STATE WATER RESOURCES CONTROL BOARD

CONSIDERATION OF A RESOLUTION TO ADOPT THE
WATER QUALITY CONTROL POLICY FOR DEVELOPING CALIFORNIA'S
CLEAN WATER ACT SECTION 303(d) LIST

WEDNESDAY, SEPTEMBER 8, 2004
1:00 P.M.

JOE SERNA CAL/EP A BUILDING
COASTAL HEARING ROOM
SACRAMENTO, CALIFORNIA

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CHAIRMAN BAGGETT: Good afternoon. We are back for the last item of today's workshop, Item 10, 303(d) listing guidance.

Craig.

MR. CRAIG J. WILSON: Good afternoon, Chairman, Members of the Board. My name is Craig J. Wilson. I'm Chief of the TMDL Listing Unit in the Division of Water Quality.

The next item before the Board is consideration of a resolution to adopt the Water Quality Control Policy for developing California's Clean Water Act, Section 303(d) list. In my presentation I would like to touch on just a couple of points. I'm going to give the briefest of brief overviews of the policy, and then give a little --

Do you want the 200-page version? It could take a couple of hours, Art. We could go that way.

But the second part I would like to talk about is two issues that have been brought up and give a very brief overview of our feedback on those issues.

The proposed policy set decision rules to be used to place waters on or remove waters from the Section 303(d) list. And that list is the list of water segments
where water quality standards are not attained and a TMDL, or total maximum daily load, is needed to address the exceedance. The policy provides a set of fast, efficient rules of thumb to address all data and information for a variety of lines of evidence. The fundamental approach is based on the concept of weight of evidence. The approach requires pulling together all available lines of evidence to make decisions on listing status.

The proposed process is two steps. The first is to use the rules to make decisions where data and information clearly show standards are exceeded. And the second part is to use a situation specific weight of evidence factor, when data and information are conflicting or the story is less clear.

To date the State Board has held two public hearings, received 127 comments/submittals on a previous draft that was released last December. The staff has responded to about 1,700 comments, and we have made several changes in response to those comments. The most recent version of the policy was released on July 22. So far we've received about 22 comment letters on the policy.

Let me turn now to the two issues I would like to discuss. The first one is related to the use of statistics and the second one is related to weight of evidence. Statistics is the science of decision-making in
the face of uncertainty. Needless to say, there are huge
uncertainties in every aspect of deciding if water quality
standards are exceeded. Statistics can be used to
describe data or can serve to make generalizations about
the world. There are two types of statistics. One is
called descriptive and the other one is called inference.

Descriptive statistics is treating data to
summarize or describe some important feature without
attempting to infer anything that goes beyond the data.
These kinds of statistics are used widely, and many of the
commenters are recommending that the State Board use them
for 303(d) listing purposes. It is descriptive to say
that two hits out of three samples show that, for a small
data set, the standard was exceeded. This approach is
used widely in compliance monitoring, in determining if
effluent limits are exceeded, because we can look back and
see the universe of samples and decide if those values are
exceeded.

For the 303(d) listing process it is different. We
have to use data that was collected in the past; that is
all that is available to us. We are trying to infer
something into the future, at least into the present, and
that is the problem exists now. To do this kind of
analysis, it would be nice to have large numbers of
samples and a variety of parameters. Unfortunately, we
are limited by the time, cost and impossibility in many cases of getting more data. We are, quite frankly, limited to the information that is readily available, that is out there and submitted to us and we can get our hands on.

Since generalizations of any kind lie outside the scope of descriptive statistics, we are thus led to the use of inferences to identify water quality problems. It must be understood, of course, when we make a statistical inference that is a generalization that goes beyond the limits of the data, we must proceed with caution. We must decide carefully how far we can go in generalizing from a given set of data, whether the generalizations are reasonable, whether we need more information, for example. The most important problem of statistical inference, though, is to appraise the risk to which we are exposed by making generalizations from sample data, the probabilities of making wrong decisions or incorrect predictions, and the chances of obtaining estimates which do not lie within permissible limits of error.

These various possibilities may seem somewhat confusing to some frightening and to many that have commented they are not protective. But uncertainties in evaluating data cannot be eliminated. Since these uncertainties will always crop up, the Board has two
choices. You can ignore the uncertainties and just go forward with whatever data, looking back, or you can simply learn to live with the uncertainties.

We recommend facing these uncertainties head on. A statistical approach provides a reasoned and transparent tool for the first step in distinguishing between waters that meet and do not meet water quality standards. The major question that has been posed: Are water quality standards changed by statistics? The short answer is no. The provisions of standards are addressed in the first step, and the evaluation process is laid out in this policy. The magnitude, frequency and duration of standards are addressed first and the determination is made of whether the standards are met in that particular instance.

So we ask the question: Are water quality standards attained? We use the provisions of the standards. Then all the yeses and noes to that question go into the statistical analysis, and that's where the weight is developed.

We are proposing to use a test that balances the types of decision making errors so inferences can be made on the status of water segments. This approach is well justified from a scientific perspective. U.C. Berkeley peer reviewers have found the original approach to have
merit. We have had recent feedback from a Cal Tech
scientist who strongly supports the use of this approach
as quite defensible.

So how does this all work? In practice how will we
go about implementing these provisions of the policy?

For most data sets it will be very clear if
conditions of listing are satisfied. This first step
essentially clears the deck, if you will. Most of the
decisions are going to be clear cut. We will have 25 of
50 samples. That is a clear listing situation. And the
approach that we are proposing will allow us, then, to
focus in on those listings where the story is less clear
or it's too close to call.

Many of the commenters have said that the policy is
not restrictive enough. Still others have said the policy
should make it more difficult to remove waters from the
list. Setting the acceptable errors where waters are
listed or delisted is purely a policy choice that needs to
be made by the State Board. We've provided values that
are justified. That is not to say that other values are
not possible. There are other values that are possible
and they are justifiable.

The second issue I want to touch on is weight of
evidence. I just have a few seconds longer.

The policy provides a mechanism to consider all
available data and information. Absolutely no information will be excluded. Absolutely all data and information is included in this process. Once the decks are cleared, as I talked about before, once those easy listings are made, if it is necessary to dig deeper into the evidence, the policy provides for virtually an open-ended review of the data and information available. General guidance is provided in this regard. It is not specific because of the variety of circumstances and data that could be encountered.

With this flexibility comes the burden of describing the rationale for using this method, however. The policy calls for a situation specific weight of evidence to be based on reason and reference to the evidence that is available. There is a fear that this approach is license to contravene the provisions of the policy. It is not. The approach only provides a mechanism to consider absolutely all data and information.

Many issues have been raised in the letters that have been received. These are the only two I want to talk about now. If during the workshop you would like clarification on any aspect of the FED or the policy, I will be here and be happy to respond. If you have any questions now, I would be happy to take them.

MEMBER SUTLEY: I wanted to pursue this issue
with the standards themselves because I want to make sure I understand the argument you are making. We have these water quality standards and you're attempting to apply this statistical method. You are trying to account for uncertainty with respect to the data. But I guess my question is whether the standards themselves account for -- in some way account for uncertainty in the data; that is, they are expressed as you said in terms of duration, magnitude. So you have a limit and you have a way that it is expressed so you know whether you are violating the standards or not.

And my assumption is that part of the reason that you express standards, both in terms or in terms of an absolute limit less a number of exceedances over a time period, is in some sense to take account of the uncertainties with the data. So if there were no uncertainties in the data, a single exceedance of a limit would be a violation and would mean that you are exceeding the -- you were violating the standards. But that is not the way the standards are expressed. So I am having trouble understanding why that in and of itself isn't the way that you account for uncertainty in the data. And that is a legislative act in a sense to set those standards, rather than some statistical guess of whether you want to incorporate data or not. I'm just having
trouble understanding how we aren't running into a problem of doing -- of failing to do the thing that the Clean Water Act directs us to do, which to list impaired water bodies.

So help me understand this. I'm really having trouble with it.

MR. CRAIG J. WILSON: Let me see if I can help you with that.

CHAIRMAN BAGGETT: I have a similar, close related question.

MR. CRAIG J. WILSON: The standards say what they say, and they are very clear in what they say. With unlimited monitoring information, with a complete understanding of water quality in the state, we could make listings on one exceedance of a never-to-be exceeded value. We could do that because we would have an understanding. The assumption that many people make is that there is no uncertainty in any of these measurements. This whole policy is not focused on the standard. We have drawn a bright line between the standards and the data that are available. We are focused on how good the sample is, what is the weight of those samples with respect to those standards.

EPA guidelines, guidance to the states, allows for this kind of thing. They talk about these kinds of
errors. Because we are going from a situation of looking
descriptively in the past to these measurements to trying
to project them to some future condition.

CHAIRMAN BAGGETT: EPA's argument in their
comments, and I think in the comment letters, were that
CTR constituents require if there are two hits in a
three-year period, it is a violation.

MR. CRAIG J. WILSON: To me that answers the
question: Are our water quality standards attained?
Clearly, yes, in that circumstance. But it is one time.

CHAIRMAN BAGGETT: Even though it is a
violation of CTR, you are saying it is not necessarily
impairment because you only have two out of three years?

MR. CRAIG J. WILSON: I'm sorry this is such a
difficult concept. As those exceedances build up, we
become more confident that what we are seeing in the data
that was collected in the past is actually what is going
on in the present and is characteristic of that water
body.

CHAIRMAN BAGGETT: I guess it would be similar
if there was a fish kill and it is a one-time event, that
doesn't mean that the water body is impaired permanently
because a train car rolled into the river.

MR. CRAIG J. WILSON: That is the concept.

MEMBER SUTLEY: I come back to my original
question which is: If the standards, the CTR standards, are expressed as you need a certain number of exceedances over a period of time to have a violation, then how is it that you can sort of throw that out and say, well, for purposes of understanding whether there is a violation or not it applies, but for purposes of determining whether the water body it doesn't. I don't get the distinction.

MR. CRAIG J. WILSON: There is a number of ways of looking --

MEMBER SUTLEY: Hold on. Just because -- I mean, the way I understood it, and somebody tell me if I am wrong here, is that the situation which I just described, a fish kill, if it happens once, well, it happened once. If it happens twice, then you have to start to wonder what is going on in the water body that would permit that to happen more than just something, you know, something that ended up in the water body that killed all the fish. It just starts to -- and that the standards are expressed in that way to take account of the uncertainty over a single piece of data, of what causes a single piece of data. So --

CHAIRMAN BAGGETT: The CTR is established for point source pollutants, correct? For permits which permit, as per NPDES permit.

MR. CRAIG J. WILSON: The CTR values were
established as water quality criteria that apply to water bodies, every part of a water body. And once we have the CTR that applies to the water body, we have a process to go through to calculate effluent limits off of those values. And when you enforce on those effluent limits, you are looking back at the data you have. It is a fundamentally different kind of situation. Getting two hits in a row, just by chance, is the statistical test that shows that that is probable. Random events occur in rows. They don't alternate. Getting more than one hit, and this policy for toxics calls for at least three hits, and then it is appropriate to list and there is good --

CHAIRMAN BAGGETT: As opposed to --

MEMBER SUTLEY: Then that gets to my next question, which is: How can you say you are not changing the standards because the standards are expressed as one -- more than one exceedance in a three-year period? You are saying three is okay.

CHAIRMAN BAGGETT: Two.

MEMBER SUTLEY: Two exceedances. So how is three okay? And the standards are saying two is not okay.

CHAIRMAN BAGGETT: He is saying three will list.

MR. CRAIG J. WILSON: Three will list.

MEMBER SUTLEY: Right. Isn't it supposed to
be two will list? That is what I don't understand, why
that is not changing the standard. Because one exceedance
is allowed and it is the second exceedance that says you
have a violation. Did I miss something? That is the way
the CTR is expressed.

MR. CRAIG J. WILSON: That is the way the CTR
is expressed. And to me, one trial, one instance of
answering that question, are water quality standards
exceeded, you get one gimme, if you will, one hit, and
then the next one, if it is a hit, you have two hits.
Then for that one trial you have a water quality standard
that is exceeded. Now that is one time in a row. And
looking back on it, if we were enforcing on this, I can't
say anything about whether it is happening now or whether
it is happening in the future. But as the evidence begins
to build, as we get more hits, then we can't say that.
That is all I'm saying.

MEMBER SUTLEY: Except that -- I'm having
trouble. You know I've been having troubling with this
for months.

MR. CRAIG J. WILSON: I realize.

MEMBER SUTLEY: But that -- I don't know where
we have another situation in any other media where you
would say that the data you have isn't indicative somehow
of what the condition of whatever it is, the water body,
the air shed, that is all you got to go on. This is a list that is done every two years. It is supposed to be updated every two years, and then the consequence of this is a decision at some point, whether you do a TMDL or not, so if we don't have that, then what do we have? We don't really have a way of judging whether a water body is impaired or not.

MR. CRAIG J. WILSON: All I am saying in this process, we are building up the evidence, and scientists and everyone else have propensity to look at small amounts of information and see patterns in small amounts of information. One of the reasons we have statistics is to force scientists to use a standard set of approaches so they don't overstate the answer too quickly, so you have enough evidence to make these inferences.

Looking at the data sets in the past is easy. It's a piece of cake. You don't have to infer anything; it says what it says. If we have two out of three, that is what you are enforcing on, that is the answer. But if you want to infer to the future, you need a little bit more information.

I'm sorry this isn't a satisfying answer, but that is the answer. That is why we are doing it this way. That is why we proposed it this way.

CHAIRMAN BAGGETT: I think that was one major
area of comments. We will hear more about it and that is
one of the comments and that is one of the issues, two
versus three.

    MR. CRAIG J. WILSON: I understand.

    CHAIRMAN BAGGETT: It appears there is less
controversy with the conventional pollutants.

    Any other questions?

    We have lots of cards. I am sure we will before
5:00. We will be back. Three hours? We'll see.

    Dave Smith, U.S. EPA, first, and then Donna Chen
has a plane to catch.

    MR. SMITH: Good afternoon, Chairman Baggett
and Members of the Board. Thanks for the opportunity to
speak to this issue. I will certainly pick up on a couple
of the issues that you have been talking about the last
few minutes.

    First, I wanted to commend staff, Craig and his
staff, for the extraordinary hard work they've done.
They've tried to craft a very difficult policy. We think
that they've created a framework that is workable here.
As you can tell from seeing our comments, we do think
there are critical areas that are inconsistent with your
own water quality standards as well as with good
statistical practice and thereby inconsistent with federal
requirements. But I would like to emphasize that I think
there are many very good things in this policy and the
latest draft is a marked improvement over the prior draft.

I think we all share the overall goal to come up
with a comprehensive listing policy that will deal with
consistent listing decisions on the state and still
provide discretion to tailor our assessments to individual
situations. I think that the policy goes a long way to
achieving that balance.

We don't think it strikes quite the right balance
between analytical rigor and inclusiveness, nor between
the use of standardized rules and professional judgment.
But our sense is that a number of these issues can be
corrected without a huge amount of effort. So I guess
what our overall message is: We think you're close. We
think it's worth a limited shot at crafting some
improvements to this to address these types of concerns.
We think there are solutions that need to make this drag
on for months and months or years and years from now.

We think it is particularly worth noting that the
policy calls for the use of all kinds of data, including
pretty unconventional data types, and that is great. So
we think that if you retain that kind of approach, a
comprehensive approach to looking at all kinds of data,
that you'll have the policy that is workable and could
lead to the right decisions. But there are some
weaknesses, as we pointed out in several of our comments, that trouble us and that require some attention.

The first has to do with the use of these statistical methods to evaluate the data sets. We have concerns both with the application for toxic pollutants and conventional pollutants. Since you focused on the toxic issues, I will kind of highlight the differences in views.

Craig spoke to the idea that the policy would require the listing for toxics, if there are three exceedances. That is true for very small samples. For larger sample sets the policy provides for listing, which would allow a 5 percent exceedance rate for toxic pollutants. Under the California Toxics Rule, it essentially allows a .1 percent exceedance rate. That is basically one day in a three-year period, rounded. And there is a big difference between allowing a .1 percent exceedance rate and a 5 percent exceedance rate in applying these types of statistical tests.

We do have some issues that are very technical concerns about the structure of the statistical tests that are proposed here, and I'm not going to get into those today. We do think it's possible to use these types of statistical tests. The way they are structured in this draft have some problems that EPA statisticians in
Washington have big issues with. But I think it is safer
to say and simpler to say the use of the binomial approach
for the way the California water quality standards are
expressed in most cases is inappropriate.

CHAIRMAN BAGGETT: I guess I have one basic --
frustrated with this process. I'm wishing we were back in
water right fees at this point. We aren't setting floors
here. I guess the frustration, I've gone around with a
lot of people the last year and a half. If you have two
hits, and the Regional Board decides it should be listed,
it can be listed with this policy. It doesn't prohibit
you. This is like first cut. That's where I guess I fail
to see -- would you just propose we say where we are and
not have a policy? Do a case by case and continue.

That seems to be where people are headed. Let's do
it the way we've always done it. If you don't like it,
you can list whatever you want to list and we go on our
way, and they will see you instead of us.

MEMBER SUTLEY: They can list anything they
want to list, anyway.

CHAIRMAN BAGGETT: Why does this even matter
to you, one? And two, I'm really struggling why you care.
You can list whatever you want to list anyway. You can
ignore this state policy. And two, this is saying, the
way I read the statistical stuff, if you fall here, then
you are automatically listed. If somebody makes a case and there is two bad hits, even though there is 2,000 samples, two in a three-year period, it violates it and it should be listed. There is nothing in this policy that I read that prevents you from listing that or the Regional Board or anybody else.

MR. SMITH: Couple of thoughts. First of all, we think that this much effort is being placed in developing a listing methodology. It is good government to base listing decisions on an overall methodology rather than trying to reduce everything to case by case.

CHAIRMAN BAGGETT: You are basically proposing we use CTR and water quality standards, and if you violate, and that is a really simple policy. We don't need --

MR. SMITH: That is an option you can adopt to modify the policy to make it more in accord with your water quality standards and with the CTR. But I think the other point that is worth stressing is while there are provisions in the policy that authorize the use of weight of evidence approach, its use appears to be discretionary, and I think that there is a lot of concern that that discretion may not actually be used by the Regional Boards or by the State Board.

Perhaps. But I hope we share the goal that it is
better if EPA's approving states submitted lists rather than consistently disapproving them. So our sense is close enough to having a framework that could yield approvable lists that it is worth a try to get there.

CHAIRMAN BAGGETT: That is not the way I read your letter. It doesn't sound like we are close at all when I read this letter. It sounds like we are far apart as we were a year and a half ago.

MR. SMITH: I guess I would just say I do think a number of the things that we had concerns about in the prior draft have been successfully resolved in this latest draft, and we are pleased about that. We appreciate that. We think that some of the fixes with respect to some of these statistical tests, that there are alternatives that are available to us now that have been suggested that could be adopted. So it is not a matter of discovering new methodologies to incorporate into the policy. We've addressed those issues.

It would be a matter of the Board providing direction to staff to actually work with us and seek those types of changes, incorporate them. And I think with respect to the weight of evidence provisions, and I guess the other thing I would mention is we had some concerns about data quality expectations of the policy sets. With some fine-tuning to those types of provisions it would
satisfy us that the state really will apply this weight of
evidence approach forcefully and that that could provide a
way to fix problems, from our perspective, that are caused
by application of these other types of tests.

So that is why I am saying that I think we are
fairly close to a policy that certainly could result in
approvable lists that address not every stakeholder's
comments, but many of them. So I think our recommendation
would be that you do that, that you ask the staff to make
some kind of fine-tuning corrections in some areas of the
policy. Not to scrap the whole thing, not to go back and
redraw the whole thing. But to try to do that in a fairly
quick period of time and bring it back to you for your
adoption. And I guess our sense, it's worth a shot. We
encourage you to try to do that rather than adopting the
policy that at least has the possibility, if not the
likelihood, of yielding decisions where we end up having
to add a lot of waters to the state's list. We think that
is a bad use of everyone's time.

Finally, I think we are concerned about adoption of
a policy that appears in conflict with state water quality
standards simply because it might subject that policy to
legal challenge in the state system and tie up you and
your staff's time dealing with that type of challenge,
which would be great to avoid if we could.
So I think I'll leave it at that. I'll be happy to answer any more questions, but I hope you will continue to try to get this right. I think we are quite close, and I think the Board is to be commended for coming up with something that is this close.

CHAIRMAN BAGGETT: Thank you.

Donna.

MS. CHEN: I am Donna Chen, representing the City of Los Angeles. Thank you very much for accommodating my schedule. Good afternoon. I have some comments on the 303(d) listing policy.

I want to just add a little bit more on the science aspect that was discussed, touched upon by the previous speaker. I do want to acknowledge that the City appreciates the state's effort to standardized the listing and delisting process. We feel that a well-developed policy is definitely needed. We would like to point out that the various changes made to the latest draft, if you consider them separately, may be considered minor, but, if you consider them in total, they substantially weaken the scientific rigor of a listing policy.

Scientific rigor is important. If it is weak, it increases potential for inconsistent application of a policy between regions and lowers the City's confidence in the listing policy and impairment listing that is
generated by it. Therefore, the comments that we have recommend that scientific rigor be restored to the listing policy. We have submitted written comments that go into a lot of detail regarding that topic.

But not to belabor the fact, I want to point out a couple of items here, to be a little more specific on that. One of them is regarding the current draft restores the use of visual and semiquantitative assessment to the listing policy. The draft mentions the numeric water quality data must exceed the guideline. Again, it allows a referenced condition to be used. So this infers conditions do not have to be numeric in nature in regard to referenced conditions.

Our recommendation is to visual and semiquantitative assessment for listings, such as nuisance, as ancillary lines of evidence when compared to referenced conditions.

Regarding the weight of evidence approach, we would like to see that clarified when using quality of assessments or dealing with impairments that are not tied to pollutants. We have provided language in our comment letter to provide less confusion. This includes language regarding the consideration of water, tissue or sediment concentration of pollutants as primary lines of evidence.

And the last detail, the one I want to point out on
the science aspect, is to modify the listing requirements when older data is used for listing purposes. As written, the listing can be made based on data that is greater than ten years old. Older data should be accompanied by new data; that is data less than ten years old. To verify whether the older data is reliable, the newer data should be more heavily weighted because it is more current and more representative of current conditions.

I have a comment related to the promulgation of guidance documents and references. In the past the guidelines that have been used were applied inappropriately to local conditions, and it appears no adjustment to fit the local conditions were made on those guidelines. These guidelines and the rationale for their use should be presented for stakeholder review. It appeared that in the past some of these guidelines have metamorphosed into TMDLs as standards, and should formally be addressed as a standard. This is promises to wastewater treatment plants and industrial dischargers, because they are under a different set of standards and have had to adjust operations and studies, to address new guidelines or existing guidelines that have be applied in a different manner.

So the City recommends that stakeholder review, promulgation of documentation of these guidelines take
place as they are incorporated into the Basin Plans.

That concludes my oral comments. As I mentioned, we
did submit written comments in great detail to the Board.

CHAIRMAN BAGGETT: Questions?

Thank you.

The environmental has asked to be taken as a group,
so we will start with environmental group.

Conner Everts.

MR. EVERTS: You will have to excuse me, I
have a bit of a cold. Even though I learn everything, I
sit through your meetings such as the water rights fee
discussion, I seem to forget not to fly with a cold, so my
ears still a little clogged. I can't hear.

I'm also going to leave it to the rest of our
group, primarily from our PAG group that's worked on this
for a very long time, to answer questions. I want to
thank you for the opportunity and the diligent work of the
staff and the outreach that's been done to this point. I
realize that these are also difficult times in terms of
budgets and constraints. Nevertheless, I hope we don't
waste the investments of time you have all made to date
and find some compromises on these issues.

My job was a simple one, to fill in for Linda
Sheehan and David Beckman who wouldn't be able to make it
here today, something about school starting and other
programs going on, and find some on the ground examples. However, when I started to do that, I was talking to people from San Diego to the North Coast who I work with doing my circuit writing and outreach, and they brought up more was the difficulty about actually listing the local waters and their concern of delisting of others would become easier. Partly because of the small sample sizes, the statistical method, that it wouldn't be appropriate in a delisting scenario.

I don't want to go into a lot of detail, but certainly with what we have seen in a severe drought over the last four years in Southern California, I drive through watersheds that don't have imported water, and we have incredibly dry areas. And with incredibly dry areas increases the plume of pollution in a lot of these issues, so the discharges that we have in a lot of these streams are the only water in the system.

One of a few basic points. The rule of three seems very arbitrary. I don't mean that we're against everything we've got here. I think a lot of good work has gone here. I think there are some details we need to work out. I really want to follow on the comment by EPA and you'll certainly get some detailed comments from the rest of us. But we are afraid that the statistical approach to delisting will miss numerous waters and will result in
inefficient and problematic listing of others.

I hope in this discussion, and I was surprised to hear Chairman Baggett say that he would like to go back to water rights, something that is easier, that we can come to some conclusion, and I hope we can continue to work together because the PAG process was a long-term consensus involvement, and I appreciate the support and I appreciate this time here, and I am going to yield to the rest of our group. I am also tasked with keeping them on time, so we will try to move pretty quickly here. I've given up on trying to catch my flight home. I realize we have to have a lot of discussion here.

Thank you very much.

CHAIRMAN BAGGETT: Thank you.

Sarah.

MS. NEWKIRK: Good afternoon, Board Members. I came prepared to say good morning. I have a PowerPoint presentation that is now currently up on the screen. We will try to operate this thing. My name is Sarah Newkirk, and I represent the Ocean Conservancy. My remarks this afternoon will relate to three main objections that we have, the Environmental Caucus had in its recent comment letter on the draft 303(d) listing policy.

First, that the statistical listing methodology is, and these are the words of EPA in its comment letter,
inconsistent with state water quality objectives. Second, that the rule regarding small sample sizes is unscientific and also inconsistent with state water quality standards. And third, that the statistical technique used for dealing with delisting waters is unprotective and arbitrary. And those again are the words of EPA. And we would like to echo EPA when we say that as a result the policy will result in a situation in which EPA would potentially have to add hundreds of waters and pollutants to the states 303(d) list which is a situation we all want to avoid.

First, the statistical listing methodology is inconsistent with water quality objectives. As you know, this version of draft policy adopts the accepted sampling by attributes methodology. This methodology is most commonly used to select lots in industrial process applications, and it uses two critical thresholds. First, there is a high point where there is so many defective products being produced in a lot that safety and marketability are compromised. But there is also a low point which the producer is spending so much time and effort trying to avoid mistakes that cost-effectiveness is compromised.

This graph shows what this methodology as applied to water quality assessment looks like. The blue curve gives the relationship between the probability that the
water body won't be listed and the underlying exceedance rate, given a particular sample size and listing criterion. Now there are two thresholds here, just as I described. The high threshold is the threshold exceedance rate at which there are so many exceedances that it gets dangerous to human health and the environment. The low threshold is an underlying exceedance rate below which we don't want to really worry about because it is not cost-effective.

Now assuming that we can agree that there is some lower limit below which waters are too clean to worry about, there is nothing inherently wrong with this as a statistical methodology. The critical issue that you need to think about is where you set the two thresholds. Now intuitively we'd expect that you would set the upper threshold, representing the dirty water body at which you don't -- gets dangerous to human health and the environment to go above this number of exceedances at somewhere around 10 percent, which is what the traditional EPA recommended exceedance rate at which waters were to be listed. And that the lower threshold would be set, I don't know, somewhere below that.

But staff has proposed, interestingly, that the low threshold be set at 10 percent and the high threshold be set at 25 percent. So 25 percent is the rate above which
it is dangerous to human health and the environment, and
10 percent is the rate at which it is not cost-effective
to go below. It is a little bit incomprehensible to me
how staff came to decide that 10 percent rate of water
quality objective exceedances, which is the rate at which
EPA's historic guidance called for listing, is consistent
with clean waters somehow. But we also strenuously object
to the extremely upper high threshold limit.

We are not the only ones that think these choices
are illegal. EPA said in its comments that the draft
policy assumption, that water quality standards can be
violated for conventional pollutants more than 10 percent
of the time is inconsistent with state water quality
objectives. And staff has repeatedly justified this
methodology by suggesting that it is consistent with EPA's
CAM guidance. But EPA's own comments belie this as well
by stating that the examples relied on by staff are
actually inapplicable in California. We'd like to note
that EPA's comments were made after consultation with
headquarters.

Our second major flaw that we'd like to highlight
is that staff's proposed approach relating to low sample
sizes, which we finally called the rule of three, bearing
in mind that for conventionals it is the rule of five.
There are three major problems with the rule of three.
First, it is extremely biased against listing impaired waters. Second, it is unscientific and arbitrary. And third, it is inconsistent with water quality standards.

First, the rule of three is biased against listing impaired waters. The rationale for adopting this approach, as stated in the FED, is that if very small sample sizes are used, error rates, even if balanced, could be very high. But the thing to note is that the rule of three avoids only one type of error, that of erroneously listing clean waters. As the FED itself acknowledges, under the rule of three there is a small chance of incorrectly listing a clean water. However, there is a large chance of failing to list water bodies that are not meeting water quality standards. Therein lies the bias.

This graph shows how the rule of three works in the context of the accepted sampling methodology's threshold for clean and impaired waters. The three curves here represent different sample sizes, each with a critical exceedance rate of three. The solid blue curve in the center represents a sample size of ten and a critical exceedance rate of three. Note that an actual exceedance rate, a true exceedance rate of 10 percent, there is 95 percent probability that we will not list that water. But even out of 25 percent true underlying exceedance rate,
there is a more than 50 percent chance of not listing the water. Even more extreme is the wide dotted line, represents a sample size of five with a critical exceedance rate of three. And there at a 10 percent underlying exceedance rate, 10 percent, there is a virtual certainty that the water body will not be listed. Even at a exceedance rate of 25 percent there is a more than 90 percent probability the water body won't be listed. In other words, the chances of failing to list truly impaired waters under this methodology are extremely high.

Our second criticism of the rule of three is that it is unscientific and arbitrary. Staff's rationale for using statistics in the first place, which you just heard, is also stated in the FED, that using statistics would require the reliance on valid scientific procedures. However, the rule of three is wholly arbitrary and inconsistent with the whole notion of scientific procedure. Maybe this wouldn't be a problem if this procedure were going to be applied infrequently, but that's not the case. Because so many data sets used to make these assessments are small, it will, in fact, be frequent, if not the most frequent procedure, used to make these decisions.

Finally, the rule of three is inconsistent with water quality standards. This graph shows the percent of
samples that we actually have that are actually exceeding water quality standards for a range of sample sizes under the rule of three. The red line beneath represents the traditional 10 percent listing criterion. You will note that the small sample sizes we list at up to 60 percent of samples exceeding water quality standards. And just a reminder of what EPA had to say about this. The assumption that standards for conventional pollutants may be violated more than 10 percent of the time is inconsistent with state water quality objectives. But the rule of three permits exceedances of water quality standards in up to 60 percent of cases, and this is unacceptable.

The final flaw I want to highlight in my remarks is the fact the proposed delisting approach is unprotective and arbitrary. First, that it will result in the delisting of numerous impaired water bodies and, second, that it will result in bizarre listing and delisting loops that I will get into momentarily.

First, this Board's expressed its position that delisting should be harder than listing. Not only does the delisting approach under the draft policy not reflect this position, it would, in fact, result in the delisting of numerous water bodies that are actually impaired. This graph, again, the red line beneath shows the traditional
listing standard of 10 percent. But the jagged blue line up top is actually the percent of samples exceeding water quality standards which, under this policy, would actually delist.

In other words, you can see that water bodies will be delisted when between 13 and 17 percent of samples are actually exceeding water quality standards. We vigorously disagree with the notion that water bodies in which 13 to 17 percent of samples exceed water quality standards are actually clean enough to merit delisting.

This slide shows portions of Tables 3.2 and 4.2, reflecting the critical listing and delisting thresholds for conventional pollutants. Looking at these tables side by side demonstrates two points. First, it demonstrates clearly it is not any harder to delist than it is to list. But, second, it shows how, when the thresholds are so close, water bodies may bounce on and off the list in a manner that consumes resources and prevents any real action.

Consider this hypothetical situation. If you have a sample size of 30 with five exceedances, you get a listing. If you get one more sample and it's clean, you get a delisting. One further sample that shows an exceedance of water quality standards, it gets back on the list. Obviously, this is an illogical result, but it is
one that's practically ensured under a methodology in which the listing criteria and delisting criteria are so close.

Our solution to these problems that I have stated is to adopt the 10 percent raw score approach. The specifics of this were communicated to you in our comment letter of August 25th, and we encourage you to carefully review the line edits to the draft policy that we submitted. We also proposed that the delisting decision be made using data that are independent from the data that were used for listing, because fresh data will ensure that listing and delisting loops will be avoided.

Staff rejected the raw score other approach for this reason: According to the FED, the disadvantage of using it is that the associated type one error rate would be high. In response to this objection, we refer the Board to our comment letter of February 18, 2004, which demonstrated that actually the raw score approach results in nearly balanced error. However, we also contend that unlike type two error, which is failing to list impaired waters, type one error, the listing of truly clean waters, is actually nearly cost free. In other words, the specter of accidentally developing a TMDL or a whole bunch of TMDLs for waters that are not truly impaired is illusory because there is so much confirmatory monitoring required
in preparation for the process.

This concludes my remarks. Thank you for considering these comments, and I would be happy to answer any questions.

MEMBER SILVA: You said that we have a policy of making delisting harder than listing. Where is that policy?

MS. NEWKIRK: My understanding was that Chairman Baggett conveyed that to Linda Sheehan at a meeting.

CHAIRMAN BAGGETT: I told her that was my opinion. That doesn't mean a State Board policy.

MS. NEWKIRK: Understood. Point taken and correction made.

MEMBER SILVA: We are trying to make it equal, to make it, I guess, not as hard, but make it fair to both sides to delist and list. That was my understanding.

MS. NEWKIRK: The problem with the listing/delisting loop is actually a bigger problem when the thresholds are very close, obviously.

MEMBER SILVA: I realize that it wasn't a policy that we established.

MS. NEWKIRK: I stand corrected, but Chairman Baggett's policy.

MEMBER SUTLEY: Not so much a question for
you, but at some point today we need to have a discussion
with Mr. Wilson about the delisting, but I don't know we
have to do it right at this second.

MS. NEWKIRK: Thank you.

MR. O'BRIEN: Good afternoon, Chairman Baggett
and Board Members. My name is Leo O'Brien. I am the
Executive Director of WaterKeepers of Northern California,
and EPA stole a little bit of thunder here. It was my
intention to focus on toxics and the application of what
we feel is the mishandling of toxics impairments under
this policy.

I want to make clear that Sarah's presentation and
the repeated discussion of 10 percent was in regard to
conventional pollutants. We believe that the 10 percent
hypothesis testing, 5 percent hypothesis testing
hypothesis testing, hypothesis testing at all is
inappropriate as applied to toxic chemicals. We think it
is bad policy, it is not precautionary, it will increase
the discharges of toxics in the State of California, and
as you have heard inconsistent with what EPA would like
you to do, and finally it is illegal.

California has well thought out standards for
toxics. They have been adopted through a deliberative and
public process, and they are stringent. But they're
stringent for a good reason. These are the nasty stuff.
This is dioxins and mercury and lead. This is the stuff that we don't want out there in the world. They're dangerous to human, dangerous to wildlife. You know all this. But I feel like I need to remind you.

And the stringent standards are inconvenient and sometimes difficult for the dischargers, but they are protective of public health and of wildlife and our ecosystems. I intended to quote from EPA's letter. I'll spare you.

CHAIRMAN BAGGETT: Thank you.

MR. O'BRIEN: But they have repeatedly and sharply criticized the approach taken in this policy.

CHAIRMAN BAGGETT: I have to ask you the same question, Leo. I don't understand yet. No one has articulated why this prevents two hits in three years from listing a water body. It doesn't. This is a low hanging fruit. This says that you are automatically in at this level under this statistical model. It doesn't say you can't list. It doesn't say don't list. It doesn't say you are prohibited from listing. It doesn't say violate the CTR anywhere in this document unless you guys can show me where it is. I haven't seen it. It says this is the slam dunk, you are in.

MR. O'BRIEN: I hear you. Why do we need it?

CHAIRMAN BAGGETT: Why do we need policy?
MR. O'BRIEN: The policy should effectuate the standard. The standard is adopted; it exists.

CHAIRMAN BAGGETT: It is not taking that away. It still exists.

MR. O'BRIEN: If the standard is two or more, why do we need a policy that is three or more and sometimes 5 percent? And, I guess, there is some sense that that is what will be applied and then there is discretion, but there isn't room for discretion here. The standards exist and they take away that discretion.

CHAIRMAN BAGGETT: What if there is a car spill? What if it is a Dunsmuir spill? You are proposing we list the Sacramento River forever as an impaired water body because a tanker fell in it? That is what I am having trouble with. Or the blow out of the Delta levee? You have something going in, a catastrophic event.

MR. O'BRIEN: Those are special situations that you could create some language to address without creating broad policy that is inconsistent with the legally adopted standards. You know, to some extent -- right, there are these exceptional and special circumstances, but there are going to be lots of circumstances in which something not exceptional happens that results in one thing but no -- one exceedance or two exceedances. And so what CTR tells us is that, when those
two exceedances happen, beneficial uses have been damaged. They are damaged. So today those beneficial uses are damaged. So, Craig, sort of past, present, we can't tell if they are being exceeded today. The point is the beneficial uses have been harmed.

CHAIRMAN BAGGETT: It is likely to be listed, I would assume.

MR. O'BRIEN: Outside of the statistical process, if a Regional Board exercises its discretion and you exercise the discretion.

The second point I want to make --

CHAIRMAN BAGGETT: If we did it last time, the last listing cycle, maybe some of you forgot, we listed all the North Coast rivers impaired for temperature over the ruling of the Regional Board who decided, no, we don't have enough evidence. The fact somebody presented evidence, we listed them. They're narrative standards. They are very tough to figure out whether it is impaired or not. We use that discretion, and we are applauded for it. I don't understand how this is limiting.

MEMBER SUTLEY: I guess I have a slightly different concern. I agree with you, Art, in the sense that we have the weight of evidence approach. I understand that. And I think for things that clearly should be listed, there is not a discussion. I would be
concerned, however, if the alternative, the sort of easy way to do it, and we are just looking at data without having to apply judgment was flawed, legally flawed or scientifically flawed. So that is -- the concerns that I have about this is not that we don't have an alternative based on weight of evidence, but if we are trying to make this a more efficient and streamlined way and make sure that we are getting through these listing decisions, I would be very troubled to be adopting a policy that allowed an alternative, even if it could be overruled, that was flawed, legally or scientifically or on a policy basis.

So what I am trying to understand is if, in fact, this policy is flawed, if these statistical methods are flawed, I don't know how we could consciously adopt them.

MR. O'BRIEN: Chairman Baggett, if what you are saying today is that you and the rest of the State Board Members are committing in some way to exercise your discretion in all of those situations, which I don't hear you to be saying, if that is what you are saying, every time you get a toxic listing or there are two exceedances that you will list, the environmental community probably would feel better about it, but I am not hearing you say that. I don't think you can say that and adopt this policy at the same time. So we'd like you to adopt a
policy that does say that.

In answer to Member Sutley's point, we do think it is illegal. The test that is used in this policy does not incorporate the time language in the standard, the more than three years. It does not appear anywhere. So the question was asked by Craig: Are water quality standards changed by statistics? And he said, "Oh, no, they are not. Statistics don't change. It is just a way of testing." That is true if you actually test the standard. And we are not testing the standard. We are testing a number which is a part of the standard. There is also this exceedance frequency and time period, a specific time period, three years. Read the policy. Three years does not appear in connection with toxics at all. And so we are not testing the standard. So your standard is not imported into this policy and, therefore, it is effectuated and, therefore, the policy is illegal.

The argument has been made in the documents that it is only for one purpose, that for other purposes out there, the other purposes we use the standard for, we are still going to use the numbers in CTR and still use the exceedance frequency. And that seems a very thin defense for you, that to change -- we only changed it for one purpose, your Honor. You know, I think it's deeply flawed from a legal point of view.
I would also urge you to look at the way that an average, the language on average -- I am getting very specific and picking this apart as a lawyer for you because I really want you to think about it. How is that language on average, which is part of the CTR standard, expressed in this policy? If you read the language in the response to comments about this, I think you will get a chuckle. It is a real stretch. It is very inconsistent with the language that EPA uses in their comment letter.

Your staff also points to other states to support this test. But they haven't provided you with the information on what the -- how the standards are expressed in those other states. California standards protect California beneficial uses, and California deserves a California listing policy.

So we have provided you with some language, with some edits, line edits. I hope you will consider them. If you are not willing to remove the entire hypothesis testing and binomial -- I forget the new name for it -- the hypothesis testing approach from the policy, I hope you will consider removing it as applied to toxics.

And thank you for the time and thank you for the questions.

CHAIRMAN BAGGETT: Thank you.

MR. GOLD: Afternoon. My name is Mark Gold. I
am the Executive Director of Heal the Bay. Unlike most of you, I'm actually happy to be here because it gets me out of the last 15 hours of negotiating AB 885, rather than talking about septic systems is an improvement to me.

First of all, I just wanted to state that I felt that Sarah's testimony in particular, really, I think laid out for everybody what are the biggest concerns on this approach. Obviously, you want certainty, consistency and environmental and public health protections in your recommendations, and to have the sort of erratic ambiguity within the existing system for both delisting and listing, having similar policies, the small sample size issues, the CTR issue which Leo just went into in detail, those are obviously major concerns. But I am up here just to talk particularly about beaches.

Obviously, that is something that Heal the Bay does an awful lot. I sit on your clean beach advisory group, and our organization does our beach report card. So we've been looking at the beach water quality data probably more than anybody else in the state.

We strongly urge the State Board to go with the 10 percent flat rate overall, if they are going to be doing a flat rate at all for beach water quality, and that 10 percent plus the binomial on top of it is not at all protective to beachgoers. You've heard that rationale for
why that is from Sarah. And I would like to also state that this has been discussed at the beach water quality work group for the state. And when it's been discussed it's been talked about 10 percent for the year and 4 percent before the AB 411 periods. No one has been talking about throwing in the additional margin on top of that, where 10 percent is really the issue. The other thing is just a 10 percent flat rate, just to remind you, doesn't take into account the magnitude of exceedance of any sort of violation. There are many beaches as we all well know that not only exceed the standard, but exceed the standards by orders of magnitude. By not taking that into consideration that obviously is a major, major concern from the standpoint of beach water quality and protection of public health. Obviously health risk is not only what the -- it is the number of people that are in the water as well as the density of bacteria that is in the water, and that is not taken into consideration at all.

Just a reminder on the rationale given by your staff is that variability and analysis is one of the reasons why 10 percent flat was not taken. And remember, the water quality standards that you developed in the State of California as part of AB 411 are based on epidemiologic evidence where people are getting sick and
the variability is taken into consideration in determining what those numbers are.

And even the Southern California study done by SCORP, basically seeing what the variability was in samples, determined that for an enterococcus density of 104, you can have a density of anywhere between 70 and 155, which is one standard deviation away from that. Why is that important? It tells you that you can underestimate densities as well. It is not just overestimating densities, which, again, is not taken into consideration by the approach that your staff has gone forward on.

The other thing that is in here is there is a tremendous disincentive for wet weather monitoring because there is no use of rain advisories. So why would you as a local government agency or health department monitor during the wet weather, knowing that that could potentially be used for listing policies when rain advisories cannot. That makes no sense whatsoever. We see it right now in San Diego County, for example, where their monitoring program, which is absolutely excellent, during day before AB 411 time period, is merely a skeleton program during wet weather, and obviously that reduces their risk of delisting -- listing.

CHAIRMAN BAGGETT: Aren't most of -- like Santa
Monica Bay is listed for most of the pollutants of concern already.

MR. GOLD: Yeah. I am concerned about the entire state of California, not just Santa Monica Bay.

CHAIRMAN BAGGETT: And San Diego Bay and most of the -- I guess, what is left?

MR. GOLD: You have listing and delisting policy. This is going to definitely come into consideration if you are going to decide to take something off.

CHAIRMAN BAGGETT: Delisting is another issue.

MR. GOLD: The other thing is we strongly believe that there should be a reference approach. A reference approach is preferable to the 10 percent flat approach because then you are really comparing what is going on in the local area for bacteria densities in comparison to reference conditions. That is really the correct scientific approach. That is what L.A. County has obviously done with Santa Monica Bay, the L.A. Regional Water Quality Control Board. It is something that we think really needs to be mandated throughout the state rather than just setting a flat number, because you are really talking about comparing risks, and where you have a pollution source areas and where you don't. Right now it is an option. It is certainly not a mandate.
The last thing, which I am assuming must have been a typo, is that there is AB 411 4 percent requirement for April through October. It says right now it applies only to coastal beaches. I am assuming like the rest of the section that it's actually applying to all rec-1 waters. And so I hope that is something that gets clarified. Obviously, we should be concerned about people who swim in creeks and lakes and rivers as well. And right now the policy is silent on what to do in that particular situation for listing. I am assuming the 4 percent before AB 411, the time period through October applies as well, so that needs to be qualified.

Thank you.

CHAIRMAN BAGGETT: Want to clarify that now, Craig.

MR. CRAIG J. WILSON: Of course, the 4 percent value came as a recommendation from the beach water quality work group. We pretty much took all of their recommendations directly. The 4 percent value was developed with a shoreline study in Southern California. It is definitely applicable to coastal waters, to coast lines. I don't see that it is applicable to inland waters since it was not developed for those waters. We've made that distinction between the two.

CHAIRMAN BAGGETT: Why wouldn't it be?
MR. CRAIG J. WILSON: I have no idea if the lakes and streams react the same way, have the same kind of exceedance frequency as was developed for coastal waters. We were just being very narrow in the way we interpreted that, not broad. I am sure if we interpreted it broadly, we'd have the regulated community saying, "Hey, why are you applying it to freshwater? It was developed for ocean waters." We took a conservative approach.

CHAIRMAN BAGGETT: Mark, do you have -- no doubt you were involved in this.

MR. GOLD: The 4 percent was not any sort of well thought out study. It was more looking at what were the water quality trends throughout the state for areas where you didn't have any pollution sources. So we were looking at 4 percent and saying, well, you know if you are over 4 percent then you've got issues. The 4 percent is similar to what you might expect in a background type situation. So just because the data that was only looked at was coastal data, doesn't mean that we should just ignore the fact that literally millions of people are swimming in our rivers and our lakes, and that is the situation here. It wasn't any special ocean study that was done. It was just looking at existing data.

CHAIRMAN BAGGETT: So Lake Tahoe, Lake
Almanor. Recreation.

MR. GOLD: Exactly.

MR. JENNINGS: Good morning -- good afternoon.

CHAIRMAN BAGGETT: Good morning someplace.

MR. JENNINGS: Bill Jennings representing DeltaKeeper, San Joaquin Audubon and CSPA. I want to talk, briefly address error rates and small sample sizes.

This is essentially the picture of a graph that Craig Wilson has employed in a number of presentations to illustrate binomial method balancing errors. The red line is the probability of improperly listing a clean waterway, and the blue line is failing to list a dirty waterway.

Let's focus on small sample sites, sample sites of less than 25. Notice that the error rate at sample sets of less than 25, the chance of making an error using the binomial method when balanced under a 25 percent scenario as staff proposed, and this graph is based on the same statistical parameters that your staff has used. The green dots represent the chance of failing to list a water body that is actually impaired, and the red dots represent improperly listed water bodies that are not impaired. The graph clearly demonstrates the so-called balance error rates are not really equitable. Errors are frequently greater than 20 percent. For critical sample sizes, balancing simply doesn't work for small sample sites.
These error rates are compounded when the rule of three is used, as proposed by staff. The likelihood of failing to list an impaired water body dramatically increases. The likelihood of listing a clean water body substantially declines. In fact, if you look at a sample size of ten, you are looking at almost a 68 percent error rate for improperly listing a water body.

Remember, you can only make one error at a time. And staff has conveniently failed to illustrate the error rates associated with the rule of three, nor have they pointed out any statistical justification for the rule of three. The rule of three is purely arbitrary. It is purely political. And if it is included in the policy, it will provide the regulated community with an enormous incentive to oppose increased monitoring efforts.

The next set compares the binomial with the binomial plus rule of three for sample sets of between five and ten and between ten and 20. Keep in mind that the binomial approach ignores magnitude, spatial and temporal concerns and the methodology that EPA and the state have used to develop water quality standards.

One only has to look at SWAMP, the Bay's regional monitoring program, ag waiver monitoring, the Sac River Watershed Program and Southern California's water research program, or, for that matter, USGS' NAWA or EPA's EMAP
monitoring to realize that for the foreseeable future we are cursed with small sample sizes.

CHAIRMAN BAGGETT: Bill, you don't have to go back to the slide, but how would this discourage more monitoring? Wouldn't it be the converse? Would't you -- if I were a discharger, I would want tons of samples. I would want to have more.

MR. JENNINGS: You would want fewer samples.

CHAIRMAN BAGGETT: I would want to monitor so I have a few samples.

MR. JENNINGS: With fewer sample sites it is much more difficult to list a water body, especially under a binomial method and rule of three. One of the problems is that I can go out on the Calaveras River, which is next to our office, and I can select -- I would collect five samples, and they'd be toxic. Or I could collect five samples and they wouldn't be toxic. That would depend on when I went out there to collect the samples. So I am just very suspicious of some arbitrary statistical approach that doesn't really give precedence to a best professional judgment and discretion of the Regional Board. My concern is that the binomial approach and the rule of three really becomes the standard and best professional judgment becomes the unusual situation.

CHAIRMAN BAGGETT: I guess, I pose the same
question. I see this as the opposite thing. I am saying this is the low hanging fruit. If you fall under these numbers, you are listed instantly. It doesn't discourage. The Regional Board can list before they even have samples if though feel it needs to be listed.

MR. JENNINGS: Well, if that were the case, we wouldn't need the binomial -- the binomial method shouldn't apply to those sample sizes. If you get your three hits or two hits in three years, you just list. In that case we are arguing over nothing. We just eliminate the binomial approach for small sample sizes. Because if large sample sizes, balancing, it begins -- there is much less of an error rate. We all agree if we have a hundred samples that we have a pretty good chance --

CHAIRMAN BAGGETT: What number would you -- so that is -- then to follow up on that, what would you propose then? What is low -- one of the struggles I am having, when you only have a few samples and it is especially the CTR constituent, I'm struggling where that line is, if you are going to draw a line. Recognizing that this line really can be overridden by best professional judgment of the State or Regional Board.

MR. JENNINGS: I think you can work on that if you make more clear the lines for best professional judgment and how it would play.
MEMBER CARLTON: Looking at your chart there, that you have displayed, Bill, you would say, like, 25, 25 sample sets that we are getting out into a range where the errors are small.

MR. JENNINGS: It's smaller.

MEMBER CARLTON: Would you find more value, more accuracy in using this approach, greater than 25 samples?

MR. JENNINGS: I think that would open up a line of communication we ought to have. It is encouraging.

MEMBER SUTLEY: Let me ask -- I don't who, somebody. It would seem to me that if we were to come up with a sample size number that everybody felt comfortable with and had some scientific or some statistical basis or if it is 25, it would seem to me the way that we -- if we are looking for some consistency among the Regional Boards and some efficiency in this, then below 25 we need to be clear that we are going back to what the standards are, which would be 10 percent, if I get this right, 10 percent for conventional pollutants or no more than exceedances for toxics over a three-year period based on the data that you have at hand.

CHAIRMAN BAGGETT: Or also best professional judgment. By Bill's own admission, depends on where you
take these, and Regional Board I assume considers all
that.

MEMBER SUTLEY: If you were to look for some
shorthand and what the data was written on would seem to
me -- well, maybe it is the converse, which is you should
not fail to list something where you have more than 10
percent exceedance of conventional pollutants and you
should not fail to list where you have more than two
exceedances, and then the listing basis you go to is the
weight of evidence. But I just don't want us to get in a
situation where we adopt a policy which says for small
sample size it's okay to use a flawed statistical method.
Small sample sizes no statistical method is appropriate,
and that we should be back at the standards.

CHAIRMAN BAGGETT: Craig, do you have --

MEMBER SUTLEY: Maybe that was a rhetorical
question.

MR. CRAIG J. WILSON: The rule of three, I
hate to call it the rule of three. The reason we have
that is to avoid setting a minimum sample size of, like,
21 samples or 25, that kind of thing. But rather to say
if it, the samples, are representative, the example that
Bill gave where you can go out and collect five hits, and
go out the next day and collect five hits, that is not a
representative sample. There is clearly something going
on there that's inappropriate, and the Regional Board needs to look at that sample very carefully. It's representative. We thought in that lower graph there, where the green lines goes up, that is the type two error. In those circumstances we always list. There would never been a type two error in that circumstance.

So we saw this as going towards being environmentally conservative, listing when you have three samples, even though the sample size wasn't large, because the burden of proof was met. I don't need to see, if I have three hits in a row out of these samples, I don't need to see 20 more hits to list. We have met the burden. List it. That is what that rule is about.

MEMBER SUTLEY: Potentially violates the standards.

MR. JENNINGS: It is a nonstatistical path put on to a statistical approach. And if the binomial is statistical, then why would you then say the rule of three, which has no statistical --

CHAIRMAN BAGGETT: Craig.

MR. CRAIG J. WILSON: It is a nonstatistical approach. It is a policy-oriented thing. But it makes sense, the burden of proof is there. If you want to set a minimum sample size, minimum hits, that could be done.

CHAIRMAN BAGGETT: That sounds at least one to
explore.

MR. JENNINGS: Pardon?

CHAIRMAN BAGGETT: Communicating about.

Dialoguing.

MR. JENNINGS: I guess what my concern is that, for example, what SWAMP is is 4 percent of what the Legislature was told was the minimum number required to monitor the state's waters. I mean, most Regional Boards will monitor a given watershed three or four times, once every five years. I mean, since we are faced with these limited monitoring, these inadequate sample sizes, any approach that is statistically skewed against limited sample sets is unfair and biased against, you know, the environment. And I want to reiterate that I think it is far more egregious to fail to list an impaired water body than improperly list a clean water body. If a water body is improperly listed, all that occurs is additional monitoring to further define the problem. It is easily correctable. However, if an impaired water body is not listed, environmental degradation continues. In Region 5 we have 250 impaired water bodies, and we've done nine TMDLs. This is hardly the burden that listing brings to the regulated community.

Thank you very much.

CHAIRMAN BAGGETT: You know who you are.
Hi, I am Kate McGinnis. I am here representing California CoastKeeper Alliance. This is a priority issue for the Alliance and is member organizations who are San Diego BayKeeper, Orange County CoastKeeper, Santa Monica BayKeeper, Ventura CoastKeeper, and Santa Barbara ChannelKeeper. I am here to speak about the water quality segments being addressed portion, which we believe should be eliminated from the policy.

This section classified as water segments in the separate section of the 303(d) list, if the segment is being addressed by a certified program in lieu of TMDL, this is unacceptable because it will allow water segments on the special portion of the 303(d) list to avoid the TMDL process, circumventing the requirements of Section 303(d). It is of the utmost importance for all impaired waters to have a TMDL since this is the legal requirement to restore waters to meet beneficial uses. The intent of the Clean Water Act is for the TMDL program to co-exist with other enforcement and cleanup programs under the act. Without the TMDL the enforcement programs for water quality improvement will be disparate and variable across the state.

The TMDL process sets up a system which will allow for effective cleanup of impaired segments statewide. Section 303(d) provides a mechanism to take into account
these existing programs through the prioritizing segment fraction. Priorities can be set based on the severity of the pollution and uses to be made of such waters. Rather than exempt these waters with existing programs, the Board should use the program as a factor for this prioritization analysis.

Thank you for considering our input and for giving us the time to testify.

CHAIRMAN BAGGETT: Dave.

MR. PARADIES: Good afternoon. I'm Dave Paradies. You are missing one member. We will shorten your afternoon by a little bit. I am Dave Paradies. I am the Bay Foundation, Morrow Bay. I'd like to apologize for Linda Sheehan who couldn't be here because of a commitment in Washington, D. C., and for David Beckman who had a commitment in front of a judge regarding some water quality litigation.

For a little change of pace in this dialogue, the Environmental Caucus would like to thank staff and the Board for some of the improvements that we see in the policy. In particular, the situation specific weight of evidence section is dramatically improved over the early version that you folks saw. The section on the method of dealing with considering all data is much better than the original that was far more limited. As you can tell from
my colleagues' testimony, we still have some difficulties
with this. I would like to join voices with Dave Smith of
U.S. EPA in saying what we have here is a document that
can be worked on just a bit longer and have something that
is workable.

Touching briefly from a different standpoint on
binomial issue. One of the underlying intents of this
whole process was to come up with a screening level more
or less method of just list or don't list, using a simple
formula. Then to rely on professional judgment. The
underlying motive was to make it more automatic, to have
more uniformity, to take some of the risk, both to the
waters and the economic risks, out of this whole process
for dischargers. Unfortunately, the binomial just doesn't
appear to be the method.

I share Ms. Sutley's viewpoint, if the water
quality standard is violated, it's violated. When you
place additional burdens on top, all you're doing is
reducing water quality protection. In the wonderful
charts and graphs we see one of the things that both the
Environmental Caucus, PAG and the regulated caucus of the
PAG agreed on was this process should be transparent.
Should be transparent means it should be understandable to
the public. In my view, the public can understand this
water is dirty. If the standards are exceeded more than
10 percent of the time, I doubt very much whether we will see the public examine the binomial distribution and so on and see any kind of transparency or any sense.

While it sounds like science, it's merely a method of changing the level of the bar. We talk low sample sizes. I don't think anyone in the room wants to list on a single sample with a bunch of uncertainty. But all the burden and all this entire policy is slanted toward, the discretion that once you lose that screening level. If the policy had a minor paragraph change that said if there is a low sample count, but water quality standards are exceeded, than that Regional Board would be obligated or State Board would be obligated to come up with an explanation for why it didn't list. Then you might have some balance in this thing. Right now it's all slanted the other way. It's discretionary. When we don't make the screening level, then you have to go through a more complicated process.

I think it's in everyone's best interest to see more of the decisions moved into the more uniform screening level, and that is, I believe, the answer to Mr. Baggett's question as to why there is such a furrow over this binomial test.

Accordingly, the Environmental Caucus asks you to simply reject that and put back the 10 percent. There's
been discussion of these low sample counts and a kind of
an assertion that five exceedances should be required for
conventional pollutants. When we talk about typical water
quality sampling here in California as evidenced by the
SWAMP program, one way to sample water in streams and
rivers and lakes and so forth is a fairly low frequency
sampling, like monthly, for example. I do a lot of this,
a lot of monitoring. I do a lot of data analysis of this
data. When I take a look at those 12 monthly samples and
I have nitrate screening at three and five and ten times
the drinking water standard in four months, and those four
months just happen to be the growing season, I shouldn't
need to revert to a best professional judgment approach.
The screening level should handle it. The five is
arbitrary. Whether we call it rule of three or rule of
five, the same counts of water quality standards are
violated. Then the water body should be listed or there
should be an explanation.

We did see a few other technical problems similar
to the one Mark Gold brought up, that through adding the
word "coastal beaches" to that one coliform rule, what
you've done is tell the people swim in the American River
that they -- it's okay if they swim in 250 percent as much
fecal coliform as somebody down in Newport Beach. I don't
think you want to go there. It doesn't make a great deal
of sense.

With respect to some of the toxicity testing language in here, we have one paragraph that says you can list for toxicity alone and another paragraph that says certain other kinds of biological effects you must demonstrate that there is a pollutant associated with it. This is kind of strange because a standard toxicity test that you'd be getting, you go out and measure whether the animal died, whether it grew enough, whether it had young. That's the test. Except this policy separates those things and sets up a different set of rules for part of the tox test than it does for the other part.

In general, one more follow up. We talk about minimum sample size. When Governor Davis put out his last budget, he got rid of all water quality sampling in California. We went through an exercise with the Legislature who in effect restored water quality sampling in California. So the SWAMP program died, and then it came back to life. Right now the SWAMP program has lost 30 percent of its budget again. That is pretty crippling for a program that was underfunded to begin with. We are concerned since the dischargers are paying an added fee, where is the money going and why is the program being cut, and how can you possibly consider looking at minimum sample sizes when you are not prepared to pay through that
program even for the most minimal sampling at all in the State of California.

In closing, we would urge the Board to change the policy to address the concerns of U.S. EPA, and we would like you to take another look at many of those line items detailed as we provided you with.

Do you have any questions?

CHAIRMAN BAGGETT: I don't.

A lot to think about. Secretary said you can talk to him about the budget cuts. That was his tough calls.

Let's take ten minutes and then we'll come back with Craig Johns trio and then we have Bobbi Larson and a couple people, and we've got miscellaneous after that.

A couple things maybe to think about during the break for Craig, et al. I think you heard some discussion of communication on should there be a 25 limit for minimum sample size, the delisting criteria strike out underlined on the environmental community's strike out underlined. Any comments on that would be appreciated by me, anyway.

And the 4 percent issue, on whether we should apply that to inland surface waters. It's been a proposal noted here, some interest in.

Anything else? Just trying to give them some things to think about. Use those ten minutes productively.
With that, let's take a break.

(Break taken.)

CHAIRMAN BAGGETT: Craig Johns trio.

MR. JOHNS: I forgot my cello. You'll excuse me.

CHAIRMAN BAGGETT: I figured a saxophone.

MR. JOHNS: Board Members, my company players will have theirs. For the record, my name is Craig Johns. I am here today on behalf of the California Manufacturers and Technology Association, Partnership for a Sound Science and Environmental Policy, and the City of Santa Rosa.

We stand here this afternoon at a late and growingly weary time after several years' work on this policy. And like others before, I would like to thank your staff and many of you for the time that's been put into this, literally thousands of hours, through the PAG process, independent of that. So Craig Wilson and staff have done a great job. He didn't put in everything or all, frankly close to all, of what we wanted. So we do have some comments that were submitted in writing. I am going to pleasure all of us by not repeating all those.

CHAIRMAN BAGGETT: Thank you.

MR. JOHNS: I would like to focus on a couple of points that seem to be of interest to some of the Board
Members, including the whole statistical issue as well as
the delisting process. And I know that Prof. Lorden will
follow me and a couple of speakers will speak a little bit
more jointly to the specifics of the binomial method and
why he has submitted a comment letter as to why it is an
even-handed approach, as he pointed out.

Ms. Sutley questioned earlier in the afternoon the
issue of why, I am just specifically on the exceedances of
CTR constituents, why we are setting up a different
process with this than what may be laid out in the CTR.
And I think what it gets down to, and I will cop to the
fact that I am not a statistician, I am not a
mathematician and kind of not a scientist. But I've read
a lot of about this over the last several months. I've
talked with a lot of folks about it. I'm becoming more
comfortable in my understanding.

And what your staff is trying to do by presenting
you with the option that they have here, this exact
binomial method, is to provide a process to give Regional
Boards, and ultimately the State Board when approving the
TMDLs, a confidence approach. It is not to say that one
hit there, one hit not there is going to be a listing or
nonlisting. On the point that Chairman Baggett raised
several times about how, even if you don't have the three
or the five or whatever, there are still opportunities
using the situation specific weight of evidence approach that will allow Regional Boards to propose the listings.

I was struck by one of Dave Paradies' comments. I've always liked listening to Dave. He is one of the very reasonable folks that I have enjoyed dealing with in the PAG process over the last year.

CHAIRMAN BAGGETT: There is his credibility.

MR. JOHNS: Sorry, Dave. Still love you, though.

CHAIRMAN BAGGETT: Among his peers.

MR. JOHNS: The environmental community is afraid of the discretion that this approach will lead to the Regional Boards. And what you are going to hear from some of us, and you probably read in our letters, in some cases we are afraid of the discretion that you want to repose in the Regional Boards when some of these issues don't come straight down the line. That has to say something. I know it says a lot about the approach that Craig Wilson and staff have recommended.

But the way I look at it, going back to the point you were making, Nancy, is it's kind of like, and I apologize that I couldn't come up with a better analogy, but in my mind this is the way it works: The insurance company gives you one point if you have a speeding ticket, and that speeding ticket is like popping the CTR for
perhaps a particular constituent. And if you don't get another violation in a couple of years, that point is going to come off our driving record and your driving insurance rates aren't going to go up. But if you have a couple of those speeding tickets, then you are going to be labeled a chronic speeder, and, therefore, you are going to have to pay the price for that. And what the insurance companies use that point system for is to have confidence in knowing that they're going to be charging the people who should be charged more for insurance more than those who are safe drivers or good driving records.

You raised another point which I want to get at.

MEMBER SUTLEY: On your analogy, I spent a lot of time on the roads these days. Getting one speeding ticket doesn't mean that's the only time you speed.

MR. JOHNS: Absolutely not. But we are limited to what we know in terms of the monitoring approach.

There was a questions that you raised, Ms. Sutley, as how this could be legal. And folks from EPA stood before you and Ms. Strauss wrote in her letter that this binomial approach would be illegal and inconsistent with the water quality standards in California. And really what I would like to do is go back and cite -- this was in the PAG letter back in February. But just in the event
that it has been missed, no one's brought it up, I felt compelled that I should.

A year ago in May a District Court case out of Florida, faced with a challenge by environmental groups claiming that the state's adoption of the impaired waters rule, adoption of the binomial approach, which is very similar, actually more flexible than what staff is proposing, but very similar in terms of the exceedance rates and the confidence levels, the Court find there specifically that the IWR, the impaired waters rule, was intended to do nothing more and, in fact, does nothing more, than sets forth a listing methodology to be used in the TMDL process.

Further, that the listing methodology cannot possibly have the effect or advising for water quality standards or policy affecting those standards. So your Board, this state, would have the benefit of knowing that this issue has been challenged in at list one court that has looked at it after. I should point out, EPA in that region approved that approach, that this Board would be on sound ground in approving it as well.

I want to turn very briefly to the delisting issue because it is a big concern of the regulated community, and I don't know if I'm going to address your issue or your question specifically, Mr. Baggett. If I don't, I
would be happy to answer it.

Many in the Environmental Caucus say that the proposal would result in too many delistings. And throughout the PAG process we've heard their claims that our claims -- that there were a lot of listings made with very little or no information or inadequate data from a QA/QC standpoint -- were grossly overstated and exaggerated. And if that is the case, then I question how many of these existing or historical listings are going to have to be reviewed.

But having said that, the current policy that your staff is proposing creates a far more burdensome requirement on proponents of delisting to meet. As it stands right now in your policy, you have at least 21 samples for conventional pollutants and at least 26 samples for toxic pollutants to be able to come back and make an argument there should be delisting. So if want to talk about looking for parity in listing and delisting, which is something I thought we were all looking for, and that is one of the reasons why the binomial approach seeks to have a balancing of errors exemption there. The policy you have right now is not even. It requires far more information to get off the list than it does to get on the list.

Notwithstanding all of the charts and graphs and
everything that you've seen, if you want to talk about a minimum sample size to get on the list, I think, and I am not going to speak for anyone else but myself on this, I think the regulated community would be happy to do so. But if you want to talk about what do you do with those sample sets that are less than that number, whether it is 20, 25, 50 or a hundred, then that is where I think we are going to have some problems because that is effectively what this approach has sought to do, is deal with very small sample sets in what I think is a very fair and even-handed way. I asked Dr. Lorden to address that. If you want to talk about minimum sample size of 25 to get on the list, I think we'd been more than willing to do that. The question of what you do with sample populations of less than 25 creates a bit more of a difficulty for the Regional Boards and for us as well.

I am going to conclude there because I know you have many others who would like to speak. Unless you have questions, I would be happy to try to answer those.

Thank you very much.

CHAIRMAN BAGGETT: Dr. Lorden.

DR. LORDEN: Good afternoon. I am Gary Lorden. Briefly mentioned as a Cal Tech professor. I am chair of the math department at Cal Tech. My specialty is statistics and probability. I have been teaching those to
scientists and engineers for the last 40 years, and I do a fair amount of different types of consulting. And I am here today essentially as a consultant through contacts with a firm called Flow Science set up by a professor emeritus who is a long time friend and colleague in Pasadena and through them through the California Coalition for Clean Water.

So I am not representing the California Coalition for Clean Water. I was asked by my colleague Flow Science back in late January to take a look at what was being proposed in this long worked on revision of the listing and delisting policy under Section 303(d), and from a statistical point to say what I thought of it. As my wife and my colleagues at Cal Tech can attest, I can be fairly critical, no matter who is paying me.

I took a look at it and said, "Gee, this is good." And I took a look at the revision, was actually presented here in this building in May in a discussion that I attended with some of the regulated community, and I liked the changes even better. And so I am here to, first of all, say that I think the progress that has been made by Craig Wilson and his staff in trying to, as I understand it, come up with a rational way of analyzing at least a good fraction of the listing and delisting decisions, I think is a wonderful thing.
So let me tell you a little bit about what I consider to be the role of statistics, and forgive me if I sound a little defensive. Because it seems sometimes when I am listening to the very good discussion that has been held here today, that people think that there is a choice between doing statistics or using a statistical approach on the one hand and not doing it and going back to some good old alternative way of doing it. I'm afraid I differ on that. I think there is no alternative, but to do statistics. It is just a question of whether you do it explicitly and knowledgeably or whether you just put your wet finger in the air and use some rule of thumb and don't even calculate what the consequences of them will be.

So I am very much of the opinion as a professional that it makes sense to try to calculate the consequences of a listing policy, any form of listing policy that depends on data. So let me back up and say what I think the fundamentals of the approach that Craig Wilson and his staff have developed are.

First of all, I read back in January a fairly extensive treatment of alternative methods for trying to use some sort of statistical analysis of data to determine listing and delisting decisions. One of those was the so-called exact binomial method. Others involving, like, averaging, using variations of student T test and so on.
and so forth. In my 40 years of experience in various kinds of consulting, I always shutter to anticipate the kinds of arguments that are going to be made when you start using averages as the be-all and end-all of calculations and inferences in statistics.

Because, especially in messy data, as often happens in environmental circumstances, you get some outliers. You get some unusual events. If you do averaging, it influences the results to such a degree that sound professionals, particularly the statisticians, don't want to use the average. What do you do? You argue about it. You say, "Well, this one's an outlier." "No, it isn't. It doesn't meet the following test for outliers."

What I think is attractive, among other things, about the binomial method is it basically says the following: If we always had, when we measure the standards in a particular water body for some contaminant, if we always had results that were above the level of standards so they were exceedances and bad, we would have no problem. If they were always below, than we would have no problem. The problem we face is that in practice we fairly often get some sample results that are above the standard and are bad and some are below the standard and are good. What do you do in that situation? Seems to me, one way or another, you've got to try to balance and you
have to try to measure the consequences of what you do.

I think a lot of the criticism that has been made of tables, and they were shown in some of the projections, Table 3.2 where we have what might be called the rule of five, you have to get to be listed at least with five exceedances or more in a sample size and range 26 to 30. A lot of the objections that are made, for example, the ones that are proposed to be solved by using the flat 10 percent, which would say if you have a sample size of 26 to 30 that you need three exceedances. And, yes, you could have that table. But what I consider the virtue of this table is I know the rationale for it and it is a sensible rationale, namely to balance the two kinds of error. I won't get into the technical discussion. It's late in the day and I don't want glazed eyes.

A lot of the critics have explained it very well with some of the graphs. There is two kinds of error. You can have something that is basically clean, but tests dirty on a few occasions and gets listed. You can have something that is basically dirty but has only a few bad tests and overwhelming the good tests and doesn't get listed. So those are the two kinds of error. You are trying to balance them. I think the staff has done a very good job on making that explicit.

In order to make it explicit, they've done
something that I've recommended for 35 years teaching
sophomores and graduate students at Cal Tech, which is
basically take two pegs. One of the pegs is the place
where you want to be pretty darn sure that you're going to
make one of the decisions after you look at the data. And
the another peg is where you want to be pretty darn sure
where you're going to make the other decision.

For the conventionals what the staff has done, for
example, in Table 3.2 is to take the peg of 10 percent,
and that would be criticized. But the method I think is a
very sound one, and it is one I would have proposed if I
had been asked to design the system. You take the 10
percent level, supposedly true exceedances, is what you
would get if you took a lot of data nicely spread over
space and time in a particular water body, and if it
really is, hypothetically, 10 percent of the samples would
be bad. Then, according to this table, what you want to
do is rarely make the decision to list. Conversely, if it
really is 25 percent of the time, if you had large amounts
of data, well-sampled data, if it really is 25 percent of
the time you have an exceedance, you want to almost always
list. That is the goal, right. Those are the two types
of errors you want to control.

What the staff did -- and I liked it the minute I
heard it, and I thought about it since. It was several
months ago, and I like it even better now -- is to simply say we want to take the listing levels, like five for 26 to 30 and six for 31 to 36, to be chosen so that with the two pegs of 10 percent and 25 percent, we come as close as possible to getting the same confidence in the results. And they put in an additional standard on that, which is the reason that the minimum sample size has to be 26, and that is that we want to be capable of discriminating between 10 percent and 25 percent. If you take a sample of seven, I am here to tell that you no matter what you do in terms of analyzing the data, you have a very, very good chance of being wrong, whether it is 10 percent truly or 25 percent truly. You have a very, very good chance of being wrong.

So the way they did it was to set a standard of 80 percent confidence or 20 percent error probability. They would only use the standard in the table. They would only list the exceedances in the table when it was possible by choosing listing levels to have less than 20 percent chance of falsely listing something that shouldn't have been listed and less than 20 percent chance of failing to list something that should be listed. That was the approach. It makes wonderful sense.

If you ask: What do we do if we don't have large enough samples? As an outsider, I say take more data.
That's the sort of thing that statisticians say all the time. Naively, when I first looked at this situation and read the write-ups and justifications and choices that were considered before going with the exact binomial approach, what I said to one of my colleagues was why don't they have a situation where instead of making a hard decision, hard in the sense of yes/no, you either list or delist.

If you have something that is worrisome with a sample of eight or ten or 12, and it is not high enough to come up to the level of five that puts you on the list for the conventionals, well, why not have some sort of monitoring program that kicks in, some sort of watch list. Well, it turns out there is a terminology called planning list, and some states do that. As a statistician, to me that makes a lot of sense, and it is the natural answer to the concern that there is insufficient data and always incentives not to test. Why let people act on an incentive not to test. Why not say your data is looking worrisome, you have to test. To me that just seems like the only sensible way to look at it. You have to require people who have scary data to make further tests. That is what doctors do. That's what scientists do. Why not do it in this context?

It seems to me we need to separate a number of
issues. One of the issues about which I, as you might
suspect from listening to me, have little doubt is that an
approach that explicitly calculates the chances of being
wrong. The so-called statistical makes the most sense.
Simply throwing in a 10 percent rule and take what you
get, and it doesn't matter whether you are much to often
making mistakes, to a scientist or a statistician that is
not good practice. Good practice means that you look at
the consequences of setting up your structures. And the
structure that counts here are these tables.

And so what I strongly support is that the staff's
good work on this, which I really think is unusually good,
because when I read what regulatory bodies and companies
and colleagues do in setting up statistical protocols,
which is one of my real specialties and how should you
design statistical protocols to accomplish what you want,
typically I disagree with them rather strongly because
they don't accomplish anything rational. They have no
clear rational goal of what we are trying to accomplish.
This has a very clear rational goal. It makes really good
sense statistically, and I think it should be continued.

So to address the arguments that many critics have
made, if the concern is that the rule of three is to much
or something like that, well, change the peg. If it is
not good at 5 percent and 20 percent, make the argument
that the pegs should be two other values. What will come out of that, using the same statistical approach, very likely is a rule of two. I think from what I heard today, if it were rule of two instead of a rule of three, the objections would go away. So let's agree what I think we can agree on, which I think makes sense to have a statistical evaluation of the performance of such policies and to have, as the Chair said, for low hanging fruit kind of a backbone, normal way of doing business makes sense. Certainly, analyzing multiple lines of evidence, special circumstances, using discretion, even as the Chair, once again, pointed out, if there is a federal standard that says twice in three years on toxics and you're bad, I don't see why that can't be applied on top of the consequences of this table. Some of the time that is going to be more stringent than the table. Some of the time it is going to be less stringent. Because the table allows for accumulating data over a longer period than three years. I just think you have to look at things from the point of view of what you are trying to accomplish, design what you're doing. I think this is a really, really good piece of progress that's been made by the staff in trying to do a rational job.

Thanks very much.

CHAIRMAN BAGGETT: Thank you.
MEMBER SUTLEY: I just have one quick question. I think a quick question. I hope it is.

DR. LORDEN: There are no quick answers from me, but I will try.

MEMBER SUTLEY: I know the danger of asking a professor.

CHAIRMAN BAGGETT: Cal Tech people, we are well aware.

MEMBER SUTLEY: You mentioned that the small sample size is, and everybody would agree, probably using statistical tests, I am wondering if you looked at the way that this was presented with respect to the sort of minimum sample size before you would actually want to use the binomial approach, if you have an opinion about that.

DR. LORDEN: Yes. I don't agree that the problem is whether to use statistics or not. In any systematic policy you are going to be using statistics. It is just a question of what calculations you do to try to decide what your critical levels are for listing or not. It seems to me that the problem with the small sample sizes is that you are very likely to be wrong, one way or the other. And so I don't think there is really any rational remedy for that, except to take more data. And wouldn't it make sense to just require that in some way, that the data be taken on an accelerated basis to
bring it up to the level where you do have the ability to
discriminate what is true and what isn't true.

MEMBER SUTLEY: Well, I am not sure we have
that discretion. But having said that, I don't know,
maybe this is not fair question, but is there sort of a
magic number at which you feel you have enough data,

enough samples, to calculate using the binomial method,
would yield a meaningful answer?

DR. LORDEN: It is always meaningful. It is
just that it is very vague to have small numbers. And it
isn't a characteristic of using binomial or some other
statistical calculation, like averaging or maxima or
anything like that. So it is just a question of, if you
have limiting information, the answers are vague and the
inferences are vague.

What I could say is I think it is perfectly
reasonable in the discretion of a Regional Board, for
example, to look at the facts when there is too little
data and to use judgment. I think it certainly makes
sense to put pressure, as much as can be done within the
existing systems, to try to keep that from happening,
where you get into a situation where there are very small
amounts of data. Or at least would it be impossible for
the Board to say, the State Board or the Regional Board,
there is a big argument because this is a sample data set,
but it looks worrisome. Go in and get more data or we are
going to have to list you. That is what I would do.

CHAIRMAN BAGGETT: That is not an uncommon
practice.

Now the saxophone. The accordion.

MR. ARRIETA: Good afternoon, Mr. Chairman,
Board Members. My name is David Arrieta. I am here
representing Steve Arita with the Western States Petroleum
Association. He was here this morning and had to leave
for another engagement, so he apologizes for not being
here.

Actually, I have been the person that has been
involved in this process with the PAG for the last umpteen
years, and it's been a long, arduous road to the point
that we are at today. And I thought that we were getting
very close until about an hour and a half ago or so. And
the issue is we think that we need a statewide policy that
can address waters in a uniform manner across the state so
that we are evaluating the decisions in a similar manner.
So we would like to say that the PAG -- the regulated
members of the PAG sent you some comments. We thought
they were kind of tweaking comments that were trying to
fine-tune the policy. And we were hoping that after that
review and consideration of the those comments that you
would go ahead and move toward to adopt the policy sooner
rather than later because the two or four list is upon us, and we need this guidance, this document, so that we are all looking at listing from a consistent basis. With that I will close.

Thank you.

CHAIRMAN BAGGETT: Thank you.

Now a duet, Bobbi Larson and Sharon Green.

MS. LARSON: Thank you, Mr. Chairman and Members. I am Bobbi Larson. I am here today on behalf of the California Association of Sanitation Agencies. I will try to keep my comments brief, if I can.

The first thing I would like to do is compliment the State Board on the process. Even if you're hearing a lot of anxiety or agitation about the result, I do think it is worth commenting that the process that the Board has used has been a very open one. There have been multiple drafts, multiple opportunities for people to comment, including an informal early venting with the PAG. I think your staff has been very accessible, willing to come and speak to people about the policy, to answer questions, to get comments and input.

So where do we end up in this thing? I do think that a great deal of thoughtful work has been done by the staff and that should not go unacknowledged. I think this is just a very difficult policy issue for the Board to
wrestle with. I am so appreciative of what the staff has
done that I almost hesitate to send my letter saying
please make 23 changes to the policy. But I did anyway.

So I do want to say, too, that we support many
aspects of the proposed policy. Not to belabor it, but
the use of the statistical process and the binomial
approach. And I just want to echo what Craig Johns said,
that we do believe that this policy is legally sound. It
has been used in other states. Arizona, Florida, Texas.

I know that there has been some comment about how that
relates to the water quality standards. But I know that
in at least some of those states the once in three years'
exceedance standard is also applicable to their water
quality standards.

So I think that the legality of the issue shouldn't
really be what you are concerned with. It should be the
appropriateness of the policy and that, of course, is your
decision.

CHAIRMAN BAGGETT: Litigation has never been
something to stop us from making a decision.

MS. LARSON: True. And I do want to also say
that I think there are many improvements in the policy
that go toward one of the principle goals, which is to add
clarity and transparency, something that Dave Paradies
mentioned, particularly in terms of the detailed fact
sheet and those kinds of things which really, I think, will make it easier for anyone to understand how something ended up on the list.

Finally, I do think it is very important that we do have the kind of specificity with regard to delisting as well as listing that is proposed in the policy. I was under the impression that the goal of the Board was to have some kind of parity or equivalence in terms of listing and delisting. I think it's been pointed out that we think the existing policy actually does impose a heavier burden on delisting, but it is a burden that we think is appropriate.

CHAIRMAN BAGGETT: How do you respond to the earlier PowerPoint? So close, which is always one of my concerns. You can end up literally with year to year, just change every other.

MS. LARSON: That is troublesome, and I might perhaps see if staff has a particular answer to that, but I think that may be the direction that the Board has been discussing going in, perhaps some kind of minimal sample size might help with that kind of bounce back. And maybe -- I don't --

Heather, do you want to respond?

A couple other speakers are a little more familiar with the specifics of the policy that might be able to
answer your questions better than me. I think that the critical point from our standpoint is that historically it has been our experience that once you are on the list you stay on the list. And it is very difficult to change that, regardless of what the basis for the initial listing was.

CHAIRMAN BAGGETT: It should be more difficult to get off than to get on, it seems to me.

MS. LARSON: I guess, we should clarify what we mean by more difficult. I think because of what has been spoken to earlier, the level of confidence that we need to have, it would be by definition, you will need more samples, you will need more data. So in that sense, it will be more difficult. But the confidence level should be the same. They should be just as confident when you are delisting as when you are listing.

Again, I am not a statistician. I don't understand how that works. That's been sort of our understanding, is that you want the same confidence level in your delisting decision as you have in your listing decision.

And I do wanted to speak to one of the comments that was made earlier which is that there aren't any consequences from listing, so you should put everything on the list. There are no some costs or anything.

CHAIRMAN BAGGETT: That would be the easiest
thing at this point. We just list all the water bodies.

MS. LARSON: You all know, as well as I do, there are some very real consequences of being on the 303(d) list, particularly if you're a permitted point source. There are interim permitting requirements. There are limitations on your sources. And in addition, there are resource issues for all of you and for all of us. I would caution the Board that the whole purpose of going down this road, I think, although you may all be regretting it now, of having a listing policy, is that we are going to have some rigor with regard to where we are going to spend our resources over the next ten or 13 years in developing TMDLs.

So those are some of the things we like about the policy. And I guess now I will squarely contrast my comments with those of EPA and some of the environmental commenters in that in our view this current draft is in many ways a step back from the prior draft policy. We think maybe the flip of what Dave Smith said, we think you have gone too far in sacrificing analytical rigor for adding back in broad discretion. And what we try to ask ourselves, many folks in the regulated community are very interested in getting a policy done, getting some clarity. We had to ask ourselves: Do we think that the state is better off with this policy than without it? And we have
a hard time answering that question. I think our goal in
going into this was if you have two Regional Boards with
exactly the same information sets, if they went through
the policy, they would reach the same conclusion. And I
am not sure that we can say with any confidence under this
policy that would happen.

I think the policy is moving a little further from
the Board, I thought, articulated goal of having a list of
waters for which TMDLs will solve the problem. And
whether we like it or not, once these waters go on the
list, I think there will be a presumption that a TMDL will
be developed for them. I don't think this idea that we
should just put everything on that and sort it out later
is a concept that we can support. That said, I think if
you go any further toward loosening this policy up, you
might as well not have one, because that is in effect what
you are going to do.

So I just want to say that I agree with the
observation that the Chairman made earlier. It is
certainly my reading of the policy that the binomial or
statistical approach and the listing factors are just step
one, as Craig Wilson said. And then there is step two,
which is the situation specific weight of evidence, where
you can list something that meets none of the listing
factors provided you make a case for it.
Now that is something we are not crazy about. We don't like it. We think that is a loop hole. But I don't understand how other people can come up and be so agitated about the first part of the policy when that part of the policy is clearly there and it has an equivalent way in terms of whether or not you get on the list or not. I guess I agree with your reading of the policy that the formal listing factors are not a barrier to listing something that is impaired for whatever reason, even if it doesn't meet those statistical thresholds.

So what is it that we want you to do? I always regret coming in front of this Board without a very clear recommendation. I like it when I can come up and say, "Please make these two changes and we will be happy and we will be able to support the policy." Unfortunately the things that we are concerned about in the policy are sort of -- there is a whole laundry list of things where we feel the policy has been loosened up, where it is not as rigorous as it was. So I realize now, today, though, that after listening to all the testimony, that everyone is, as Craig Johns said, afraid.

The environmental community is afraid that the discretion will not be used in a way that we capture all the waters that should be listed. We're afraid in the regulated community that that discretion will be abused
and things will be listed that are not truly impaired. Maybe you're just going to have to bite the bullet here and make the policy decision that you're going to give this thing a try, that it is a better policy than we have historically, because we've had none. And maybe we ought to maybe just road test the thing, get it adopted and see how it works in practice. Because it is your policy, you can change this thing in a year or two years. I'm sure you want to go through this again. I think a lot of what you're hearing is speculation from all of us about what will happen under this policy.

CHAIRMAN BAGGETT: You're just lucky that our windows don't open, or we'd lose some good staff.

MS. LARSON: I know you have a very difficult decision. I guess I just want to weigh in. Despite all of the concerns that we've raised about this particular draft of policy, and I do want to urge you to ask your staff to take a hard look at those and see if some of those improvements can be made. The bottom line is sooner or later we ought to get on with it. And we do have a 2004 list to do. I am not sure that further delays and further wrangling like this is going to get you any closer to something that everyone is comfortable with.

CHAIRMAN BAGGETT: I think it is our intent to get something adopted this month.
MS. LARSON: I would support that.

Thank you.

CHAIRMAN BAGGETT: What, remains to be seen.

MS. GREEN: Good afternoon, Chairman and Members of the Board. I am Sharon Green. I'm here today as chair of Tri-TAC, a publicly owned treatment works regulatory advisory group that examines a wide range of issues affecting wastewater treatment agencies in California. I have to say there is not much left to say on this matter from my point of view, that my colleagues have pretty much covered most of the major points. I did have a couple of things I wanted to try to briefly mention, but really I do feel that the most important points have been made and I appreciate the difficult policy choices before you. I think that we all agree there are tradeoffs to be made, and maybe it's just time to kind of put the line down and make those choices and see how it works.

I think that the two quick points that I wanted to touch on, one of them has to do with the notion which comes out of federal regulations that states must evaluate all existing and readily available data and information. The federal regulations require states to assemble and evaluate all existing and readily available data and information. And this is an important requirement and
obviously you have to comply with that. We recognize that.

But we are concerned about some of the changes that were made in this version of the policy that seem to undermine the evaluation component and suggest that any information must be used for listing purposes. We think that the data quality requirements and spacial and temporal representativeness requirements and some of those things are good screening tools to make sure that you really are getting a true picture of water quality, and that the assemble and evaluate portion of this should not be lost.

And furthermore, there was also in 2001 the Budget Act Supplemental Report language requiring that the listing policy include criteria to ensure that the data and information used are accurate and verifiable. I think that this, obviously, has to be woven into that. So that is all I am going to say on that. There is more on that, I think, in some of our comments.

The other area -- I actually hadn't really planned to talk about this, but since it's come up as such a critical issue of how the water quality standards themselves relate to the assessment of attainment of those water quality standards -- I guess I just want to say a couple of things that relate more to the standards.
themselves.

I guess, first off, it is important to remember there are different types of standards, and even within toxic pollutant standards there are different types. There are the aquatic life standards. Some are four-day average concentration values. Some are one-hour concentration values. There are human health standards that have an entirely different basis. They don't have, I don't believe, the once in three-year exceedance frequency built into them that the aquatic life standards do. They are based over a lifetime of individuals consuming either drinking water at two liters per day or consuming fish on an assumed rate of fish consumption.

And so it is not quite so simple to just say if you exceed them more than once in three years you know it's -- you know that the standards are violated and there is a use impact.

The second point I would make is that I think we all know that the basin plans which contain the beneficial use designations, for the most part aside from the ocean plan, that they were mostly done in the '70s. There have been some refinements. In many cases those were done on a sweeping basis without a lot of site-specific consideration, in many cases. I am not saying all the water bodies, but certainly in many instances. And they
are not necessarily as refined as we might like them to be, and the corresponding water quality criteria or objectives, depending whether they are state or federal, are also not necessarily refined on a site-specific basis.

And the last point is that, in developing those water quality criteria or objectives, there is often a lot of layers of conservatism built in, which really mean that if you exceed once it doesn't necessarily mean there is an impact. You may need to have the larger body of data to really see what is going on in the water body, and you may need to have more refined standards to really know what are the levels at which impact will occur.

So with that, I will conclude. If you have any questions, I would be happy to try to answer them.

MEMBER SILVA: Bill Busath.

MR. BUSATH: Close, but I wrote it so I can't complain how you pronounce it. My name is Bill Busath. I'm here today in my capacity as vice chair of the California Stormwater Quality Association, CASQA. You're familiar with CASQA and the role that we've played over the years in assisting the State Board with development and implementation of the stormwater permitting process. And we appreciate opportunity to provide comments on the proposed 303(d) listing policy.

As you know, we participated with comments in both
the July and December versions, and I submitted some
written testimony so I'll be summarizing with my verbal
testimony.

As we previously stated, CASQA supports the State
Water Board's goal to establish a standardized approach
for developing California's Section 303(d) list. The
process employed in developing the 2002 list was a vast
improvement over the process used in previous years. And
like the regulated caucus of AB 982 PAG, we would like to
see the State Water Board adopt a final statewide policy
as soon as possible.

However, we have some concerns. First, I will
just be talking about three specific areas. First, CASQA
is concerned that the July 2004 draft policy seems to
ignore the requirements of 40 CFR, Section 130.7(B)(4)
and, therefore, does not fully comply with the federal
regulations for implementing Section 303(d) of the federal
Clean Water Act. This requirement is very clear: The
listing shall include a priority ranking and also identify
the pollutants causing or expected to cause violations of
the applicable water quality standards.

In terms of identifying pollutants, two things are
clear to CASQA. One, the conditions or symptoms, like
nuisance, water odor, taste, excessive algae growth, foam,
turbidity and color, could be used to list water segments
under the draft policy are not pollutants as defined in the Clean Water Act and Porter-Cologne. And two, the State Board must publish a list for the purpose of 303(d) compliance that identifies pollutants for all water quality limited segments listed.

Second point is that 40 CFR, Section 130.7(B)(4) is clear that the list must include a priority ranking. Yet in issue eight of the FED priority ranking of TMDL completion schedule the recommended alternative three blurs the distinction between these two separate actions, priority ranking and TMDL scheduling. The point of again seeming to ignore the federal regulation and mischaracterizing U.S. EPA guidance. U.S. EPA's guidance does not speak to 40 CFR, Section 130.7(B)(4) and only provides guidance for TMDL scheduling, presumably because the regulation is so clear that the list shall include a priority ranking that no further guidance is necessary on that requirement.

As a result, CASQA believes that the draft policy is missing a methodology for complying with the requirement under 40 CFR, 130.7(B)(4), that the list shall include a priority ranking. To comply with this priority ranking requirement, CASQA believes that the State Water Board should seriously consider the methodology for developing a numerical pollutant severity score proposed
by Armand Ruby, alternate CASQA representative to the AB 982 PAG. We understand that introducing a new methodology at this point of the process may seem challenging and may be infeasible, but, again, we believe the draft policy is currently lacking a methodology for meeting the priority ranking requirement, and we believe that the proposed methodology is compelling enough to warrant serious consideration.

The third point is that CASQA believes that the scope of the July 2004 draft policy is overly ambitious and attempts to do -- to be too many things to too many stakeholders, resulting in a draft that unduly complicates the definition of a 303(d) list and is inconsistent with federal regulations implementing this portion of the Clean Water Act, and as a result it produces a definition of a 303(d) list that will be virtually impossible for disparate and otherwise reasonable stakeholders to understand, let alone accept.

The Section 303(d) list is supposed to do three things. First, list the water quality limited segments and associated pollutants in a priority ranking, and that is what it is supposed to include, and also including waters targeted for TMDL development in the next two years.

CASQA believes the current draft does not provide a
methodology that meets even these basic criteria, and yet
the policy attempts to go beyond them by creating more
than one category and subcategories of lists within the
303(d) list. These categories and subcategories belong on
the State's Clean Water Act Section 305(b) report. In
fact, they are statutorily required under Section 303(b).
To avoid these regulatory mistakes and the impending
confusion they will cause, CASQA recommends three steps.

First, make all necessary revisions to the draft
policy so that all sections are consistent with the
federal definition of the 303(d) list. Second, develop a
305(b) reporting policy that dovetails with the front end
of the 303(d) listing policy and provides an appropriate
regulatory home for many of the categories and
subcategories of water segments that under the current
draft 303(d) listing policy would be inappropriately
lumped in the 303(d) lists. And three, adopt a version of
the draft Water Quality Control Policy for addressing
impaired waters that dovetails with the back end of the
303(d) listing policy. Again, this policy would provide a
home for some of the categories and subcategories of water
segments.

The combination of a comprehensive 305(b) reporting
policy and a clear 303(d) listing policy and adaptive
Water Quality Control Policy for addressing impaired
waters should give the State Board and the environmental
community and the regulated community a legally structured
and clear set of lists to help guide water quality
management in California.

Thank you for the opportunity to present our
comments. You have our written comments, also.

Any questions?

MEMBER SILVA: Thank you.

Richard Watson.

MR. WATSON: Thank you, Vice Chair Silva and
Board Members. Actually I would like to make my
presentation and Jim Scanlin's card in front of you, just
handed me something and asked me if I would try to present
three or four comments for him.

Today I am before you representing the Coalition
for Practical Regulation, which, as you know, is a group
of 43 small and medium sized cities in Los Angeles County
that have come together to address water quality, water
quality policies/issues. I would like to thank you for
the opportunity to comment on the July 22nd draft of the
Water Quality Control Policy.

First, we also commend the State Board and staff
for the progress that you have made in developing a
listing process. We continue to enthusiastically support
the Board's goal of standardizing the listing procedures.
The enhancements that your Board made with the 2002 list were very good, and those were manifested in the July 2003 document. The Coalition for Practical Regulation also strongly supports the continued emphasis on basing the listing and delisting decisions on sound statistical evaluation. The revised binomial distribution approach balances the type one and type two error rates, which was a major issue in earlier discussions, and really should be acceptable to all parties that support a technically sound listing and delisting process.

However, the Coalition's concerned that the draft before you today retreats further from the July 2003 draft and moves back towards the pre-2002 procedures that gave great flexibility to Regional Boards and resulted in many erroneous listings. Today, in the interest of time, I will address only one key issue. In addition, I want to affirm our strong agreement with the technical comments made by CASA and the regulated caucus, and I also want to include our previous comments by reference.

The one key issue is a need to identify pollutants. The Coalition is concerned that the draft policy still inappropriately allows the water body segments to be listed without a pollutant being identified. Someone said earlier something about a presumption that once listed a TMDL will be prepared. There is not just a presumption.
Federal regulations in 40 CFR 130.7(c)(1) requires that TMDLs be prepared for each water quality limited segment. However, TMDLs cannot be prepared unless a pollutant causing impairment has been identified. Therefore, water body segments should not be listed unless a pollutant has been identified, because only then can you really develop a TMDL that is required.

The July draft policy specifically allows a water body to be listed for toxicity, which is another concern of ours, without the pollutant being identified. This appears to be based on what I call a misinterpretation of 40 CFR 132(i), which specifies that a TMDL may, quote, be expressed in terms of either mass per time, toxicity or other appropriate measure. Our interpretation is that expressing a TMDL in terms of toxicity means using toxic units to express acute or chronic toxicity of the identified pollutant that is causing the toxicity. It is not a substitute for the requirement in 40 CFR 130.7(a) to provide, quote, a list of pollutants to be regulated.

Furthermore, the Functional Equivalent Document doesn't sufficiently address the potential adverse environmental impacts of listing a water body segment for toxicity alone without identifying the pollutant.

In addition, the draft policy allows water segments to be placed in the Section 303(d) list if, quote,
qualitative assessments of the water segment for nuisance, water color, odor, taste, excessive algae growth, foam, turbidity, oil, trash or color, meet a number of specified conditions. Not one of those conditions requires the pollutant to be identified. And there is similar provisions dealing with adverse biological response and degradation of biological populations and communities. We think that pollutants must absolutely be identified to be consistent with the federal regulations. Therefore, we request that you direct your staff to remove all references to all listing of a water body segment without the pollutant or pollutants being identified. I think this is particularly important if you make any changes in this statistical approach that is being discussed.

Thank you very much.

Mr. Scanlin was attempting to address a question that Ms. Sutley had. And he was talking about -- I think the question he had was the consistency between the CTR and three allowable exclusions, and the question does water body meet standards. He made a point about sampling. He said when taking a sample that is representative of a water body in a particular period, there are two sources of uncertainty. One, taking a very small sample that represents a large body of water. His example was San Francisco Bay. And two, the chemical
analyses aren't 100 percent accurate. He indicated in
some tests you can use plus or minus 20 percent allowable
and some tests plus or minus 50 percent is allowable of
the actual value.

He said those are not unusual. He thinks those are
pretty good reasons for saying that if you had just one or
two tests, you may not have actually been in an impaired
water body. So he says that due to these uncertainties he
does not believe having two samples result in better above
the CTR, determine that a water body is not impaired and
not -- it is not inconsistent, anyhow.

Thank you very much.

MEMBER SILVA: Thank you.

Heather Lamberson.

MS. LAMBERSON: Good afternoon. My name is
Heather Lamberson. I am representing the Los Angeles
County Sanitation Districts, and we are a wastewater
entity that operates 11 treatment plants in Los Angeles
County. We discharge to a number of waters that have been
listed for various constituents, and we have also
participated in a number of TMDLs. So we take the listing
process very seriously.

We appreciate the efforts that the State Board has
made to include policy provisions that increase
consistency and clarify the listing process. And we
encourage the State Board to stick to these goals of clarity and consistency, and we think the end result will be a better process that is scientifically valid and also objective. We submitted detailed comments and in general these comments recommend changes that call for a policy that is probably more reflective of what was in the December 2003 version. And we encourage the State Board to make these recommended changes because we believe that it will reintroduce elements of clarity and consistency that are currently missing.

Many of the changes that we recommend seek to minimize the area of uncertainty, and Richard just mentioned a couple. For example, natural variation within a population, temporal and spacial variability, measurement error and also analytical error. By reinstilling the elements that have been removed from the policy, such as the minimum number of samples, the data age requirements and provisions that require adequate temporal representation and quality assurance requirements, by reinstalling those elements, we think you can address some of those areas of uncertainty.

Regarding the overall statistical approach, I don't think that it is realistic to expect that any assessment or listing methodology will identify all impaired waters with perfect certainty. But we think that with the
incorporation of these recommended changes that the policy may be a better process that will lead to a more reasoned and consistent decision-making. We also think that having a level playing field for listing and delisting is important, particularly because some of the historical listings, there may be little confidence that the water body is actually impaired, even though it is assumed to be so solely due to the fact that it is on the list.

We have also -- and Bobbi talked a little bit about this, about the cost of listing. We have seen through the TMDL process that there has been a reluctance to reconfirm the listings, reevaluate the listing during the TMDL process. We think that is why it's particularly important to make sure that listing and delisting are considered on an equal basis.

And with that I would just like, I guess, to address what Bobbi had said earlier. I think that as far as listing and delisting, sort of this loop that you get into, I think that having minimum data requirements will go a long way towards eliminating those kinds of situations. With a larger sample size you are able to minimize those areas of uncertainty, measurement error, natural variability that you see within a population. I think with the larger sample size you are better able to distinguish those. So I think that will help sort of
avoid the situations of getting back and forth on the list.

Thank you.

MEMBER SILVA: Thank you.

Armand Ruby.

MR. RUBY: My name is Armand Ruby, and I am an alternate member of the AB 982 PAG representing municipal stormwater agencies. I'd also like to commend Craig and other State Board staff for the efforts in bringing order to the chaos that has in the past been the 303(d) listing process. Nonetheless, I will join my voice with others in saying that I do believe there is room for improvement in the policy that has been drafted.

My background is as a scientist that has worked in water quality field for about 25 years now. And I would like to suggest some technical improvements to the way that the policy has been written.

I have developed a proposed approach that includes elements, key elements, of the proposed policy, including binomial distribution decision-making process. But my proposal brings additional scientific rigor to the process. I am basically recommending integration of all available information, not just by compiling and especially not just looking at them sequentially as the current policy proposes, but to look at them in an
integrated fashion.

The main impetus for this proposal is that the current policy does not, in fact, constitute a weight of evidence approach. Simply looking at all the available information in categories that are set out in the policy does not in itself constitute a weight of evidence decision-making process. And so what I am recommending in my proposed alterations to the technical approach are integrating all the information within essentially a matrix that allows two things to happen.

One is a listing decision will be made as to whether a water body belongs in the 303(d) list of impaired waters; and then, secondly, as was discussed by Bill Busath for CASQA, there will be a priority ranking which is also required under the 303(d). And that the first process, the listing decision, is accomplished by compiling the information in asking three questions.

First of all, is there a documented exceedance of pollutant specific criteria or objective that meets the established criteria within the specified period. And criteria I am referring to are very similar to what is laid out in the existing policy right now, use of the binomial distribution and so on for decision-making points based on the number of samples.

Second question: Is there a document of evidence
of beneficial use impairment within the specified period. And then thirdly, is a pollutant from which a qualified criterion or objective exceedance is documented is likely to be the cause of the observed beneficial use impairment? In other words, what I am trying to do is build a weight of evidence approach that requires a numerical -- an exceedance of numerical or narrative water quality objective coupled with evidence that the pollutant has been measured in exceedance is also creating an actual impairment to the water body. And that the third question does link the pollutant in question with the impairment question B.

The second goal of my proposed revisions would use the same set of information that are compiled in answering those questions and developing a matrix where -- a weighted matrix, where all of the evidence would be compiled, weighted and summed, so that you end up with a pollution severity score, which essentially is word for word what is required under Section 303(d) of the Clean Water Act.

You have -- I submitted by the prior deadline these memorandum outlining the process. And I'd just like to conclude by saying that a lot of the discussion today with respect to the discrepancy between the California Toxics Rule, the one-three year exceedance level and the 10
percent level that is currently in the proposed policy for toxics is a tacit admission that an exceedance of water quality objective by itself is not sufficient evidence that a water body is impaired.

And I would like to expand on that tacit admission to say that a water quality exceedance, an exceedance of a water quality objective without additional evidence that the water body is impaired is insufficient to list. And the reason for that is that there are many mitigating circumstances within the real world that can cause a chemical that is measured in exceedance of objective not to actually have a measurable detrimental effect. And the levels at which the objectives are set are based on essentially laboratory studies in which those environmental mitigating factors are not accounted for.

Thank you very much for the opportunity to provide these comments.

MEMBER SILVA: Thank you.

MR. THOMAS: Thank you. I, too, had the pleasure to be on the PAG through 400 meetings in ten years or however long they went.

MEMBER SILVA: Only seemed that way.

MR. THOMAS: Thank you, Mr. Silva. On that I represented one of the few nonpoint source, the folks representing the California Cattlemen's Association. So a
perspective that we shared early in the PAG, and Craig could bear this out as others. We said don't get wrapped up forever on the questions of listing and delisting. We've got an awful lot of things to do in getting these TMDLs together. How soon can we get them developed? How do we prioritize them? What should we do on updated monitoring if the listing was on old data? How do we deal with mitigation and implementation plans?

I was reflecting back as I was listening to a lot of testimony that we're a long ways down the road and we still seem to be wholly wrapped up over listing considerations, not that they are not important. But you have done awful lot of work as a Board and as a staff to put this together, and it sure seems to me that it is clear that you can continue the process of tweaking and tweaking and tweaking and you are not going to find Nirvana in this. Some people are, in fact, probably just jacking you around developing records for a lawsuit they are already intending. Don't disappoint them. Bring it to a close. It has to move to that forum.

What I really wanted to say, and the only reason that I got up is I was motivated by U.S. -- Region 9's comments. I think that it's time to bring this to a close. It is disingenuous for them to keep trying to push the matter forward. We are so farther along in California
than in many other places of this nation, all within EPA's jurisdiction, when you look at the number of listings we've had and what you have developed on TMDLs. If they want the process, save the money. Hell, give it to them. Let them list. They said nobody thought that was the thing to do. I have crossed the line. I think you got to bring it to an end, not worry about threats from any of communities, including one region of U.S. EPA. And we can get on to really developing some TMDLs and not just deal with the listings.

    Thank you. And we have appreciated this arduous service on the PAG. Thanks.

    MEMBER SILVA: Thank you.

    That is all the cards we have. Anybody we missed or somebody that wants to add something.

    MS. MILLS: Good afternoon, Mr. Silva and Members of the State Water Resources Control Board. My name is Laura Giudici Mills. I am here representing the Salinas River Channel Coalition, which is a group of landowners and growers in Monterey County. And after listening to all the information presented today from both sides, I felt that it was important that I do go on the record and say when you are considering listing and delisting, take into consideration one of the largest issues facing the agricultural industry right now, which
is the ag waivers, and consider what incentives exist for agriculture to step up and implement best management practices with their own funds. If there is the ability to delist a water body that serves as an incentive, we can use that in our outreach to get people to enroll in the ag waivers, typically within Region 3.

So I just ask you to consider this information when you are looking at whatever your policy is for listing and delisting.

Thank you.

CHAIRMAN BAGGETT: Thank you.

Thank you, everybody, for your comments. We have a lot to think about. I know it sounds like we may -- this minimum number of samples, when we decide to the approve the list for the policy.

Any other thing, Nancy?

MEMBER SUTLEY: I had three things on my list. One was the small sample size and what do we do when we don't have a small sample size. And I think there is some unhappiness with the rule of three for small sample sizes. We need to talk about that a little more. There is probably a fix there.

On the delisting, the question of whether a minimum sample size helps to resolve some legitimate concerns and some concerns I have about delisting based on statistical
methods which seems to me creates a problem for us.

And then the issue about the 4 percent for the coliform not only applying to coastal water bodies but also inland. I think there was a fair amount of agreement that we should do that. I think those are the -- to me those seem to be the outstanding issues that we need to discuss more.

I just want to say for the record that I think we are pretty close, and I would like to see us adopt something soon. These are changes -- these are discussions we can have quickly and try to resolve this quickly because it would be better to have a policy than not have a policy or to prolong this particular discussion because it is really painful.

MEMBER SILVA: The latter comments were all to that vein. Seems like whatever we do we are not going to make anybody happy, and just to get something done is better than not doing anything.

Appreciate those latter comments to that point.

Mr. Chairman, I think we are ready to close.

CHAIRMAN BAGGERTT: Just in time.

MEMBER SILVA: Bang the gavel. Back to you.

CHAIRMAN BAGGERTT: Thank you, all.

(Workshop concluded at 4:15 p.m.)

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REPORTER'S CERTIFICATE

STATE OF CALIFORNIA
COUNTY OF SACRAMENTO

I, ESTHER F. SCHWARTZ, certify that I was the official Court Reporter for the proceedings named herein, and that as such reporter, I reported in verbatim shorthand writing those proceedings;

That I thereafter caused my shorthand writing to be reduced to printed format, and the pages numbered 3 through 116 herein constitute a complete, true and correct record of the proceedings.

IN WITNESS WHEREOF, I have subscribed this certificate at Sacramento, California, on this 21st day of September, 2004.

ESTHER F. SCHWARTZ
CSR NO. 1564

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