Appendix E

Public Hearing Transcripts

Part I: Transcript of April 14, 2005 Public Hearing before the California Regional Water Quality Control Board, San Francisco Bay Region

Part II: Transcript of June 15, 2005 continuation of the Public Hearing

California Shorthand Reporting
52 Longwood Drive, San Rafael, CA 94901 (415) 457-4417

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CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

San Francisco Bay Region

Elihu M. Harris Building
First Floor Auditorium
1515 Clay Street
Oakland, CA 94612

April 20, 2005

Item 7

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Official Reporter: Tahsha Sanbrailo

California Shorthand Reporting
52 Longwood Drive, San Rafael, CA 94901 (415) 457-4417

Chair Muller - Item 7 is our hearing to receive testimony on our proposed Basin Plan Amendment that would establish a Tomales Bay Pathogen TMDL and Implementation Plan for that TMDL. And so we have staff presentation and a number of members of the public that I think we have a number of cards that want to make comments. This is the last day of the public comment period. There is no action necessary for the Board today. We are required to respond to all public comment, in fact, we encourage the public comment because now is the appropriate time to get it, rather than later in the process. So, with that, I would like to ask Farhad Ghodrati and Rebecca Tuden to provide the presentation on this for us.

MR. GHODRATI: Thank you. Good morning. My name is Farhad Ghodrati. I am an environmental scientist with the Planning TMDL Division. Shortly, I will be joined by Becky Tuden who is an environmental planner with the same division. We are here today to introduce to you our proposed Basin Plan Amendment that establishes a TMDL and Implementation Plan to control pathogen discharges in the Tomales Bay Watershed. Today's hearing will also allow the public an opportunity to provide their input and gives the staff

a chance to receive something back in direction from you.

We have been working on this project for a few years now and over the years have completed several project reports and met with the stakeholders many times. We also recently submitted our proposal to an external scientist for peer review and revised our documents accordingly. All this activity has culminated in our distributing of the proposed Basin Plan Amendment for formal public review and commenting which ends today.

Tomales Bay and its watersheds are located in the northwest corner of our region, right next to the Point Reyes National Seashore and approximately 45 miles from downtown Oakland. The pathogen TMDL covers four water bodies, Tomales Bay, and all three of its major tributaries, Walker, Lagunitas, and Olema Creeks. Of the three tributaries, Lagunitas is the only one that is officially listed as impaired by pathogens, however, all three tributaries experience elevated levels of pathogens. These tributaries are also impaired by nutrients and sediments, and we will be preparing TMDLs' for these constituents in the future to compliment pathogen TMDL. As you can see in this

figure, these tributaries discharge directly to the Bay and therefore significantly influence the water quality of the Bay. Also, our recent modeling of the Bay shows that tributary discharges to the Bay receive minimal dilution, therefore, this TMDL covers and addresses all four water bodies together.

Before I go any further, I would like to define what pathogens are. Pathogens are basically parasitic organisms that are capable of causing diseases as in their host, and in the case of this TMDL, we are concerned with water born pathogens that we call "origins" that are comprised of three groups of microorganisms, which in order of size from the smaller to largest are viruses, bacteria, and protozoa. These pathogens have the potential to cause a variety of diseases in humans from simple diarrhea and vomiting to heart disease, liver disease, respiratory disease, and may even lead to death.

The main beneficial uses of the Bay and its tributaries that are relevant to this TMDL are water contact recreation such as swimming and fishing, non-contact water recreation such as boating and kayaking, and shellfish harvesting such as oysters, clams and mussel harvesting. With an estimated 2.5 million

visitors a year, Tomales Bay is a premier place for water-related recreational activities in that region and it is the only existing commercial shellfish growing area in the region, and one of the four remaining areas in the State of California where waters are still suitable for agriculture. Unfortunately, due to high pathogen levels, the Bay and its tributaries do not fully support their beneficial uses. For example, it is estimated that, on average, shellfish harvesting is prohibited in the Bay for approximately 70 days a year. Shellfish are filter feeders and essentially have the ability to concentrate pathogens from contaminated water in their tissue and, if such shellfish are ingested, they could pose a great threat to human health. And that is exactly what happened in 1998 when more than 170 people got sick from consuming contaminated raw oysters from the Bay. The cause of that illness later on was found to be the waters from human origin called the Norwalk Virus. The goal of this TMDL is to restore and protect all these beneficial uses of the Bay and its tributaries. So where are all these pathogens coming from? They come from two main categories of sources: human sources which include faulty septic systems, boat discharges,

and sewage treatment facilities, and animal sources which include animal agriculture, municipal run-off containing pet waste, and wildlife. And one thing to point out here is that the human sources of pathogens are of greater risk to human safety than animal sources are.

A part of developing any TMDL is to find a way to express desired future conditions in a numeric way. For this TMDL, we are proposing three targets to help us define success and track our progress. Our targets are based on concentration of fecal coliforms which are a group of indicator bacteria commonly used to indicate presence and magnitude of pathogens in an environment. To protect shellfish harvesting using the Bay, we are proposing a Bay target of 14 fecal coliform per 100 ml of Bay water, which is an existing Basin Plan water quality objective for shellfish growing waters, and it is the same standard that the Department of Health Services uses to regulate shellfish growing waters. To protect recreational uses in the tributaries, as well as shellfish harvesting in the Bay, we are proposing a tributary target of 43 fecal coliforms per 100 ml of tributary water. The tributary waters need to be also protective. Targets need to be also protective of

shellfish harvesting used in the Bay because, as I mentioned earlier, tributary waters receive minimal dilution in the Bay before they reach shellfish growing areas. And the last target is a target of zero discharge of human waste which is consistent with an existing Basin Plan waste discharge prohibition. And this target is necessary because human waste is a significant source of pathogenic organisms including viruses, although attainment of fecal coliform targets alone may not sufficiently protect human health. We have used these targets to help us develop our load allocations for various source categories of pathogens. And here are the proposed load allocations for various source categories in terms of fecal coliform concentrations. As you can see, we are proposing two sets of load allocations, one for direct discharges to the Bay, as shown in the middle column, and one for discharges to the Bay tributaries as shown in the right hand column. These load allocations are concentration based, and the same for the proposed TMDL targets. And this is an approach that is consistent with federal regulations, TMDL guidance, as well as other approved pathogen TMDL's. And, with that, I am going to turn it

over to Becky, who is going to tell you about our proposed implementation plan.

Chair Muller - A couple quick questions.

Mr. Waldeck - Why is it 14 in the Bay and 43 in the tributary? I would almost think that it would be the other way around.

Mr. Ghodrati - The shellfish growing beneficial use exists only in the Bay and that is the most sensitive beneficial use, so that is the reason. The standard water quality objectives that we are using, that as I mentioned is 14 fecal coliform per 100 ml of water, come from the same standards that the Department of Health Standards uses. The water quality objective for the recreational uses that exist in the Bay, as well as the tributaries, that is actually 200.

Mr. Waldeck - So we are all well down below all that.

Mr. Ghodrati - We are below that because our recent modeling study show that if we stay at 200, we will not be able to meet the 14 in the Bay.

Mr. Waldeck - Okay, thank you.

Chair Muller - Shalom?

Mr. Eliahu - I guess this is concentration based, it is not really TMDL, it is not a mass base?

TMDL, I thought, all the time we are basing it on a mass quantity.

Ms. White - Correct. This is Diane White. And, yes, the regulations allow for TMDL's to be mass based, and they are typically mass based, but they certainly allow them to be concentration based and EPA's guidance for pathogens specifically identifies that. So it is similar, if I may explain, what you see here is that the concentrations for all the inputs is essentially the same within the allocation. And maybe a better way to explain that is that the concentrations are not additives, similar to temperature. If two streams flow into a water body and the temperature of both of those streams is 20, for instance, the downstream temperature is not 40, it is still at 20. So we have all the allocations consistent throughout the watershed. Now, the difference, if I may go back to that question about the 14 vs. the 43, comes down to an averaging period. In the Bay, the shellfish standard is a 14, and that is actually a median sample, which is five samples, essentially the average of five samples taken over a 30-day period. The 43 that is referenced as it relates to the tributaries is a single sample maximum. So we have done some modeling to look

at the dilution that takes place in the Bay from tributary inputs and the resulting effects within the shellfish growing areas in the Bay. And what we believe is that, if the tributary waters come in and they do not exceed 43, then, as the waters move around the Bay and your average Bay waters over a 30-day period with five samples taken within that 30-day period, that you will be in compliance with the 14, which is essentially an average value.

Mr. Eliahu - Let us say we have a contaminate short in concentration, we can add to the water, pure water, and then that concentration is going to drop. We did not allow that in some pollutants, I think, even in Mercury. And here we are saying, really, concentration does not matter. I mean, if a discharger have more than 14, and he has discharged, he can add some water and bring it down to 14.

Ms. White - Well, this is essentially natural dilution taking place within the water body. These are not point source discharges, this is essentially run-off from grazing lands, run-off from open space. And so the natural dilution that takes place within the Bay has to do mainly during storm events, and it is rain water and precipitation, which is that dilution source.

So we are addressing it a little bit differently, I think, than if you think of a point source discharge in a bioaccumulative pollutant.

Chair Muller - I would like to ask, also, did you state earlier that so far what we are looking at is the human sources are a bigger level than the animal sources?

Mr. Ghodrati - They are not necessarily at a bigger level because we measure both of them using fecal coliform bacteria, but human sources are believed to pose greater risk because they also contain viruses and more variety of pathogenic organisms.

Chair Muller - So greater risk.

Mr. Ghodrati - Greater risk, yes.

Ms. White - Greater risk, but not greater load.

Chair Muller - Oh, okay.

Mr. Wolfe - And remember, I think the fundamental thing here is that is different from the mercury TMDL is that, there, we really were concerned with the loading mass of mercury because that mass of mercury ultimately has the way to get into fish tissue. And so, there, we are trying to reduce that mass. Here, it really is a concentration because we are

basing it on the use of an indicator, fecal coliform, as an indicator for what pathogens are there. And so we cannot measure each individual bacteria or virus, but this is an indicator and this is a universal mechanism for determining whether we are meeting a bacteria level.

Chair Muller - Diane, were you going to continue on? Any other questions? Oh, I am sorry. Part two. That is right, thanks, Tom.

Ms. Tuden - Good morning, board members. My name is Rebecca Tuden and I am an employee from the U.S. Environmental Protective Agency and I have been on loan to the Regional Board for three years, specifically to work on this TMDL in Tomales Bay. And I am going to talk to you about how we hope to meet those targets that Farhad talked about in the Bay. In short, meeting those pathogen targets, especially in the rainy season, is going to require concerted efforts by stakeholders in the watershed. And we have been working extensively with the agricultural community, county officials, and homeowners for the past three years to try to develop partnership to reduce those pathogen loads. And we believe that this extensive outreach effort has been effective. And we also hope

that it will help streamline implementation for future TMDL's expected in the same watershed for nutrients, sediments, and mercury. So the TMDL, in addition to including the targets, also includes an implementation plan, and this is the overview of that implementation plan. So if you ever find yourself kayaking in Tomales Bay, you can think about this implementation plan and try to remember these main points, which is that the implementation plan tries to leverage existing efforts. I give a lot of credit to the stakeholders in the watershed for spending efforts out there to reduce their pathogen loads. And we have been working with them by participating in local forums like the Watershed Council or the Technical Advisory Committee, and we have also helped direct grants to those stakeholders, over $3 million in grants in the last four years, to reduce pathogen and sediment pollution in the watershed.

In addition, we believe this TMDL implementation plan allows the maximum flexibility in the approach that it uses. And I will talk about that. It is also consistent with the state's non-point source policy, and it includes a monitoring and adaptive

management program that allows it to be modified over time as new information develops, or as needed.

The implementation approach we are using is three basic steps, and it is consistent with other non-point source programs, most notably the Storm Water Program. And we ask that each source category first look at their site, or their facility, or their land, and say, "Am I polluting? Is there a potential here for pathogen to run-off into a water body?" If yes, they are to develop a plan, "What steps do I need to take to reduce that pollution?" And, finally, to implement that plan and to demonstrate compliance with that. So, rather than requiring prescriptive actions on what to do, we are asking each facility to develop their own plan that best suits their needs.

In addition, there is a statewide policy that was adopted in May of last year, the state's non-point source implementation policy, which reiterated that all non-point source discharges are regulated. And it went one step further and required specific regulatory mechanisms that should be used for those non-point source, and those are waste discharge requirements, waivers of WDR's, and Basin Plan prohibition. Our TMDL is consistent with this policy and adopts one of those

regulatory tools for each of the non-point source categories.

The policy also encourages use of third party programs which we have included in our TMDL, and an example of that already taking place in the watershed is through non-point source funding to the County Storm Water Program. The County has been offering technical assistance to horse facilities in Marin County, helping them with their manure management and assessing the facilities, and basically providing technical assistance. If that were to continue, then the County could be a third party that would report on implementation of other efforts in those horse facilities and report to the Regional Board, rather than having the Regional Board go out and assess those horse facilities independently. In addition, the policy also includes other elements like management practices, time lines, and feedback mechanisms, all of which are in our TMDL.

So what are we asking each of the source categories to do? If you look at the top three highlighted in blue, dairies, treatment facilities, and municipal run-off, this TMDL is not proposing any new requirements for those sources. For the dairies, if

you remember about two years ago we launched a concerted effort here at the staff where we worked with the dairies in assessing all their facilities in one year, determining a baseline, and working with them to bring them into compliance with their waste discharge requirements. And currently all of the dairies in Tomales Bay are in compliance. And in your EO report this month, we indicated that we are starting a similar staff effort to work with the treatment facilities in Marin County in assessing them and evaluating them and with the municipal run-off program, that is the County Storm Water Program which is ongoing. For septic system, we are requiring the County to develop a countywide evaluation program of their septic systems. Currently, the county does not have an inspection program. Unless a homeowner takes some action that requires a permit, there is no inspection. And recent information has shown that approximately 25 percent of the septic systems in Marin County are failing. For boaters, we are working with the resource agencies to develop a boating management plan which will identify specific requirements and needed facilities such as a pump-out facility. And for the horse and cattle ranches, we are asking them to develop and implement

ranch plans. Most of the ranches, we have heard numbers of roughly 75 percent, have existing ranch plans, and they have been working with technical assistance programs out there. We are just asking that those plans be formalized and implemented as part of this TMDL.

So we have been working extensively with the stakeholders and a number of issues came up during the stakeholder process. One comment that was raised was that they feel these comments are too stringent, and in particular there is a concern that the Water Board will take enforcement action against the homeowners, dairy farmers, or cattle ranches if these targets are not met. These targets are necessary to protect human health associated with consumption of shellfish. In addition, these implementation actions are consistent with the non-point source policy, and that is going to be the focus of our efforts in the watershed, is not on enforcing the targets, but on working with the stakeholders to implement these source reduction efforts. On the other side of the coin, we have heard that the targets are not stringent enough and, as Farhad had mentioned, we actually did some extensive remodeling of these constituents in the watershed and,

based on that, we have revised the tributary targets below the recreational standard of 200 because we believe that was necessary to achieve the Bay targets.

Another comment is that this TMDL is too expensive. And if you look at the cost estimates in the TMDL, most of the costs are associated with repair of septic systems and we assumed, just to be a conservative estimate, very expensive cost, of putting in a whole new mound system, and also cattle exclusion fencing. And we believe that implementation of this will also help with reduction of nutrients and sediment loads. And the annual costs, if you look at it on an annual basis, are roughly $1.8 million, which is comparable to what we have already contributed in grants.

Other concerns raised is that the real problem is wildlife, and this is coupled with the concern that we did not use DNA testing to specifically identify the sources. The majority of the loads are coming from tributaries that are dominated by cattle ranches. And in those watersheds that only have wildlife, we have much lower pathogen contributions. And regarding DNA testing, at this point it is considered experimental and if it becomes more acceptable we will consider it

as part of an adaptive management effort. Right now, we would like to focus our time and resources on implementing those source reduction efforts.

Lastly, the other element of this implementation plan is adaptive management consideration. On this, we hope with this TMDL that we can use this adaptive management section to allow the TMDL to respond to changing information, be it new information about wildlife, or DNA testing, or other information as it arises, and we can use it to keep the TMDL up to date and responsive to new information.

So what are the next steps? Today, we are going to hear some public comments and it will be the close of the public comment period. Staff will then review those public comments, respond to them, and make recommendations as to how we may need to revise the Basin Plan Amendment or TMDL, and bring them back to the Board for your consideration. We are anticipating the Board adoption hearing in June and, if approved, it would then go to the EPA and the State Office of Administrative Law for approval.

Chair Muller - Thank you very much. We are going to have a couple questions and we have seven

cards. I for one appreciate this excellent report here. This is very well done. Go ahead, Clifford.

Mr. Waldeck - Just a couple of quick questions here. You said that there is not any inspection of septic systems by the County of Marin. What is the County of Marin's group called, SEPT ACT? What is that?

Ms. Tuden - Septic Technical Advisory Committee. It was an advisory panel to the Board of Supervisors. It convened for about 18 months and it made recommendations on how the county should proceed with its septic management program. And essentially the county does have a bi-annual inspection program on the books, it is not being implemented. If you come to the county with a permit that requires a building permit, as a part of that, they will look at your septic system, and in that case they will inspect it if you are going to make changes or update it, but they do not have a regular inspection program. So if you have lived in your home for 10, 15, 20 years and have never required a permit, there is no inspection program to ensure that your septic system is functioning, except the homeowner's own initiative.

Mr. Waldeck - And one other quick follow-up, wearing your U.S. E.P.A. hat, we all know about the

cost of septic systems being put in and, you know, it can be anywhere from $30,000 to $100,000 or more, and we have always heard about that there is other septic things that do not have to have leach fields and ultraviolet – I am not sure specifically what the technology is – but if there was a cheaper form of septic system that would achieve the same goal, who is – is it U.S. E.P.A. that would give it the thumb's up that that is a proper septic system to use? Or who makes that call?

Ms. Tuden - There are some trade agencies like NSF or universities that review septic systems. It is actually the county that approves a septic system that is installed, and they would rely on this trade information, and then the Regional Board in certain cases would also oversee the approval of the certain types of technology. So the U.S. E.P.A. actually does not have any permitting role in septic systems at all.

Mr. Waldeck - But wouldn't it be your call? I mean, I am sure you have heard of new types that have come out and, of course, the new types that come out are the ones that are being sold, so of course they are going to say it solves everything.

Ms. Tuden - Right.

Mr. Waldeck - Are they there yet? Or are they almost there?

Ms. Tuden - Well, there is a lot of what we call innovative or alternative technology and different types of technology are best used for different limitations, like if you have high groundwater or if you have a small area, or you have poor soils. You could use different things. And, you are right, we do use U.V. or disinfection or pre-treatment systems. Actually, the cheapest, you know, most maintenance-free septic system is one that is gravity to a dispersal field because you do not need a pump, you do not need a lot of those bells and whistles, you do not need to do as much monitoring. But what happens is that if you have a site that is constrained, if you do not have the necessary size for the soils to do the work, or you have high groundwater, then you go to different types of technology. And there is – I can put on my Marin County hat, but they are working on approving more innovative technology so that it can make it easier to accommodate those sites that are constrained. And it varies from county to county what actually is approved in terms of innovative or alternative technology.

Mr. Waldeck - And of those towns around there, whether it be Inverness or something, do any of those towns have a little bit more concentration of fecal – do they have municipal sewage treatment at all?

Ms. Tuden - In West Marin in the unincorporated area, they are all on septic systems. The town of Tomales and portions of Bolinas, which is actually outside the watershed, there are some that have, you know, sort of a management system, but most of the watershed is exclusively on septic systems.

Mr. Waldeck - And because there is not – I mean, having sewage treatment and having everybody hooked up would just be hundreds of millions of dollars because it is on 60-acre ranches.

Ms. Tuden - It is a lot of money, it is stretched out, you know, it is a large area, and in addition there are some growth control concerns. There is a pilot project underway in the eastshore community of Marshall funded through state grants to look at a community wastewater system where they would take basically the septic fields that are located right along the Bay, in some cases overhanging the Bay, and move them to an inland location and treat them as a community.

Mr. Waldeck - Oh, good.

Chair Muller - If I may just clean up the septic issue here, you have to realize that this Board is not in the planning business, I think, from my perspective. We are not in the planning department business and counties in America are approving a lot of new septic systems in their planning processes, and it is because of – not so much for Marin because we have a great history of Marin that people have been here for hundreds of years, but new development in California, still there are some areas in rural counties that are going on septic, and it is just millions of them being put in in America. So the technology is probably the same as it was when our grandfathers put them in on our properties. And let me tell you, when you live on a septic system, every morning you think about it because you wish you had a municipal system to deliver to. And on the other hand, if you want to look at the water issue, we are the first recyclers, too, because we do have septics and we do have wells, and we kind of just recycle it. Moving on –

Mr. Wolfe - Following on that, our board, actually the Water Code allows the Regional Boards to oversee septic discharges as always discharges, but

back in the 50's and the early years of this Board, all counties proposed program established an ordinance, so in effect the Board has delegated the counties to be lead on oversight of septic systems partially because we do not want to have you as the Board to have to act on each and every application for a septic tank around the region, and partially because, as you say, this is so tied to land use, we do not want to be in the position of trying to guide the land use decisions based on whether it is septic or community. But that has been quite a significant issue throughout our board's history as to whether it should be a community system, whether it should be septic, whether it should be a satellite treatment system. So here it is significant because many of the septic tanks are in areas where they are constrained, it may be more appropriate to have a community system, but then there is also the potential for land use concerns – does the community system then provide the opportunity for further growth in western Marin? So that is an issue that we are trying to stay out of, the land use, but it is something we have to recognize.

Chair Muller - Shalom?

Mr. Eliahu - Yes, so basically, really, when you are asking the target 14 for concentration, and here study results from the Bay sample generally show that the Bay water did not exceed the median standard of 14, so we really are not changing very much.

Mr. Wolfe - Well, ultimately the goal here in terms of shellfish consumption, as Farhad noted, is that 70 days a year, approximately, the shellfish harvesting is shut down because especially after wet weather after the rains, there are increases in the levels. We want to see how we can reduce that number from 70. We may never get to zero, we may never get to 20, but we want to see that how can we address that as one of the beneficial uses we are trying to protect. So it may be that, depending on the monitoring period, that 14 is achievable regularly, but there are going to be those instances when it is not.

Chair Muller - If I may, just quickly, our main concern would be the shellfish operations, not the natural – or I guess they are natural – not the natural fish habitat in the Bay and other issues in the Tomales Bay Region. We are cleaning it all up, but it is the commercial operations that are the ones that are more sensitive.

Mr. Wolfe - The three prime beneficial uses we are focusing on are the shellfish consumption, the water contact recreation, and the non-contact recreation, the swimming vs. the boating and fishing. And so those are all the identified beneficial uses that we are trying to protect here.

Chair Muller - So those 70 days, are all three of those included?

Mr. Wolfe - Well, 70 days is specific to the shellfish, and that indicates that our beneficial use is not being achieved.

Mr. Morse - It is an exceptionally sensitive issue because these are shellfish that naturally concentrate viruses and bacteria and they are consumed raw frequently. So of all of the – and the thing that we are worried about is something called the Norwalk Virus and that is what shuts down cruise ships, for example. So this is a very bad critter to be controlling. So this is possibly the most sensitive to bacterial contamination of any water use is commercial shellfishing.

Chair Muller - Because we are eating them raw, too.

Mr. Morse - Yes.

Ms. Tuden - Also, besides the commercial shellfish harvesting, we do have recreational shellfish harvesting throughout the Bay, so we do consider the shellfish beneficial use to be – we need to protect that throughout the Bay, not just at the commercial shellfish growing areas.

Chair Muller - Thank you for that. Any other comments from Board members? Otherwise, we will go to our cards. We will start with David Smith from U.S. E.P.A.

Mr. Smith - Good morning, Chair Muller and members of the Board. I am David Smith. I am the TMDL Team Leader for E.P.A. Region 9 in San Francisco. First, on behalf of E.P.A., I would like to welcome the new board members and wish you well in your terms. It is our pleasure to speak in support of the TMDL package today. We have been working with Farhad and Becky and staff on this TMDL for more than two years and have tried to assist in monitoring and things like that. We think they have done an excellent job in embracing a very difficult problem. We would really like to emphasize that we really understand how critical it is to try to protect the shellfishing use in the Bay, it is really a unique resource that needs to be protected,

as well as the recreational uses that we also care about. As a kayaker, I am certainly interested in protecting that use and that area. We absolutely realize that this is a very stringent TMDL and that it is difficult to implement successfully. I have talked to some members of my colleagues and other E.P.A. regions and here in California, and I wanted to say that the approach that is being taken here is completely consistent with the approach that has been taken in many other TMDL's here in California, as well as in other areas. And I might mention briefly the experience with working on pathogen TMDL's in the Tillamook River Basin in Oregon. It is quite a similar situation, a lot of dairies, you probably consume some of their cheese, but also very productive shellfishing beds at the mouth of that watershed, and several years ago they did adopt a TMDL that was similarly stringent, have worked intensively and in ways very similar to those that Becky talked about with the residents in the watershed, the dairymen, the cattlemen, and have had really good success in substantially reducing pathogen loading in the watershed and getting in a situation where they do not have to close those shellfishing beds very often at all. So we do believe that there is good

opportunity to implement this successfully, although we do recognize that this will be a challenge.

I wanted to speak briefly to the issue about how the TMDL and allocations are being expressed on a concentration or a density basis. What we are concerned about here is human health protection and what matters from the standpoint of protecting human health from pathogen exposures is exposures to concentrations of pathogens in the water or in shellfish over very short periods of time. So this is really different from pollutants where we are concerned about the long term exposures or long term mass loadings of pollutants to the water that may cause adverse affects on aquatic life, or things of that type. So it really does make sense for the kind of problem we are trying to address here. We have provided written comments to staff yesterday supportive of the TMDL. We urge you to move forward and adopt this TMDL in June when it is presented to you, and we look forward to seeing it at E.P.A. so we can approve it at that time. I would be happy to answer any questions.

Chair Muller - Any questions. I am sure you will be standing by here in case there are some follow-up comments and questions. We can move on.

Mr. Smith - Okay, thank you.

Chair Muller - David Lewis, did I see you here? There you are. A different David Lewis.

Mr. Lewis - Thank you. My name is David Lewis. I am an advisor with the University of California Cooperative Extension. And I would just thank you again for the opportunity to come and comment and continue to work with the board and the staff on this policy. As a quick thank you – or an additional thank you – I just want to say that making the trip over here, I have a new appreciation for the trips that Farhad and Becky and Diane and Dale have made to our watershed community. So keep making them, we know it is a long drive. I work across Marin Sonoma Mendocino Counties with agriculture, doing on-farm research to look at where loading is happening, and put in place practices to reduce that loading. As an example, I am part of a group of advisors and North Coast Regional Board staff that recently just completed and approved the erosion control plan for an agricultural operation in the Garcia River. I think that is where that TMDL

is heading. We are not there yet. Today here we are really talking about the ground rules and I think that is why you are going to hear the comments that you are going to hear today. And I am going to offer comments along the same line because I think you are working with a community that really wants water quality for their watershed. They want good water quality, but they are also worried about the risks posed to them and the risks posed to the vitality of the community. So with that in mind, I am going to offer these three points, I submitted written comments yesterday, and I would just encourage you to read those comments if you have the opportunity. But here are my three points I would like to drive home. The implementation plan strikes a very good balance between explaining the mandatory nature of the state's non-point source policy with the flexibility to look for the options and ways to comply. And I think that will work well out in the watershed. Regarding the targets and allocations, the staff has spent a great deal of time pursuing a line of logic that makes sense in terms of how do we achieve 14 in the Bay, in other words, what concentration and tributary streams allow for 14 npm per 100 ml in the Bay, the standard for shellfish harvesting? That is a

reasonable first book end to help us try to understand what we are trying to achieve. What has not been pursued yet is what can be obtained through the implementation plan and all the compliance. In my written comments, there are data from the Shellfish Technical Advisory Report in '95 and '96, of three controller comparison watersheds. The data from that study and other studies that I present in the letter demonstrate that, even from a watershed that really does not have the source categories identified in the TMDL has water quality conditions that exceed the proposed allocations and targets. If that is the case, we need to find that other book end and work in the middle somewhere in terms of what is background and what can be achieved, and I say that because the 43 and TMDL's are not only a regulatory tool, but they are a tool that motivates and directs communities to improve water quality. The standard right now as it is written is really creating a disincentive to those because of what we have learned over the last ten years through the shellfish tact and other community efforts to learn about water quality. It is tough to feel like this is an achievable goal. So the point here is to ask you, the Board, and your staff to consider ways to revise

this standard to one that can be achieved, to one that the community knows they should and can successfully reach. The third point, and it gets to the adaptive management portion of the implementation plan and what Rebecca Tuden was talking about, there is a list of questions on the last page of the amendment of the Basin Plan Amendment. They are good questions that highlight the uncertainty of these targets and allocations and the uncertainty of whether the implementation plan can help to achieve those. Only through monitoring are we going to learn and get the answers to those questions. And so the final point to make is for you, the Board and the staff, to really put as a high priority that monitoring program that is outlined in the staff report. That monitoring program, both for implementation and for ambient water quality, will probably give the greatest service to the community as it strives to meet its goals for, again, water quality, the environment of Tomales Bay, and a vital community. So those are my comments. I will be around and can answer questions.

Chair Muller - Thank you. I will make a brief statement that if we can ever figure out how to achieve all these limits, we would be miracle workers. We are

trying. That is the key to our life here is achieving the limits. Thank you.

Mr. Wolf - I do have a question. You mentioned three other watersheds and you indicated that even in those watersheds these standards have not been met. What are the best practices in place in those watersheds?

Mr. Lewis - Actually, those three are tributary watersheds to the Tomales Bay, one on the westshore, two on the eastshore. They actually have no septic systems, they have no ag. They were studied and used as a comparison or control watersheds for a larger pathogen loading study done by the Tomales Shellfish TAC.

Mr. Wolff - So they have no grazing and they have no – they have wildlife.

Mr. Lewis - Ostensibly, wildlife background sources, yeah.

Mr. Waldeck - I just have one quick question here. I was reading in – and perhaps you can answer this – in the I.J. about whether to cull the herd of deer that are out there, or tule elk, or things like that –

Mr. Lewis - Your connection to the TMDL –

Mr. Waldeck - – you know, if we cull the herd, there will be less –

Mr. Lewis - Well, that is a Point Reyes National Seashore policy, I think that is an issue about whether – that is for Point Reyes National Seashore staff, but I think that is an issue about whether those are indigenous indemic species or not.

Chair Muller - Okay. Next will be Nancy Scolari, I think, from Marin RCD. And then following Nancy will be Sharon Doherty.

Ms. Scolarey - Yes. This is Nancy Scolarey, Executive Director of the Marin Resource Conservation District. I just wanted to give you a little bit of background. I have a letter for you today. I do not know who this goes to, but I just wanted to give you, before I read this letter, just some background about our board. There are five board members that are elected into office, and the district that they represent includes the Tomales Bay Watershed. And they assist agricultural land owners in dealing with environmental issues, putting in water quality improvement projects and erosion control projects. And you have helped us immensely through the years in that regards, and so I thank you for that. This is our

letter: "For nearly 30 years, the Marin RCD has invested a tremendous amount of time, effort, and funding to improve the habitat and water quality in the Tomales Bay Watershed. During this period, many valuable lessons have been learned. Our experience through the years have taught us the following: it is important to develop a trusting relationship with the landowners. Implemented programs take time, perhaps as long as 20 years, to make significant improvements. Advances in science, technology, creativity have vastly expanded the tools available to assist us in that regard. Local commitment to agriculture has been bolstered by a coalition of community organizations and many who are represented here today. And we become extremely concerned when guidelines are imposed with strict adherances that might be impossible for us to attain, and that while staff maintains that the numbers are important and that we will be in compliance by doing everything we can, it is a fact that, over time, personnel changes could bring a change in attitude. Then the numbers not achieved can be a cause for violation action. This does not give the landowners any level of comfort. So we would like to offer the following considerations for discussion, 1) the

proposed standard of 14 and 43 in five years may be unattainable in spite of stringent management practices and innovative programs, 2) the sources of fecal bacteria are generally grouped into three major categories, human livestock and wildlife, and utilization of bacterial source tracking, a new methodology used to determine the source of fecal pathogens could possibly prevent errors in determining the point and non-point sources of bacteria, 3) the E.P.A. has identified three molecular methods of DNA fingerprinting. Such testing may provide a more exact basis for determining the source of bacteria. While the current methodology for the two previous methods is costly, continued scientific advances in the procedures could lower the monitoring costs. Here is where the time constraints of the current plan could have the most devastational effect. And given the level of strong local community support for agriculture, a statement should be provided in a document realizing the importance of sustainable agriculture in our watershed. The RCD certainly understands the dilemma facing the Regional Boards and the quest to satisfy 303D mandate, however, it becomes increasingly difficult to convince landowners with livestock

exposures that these are supposed to be cooperative efforts. Many hours have been spent by our organization researching U.S.D.A., E.P.A, and other government websites for answers. We know that the situation is not unique to the Tomales Bay Watershed." And Gus Douglas, who is the West Virginia Mr. of Agriculture, presented this statement. "Our main goal is to identify the problem first, then create a program to rehabilitate the source of the problem. We must be certain of where the waste is originating before we can begin to destroy our family farms that are located along the waterways. We have had a great success working with farmers in implementing voluntary incentive based programs. Millions of dollars of public and private funding have been spent to ensure that agricultural practices help protect the watershed. By identifying these sources to analytical means, we can target our testing to keep rivers and streams within acceptable and established limits, and maintain farming in these same watersheds, as well."

Chair Muller - I need you to conclude, please.

Ms. Scalarey - Okay.

Chair Muller - Thank you.

Ms. Scalarey - That such a statement can reverberate from east to west speaks to the enormity of the problem facing our watersheds in our quest to find definable limits for a TMDL. So we thank you for considering our request and I also just want to say that we thank you for the staff that you have put into working with our community out there, and they are a wonderful staff to work with. So thank you very much.

Chair Muller - Thank you. Sharon Doherty, I believe. And then following will be Thomas Batey.

Ms. Doherty - Good morning. My name is Sharon Doherty and I live at 12800 Highway One, Point Reyes Station. I thank you for this opportunity to share – to allow me to share my concerns with you and I am going to read something, I apologize, but – "I am a third generation dairy producer on the Tomales Bay Watershed. My family and I have serious reservations about the TMDL requirements as proposed by the Regional Board staff. We are very proud of our environmental stewardship. We were one of the first dairies in our area to achieve certification through the prestigious California Dairy Quality Assurance Program, verifying that we have the necessary facility infrastructure management programs in place to be in compliance with

the local, state, and federal water quality regulations. In fact, with the other dairies in the watershed, we have received recognition from your staff for the work that we have done. While we are gratified that your enforcement staff is supportive of the efforts that we and others have made, we are quite apprehensive about the proposed Basin Plan Amendments that assigns performance standards that are unrealistic and that we do not feel that we will be able to achieve. Of particular concern is the requirement not to exceed a single sample basis, a standard for fecal coliform of 43 most probable number per 100 ml in the tributaries of Tomales Bay. We are well aware that this standard has not been achieved, even in the controlled watersheds which have been mentioned previously, where there is no agriculture even there. It seems unrealistic to set a requirement that has not been accomplished, even in one controlled tributary. When we originally discussed the TMDL's with your staff considering the nature of our winter storm events, even 2,000 would make sense on a single sample basis. Additionally, the board should be aware that contact recreation does not occur in Tomales Bay under winter storm events. My family has tried to be a positive

contributor to the local community, we have sincerely appreciated the community support of local agriculture. We hope that the Regional Board will note that when we started these discussions, there were sixteen active dairies on the Tomales Bay Watershed, today there are but 10. We need you to implement reasonable regulations if we are to remain a viable part of the Tomales Bay community. Our family has swam, eating cockel (Phonetic) clams, native oysters, mussels, crabs, halibut from the Bay for generations. It has been a healthy gourmet pleasure, not a sickness. Please give us realistic goals for a living productive Tomales Bay, not a sailboat swimming pool. Thank you for your consideration and I am available for questions.

Chair Muller - Thank you for your comments. Next will be Thomas, I think it was, that is right.

Mr. Batey - Good morning. My name is Tom Batey and I have lived for 46 of my 48 years next to Tomales Bay. The Bay is a huge part of my life. I fish its waters, I clam its shoreline, swim its beaches, do volunteer research and various scientific studies, and basically spend an awful lot of time trying to protect and improve the health of the Bay.

May I express my strong support for the pathogen TMDL for the Tomales Bay Watershed? This effort represents our best next step to improve water quality, providing the significant means to categorically address the key sources of one of the primary pollutants in this Bay. It has been 28 years since the Clean Water Act introduced the concept of the total maximum daily load for addressing water pollution, and it still has a very long way to go. This TMDL is not without some shortcomings. I am concerned that the implementation mechanisms may lack the teeth to affect the desired changes and behaviors that will be necessary to reduce pathogen levels in the Bay. The effectiveness of the implementation plan depends on how regulatory staff chooses to interpret and enforce the trackable implementation measures. I frankly have a hard time figuring out how much the implementation plan is enforceable at all. The TMDL fails to adequately address the role of wildlife as a source of pathogens, listing wildlife as a discharger of pollutants and failing to frame the debate in a way that clearly acknowledges that background levels of pathogens are not, in fact, a problem. The TMDL is also quite anthroporcentric in its purpose and how it states the

problems in the Basin Plan Amendment. It ignores how human and animal waste responsible for pathogen loading can significantly impact the health of the natural ecosystem. I would ask the board to consider the following three issues: 1) a problem statement that articulates the non-human beneficial uses of Tomales Bay. Tomales Bay and its main tributaries are critical pieces of increasingly rare coastal habitat, the relatively healthy and functional estuarian system. The pathogen loading addressed in the TMDL is a result of animal and human waste coming in contact with the tributaries in the Bay itself. Pathogens themselves need to be recognized as an indicator of all the other harmful constituents that may be present in this waste and can adversely affect the biotic health of the ecosystem. For example, growth hormones and other pharmaceuticals used in agriculture are known to disrupt natural growth and reproductive cycles in the aquatic environment downstream. Similarly, pet waste associated with municipal run-off has been linked to viral problems for marine mammals in affected waters. While there has been no documentation of these concerns, the linkage between our waste and the Bay and tributaries has been made, and the inherent risk to the

natural resources needs to be identified. So proposed change, in the problem stated on page 1, include a sentence that reads, "Elevated pathogen levels should also be seen as indicative of significant risks to those listed beneficial uses protecting the natural resources (called freshwater habitat, estuarian habitat, marine habitat, preserving rare and endangered species, fish spawning, wildlife, etc.)." Issue 2, the consideration of wildlife as a source of pathogens. The TMDL report and subsequent Basin Plan Amendment identify wildlife as a recognized source of pathogens in the listed waters. The TMDL is conceptually clouded by the failure to adequately separate wildlife from the other sources or user groups and to clearly acknowledge that background levels of pathogens are not a legally recognized pollutant. The Clean Water Act is fairly straight forward in defining pollutants as those harmful constituents that have been directly produced by man or the results of man's effects on the environment. Some critics of the TMDL continue attempting to blame wildlife for elevated pathogen levels, incorrectly calling for management measures on wildlife, when this is neither a defensible legal option, nor particularly justified in light of the

current data on how and when pathogens enter the Bay and tributaries. The TMDL has failed to adequately articulate how background levels of pathogens are a recognized, yet expected and generally exempted source by regulatory standards. The proposed change: Under Sources on page 1, strike "wildlife" in the list of sources to be "properly managed" and add the following sentences: "While acknowledges the source of pathogens, a naturally occurring background level from wildlife, it is not considered a form of pollution under the Clean Water Act. Furthermore, current data on control subwater sheds and non-run-off sampling throughout the watershed strongly suggests that wildlife is not a significant source of pathogen loading." There are some other wonkiness here, but –

Chair Muller - I need you to summarize –

Mr. Batey - Alright. Third point, the lack of a separate treatment facility. With all the effort going in improving septic system maintenance and functionality around Tomales Bay, it seems absurd that West Marin is without a facility that actually treats our septic waste. Barellos (phonetic) is an antiquated series of sledge ponds without prescribed residence time for either effluents or solids, nor any sort of

monitoring for pathogen levels, the material from these receiving ponds is simply spread in the surrounding hillsides. Depending on the time of year, this morning's received waste can be dumped on the ground this afternoon. The WDR for this facility limitates the irrigation of effluent from April through November, so every winter this facility is shut down for the lack of freeboard. The fallback solution is the San Rafael Municipal Treatment Plant, which has been turning away West Marin septage, claiming their own system is overburdened in the wet season, as well. As the septic component of the pathogen TMDL gathers momentum, there will be a greater need for a facility to receive and treat increasing volume of septage. The TMDL directs regional staff to review WDR's for treatment facilities. I hope the board can recognize that we did not have a true wastewater treatment facility that is available for our septic waste and will direct staff to evaluate the options and act to rectify the situation. Here in the 21st century, the practice is spreading untreated human waste on the hillsides is unconcienable.

Chair Muller - Thank you. One more minute.

Mr. Batey - One more minute, okay. Just the changes that would be there would include the following action items in the small water treatment facilities, one would be to evaluate the options of septage received, evaluate the options for septic receiving facilities, and develop alternatives to the current choices that are not seasonally limited, and provide for adequate treatment. And the second one is upgrade existing WDR's to include a measurable degree of treatment before effluents and solids can be released from the facilities. Thank you.

Chair Muller - Thank you. Any questions? Moving on, we will go to Mike Gale. Did you get the last speaker's comments? Did he turn in a written comment on that? There was a lot of comments there.

Ms. ? - Tom, did you submit a letter to us?

Mr. Batey - Yeah, I gave it to Farhad.

Chair Muller - Okay, good.

Mr. Gale - Good morning and thank you very much. I am going to be presenting into the public testimony a letter that I am carrying for Dr. Corey Goodman, who I guess I will present to Becky Tuden.

Chair Muller - State your name and address, please.

Mr. Gale - My name is Mike Gale. I live at 5105 Chileno Valley Road, Petaluma, but we are in the Walker Creek Watershed. I would like to read this, but I am afraid of being cut-off. Do I have a certain amount of time?

Chair Muller - Yeah, we are being very generous with those three minutes, let me tell you. Go ahead and see how you do, but the Chair does have the prerogative to ask you to conclude.

Mr. Gale - I have a particular interest in this issue, as my wife, Sally, and I raise grass-fed beef in Chilemo Valley. Like us, our neighbors are all in the business of animal agriculture. Ours are not the native areas and feed lots of the central valley, nor are we the operators of huge factory farms which spill and seep pollutants into public waterways. We share your concern with these polluters and feel they should be regulated to protect the public. Rather, our ranchers epitomize the bucolic settings featured in travel magazines. Our rolling verdon hills are dotted with cows, sheep, and goats. For instance, our ranch is an average size, 600 acres, and we have 88 cow calf pairs on this ranch. It is not crowded, and our animals lead the kind of life one would like for all

animals in productive agriculture. Similarly, there are a few people in our neighborhood with one house every half mile or so along a county road. I come before you today because I feel threatened by the proposed TMDL. The target TMDL is far too low. I worry that our efforts to develop and sustain a profitable business will be threatened by closure if the target numbers are not met. I worry that our children will be discouraged from taking over our business because the threat of closure will always be over their heads. I worry that necessary improvements and repairs to infrastructure will be postponed because the uncertainty of the future will always be a concern. I worry that our cows will have to meet what I see as an unreasonable and unattainable target number. The dated MPN numbers in our valley exceed the target MPN's by hundreds, if not thousands. There is no way we can meet that standard. We are not even sure these standards were arrived at in a reasonable manner. They represent an indicator rather than the presence of a real pathogen. They include fecal contributions from sources other than cows, but are in proportions we are not told. I am not sure that the local wildlife fecal coliform can meet your proposed standards. The

standards are designed to protect people swimming in our streams, but there are no swimmers, nor is the water deep enough to swim in it. And unlike illnesses from human pathogens, no cases exist in which a person has gotten sick from water born pathogens originating from a cow. My neighbors and I have many questions for you. We feel these questions need answers before we are able to undertake expensive practices. You are considering approving a new policy that could cost West Marin ranchers a great deal, and yet it will not reach the proposed TMDL target. For many years, we have been trying to improve water quality because we want to, and not because we have been forced to. These practices include fencing cows out of creeks and planting native trees, among other things. They are not modest efforts. We feel a proper TMDL process would include answers to the following questions in order to come up with a workable, understandable and achievable plan. What is the definitive source of the pollutant of concern? Human, livestock, wildlife? What is the natural background number of the pollutants of concern? What is the base line from wild life? What is the likelihood based on real conditions of the pollutants of concern living outside its host on the way to its

potential human victim? What is the likelihood that this pollutant will reach its victim in strength required for infection? What is the likelihood that potential human victims will be present in the creeks and the Bay to receive the bacteria? Are there any documented cases of anyone getting sick from bacteria from the cow upstream? Why do we use indicator bacteria rather than the bacteria or actual pathogen of concern? If disease is likely from cows, why haven't our ranchers gotten sick? What is the human cost of the TMDL implementation? What will it mean to our way of life? Will West Marin cease to be an agricultural community? And will your TMDL standards forever change the character of our community, driving it away from productive agriculture? At the point of implementation, what assurances will the Water Board give that the practices required by the Water Board implemented will be the last word? What if the numbers do not go down? Surely, we cannot be expected to eliminate all of the local wildlife. Will this be a never ending process, perhaps ending with the loss of all lifestock? What assurances can the Water Board give us that, if we follow all your recommendations, we will be safe from legal recriminations? Admittedly,

there are always more questions than answers. Please do not take your actions lightly. If you implement the proposed TMDL levels, you will change the character of West Marin. Wouldn't it be sadly ironic if it turns out that much of the actual fecal coliform comes from birds and other animals throughout the watershed? Do you feel comfortable permanently changing our community without having the facts to back-up your decisions. We ask the Water Board in all seriousness to initiate the research to answer these important questions. Our livelihood depends on it. Thank you.

Chair Muller - I will tell you this, Mike, I appreciate your effort in this, but we do take this very seriously. I personally am not in business to hurt people and I think we will work very hard, myself personally, to see that we ensure that we do not change the way of life over some decisions that we make. And I think we have always done that at this Board level. That is just my personal feelings at the moment and we will see what the Board says. Next speaker is Bob Jokomedy. We are down to two cards.

Mr. Jokomedy - Good morning. I will try and do this as fast as I can. I feel a little bit, you know, disappointed in the fact that we take the time to

come down here, it takes us an hour and a half to get here, and giving up our day – and we appreciate the time that you people have, too, but then to limit us in the amount of time, it just – this is a livelihood you are talking about here –

Chair Muller - Bob, may I interrupt you, please? I never shortchange anybody. I try to be fair to everybody, and I definitely will be fair to you, so I do not think – you have to realize, we have a big agenda to go through at the state level like this, and if we do not set some guidelines, then what happens is we just get runover, so I appreciate your comments, but as long as I am Chair, I will never do anything to shortchange you because I realize the importance –

Mr. Jokomedy - Trust me - knowing that you are a farmer, Mr. Chair, I am sure that you can appreciate that.

Chair Muller - I would like to be on the tractor today, myself.

Mr. Jokomedy - I would much rather be doing that than being here, believe me –

Chair Muller - Okay, Bob, let's go.

Mr. Jokomedy - I just had to get that out. I have been in the dairy business – I have lived in Point

Reyes in the Tomales Bay Watershed all of my life, for 67 years, and have been in the dairy business all that. My father started it before I did. We have had two dairies out there over the years and we live right on the side of Tomales Bay right now. I have four daughters which are involved in the business, one of whom – Jill Basch (phonetic), she is right here, and it has been a struggle in agriculture, I do not have to tell you. Believe me, with prices and many other things that we have to contend with. But we feel proud that we have been able to build the business that we have and then we are able to bring the next generation in, I mean, that is what it is all about to me is being able to, you know, bring this thing together so we can bring the next generation in. We have eight grand kids and hopefully some day they will be there, too. And there is always light at the end of the tunnel. My big concern and the reason I am here today is it is getting harder to see that light at the end of the tunnel for us. The fact of the matter is – and, again, not to elaborate and I do not want to repeat what other people have said – but, to me, these targets for agriculture, knowing what we have done in the last 15-20 years, knowing the technologies that we have used and what is

right ahead of us, I am not sure that we can meet them or not. And I made this comment today to Diane White the other day in Point Reyes and she said, "Well, how do you know you cannot meet them?" Well, she kind of stumbled me for a minute and I really did not know what to say, to be honest about it. But in thinking about it a little bit more, 1) the controlled sites that David Lewis talked about, when we are seeing standards that are lower than what we are getting from controlled sites, granted, they are not as high as maybe he is coming off some of the ag land, but irregardless that they are higher than what the goals that we are setting, it makes you wonder; 2) we have done a lot of testing through TBAG, through David Lewis who just testified, and we have derived from Prop. 13 and one thing and another over the last few years, doing a lot of on-site testing on the ranches, we are doing testing on the streams going off the ranches, to be frank and honest with you, three tests were taken on my place this year, one of 4,000 and 1 of 5,000 fecal coliform. Now, the good and the bad of that, you know, the good that I see in it is that is a hell of a lot lower than what we had two years ago was 60-70,000. The bad, can we get down from 4 or 5,000 to 43? We started at 200

which we thought was ridiculously low and now we are down to 43, and so these are some of the concerns that we have. Now, granted, we are hoping that there is new technology on the way that is going to help bring us down close to these numbers in the near – in the future – I do not want to say the near future, but the future. And some of those technologies are adding ingredients into the manure ponds to lower the nutrient count before it goes out into the field. But we do not know how soon these are coming, we do not know how effective they are going to be yet. In the mean time, we are tied to meeting these levels within five years. And, again, I asked Diane the other day, I says, "Well, what happens if five years from now, ten years from now, we have not met this level?" I still got 1,000 in the creek. And some third party comes and wants to take us to court over it – not you people, a third party? I says, "Are you people – and I am talking to you people now – are you willing to come and testify for me in court if that happens?" She said she was. And I hope the Board agrees with that. We are seeing up there, three things – we are not giving up by a long shot, I have too much invested in it, believe me. I have even covered my bet on the other side a little bit in the

fact that I have invested a small investment in one of the oyster companies, so we are trying to look at this thing from both sides, believe me. There are three things that we really want you to take a hard look at if you possibly could, four things here, actually, 1) this 30-day closure – which they are saying is roughly 70 days right now, evidently it takes 30 days of closure to import the water body. I understand that this is not, you know, the criteria of these closures is the State Water Board, it is not you people, but that is one of the problems with our government, as much as I love to live in this country, believe me, but we are all single minded and we have got to start working closer together to start putting these things together. From my knowledge, there has not been a lot done on these closure dates for maybe 7-8 years now. We think there has been enough – plenty of improvement to start to look into the criteria of these closures and hopefully moving them. One of the examples is – this year is a perfect example – we had three major storms early in the year, earlier than we normally have, bigger than we normally have. A half an inch of rain automatically closes the Bay for five days. The first 8-9 inches of rain that we get in Tomales Bay

Watershed does not run-off. Our creeks are bone dry, there is nothing running off them. But yet they closed the Bay for five days, a minimum of five days. In these three storms, there was nothing running off. There's 15 days right there. So something needs to be looked at right there. Two, I guess the other thing we need – I know we have been working at this thing for 15 years and that is a long time, but it is a short time in comparison to what we are trying to accomplish and knowing the technologies that we have today. We need more time, I think. I feel that we are being rushed in much of this. I think we have to meet some goals as we go along, I do not disagree with that. I and my fellow agricultural people are more than willing to continue to work towards this thing, but we just feel that we are tied down time-wise too much. And the other thing, and I will close with this, is may I ask you a question? How many of you have been up to Tomales Bay and seeing a water body? Five or six, that is just wonderful. I would like to invite you all up to take a tour of it before you finalize this document and see what we are doing along with everybody else. And we would be more than happy to give you a whole day up

there and show you around. So, with that, if there is any questions, I thank you for your time.

Chair Muller - Thank you, Bob. And I thank all the speakers prior to this. And the last one is representing Western United Dairymen, so we can keep you to three minutes because you are the paid person, right? Oh, we have got more.

Ms. Dapo - Chair Muller and members of the Board, good morning. My name is Leslie Dapo, Field Representative in Marin and Sonoma Counties for Western United Dairymen, 1350 K. Street, Modesto, California. I have a letter I would like to read from the Director of Environmental Services, Paul Martin, being as he was unable to attend today. "Western United Dairymen has reviewed the proposed Basin Plan Amendment to accomplish the Tomales Bay Watershed Pathogen TMDL and Implementation Plan. We appreciate the opportunity to provide the following comments. Western United Dairymen is a state-wide dairy farmer trade association representing 1,100 California dairy families. Our members produce 65 percent of the milk in California and all of the dairies in the Tomales Bay Watershed are members of our Association. We have provided extensive written comments early in the TMDL process dated April

12, 2004. While some of our requested changes have been accomplished, others have not yet been addressed. We are particularly concerned that the baseline conditions of the watershed are not well understood. We note that the study results from 1995 and 1996 indicate that even watersheds without dairy or other agricultural activities have been unable to meet the standards set by the Basin Plan Amendment. We strongly caution the Regoinal Board that if requirements are set so strictly that the producers feel they have no hope of complying, effectively, there will be no incentive or a reason to even try now or in the future. This is not what we or anyone else wants to happen. Dairy producers, just like everyone in this room today, need to know that they have at least a chance to be successful. Winter time storm flows can be quite severe and it does not appear the proposed amendment gives full recognition to this fact. Contact recreation is highly unlikely during winter storms and this should be considered when establishing beneficial uses for the tributaries to the Bay. Temporal and spatial conditions must be evaluated to accurately determine beneficial uses. Considering this fact, the most probable number standard represented for fecal

coliforms of 43 is severely unrealistic and should be reviewed with full consideration given to the study results mentioned above. Lastly, we call your attention to a memo of March 23, 2005, sent to Art Baggat, Chairman of the State Water Resources Control Board, from Allen Lloyd, Secretary of the California E.P.A. Secretary Lloyd requests that the State Water Resources Control Board assure the appropriate integration of science in decision making, including policies, regulations, Basin Plans, and permits. Western United Dairymen shares Dr. Lloyd's concern and encourages the Regional Board to pay close attention to the science to date and, further, to conduct additional site specific research so that the Tomales Bay Amendment to the Basin Plan is truly science-based and reflective of a reasonable implementation program. Our members in the Tomales Bay Watershed have repeatedly indicated their willingness to engage in constructive resolution of community issues. We urge the Regional Board to direct staff to renew conversations with our Tomales Bay producers to accomplish resolution of the issues causing us concern." Thank you for your time and opportunity to give comments, and I am available for questions if you have any.

Chair Muller - Good. Thank you, Leslie, good seeing you. Last card will be John Hulls from Marin – Point Reyes.

Mr. Hulls - I would like to thank you for the opportunity to address the Board. My name is John Hulls. I live in West Marin. I am a columnist for the Point Reyes Light. There are a lot of volunteers on the paper and I volunteered to come over here today. I know there is that comment about sausages and laws and watching them being made, but I would like to thank the Board for their efforts. However, on the newspaper, we get to see all sides of the issue and we get yelled at a lot. And one of the things I think there is general consensus is that everybody wants to clean up the water out there. You have heard from Tom Batey and you have heard from the ranchers, and people want to do it from a known basis, and we have talked to Washington and the E.P.A. back there, and they said that the best thing that we could do is go through the TMDL guidelines that they issue. I submitted a letter on these points, and rather than go through them all, I will just look at – there are three issues that we feel are on the E.P.A. checklist that should be addressed. The guidelines – and I quote – the guideline states, "E.P.A. regulations

require that a TMDL include L.A.'s load allocations which identify the portion of the loading capacity attributed to existing and future non-point sources and to natural background." I think this is in the report and it is what the ranchers are asking for, as well as the people entrusted in the environment. The other thing, and I have commented in my written submission on all of the points on the TMDL, is a measure of safety. And, once again, there is supposed to be a margin of safety, and I quote, "that accounts for any lack of knowledge concerning the relationship between load and waste load allocations and water quality." And that is right in the TMDL guidelines. And, finally, I would invite you all out to West Marin, as Bob did, and I would invite you out to Piers Point, and when you get out down the trail, turn left on the gulley. If you are watching the view rather than where your feet go, you will step in the problem from the elk. And if you also go to the Vedanta Center, which is open to the public, you will see the great state parks controversy which are the herds of exotic deer, often numbering in the hundreds, that are right next to the stream flow. And being on the newspaper, I have had the privilege of reading not only the Basin Plan Amendment, but the

State Parks and the Federal Parks concern about wildlife. And if you read their report, what they say is there are a large number of non-native deer standing in the creeks, rubbing their antlers on branches, and they are concerned about their effects on the watershed, so I think the community is looking at some integration of all these effects. But I think if I were to go back to the TMDL guidelines, there is Item 8 on the checklist, the Federal checklist, it is called Reasonable Assurance, and what we are all looking for in West Marin is reasonable assurance that our efforts out there as a community will result in a lowering of the waste and the fecal coliform. Right now, looking at the potential contribution from wildlife, we just do not see that. And I would like to see this addressed for the benefit of the whole community. Thank you very much for your time.

Chair Muller - Thank you for the comments. That is the end of our speaker cards and we can definitely feel and sense the passion in this TMDL that we are looking at here. Comments from the Board. Gary? Then we will go back to staff.

Mr. Wolff - I have a couple questions for staff, actually. I understand that nutrients and

sediments are impaired in Tomales Bay, as well as pathogens. Are there any other impairments?

Mr. Wolfe - In Walker Creek is mercury impairment, but you do touch on a good point, is one of our efforts, even though we are not ready with those TMDL's, is to try to have the majors and the practices that will be implemented to address this TMDL also be effective to address those. We do not want to start fresh, from scratch, and have a whole new effort for sediment.

Mr. Wolff - When are those TMDL processes scheduled to occur?

Ms. White - I think within June of next year you will see the mercury TMDL for Walker Creek before you. And then we have got a number of technical studies underway in relation to sediment TMDL's in those watersheds, and so those will be a year or two following that, since we are just in the process of doing sediment budgets and that type of work out there.

Mr. Wolff - The reason I ask is that I am sure that everyone in the watershed does want to improve water quality there, but as is so typical, that gets traded off against the cost. And hence people are concerned about the cost. And in my experience, there

are often opportunities for doing something cost effectively when you combine it with something else that needs to be done. And you hinted at that in the presentation, but it is not at all clear to me how in the process of planned development, a county-wide evaluation program for septic systems, etc., under this TMDL, how those types of economies are going to get assessed and where those types of opportunities might be investigated.

Ms. White - In part, I will give you one thought on that is, for the Range Lands Management Plans that we are discussing about the range lands in reducing pathogen loads from that, part of the process is setting up a list of – I forget what we call it – but certain criteria or a checklist of things to be looked at and evaluated as part of developing this range and management plan. And we will certainly be looking at all aspects of water quality concerns in doing that, and sediment and nutrients will be one, and also looking at practices which will address those other pollutants at the same time in moving forward with working with ranchers or third parties involved with ranchers in getting an acceptable range land management plan in place. And I think, likewise, if

you think about septic, we are looking at improving septic tanks so there is no discharge of human waste from those septic tanks into waters. Well, essentially no discharge of human waste equates to limiting or eliminating excess nutrients from those systems, as well, entering the waters. So as we move forward, we will, as staff, be working with these various parties and bring in these other water quality considerations which will be doing TMDL's aside, I mean, just as part of what we are always doing out there.

Mr. Wolff - So the county-wide evaluation program and the facility plans that will come in under time, which are two of the three new items here in this TMDL, those will include economic assessment of cross pollutant benefits? Or at least some sort of discussion of the possibility of cost effectiveness across the pollutants, as opposed to just for pathogens? Or am I putting words in your mouth that it really will not go that far?

Mr. Wolfe - Well, I think we can take a step back, as representative of the RCD mentioned, that we have worked with RCD and all parties in West Marin, all interested in the North Bay counties for a number of years looking at what are the appropriate measures

where you get the most bang for the buck that can be implemented and can be shown effective. And I think that is our real goal, not only here, but throughout all of our TMDL process is first look at what are those practices that both we have been doing that have shown effective, what can we do to make sure that those practices are aggressively implemented – the known effective practices are implemented? And then take a step back if we are not achieving, after we have implemented all known practices, take a step back to see what are our other approaches? Is it true that, as a number of people have commented, that we will never meet the target and we need to look at another solution? And that is really where we are trying to include in all of our TMDL's, especially here, is an adaptive implementation approach, trying to do the tried and true efforts aggressively. The people, I am sure, coming here today are those who have been actively engaged and actually we are quite please as it was noted that, in the Tomales Bay Watershed, all of the dairies complied with our standards for a waiver of waste discharge requirement, so we did not need to issue waste discharge requirements to them. But we want to make sure all opportunities for aggressive

implementation are met before we say we cannot do it. And so we are going to continue to push that and not just say, "There is a number out there. No matter what the cost, you need to meet the number."

Mr. Wolff - Alright, well, I will let this drop with one last comment, which is that it was not clear to me in reading the TMDL how that piece of the adaptive management process would work, how the economic analysis would work. And so my concern was, three and a half years from now we hear what we are hearing today, which it is not economic to do these things. Then what? Well, we have wasted three and a half years in some sense. We should be studying and understanding that by then so that if it is not economic, we can face up to that at that time, or if it is economic, we have discovered whatever cleverness we need to discover between now and then to make it economic.

Mr. Wolfe - Good point.

Chair Muller - Shalom.

Mr. Eliahu - In reading the TMDL, I was under the impression that the set goals really reflect what is going on right now, and we are not causing that much hardship that we hear today.

Mr. Wolfe - Well, I think what you are hearing a lot of today is that level of uncertainty, and I think we heard this also in the mercury TMDL, that when you set a goal, that based on our analysis is necessary to achieve the beneficial use, it seems so far out there that it may not seem achievable without that level of uncertainty and unknown. We recognize, as we did with mercury, that this is not something that is going to happen overnight, that we have to take the first steps, do what we can now, which, as I say, is trying to implement all the known best management practices, and evaluate what works and determine whether there are different things that should be implemented as we move down the path. But the targets are set as that – targets – so we can try to achieve the beneficial uses. There are obviously always going to be consideration – are those the best targets? And we are going to continue to study to make the determination whether those are the most appropriate to be protective of the beneficial uses so that the water body can achieve those beneficial uses, whether we need to change that. And so it is sort of working from both sides. But we are trying to set a starting point of how we get there.

Chair Muller - Mary.

Ms. Warren - I am concerned from staff's standpoint on setting the limits, taking into consideration that it is not just the cattle, registered cattle, that is causing some of this problem. Has anyone taken any kind of a count for the wildlife population, the deer, the elk? Because I have heard a lot of comments that a good part of the problem is coming from the wildlife. I am not opposed to wildlife, do not misunderstand me, but I do not want the problem set on the rancher, and part of the problem is not their fault. And I am going to be very very critical and very watchful for this because I think there are things that can be done and I agree that it will take some time, but I just want to be sure that the total blame is not placed on the rancher.

Mr. Wolfe - Oh, I think – we fully understand that and want to make sure we address that because –

Ms. Warren - I do not know how you do a count on wildlife, but I think certainly that has to be taken into consideration.

Mr. Wolfe - Again, our goal is bang for the buck here, and we do not want to be solving a problem

that does not exist, or not solving the problem and throwing money down the –

Ms. Warren - I am going to be real watchful of this one.

Chair Muller - Clifford.

Mr. Waldeck - I just want to follow-up with what Mary had to say there because it comes down to almost like the ranchers are the POTW's that have cleaned themselves up well, you have the septic concerns that are out there, and I can see how that can add to the load. And you almost think that the best path to achieve pathogen controls are to cull the herds, and that is a tough call to make. I have not followed it that closely, but Jane Goodall came out and said, "You do not cull the herds there." And if that is what helps us achieve the water quality control pathogens, I mean, it is almost in our regional water board that all animals are kind of bad because they are all little mini pathogen producers there, so we do need to take a hard look at that element because when the speaker for the Point Reyes Light came out and said, you know, go to this corner here and you can see what the results of the elk are, that, you know, that is something that if we do want to achieve the goals in

the watershed there, it seems like that is a good place to start. And I just wondered if you have any comment or if there is any history about that stuff because you are talking about sterilizing or killing or removing animals.

Ms. White - Well, I have a comment. I just wanted to point out that our data shows that the cattle dominated watersheds, the pathogen loads from those watersheds, are extremely high – orders of magnitude higher than what we find in the waterlife only dominated watersheds. So the question that is being raised is, when we get all these reductions needed, we bring down those other watersheds with cattle, you know, tens of thousands of coliform levels lower, then when we are out in that region close to the target, how much is wildlife contributing vs. how much are cattle contributing at that point. So I just want to emphasize that the implementation plan is really focused on getting the loads down significantly in those watersheds, and what we hope to do – our intention with adaptive management is, then, when we get to that point where we have got control actions in place that are consistent with existing policies and requirements that have been on the books for years,

then we can continue during this period of time to evaluate the wildlife contribution and the significance of that contribution.

Mr. Waldeck - So in your observation, it is still the cattle, that they are not as cleaned up as, like I said, like the POTW's are.

Ms. White - Yes.

Mr. Waldeck - And I did not know that we had 13,000 head out there, so it is kind of interesting to contemplate MALT, which is the Marin Agricultural Land Trust, where they are setting everything up, to preserve these ranches in place, and then from our point of view, kind of making the cattle industry as kind of the bad guys, and I just hope that you are able to move forward and give good answers for everything involved there. But I am glad to hear that we do not have to go out and cull all the herds tomorrow, because I do not want to do that.

Ms. Smith - And, again, it is the confined animal facilities, the dairies, that we have been working with for a long time, but we really have not been working with the dairies in response to the lands that they graze or the grazing lands and the access of cattle to the creeks, etc. I mean, that is the area

that we are focusing on now, which has not been given much attention. With that, I also wanted to add that we will take a look through this comment period the comments received, and we will look at the targets in the allocation scheme, we will sit down with E.P.A. and see if there is an alternative way within that scheme for us to acknowledge the wildlife contribution and the contribution by open space lands, and maybe there is a different way that we can still meet the legal requirements. So we are willing to look at the comments and meet with E.P.A. and see if we can change things a little bit along those lines and still meet basic requirements that need to be met through the TMDL process.

Mr. Waldeck - Thank you.

Chair Muller - Gary.

Mr. Wolff - One other quick comment. What would the standard be if it were based on this background level we are seeing in areas coming primarily from wildlife? I mean, if that were the basis for the standard, what would we be talking about?

Ms. White - I think it would still – it depends on the averaging period. So if we look at averaging periods, we are still in the area from some

of the data that we have of between, you know, 40 and 200 per se, depending on when you sample, during storm events, non-storm events. We do have in some of the wildlife areas some numbers in the thousands, but I do not think they are sustained for a long period of time. So, again, if you look at five consecutive samples in a 30-day period, you can probably bring that down to much lower concentration, which I think is in line with our recreational water quality objective, the Rec 1 objective of 200, but we will take a look at that.

Mr. Wolff - Thank you.

Chair Muller - Well, I am going to make a couple of comments here. I think, 1) from my perspective, again, and from our ten years – my ten years of sitting on the this Board, the privilege of – we have always tried to look at a balanced approach and we are looking at a community in an area out there that really is, as I put it, if our name in our region here, we really are urban agriculture. We are an area out there that preserves the open space for millions of people within the Bay Area here. Number 3 along the way here is, I think we have really – we probably set the level of environmental stewardship of almost anywhere in America in the Bay Area here, trying to

make the right decisions, whether it is with the mercury in the Bay, or whatever. We might not always reach it, but we are at least giving it an effort. So I think we have to be cautious here that some of the speakers mention about the difficulty in business. Every day, all of us are going to have difficult times in business. And I think we have to – the one word I really appreciated from one speaker was it be reasonable in this approach on what we are doing here. We have to be reasonable. Because we are preserving a way of life, one, but we are also preserving a future for all of our families in the Bay Area here. And so who is a better steward of the land but the families that have the history there? So, given time, if you look back in the 40's and the 50's when we had dairies, we rammed manure in the creek because we did not know any better. That is not that long ago, it is almost 60 years ago. So now we are saying, "Okay, you have got to meet this level," give us time. Give everyone time to be reasonable to meet the levels. And I do not think we ever want to be in the business to hurt people or put them out of business because then what you are going to do is you are going to have landowners that come in, that want to develop, or open space, and then

the management of the property is going to be worse than we have now. So I think we have to be cautious there. So I want us to be reasonable and I want us to be balanced, and I think the landowners out there are giving it a try, I compliment them, I compliment the environmental stewards out there that are concerned, too, for all. And there are many elements out there that are causing this pathogen issue, but I think that if we continue to move in the right direction at a reasonable approach, it can be done. It will not be the 120 years in the Bay thing, but, you know, let's continue to move forward and be cautious there. That is just from my perspective. I do not know how the rest of the Board feels.

Ms. Warren - I agree.

Chair Muller - I do not ever want to see us do anything to continue to displace people from land management out there and, again, as I have stated earlier, you know, a year ago we were giving awards to the dairy industry out there for their stewardship and a year later we want to rake them around a little more, so let's keep what few we have out there, but make sure they are doing a job which I know they are doing the job to clean-up. And the ones that are not, as you

said, Bruce, that we have to bring them in line as peers out there and say, "Look it, you know, we are going through that in every community that, you know, we do a good job in our yard, then the guy next door dumps all the garbage out the back door." So it is a human thing. Give us your spin. There was a lot of great input today and I appreciate everyone's time and commitment to this because of the seriousness of it.

Mr. Wolfe - Your points are well taken because we are trying to define how we can be reasonable and be balanced because, certainly, it is not going to be those of us at this table who are actually doing the work, we are going to rely on those in the community to do the work, and I think they have demonstrated they want to be partners with us and we have had a long term partnership with the community, and so we want to be working with them. And we are continuing to meet with various parties to see how we can resolve and come up with that reasonable and balanced approach. I think what we are hearing today is, to a large degree, consistent with what we have been hearing and we will continue to work with all parties. We are legally required to respond to all comments and we never treat that effort lightly as just a mean to sort of check the

box that we have responded to comments, but we do want to make sure that, in looking at the comments, we can both build on the comments and suggestions, you heard a lot today, and ensure that we are coming up with a balanced, but implementable, TMDL.

Chair Muller - And I think along that line, as board member Gary Wolff said, what is the economics in this, too? And I think that was a great point. Can we tie this in where we can get some financial logic to all of it put together, instead of just pushing in one direction. Let's see if financially we are making the right moves so we know in what direction we are going to go.

Mr. Wolfe - Right, although, Mary, your point is well taken in that the TMDL is an opportunity potentially to continue to focus. There has been a lot of grant funding that has gone to Western Marin. We have always been interested to see what we can do to learn more and apply grant funding both to the science and the research, but also the implementation.

Chair Muller - I do not normally do this, but the guy that buys the ink by the barrel, you have got to give him another minute or so.

Mr. Hulls - Actually, the only reason I am down here again is I will get in trouble with my editor because he said to make sure that any board member or any staff member who wants to have a guest column in the paper, 1,400 words –

Chair Muller - We have nothing else to do but write things for you guys. Thanks for the invite.

Mr. Hulls - Informed debate is going to solve this problem, so thank you very much.

Mr. Waldeck - Based upon what Ms. White said, is that, you know, when I look at the livestock here, seeing 11,000 head that are in dairy and that they are both confined and they get to roam, too, I do want to be reasonable, but I do want to kind of tighten things up in the sense that I think that, unlike the subsistence fisherman that are out on the Bay that we really need to protect along the way, I think there is that we do not have to – I think the word is "coddle," but I am not that sure – I think the dairy farmers that are out there, that we should not be shy about imposing new guidelines or introducing practices that are in place because if they are reasonable, I do not want them to come across – I just think between dairy subsidies and –

Chair Muller - We will help you on that one.

Mr. Waldeck - – easements, and everything else, that I do not want this Board to ease up on what it needs to do because we are going to destroy the industry here. And I agree with what you have to say, but I think we also have to be understanding that it is not like the subsistence fisherman either.

Chair Muller - Well, and I am not going to defend totally the dairymen in Marin, but let me tell you, 300 cow dairy is subsistence compared to a 6,000 cow dairy in Tulare. So that is subsistence out there. Go ahead, Mary.

Ms. Warren - I agree with Cliff. I think there has to be fairness on both sides and I think the ranchers are doing what they can, there may be some more that they can do. But I want to make it real clear that it has to – it has got to be a fair assessment of what is happening up there and it is not all the ranchers, and it is not all the cattle.

Mr. Wolfe - I think Clifford's earlier note that this almost sounds like the ranchers are the wastewater treatment community when we talked about mercury, that there certainly was a lot of comment that we should push that source category further, but it is

true. We recognize the dairies and ranchers have done quite a lot, and you cannot continue to go back and expect them to do more and more and more. So we recognize that and that is the challenge in any TMDL, is trying to get the appropriate balance, how it can be both reasonable and balanced while we address all the source categories, and can move forward.

Chair Muller - Well, we need to bring this to some conclusion here. So any other comments from board members? I think you have gotten a great testimony today from all sides and I hope everyone with their submittals will be responded to appropriately. You kind of got a sense where the Board is coming from. And there is no action required, is that correct?

Mr. Wolfe - Right.

Chair Muller - This is for informational purposes for the board to bring back to us in the future here and hopefully we can get a few more answers to some of these questions.

Mr. Wolfe - Definitely.

Chair Muller - I am sorry, but I am going to have to take a five minute or ten minute break here. So we will take a very brief break.

Mr. Wolfe - The last three items are report items. We will try to keep our presentations concise, but I think we have time for a brief break.

(Off the record.)

(Back on the record.)

Chair Muller - Can we get a first call here? Okay, is our staff coming back here with us? Just while we are concluding there, maybe we can go ahead and take up that Point Reyes invitation to write a little article.

Mr. Wolfe - Yeah, we will look at that because, as a significant part of all of our TMDL efforts, we want to make sure that we are doing the outreach and I think that would be a great opportunity.

Chair Muller - Just to follow-up there, we were talking about this a little off-site, I do not know if the Marconi Center or whatever is out there – is that in that area?

Mr. Wolfe - Yeah.

Chair Muller - Maybe we could look at that as an off-site because, again, that is kind of an area a lot of us do not go to very often.

Mr. Wolfe - Right.

Chair Muller - So I would like you to look at that area if that meets with everyone's –

Ms. Warren - Yes.

Chair Muller - Okay, so we are switching around and we are going to (Item 9).

Part II: Transcript of June 15, 2005 continuation of the Public Hearing

Item 7.

Mr. Wolfe – Item 7 is a continuation of the hearing that was – the first hearing was in April for the Tomales Bay Pathogen TMDL, a hearing to consider adoption of the proposed Basin Plan Amendment. At this point, because we are still making revisions to what you saw in April and what the community saw in April, I will not recommend that we consider adopting the TMDL today. What we want to accomplish today is an opportunity to update you on what has been going on since April, where we are going in terms of some of the revisions. You have also received a supplemental that includes what we had just sent out last Friday to the community to give sort of the initial revisions to what you saw in April. So you at this point do not need to go through and memorize all of that, but it is just more to give you a point of reference, especially if there are speakers that refer to that. So, with that, I would like to ask Diane White to give the staff presentation.

Chairman Muller – Along that line, if I may, if we are talking about a timetable here, I think we would like to look towards September maybe to –

Mr. Wolfe – That is pretty much staff's feeling, too, is we especially want to make sure that, in fact, we have received requests from Marin County Board of Supervisors, Marin RCD, that once revisions are put out there, that they would like at least 30 days to review that. And I think that is reasonable. So we are pretty much thinking on the same lines as September would be the appropriate time – especially since we still need to officially respond to all comments received. So at the end of this hearing, we will review that again and make sure we are all on the same page.

Chairman Muller – And we do have a couple cards on this.

Ms. White – Good morning. My name is Diane White. I am in the TMDL Planning Division and I am a TMDL Program Manager. This is the second hearing in the process to establish a TMDL process and Implementation Plan to control pathogen discharges in the Tomales Bay Watershed and protect the public from exposure to water borne diseases. This past March, we distributed a proposed Basin Plan Amendment that would establish a TMDL for Tomales Bay. At the April Board meeting, we presented an overview of the TMDL and we heard testimony from stakeholders. We received

18 comment letters in response to our proposed Basin Plan Amendment, and I have included those in your agenda package. Now, at today's meeting, it was originally scheduled for an adoption hearing, but for reasons I will discuss in this presentation we are recommending that you postpone adoption to a subsequent meeting to give stakeholders an opportunity to comment on our proposed revisions. We have been working closely with State Board staff and various stakeholders to discuss how we can best address their concerns and develop a TMDL that not only satisfies the legal requirement, but that will result in real water quality improvements. Last month, I met with the Tomales Watershed Council, and the Watershed Council meets out in West Marin every other month, and this is a forum consisting of local, state and federal agencies, as well as a diverse group of stakeholders with local interests out there. And I also met with the Marin County Board of Supervisors last week to discuss the TMDL, the comments received, and various ways we may go about addressing their concerns. In order to further these discussions, we have put forth some preliminary revisions to the Bay Plan Amendment and I have just handed those out to you as a supplemental agenda package. These are for discussion purposes only and, certainly, if you have any

questions or comments, we would be happy to discuss these preliminary revisions with you.

Today I am going to be giving you just a brief overview of the key elements of the TMDL and then focus on the issues raised by stakeholders and what we are doing and proposing to do to address some of their concerns. Now, with this TMDL, we are striving to find that balance where water quality is restored and protected and that the actions that we are requiring are justified based on our understanding of the problem. Tomales Bay is one of the jewels of our region. It is located in the Gulf of Farralones National Marine Sanctuary and it is one of four remaining locations in California where the waters are clean enough to support the production of commercial oysters for human consumption. In addition to the 11,000 residents out there, over 2.5 million visitors come to Tomales Bay to kayak, swim, tide pool, feast on the local food, wine, cheeses, and oysters from the area, and the local economy, we recognize, is closely linked to the health of the Bay and local agriculture. And so with this TMDL, the challenge really is how can we put something forward in a way that sustains local agriculture, allows for limited residential growth, supports tourism, and also protects the health of the Bay.

So as a brief overview of just the TMDL elements, I will start with the problem statement. This is where we identify the impaired beneficial uses and the pollutant causing the impairment. For Tomales Bay, the beneficial uses are shell fishing and water contact recreational uses such as swimming, fishing, and tide pooling, and the pollutant that is listed for the impairment pathogens. Now, the pathogen is water borne bacteria and virus capable of causing disease in humans and, as a reminder, we infer the presence of pathogens by monitoring for fecal coliform bacteria. And it is the presence of fecal coliform bacteria in the water column which tells us that there are wastes present there from humans and animals.

Now, the next TMDL under water quality targets - and the targets express the condition - the desired condition - of the water body. And, by law, they must be as protective as existing standards. Now, for this TMDL, we propose for Tomales Bay a water quality target of 14 fecal coliforms per 100 ml of water, and that is a 30-day average concentration, and that directly relates to the water quality objective in our Basin Plan. We also proposed a target for the tributaries of 43. Now, in further reviewing, I will discuss this later, we looked at our water quality standards for those tributaries, and we

believe we can justify raising that target now up to 200. For source analysis, source is analysis is where we identify sources contributing to the problem. And for this TMDL, we have identified grazing lands, weakened septic tanks, horse facilities, municipal run-off, typically containing pet waste, both discharges, wastewater treatment facilities that are not operating up to spec, dairies, and also wildlife as a minor contributor. Now, the allocations somewhat different than the targets is the maximum amount of pollutant that a discharger can discharge, such that the sum of all discharges combined will result in the water body still attaining water quality standards. Now, we have originally proposed now an allocation scheme the same as the targets that we proposed. What I will say now is that we are reconsidering those allocations conducting some additional analysis, and I will touch on that later in the presentation, as well. And then, finally, the Implementation Plan. And for this project, the Implementation Plan is really focused on non-point sources, and with non-point sources, we typically identify management practices, and then we ask the responsible parties to implement those practices.

So just to start out briefly and talk about the Implementation Plan, I would like to remind you of

something we stated in the April Board meeting, and that is everything that is being required as part of this TMDL would be required whether the TMDL was in place or not, so that is key. And I am going to be talking about this now so you can think about that as we go through the rest of the presentation. Now, the federal listing of this water body as impaired, I see it that the TMDL process for us is akin to kind of a housekeeping exercise. It has forced us to take a look at our internal work priorities, to review existing regulations, to go out and collect and analyze water quality data, to meet with state, federal and local agencies and talk to them about how they are managing land uses and protecting water quality, and then go out and remind stakeholders of the responsibility to protect water quality themselves. And as you may recall from the April board meeting, we heard very few objections to the Implementation Plan that was being proposed. That is because we do feel it is fairly well balanced. The two areas where the stakeholders did express concern are with the identification of sources and with the attainability of the water quality targets and allocations.

So I would like to take this opportunity to review these concerns and our potential responses, and I will begin with the source analysis. A number of

commenters requested that bacteria source tracking studies using DNA be conducted to more accurately identify pathogen sources. Now, imbedded in this assertion is that wildlife may be a significant contributor. DNA studies entail developing a DNA library that contains DNA samples from warm blooded animals that may reside throughout the watershed and then going out to the water, taking a sample, and trying to look for such DNA. Now, this can be a little bit tricky because the presence of DNA does not necessarily indicate that that source may be a significant load. For instance, we go out in the Bay and a seal happens to swim by. Three minutes later, we grab a DNA sample. That sample, that water bottle, is going to have a fair amount of seal DNA in it. It does not necessarily mean that seals are the largest contributor of bacteria to the water body itself. Now, to undertake an extensive study to look at the relative contribution using DNA of all types of sources in the watershed, that is when we start talking about a study that would cost hundreds of thousands to millions of dollars and take many years.

We assert that our water quality data and our watershed monitoring supports our assessment of our existing sources, and that the DNA analysis is not necessary to justify the proposed actions. And, as I

stated earlier, all of these proposed actions are essentially already required. We are not opposed to using DNA studies to help us further refine our source analysis; we just do not think we need to delay action at this time. We also believe that grant monies would be better spent actually supporting preventative based implementation actions rather than trying to point fingers at individual dischargers.

So let us review some of our watershed observations as they relate to sources. This graph up here depicts five week average concentrations of fecal coliform bacteria found in the water column, and we sample once a week for five weeks because this is how the objective is written in the Basin Plan. The axis here goes from zero fecal coliforms up to 1,200, and this is two data sets from 2004 and 2005, the blue being the 2004 data and the red being the 2005 data. And just for a reference, I have put on our water quality objective of 200 here on the chart. So we start with open space lands that contain wildlife and you will see these are much lower than the tributary objective there, and then we move down to these water samples we are taking just downstream from a lake that contains an extensive wild bird population and also has some grazing lands. The numbers are slightly higher. Then

we go over here to a watershed that is dominated by grazing lands and, as you can see, the numbers are quite a bit above our water quality objective and, likewise, this sample here was taken in an area just downstream of a dairy, grazing lands in a septage pond. And over here, this column represents our sampling location just downstream of horse farms and a number of septic tanks. Now, to further back this up, we assert that when we go out into the field and we take a water sample, that we do not need a DNA test to tell us that there is animal waste present in the water column. There, we can go out and we can take photos such as this, which is this cow pie sitting directly in the creek. We also assert when we go out in a water body, and this picture is – I think, you know, it is not difficult to see this kind of a set-up out there – and this is where cattle have free access down to the channel right here, and notice a few things – these water bodies are also listed as impaired by nutrients, sediments, and pathogens. When cow have direct access to the channel, we have a lack of riparian cover, or there is the lack of vegetation along the channel here which provides shade. There is also – you can see the cattle have been trampling along the banks here, so we get sediment discharges, and

then we get direct discharges from the cattle into the water of both nutrients and animal waste.

Now, the proposed implementation action for ranchers is to work with a technical expert and develop a plan for the ranch to minimize the discharge of animal waste to the creek, and propose an implementation schedule for undertaking such actions. This next slide is an aerial view of Tomales Bay and I just wanted to point out that we do have a number of homes directly along the Bay, as well as a number of homes that are fairly close to tributaries that drain to the Bay. Now, we assert that when and if we detect the presence of human waste in the Bay, it may be too late. In 1998, there was a serious outbreak caused by a virus of human origin making its way into commercial oysters. Likely sources include direct discharge from a boat or a faulty septic tank. A recent survey of septic tanks in the watershed suggest that up to 40 percent of these septic tanks are marginal or failing. The proposed implementation action for this source is preventative based. It requires homeowners to work with Marin County and bring their systems up to county repair standards. Now, I also like to point out that we have an $800,000 Prop. 13 grant out in the watershed. They will be working with homeowners for 20 to 30 homes, and they will actually

be moving the leach fields away from the Bay and closer inland for those homes and that is just the type of activity that we are trying to promote here. We also have an implementation action in preventing boat discharges and that is for the key management agencies in the watershed to develop and implement a boating management plan.

I just wanted to orient you quickly on the major tributaries here again for the watershed. This is the Walker Creek watershed with Walker Creek up here draining into the northern portion of the Bay, and the Lagunitas watershed down here draining into the southern portion, and then this light blue colored area here are the smaller tributaries that drain directly to the Bay. Now, as I mentioned earlier, a TMDL target must reflect the beneficial uses for the water body. So in review of what we originally proposed, we do support raising the tributary targets to 200 because that will still offer protection of beneficial uses. The allocations -- and I will talk about that in a bit -- as they relate to protecting beneficial uses in the Bay, and discharges as they relate to coming into the Bay, are still under consideration.

A question was also raised, and this is a question Board Member Wolfe raised at the April hearing

about background concentrations in the watershed, so I wanted to present this data set. The issue came up about the original proposed targets and their feasibility due to background concentrations. So the best data set we have to answer this question is from a small watershed on the western shoreline of Tomales Bay, close to the town of Inverness, called Third Valley. And, again, these are samples that are taken every five weeks for five weeks because that is how the objective is stated, and this depicts the average concentration for those five week sampling events in the summer of 2004 – winter of 2004, summer of 2004, and winter 2005. And as you can see, these concentrations are well below what we would be revising to be our tributary target. I would also like to point out that during non-storm events when wildlife are indeed present in the Bay, the Bay waters are below standards. Currently the Bay is shut down for shellfish harvesting on average about 70 days per year and these closures take place when we have high bacterial load entering the Bay from the tributaries. So we do not believe that the contribution of wildlife in Bay is significant because it certainly is not causing exceedance of standards during non-storm events.

Now, we have identified a number of tasks in the Adaptive Management section to help us continue to better understand these loads associated with wildlife, but we also propose stating in the Basin Plan simply that the Board does not intend to hold individuals responsible for wildlife discharges. To get at the question of allocations, I wanted you to take focus on the northern section of the Bay. This is the Walker Creek delta area. This is Walker Creek here where it empties directly into the Bay, this is the northern portion of the Bay, and the colored polygons you see there are the shellfish lease areas. So, again, our challenge here is to determine what concentration we need to have in Walker Creek as it discharges to the Bay such that the Bay 30-day water quality objective will be met. In order to answer that question, we turn to U.C. Berkeley scientists. We have been working with them for a number of years to develop a hydrodynamic model of Tomales Bay so we can better understand fate and transport of pathogens. Now, when we originally ran this model we proposed an allocation strategy of 43. And imbedded with that initial model run was a very conservative assumption that we acknowledge in our staff report, and that assumption was that there was no die-off of bacteria that took place. So what we did was we

took a look at this again, and I think we are recognizing that that consumption might have been overly conservative. Bacteria do die off the longer they are in the Bay; in fact, there can be significant die-off that takes place within a 24-hour period. And so what we have asked the researchers at Berkeley to do is to re-run this model with a bacteria decay coefficient. And to kind of give you a feel for the model and to kind of demonstrate that we do indeed use sound science here, I want to show you a little modeling scenario here, so I will point out a few things before I get the model up and running. First you will see the green coming in here; this is Walker Creek, again, where it enters the Tomales Bay Delta, and we have the center of the shellfish lease areas depicted here. Yellow is lease area 15, green is lease area 4, and red is lease area 17. Now, the green that you see here is essentially fresh water. We tagged every bit of fresh water that empties into the Bay as being green, and it does not decay, so you will see that it sticks around for some time. And then we assign a pathogen or bacteria concentration to that fresh water as it comes in. And as the model runs, you will see a red bar march across the top here, and you will see that in relation to the upper graph here, which indicates tidal stage during this 36 hour cycle that I am

going to demonstrate. So here is a high tide, low tide, high tide, low tide, high tide, low tide. This goes back and forth and you will see the influence of tides on the distribution of fresh water and potential bacteria concentrations of the growing areas. Now, we also simulate a storm within this period, recognizing that storms are when exceedances take place. So this is a hydrograph on the lower bar here marked in green, and this essentially is a wind-up to the storm. So we have got very low flows in Walker Creek, and then it starts raining. And here come the flows increasing. This is peak flows in Walker Creek entering the Bay, and then you see these flows gradually die off as the storm passes. So, with that, this will just give you an idea, and, again, this is with no bacteria decay depicted here, so we will see some different results when we actually look at decay. We will start this running and you will see the red bar marching across, there we are at high tide, low tide - still no storm yet - and now the storm - the flows start to increase, there we are with the high tide, storms increasing, low tide, you can see the green now coming in through the storm, high tide event marching down to low tide. Again, the tide is rising. We still have a fair amount of green in the Bay moving back and forth over the growing areas, down to low tide, again

moving around, and we see both the green areas or the fresh water being sloshed around in this area for a fair amount of time, and then new inputs coming in.

So that is just kind of a feel for what we are doing there. The model, interesting enough, runs close to real time. So what we simulate there for the allocations exercise is we simulate a 30-day stormy winter month that has one large storm, two medium size storms, and I think two to three small storms. To simulate that 30-day period takes close to three weeks of modeling time. So I think as we speak today, we just hit maybe the second or third storm in that sequence. So we expect results from Berkeley towards the end of June.

So I just wanted to hit on some quick revisions here that we are proposing to make to the Implementation Plan. We revised the Implementation Plan somewhat based on comments from State Board and that is – we are not really changing any of the required actions with those revisions, but we are making the language consistent with the state's non-point source policy. And I have heard from stakeholders already on some of those changes, and I think that is going to require us to go up and have some meetings with them to further discuss what that language means. It

is stated in the more regulatory fashion than I think the Basin Plan Amendment was originally crafted. So we are going to discuss that with them further. We have also made some changes to allow a little bit more flexibility and allow dischargers to actually propose back an implementation schedule to us, rather than dictating one. And we have added some of what we call comfort language in there emphasizing that we are not expecting dischargers to do more than what is reasonable and feasible, and that is language that we have used also in the Mercury Basin Plan Amendment. And then we have augmented the Adaptive Implementation section to better clarify some of the work that we think needs to be done to better guide future decisions regarding water quality, long term water quality protection, and then also grant priorities.

So what are our next steps? Well, first, I believe that we are doing the best we really can here to address the concerns raised by stakeholders and develop a TMDL that meets these basic requirements of the Clean Water Act and protects water quality. The basic premise of this TMDL is that individuals are responsible for keeping animal and human waste out of the waters that we swim in and the food that we consume. A serious effort is indeed required by all here. Keep in mind that we had two outbreaks of

water borne illness in this watershed resulting from people consuming contaminated oysters. And, in addition, in 1995 and 1996, in a special study, the deadly e coli bacteria HO157 and Salmonella were both detected in Bay waters. The presence of these two bacteria in a relatively small sample set does reinforce the public health concern and the call to action that we feel is imbedded in this TMDL. Now, as far as next steps, once we receive the model results anticipated towards the end of June, we will complete our revisions to the staff report and propose Basin Plan Amendment. We will then distribute these documents to stakeholders and then we will recommend that you provide stakeholders an opportunity to comment back to us on these revisions, we will make all appropriate revisions and bring back for you a TMDL for adoption. Thank you.

Chairman Muller – Any questions of Diane? Thank you again. She is becoming a regular here.

Mr. Waldeck – Through the Chair, you started off saying that our staff said that we were going to start and have – extend this hearing to July, and now we have skipped over to September. How do we end up in September?

Mr. Wolfe – Well, I think what you heard from Diane was that, while we have just last week put out our

latest revision, it is incomplete, that we want to complete this model and that the results from the model will not be available until the end of next week at the earliest. So then we will plan to, before the 4th of July, get our revisions essentially out on the street in that we want to provide 45 days of comment. And so that comes in mid-August, and then we will need some time to review those and make any further revisions as appropriate, and that sort of leads us into the September meeting. We also are required to complete and produce a response to comments. In other words, all of those 18 documents you have in your package we need to write up a direct response to each of those, and anything new that comes in, we also will need to address that. So we are trying to follow the whole idea of no surprises. We do want the input from the community, ultimately it is the community that is going to be involved in implementation, so we want to bring them along and make sure that they understand what is going on. I do note in this packet, the supplemental package which shows where we are on revisions, it sort of demonstrates we need Ray because I see that we have got our pages sort of back and forth. So it is 2 to 1, 4 to 3, but – at any rate – this is what is now out on the street, as you were, and so we are getting initial comments to the changes, but one of the

most significant is, as Diane said, running the model to see what we can do to further ramp up the numbers in such a way that we are still being protective, but provide that appropriate level of comfort in the targets.

Mr. Waldeck – And how about the model – does it tell us much new? I mean, we are waiting for the next report to come out –

Mr. Wolfe – I think our initial review is that it looks like it will allow us to at least double the number of 43, so it is headed in the right direction. And the basic point is that, by including die-off that is probably more realistic, we still want to ensure that we are being sufficiently conservative, but not so conservative that we are no longer realistic.

Mr. Waldeck – Okay, thank you.

Chairman Muller – And always allow a little maternity time. It is a busy summer time also with vacation schedules, and August we do not know if we are going to be able to pull together a meeting with the Board, I do not know. We are still discussing that. So that is why September.

Mr. Waldeck – Okay, thanks.

Chairman Muller – But we are going to continue to move forward with the responses.

Mr. Wolf – I just want to thank you, Diane, for answering the question about background very clearly. I also wanted to express what has been my main concern from the first time I saw this, just to be certain it is clear. I think you are working on this already, but in terms of the five steps or five elements that you described early on in the presentation, it is the fifth element of the Implementation Plan where I have the most concern and it is because I foresee a time three or three plus years from now when people come back and say, "You know, we did our best and we haven't achieved the standard," whatever it is – 43 or 200, whatever it is. We haven't achieved it, and then this Board will be confronted with deciding whether enforcement action is appropriate or not. And when people come back and say they were not able to achieve it, they are going to say, "Here is what we tried, here is what it costs, here is what the results were," and so forth. And unless that package is comprehensive, is credible, has some peer review, you know, make sure all the different types of interventions that might have been done have actually been tested in the field, unless all that has been done, we will be in a bad position. It will be very difficult to make a

good decision. And so until the Implementation Plan sort of lays that out, I can clearly see who is doing what, and how it is going to be coordinated, I am a little concerned about that element. And I just wanted to express that.

Ms. White – We have heard that concern and we are really trying to work to address it. One of the things you will notice is that we have this 2009 time frame and that is really the point where we do our first check-in about how things are going and, you know, we have not even done the basic things like identify all the responsible parties out there by name and location, and so there is an extensive effort involved with doing that and I think, to further that, again, getting folks to come and do the work on their property that they need to do regardless of this. We have a number of grants out on the watershed, we work very closely with the U.C. Ag Extension. We have really been trying to promote demonstration projects out there, and our hope is that we will come a long way in really getting a handle on what can we achieve given what the management practices that are out there and how that can be altered. And I really think that that is the best we can do. But we feel that the actions that we are calling for – we are quite clear that they will have a benefit, there is no doubt about that. It is whether they are going to get

us 90 percent of the way, 99 percent of the way, or 100 percent of the way, and that is just what non-point sources are about.

Mr. Wolf – I understand. I think the coordination of that effort or the pulling together of that effort is of still some concern to me. Imagine that each of us tried to paint part of the picture, you know, the total picture probably would not be that good unless somehow there was a coordinating mechanism. There is no party in the TMDL that is the coordinating party, as I read it. Maybe there is one and I am not seeing it yet, but who is going to coordinate to make sure that the different pieces of research and so forth come together and fit together and there are no gaps? Our staff cannot do that. And I am not clear on who is going to do that out there.

Ms. White – Between the Tomales Bay Watershed Council, the RCD out there, you know, the groups as part of the Watershed Council is actually a forum that we think can work quite well along those lines, and we do spend a lot of time working with them. So I guess that is my best estimate of how it needs to take place because we want it to be locally based and we want it to be done in a way that everyone feels that they can participate.

Mr. Wolf – Back to DNA testing – it was not just to better characterize where the coliform are coming from, but also to set up the argument, perhaps, that if there are elevated coliform above the standard, but they come from sources which are not harmful, then you would know it is not a problem when it appears to be a problem. Isn't that part of the argument? And how do you respond to that?

Ms. White – That is part of it, but you can also get at that without DNA studies and that is what we are going to be exploring. There may be some areas and there is actually a proposal in there to do a limited DNA study in a target area to look specifically at that. But you can also estimate wildlife contributions by simply going out and counting the number of wildlife and getting an estimate about the amount of waste they produce, and that is a relatively inexpensive way to try and grapple with relative contribution from some watersheds. So we identify that in the adaptive management section in that we are willing to work with groups in conducting such studies, but we need to really articulate the questions that we want to answer with the study, not just identify all sources that are out there, because we could just go crazy running around the watershed looking for those sources.

Chairman Muller – Shalom?

Mr. Eliahu – Yes. I have a question on that figure 2, that U.C. letter of April 18.

Ms. White – Uh huh?

Chairman Muller – It is in the packet.

Mr. Eliahu – In here, we have the storm flow which show points here. I guess this is the actual measurement of the coliform. And then the average of that, the way I see it, is about 1,000. And they base – the target will be 200. Still there is a big difference here.

Ms. White – Right. Well, what we find with that data is one will say that we can no longer use the watershed that was used back then as our pristine watershed because the land uses have changed in that watershed. So just to keep that in mind, that is why we do not have any new data that we can present from that location. But also keep in mind that this sampling effort was targeted specifically to go out during all storm events and collect data, and that is not how our objectives and our averaging period works for our objectives. So we go out and the objective states that you need to sample weekly for five consecutive weeks, and then average the data associated

with that five week sample. It is not that you go out and look for the worse case time after time to generate your average. And so, essentially, in the averaging period imbedded in the water quality objective if you think about it, it is an acknowledgement that you are going to have periodic exceedances and we recognize that, it is the 30 day average which is what counts, and so when David and these folks are going out and sampling, they only sampled during storm events, they did not randomly sample, they did not sample during consecutive intervals within that 30 day period, and so you are going to tend to have a data set that is skewed to the high side for that very reason.

Mr. Eliahu – How did you arrive to the 200 level?

Ms. White – Well, I am not that familiar with the basis of the original standard that is contained in our Basin Plan, but that is indeed the standard in our Basin Plan is 200 and that relates to recreational water quality uses, and it is a risk based analysis which essentially says if coliform levels are 200 or below, we feel this poses minimal risks to folks who are going out and recreating in waters. And once it is greater than 200, we feel that the risks increase because the likelihood of pathogens being present.

Chairman Muller – Margaret.

Ms. Bruce – Actually that brings up a question in my mind. How does that 200 relate to shellfish exposure to these pathogens?

Ms. White – It doesn't. The 200 relates simply to protection of the recreational water quality use and the 14 relates to the protection of shellfish uses. So what we are saying is that we acknowledge all the way up through the tributary where the recreational uses take place that concentrations do not need to be 14, they only need to be 200 to protect that use. So the question is when those waters at the bottom of the watershed enter the Bay, how much lower do they need to drop below 200 such that we can achieve 14 in the Bay, which is again a 30-day average number.

Ms. Bruce – Got it.

Ms. White – And that is what the modeling is going to help us do because you can see things fluctuate quite a bit during storm events entering tides, and if you wanted to pick out a 30 day average, you really kind of have to scratch your head unless you have a model that can crunch all the data for that 30 day period and give you some good numbers.

Ms. Bruce – Just one quick probably not significant, point. But you kept referring to animal sources. And I am interpreting that to mean domestic animal sources – cats, dogs, cows, chickens?

Ms. White – We say all warm blooded animals produce coliform bacteria.

Ms. Bruce - But those in the watershed that are there anyway, in a pristine watershed, are not contributing a pollutant. They are contributing coliform because that is what they do, but if you are – and this is sort of a response to one of the comment letters that was attached in the packet, and I think the point is well made, it is not a regulated pollutant. And how do you make sure that the community that you are discussing these issues with are really clear that those are minimal contributors from the wildlife perspective, and that when you talk about animal sources the dominant ones you are talking about are all of our human associated critters.

Ms. White – Well, you have touched on one of our big challenges.

Ms. Bruce – Is it possible for you to predicate the use of animals as domestic vs. the other ones and just say domestic animal sources?

Ms. White – Well, keep in mind that we are not regulating wildlife as a pollutant, per se, it is just we are recognizing them as a contributor of bacteria which is our indicator. And so we are proposing, actually, that we change the source category listings, and that is in the revised language, to not actually state wildlife as a source, but actually, since we have most of the sources listed by land use, acknowledge that there are open space lands in the watershed that contain wildlife and that those lands, similar to the open space areas that we monitored, do contribute bacteria concentrations to downstream waters, and just acknowledge that within our tracking. But then, to come back and say the statement that – when we work with individuals in terms of the Implementation Plan, we are certainly not going to hold them responsible for addressing these uncontrollable wildlife discharges within their area, and that is where I think we are going to have to do some real follow-up work as we move ahead and individuals who identify themselves as undertaking all the required actions as relates to managing waste from their domesticated animals, we certainly are going to work with them, monitor their property, and see if we can get a better handle on what is the actual wildlife contribution. So, again, they

are not being held responsible, but we are willing to work with them on that.

Chairman Muller – And we actually have a couple cards. Any other questions from the Board? First is Sally Posey and then Gordon Bennett are here, and I think whoever wants to go first, and it is kind of interesting because Grandpa would probably spin around in his graves looking, we have Farm Bureau and the Sierra Club coming together here on a card, which is a wonderful credit to the watersheds, really, I am very serious about this. Thirty, forty years ago, this was probably unheard of. But I compliment the watersheds for coming together here. So, Gordon, I guess you are first.

Mr. Bennett – Thank you. Gordon Bennett from the Sierra Club. I want to point out that, although I am wearing a black hat today, the Sierra Club is not interested in pursuing lawsuits. It has been reported in the press that the various environmental organizations are out to get the ranchers, we are not. We are looking for a cooperative based approach here and we think this Basin Plan is a good step forward in that direction. We like the changes that have been made. We think having a realistic goal is a very good idea. We acknowledge that wildlife

does make contributions to the coliform counts, but we feel that these are minor contributions and there are major problems that we need to move forward and work on. So we would look towards – we would favor the implementation of this Basin Plan and not have it held up while there is all kinds of red herrings essentially about what different kinds of wildlife are contributing. Those are minor contributions. The major problems need to be worked on, they need to be started on now. So thank you very much.

Chairman Muller – Sally, then – I think this name has a long history on West Marin out there, so hopefully she can speak towards the past – and the future. Thank you, Gordon.

Ms. Posey – Thank you. My name is Sally Posey and I am here representing Marin County Farm Bureau. We appreciate the efforts and the work the staff has done to revise the TMDL figures. We continue to request additional changes and would like to work with the staff for attainable targets for the years to allow continuing agriculture to be in compliance. We also continue to encourage the Board to include funding for source testing to maximize the benefits of the limited resources and actually improving water quality, and to help ensure that

agriculture is not inadvertently - or that the other sources are not inadvertently attributed to agriculture. We have concerns for our industry. The currently proposed estimated cost of $50-70 million for this TMDL will make it impossible for agriculture to continue to be profitable. Marin County Farm Bureau supports voluntary incentive based programs and we appreciate the Board recognizing many ranchers and farmers in this area that have voluntarily worked on improving management practices to reduce non-point and point source pollution. We hope that will continue. We have a concern that much of the funding has been through the EPA with habitat enhancement as a requirement. These successful projects have increased wildlife in the creek areas and have increased inputs from, so those who have done the best job of trying to comply end up having increased amounts from wildlife, which can then be attributed to their agricultural operations. This is one of our strongest arguments for requesting the DNA testing because we want to continue those voluntary programs that have been successful. I just received this draft today, we will comment on it in writing, and we appreciate all your efforts. Thank you very much.

Chairman Muller – Thank you for coming over. We do not have any other further speakers. Questions? If not, we will go back to staff and go to the next level.

Mr. Wolfe – As you say, I recommend we keep the hearing open. We will once we get the model run, we will further update the revisions, circulate that, and give a full public comment period focusing those on the changes we have made to date.

Chairman Muller – Everyone comfortable?

Mr. Waldeck – So is DNA testing our call?

Mr. Wolfe – Monitoring is our call. And our desire is to use, as we have talked about a lot today, the appropriate sound science to be able to drive the decision making. But I think one of the challenges that we have seen not only here, but on the mercury TMDL and throughout is when we may not have complete monitoring data, how can we move forward? I think we could say we are never going to have complete monitoring data that gives you 100 percent certainty as to the measures you are proposing or implementing are going to be successful. That is why we need to continue the monitoring and, as Diane says, we are looking at how we incorporate DNA testing and other monitoring to both demonstrate the progress we are making

and, really, are we achieving something? Are we minimizing impacts? And does this drive further implementation or say we should change what we are doing?

Mr. Waldeck – At its most effective, DNA is just a tool of many tools along the way. I think we all watch so many of these crime shows on television where "DNA testing shows that…," you know.

Chairman Muller – Remember it is television, Clifford.

Mr. Wolfe – Well, and, as Diane noted, to do this comprehensively can be quite expensive. And we recognize the need always to collect the best data, but we also need to do that efficiently and be able to make some steps, I think, as the Sierra Club commenter said, we need to make sure that we are moving forward and taking measures we can do now, but continuing to evaluate those as we move forward. And that is going to be the constant as we bring these TMDL's to you, that how are we using the data we have collected to date, apply science and technology to that to make the recommendations to you, and so how can we move forward while we continue to get that additional information and do adaptive implementation.

Mr. Waldeck – Thank you.

Chairman Muller – Thank you, Tom and Diane, for all the hard work in the watershed group out there. You know, the way I view this, also, is that you have got something going on for hundreds and hundreds of years and, you know, we are trying to make some decisions quickly in my viewpoint that this has been going on for a long long time. So I think at least we are starting. We are doing the right things, but I think we have to be cautious that we do not do the things that will disrupt that whole area that has been going on for hundreds of years, too.

Mr. Wolfe – Right. And I think Diane's point initially was that what we are putting into the TMDL is essentially what is already required. You are not allowed to – the Basin Plan already prohibits discharges of human waste. We already have a waiver and permit program for the dairies, things like this, so we are essentially pulling that altogether in what is in effect the Watershed Plan. And I know this makes the community nervous, especially when there is target numbers out there, that as long as it is a narrative, guess we can work towards something that is sort of squishy, a little bit, but when we have something written down with the target numbers, that is something that gets people nervous. So we are trying to work within that framework. We are required to move forward with the

TMDL, and we want to make sure that it is not just a paperwork exercise that ultimately either sits on the shelf or has this running back to you on a regular basis, to either make changes or to otherwise modify.

Chairman Muller – I do not know if I should bring this up, but very briefly, there is new discussion about watershed trading. Does that come under the TMDL policies at all, the potential of a watershed trading policy out there?

Mr. Wolfe – Well, I think the idea is that if within a watershed there are some impacts caused by one group that cannot be fully addressed, are there ways to get more bang for the buck by looking at another source category. I am not sure where we go with that approach in Tomales Bay. I think we also need to recognize that, as Diane noted, that we also have TMDL's in Tomales Bay that we will need to do for nutrients and sediment. And so we are trying to look at how some of the measures that might be implemented here can also be effective there. That is not the same as trading. I think that eludes much more to maybe the opportunities, for instance, in the Mercury TMDL to say we are doing things in the Bay, we have pretty much exhausted what we can do in the Bay, are there then things

we should do up in the watershed up in the Sierras that might be effective. So it is part of the whole equation. There is no one set way to do it, so we have got to keep an open mind.

Chairman Muller – Good, thank you. Then we will be looking forward to more information and responses and we will tackle them again in the future.

Mr. Wolfe – We will probably give you a report on the progress up to September. And, correct me if I am wrong, Dee Dee, do we need to officially consider continuing?

Ms. Dickey – I recommend that the Chair continue the hearing at the end of the hearing.

Chairman Muller – So ordered. I would like to continue the hearing until further notice – until September. Okay, good.

Before we move on to the next item, I would just like to introduce Craig Wilson for coming down from Sacramento. Craig, thank you. He is a very busy man with a Board hearing tomorrow, but he is giving us some time. So we have our head legal counsel here to make sure we are doing the right things, but for new Board members, we can

thank him for giving us – a lot of regions do not have their full time staff, I believe – is that correct – as we do in our office with our legal counsel. Because of Craig, we have had that opportunity. So, thank you. And we are looking forward to your briefing.

(end of item 7)