Appendix F

May 8, 2008 Item No. 7
Testimony Hearing Transcript

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Item No. 7

Mr. Wolfe – Up next is a significant item for today, is the testimony hearing for our Guadalupe River Watershed Mercury TMBL project, something a little bit different since there was recently a very good program that KQED put together on mercury. We are starting out the staff presentation by showing this short clip from KQED which puts mercury into perspective. I think it is useful for all of us. So we are optimistic we can get the electronics to work here? Great. Then we will have it up on the screen behind you.

Mr. Ponton – Good morning, Chairman Muller, members of the Board. My name is Jim Ponton. I am a Section Leader in the Planning and TMDL Division. Today we are going to show you a short Quest segment that sets the stage for the Guadalupe Mercury TMDL. So sit back and relax and enjoy it. [Clip]

Mr. Wolfe – Well, in effect, this is next week, so you will get to hear about that. You may recall that this Board has been very significantly involved with Mercury in the Bay and, after a number of years, the Bay-Wide Mercury TMBL has been approved by U.S. EPA. Likewise, this Board has approved a Mercury TMBL for the

Walker Creek watershed in Marin County. So this is another very significant component, the Guadalupe watershed, because this not only – as you saw from the film – has in-watershed impacts, this is a significant source and was identified as such in the Bay-wide TMDL. So with that, I would like Terry Austin to give the staff presentation building on what you saw in the Quest presentation.

Ms. Austin – Good morning, Chair Muller and Board members. I am Carrie Austin and I am an engineer working in Mercury, and I am very pleased to be here this morning to explain this project. Today I am going to give you a tour of the Guadalupe Watershed, describe the problem with Mercury, give a quick overview of the TMDL, and review our goals for the project, discuss our technical approach, and then the implementation plan to solve the problem. I will describe to you how the Bay and the Guadalupe Mercury TMDL's are closely integrated. I will review some of the comments and describe the next steps in the project.

So here is an aerial view of the Guadalupe River Watershed in Santa Clara County. I will describe how we divided the watershed into three portions. Let us follow

the water as it flows downhill. So we are going to start at the bottom of the screen down here in the green. The water flows up the screen north towards the Bay. So the upper watershed here is a very steep and hilly terrain. And reservoirs and lakes are found down generally in the middle of the watershed, and these are all artificial. There are no natural lakes in this watershed. The lower portion of the watershed is highly urbanized. The City of San Jose, downtown San Jose, is located here, as well as the San Jose Airport, and I will be referring to the urban area as downstream of the lakes and reservoirs. So the New Almaden Mining District is shown here, outlined in this red oval, and it lies along one of the lower ridges of the upstream area. Santa Clara County Parks owns most of New Almaden. On the east side, New Almaden drains to Almaden Reservoir and it also drains to Alaminas* Creek. The upper end of Alominos Creek is the historic town of New Almaden and the creek is lined with residences. And we have several residents here to speak today. On the left side, New Almaden drains to Guadalupe Reservoir and it also drains to Guadalupe Creek. These two creeks joined together to form the Guadalupe River and they flow into South San Francisco Bay. Let us get a close-up of

the mouth of the river. Isn't this beautiful? It is an aerial photo; actually, it is not a watercolor painting. And down in the lower right, the Guadalupe River comes in here to Alviso Slough, and past these former Cargill Salt Ponds, and into South San Francisco Bay. A slower portion of the river is subject to tidal influence, so it is part of the San Francisco Bay Mercury TMDL. And I will explain later how these TMDL's are closely integrated. The public bought these Salt Ponds and we are making a billion dollar investment into restoring them via the South Bay Salt Ponds Restoration Project. New Almaden is only 15 miles upstream and we need to turn off the tap to stop that mercury from flowing into this restoration project. So let us talk about the mercury problem.

Going back to our familiar aerial view of the watershed, but I have added a red line around the portion of the watershed that New Almaden drains to. There is a public health advisory in fish consumption in these waters. This is not like the advisory for San Francisco Bay. This advisory warns that no one should consume any fish from these waters. That is the problem we want to solve, so, first, how bad is this problem, really? Here are the five most frequently consumed fish from San

Francisco Bay, and it shows there the mercury concentrations. So on average they have elevated mercury concentrations, but you know that, that is why we already have the TMDL for mercury in the Bay. The right hand blue column is mercury in a top predator in favorite sport fish – striped bass. Let us look at fish mercury concentrations in another favorite sport fish – bass in reservoirs. So here I have added to the San Francisco Bay columns fish mercury concentrations in reservoirs downstream of New Almaden. The webbed bars are mercury concentrations just in top predators, so these are the worst case concentrations, these are not average. The two right-hand red bars are reservoirs adjacent to New Almaden. The red bar on the far right is Guadalupe Reservoir. At almost 6 mg per kg, it has the highest recorded fish mercury concentrations in California. The two left-most red bars are from reservoirs downstream of New Almaden. They still receive mining waste, but their drainage area is much larger and the mining base is diluted with cleaner sediment. Still, as you can see, fish mercury concentrations are elevated in these downstream reservoirs. Mercury in fish is the problem we are trying to solve.

Let me now explain this TMDL in a nutshell. The problem is not the mercury in fish. Pound for pound, wildlife eat more fish than we do, so we propose new water quality objectives in TMDL targets to protect wildlife. These targets also protect humans. We divided the watershed into three sections and we established TMDL's for each, the upstream area, reservoirs and lakes, and downstream areas, and the allocations are equal to the TMDL. Similarly, our implementation plan varies by watershed area. We propose to start at the top with erosion control at land sites. That will mean less mercury in reservoir bottom sediments. But that alone is not enough, so we also need mercury controls on reservoirs. Downstream creeks need clean-up and restoration. So we need to describe the TMDL team now, and I have already described the problem, so I will start with the targets.

This slide shows dietary preferences. Smaller birds like the king fish around the lower right eat small prey fish. And larger birds like the Osprey* in the middle eat larger prey fish. In humans, well, we have all heard big fish stories, so humans eat larger fish. The numbers shown in gold in the lower left were calculated by

the U.S. Fish and Wildlife Service and .05 mg of methyl mercury per kg of small prey fish protect king fishers, and .1 mg of methyl mercury per kg. of larger prey fish protect Ospreys. These are the proposed water quality objectives in the proposed TMDL targets. We calculated that these levels in prey fish are equivalent to .2 mg per kg in larger fish that humans consume, which is the same target that we establish in San Francisco Bay and in Walker Creek to protect humans.

I am going to introduce you now to our TMDL's and allocations, and then I am going to explain how we calculated them. Because this is a watershed with three different types of waters, we developed three different TMDL's in allocations equal to the TMDL's. Let us start with the upstream TMDL in the lower right green box. That is .1 mg of mercury per kg of sediment that erodes and becomes a bottom sediment in lakes and reservoirs. Low mercury concentrations in bottom sediments is not enough. We also need to control methyl mercury in the lakes and reservoirs themselves. That TMDL is shown in the blue box. It is 1.5 nanograms of methyl mercury per liter of water. Downstream, in the upper right green box, we used the sediment target from the San Francisco Bay Mercury

TMDL to establish the TMDL, an allocation of .2 mg of mercury per kg of sediment that goes to San Francisco Bay.

So now I am going to describe the sources of mercury in the reference site approach we used in developing the TMDL's and allocations, for the upstream area and for the lakes and reservoirs. Using Lexington Reservoir as a reference site, so Lexington is over here on the left, this reservoir here, it is located outside the influence of New Almaden, and it is outside this TMDL project. There are two sources of mercury to the reference site – naturally occurring mercury in soil and atmosphere of deposition, which is a global problem. Because mercury concentrations in fish here are typical of other Bay Area reservoirs, it is unlikely there is a local source for atmospheric deposition. Therefore, neither of these sources to the reference site are controllable via Water Board or Cal EPA regulatory authority. So the reference site represents the best conditions that can be achieved in this watershed without active reservoir management. The rest of the watershed outlined in red has two additional and controllable mercury sources; by far the largest source is mining, and also mercury from urban run-off.

Let me show you the strong link between mining and mercury in fish and why this TMDL is aimed at mining. This slide shows the relative importance of the sources of mercury to fish bioaccumulation of methyl mercury. On the left, the green column is our reference reservoir which has two sources of atmospheric deposition in mercury and soil. That dotted green line across this figure shows the relative contribution of these two sources to fish bioaccumulation of methyl mercury in all of these waters. The four reservoirs in red all receive mining waste. The two reservoirs adjacent to New Almaden have the highest fish mercury concentrations. And the two other reservoirs downstream still have elevated mercury. In this TMDL, we focus on the worst problem, mining waste. We sampled sediment from three reservoirs where we have fish data, so this X axis gives you the bottom sediment mercury concentrations, and the Y axis is mercury in fish. On the lower left in green is the referenced reservoir where the bottom sediment total mercury is .1 mg per kg. Then we sampled two other reservoirs that are downstream from New Almaden. Colera* Reservoir, in red because it receives mining waste, has a bit more mercury in the bottom sediment and in the fish. Way over on the right side is

Guadalupe Reservoir and it has, as you can see, quite a high bottom sediment in fish mercury concentration and it is adjacent to New Almaden. So we concluded that lower mercury in the sediment yields lower mercury in the fish. Based on the bottom sediment mercury concentrations in the referenced reservoir, we developed the total maximum daily load and the allocation for upstream areas of .1 mg per kg.

Next, I will describe methyl mercury TMDL and allocation to lakes and reservoirs. This is a graph of methyl mercury concentrations in the referenced reservoir over an annual cycle. Clearly, methyl mercury concentrations increase in the dry season and reached a peak of 2.6 nanograms per liter before it dropped off really steeply at turnover in the fall. To meet the wildlife targets within five percent margin of safety, we calculated TMDL and allocations, a solid black line, a seasonal peak of 1.5 nanograms of methyl mercury per liter of water. That wraps up our TMDL's and allocations which are .1 and .2 mg of mercury per kg of sediment, and 1.5 nanograms of methyl mercury per liter of water.

Next I will describe our plans to implement these TMDL's and allocations. There are two actions for

Phase I, the first ten years of implementation. The first action is to turn off the tap by starting at the top of the erosion control at mine sites. We know one thing that solves the mercury problem for sure – to keep it out of the water. _____ Hill was the largest mercury mine at New Almaden and, as you can see in the photo at the left – I think you can make it out – it is a bit of a messy operation. I think this is a mining waste dump that went down the front of the hill; on the right is the extensive clean-up that County Parks undertook. This was an extensive mine waste dump down the front and they brought in heavy equipment and they moved some of it up to here, they have benched it, they have put in V ditches to direct the storm water over to the side. This is source control, finally referred to as "turn off the tap," and we know it works. It is relatively simple to do, but it is needed on a large scale. To date, only the five worst sites at New Almaden have been cleaned up. Unfortunately, there are more sites in New Almaden in need of erosion control measures.

The second action is to develop methyl mercury controls for reservoirs and lakes. We are counting on the engineers at the Santa Clara Valley Water District for

this important control in technology. The photo on the left shows a solar powered water circulator engineers that the Santa Clara Valley Water District are testing in Lake Almaden. Preventing inorganic mercury from mining waste and other sources from being converted to its more toxic form, methyl mercury, is key. The Water District's engineers have already reduced methyl mercury concentrations by 90 percent. I believe that necessity is the mother of invention. And here the Clean Water Act and its TMDL requirement has created the necessity to spur invention. Although we cannot regulate innovation to happen, we can recognize and reward it throughout the development process. The photo on the right shows District Board member Tony Estrimetta* accepting the first ever Watershed Stewardship Excellence Award for all their work on mercury.

This too is the second ten years of implementation and that is the time to clean up mining waste in creeks. These photos illustrate the stream bank stabilization and restoration projects we are counting on to clean-up mining waste accumulated downstream. These photos are the project the Water District undertook along Alamedos* Creek. At these downstream locations, it does

not make sense to clean up until erosion control measures are in effect at the mines. But some sites would benefit from early implementation, and we will give credit for it.

The Guadalupe and the Bay TMDL's are closely integrated in the following ways: the water quality objectives protect sensitive wildlife in both Guadalupe and the Bay, and protect humans who consume up to one fish meal per week. Urban run-off allocations and implementations are the same as in the Bay and three TMDL. The Guadalupe Mercury TMDL implements the load allocations assignment by the Bay Mercury TMDL and they each plan 20 years for implementation. Stakeholders have been involved in the scientific studies for this TMDL through the Guadalupe Mercury Work Group which was co-chaired by Santa Clara Valley Water District and Water Board staff. Many of the members are here today and plan to speak. The proposed Basin Plan Amendment is based on detailed scientific studies funded by the Santa Clara Valley Water District and guided by the work group. The work group also reviewed and commented on their TMDL Project Report. Back in 2006, we received eight comment letters and we revised the Staff Report in response to comments we received.

Here are some key comments we received in our 2008 Staff Report: U.S. EPA urges adoption of the proposed water quality objectives and TMDL's. Clean water actions strongly supports the TMDL's focus on both total and methyl mercury. The Santa Clara Valley Water District expressed a port to ensure successful implementation and we are counting on partnership for that. Their conflicting comments on the proposed water quality objectives and how best to protect human health. One party recommended the U.S. Food and Drug Agency's 1.0 mg per kg action level. We propose a number one-fifth of the action level, .2 mg per kg, same as Bay and Walker were three targets. Others propose an even lower number to protect subsistence fishers. Several parties expressed concern over the scientific validity of the TMDL's, especially the source and linkage analysis which pointed the need to control the mercury from mining waste and not from atmospheric deposition.

We are confident the data support our focus on mining waste and the peer reviewers concurred. Many people expressed that, for the mine sites, the allocations are too stringent and are de facto clean-up standards. The allocations – the upstream and downstream allocations

– are not clean-up levels. We are going to revise the Staff Report in Basin Plan Amendment using language similar to that in the PCB's TMDL to state clearly that the allocations are not clean-up levels. Several parties have already undertaken mining waste clean-up and other actions called for in the Implementation Plan, and they want credit for these actions. They deserve credit. And we intend to clarify how credit for early actions is accrued.

In the coming weeks, we will continue to engage in constructive dialogue with stakeholders. Since receiving the written comments, we have had productive conversations with the Santa Clara Valley Water District residents, Clean Water Action, and Bay Keeper. We will continue to meet with stakeholders to clarify our intent and to build upon common ground to resolve issues. We recognize that this TMDL project and its implementation plan will not happen without the leadership and watershed stewardship of the Santa Clara Valley Water District. We are counting on them for coordinated watershed monitoring, methyl mercury controls, and downstream creek clean-up. We are preparing a response to all the comments we received and we will revise the Basin Plan Amendment and

Staff Report as needed. We expect to bring our revised documents back to you for your consideration this summer in August. These pictures show what we are trying to protect – birds, humans, and the largest wetlands restoration project on the West Coast. This concludes my presentation and I will gladly take your questions.

Chair Muller – Thank you for that thorough explanation of a difficult situation. Board members, we have ten cards that, so would you like to go through the cards first? And then we would ask staff for a recommendation and comments. With the time constraints today, may I suggest to the Board that if you need to get up and take a break, you just do it on your own? We are not going to take a total break here. How is that? At this time, we have a lot of cards, as I said. What I will do with respect to the private individuals who have made a great commitment to be here today, I will call on them first. So I am going to go in kind of reverse that I usually do. The first one will be – I think it is Michael Boland. Are you here? Mike, okay. We will start with you and then we will go to another Mike, Michael Cox, and then Roberta. Kind of follow-up each other, that way we will give you about three minutes up. How is that?

Mr. Boland – Hello. My name is Mike Boland and I am delighted to have the opportunity to speak to the Board today. I recognize your efforts to improve the water quality and our watershed has been impressive. I would like to invite you to join our environmentally concerned creek community to a river clean-up this Saturday because we have an active community in New Almaden. I am here to represent myself as a single property owner in the New Almaden area, and only to voice my personal opinion respectfully of the Basin Plan Amendment. I say this to the fact that only a handful of people in the Los Alamedas Watershed should know about this meeting and what are the issues being reported today. And I cannot say anyone here represents the total opinions of the last Alameda Watershed community. I strongly feel that the TMDL Amendment Plan needs to be revoked or postponed and be presented after a clearly informed active public community meeting has been held with the residents in the area. I am concerned that the Los Alamedas community has not heard all the results of the test, the reports, the studies, the recommendations from your representatives. I am concerned that the residents have not had the chance to respond to the revised Phase I and

Phase II 2008 dates set forth in this plan that affects me. I strongly suggest the best time to represent this Amendment to the community would be after the results from the TMDL reported actions are known. This action will limit the confusion of many messages from the Board and give the community a clear and simple action plan in which they could support. At this time, I would suggest a different model plan to be used with the Los Alamedas Watershed residents. May I suggest using parts of the Walker Creek Basin Plan Amendment as a model? This plan has a clear implementation methods. Living and working in New Almaden has been a challenge. For me, the challenges are to create new solutions and that we take new ways to design them. Therefore, I challenge the Board and your staff to create a revised Amendment Plan with new modeled goals for the Guadalupe River proposed Basin Plan, a plan that includes reachable standards, that includes [inaudible] around residents' participation, modification to remedy and community input to develop the best solution to handle current new threats, studies, data allocations and existing [inaudible]. In closing, I strongly feel that the TMDL Amendment needs to be reworked and must be presented to the community after a clearly informed Los

Alamedas Watershed Community has had time to respond to the new Basin Plan and then re-change it. Thank you.

Chair Muller – Thank you. Mike Cox.

Mr. Cox – Good morning, everyone. Thank you for giving me the opportunity to speak today. First of all, I want to say that I really appreciate the effort that staff has made in this TMDL. This is really a historic TMDL. We are dealing with the fifth largest mercury mine in the world. And this is probably one of the most prominent mercury investigations and clean-up actions that I can think of, short perhaps of the work currently going on in Almaden, spending the world's largest – five times larger than the New Almaden problem.

I am Michael Cox. I am here as a resident of New Almaden. I am here as a person who volunteered to help draft the TMDL. I have been involved in New Almaden professionally and recreationally since 1974. I closed the underground mines. I was the Field Manager for [inaudible] the DTSC faced three remedial investigations and I participated in all phases of the RIFS and RAP up until closure, and I have studied the mines and its history intimately since 1974. What I am asking for today is for the Board to delay the adoption of the BPA until

more work can be done on the TMDL. I think the comments that I went through in detail all seem to indicate different issues – some minor, some major, but it appears that there are some things that need to be done to adjust the TMDL. I know you have a process that you typically follow, but the thought occurs to me that it would be outstanding if we could reconvene the stakeholder group, the working group, and hash out some of these issues because a lot has happened in the last two years. There has been a lot of research that has come out of the global scientific community that was not available prior to 2006, and also the Santa Clara Valley Water District has done a tremendous amount of work on reservoir research on hypalymnion* control, using solar bees in order to see if they can turn over the water artificially, and thereby reduce methyl mercury, and they have had great success. And unfortunately we have not been able to integrate all of that yet into the TMDL. More significantly, I think that the current BPA language could be misconstrued by residents. It appears to threaten individual creekside homeowners with the threat of 13267 and 13304 actions in 2009 and 2010, and I think that really needs to be addressed and I agree with Mike Boland that the Walker

Creek DPA, I think, deals really eloquently with the issue of creekside homeowners. It simply says that, if they have any kind of permitted activity creek bank, some kind of permit for some kind of grading or creek bank action, that they would go ahead and follow what the permitting agency would impose at that time. Also, I am having a lot of trouble with the sediment quality goal. I note that, for the Gambinini* mine, the sediment quality goal in the mine area is 5. I believe there is a creek bank of 5 mg per kg suspended sediment and I believe there is a creek bank of 3 mg per kg, and then there is a .2 mg per kg at the point of compliance at the receiving waters, and that is the same that we have here. We have a .2 at the Bay, but we have a .1 at the mine. That is 50 times lower than the Gambinini* mine. And you have to recognize there is a concentration gradient here. The New Almaden mines were subject to erosion aliacin*, and at times there was substantial pliacin* gravel deposits of cinnabar. There is definitely a concentration gradient from the mine to the Bay. That gradient has not been characterized. Also, most significantly, prior to 1916, it is relatively easy to go back through the historical facts and come to the realization that something on the order of 200,000 kg of

mercury and one billion kg of waste was discharged in Alamedas Creek and flushed downstream. That waste is throughout the system. It remains largely uncharacterized. Its contribution to the mercury problem in the Bay is somewhat in question. And I think these are the substantial issues that I would like to see a little more forethought in the current TMDL and especially the Basin Plan Amendment.

I am also a little confused in reading the plan that has been laid out in the BPA because it appears to me that 80 percent of the money is going to more studies instead of mass removal. We certainly as a community, and I myself personally agree, that mass removal is very important here. If there is mine waste that are perched that are subject to erosion, that are in the headland areas, you definitely want to get those out of the system. It just does not make sense, even if it is only 100 kg of mercury, you know, keep it out. That definitely makes sense. So I really applaud the removal actions that the Water District has already undertaken. I believe they have removed something like 1,000 pounds of mercury already and they are going to do the Jeff Jock* Gulch work above Almaden Reservoir, so that is really great. So, in

summary, myself and others, Mike Boland, we have formed an organization called “Friends of Los Alamedas Watershed and we want to help educate the community work with the Water Board and get the word out to the community, but unfortunately there are some timing issues that happened. I myself have been uninvolved for the last, well, since 2006 due to the illness of my late wife. Now I am back involved. Mike Boland took the seat idea of a nonprofit organization to help pull together the agencies in the community to try to tackle this problem. That organization, thanks to Mike, just got chartered, just got its 501(c)(3) status, but it only happened just recently, so we have not been able to do all the outreach yet and get the stakeholders fully involved in this project. And all of these creekside property owners potentially have mercury contaminated stream sediments on their property – they did not put it there, but they certainly need to be educated about not putting sediments into the creek. So, in short, I am asking if it might be possible to work with staff on the TMDL revisions using the members of the work group. I am certainly willing to roll up my sleeves and come back together and do that. I am also asking if the BPA, if the Basin Plan Amendment could be delayed for a

little while until we can bang out some of the details, some of the issues with the TMDL, especially EPA notes. You have not talked about the permits, you have not talked about what exactly is being done to ratchet down, say, for example, the park storm water permit. You know, that is currently absent, so that needs to be addressed. And then there is a lot of confusion about – there is no daily load in the TMDL. I mean, it is a fish goal, but the science around sediment vs. fish concentration is very controversial. So I thank you for your time and I look forward to working with staff and having this be a world class TMDL that everybody can really be proud of and hold up as an example to the world. Thank you very much.

Chair Muller – Thank you. Roberta and then Steve Richie.

Ms. Lindt – Hi. I am going to talk to you today. I am Roberta Lindt. And I would like to say that I would like to say that I want to have a safe environment. I live in New Almaden and I believe that the proposed Basin Plan and TMDL implementation plan is so flawed scientifically that it makes me fear for environmental quality of the neighborhood and the San Francisco Bay. As a resident of New Almaden and a PhD

Geologist, I have attended two of the conferences listening to scientists on mercury and our pollution, and we need to [inaudible] could have approved Appendix A in the TMDL because it never distinguishes between the different forms of mercury. We have got elemental mercury, cinnabar*, dimethyl mercury, ionic mercuries, and those things have to be distinguished in order to do a proper clean-up. I am curious about who are the peers who approved the scientific basis. [Inaudible] not taken into account in the TMDL and I would really like to see that. In addition, some of the data mentioned in Appendix A is not backed up by any [inaudible] such as the fish in the Guadalupe Reservoir have 20 times the amount of mercury [inaudible] when it was clear that it is not anywhere near that. And the graph that she showed was comparing different species, which is not a good way to compare amounts of mercury in the different places. I am sure there is more mercury in the reservoirs because it is stagnant water, except for [inaudible] and that is something that should be taken into account. The staff summary report was also flawed. It includes a simplistic radio program as giving a great overview of the program in six minutes. This simplistic idea of pollution is just

like litter – pick it up, bury it, and it is gone. It is not a good idea, especially this being groundwater mess according to one of your pamphlets outside. Right now, we have got it is buried, water is leaching through the stuff that has already been buried, bringing out different amounts of mercury. So I do not believe the science is right in the TMDL. The detailed scientific studies mentioned in the report did not include predictions or plans for chemically testing the sediments before and after and during remediation, which if you do remediation as a kind of test as this work to keep mercury out, that is absolutely essential. And I have a fear that the people who are doing the clean-up might not want to see that close of extra mercury dumped into Almaden Reservoir into a stream that will come after bulldozers or [inaudible] fines are being created, more fines than there are now, and the air pollution that might come from a whole dumping thing. They might want to keep the things moist, but I have seen bulldozer operators in action and you can make a lot of rules about how they should do their work, and then different things sometimes happen. We do not want to deposit more mercury in the air, even though the Calcines* in Jacques* Gulch do not have a lot, and not

a lot would be deposited in the air, nothing like the refineries or Kaiser Cement Company, but that is a problem. You really do not want to add anymore at all to the air –

Chair Muller – I need you to conclude, please.

Ms. Lindt – Okay. The action required at this time, as far as I can see, is to make the TMDL's accurate, to extend the amount of time available to make the revisions, and to include scientists and the affected homeowners along Los Alamos Creek, Guadalupe Creek, and [inaudible] Guadalupe Watershed – get them all involved in the revision process. Thank you.

Chair Muller – You are welcome. Thank you. Steve, followed by Beau Goldie.

Mr. Richie – Thank you, Chairman Muller, Board members. It is good to see some old friends here. I am Steve Richie. I am the project manager for the South Bay Salt Pond Restoration Project. And [inaudible] which you have before you is hard. If this were easy, you would have done it a long time ago, and it is just very very difficult to deal with it, so I hope you rise to the challenge because, frankly, this is as far as I am concerned probably the biggest mercury issue in the Bay,

the source, and the Guadalupe River – the source is in the Guadalupe River. The previous speaker mentioned mercury workshops, SFEI hosted mercury workshops for researchers once a year, folks get together, show their data and information, and I have been attending those regularly, and one thing is extremely clear – there is a lot of mercury already down in the Bay. In fact, in the salt pond area that we are working in, those were dyked off after the mercury mines really had seized operations. So there is a lot of mercury there already that we are having to deal with. And you have spent collectively probably $5 Million in the South Bay assessing what is going to be the fate of that mercury, and how it interacts with restoration. At the last two or three meetings, we had a discussion at the end and we all talked about, okay, so what should we really do? This is not just science, what should we do to actually solve a problem? And the consensus is pretty clear – I mean, Carrie captured it – "turn off the tap." So we need to move to as efficient and effective remediation actions as possible. The TMDL seems to be the key to those. You are hearing debates about whether there are flaws in it – I appreciate the communities' concerns, though, in making sure their

involvement is extremely important. I would look to the Water District most to help work with folks there to make sure we move forward. But I would urge moving forward as rapidly as possible with the TMDL to make sure we eliminate the source material because we will be spending in the billion dollars plus downstream, trying to make the Bay as good as we can make it. And one way to do that is to eliminate the source of mercury from the Guadalupe. Thank you.

Chair Muller – Thank you, Steve. And following beau will be Kirk Livingston.

Mr. Goldie – Good morning Chairman Muller and Board. My name is Beau Goldie. I am the Deputy Operating Officer of the Santa Clara Valley Water District. I would like to thank you for the opportunity to speak with you today on this important issue, the amendment to the Basin Plan for the Guadalupe Watershed. I also want to recognize the difficult task the Water Board has in providing for protection of water quality, with special acknowledgment of the hard work of Terry Austin, Jim Ponton, Tom Remley* and also Bruce Wolfe for the development of these amendments and the implementation.

This is a very difficult and thankless task. We recognize that.

The District and the Water Board have had a very long history working together. It was back in 1987 when underground storage tanks became a problem and that the Water Board and the District got together and started [inaudible] program which expanded statewide. I was actually part of that back then. I have been there for 23 years now. Also, in the early 90's when we partnered on the non-point source pollution efforts, the District, I believe, with the Regional Board implemented a program early on there. And then with the TMDL, we needed some scientific-based data to be able to put together a TMDL, and the Water District stepped up and provided the funding and the research to help put us where we are today. We believe that to successfully implement this TMDL, we need to continue that partnership, and the District is willing to do that. We have provided some written comments to you, ensuring that we will have a successful implementation of the TMDL, but we believe that it is important for us to continue this partnership – we also believe it is important to do on-the-ground work as opposed to a significant amount of additional studies.

There will be some additional studies, but our interest is getting things done in the ground. You can see that, as we have already pulled out more than 1,000 kg of mercury and we have also worked with our reservoirs and Almaden Lakes in the significant areas to address the methyl mercury issue. And this is without any kind of regulation – it is consistent with the Water District's stream stewardship mission. We have provided those comments that you have, they are written and I really do not want to go into those in detail. I would like to emphasize the District's interest in partnering, that we also need to recognize that there are limited financial resources available to do this. The District has estimated right now that, just in mining alone, in response to permits, all the permits that were [inaudible] spending about 18 million dollars a year in monitoring, alone, in about 2018. That is a significant expenditure and we are working on ways to reduce that and put together more comprehensive types of monitoring. What I want to be able to do is to come back to you with the adoption, with the support of my Board in this partnership effort. And we have been working recently with Tom and staff to actually

get to that partnership level so we can come back. Thank you very much.

Chair Muller – Very good. Thank you. Kirk and followed by Andrew from Guadalupe Rubbish Disposal Company.

Mr. Lemington – Good morning, Chairperson Muller and the rest of the Board. I am Kirk Lennington and I am the Senior Resource Planner for Mid-Peninsula Regional Open Space District. We own about 17,000 acres within the area directly adjacent to the Guadalupe River Watershed. Only a small portion of our land actually falls within the watershed that drains in the Guadalupe Creek and Guadalupe Reservoir, and we only have a few small sites that have a history of mercury mining in the area. I am up here to offer my commendation to the work that has been done so far on this TMDL, particularly the work of your staff. Carrie Austin has been fantastic, as well as the support and the leadership of Santa Clara Valley Water District. Their support of this project has been instrumental in getting us to this point. I also would like to second the comments you have heard already about the implementation of the project to turn off the tap of mercury production. We are certainly ready to move on projects on our lands

and we would like to encourage everybody to get moving on the projects on their properties, as well.

One of my concerns with the TMDL's as it stands is with the monitoring component of the document, particularly the recommendation for the coordinated monitoring program. My experience when I started with the Open Space District and started attending the work group meetings is that there are a number of very disparate interests present within that stakeholder group. I think trying to get everybody on the same page in a voluntary manner to have a coordinated monitoring program is a very great challenge and I am uncertain about the success that we could expect with that if left to the work group's own efforts to organize ourselves in the monitoring program. I would like to see some stronger leadership from the Board in organizing that monitoring program, to actually provide the direction and the leadership for that. Thank you.

Chair Muller – Thank you. Andrew and followed by Parks Director, Lisa Killough.

Andrew – Good morning members of the Board. Thank you for the opportunity to be here to present comments on behalf of Guadalupe Rubbish Disposal Company.

I am Andrew Kenefick. I am Senior legal counsel for Waste Management which owns the Guadalupe Rubbish Disposal Company. The company owns property in the Guadalupe Watershed and the landfill which was at the north end of the mining district in that Guadalupe Creek on the west side, and then it curves to the north side of the property as well. We, the company, have recognized in the form of addressing the mercury issue for a long time and have been involved in both monitoring and participating in various works with the state and government agencies on issues with mercury. I do also want to thank the hard work of Carrie Austin, in particular, on this very difficult and rough and challenging problem. We have worked together and know sometimes we do not agree, but I know all the efforts are in the right direction. The company in the end does not want to see a well supported, scientifically based TMDL. We are current landowners and so I think the feelings shared and demonstrated earlier, of most if not all the people who are impacted were not miners – we did not mine the property, we did not cause the mercury contamination in the beginning, yet we have inherited the legacy and we here need to be able to deal with the problem, but deal with it as landowners. We have

submitted separate comments and I just want to highlight three of those comments that we made. One comment is a pretty fundamental one which is the total of the TMDL, Total Maximum Daily Load. No matter how you feel about the TMDL, the TMDL Report, one issue that has to be addressed, I believe, by the Board, and ultimately EPA will have to address it as well, is the fact that this is not really a daily load. The Clean Water Act specifically says the state shall establish total maximum daily load. And there has been at least one court case that I know EPA has issued guidance on it, saying that daily means daily. You cannot do something that has already been daily and in a case like this particular TMDL, you saw that it is not a concentration where it is kg per day or any kind of rate, it is based on mg per kg. So it is a concentration-based and not a rate-based TMDL. And I think, as I said, no matter how you feel about it, I am not clear, I am concerned because I think that the TMDL certainly is vulnerable to criticism for having what may be viewed as a fundamental flaw. I did notice EPA submitted comments on it, but they did not raise this comment, so I do not know where EPA is going to come out on it, but it is certainly

an issue that I do not know the answer to, and I do not know how the Board intends to deal with that.

The concept of it being a concentration as opposed to a rate is significant, not just for purposes of the Clean Water Act, but I think it is a concern of the landowners because a static is a static concentration, and the term that the TMDL uses is a ratable [inaudible] which is defined to be a portion of bulk material that is potentially available for transport by storm runoff. And as a landowner, and for other landowners, that is a very troubling statement or definition because we do not know – what does it mean? Potentially variable for transport by storm runoff. It could apply to our soil. How is a landowner supposed to know what to do in terms of trying to figure out what a point 1 or point 2 standard is? If you go out there and you test your soil and you find that you are above that level, what do you do? Do you have to excavate it out? Do you have to vegetate it? What if it is on a hillside? What if it is not on a hillside? Is it now potentially subject to erosion? And I was pleased to hear Carrie's comments at the beginning to emphasize that it is not intended to be a clean-up standard, but I am sure that that is going to be a lot of discussion that

would be had over the revisions to the TMDL and the TMDL report in terms of clarifying whether or not it truly is a clean-up standard because [inaudible] as a concentration and not as a rate, it starts to look like a clean-up standard. Go out and sample it, if it is above, you have got to clean it up; if it is below, you are okay.

We also think it is somewhat unfair to say that it is a concentration-based clean-up standard because it does not really tell you what is impacting the water. You may have some people who have discharges that have certainly above the point 1 standard or point 2 standard, yet they are discharging very little sediment into the stream, and therefore very little mercury. On the other hand, there are a lot of dischargers who discharge a lot of sediment, although maybe at levels that are below the clean-up standard. The net result would be a lot more mercury going into the system, you know, kg per day sort of an analysis, and from the discharger who has got levels below the standard, as opposed to someone who is just discharging a very little bit of mercury. So, in other words, the rate is not critical. The rate is critical in that the concentration –

Chair Muller – I need you to summarize.

Mr. Kenefick – Okay. The last of the piece here is we do support the motion of trying to work upstream and working downstream in terms of the clean-up. It does not make any sense to focus all of your clean-up efforts downstream, only to have the recontamination occur from the upstream sources. We know it is a challenge, we also know that the time needed to accomplish the clean-up could be substantial. The mercury has been there for a long and it may take some time to solve the problem. Thank you very much.

Chairman Muller – Thank you. Following Lisa will be Andrea.

Ms. Killough – Good morning, Chair Muller and members of the Board. I am Lisa Killough. I am the Director of Santa Clara County Parks, and our organization is the caretaker of Almaden Quicksilver County Park. Since purchase of the park in the mid-70's, the county has taken their responsibility for clean-up of the mining by-product – the name is Calcines* and this is through two separate regulatory processes aimed at minimizing risk to human health and to biotic life. These two processes are resulting in the clean-up of the known calcign deposit areas in the park, and the county is expending

considerable money to that end, the first efforts costing approximately $6 million, and the second is estimated in excess of $2 million. Now, I mention these efforts to underscore the fact that the County has never shirked its responsibilities for management of this well-loved park. We have stepped up to the plate to address contaminate issues, even though we have very limited resources. And I will underscore what was previously mentioned about resources – this is an issue for the county, as well. Now, I mention these efforts as a way of noting that the county has never shirked its responsibilities and that we come to you with a sincere plea to consider our record in managing this property for the public, to address the risk for mercury, but also to allow for public enjoyment of a beautiful park. We are talking about a park.

Our biggest issue with the report is it appears to set a very narrow standard in the Basin Plan for addressing all forms of sediment mercury in the watershed. Now, that is whether Calcines are naturally occurring sediment mercury. Now, why we believe the objectives for using the standard are well-meaning, we do not believe that the standard is attainable because of the natural geology in the park and the watershed, and also because we

have a responsibility for the protection of habitat values, and that has to be considered in the equation. The relevant argue now on the DTL's of this proposal, we acknowledge that this is a complex issue, and we are going to proceed and recommend that we do so in a phased approach that provides flexibility for adapting our approach in light of additional research, while allowing the county to proceed with other control measures that are within our ability to affect in the near future. We care about this issue, we care about the work that the Regional Board has done on this, and we thank staff, in particular, for the amount of effort that they have put into this. We want to take a collaborative role in this process, and we ask that you carefully consider our written recommendations in your deliberations and that you provide more flexibility in the implementation process than is presently envisioned.

Chair Muller – Thank you. I just want you to know that I do not think personally – I have never thought you shirked your duties. I mean, you guys have got a tiger by the tail down there with that park. So thank you very much for your input. Andrea, please.

Ms. Ventura – Hi. Good morning. Thank you for allowing me to speak before you again. My name is Andrea Ventura. I am with Clean Water Action. I am also here on behalf of the Environmental Justice Coalition for Water, which [Inaudible] is a member of. And I should add, by the way, that I am a San Jose resident that lives very close to the Guadalupe River, so maybe a little bit of a personal stake here. I have followed the progress of this TMDL's development since mid-2003, which forms the basis of our comments and recommendations, which we have already sent in writing, that you have. So I am not going to focus on anything that we have commented on in the past, but I do want to especially commend the hard work of this Board's staff, particularly Carrie Austin, who has shown a lot of leadership on this, as well as our Water District. There has been a lot of effort over these years.

There are aspects of this TMDL that we think are very very good and reflect a strong level of innovation. We agree with the tone of the tap from the Mines Program that has been outlined, it is very important. But there are some areas of deep concern that we would like to see addressed before this TMDL moves forward. Regarding the issue of looking at those methyl and total mercury loads,

we think that is extremely important. Our organization is very concerned, as I think you know, with the impacts on subsistence fishes who are being exposed to higher levels of mercury than is healthy. Currently, the ultimate goal must be to address the total mercury problem, but given the extreme nature of the contamination in this watershed, we are looking at decades and decades of work ahead of us. Both our communities and our wildlife are being affected now, so anything that can be done on the ground to interfere and reduce methylation would at least protect our communities in the interim. So we truly truly do support that and think that the fact that this Board and the Water District, by initiating an innovative and promising pilot project to address methylation, demonstrates the sort of leadership that we look for in our water agencies, as well as a commitment to protect our impacted communities. That said, because this has been proactive, and this is moving ahead, it makes us a little more disappointed that we have what we believe is a fish target that will not protect those communities in the end. And there is no language in the TMDL reflecting requirements for exposure reduction activities over the course of the time that we will be working on this

watershed. Basically the 32 grams a day fish target was established without characterizing the actual fishing practices in the watershed. But if you go to any nail salon during the week and ask the workers there in San Jose what they are going to be doing this weekend, more than not you are going to hear that they are going fishing and that they bring their fish home, they eat that, their children are eating it, and it is a potential issue. And, you know, we have put a lot of investment in characterizing the watershed and the problem, and even the wildlife, but you are not looking at the human fishing practices. We think that needs to be done and we would like to see something in the TMDL that reflects that you will move ahead with that. In the interim, we do believe that we need at least an objective in line with U.S. EPA's target of 142.4 grams a day, which will allow people to safely eat higher levels of fish in the future. We also do not believe that relying on Lexington Reservoir to establish we are safe is appropriate just because that reservoir is not impacted by the mines. There is an air deposition problem that is difficult to control. If it is coming from overseas, however, that does not mean that the fish are safe to eat for subsistence fishers.

Chair Muller – I need you to conclude.

Ms. Ventura – I will conclude. We also believe that exposure reduction requirements should be both into the TMDL as was done in San Francisco in the San Francisco Bay TMDL, that had been mandated for that TMDL by the State Board. Clearly, we do not want to be in the position – and I know you are committed to doing the right thing – we do not want to be doing the right thing just because the State Board tells us to. We need to be thinking about this. So what we recommend is that the TMDL does include an intention to study fishing practices in the watershed, but we plan for -- once that information comes forward, plan for including exposure reduction requirements as needed by that study. We have a big problem – we may not have caused the problem, you know, we weren't the goldminers, but we are the ones that are responsible for dealing with one of the most polluted rivers in the world and protecting people that are using it. Thank you.

Chair Muller – Thank you. Maybe stand by here for a minute. Bay Keepers wanted to make a comment and they were going to have James do it, but I might just have her do it. It is a little more comfortable. Is it a

written comment? Is it lengthy or – alright, would you mind reading it for Bay Keepers, please?

Ms. Ventura – Not at all.

Chair Muller – I think that would be – Bay Keepers – Sarah was called away to jury duty.

Ms. Ventura – We have to do our public service. Right? Okay.

Chair Muller – You guys are kind of partners.

Ms. Ventura – Well, we have worked together and we often agree, not always, but usually. So this is from Bay Keeper. And I am going to mispronounce your last name here, so forgive me. "Good morning, members of the Board. My name is Sara Aminzadeh. And I am here on behalf of San Francisco Bay Keeper. Before I go into my comments today, I want to commend staff for the innovation of this TMDL and targeting the methyl mercury. We certainly appreciate that. Bay Keeper submitted written comments on this TMDL on the 21st and instead of reiterating those comments, I will focus on another issue which we found important – the [inaudible sources of aerial deposition]. [Inaudible] all of our local area sources will become a larger piece of the puzzle. Additionally, mercury deposited through atmospheric deposition is [inaudible] than native mercury.

In the San Francisco Bay TMDL, the Board has stated that the Bay Area Air Quality Management District 'should conduct a local mercury emissions in each Bay and investigate the significance of local mercury air emissions.' That is from page 22 of the Basin Plan Amendment. Staff has informed us this provision in the San Francisco Bay TMDL is intended to cover the Guadalupe Watershed, however, in our opinion, [inaudible] does not clearly define the scope of that [inaudible] with the watershed. Even if this TMDL is designed specifically to address the [inaudible], we request that similar language be added to the Guadalupe TMDL specifying the Guadalupe Watershed as a local area particularly in need of inventory investigation. [Inaudible] the TMDL should cross-reference the atmospheric deposition section in the San Francisco Bay TMDL to clarify that it is intended to cover the Guadalupe Watershed. Additionally, Bay Keeper urges the Board to move forward with Bay Area Air Quality Management District on this inventory by creating a time frame [inaudible] steps for the data gathered. We ask the Board to amend the TMDL to provide for a special study to evaluate the effectiveness of existing control measures and the feasibility of load reductions for [inaudible]

specifically in the Guadalupe Watershed. We also want to echo Clean Water Action's comments regarding subsistence fishing and agree that a target that all of us can fish out of the watershed one meal per week, would not be appropriate. [Inaudible] the watershed and implement exposure reduction strategies as needed. I want to thank the Board members for taking the time to hear comment on the Guadalupe River TMDL today." I will just say that we will echo also their opinion on the [inaudible].

Chair Muller – No bonuses there. Come on. Thank you.

Ms. Ventura – Thank you.

Chair Muller – That concludes the cards I have at this time. There are a lot of questions. I just remind us all that this is the first of the two hearings, so there will be no action taken. So there will be a lot more questions to answer after what we have heard today from our testimony, and I guess, briefly, does the Board have any questions that are owning of the comments to give back to staff at this time? Or what are your thoughts?

Dr. Singh – I was going to say, because many people are requesting that we should be flexible and give them more time, get the input from residents as to how it

will impact them. Some of them are making comments how we will test the sediment, how we will monitor it, and apparently the Santa Clara Valley Water District has been spending money monitoring. Apparently the County of Santa Clara Parks Department is involved. But these are comments about a request for giving more time. What do you think about it?

Mr. Mumley – Hi, this is Tom, I am Assistant Executive Officer. First I recall your attention that this TMDL has – actually all our TMDL's which are challenged with very complex situations employ a phased, adaptive implementation approach. So a lot of the issues raised have to do with we need more information about this very complicated situation. We have taken the approach of integrating the need for additional information as part of the implementation scheme, and even heard concerns about spending money on studies vs. money on actions, and that is always the challenge that we are faced with. We want to make sure the money spent on actions are smartly used. Back to Board Member Young's term of "no regret" actions. So we are really calling – this TMDL, as with all other TMDL's, again, faces that concept that we are calling for early actions that are expected with reasonable confidence

to be meaningful. Now, with that in mind, there are details in to how those decisions will be made, and a lot of the concern I hear can be resolved, partly at least, from clarification, to be clear about how this will play out as we get more information. There has been outreach to local residents, obviously, but I would say not enough. And we have been working in partnership with the District to address this issue. But we are certainly committed to enhance our effort. But, again, to phase adaptive implementation, the Alamedas Creek restoration aspects or clean-up aspects, are subsequent phased steps. So spending a lot of time now vs. taking action on the mine waste may not be the most prudent way of going about business. But we certainly will use the time between now and when we come back to you to go out, to communicate with the local residents. Similarly, we will work with the parties who expressed concern that the concentration approach results in a de facto clean-up standard. We clearly have a challenge – or opportunity, I would say – to be clear about how that plays out, that it is not a clean-up standard, but there is a process that will have to be used to determine what sites will be attended to, to what level. Our approach will be to spend time reviewing

all the comments, and go sit down with all these key parties to make sure they are clear on what we are proposing because I think some of the concerns reflect the difficulty we have in writing a Basin Plan speech vs. plain language that people can understand, and that is a challenge I think we can take on.

Chair Muller – Shalom?

Mr. Eliahu – Yes. I support the staff for moving that in. I think it is about time to take action to clean that source of mercury, or saying we should not delay the action at all, but we should talk with the stakeholders and find out what they need. The only certain thing I can see from that is really closing that source, the upstream. The rest of it, holding even to the report, it really is trial and error to change a lot of things. I see here in Table 43, for example, uncertainty of 500 percent. So this, to me anyway, that we are going to learn as we go. So I support staff and I think we should take action not today.

Chair Muller – I am going to come back here – Steve?

Mr. Moore – Well, I want to drill down a little more [inaudible] and speak to the issue of a numeric

target vs. the standard, because I think it can work. But there is nothing in the TMDL, I think – and correct me if I am wrong – that says, you know, that is for soil on land in the watershed. I mean, the Water Board is interested in concentrations of the pollutant in sediment in waters. Is that correct? Waters of the state. So I want to try to make clarification on this matter that, you know, the clean-up standard is more in the purview of programs related to clean-up of specific sites and soil targets. And in the TMDL arena, you are talking more about the condition of sediments and concentration of pollutants in the water bodies. Is that a fair clarification?

Ms. Austin – This is staff, Carrie Austin. Yes, it is a fair characterization that the TMDL is related to the mercury concentration in the sediments in the bottom of the reservoirs. And also in the Staff Report, I have described how clean-up levels could be calculated. So we did anticipate this and we have some ideas. We do not have the sampling yet. We thought each party would like to undertake that on their own account, on their own projects, to define the clean-up levels. And that would be written into the permits.

Mr. Moore – Good. And so that demonstrates that there is a step removed with respect to this regulatory action and that target, and what ultimately would be done on site that would be addressed under this TMDL. I am interested in the engineering aspects of the suppression of methylation in reservoirs. I believe we have internal combustion engines and automobiles, and we learned that we are creating air pollution, so standards of smog internal equipment on those engineering devices in the environment. Similarly, with reservoirs, they are artificial, impoundments of water and landscaping leads to water quality transformations, and so what we have learned – and it seems like we are on the cutting edge, that, to me, this is not new information, there is hypoxia – low oxygen conditions are created in these artificial impalements and, whereas technology available to ameliorate the adverse impacts of hypoxia in these artificial impalements, it is great to see the District pioneering some work in terms of applying existing technology to manage the reservoirs in accordance with what should be done to protect water quality. I think it is fantastic. But I read the comments from the District and I want them as a partner to this Board, but the tone of them was very

critical of staff and I looked and thought, “Well, why don’t we just issue EDR’s on reservoirs to manage the adverse impact on water quality?” So that is a backstop in terms of protecting waters, and I want to put that out there, that we want to be partners, too, but we do not need to be pushed around in terms of that. And we do not have to necessarily say they are, you know, this is some cutting edge reservoir management work. So I was kind of put off by the tone of the comments, but I am going to leave it at that and we will come back to other points later. Thanks.

Chair Muller – I am going to jump down here to this side and we will go back and forth here. I need someone to take a picture of this Board at full capacity here. Where is the camera, folks.

Mr. McGrath – I hope you will bear with me for a minute. This is complicated and I have some ideas and some thoughts about what should come back to this Board, and some of the reasoning that should go forward as we move it from beginning to turn off the tap and monitoring.

Total mercury – I listen to Mark Marvin, Deepest Quality* (DPS Qual?) yesterday and he continues to just about completely baffle me with his concept of reactive

mercury, which is a third species. But I think it makes the point that total mercury is not the metric that we are going to use for all time as we begin to understand the process of mercury. Obviously it matters downstream because we are trying to restore resources, and we need to work on turning off the tap. And it is not going to be easy to turn off the tap. But we need to begin to move away from total mercury into methyl mercury and perhaps reactive mercury, so we have the tools to monitor as we move forward. That is fairly clear. The problem with using total mercury is, once there is enough to initiate bioaccumulation, the landscape and factors like green size, the precise geochemistry, particularly carbon, organic carbon, sulphur and iron, all matter more than concentrations of total, as well as the food chain and the natures of the food chains. So we need as we move forward to begin to reflect the adaptive management process into picking these things up and beginning to use them as metrics. The issue that has come up very well in testimony here is what is the background? Are we trying to clean this stream up below the background? And as I began to kick that around and think of my own background in stream management, could we know or estimate the

background? And would it have led to fish levels that were at one time unsafe? And as I began to think more and more about it, I go back to the reservoir question because, in this system, I think reservoirs are a big part of not just the methylation process, where we are absolutely on the right track of controlling that, but also the morphological reasons that we got mercury problems in this watershed. Robin Grossinger of SFEI has done work on what the historic landscape of this was. It was open savannahs, flood plains. The flood plains were pretty well dried in the summer. You had a system that was capable of translating background mercury into methyl mercury, but it was not going anywhere because of the transport system. And so what you have got with reservoirs is you have got a system that completely alters the transport and retention of methyl mercury on this whole river stream. So I do not think it is an idle question to say there is a responsibility associated with reservoirs, not just for what is happening in them for the whole morphological function of transport and retention of those systems. I mean, if you think about it, before reservoirs provided flood control, what methyl mercury we were getting was going down the stream. I mean, you would

get nothing, you would get nothing, I mean a bank full stream every two years, and then you would get a gusher, and stuff would go way downstream, it would not stay in the Guadalupe system. Now, that is a working hypothesis. I am not sure of it, but I think in terms of a nexus between retaining reservoirs for flood control and water supply, which is usifluxory*, and mitigating their impacts, I do not think there could be a clearer nexus that there is a relationship here between retaining the reservoirs and doing something about their function on that. So now one last idea. What could it have been like? These systems filled up with sediment fairly rapidly as sea level rose in the Bay. I mean, the total time between current when sea level began to approach the Bay is about 8,000 years. So the flood plains around the Bay filled up the sediment fairly quickly. Those are pretty good relic depositories of what the natural system was. So I think if you go under the recently perturbed system, and you go into these valley floors and you look at what was the historic record, what was the mix of sediment within there, you in fact have a pretty good geologic record of what might be in the stream bed. So I think you could go back to say – and I do not think it makes sense to take a

stream back beyond the biological level or, you know, the pre-disturbance level. We cannot clean up a stream that has got a natural background of cyanide or cinnabar beyond what it was. But there are some tools here that maybe we have not thought about. So I want to see, as you bring this forward, your ideas about monitoring of how we are going to transfer from the total mercury system, which tells us there is a problem and we need to turn off the tap, to a system involving perhaps reactive and certainly methyl mercury that tells us how we are doing. That to me is the question – we should turn off the tap, but it is going to leak in some places, and then where it leaks we should be thinking cost-effectively about how to do that.

Chair Muller – Thank you.

Dr. Singh – Hello, I am Dr. Singh over here. I was looking through the – first of all, I must commend the staff for doing a good job of presenting. I know it is [inaudible] work we do. We can always do good work and we can always do more research. And I was wondering, and I fault myself for not finding here, but that if they do the land cleaning, obviously near the mines, [inaudible] clean-up the regular waters, what is the relationship – I think the Santa Clara County had bought some lands and

they have done some clean-up and spent some money. Is there some kind of data available that that clean-up job has resulted in the reduction in the concentration of mercury, that there is some kind of [inaudible] reduction, what amount of mercury reduction has taken place. Certain action we take, what is the result of that action? Some kind of correlation, some kind of [inaudible]. With every action we take and then measure, and I do not know who will do it and where the funding will come for that, I think Santa Clara Valley Water District will be the one that should conduct this research. But look at taking certain different actions to reduce the concentration of mercury in the water, and make it a relationship so that we can predict in the future the water reduction we need, which action is most effective, and which action is least effective. So I was just curious about it, and if somebody would like to make a comment about this, they have some data like this, I would like to hear. Thank you.

Chair Muller – Thank you. I will let Vice Chair comment here and then we will get staff's final comments regarding what the Board has mentioned.

Dr. Young – Thank you, Mr. Chairman. I have a couple of questions and then I would like to offer some

comments in response to what we have heard today and the written comments. First of all, I would also like to commend staff for writing a very clear staff report, what is a very tricky and complicated scientific issue. I think you did a very nice job. My first question is, I would like to hear more staff comment on the criticism that what we are putting out here is 20 percent of the cost would be related to action and 80 percent will be related to monitoring. I really would like to have you kind of pick that apart and explain where that comment comes from.

Ms. Austin – Carrie Austin again. And you asked about costs. The grand total estimated costs for this TMDL are between $200 Million – and we really hope it is closer to that – up to $1 Billion. And these are the costs, and I cannot for the life of me figure out how come anybody could tell me that it is 80 percent studies. I am a really practical-minded engineer. The only studies in here are the studies that are necessary, and using them are already committed to. I do think that means there is a problem with communication, and we have already started working on solving that problem, and we are utterly committed to it. So if you have anymore detailed questions, I would be happy to take them.

Dr. Young – No, that is very helpful, actually, that slide. I guess my thought would be that, if there are places where we can consolidate monitoring, I think you are on that page, too, and you should do that. And I am relieved to see the slide and see that, in staff's opinion, it indicates we are more focused on action than we are on study, although, I mean, as a scientist I always appreciate having better information, but it is important that you have to just go ahead and do what you know needs to be done. Okay, second question. As I read the TMDL and looked at the definition of the TMDL as a concentration of sediment, I was assuming that that was an average over the whole section of the watershed, and that that concentration would not necessarily be applied to every site or every clean-up. Is that a correct assumption? Okay, well, we might want to write that a little bit more clearly in the documentation because it also clarifies the issue of whether it is a clean-up standard or not. But that does raise the issue that it would also be good to clarify in the documentation that, for particular clean-up's on particular science, it does make a difference if we decrease sedimentation at a particular site so that, you know, all this discussion of

are we looking at concentrations, or are we looking at loads? My assumption is that, on a particular site, we are looking at loads. But the overall goal in the watershed is a concentration. And if I am right on that, it might be clarified a little bit in what we write because it sounds to me like there was some confusion on that issue. Okay, with the Chair's permission, I will make a couple of other quick comments in response to the commenter's today and the written comments.

I am really on Steve Ritchie's page, that we need to continue with remediation action and, you know, if it is short of perfection in terms of our information bases, but we know what needs to be done, let us go ahead and do it, because that is what cleans up the environment. Second, if there is concern that we are not giving full credit, or appropriate credit for early implementation and cooperation, that is disconcerting and I am sure that staff will try to make sure that we give appropriate credit, because that is how we get people to step up to the plate and I want to make sure that we are really on that issue. Similarly, there was some comments that were sort of varied in some of the pages, but I thought they were very important. At least one of the potential

permittees felt that it was going to be in a position to negotiate between what the Regional Board wanted and what the Endangered Species Act would require, and what Fish and Game might require. And we really do not want to do that as a state agency, and so I would ask the staff to be particularly attuned to setting up the situation where the Permittees are not required to juggle the requirements. It is sometimes conflicted requirements from different agencies – we should clean that up ourselves. Similarly, certainly we do not want to "clean up areas that have rare serpentine habitats," and I am sure that that was not the intention, but we might want to clarify that.

Finally, I would like to just make sure that, if we adopt a policy where we are only going to require mercury control measures as part of restoration projects, or other permits that are applied for in the streams, that we do not set up some unintended consequences and create a disincentive for people to do restoration. And I am sort of afraid that we are going in that direction, and I would appreciate staff giving some thought to that issue to see what we could do about it. Thank you, Mr. Chair.

Chair Muller – Very good. Yes, sir?

Mr. McGrath – Two more quick comments which are, I think, on the details side. Again, as you go forward in monitoring, I think grain size matters – what grain size – I mean, the ultimate question is what are the chemical and physical bonds, and that kind of gets captured in grain size. So as you begin to look at sediment, the potential bioavailability of the weak physical bonds are much more of a concern on very fine grain material than they are in sand or something larger. So I think that eventually needs to move into monitoring, that part of the monitoring on sediment needs to be what the grain size is. And then, finally, one of the things that I think we might want to consider is physical barriers to the sediment that is of greatest concern, that can be armoring, which was mentioned at least in one place in the staff report, in lower parts of the channel, you know, in which modifications have happened, but that is not impossible to do in reservoirs, as well. You can armor with or you can alter the process and the availability with sediments all the way from Bentonite* to gravel. Now whether or not that makes sense, whether it is feasible, whether or not it is lower in cost – but I want to make sure that innovative ideas like that in the stream bed and the

reservoirs, as ways to manage the methylation process are not precluded.

Chair Muller – Thank you. Mr. Peacock?

Mr. Peacock – I just have one quick question to ask staff. Someone made the comment about people who work in nail salons going out fishing on the weekends and, you know, I think to the degree that that subject has come up, I think it is appropriate to try to quantify the number of people who actually do subsistence fishing. It is a relevant set of numbers, whether it is at the mouth or on the Guadalupe River – I hope nobody is fishing on the river – but I think this is important for us to do, especially in view of this chart here. And so I would appreciate some data on that.

Chair Muller – Thank you. I am going to take one slight break here for a moment. I am going to lose a couple of board members, so we will still be alright for quorum issues, but I want them to realize that our July meeting will possibly start on Tuesday at 1:00 p.m. and conclude on Wednesday. So that is kind of what we are negotiating for because we have a full agenda in July, so we probably should have a split meeting day. So we will do a two-day meeting in July. Okay? I want them to know

that. Okay, back to the subject at hand. So, staff, you have received a lot of comments. Do you understand how the Board feels and where we are going? I know how hard Jim and Carrie, you have all worked, and others on this. This is a tough situation and it seems like, you know, in the world of water, this mercury thing has consumed us over the last number of years. Hopefully someday, as the Vice Chair said, and Steve has said, that we can kind of bring this to a conclusion here, that will meet all the property owners and environmental groups and everyone's satisfaction, in which it will probably not, but at least we can start the clean-up process to go.

Mr. Wolfe – Well, that is one of the recognitions of the public comment process and the testimony. Hearing that we are having – frequently you can do many meetings with stakeholders, but until you put it down in writing and have people look at what, as Tom says, what things look like in Basin Plan speak, to a certain degree, it may not always be clear. And then that becomes the issue, as Dr. Young points out, that frequently, then, we have to take a step back and clarify – make sure it is understandable and make sure that we do not have those unintended consequences. And so that is

our goal, not only to continue to meet with parties over the coming months, but to look where we can provide those clarifications and sort of show our work through the Basin Plan Amendment. We had to a certain degree been able to do almost a two month turnaround between testimony hearings and adoption hearings, in this case especially recognizing that July is going to be a full agenda. The earliest we would be bringing this one back would be August, to give us more time to work that through. I think we also, like Dr. Singh says, how can we look at work that we have done in the past and use that to predict future work, and I think your question we can address. Certainly there is a lot of work. We have, in fact, Dyan has personally overseen up in the Walker Creek Watershed at the Gambinini* Mine, where we have some of those predictive models and can look at where we get the most bang for the buck. And, really, that is the challenge here. As the slide is still on behind you, the high cost for implementation here could be a billion dollars. And, yes, even though that is over a lengthy period of time, that is very significant. And we cannot say that that is all going to be on the District's back, or a certain party's back, but there is a lot of work that needs to be

done and it is trying to juggle that – what do we do now? What are those no regrets actions we can do now, but still continue to learn and address the issues as we move forward? So I think we appreciate all the comments you have given us, we especially appreciate the comments we have gotten from the agencies, the public, the citizens, and now we have to go back and use that to come up with a better package.

Chair Muller – Very good.

Mr. Moore – I did not have a chance to say, but I think it is a great body of work. I know that a lot of work has gone into it and it has been excellently presented. And I do not see a reason for delay. I think that concerns about everything in the community can be addressed in the current path. Right now you have got some feedback, you have gotten comments, bring this back to us without delay so we can turn off the tap.

Chair Muller – Again, it is quite interesting because, as I said from my watching Region 3's, commenter's made that comment a lot down there, that they were left out of the process. And with all respect to the communities, it is just so hard to get everybody to a meeting, or get everybody to a room, and so I know we work

hard at that, and we try hard, and we are trying harder. But it seems like that is a common comment we hear often.

Mr. Wolfe – And we recognize that. We also recognize that this is not over once the Board adopts a Basin Plan Amendment. That to a certain degree, it only just starts because there is so much implementation. And as part of that implementation, we want to make sure that all of the public, all of the stakeholders, are actively involved. That becomes a challenge for us, but it is something we definitely need to do.

Chair Muller – Very good. Thank you. Thank you, guys for all the hard work and some more work ahead of us. Moving on to 8A and B.

Mr. Wolfe – And I would note, I think that, while we have just gone through extensive testimony, [missed something here].

Item 8 …