

To: Song Her
Clerk to the Board
State Water Resources Control Board
1001 I. Street
Sacramento, CA 95814

Re: Comment Letter on Pathogens in Tomales Bay

3 April 2006 (e-mailed and faxed)



Dear State Water Resources Control Board Members,

I am a resident of West Marin and a correspondent for the Point Reyes Light. I am writing to request that you reject the Tomales Bay TMDL plan prepared by San Francisco Bay Regional Water Quality Control Board. (SF RWQCB) I submitted written comments to the SF RWQCB, and received the Staff Responses only two days before the meeting at which SF RWQCB approved the pathogen TMDL. Subsequent to the September 2005 meeting, I wrote a column on the TMDL, which is attached.

As stated in the column, I received the SF RWQCB distributed its responses to the stakeholder comments a mere two days before the September 2005 SF RWQCB meeting. The lack of time made it impossible for me and other stakeholders to respond to the Staff comments. Further, the unannounced, last minute substitution of the unpublished 3rd Valley data for the previous published baseline data is totally unacceptable scientific protocol; my column references my discussion with Dr. Brian Schrag of the National Science Foundation program on research ethics. I also stand by my comment that the lumping together of the public comments renders the staff replies largely unresponsive.

Here is just one of the many errors and unsupported data in the TMDL and the Staff response. On page 98 of Appendix E, Public Hearing Transcripts, responding to public comments, staff makes the observation that if a seal is swimming by and three minutes later they grab a DNA sample, it will have a lot of seal DNA in it. Notwithstanding the mistake that the DNA tested would be the DNA of gut bacteria that is specific to seals, determining the fallaciousness of this argument against "DNA testing" is a matter of simple critical thinking, rather than science. If the mere presence of a seal is sufficient to upset a highly targeted BST/MST test, one must look at the effects of the same seal defecating in the vicinity of a shellfish bed on non-species-specific indicators such as e-coli.

A harbor seal will eat as much as 2000 pounds of fish per year, often climb up on shellfish floats, and certainly defecate vast quantities of gut bacteria that is indistinguishable from other mammalian sources with the testing procedures used in the preparation of the TMDL standards. Considering that the seal population can be as high as 1500 adults, it is reasonable to assume that tens if not hundreds of thousands of pounds of fecal matter are dumped directly into the bay by this one species alone.

This is the heart of the argument for BST/MST testing as proposed in the comments of the ranchers, UC Ag Extension, Dr. Goodman and others. Without BST/MST testing, there is no way to discriminate. The methodology of BST/MST testing is discussed in the EPA document on MST referenced in my column and in other comments from the public. EPA *Microbial Source Tracking Guide* discusses a wide range of tests with the capabilities of doing various human/animal and human/domestic animal/wildlife splits and provide charts to aid in selection of various levels of test protocol. Obviously, the SFRWQCB members did not consider this document before forwarding the TMDL for State approval.

The seal example brings up another real issue on pathogen TMDLs and public safety. Zoonotic diseases are a major concern of federal Center for Disease Control. UC Davis School of Veterinary Medicine, maintains a website for physicians listing zoonotic diseases associated with marine mammals. The list includes caliciviruses, closely related to human Norwalk Like Viruses (NLV) implicated in earlier gastroenteritis outbreaks from eating Tomales Bay shellfish. The bacterial zoonotic diseases where there are actual cases of transmission to humans are also listed on the UC Davis site. A TMDL is mandated to review all the available data. While it is true that evaluation of the zoonotic risks is an emerging science requiring evaluation by highly qualified personnel, it seems dangerously limiting to not consider them in a pathogen TMDL

BST/MST will provide the proper identification of bacterial sources as requested in so many of the public comments. In Point Reyes, restoration of the environment such as the reintroduction of elk and protection of many species such as harbor seals has lead to a dramatic increase in wildlife population. This makes the use of BST/MST even more important as the basis for accurate pathogen risk management, which will certainly be needed as humans and wildlife live in ever-closer proximity, and should be included in the preparation of the Tomales Bay Pathogen TMDL.

Respectfully,

John Hulls

Attachments: Point Reyes Light Column & SFRWQCB response.

Point Reyes Light - September 29, 2005

Somewhat logically

John Hulls

BS in Tomales Bay traced to Oakland

Princeton University professor Harry G. Frankfurt has done us all a valuable service in looking into the true nature of institutional deception and its effect on society. In a small book (Princeton University Press), titled *On Bullshit*, Professor Frankfurt reviews numerous ways BS can be so widely disseminated as to affect all aspects of modern life.

Scientific BS, for example, often consists of leaving out crucial information. Take the "intelligent design" advocates. You simply cannot have an honest debate with these folks, so they should simply be called on their BS and then ignored. The Discovery Institute, a creationist think tank in Seattle that is the source of much of this malarkey, claims that "intelligent design" is not religious, nor motivated by religion, and merely makes "scientific" claims that Darwin is incorrect.

Their "science" is BS, but it is BS with a purpose. The institute's "Wedge Strategy," which has now been leaked to the public, consists of a 20-year program that seeks to drive a wedge between

the "devastating cultural consequences of scientific materialism" and "the theistic understanding that nature and human beings are created by God." As an excellent article, *A Skeptics Guide to Intelligent Design*, reported in the July 9-15 *New Scientist*, the Discovery Institute's response to it agenda being exposed is that it is "just a fundraising document." This disingenuous spin is a prime example of Professor Frankfurt's description of institutional BS.

A West Marin example of leaving out crucial information to advance a very questionable agenda was demonstrated last week by staff of the San Francisco Bay Area Regional Water Quality Control Board, which is based in Oakland. At a meeting where the board established maximum-pollution levels for Tomales Bay, staff so jiggered research data that it became pure BS.

The "TMDL" (Total Maximum Daily Load), the board adopted last week sets a limit on how much bacteria-laden waste can go into the bay. Many West Marin folks, myself included, met the deadline for submitting questions to the RWQCB, but the staff's only action was to post largely non-responsive answers on the web only days before the meeting, simply not enough time to analyze and respond. I will dwell on only one staff response because it is the most disturbing.

When questioned about the large amount of waste from wildlife, which has been documented in bays up and down the West and East Coasts, staff responded that their data show that wildlife doesn't make a significant contribution to the bacterial load.

This assertion is directly contradicted by the RWQCB's own data. Water samples had been taken at White Gulch below the tule-elk range in the Point Reyes National Seashore. The RWQCB staff had sampled creek water below White Gulch to use as a baseline on bacterial pollution from wildlife because there are no livestock or septic systems anywhere near the area.

David Lewis of UC Cooperative Extension noted that even though RWQCB staff themselves selected White Gulch as free of human and agricultural bacterial influence, the measured pollution levels are several times higher than the new pollution standards for creeks flowing into the bay, and are therefore clearly from wildlife.

Worse yet is how RWQCB staff simply ignored data from another water-sampling site (labeled Marshall Near Shore No. 44). This site was chosen to test for bacteria from septic tanks in the area, but the amount of bacteria here was not significantly different from the amount of bacteria at water-sampling sites without houses.

Dr. Brian Schrag at Indiana University heads a National Science Foundation program on research ethics. As such, he insists that when researchers substitute data that reinforces their theory for data that contradicts it, the researchers are obliged to go to extraordinary lengths to make sure that *any* interested party must be made aware of the contradictory data that is being ignored; moreover, the researchers must clearly explain and document the scientific rationale supporting their ignoring uncomfortable data or substituting more favorable data.

In their presentation to the RWQCB, staff never directly mentioned their White Gulch data. A couple of times the staff made vague allusions to the White Gulch testing, but in no way did they come close to observing scientific ethics, as outlined by Professor Schrag.

What is doubly frustrating is that the US Environmental Protection Agency's handbook, *Protocol for Developing Pathogen TMDLs* (the recently approved standard) mentions many of the potential sources of bacterial pollution that West Marin residents have been specifically concerned about, such as how much bacteria can be attributed to septic tanks, domestic animals and wildlife. It

also gives examples of TMDLs developed with an EPA computer model (called BASINS).

BASINS, which is available at no charge from the federal government, allows a rapid analysis of where bacterial waste comes from and what the result would be if those bacteria were reduced in individual creeks within a watershed. The EPA gives examples of using DNA and other bacterial/microbial tracking methods to determine the specific animals waste in a creek is coming from – something many folks in West Marin want to see done.

RWQCB says no and claims the EPA says such tracking isn't practical. However, when you actually read the EPA's *Microbial Source Tracking Guide* document, it's not the negative document that RWQCB say it is; rather, it's a thorough guide to the many tracking techniques. It indicates when to use tracking and gives examples of TMDL standards developed with bacteria tracking.

As federal EPA staff have told *The Light*, there is a huge disconnect between the EPA in Washington and what occurs at the regional level. So, what's to be done?

The TMDL approved by the regional board must still be approved by the State Water Resources Control Board, the state Office of Administrative Law, and the federal EPA. If the regional board is not called to account for its jiggering of data – that the bay is seriously polluted by bacteria from failed septic tanks – the lie, through repetition, will become embedded in the bureaucratic consciousness and used to justify widespread expensive engineering and replacement of septic systems.

Simple tracking of the source of bacteria can block the RWQCB's cavalier approach to setting TMDL standards. Failure to scientifically determine sources of contamination will result in

endless studies, evaluations, and projects. These will create uncertainty and ongoing costs for county government, residents of the Tomales Bay watershed, ranchers, and shellfish growers.

The RWQCB seems to be at the beck and call of bureaucrats, not scientists, and their TMDL would provide them high-paid employment for years. By the RWQCB staff's own admission, the new TMDL is going to cost Marin County and its citizens millions of dollars. And in the end, Tomales Bay may not be any better protected than it is right now. For as scientists – as opposed to bureaucrats – know, wildlife really can and really do account for much of the fecal bacteria in coastal waters and only good science will tell us how much.

Dr. Corey Goodman, a Marshall resident and member of the National Academy of Sciences, previously offered to assist RWQCB in assembling a world-class panel of scientific experts to provide advice on Bacterial Source Tracking. Dr. Goodman is a past chairman of the academy's Board on Life Sciences, which has already conducted studies of waterborne pathogens for the EPA.

He has also generously offered to allow his own ranch land to be used for the proposed East Shore community septic system. Perhaps RWQCB could be persuaded to ask Dr. Goodman to assemble a truly independent academy review panel and determine if their TMDL is science, or as Professor Frankfurt's book put it, that substance which is "a greater enemy of the truth than lies are".
No bull.

Text of response by SF RWQCB published as letter to editor in Pt. Reyes Light. 27 Oct. 2006

To the Editor:

While Regional Water Quality Control Board staff welcome public discussion of our water quality improvement plans for the Tomales Bay watershed, we were sorry to read John Hull's opinion piece on Sept. 29, a week after the board approved the pathogens-reduction plan.

Mr. Hulls provided similar comments on an early draft of the plan. We responded to comments from him and a number of other residents and interested parties in documents that are available for all to review at both the library and Resource Conservation District office in Point Reyes Station, and on the waterboard website at

<http://www.waterboards.ca.gov/sanfranciscobay?Agenda/09-21-05/09-21-05-6appendixd.pdf>

We encourage your readers to take a look at these documents and evaluate the comments and responses for themselves.

Impairments due to pathogens in Tomales Bay watershed in general, and Walker and Lagunitas and their upstream tributaries in particular, is not in dispute. It falls to all of us to work together for many years to come, to make the watershed healthy for people who take their recreation in local waterways and who eat shellfish harvested in the Bay. If we're going to be successful, everyone has to do his or her part.

Water board Staff are charged with developing water-quality-improvement plans for pathogens, nutrients, sediment, and mercury in the Tomales watershed. We are committed to working in partnership with everyone who wishes to participate in the extensive processes that are integral to the work we do.

We have a long history of working effectively with the Tomales Bay Watershed Council and all the stakeholders in the watershed, and we will continue to be responsive to stakeholders' concerns and interests, while keeping in mind our mandate to develop plans that comply with all State and federal regulations and solve water quality problems.

Bruce H. Wolfe, Executive Officer
SF Bay Regional Water Quality Control Board
Oakland

Editor's note: Mr. Wolfe's response brings to mind Gandhi's observation, "First they ignore you, then they ridicule you, then they fight you, then you win". Mr. Wolfe had earlier been offered the opportunity to address The Light's concerns in a guest column, as is reported on their website. It is disingenuous to expect someone to wade through the RWQCB website searching for public comments; moreover, the link Mr. Wolfe provides appears to have some problems. If you want to look at both the public's questions and the board's responses, they can be found online on the waterboard website at <http://www.waterboards.ca.gov/sanfranciscobay/tomalesbaypathogenstmdl.htm>. Click on appendix F to read the actual public comments. Appendix D has the staff's replies. Mr. Wolfe is right, the public should read these and decide if the regional board is responsive, not only to The Light, but State Health Department, UC Ag Extension, and others. The Light stands by its position that the proposed TMDL for Tomales Bay ignores the board's own data and does not adequately address the influence of wildlife.