 outlined in the presentation at the last meeting, that
14 those methods are easily designated. And arguably any
15 other method that the lab thinks is a reasonable way of
16 measuring diesel exhaust is designated. So that those are
17 available for prioritization.

18 CHAIRPERSON MORENO: Thank you.

19 So whether or not the Panel today specifically
20 prioritizes nitropyrene, it's already been covered with
21 the recommendation to prioritize diesel exhaust then?

22 DR. ROISMAN: I believe that - and maybe Jianwen
23 can speak to this - that 1-nitropyrene was one of the
24 methods that was outlined as an option for --

25 CHAIRPERSON MORENO: All right. Thanks.

1 DR. SHE: Additional information like Dr. Lipsett
2 has mentioned, ARB also put a proposal to use 1-nitro --
3 hydroxyl 1-nitropyrene as a marker. Although, it's not
4 unique, but we think that it may be the possible ones. So
5 that's why we have that chemical there.

6 CHAIRPERSON MORENO: Okay. Further discussion or
7 questions by Panel members on PAH?

8 If not, I think, Dr. Luderer, you had a statement
9 that incorporated air pollution with regards to PAHs.
10 Would you like to make a recommendation or --

11 PANEL MEMBER LUDERER: Well, after what Dr. She
12 just said, I'm wondering whether maybe we should limit it
13 to prioritizing the four on the list that the laboratory
14 is --

15 CHAIRPERSON MORENO: Dr. Luderer, if I go back to
16 the recommendation from staff, that their suggestion was
17 not to worry too much about the capacity of the lab, but
18 to make a -- just make the prioritization and the lab can
19 determine what their capacity is.

20 Dr. Solomon.

21 PANEL MEMBER SOLOMON: Well, from my perspective,
22 the capacity of the lab actually does matter. Because if
23 it's something that's relatively easy for the -- and not
24 terribly -- you know, not hugely expensive for the lab to
25 do and not hugely time consuming, I'll feel a lot more

1 comfortable prioritizing it. Because in my view, the PAHs
2 are really sort of borderline about which way I'm frankly
3 going to go on that.

4 And so if it means pushing staff to do
5 significant time-consuming methods, validation, and by
6 very expensive standards, you know, I might recommend
7 against prioritizing those PAHs. Whereas, if it seems
8 like something that is, you know, readily feasible, with
9 not a big stretch, then I feel much more comfortable
10 recommending them as a priority.

11 So I actually would feel better, I think, about
12 these four. But I'd love to hear a little bit more from
13 the lab about that.

14 DR. SHE: Regarding the standard, that's --
15 excuse me?

16 CHAIRPERSON MORENO: Is it on?

17 DR. SHE: -- about standard, recently we received
18 an Email from Dr. Dana Barr from CDC. She indicated that
19 she got the instruction from her management that we have
20 provided some standard to State lab, which she already
21 give us some. So for the other, like the PAH ones, we
22 still needed to find out if this was true that would give
23 us standard a lot.

24 CHAIRPERSON MORENO: Okay. Well, we're -- I
25 don't know if there's any more further discussion

1 necessary. And if someone's ready to give a
2 recommendation -- and, again, we don't have to give a
3 recommendation for prioritizing this particular group.
4 And we have two more that we're going to discuss.

5 So back to the Panel.

6 PANEL MEMBER LUDERER: Well, in the interim, we
7 could recommend to prioritize the three,
8 3-hydroxyfluoranthene, 6-hydroxychrysene, and the
9 3-hydroxybenzopyrene, which are the ones that you already
10 have the standards for; and are on the CDC list and so,
11 therefore, are designated.

12 CHAIRPERSON MORENO: Okay. We have a
13 recommendation from one of the Panel members.

14 Is there further discussion on that
15 recommendation?

16 Then is there consensus on that recommendation?

17 Yes, the Panel. Okay.

18 Program staff, is that clear?

19 Okay. Great.

20 Next, perchlorate.

21 And could we hear from one of the Panel members
22 that was interested in considering that as a priority.

23 PANEL MEMBER SOLOMON: This is Gina Solomon.

24 I'm interested in perchlorate mostly, because
25 it's been identified in more drinking water sources in

1 California than in any other state, by far. And the
2 concentrations in drinking water have been relatively high
3 compared to other states in parts of California.

4 There are also some concern about exposure
5 through the food chain through irrigated crops.

6 And so there's widespread human exposure.
7 Perchlorate is a known thyroid disrupter, with affects on
8 development of the brain in infants. And so it's a
9 significant concern from a child health perspective and
10 from an exposure perspective. And there's some California
11 specific issues at play.

12 So those were the reasons that I pulled it out of
13 the larger group of designated chemicals.

14 The concern about perchlorate is that the
15 method -- you know, it says "later" next to it. It's not
16 doable by the lab right now. And it appears that there's
17 some additional work and equipment that might be necessary
18 to move that forward. So we need to take that into
19 consideration when we decide whether it merits
20 prioritization.

21 CHAIRPERSON MORENO: Dr. McKone.

22 PANEL MEMBER MCKONE: Yeah, I think this is -- I
23 mean, this is an opportunity sort of sitting there to
24 learn more about complex exposure pathways. It's
25 definitely an important issue for California. So I think

1 there is a need to pursue it.

2 PANEL MEMBER WILSON: Dr. Solomon, is this
3 primarily a water -- through water contamination? That's
4 what you're talking about for California exposures?

5 PANEL MEMBER SOLOMON: My understanding is that
6 last count it was in something like 150 different water
7 systems in California, which put California far and away
8 at the head of the list of the states in terms of water
9 quality problems with perchlorate.

10 But there's quite a bit of data right now showing
11 that perchlorate is taken up in leafy green crops, such as
12 lettuce and spinach and related crops. This has been an
13 issue in the Imperial Valley, because of the contamination
14 of the Colorado River and irrigation of these crops with
15 Colorado River water.

16 And there's also some data on uptake, I believe,
17 in citrus crops and some on perchlorate in milk, both
18 human milk and cow's milk.

19 So there are a number of different exposure
20 pathways of interest. The ones that are perhaps more
21 unique to California are the direct drinking water
22 exposure pathways, because obviously people all around the
23 country eat California crops.

24 PANEL MEMBER WILSON: Right.

25 CHAIRPERSON MORENO: Dr. Lipsett.

1 DR. LIPSETT: Yeah, I just wanted to interject
2 here in relation to what Dr. Solomon has been saying, is
3 that our environmental health tracking program is planning
4 to do a pilot biomonitoring study in the Imperial Valley
5 looking specifically at perchlorate. And our lab is
6 likely to be doing -- in fact, they will be doing the
7 analysis, that the tracking program is going to be paying
8 for this. So it would be nice to have some support from
9 the Panel with respect to having that be one of the
10 priority chemicals as well.

11 DR. SHE: Just to follow up on what Dr. Lipsett
12 said. We actually work by checking program. And they're
13 able to give limited funds. Lab also use some fund from
14 the general lab equipment. So we put -- we supplement the
15 purchase for the high chromatography, which is the method
16 EPA recommends for the -- to do the perchlorate. So we
17 are moving on that part.

18 Also the photo lab, which have a lot of
19 equipment, they're interested in the vegetables, why the
20 leaves of the vegetables, to look for it. So kind of a
21 small momentum was built up in the laboratory that we take
22 on.

23 CHAIRPERSON MORENO: Okay. All right. Then is
24 there a recommendation from one of the Panel members
25 regarding perchlorate?

1 PANEL MEMBER SOLOMON: I'd like to recommend --
2 this is Gina Solomon. Sorry. I'd like to recommend that
3 the Panel prioritize perchlorate for biomonitoring in the
4 State Biomonitoring Program.

5 CHAIRPERSON MORENO: Okay. Any further
6 discussion or question on the recommendation?

7 Okay. And is there a consensus on that
8 recommendation for approval?

9 Okay. Great.

10 And the last that I have on my list was interest
11 by the Panel to consider phthalates as priority chemicals.

12 And I've got -- there are several interested.

13 But, Julia Quint, I think you --

14 PANEL MEMBER QUINT: Yes.

15 CHAIRPERSON MORENO: -- brought that to our
16 attention.

17 Would you like to explain your interest in that.

18 PANEL MEMBER QUINT: I'm interested in it,
19 because I think there has been a lot of publicity about
20 phthalates. I think there are lots of consumers who are
21 interested in phthalates. There are sufficient data to
22 show that we should be concerned about the potential
23 developmental effects of phthalates. They're ubiquitous.
24 And I am particularly interested in prioritizing it,
25 because we have a very active nail salon collaborative

1 that is working -- it's national. Lots of activity here
2 in California.

3 And it's one of the chemicals -- dibutyl
4 phthalate in particular is a plasticizer that's used in a
5 lot of nail salon products. And it's a largely
6 Vietnamese-owned industry, as well as workers. And I
7 think some of those exposures -- when we get to a
8 representative sample of California, we might be able to
9 capture some unique exposures just from dibutyl phthalate
10 that possibly would not be picked up, or at least is not
11 broken out in the CDC data.

12 So I think toxicological potential health
13 effects, exposure, and some specific populations in
14 California that I'm interested in. So those are the
15 reasons that I am interested in prioritizing it.

16 CHAIRPERSON MORENO: Thank you.

17 Other thoughts from Panel members on the class of
18 phthalates?

19 Dr. Solomon.

20 PANEL MEMBER SOLOMON: At one point, we had
21 discussed, as a panel, the possibility of looking at the
22 chemicals that are replacing phthalates in toys. I'm not
23 sure how far along staff is with that project. I think it
24 was on a slower track, but that is of some interest.

25 When Dr. Quint mentioned dibutyl phthalate, which

1 is particularly wide spread and the exposures are
2 particularly high and it's very heavily used in California
3 and elsewhere, one of the interesting things that I've
4 come to understand is that apparently since that was
5 banned in toys, a very closely related chemical,
6 di-isobutyl phthalate, appears to be coming in as a
7 significant replacement. That phthalate, di-isobutyl
8 phthalate, is not part of the CDC Biomonitoring Program.

9 And so this is an important discussion on
10 priority setting. But I think it also raises again the
11 question of designating additional new and emerging
12 phthalates. Because if we want to do a really good job
13 with phthalates, we need to pair some of the phthalates
14 that are reducing in use with some of the ones that may be
15 increasing. That's not, you know, something we can
16 obviously do today, but it's something that we should be
17 not losing site of.

18 PANEL MEMBER WILSON: I had the same -- Mike
19 Wilson. I had the same comment, that this class of
20 substances suffers from the same problem as the flame
21 retardants. And I think Sarah Varney just did a story on
22 this on the California Report on the emerging substitutes
23 for phthalates, and that they were -- that there were some
24 concerns about their toxicity and there were also large
25 unknowns with respect to toxicity. And so I -- you know,

1 I think it's -- we certainly want to prioritize this class
2 of substances. But I want to flag again the need for the
3 program to be effective in capturing those that are
4 emerging, that we need to pay attention to that and again
5 revisit it on our next meeting perhaps.

6 DR. SHE: One from the lab report part. Since
7 the lab work trying to move with the current resource
8 level with the proposal with the association of public
9 requests laboratory, which the EPA chair -- they give us a
10 fellow. So when we do the proposal, we use a fellow in
11 the proposal, so it is fellow we are working with us for
12 one to three years. So the fellow allows in the team
13 working with us on this. So I was thinking if we get to
14 the recommendation from the panel, it might be easier for
15 this process, we already told them we were working on
16 these chemicals. Otherwise, we may need to find a
17 different research project for the fellow.

18 (Laughter.)

19 PANEL MEMBER QUINT: I like your thinking.

20 PANEL MEMBER SOLOMON: You never, never, never
21 turn down a fellow.

22 (Laughter.)

23 CHAIRPERSON MORENO: All right then. If there is
24 no more discussion on that, is there a recommendation by a
25 Panel member with regards to phthalates and prioritizing

1 chemicals?

2 PANEL MEMBER QUINT: Sure. I would like to --
3 this is Julia Quint. I would like to recommend that we
4 prioritize the phthalates for the Biomonitoring Program.

5 MS. HOOVER: So this is another one where the
6 whole class isn't designated. So I think the way that you
7 did the earlier groups that were not fully designated, you
8 could do the same with phthalates.

9 PANEL MEMBER QUINT: Okay. So we need to amend
10 that to -- I can't find the ones that are...

11 I would like to recommend that -- I'd like to
12 recommend the phthalates that are currently being in
13 the -- CDC is monitoring as a priority for the California
14 Biomonitoring Program.

15 CHAIRPERSON MORENO: So would that be phthalates
16 that are currently designated?

17 PANEL MEMBER QUINT: Yes. I suspect all of these
18 are designated, right. They're on the handout we have.

19 CHAIRPERSON MORENO: Yes.

20 Okay. Is the Panel clear on the recommendation?

21 Okay. Any further discussion on that
22 recommendation by Panel members?

23 Okay. I'm looking for a consensus for approval
24 of the recommendation. I've got it on this side, and this
25 side as well. And I do also approve.

1 Clear?

2 MS. HOOVER: Yes.

3 CHAIRPERSON MORENO: Great. Thanks.

4 Okay. Panel members, that was the list that I
5 put together listening to the initial discussions.

6 Is there any further discussion on the currently
7 designated list of chemicals for the Biomonitoring
8 Program?

9 I'll start on the very end and we'll work our way
10 back this way.

11 Dr. Solomon.

12 PANEL MEMBER SOLOMON: I just have a question for
13 staff. As we've gone through some of these chemicals,
14 there have been mentions of, "Oh, the tracking program
15 approached us to do a collaborative" or, "Oh, we've got a
16 fellow who could work on this for free" or "somebody could
17 give us the methods."

18 Is there anything else --

19 (Laughter.)

20 PANEL MEMBER SOLOMON: -- that we should be
21 thinking about where there is an opportunity -- similarly,
22 you know, the mention of diesel exhaust where the Air
23 Resources Board has actually requested a proposal to
24 develop such methods -- are there other opportunities that
25 staff is aware of that should be brought to our attention

1 where with designation by this Panel, it would potentially
2 open up opportunities to apply for funding to acquire
3 additional staff or methods?

4 DR. LIPSETT: Well, the program update, I was
5 going to mention tomorrow that the CDC has just issued an
6 RFA to help support biomonitoring programs in the states.
7 They issued this RFA shortly after the House stimulus bill
8 was passed. And I think that they were thinking they were
9 going to get some stimulus money, but it turns out that's
10 not the case.

11 However, their budget for this year -- this
12 fiscal year with the Omnibus Bill has been augmented.
13 There will be some money to help support state programs.
14 I'm going to talk a little bit about that tomorrow.

15 There is another program or another small
16 scale -- I mean, a very small scale project in Tulare
17 County that I'm going to be talking about tomorrow too
18 that involves pesticides. But I think that the ones that
19 you've talked about today will cover the one -- whatever
20 it is that they ultimately decide to monitor for in that
21 particular program as well.

22 And there may be some other opportunities that
23 I'm not aware of that other staff might want to comment
24 on, at this point.

25 I guess not.

1 But we did have this request for information that
2 we talked about in the past -- the past meeting. And
3 there are several sets of archived samples that will be
4 analyzed. And I'm just trying to remember -- I think that
5 most of those chemicals are ones that I would have to do a
6 comparison. But I think that they are all ones that
7 you've covered this afternoon at this point. I might be
8 wrong about that.

9 Myrto, do you -- yeah, okay.

10 So I think that we're good on that score.

11 Okay. Thank you.

12 CHAIRPERSON MORENO: Okay. There was another --
13 I think someone else had a comment.

14 Yes.

15 PANEL MEMBER KAVANAUGH-LYNCH: A thought, that it
16 might be important for us to consider doing something
17 which could end on a happy note, which is adding tobacco
18 to the list since California has the lowest smoking rate
19 in the state and has that in large part -- of the nation,
20 sorry -- and that is in large part due to the public
21 health efforts of the State, that that might be a very
22 nice thing to demonstrate to the Biomonitoring Program and
23 monitored. It would be a monitoring of a public health
24 intervention issue.

25 CHAIRPERSON MORENO: Okay. Further discussion on

1 that most recent recommendation?

2 Dr. Luderer.

3 PANEL MEMBER LUDERER: That would be then to
4 recommend to prioritize cotinine?

5 PANEL MEMBER KAVANAUGH-LYNCH: Yes.

6 CHAIRPERSON MORENO: Okay. Further discussion?
7 Yes.

8 PANEL MEMBER SOLOMON: I have a laboratory
9 question about that, because my recollection was that that
10 came up, at some point, earlier on and there was a problem
11 with biomonitoring for cotinine. I actually would be very
12 much in favor of it. But I thought that there was some
13 issue that made it hard.

14 DR. LIPSETT: I don't think it's a methodological
15 issue. I think it was a question just of resources, that
16 because of the nature of the analyses that would need to
17 be done on that, that basically you'd need to have a
18 specific machine devoted pretty much exclusively to
19 analyzing for cotinine. At least this is what my
20 recollection was that Dr. Flessel had said.

21 Jianwen, is that correct?

22 DR. SHE: Sorry, I'm not familiar with cotinine's
23 specific technical part. That's before I joined the
24 group, I think.

25 PANEL MEMBER SOLOMON: My recollection is that

1 cotinine did come up in the past and that there was a
2 concern that it would -- they'd have to buy a whole new
3 machine just for that. And if that's the case, that cools
4 my enthusiasm for it quite a bit, even though I think that
5 it is -- you know, if it -- if it weren't so difficult, it
6 would be great, because I think that it squarely fits in
7 our overall goals of monitoring effectiveness of public
8 health interventions in California.

9 CHAIRPERSON MORENO: Okay. Further discussion?

10 Dr. Kavanaugh-Lynch, do you still feel compelled
11 to make a recommendation?

12 PANEL MEMBER KAVANAUGH-LYNCH: You know, on the
13 premise that everything that we make a priority then is
14 just a recommendation and then staff are going to do it or
15 not depending upon issues like do they have to buy a whole
16 new machine for it, I'd suggest that we put it on the list
17 and they can decide not to do it.

18 CHAIRPERSON MORENO: All right then, would you
19 mind making that a recommendation?

20 PANEL MEMBER KAVANAUGH-LYNCH: I recommend that
21 we add cotinine to the prioritization list -- list of
22 prioritized chemicals.

23 CHAIRPERSON MORENO: Thank you.

24 Any other comments on that recommendation among
25 Panel members?

1 Dr. Solomon.

2 PANEL MEMBER SOLOMON: I'd just like to make sure
3 that we make very explicit -- that, you know, if it does
4 require major capital costs, that we don't expect that
5 staff will carry out that recommendation. So I just want
6 to be careful about putting it up there along with the
7 other priorities. But I think I mean -- okay. I'm
8 willing to go with that, with a big caveat.

9 CHAIRPERSON MORENO: I think that's a reasonable
10 suggestion from the Panel to the Program.

11 Okay then. Do we have a con -- and I want to
12 point out that cotinine is a designated chemical
13 previously existing on the CDC's list.

14 So do we have consensus to accept that
15 recommendation by Dr. Kavanaugh-Lynch?

16 On this side of the Panel, yes.

17 Okay. Great.

18 The Staff. Clear?

19 MS. HOOVER: Yeah, thanks.

20 CHAIRPERSON MORENO: Okay. Thank you.

21 All right. With that, is there any other further
22 discussion on this topic this afternoon?

23 If not, we have another presentation.

24 Okay. I'm not seeing any.

25 Okay. Great.

1 Well, that concludes that portion of the meeting
2 today.

3 And we do have another presentation now. But
4 before we move on -- which is a follow-up on pesticides.
5 It's just past 4:30. We actually were -- on the agenda,
6 we were to hear a follow-up on pesticides and we're also
7 to have a discussion on the agenda that's entitled "Next
8 steps," and then ending the meeting at 5 o'clock.

9 It's 20 to 5, so I would like to bring back to
10 the Panel a suggestion and entertain any other
11 suggestions. But my suggestion would be to put off the
12 agenda item "Next steps" until tomorrow, so that we can
13 spend time on a follow-up on pesticides.

14 And in addition to that, we may be here -- if the
15 Panel wishes, we could stay a little bit past 5 o'clock to
16 give the item -- agenda item on pesticides due time.

17 That's fine. Okay.

18 Can staff?

19 Okay. Thank you.

20 All right. Well, then the next presentation, Dr.
21 Krowech.

22 Thank you.

23 (Thereupon an overhead presentation was
24 Presented as follows.)

25 DR. KROWECH: All right. I'm going to talk about

1 already on the designated list. And we also excluded
2 fumigants in organics and other pesticides not considered
3 easily biomonitoring or of low toxicity concern.

4 --o0o--

5 DR. KROWECH: And so we wound up with this first
6 batch from those 50, 12 chemicals -- ten of which were
7 primarily agricultural, one non-agricultural, and one
8 adjuvant.

9 --o0o--

10 DR. KROWECH: In terms of pyrethroids, this is a
11 list of the pyrethroids that are registered in California
12 that are not biomonitoring by CDC. And I won't say too
13 much about them. But to echo what was said earlier, for
14 instance, bifenthrin, which is a high-use pesticide and
15 the only high-use pesticide in the top 100 list of these
16 pyrethroids here, their use increased from 2006 to 2007 on
17 almonds. The increase was 199 percent.

18 --o0o--

19 DR. KROWECH: In terms of pet pesticides, we're
20 in the process of developing a list of pet pesticides that
21 appear to be intentionally important in California. And
22 these are some examples of pesticides that we have been
23 looking at.

24 --o0o--

25 DR. KROWECH: Household pesticides, again in

1 progress. Currently, we're focusing on finding
2 information on pesticides that are consumer pesticide use
3 and also identifying pesticides that are added to other
4 household products.

5 --o0o--

6 DR. KROWECH: So some considerations that we have
7 found in this screening process are that pounds applied
8 may not be the best screen. Many pesticides of concern
9 could be low volume but high exposure, for example, in
10 home and lawn use, pet use.

11 Product type and use are important. Home
12 pesticides contained in an ant trap are a different
13 exposure than those from an aerosol spray.

14 Residues in food could be used as one indicator
15 for exposure concern.

16 Physical and chemical characteristics can be
17 helpful in terms of assessing exposure. And
18 pharmacokinetic factors are important in terms of what is
19 absorbed, how the body handles the pesticide, and the rate
20 at which the pesticide or its metabolites are removed from
21 the body would affect our ability to biomonitor it.

22 --o0o--

23 DR. KROWECH: I'm going to be presenting three
24 short case studies just to illustrate some of the
25 information that we've been able to come up with. Before

1 I do that, I want to remind you of the criteria for
2 recommending additional designated chemicals, because this
3 is the kind of information that we have been able to find
4 and it's the kind of information that we've been looking
5 for.

6 Those are exposure or potential exposure; known
7 or suspected health effects; the need to assess the
8 efficacy of public health actions and laboratory methods,
9 in terms of the availability of an analytical method,
10 availability of adequate biospecimens and incremental
11 analytical costs.

12 --o0o--

13 DR. KROWECH: Okay. The first example is
14 glyphosate. And I just want to say for all of these three
15 examples, I'm not going to be talking about physical and
16 chemical characteristics. Tom McKone is going to talk
17 about them after this talk.

18 Okay. So glyphosate is the major herbicide used
19 worldwide. In California, it's used in almonds, grapes
20 cotton, and a host of other crops. It's used in landscape
21 maintenance, right of way, and home garden use. So in
22 terms of residential exposure, there's also a potential
23 for it to be tracked in the house.

24 It has generally been regarded as safe and not a
25 toxicity problem. But in the scientific literature in the

1 last couple of years, there have been reports -- in vitro
2 reports of potential endocrine disruption. It's been
3 found that it disrupts cytochrome p450 aromatase in human
4 cells. And, interestingly, the effects are amplified by
5 adjuvants in the commercial formulations.

6 I identified two biomonitoring studies. I didn't
7 do a thorough literature search, so there might be others
8 out there. In one of those studies, they were able to
9 find glyphosate in urine immediately after application and
10 for three days. And after that, they didn't find it at
11 all. And that was a study of farm families.

12 The other study was a comparison of farm and
13 non-farm families. And they were able to find -- they
14 found glyphosate in urine every time they looked. And
15 there was no difference between farm families and non-farm
16 families.

17 So one study indicates that there's just a small
18 window of time, and this can be detected. The other study
19 suggests that perhaps there's constant exposure at least
20 in that population.

21 --o0o--

22 DR. KROWECH: The next example is othilinone.
23 Othilinone is one of the 12 pesticides that came out of
24 the top 50 pesticide use report search that we did. And
25 it's used to treat lumber -- in treated lumber. In trying

1 to do some preliminary investigation about this chemical
2 in terms of, you know, could it be biomonitored and to try
3 to find something out about it, I found that it was also
4 used in consumer products in terms of use in furniture,
5 carpet backing, vinyl flooring, footwear, fabric,
6 clothing, mattresses, and plastic toys.

7 In terms of the toxicity concerns for this
8 pesticide, there are no adequate cancer bioassays that
9 have been conducted, there's no chronic toxicity or
10 metabolism studies that are reported. Structurally
11 related chemicals have been shown to irreversibly bind to
12 cell proteins. And no biomonitoring studies have been
13 identified.

14 --o0o--

15 DR. KROWECH: This last example is fipronil.
16 Fipronil has other uses besides flea and tick treatment,
17 but that's what I'm going to talk about right now. And I
18 don't know if all of you know how it's put on, but it's
19 applied topically. It's called spot-on at the nape --
20 starting at the nape of the neck. And basically it's
21 absorbed by the oils of the skin and the hair follicles
22 and it's continuously released for over a month.

23 And there was one study that looked at petting of
24 dogs for five -- after application for five minutes once a
25 week. The earliest -- initially, it was almost 600 parts

1 information is the key when screening a large number of
2 chemicals.

3 And we'd like guidance on what level of
4 information is necessary to make a decision on designating
5 additional chemicals. For instance, some of the
6 information I found through literature review I wouldn't
7 find if I had looked at authoritative bodies lists.

8 And also we'd like to get your input on what
9 would be the requirements for designating classes of
10 pesticides. Would you want a write-up on, say, three
11 members of that class or -- we'd just like to know how we
12 should go about this process.

13 And then, lastly, I'd like to note our limited
14 resources.

15 So that unfortunately there's a trade-off between
16 the number of pesticides that we can screen and the
17 quantity of information that we can review.

18 So I'll hand it over to Dr. McKone.

19 (Thereupon an overhead presentation was
20 Presented as follows.)

21 PANEL MEMBER McKONE: Okay. I agreed to help out
22 with a little bit of environmental chemistry, because one
23 of the things we realized is it -- that quantity doesn't
24 really relate necessarily to the dose and the population.
25 We need to think a little bit about the persistence in

1 understand the potential of a chemical to move from where
2 you release it into the population.

3 And so, again, the intent of this diagram is to
4 show you the sort of logic that has to be applied.

5 --o0o--

6 PANEL MEMBER MCKONE: And really it boils down to
7 this - this is really the core of the thinking - is that
8 the long-term behavior of a chemical follows the rules of
9 thermodynamics. They're very well disciplined. These
10 chemicals don't violate the rules of thermodynamics. And
11 it really amounts to phase distributions.

12 And in environmental chemistry there's really
13 three primary phases. We worry about air, water, and
14 octanol. Now, octanol is up there because it is the proxy
15 for all kinds of organic carbon in the environment - humus
16 in soils, the lipids on our skin, the lipids in animal
17 tissues. It turned out to be just a very nice way of
18 trying to understand the binding to organic phases.

19 So there's really three phase distribution rules
20 we have to be worried about:

21 KAW, which is the air-water partition
22 coefficient; KOA, the octanol-air partition coefficient;
23 and KOW, the octanol-water partition coefficient. And all
24 these are is they're ratios.

25 Now, the real nice thing about this three-phase

1 system is you only have to know two out of three. If you
2 know two, you know the other -- if you know two, you can
3 get the other one. So the phase diagram boils down to two
4 major properties.

5 Now, to make life complicated, this would all be
6 great, except there's persistence or the degradation rate
7 in air, water and soil. And that really -- if that's not
8 known, it makes our job more difficult. But to first
9 order, these are the chemistry issues.

10 --o0o--

11 PANEL MEMBER McKONE: Now, basically you
12 determine these -- these partition coefficients are well
13 established. They're just measured in a laboratory. You
14 do phase distribution experiments, plot your results. So
15 nothing new and earth shaking here.

16 --o0o--

17 PANEL MEMBER McKONE: What's been done
18 historically -- this was really introduced by Donald
19 Mackay, with his fugacity models, as he called them --
20 especially the world, whether it's an indoor environment,
21 a local neighborhood, the San Francisco Bay region, the
22 South Coast, whatever region you pick, it basically mimics
23 this sort of laboratory consisting of three phases, a
24 water phase, an air phase, some sort of lipid carbons.
25 And he really demonstrated that just on taking that simple

1 chemistry to larger systems doesn't violate those rules of
2 thermodynamics. They play out. Sometimes there's a lot
3 of complexity. But in the long term the world's going to
4 obey the same rules of thermodynamics as the flask in a
5 laboratory.

6 --o0o--

7 PANEL MEMBER MCKONE: So now the other concept,
8 completely different, is the idea of intake fraction. An
9 intake fraction has been introduced by a number of people
10 as sort of a way of understanding the importance of
11 different types of emissions. And basically the idea is
12 that we take a shortcut on actually the emissions. And
13 normally you would go through a lot of trying to
14 understand emissions, the concentration, concentration to
15 exposure. But one of the things that was realized by a
16 number of people is if you know what goes into people and
17 you know the source of that, if you take the ratio of the
18 amount inhaled divided by the amount emitted, that's a
19 very important metric. It's an important metric for
20 classifying compounds, because it tells you the efficiency
21 with which you can deliver a source to a receptor.

22 Now, it was first introduced in air pollution
23 studies. Some really good work was done in the South
24 Coast studying benzene and carbon monoxide and actually
25 doing modeling and measurement, and showing we all came up

1 with about the same answer. Which is -- and in the South
2 Coast, just to give you an idea, for benzene there are two
3 ways to do this, on a population basis or individual
4 basis.

5 So the population basis, somewhere in the range
6 of 10 to 100 parts per million, or that's 10 to 100 out of
7 every one million molecules of benzene released to the
8 South Coast go into a person before they're lost. All
9 right. So that's sort of a number -- and that's well
10 established. And that varies from -- you know, get
11 different answers in different urban areas. But it's a
12 nice number to think about that.

13 Now, on an individual basis, if you take the
14 individual, that's about one in a trillion, that is,
15 roughly one out of every trillion benzene molecules will
16 end up in one individual. So if you pick a random
17 individual and release benzene -- release, you know, a
18 trillion molecules of benzene, one will end up in one
19 individual. So that's your odds of picking up one --
20 picking up benzene.

21 So, again, the concept here is this is a ratio.
22 The numbers are -- there's a fairly good sense of where
23 these numbers lie for different kinds of exposures.

24 And for indoor exposures the numbers are much
25 higher. Studies of indoor pollution reveal that that

1 number for an individual is more on the order of 1 per
2 1,000 or 1 per 10,000, partly because you're so close to
3 the -- so proximate to the source.

4 --o0o--

5 PANEL MEMBER MCKONE: Now, the concept of intake
6 fraction, there's a cover of a magazine where the -- one
7 of the first articles introducing this. It's also been
8 realized you don't have to -- it doesn't have to be
9 applied just to air pollution. It's been demonstrated to
10 work with much more complex transport pathways, and a
11 number of approaches for doing that have been established.
12 So it's a nice screening metric. It doesn't -- you know,
13 it's not going to be useful for epidemiological studies,
14 where you really need to understand the variation among
15 individuals. But when you want to make classifications of
16 pollutants in terms of their impact on populations, this
17 is not a bad way to go about it.

18 --o0o--

19 PANEL MEMBER MCKONE: Now, what, in fact -- what
20 factors make IF go up or down -- intake fraction?

21 Proximity, right? As we said, the closer you are
22 to the source, the more efficient it will be in getting
23 into you.

24 Persistence. The longer something lasts in the
25 environment, the more likely it is to hit somebody. That

1 PANEL MEMBER MCKONE: And this is roughly what it
2 looks like. We divide the world into air, soil layers,
3 water, sediment, and indoor environment, and pesticide
4 applications to soil. We look at transfers to food. We
5 also look at -- the food on the left is local. The food
6 on the right is imported. We look at water supplies. And
7 we look at the intake to the receptor population and
8 divide it by the amount introduced. If we want an intake
9 fraction, we actually -- we're trying to match
10 biomonitoring data, so we had to include not only the
11 local contribution, but also the external ones so we got
12 the biomarker numbers correct.

13 --o0o--

14 PANEL MEMBER MCKONE: I just want to put this up.
15 Dietary exposures really evade this sort of --
16 you really have to think broadly, because it's not where
17 you are that affects your exposure. It's where your food
18 came from and what pesticides or what air pollutants or
19 soil pollutants were in the environment from where your
20 food came from. So it sort of challenges this intake
21 fraction, unless we know how to relate the food supply to
22 the source and the food supply to the receptor.

23 --o0o--

24 PANEL MEMBER MCKONE: Anyway, we did some
25 screens, that is, we ran these sorts of calculations for

1 these three compounds.

2 There's glyphosate; molecular weight, about 170.
3 Not really heavy. A log KOW of minus four. That's minus
4 four. That's one in -- the ratio of solubility in octanol
5 to water is 10,000 times roughly more soluble in water.

6 The KAW, that's the air-water partition
7 coefficient, is ten to the minus 13 almost. Again, a very
8 low vapor pressure, extremely soluble in water.

9 But it has a real big anomaly. Most compounds
10 with a low KOW would not bind to soil. They would just
11 wash right out of the soil. This compound, for some odd
12 reason, has a very high soil binding capacity - 3,000. We
13 would expect that of a compound with a KOW of, not, you
14 know, ten to the minus four, but a compound with a KOW of
15 ten to the fourth - 10,000. So it's a real anomaly. It
16 just reverses. That's laboratory work, not modeling, in
17 terms of the...

18 So it's environmental distribution, it's
19 primarily retained. When you put it in the environment,
20 it's going to be bound up in soil layers. It can be
21 retained, but it's not irreversibly retained. In other
22 words, it's mobile. It still has some ability.

23 Now, the regional individual intake fraction is
24 ten to the minus ten -- times ten to the minus ten.
25 Remember, I said benzene was ten to the minus 12. So this

1 mechanism.

2 So if it gets indoors, it gets trapped quite well
3 in the indoor environment, at least based on the screening
4 level indoor mass balance models that we have.

5 --o0o--

6 PANEL MEMBER MCKONE: So this is Octhilinone, if
7 I can pronounce it right. Anyway, a big, long alkane
8 chain coming off the right. Heavier compound. Log KOW of
9 2.45, so it's up around 300 is the KOW. A log KAW,
10 air-water partition coefficient, much higher. Much higher
11 vapor pressure. This compound partitions to water and
12 lipids, but is semi-volatile, so it's going to be higher
13 mobility.

14 It's primarily retained, just like glyphosate,
15 though it tends to be retained in the upper soil layers
16 but for a different reason chemically.

17 The regional individual intake fraction is
18 actually an order of magnitude higher than benzene in the
19 South Coast, but much lower than glyphosate. Drinking
20 water is the dominant pathway, followed by indoor
21 pathways. And the individual intake fraction is quite
22 low. So indoors is not a high hit on the indoor
23 environment.

24 --o0o--

25 PANEL MEMBER MCKONE: And this is the mass

1 balance. Now, complete reversal from glyphosate. All of
2 it's coming into the indoor environment by air transport.
3 It's being removed -- it reacts somewhat well indoors,
4 some of it being removed by air. And cleaning has nothing
5 to do with it, so you don't have to keep your house clean
6 to keep this compound in check.

7 And then we looked at fipronil. Fipronil is
8 again a fairly heavy, 213 molecular weight, a fairly large
9 complicated molecule. Ten thousand, or ten to the four
10 log -- log KOW 4, so it's 10,000 times more soluble in
11 lipid than in water.

12 Log KAW, fairly water soluble, but a reasonable
13 volatility. Partitions to carbon lipids. Again, this --
14 another substance, you put it in outdoors in soil. You
15 put it indoors though, it's going to bind to -- just as it
16 binds to soil outdoors, it's going to bind to carbon or
17 lipid, which is surfaces indoors.

18 So if you use it outdoors, it would be homegrown
19 food. But if you use it indoors, if you introduce it
20 indoors, it's going to be indoor pathways.

21 It has not a real high individual intake
22 fraction, but it's high. I mean, it's much higher than
23 some of the other -- not as high as glyphosate, but it's
24 something you would be concerned about because it has some
25 retention potential indoors. And this is something likely

1 to be introduced indoors.

2 If you're putting it on your pets, they're going
3 to be rolling on the carpet and it will bind to the carbon
4 phases and to oil coatings or the -- there's actually a
5 coating on most of the wall surfaces indoors, a buildup
6 from cooking and other things that go on over a long
7 period of time. So those surfaces retain these sorts of
8 compounds. So we would expect that.

9 --o0o--

10 PANEL MEMBER MCKONE: This is its indoor mass
11 balance. Again, it's volatile enough that it came in from
12 outdoors. It's going to come in by air. But once it gets
13 inside -- and this is very interesting. These compounds
14 can come in by air. But once they get inside, they're
15 trapped or they're basically partitioned predominantly to
16 the non-mobile phases. So that's why we worry about the
17 indoor environment as being sort of these chemical -- you
18 know, the chemical capacitors or traps. They retain these
19 chemicals for much longer than outdoor environments do,
20 because we lack the sunlight, we lack biodegradation, we
21 lack hydrolysis reactions that would be removing them
22 outdoors.

23 And so we really only get rid of them by a much
24 slower reaction rate.

25 --o0o--

1 PANEL MEMBER MCKONE: Anyway, that's just -- oh,
2 I'll skip that slide. That's just a way to think --
3 actually go back to that.

4 I mean, this is something we learned, is the
5 reason houses are traps, it's just -- you can really
6 understand this if you look at persistence and why they're
7 important. If you look at -- this is for chlorpyrifos.
8 But this diagram said, in the Salinas Valley, the overall
9 persistence outdoors of chlorpyrifos is anywhere from 20
10 to 30 days typically. But, again, it's very seasonal with
11 various conditions.

12 The persistence in the human body is less than
13 two days, right? But the persistence in the indoor
14 environment is greater than 100 days. And the indoor
15 environment is always picking these things up. So it's
16 always going to be -- even though it doesn't stay in our
17 bodies for very long, it's always being delivered because
18 your house is taking it -- it comes from outdoors, gets
19 trapped indoors, and then you've got this really nice
20 constant delivery system. So that's a way to think about
21 the interaction between the outdoor environment and the
22 indoor environment as a mechanism for delivering the
23 compounds.

24 And a similar thing goes on with food too. Food
25 is really great at scavenging some of these compounds and

1 retaining them and then delivering them to the receptor.
2 So these are the things we have to think about in
3 screening these, the weight of the compounds that are high
4 priority for being efficiently delivered to the
5 population.

6 Thanks.

7 CHAIRPERSON MORENO: Thank you.

8 Does that conclude the presentation?

9 All right. Well, I want to thank both staff and
10 Dr. McKone for the work they've done in preparing this
11 information for Panel consideration.

12 One thing I just want to mention to those viewing
13 the webcast, regardless of what time this meeting ends
14 today, the webcast will terminate at 5:30. I just want to
15 let those individuals know.

16 Okay. Thanks.

17 At this point, it's an opportunity for the Panel
18 to ask questions of the presenters.

19 So questions from the Panel?

20 PANEL MEMBER SOLOMON: Yeah, a question for Dr.
21 McKone.

22 That model is fascinating. My question is, how
23 hard is it to apply that model to a fairly long list of
24 pesticides? I mean, is it very labor intensive for each
25 chemical to run that, or is it something that is feasible

1 to do on a list of, you know, a hundred chemicals?

2 PANEL MEMBER McKONE: Yeah, we already ran it for
3 what? - I think we did it for 20 already. We've already
4 run 20.

5 And the other thing we did with it, although we
6 have to -- I mean, I'm reviewing the results and I think
7 we have to keep redoing this a bit to fine tune it.

8 The other thing we did with it, first, was we did
9 a surface map. In other words, I ran 10,000 -- I just
10 randomly sampled values of KOW and KAW over 15 orders of
11 magnitude. And I just did thousands of replications, and
12 then built a surface map. And you can see how the intake
13 fraction varies. And then I could alter the persistence
14 30 days, 100 days, 20 days. So for each of those, I have
15 a surface map. So you can go in and pick a compound and
16 locate it on a surface map to see, you know, where it fits
17 in this. And it varies over orders of -- you know,
18 there's a significant variation.

19 So one of the things I think we have to think
20 about is there may be -- you know, you might have a
21 compound where you use ten times -- compound A, compound
22 B, you use ten times more of A, but its intake fraction is
23 300 times higher than. So you could completely reverse
24 your priorities, if you're worried about the exposure
25 potential as opposed to just the quantity used.

1 CHAIRPERSON MORENO: Okay. Other questions of
2 our presenters?

3 PANEL MEMBER WILSON: Sure. Dr. Krowech, the
4 list of substances that were from the first batch, from
5 the DPR use reports, those differ from the ones that I
6 think we had identified earlier and I think the one -- in
7 which Dr. McKone ran the CalTOX model on, right? Or am I
8 looking at two different lists?

9 DR. KROWECH: I think -- is it on?

10 I think that you actually started on the same
11 list, but you didn't eliminate some of the chemicals that
12 we did. So I think that the ones that you initially
13 ran -- that were run initially, I think there was just --
14 it was from the top 100 list. Is that --

15 DR. ROISMAN: This is also from the 2006 top 100
16 list. So there are some subtle differences for that
17 reason as well from the list based on 2007.

18 PANEL MEMBER WILSON: Say that again.

19 DR. ROISMAN: Should I repeat that?

20 PANEL MEMBER WILSON: Yeah.

21 DR. ROISMAN: The list from several months ago,
22 back in November or October when you did the first
23 analysis, was based on the DPR's 2006 top 100. And the
24 more recent list is 2007. There's a lot of overlap, but
25 there are a couple of differences.

1 PANEL MEMBER WILSON: Okay. I mean, it just --
2 I'm curious, because some of the ones that were of the
3 highest volume, like metam sodium, 11 million pounds;
4 methyl bromide, for that matter -- of course, that was a
5 fumigant, so you phased -- I think you eliminated that.
6 But there were others, the chlorpyrifos, two million
7 pounds. They didn't drop off, did they, after 2006?

8 DR. KROWECH: No, no. So, first of all, we
9 eliminated anything that was already designated. So that
10 took care of chlorpyrifos and probably some other ones.

11 CHAIRPERSON MORENO: He can't --

12 DR. KROWECH: Okay. So we eliminated anything
13 that was designated as being -- anything that's being
14 biomonitored by CDC we took off, because we were just
15 interested in designating new chemicals, right? And then
16 we also -- we did not look at fumigants. We did not look
17 at certain inorganics. So we just -- we took only a
18 fragment of that list.

19 PANEL MEMBER WILSON: Okay. I'm curious, because
20 like the metam sodium is not on the CDC list.

21 DR. KROWECH: But it's a fumigant. So --

22 PANEL MEMBER WILSON: Yeah. And I guess with
23 methyl bromide -- and is the problem there that it's -- as
24 a fumigant, that it has a short half-life or it's
25 difficult to detect? What is it -- I guess the question

1 is, why is it that fumigants were screened or were --

2 DR. KROWECH: I think it's generally thought that
3 it's difficult to biomonitor -- to capture them. That's
4 pretty much my understanding in terms of -- do you want to
5 answer --

6 PANEL MEMBER MCKONE: Is there a marker for
7 like -- actually, the other one is methyl iodide is taking
8 over a market. But those are really -- unless there's a
9 breath -- I know very volatile, and I don't think -- yeah,
10 there was an issue about whether -- and I don't know if
11 that came from the lab or not -- whether those could even
12 be biomonitored.

13 PANEL MEMBER SOLOMON: This is Gina Solomon.
14 The chemicals like methyl bromide and methyl
15 iodide break down almost immediately into the methyl group
16 and the salts, so the iodine or bromine. So you'd
17 actually have to biomonitor for bromine to look for methyl
18 bromide. And bromine is very nonspecific, so is iodine.

19 I'm not as sure actually about the MITC
20 metabolite of metam sodium, how long that lingers in the
21 body and whether it is biomonitorable. But metam sodium
22 itself breaks down almost instantly to methyl
23 isothiocyanate, which then breaks down further pretty
24 quickly.

25 But, you know, if the -- I mean, that's something

1 that could be investigated, for sure.

2 DR. KROWECH: Yeah, we can look at that.

3 PANEL MEMBER WILSON: And you mean, Gina, the
4 methyl bromide breaking down physiologically, not in soil
5 or so forth, but after inhalation?

6 PANEL MEMBER SOLOMON: My understanding is that
7 as soon as it comes into contact with any organic matter,
8 it breaks down. So whatever it first hits, whether that's
9 a soil particle or your upper airway or your skin, that
10 reaction occurs, which is why it works as a biocide. I
11 mean, it's that -- anyway, it is highly reactive with
12 anything that it encounters pretty much.

13 PANEL MEMBER MCKONE: I mean that's the analogy,
14 is it's like trying to biomonitor chlorine gas, right? I
15 mean, it's so reactive that it just -- it does its damage,
16 but it doesn't leave a lot of signal after it.

17 PANEL MEMBER WILSON: Okay. Yeah, maybe we could
18 go over that with you a little bit off line. That might
19 be helpful.

20 DR. KROWECH: Okay.

21 CHAIRPERSON MORENO: Okay. Other questions?

22 It's 5:20. Just so you know, I have a train to
23 catch at 6:25. But the other Panel members will be
24 staying here, I believe. Right?

25 But if we could finish up shortly, we would like

1 to do so.

2 What I heard -- Panel members, what I heard from
3 staff was a couple of questions. We need help -- we need
4 guidance on specific -- screening a large number of
5 chemicals. We need guidance on what level of information
6 is necessary to make those decisions. And we need
7 guidance with regards to classes of pesticides. And
8 please keep in mind that we have -- that you have limited
9 resources. And in deciding the number of pesticides and
10 the quantity of information, we still need a program to
11 review.

12 Yes, Dr. Solomon.

13 PANEL MEMBER SOLOMON: I have some suggestions
14 and some questions and requests.

15 Oh, it's not on?

16 Oh, I thought it was. Sorry.

17 One point that came up is that the pyrethroids
18 are not designated as a class and that there are some
19 pyrethroids that are very heavily used and increasing in
20 use in California that are not designated. So a request
21 to staff would be to bring to us a proposal to designate
22 pyrethroids as a class or any subgroup of that class that
23 seems to make most sense.

24 Another question is whether it might make sense
25 to look -- I mean, I know that Dr. Wilson has been

1 interested in use data. One interesting thing about use
2 data is whether use has been increasing in any significant
3 way over recent years of any of these chemicals or classes
4 of chemicals that might be an additional way to prioritize
5 on use.

6 I think that using the model that Tom presented
7 to then look at some of these chemicals that are perhaps
8 increasing in use could be helpful. I'm having a little
9 trouble figuring out what the cutoff criteria should be
10 within the model. But I think that will help us to better
11 understand which ones we might want to bring forward.

12 I also -- this is a slightly separate note. But
13 in taking a step back from the discussion we just had on
14 priority setting, realize that there are quite a few
15 pesticides that are on the CDC list that we didn't bring
16 forward into the priority list. And in my case, to some
17 degree, that's because I don't know a heck of a lot about
18 them.

19 And what I would be really interested in for a
20 future meeting, if possible the next meeting, would be a
21 matrix that showed the non-organophosphate non-pyrethroid
22 pesticides on the CDC list, which ones of those were
23 detected in any significant fraction of the population,
24 because I know that some of the biomonitored pesticides
25 were really mostly non-detects. And then any information

1 that's available about use data in California, ideally,
2 you know, as compared to use data nationally or any kind
3 of surrogates that you could provide.

4 So that we might be able to pull out of that list
5 the category of pesticides that are biomonitored by CDC,
6 meaning that they're methods readily available, so we
7 could actually look at them, where the use in California
8 is maybe higher than nationally.

9 Or, I mean, I guess we could look at
10 significantly lower as well, if we were interested in
11 that. But probably not, because we're not as interested
12 in corn pesticides, for example, here as fruit and
13 vegetable pesticides.

14 I'm having a little trouble figuring out how to
15 deal with the household products and pet pesticides. The
16 public health practitioner in me is especially interested
17 in those, because I'm aware that indoor uses -- you know,
18 in the case of the organophosphates, great example, indoor
19 use, household use really drove exposure.

20 From the perspective of trying to designate
21 chemicals that are different in California than
22 nationally, I'm not sure we're getting there if we look at
23 ones that are household or pet pesticides. So we should
24 think, as a committee, how important that criterion is
25 versus the criterion of public health and exposure. So

1 I'd be curious what other Panel members think about those
2 categories.

3 CHAIRPERSON MORENO: Okay. Thanks, Gina.
4 There's quite a few recommendations there.

5 Further discussion by Panel members?

6 Yes, Julia.

7 PANEL MEMBER QUINT: I was interested in, aside
8 from the great model and what you can do with it, which
9 was quite impressive, and starting from California use,
10 which I think is important, is that there seemed to be a
11 lot of -- not a lot, but you've shown three examples. And
12 the health effects were quite startlingly different for
13 some of them. I mean almost to no information to some
14 that had endocrine disrupting, potential carcinogenicity,
15 and that sort of thing.

16 But I was also very interested in your comment
17 that you got -- when you did a literature review, that
18 that was different from using the authoritative list. And
19 I'm wondering if that's because the lists are not
20 up-to-date with respect to the literature or that your
21 interpretation of what the literature said was different
22 than what got on -- what eventually was put onto the
23 authoritative list. I didn't -- because I'm quite
24 interested in, of course, with all of the ways we make the
25 matrix use, you know, intake and all of that, that still

1 to have the known or suspected health effects be a big
2 part of the driver. So I'm just interested in hearing
3 more.

4 DR. KROWECH: Well, I guess in terms of the
5 endocrine disruption, the main list I was looking at is
6 the European Union list. And I'm not sure if they even
7 looked at these pesticides, you know. So I can't really
8 speak to the fact, you know, whether or not they went
9 through all the information. It's pretty new though.

10 MS. HOOVER: The other issue is a lot of times
11 for authoritative body lists, you know, we're -- in
12 general, you're talking maybe about like a frank
13 toxicological imprint, like cancer or reproductive
14 toxicity. And Gail was also looking at solo effects, you
15 know, upstream effects, indicator effects, that may or may
16 not be considered sufficient to actually put something on
17 a list.

18 So that's kind of the point, that if you do just
19 a screen of lists, you're going to get things that are
20 probably well studied and well characterized.

21 PANEL MEMBER QUINT: Exactly.

22 MS. HOOVER: And just one last thing. You might
23 want to note that we didn't receive any Emails for public
24 comment or pink slips before the webcast ends in two
25 minutes.

1 CHAIRPERSON MORENO: Okay. All right.

2 Well, at this point, why don't I officially open
3 for public comment. We have no pink slips from anyone
4 that's currently present wishing to provide public
5 comment; is that correct, Amy?

6 MS. DUNN: Yeah, no comments.

7 CHAIRPERSON MORENO: Okay. Yes. And there are
8 no Emails coming in as a result of the webcast. So I'll
9 close public comment and bring it back to the Panel.

10 What I have -- I've been making notes of the
11 comments here from panelists. So have you. And there's
12 quite a few recommendations here.

13 If you don't mind, Panel, I'd like to ask Gail:
14 What do you think of the suggestions that are so far from
15 the Panel, in terms of your opinion on utility back to
16 this panel for usefulness for us to make recommendations
17 on designation -- further designation and prioritizing and
18 the scope of work that it would entail of you and your
19 staff?

20 PANEL MEMBER WILSON: Dr. Moreno, could I
21 interject one other point before we do that? Picking up
22 from Dr. Solomon's point about the home use pesticides and
23 that I think we talked previously about the Air Resources
24 Board consumer product survey data, that there is a
25 database there that shows the active ingredients. And

1 home pesticides and herbicides and a number of others were
2 in the top highest use categories across a hundred
3 different product categories, you know, denoted by the
4 ARB.

5 So it might -- I think we have some basic info
6 there that might be useful.

7 DR. KROWECH: Okay. In terms of the
8 recommendations. I think it's -- I like the idea of
9 proposing to designate a class. In terms of what -- the
10 specifics of it, I think we need to get a little more
11 information. Would you want specific information about a
12 couple members of that class, three members? What would
13 suffice for us to designate a class?

14 PANEL MEMBER SOLOMON: My understanding of the
15 pyrethroids is that they fall into several subclasses.
16 And so, although I would be very happy to entertain a
17 proposal to list the pyrethroids as an uber-class, I would
18 want to see some information about, you know, one chemical
19 example from each subclass that sort of make up the
20 overall class of pyrethroids, because there are some
21 differences in toxicity.

22 But just as with the flame retardants, it's not
23 necessarily practical to do a full write-up of each
24 chemical in the class, as long as you feel that the ones
25 that are chosen are representative of sort of the spectrum

1 of effects and exposures that are likely to be seen, but
2 primarily the spectrum of health effects. Because I think
3 exposure information -- or use information is pretty easy
4 for these. We have pesticide use reporting. But the
5 toxicity, I don't think we need a full review of the
6 toxicity of each individual one, as long as we get the
7 representative ones.

8 CHAIRPERSON MORENO: Someone on this side?

9 Yeah.

10 PANEL MEMBER LUDERER: I have a question about
11 the model. And you were saying that you'd already run
12 this on 20 or -- I'm sorry -- on a fairly large number of
13 compounds. And whether there have been any that have kind
14 of really come out of that that you think would be
15 important to focus more attention on?

16 PANEL MEMBER MCKONE: Yeah, certainly glyphosate.
17 It really was an odd -- in terms of running its chemistry.
18 It has this odd behavior being really water soluble, but
19 also binding. And it doesn't bind by a standard
20 solubility mechanism. And I think we have to look for
21 those.

22 But actually, I mean on the issue of classes or
23 subclasses, I have a question I guess about whether that
24 is by -- should that be by the number of chlorines?
25 Because that's a big factor in terms of environmental

1 chemistry and exposure. The more chlorines you put on it,
2 the more you'll change. Or is it by toxicity or is it by
3 use?

4 Do we have any sense of how we could divide these
5 up?

6 PANEL MEMBER SOLOMON: All I know about is that
7 I've read about the pyrethroids, not recently, and I think
8 there were sort of Type I and Type II pyrethroids that
9 broke down differently in terms of their toxicity. And I
10 don't know exactly what it was that characterized the Type
11 I's and the Type II's. And maybe by now there's even
12 other classes that have been developed.

13 And I'm not sure that it was even chemistry. I
14 just think that they -- I remember that the Type II
15 pyrethroids were significantly more toxic than the Type
16 I's. That's about all I remember from researching this
17 sometime ago.

18 It's interesting to me also to hear about
19 glyphosate, because it's a reminder for me to keep an open
20 mind. I always think of glyphosate as being pretty
21 nontoxic and not important. And it's one of those things
22 that I get questions about from the public and people get
23 exercised about. And I always thought, "Ah, it's not a
24 big deal." But I guess I should take another look at it.
25 I'm willing to do so if, you know, if Dr. McKone thinks

1 it's worth bringing to the Panel. And the model is very
2 interesting. I think it's certainly worth us having a
3 look at it.

4 And I think that would be brought as an
5 individual chemical, because I don't really think there's
6 anything else in that same class.

7 DR. KROWECH: I don't think so.

8 MS. HOOVER: I think what Dr. Solomon and others
9 were talking about with the pyrethroids, that's really
10 good guidance for us, so we can look at them in that way,
11 like in, you know, different subclasses. The issue that
12 Dr. McKone raised about, is chlorinated important, Type I,
13 Type II? So we'll examine the class like that and look
14 for representative members of the subclasses to
15 investigate. I think that's really helpful.

16 CHAIRPERSON MORENO: Okay. Gail, there are more
17 recommendations that were made. Do you want to follow up
18 on some of those?

19 DR. KROWECH: Let's see. In terms of the matrix
20 of pesticides currently in use, I think that's something
21 that we can develop.

22 And I'm not quite sure how many there are that
23 would -- well, we'll see how big a job that is, you know.
24 But I think that's something that would definitely be
25 doable.

1 CHAIRPERSON MORENO: And there was a couple more
2 things. One was the health effects of the chemicals and
3 use data of the chemicals. Would that be incorporated
4 into the matrix and the proposal to designate the class as
5 subgroups, or would that be separate information you're
6 looking at or you're thinking about?

7 PANEL MEMBER SOLOMON: Well, the matrix that I
8 was proposing is actually of chemicals that have already
9 been designated by CDC. And the purpose of the matrix is
10 to figure out if there are any from that batch that we
11 have not yet prioritized, that we might want to consider
12 doing so.

13 So I'm not actually terribly concerned about
14 toxicity. The main thing I'm interested in is two things:
15 a) Did CDC find it in a major way out there in the U.S.
16 population? And b) Is there any reason to think that the
17 situation in California might be different than it is in
18 the rest of the country? And so I would narrow it to
19 those two pieces of information.

20 I also would like to mention, don't totally skip
21 the organochlorines, because I think there are at least
22 two organochlorines that are still in use in California.
23 But most of them are banned, so you can skip the rest of
24 them.

25 DR. KROWECH: Okay. So among the organochlorines

1 that are still in use in California, I think one of them
2 is designated and at least one that I can think of isn't.
3 So in terms of pesticides that aren't designated, should
4 we -- how should we go about, say, proposing -- should we
5 look at any organochlorine that has not yet been
6 designated and include that? I think dicofol is still in
7 use and not designated.

8 PANEL MEMBER WILSON: I mean, it would seem to me
9 if it's still being used in California, in any appreciable
10 volume at all, it would be a problematic chemical.

11 CHAIRPERSON MORENO: Dr. Quint.

12 PANEL MEMBER QUINT: But I think I would temper
13 that somewhat with what you find out about the health
14 effects. I mean, you know, it's -- yeah, it's used in
15 California and it's -- we probably -- we have to take a
16 hard look at it. But it's the way you take a hard look at
17 any of these things when you're doing an assessment,
18 because that's one of the criteria, known as suspected.

19 So I would make that -- you know, put that up
20 there on your matrix as one of the things. Even though
21 you might not be interested in toxicity per se, it still
22 has to be a part of what's going to trigger us looking at
23 it.

24 And, you know, a lot of the chemicals, I think --
25 if we're talking about categories of chemicals, it seemed

1 to me that a lot of them had endocrine disruption as an
2 effect. And I don't know how -- you know, I don't know if
3 that's because the European -- what you were looking at
4 in, you know, some of the European Union information. I
5 think you said that was one of the ways in which you were
6 finding some of the effects, but I'd be very interested in
7 those. I mean, you know, if there are groups of
8 pesticides that are out there that share that -- where in
9 the literature you find that as something that ties them
10 together, then that would be of interest.

11 DR. KROWECH: Okay. I mean, I just want to
12 clarify that the examples I showed today were not
13 necessarily from the -- the papers that I read were not
14 necessarily from the European Union.

15 PANEL MEMBER QUINT: Okay. Well, I
16 didn't -- yeah, I don't know what the source was.

17 PANEL MEMBER SOLOMON: This is Gina Solomon.

18 So what I was hearing is interest from the Panel
19 in not only bringing to us the currently designated
20 chemicals from CDC with the additional information about
21 potential -- you know, to help guide us in terms of
22 turning some into priorities, but to also point out some
23 gaps that there may be in the CDC designated chemicals as
24 you go through these classes.

25 So in other words, you know, your point that

1 dicofol is not currently monitored is very well taken and
2 much appreciated. And I think that it does -- since it is
3 pretty nasty, to use a technical term, pesticide, I would
4 be very interested in having more information about that
5 in considering designating it.

6 And I don't know how hard it is to do that, for
7 example, as you go through the carbamates, which are
8 another highly toxic class of insecticides - and there are
9 five only that are biomonitoring currently by CDC, and
10 obvious gaps. And carbaril, which is the most widely used
11 carbamate pesticide, is not biomonitoring by CDC. So
12 perhaps looking through for some of those gaps will help
13 direct us to related members of the class that we might
14 want to designate.

15 PANEL MEMBER LUDERER: And also something that we
16 had sort of touched on a little bit earlier that you had
17 mentioned and then Gina had also mentioned was the
18 pesticides -- the pet treatment pesticides and the
19 household uses. And it seems to me that a lot of those
20 were not on the CDC list either. Which even though they
21 may be things that are used nationwide and they may not be
22 particularly prevalent in California, that would be
23 something that the California Program could really add
24 that's not already being done by the CDC.

25 PANEL MEMBER WILSON: And we do have the ability

1 to gather some data about what is actually used in the
2 state, you know, with the ARB.

3 DR. KROWECH: Okay. Great.

4 CHAIRPERSON MORENO: All right. So, Gail, did
5 you get sufficient feedback from the Panel?

6 DR. KROWECH: Yes. Thanks.

7 CHAIRPERSON MORENO: Okay. Fantastic.

8 All right then. If there are no other questions
9 from the Panel, we have -- oh, great. I'll go ahead and
10 read a -- Mr. Carlos Peza asked this: If next steps are
11 being put off until tomorrow - which it is - will that
12 part of the meeting be webcast? If not, how will the
13 public be informed on next steps?

14 Let's see. Do we have an opportunity to reply by
15 Email to these folks, because we're not webcasting right
16 now?

17 MS. DUNN: I just -- I don't know. The answer is
18 other people might want to know.

19 CHAIRPERSON MORENO: Right. Well, the answer is
20 that we're not webcasting tomorrow.

21 And how will -- let's ask Sara how we would share
22 this information -- tomorrow's information with the
23 public.

24 MS. HOOVER: Yeah. So one of the things that
25 I've been doing throughout today is noting down things

1 that the SGP has asked to follow up on. And so we just
2 had a big set for pesticides. There's a few other things.
3 And then what I'm going to do is incorporate that into a
4 brief presentation tomorrow. That brief presentation will
5 be made available on the web, so it will have those
6 details.

7 And I think that is a good point. So then
8 basically at the end of the meeting, we can -- as a result
9 of that discussion, we have about next steps, I can
10 distill what the SGP's recommendations were. So there
11 would be like the presentation that I gave, and then I
12 could do a little -- we could do a little briefing about,
13 okay, this is what the SGP actually recommended for the
14 next steps. So I can do that as a follow-up to the
15 discussion, and we can post that on the website so people
16 will be aware.

17 CHAIRPERSON MORENO: All right. Thanks.

18 All right. At this point, it's a quarter to six.
19 And I'm going to close the discussion then on this last
20 topic and thank again our Panel members for providing some
21 guidance to the program.

22 I just want to conclude that -- a couple things.
23 We're going to be closing the meeting right at this time
24 and we will conclude -- we will resume again tomorrow. It
25 will be at 9 a.m., March 3rd, but we'll be at a different

1 location. We'll be at the old Sacramento City Hall
2 Historic Hearing Room, 915 I Street, second floor, in
3 Sacramento. It will be a half day and scheduled to
4 conclude at is one p.m.

5 I will not be in attendance at tomorrow's
6 meeting. Dr. Luderer has agreed to -- graciously agreed
7 to chair the second day of this meeting.

8 So thank you.

9 And as we mentioned, the second day will not be
10 webcast. It's not an option. We didn't have the room --
11 rooms weren't available that would allow us to webcast.

12 And the last thing is -- just want to share
13 before we finish up here. There has been discussion
14 throughout the day about a variety of funding
15 opportunities as a result of federal stimulus packages and
16 additional -- or appropriations through the CDC that can
17 be potentially sent down to the local level -- state and
18 local level as well.

19 And one of the things I just want to share with
20 the Panel members -- I'll have to get some more
21 information. But what I would really like to do is, as
22 Chair on behalf of the Panel, write a letter to Dr. Mark
23 Horton, who's the Director of Department of Public Health,
24 bringing to his attention that the Scientific Guidance
25 Panel is a -- should be a prime candidate for receipt of

1 any federal stimulus money that does come to the State of
2 California to build infrastructure and help the program.
3 And that's -- okay?

4 All right. I think that's it.

5 Dr. Lipsett.

6 DR. LIPSETT: Yeah, I just wanted to comment.
7 Because this is a tri-departmental program, if you're
8 going to be sending a letter to Dr. Horton, please send a
9 similar one as well to Dr. Maureen Gorsen and to Dr.
10 Denton.

11 CHAIRPERSON MORENO: Thank you.

12 DR. LIPSETT: Okay. Thank you.

13 CHAIRPERSON MORENO: All right. With that, no
14 further comments?

15 Okay. We're concluding.

16 Thank you. 05:45 PM

17 (Thereupon the California Environmental
18 Contaminant Biomonitoring Program Scientific
19 Guidance Panel meeting recessed at 5:45 p.m.)
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1 CERTIFICATE OF REPORTER

2 I, JAMES F. PETERS, a Certified Shorthand
3 Reporter of the State of California, and Registered
4 Professional Reporter, do hereby certify:

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7 Biomonitoring Program Scientific Guidance Panel meeting
8 was reported in shorthand by me, James F. Peters, a
9 Certified Shorthand Reporter of the State of California,
10 and thereafter transcribed into typewriting.

11 I further certify that I am not of counsel or
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13 way interested in the outcome of said meeting.

14 IN WITNESS WHEREOF, I have hereunto set my hand
15 this 16th day of March 2009.

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