



California Regional Water Quality Control Board

Lahontan Region



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Secretary for
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Arnold Schwarzenegger
Governor

MEMORANDUM

TO: Jeanne Townsend
Clerk to the Board
State Water Resources Control Board
1001 I Street
Sacramento, CA 95814

FROM: 
Harold J. Singer
Executive Officer
LAHONTAN REGIONAL WATER QUALITY CONTROL BOARD

DATE: May 27, 2010

SUBJECT: COMMENT LETTER: 2010 INTEGRATED REPORT/SECTION 303(D) LIST

This memorandum respectfully requests that, for the reasons detailed herein, the State Water Board **not** adopt 31 new water body-pollutant combinations ("listings") as proposed by State Water Board staff. There is not enough evidence to show that any of the 31 proposed new listings represent real impairments, and in some cases the available data indicate that there is not likely any problem at all. The State Water Board should use its discretion and good judgment to allow more time for these waters to be adequately characterized. Listing these waters as "impaired" based on the limited available data would send an incorrect message to all concerned stakeholders that beneficial uses of these waters are impaired. In many cases, these faulty listings would require either the unnecessary expenditure of limited monitoring funds for decades to come in order to remove them from the list, or the unnecessary expenditure of limited Total Maximum Daily Load (TMDL) funds to develop TMDLs, or demonstrate that they are being addressed through other programs. Many of the proposed listings involve pollutants that come from natural sources or that are not affected by any known discharges of pollutants in their watersheds.

The Lahontan Water Board recommended nine new water body-pollutant combinations ("listings") to the Clean Water Act Section 303(d) List. Those nine proposed listings are not the subject of this memo. Our concern here is the 31 additional listings proposed by State Water Board staff for the Lahontan Region. The violations of standards and criteria associated with the proposed listings were brought to the attention of the Lahontan Water Board in July 2009, and Board members agreed with staff's substantial concerns about lack of temporal representation in the data used for assessment. Therefore, the 31 proposed additional listings were not included in the Lahontan Water Board's recommendations to the State Water Board (Resolution R6T-2009-0045). (The Lahontan Water Board's staff report,

which documents the violations and summarizes our concerns about temporal representation, is part of the administrative record for the 2010 Integrated Report, and is available on our web page at:

http://www.waterboards.ca.gov/lahontan/water_issues/programs/tmdl/303d_305b/index.shtml.) The 2010 Integrated Report (Staff Report pages 10 and 11) indicates that State Water Board staff disagreed with these concerns because they “determined that the data were collected over a broad period of time to meet Section 6.1.5.3 of the Listing Policy.” This determination by State Board staff simply is not true; it ignores the complex temporal variation (i.e., daily and seasonal) in waters of the Lahontan Region, and fails to consider the extremely limited number of samples upon which the proposed new listings are based.

The following comments detail the Lahontan Water Board staff’s concerns about temporal representation. I request that the State Water Board defer decisions on the proposed additional listings to a future assessment cycle when we expect to have more representative data available to evaluate compliance with the applicable standards. The data currently available do not support the conclusion that the proposed additional listings for the Lahontan Region are real impairments.

Temporal Representation

The State Water Board’s 2004 Water Quality Control Policy for Developing California’s Clean Water Act Section 303(d) List (Listing Policy) provides that data used for assessment must be temporally and spatially representative. If they are not, listing is not required even if the numerical requirements of the Policy’s binomial model are met. Listing Policy Section 6.1.5.3 is not detailed and therefore must be interpreted using professional judgment. In particular, the Listing Policy is silent on the number of samples needed to calculate temporally representative annual averages for assessment of compliance with water quality objectives expressed as annual means. Many of the proposed additional listings for Lahontan Region waters are for violations of numeric site-specific water quality objectives (SSOs). Most of these SSOs are expressed as annual means.

The proposed additional listings are based on SWAMP samples collected between 2000 and early 2005 at some stations, and over only two years at other stations. Some years are represented by only one sample per constituent per station. Quarterly sampling was used during the early years of SWAMP due to budget constraints, and was meant to be a preliminary screening process, not a full assessment of compliance with standards.

Annual averages based on 1 to 4 samples per year do not adequately reflect the full range of diel, seasonal, annual and interannual variation in pollutant concentrations and the environmental conditions (including changes in streamflows due to short-term events) that affect pollutant concentrations. Examples of short-term changes that affect Sierra Nevada streams include rapid snowmelt due to winter rain-on-snow events and flooding due to severe summer thunderstorms. Variations in flows also affect water quality and biological processes in desert streams in the Lahontan Region, and this variability is even less predictable than that associated with snowmelt.

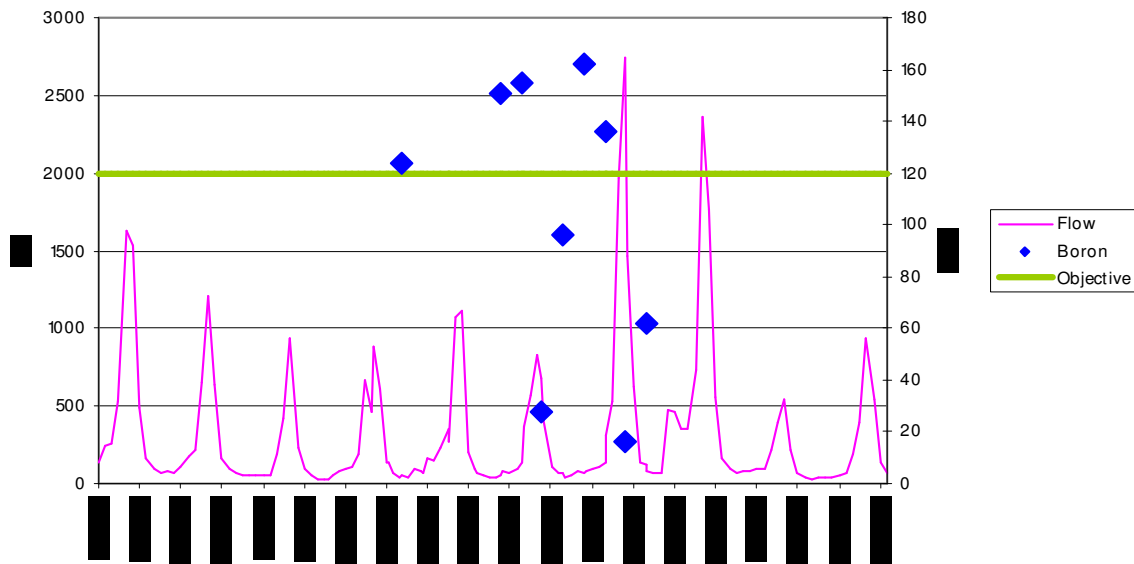
The enclosed graphs illustrate the extreme variation in central Sierra Nevada streamflows within a given year and from year to year. They are modeled hydrographs based on actual flow data for Lee Vining Creek, a tributary of Mono Lake, from a January 2010 report transmitting instream flow recommendations to the State Water Board. (See: http://www.waterboards.ca.gov/waterrights/water_issues/programs/mono_lake/).

The upper (“computed unimpaired”) hydrograph for Lee Vining Creek shows flows without diversions by the Los Angeles Department of Water and Power or Southern California Edison (SCE). The lower graph shows flows with SCE diversions only. These graphs show that streamflows are highest during the peak snowmelt season, and that the magnitude and timing of peak snowmelt varies significantly from year to year. The graphs also indicate that most of the Region 6 SWAMP samples for other central Sierra streams that were used in the 2010 Integrated Report were collected in drier than normal runoff years. The year-to-year variation illustrated in these hydrographs shows that collecting small numbers of samples in different calendar months during successive years does not provide adequate temporal representation, especially when annual average standards are involved.

The following table and graph use SWAMP data to illustrate the problem with the use of small numbers of temporally unrepresentative samples. The draft Integrated Report proposes to list the East Fork Carson River for boron, based on two years (2002, 2003) for which only one sample is available per year. Those two samples were collected during unrepresentative low-flow conditions when boron concentration is at its highest. Under the Listing Policy, these single samples are treated as “annual averages” and used as single datapoints in evaluating violations of the objective (Policy Section 6.1.5.6). More frequent sampling conducted in 2004 and 2005 (at only 3-4 samples per year) shows that the annual average likely does not exceed the objective.

boron East Carson River below Markleeville		
Date	Result	Basin Plan Objective
9/10/2002	124	
annual average	124	120 ug/L (ppb)
11/18/2003	151	
annual average	151	120 ug/L (ppb)
2/20/2004	155	
5/19/2004	28	
8/19/2004	96	
11/24/2004	162	
annual average	110	120 ug/L (ppb)
2/25/2005	136	
5/26/2005	16	
8/25/2005	62	
annual average	71	120 ug/L (ppb)

**East Fork Carson River near Markleeville
Boron**



The above example illustrates the fundamental problem with the State Board staff’s current recommendations. In this example, only one sample was available from years 2002 and 2003 to derive the “annual average.” Even when more samples were available (i.e., for years 2004, 2005) to show that the true annual averages probably do not exceed the standard, the State Board staff still recommends listing based on the single samples from years 2002-03. Such a rigid approach to interpreting the Listing Policy will result in numerous listings where no impairment exists. Further, if the East Fork Carson River is listed for boron, it would take at least 28 years of sampling to delist under the current Listing Policy. (Table 4.1 of the policy requires a minimum of 28 samples or annual average datapoints treated as single samples to delist for toxic pollutants.) Sampling for 28 years would be a substantial waste of limited monitoring funds, for a problem that does not even exist.

We are now recommending that monitoring to document nonpoint source impacts be performed at least ten times per year. More frequent SWAMP sampling (10-12 samples per year) is currently being conducted for half of the water bodies involved in the proposed additional listings. We strongly recommend that decisions on the proposed additional listings be deferred until the results of this sampling are available to confirm whether real problems exist.

I urge State Board members to use the discretionary authority available under the Listing Policy to adopt the recommendations of the Lahontan Water Board (consistent with its decision on July 8 2009) and not adopt the proposed listings added by State Board staff for the Lahontan Region. Please contact me at (530) 542-5412 if you wish to discuss these comments.

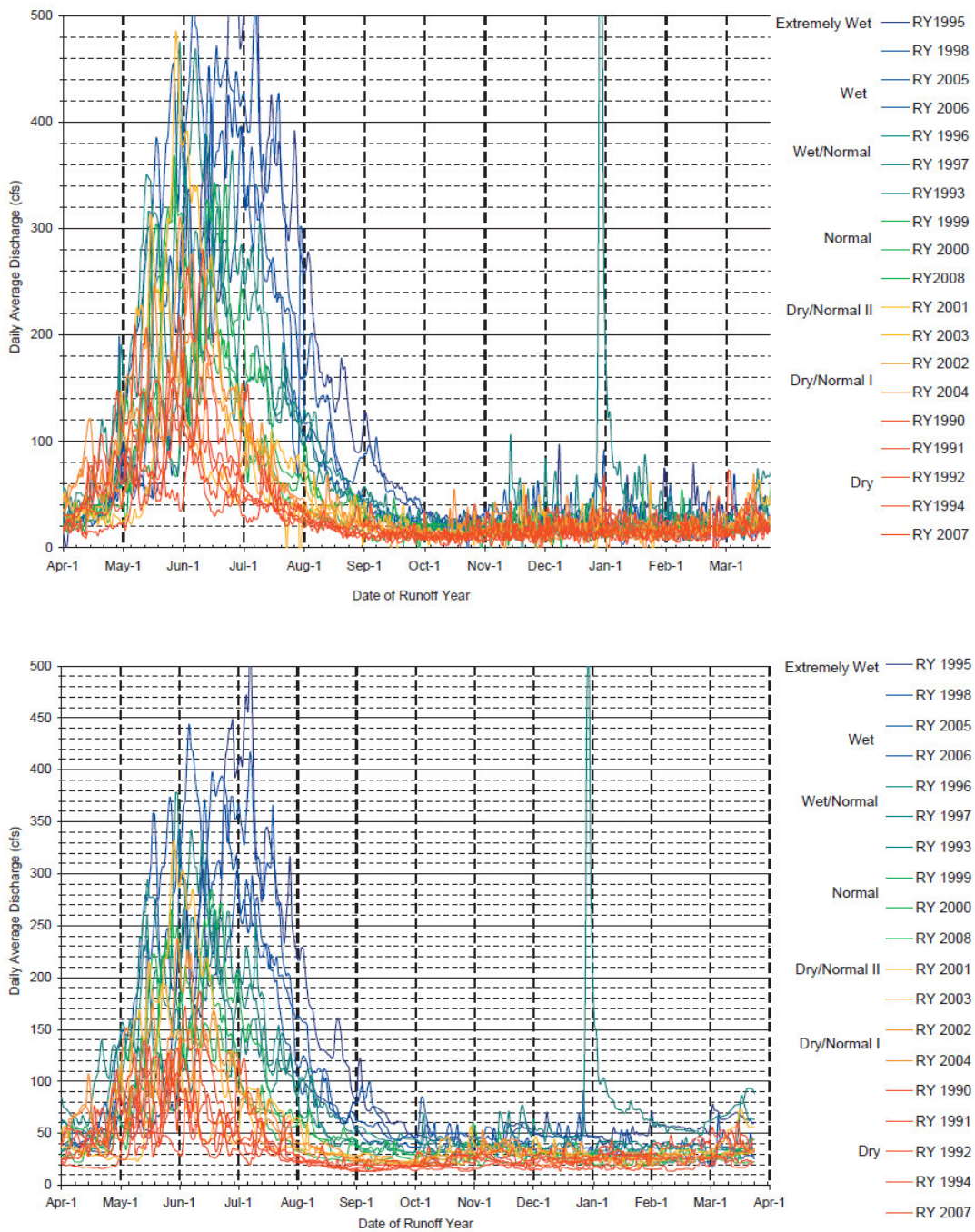
Attachment: Figure 4-1. Annual Hydrographs for Lee Vining Creek Runoff

cc (w/attachment): Shakoora Azimi-Gaylon/SWRCB/Division of Water Quality
Darrin Polhemus/SWRCB/Division of Water Quality
Rik Rasmussen/SWRCB/Division of Water Quality
Regional Water Board members
Dave Giuliano, EPA Region IX
Terrence Fleming, EPA Region IX
Jacques Landy, EPA Region

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JANUARY 27, 2010



CHAPTER 4

Figure 4-1. Annual hydrographs for Lee Vining Creek Runoff (computed unimpaired [above]) and for Lee Vining Creek above Intake (SCE regulated [below]) for RYs 1990 to 2008 showing patterns in annual hydrograph components and the range of variability in different runoff year types.