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Public Comment
Beneficial Uses and Mercury Objectives
Deadline: 2/17/17 12 noon

February 17, 2017



Ms. Jeanine Townsend
Clerk to the Board
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95812-0100

Dear Ms. Townsend:

Subject: Comment Letter – Tribal and Subsistence Fishing Beneficial Uses and Mercury Provisions

The Los Angeles Department of Water and Power (LADWP) would like to thank the State Water Resources Control Board (State Board) for the opportunity to comment on the Proposed Part 2 of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California - Tribal and Subsistence Fishing Beneficial Uses and Mercury Provisions (Mercury Provisions).¹

LADWP is the largest municipally owned utility in the nation, which serves a 465 square mile area in Los Angeles with approximately 4 million residents and a portion of the Eastern Sierras in Owens Valley. Its mission is to provide essential public services (water and power) for grid reliability and public health and safety in an efficient, cost-effective, and environmentally responsible manner. LADWP owns its electrical generation, distribution, and transmission systems as well as its 233-mile gravity fed Los Angeles Aqueduct, which brings water to the City of Los Angeles (City). LADWP's Power System supplies more than 23 million mega-watt hours (MWh) of electricity a year, and LADWP is responsible for maintaining and replacing 3,507 miles of overhead transmission circuits spanning five Western States. LADWP's Water System supplies approximately 177 billion gallons of water annually and an average of 446 million gallons per day to its residential and business customers. The water supply consists of local groundwater, imported water, recycled water, storm water, and the Los Angeles Aqueduct. Both the Water System and Power System include significant amounts of infrastructure to ensure the safe and reliable delivery of water and power in an environmentally responsible manner.

¹ State Water Resources Control Board (SWRCB), 2016. "Draft Staff Report, Including Substitute Environmental Documentation, for Part 2 of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California—Tribal and Subsistence Fishing Beneficial Uses and Mercury Provisions." January 3. Accessed February 6, 2017, at http://www.swrcb.ca.gov/water_issues/programs/mercury/docs/staff_report/hg_staff_report.pdf

LADWP has multiple facilities subject to NPDES discharge permits, including its power generation facilities that employ once-through cooling and its critical hydroelectric plants. LADWP also has a number of reservoirs, the management of which would likely be affected by the proposed policy. LADWP's comments on the Report are as follows:

I. Water Quality Objectives and Effluent Limitations

1. Background Sources

Background sources and their contribution to mercury levels. Background sources of mercury are the predominant sources of mercury in contaminated water bodies in California. The Staff Report associated with the Mercury Provisions (Staff Report) indicates that historical mining, natural soils, and atmospheric deposition are "significant" and "major" sources of mercury.² The Staff Report notes that "the median and average mercury concentrations in rain in California were 6 ng/L and 12 ng/L" and "the 99.8th percentile of mercury concentrations in rain in the United States was 174 ng/L."³ Thus, a significant fraction of rain samples in California would have concentrations higher than these values, which are equivalent to, or higher than, the proposed effluent limitations for point source discharges (12 ng/L, 4 ng/L, and 1 ng/L; see below). The Staff Report also indicates that "[m]ercury deposition from atmospheric emissions is thought to be the major source of mercury in some Southern California lakes and reservoirs (U.S. EPA 2012, Tetra Tech 2008)."⁴

In contrast, point sources generally contribute very little mercury to contaminated water bodies by comparison. For example, Table N-11 from Appendix N indicates that wastewater and industrial discharges constitute 4% of methylmercury discharged to the Delta and 1.5% of total mercury discharged to San Francisco Bay—two water bodies for which mercury-related TMDLs have been developed.⁵ Because mercury sources attributable to NPDES discharges are small compared to the dominant sources in the state, imposing stringent effluent limitations on NPDES dischargers will not result in a significant reduction in water body or fish concentrations. As a result, effluent limitations would not seem to be an effective way to reduce mercury concentrations.

² The Staff Report notes that "elevated mercury concentrations in present-day mine impacted waters and sediments indicate that hundreds to thousands of pounds of mercury remain at each of the many sites affected by hydraulic mining" (p. 47). The Staff Report also notes, "The Coast Ranges are naturally high in mercury... The soils in these areas that are naturally enriched with mercury erode, contributing to the mercury load in waterways... The mercury from mine waste, naturally enriched soils, and geothermal springs is a major source of mercury in the Coast Ranges, the Sierra Nevada Mountains, and also downstream in the Sacramento/San Joaquin Delta and San Francisco Bay" (p. 49). And finally, the Staff Report finds that "direct deposition of mercury to water bodies (vs. deposition on land upstream) has been found to be very important in determining mercury levels in fish. Harris and colleagues applied isotopically labeled mercury (as HgNO₃) to a lake and the surrounding watershed. Essentially all of the increase in methylmercury in fish after 3 years was due to the mercury deposited directly to the lake surface... Furthermore, the results could suggest that controlling emissions that are deposited directly on the water surface may have a rapid effect (few years) on mercury level in fish (Harris et al. 2007)" (p. 50)

³ Staff Report at p. 142.

⁴ Staff Report at p. 49.

⁵ Appendix N. Wastewater and Industrial Discharges, p. N-15.

Background sources and methods of compliance. The fact that background sources of mercury are the dominant sources of mercury in contaminated water bodies should be considered in the determination of discharger compliance with the proposed Mercury Provisions. As noted, evaluating compliance according to strict effluent limitations while background sources are the dominant sources of mercury in a water body does not appear to be a true measure for compliance. LADWP recommends that the Mercury Provisions be revised to include language that explicitly allows Regional Boards to establish methods of compliance other than meeting strict effluent limitations in cases where background sources are dominant.

2. Implementation Challenges

Proposed numeric effluent limitations may be unattainable. As discussed in Section 2 of the Staff Report, the proposed water quality objectives for mercury are expressed as fish tissue concentrations. These fish tissue concentrations are “translated” into water column concentration targets that would be used to evaluate “reasonable potential” and to derive effluent limitations for point source discharges. As noted above, the water column concentration targets are 12 ng/L, 4 ng/L, and 1 ng/L, depending on the beneficial use and flow characteristics of the receiving water. The Staff Report acknowledges that many point source dischargers would need to perform major upgrades in order to achieve the 4 ng/L concentration,⁶ but even these major upgrades would not guarantee that the 4 ng/L concentration could be achieved.⁷ Moreover, the 1 ng/L effluent limitation proposed for slow-moving water bodies with a Tribal Subsistence (T-SUB) Fishing designation is likely to be unachievable without extraordinary treatment upgrades. HDR’s review of treatment technologies states, “[t]here is limited information available about achieving ultralow effluent mercury concentrations near the 5 ng/L range.”⁸ The treatment process that appears most likely to be able to meet the proposed 1 ng/L effluent limitation are microfiltration and reverse osmosis (MF/RO), and then only under optimal conditions where input concentrations are low.⁹ Under these circumstances, HDR found that dischargers could achieve mercury effluent concentration in the range of 1.2 to 3 ng/L.¹⁰ The level of treatment needed to meet the most stringent effluent limitations is not discussed by the Mercury Provisions.

Determination of costs in order to meet implementation requirements. The overall costs associated with the implementation requirements of the Mercury Provisions are likely to be greater than the estimates developed by the State Board. Most available cost

⁶ Staff Report, p. 158 & p. 177.

⁷ Central Valley Water Board, 2010. A review of methylmercury and inorganic mercury discharges from NPDES facilities in California’s Central Valley Staff Report Final. March 2010. Rancho Cordova, CA. Tables 2 and 5, pp. 57-58.

⁸ HDR, 2013. Treatment Technology Review and Assessment. Association of Washington Business, Association of Washington Cities, Washington State Association of Counties. December 4. P. 12.

⁹ HDR, 2013, p. 13.

¹⁰ HDR, 2013, pp. 13-14.

estimates discuss only wastewater treatment. Appendix R of the Mercury Provisions estimates the cost of upgrades from secondary to tertiary treatment that would be required by the policy to be in the range of \$9-15 million/year over 20 years. LADWP believes this range significantly underestimates upgrade costs. For example, Sacramento Regional San—a POTW with a design flow rate of 181 million gallons per day (mgd)—is currently upgrading from secondary to tertiary treatment at a capital cost of approximately \$2 billion and \$50 million/year in Operations & Maintenance thereafter.¹¹ These estimates for a single plant are above the Board's total estimate for all plant upgrades in the State. Given that advanced treatment (e.g., MF/RO) may be necessary to achieve the 1 ng/L limitation, costs may be far higher. HDR suggests that the capital cost of upgrading a plant from secondary to advanced treatment (MF/RO) would be on the order of \$15-\$162 per gallon per day (gpd) of treatment capacity, depending on the size of the plant to be upgraded.¹² This range is one to two orders of magnitude higher than the Board's estimate of \$1.14 per gpd to upgrade to tertiary treatment.¹³

For LADWP, the costs may be higher still. LADWP is currently investing in generating station upgrades to eliminate once through cooling at its coastal generating stations. LADWP believes that mercury would be present in the intake water that flows through these plants, and is not added by the equipment or processes at the generating stations or at its hydroelectric plants. In addition, the flow rates through these facilities exceed the flow rates at most wastewater treatment plants, such that if treatment is required to meet the proposed stringent effluent limitations, costs would be far higher than are disclosed in the proposed policy.

LADWP's reservoirs and lakes may also have requirements imposed upon them as a result of the proposed policy. Although the proposed policy would develop water quality objectives that would apply to lakes and reservoirs, the implementation requirements for these objectives are not disclosed in the proposed policy, as there is a separate State Water Board project to develop TMDLs and implementation measures for mercury in lakes and reservoirs. (We are uncertain of the timeline for the proposed lakes and reservoirs policy, but it is scheduled to be adopted after the proposed Mercury Provisions.) Thus, LADWP does not know the extent of the impacts the proposed policy may have on these facilities, or the impacts of potential implementation measures on LADWP's operations.

Finally, LADWP has stormwater permits at many of its facilities. For facilities covered by the Industrial General Permit (IGP), action levels will be reduced under the proposed policy from 1400 ng/L to 300 ng/L. The Staff Report states that existing control measures "may not be sufficient to meet the revised Numeric Action level for mercury and, therefore, those dischargers affected are likely to incur incremental costs in order

¹¹ Data accessed February 8, 2017, from <http://www.regionalsan.com/echowater-project>.

¹² HDR, 2013, p. ES-2.

¹³ Appendix R, Economic Analysis, R-47.

to come into compliance with the proposed policy. Due to the site-specific nature of these controls, we are unable to develop specific cost estimates associated with the incremental control activities.”¹⁴ Similarly, the Staff Report does not appear to include any discussion of the control measures or costs that may be required to comply with the stringent effluent limitations that would apply to industrial facilities with individual permits that include process water and/or storm water, despite determining that there are approximately 151 industrial facilities in the state that would be regulated under the proposed policy.¹⁵

LADWP respectfully requests that the State Board perform analyses of the treatment measures and costs that are anticipated for generating stations, lakes and reservoirs, and industrial facilities.

Implications of the Mercury Provisions for existing TMDLs. The State Board has suggested in public meetings that the Mercury Provisions would not affect existing TMDLs in a significant way, and the Staff Report states, “The implementation provisions do not apply to discharges to receiving waters for which a mercury total maximum daily load is established.”¹⁶ However, LADWP is concerned that the Mercury Provisions and new beneficial uses may in fact influence existing TMDLs and will lead to more stringent TMDL and implementation requirements in TMDLs scheduled to be adopted in the future. As stated in the Staff Report, the proposed “Tribal Subsistence Fishing [T-SUB] Water Quality Objective was derived to protect humans consuming four to five meals per week (142 grams per day),”¹⁷ and the default fish consumption rate for the Subsistence Fishing (SUB) objective is also 142 grams per day.¹⁸ This fish consumption rate is more than four times higher than the rate used to derive the Sport Fish Water Quality Objective (32 grams per day). As a result, the proposed Tribal Subsistence Fishing Water Quality Objective (0.04 mg/kg) is considerably lower than the Sport Fish Water Quality Objective (0.2 mg/kg).

In cases where the T-SUB and SUB beneficial uses are designated, existing TMDLs for bioaccumulative pollutants (e.g., DDT or PCBs) are likely to be reopened to incorporate waste load allocations (WLAs) calculated using the new higher fish consumption rates. Thus, changes to existing TMDLs are anticipated for a wide range of pollutants, not just mercury, based on the higher fish consumption rates associated with the SUB and T-SUB beneficial uses.

¹⁴ Staff Report Appendix R, R-40.

¹⁵ Staff Report Appendix R, R-23.

¹⁶ Staff Report, p. xvii.

¹⁷ Staff Report, p. xix.

¹⁸ Staff Report, p. 120.

3. Implementation Recommendations

LADWP recommends the development of additional implementation guidance for Regional Boards. Because point sources are generally much smaller sources of mercury to the environment than historical mines, atmospheric deposition, and soils and sediments, LADWP recommends that the State Board develop alternatives to effluent limitations for mercury in point sources. However, if effluent limitations continue to be required, LADWP encourages the State Board to develop additional guidance on implementation for Regional Boards. Consistent with the State Board's Order No. 2001-006, site-specific factors should be assessed in determining both the need for effluent limitations and the methods by which those limitations, if needed, should be calculated. The State Board should develop guidance on the following:

- The kind of site-specific information that should be used to assess whether point source controls will have a significant impact on mercury concentrations in water and fish.
- The information that should be used to determine if a discharge is to "slow moving" waters.
- The use of mixing zones and dilution credits.

Development of compliance alternatives. Given that the proposed effluent limitations would likely be unachievable for many point source dischargers, LADWP recommends that clear compliance alternatives be developed as part of the Mercury Provisions. For example, LADWP suggests that the State Board consider programs to address non-point sources and/or programs to implement regional or watershed-based implementation measures for non-point sources. These alternative compliance measures would be crucial in cases where strict compliance with the proposed effluent limitations would be unachievable, would entail inordinate compliance costs, or would not result in a significant reduction of environmental mercury concentrations.

Development of a statewide variance policy. On August 21, 2015, U.S. EPA published water quality standards regulation (80 FR 51010), which includes water quality standards variances (40 CFR § 131.14). This regulation authorizes states to implement variances in cases where the highest attainable condition of the receiving water does not meet the applicable water quality standard. In such cases, the variance becomes the water quality standard used by permitting authorities in generating effluent limitations for discharges regulated by NPDES permits. Given that the proposed Mercury Provisions, as currently written, require mercury effluent limitations that are likely unattainable for certain dischargers and water bodies (see below), the use of variances by Regional Boards is necessary to prevent chronic violations of permit terms and inordinate penalties associated with such violations. Although the State Water Board has proposed a statewide Variance Policy in association with its adoption of water quality standards for bacteria, there is currently no established statewide mechanism for water quality

standards variances; only the Central Valley Regional Board has adopted a variance for salinity.¹⁹ If the State Board elects to adopt the Mercury Provisions as they are, LADWP recommends that the Board adopt a statewide variance policy *concurrently* with the Mercury Provisions.

II. Beneficial Uses

1. Development of Beneficial Uses

LADWP recognizes the discussions regarding the establishment of the Tribal Subsistence Fishing (T-SUB) and Subsistence Fishing (SUB) Beneficial Uses in the Mercury Provisions, and that these Beneficial Uses are an important step forward in addressing the comments and concerns of subsistence fishers in California, as voiced at the recent public hearing associated with the Mercury Provisions.

2. Definition of Beneficial Uses

Language used to define new Beneficial Uses should be clarified. On p. 6, the Staff Report defines the proposed Tribal Tradition and Culture Beneficial Use (CUL) as follows:

“Uses of water that support the cultural, spiritual, ceremonial, or traditional rights or lifeways of California Native American Tribes, including, but not limited to: navigation, ceremonies, or fishing, gathering, or consumption of natural aquatic resources, including fish, shellfish, vegetation, and materials.”

LADWP recommends that the State Board’s understanding of “traditional rights or lifeways” be further explained in order to clarify this definition. For example, it would be helpful if the policy listed some of the “traditional rights” in view with the definition. Similarly, an enumeration of the specific California Native American Tribes would help dischargers anticipate more clearly the scope of the proposed policy and the geographic extent over which the proposed beneficial use might be applied.

Finally, although the Staff Report states at p. 6 that the function of the tribal subsistence fishing (T-SUB) and subsistence fishing (SUB) beneficial uses “is not to protect or enhance fish populations or aquatic habitats,” LADWP requests that this language be added to these definitions to avoid misapplication of these uses in the future.

¹⁹ See Public Scoping Meeting for the Proposed Statewide Water Quality Standards Variance Policy (Jan. 23, 2017); Amendments To The Water Quality Control Plan For The Sacramento River And San Joaquin River Basins And The Water Quality Control Plan For The Tulare Lake Basin To Add Policies For Variances From Surface Water Quality Standards For Point Source Dischargers, Variance Program For Salinity, And Exception From Implementation Of Water Quality Objectives For Salinity, Resolution No. R5-2014-0074

3. Implementation of Beneficial Uses

The nature of the proposed new Beneficial Uses should be clarified, and additional implementation guidance should be provided. According to the federal definition of an “existing use” for a given water body, two conditions must be satisfied: (1) activities indicative of the use must have occurred since November 28, 1975, and (2) the water quality must have been sufficient to support the beneficial use since that date. State Board staff confirmed at the January 9, 2017 workshop that many “existing uses” designated in the State’s Basin Plans are not existing uses per the Clean Water Act; State Board staff also clarified that the water boards have the discretion to allow longer compliance schedules for past, present, or probable future beneficial uses as designated pursuant to the requirements of the Porter-Cologne Act (California Water Code).²⁰ Although the Staff Report states that “beneficial uses may be designated as a goal use (or probable future use in Porter-Cologne parlance) where neither the water quality is currently being attained or the use is actually occurring, but there is evidence to indicate that the use would be a probable future use,”²¹ the Staff Report does not discuss the additional implementation options that should be available for “goal uses.” LADWP respectfully suggests that the Mercury Provisions be revised to provide guidance on the designation of proposed beneficial uses, and to identify and provide guidance on the range of implementation actions that will be necessary to achieve meaningful reductions in mercury concentrations in the state’s waters and fish.

The effects and environmental impacts of the proposed policy should be more completely explained. As suggested above, in the discussion of the implications of the Mercury Provisions for existing TMDLs, the effects of the proposed policy are anticipated to include the establishment of new water quality objectives and effluent limitations for point source dischargers for bioaccumulative pollutants in addition to mercury. As a result, the policy is expected to result in much higher costs to dischargers and ratepayers than are disclosed in the proposed policy and staff report, and is expected to have environmental impacts that are not explained in the substitute environmental documentation (SED). For example, as noted above, it is likely that certain point source dischargers will need to employ advanced treatment (MF/RO) to satisfy some of the proposed effluent limitations. The proposed effluent limitations are expected to result in additional costs, power needs, and greenhouse gas generation.²² Impacts of increased power use and greenhouse gas emissions are not considered in

²⁰ At the January 9, 2017, State Board workshop on the proposed Mercury Provisions, Rik Rasmussen stated that “if they call it an existing use in the basin plan, it’s not necessarily an existing use under federal law, it’s subject to refinement... There’s nothing to prevent the water boards, if they designate a beneficial use as a probable future beneficial use, to either (a) have a different water quality objective as they do it, or (b) have a longer implementation schedule and say ‘hey, it’s a probable future use, we don’t expect this to be met for 50 years.’” (Transcribed from video of the January 9, 2017 workshop.)

²¹ Staff Report at p. 112.

²² HDR, 2013, p. ES-4. HDR estimates that advanced HDR treatment would require 50-100% more power than tertiary treatment, which will increase greenhouse gas emissions.


the SED, and no mitigation measures are offered for this potentially permanent, long-term additional source of greenhouse gases.²³ Thus, LADWP recommends that effects and impacts such as these be fully explained in the policy.

Clarity is needed regarding additional potential impacts of the proposed policy. The new proposed beneficial use designations may trigger requirements applicable to in-stream flows, which may in turn affect LADWP's operations of its water system. Although Board staff indicated that it is not their intention, LADWP believes that these are reasonably foreseeable outcomes of the policy as currently proposed. LADWP requests that the State Board provide additional workshops and opportunity for State Board staff to work with stakeholders to investigate these issues, and to develop modifications to the proposed policy as needed to address these concerns and craft policy language that would ensure that Board staff's intentions and the scope of the proposed policy are clarified.

Given the short time for comments and limited workshops, many issues that would benefit from additional analysis prior to adoption have not been fully explored. LADWP would appreciate the opportunity to work with the State Board to explore and develop a more workable policy that focuses on implementation measures that would produce a meaningful reduction in the ambient concentrations of mercury in the environment.

LADWP appreciates the opportunity to provide comments on the Report and looks forward to working with the State Board staff in finalizing the Report. Should you have any questions regarding this letter, please contact me at (213) 367-0436 or Ms. Chloé Grison of the Wastewater Quality and Compliance group at (213) 367-1339.

Sincerely,



Katherine Rubin
Manager, Wastewater Quality and Compliance Group

CG:

- c: Ms. Felicia Marcus, Chair, State Water Resources Control Board (SWRCB)
- Ms. Frances Spivy-Weber, Vice Chair SWRCB
- Ms. Tam M. Doduc, SWRC
- Mr. Steven Moore, SWRCB
- Ms. Dorene D'Adamo, SWRCB
- Ms. Nancy H. Sutley, LADWP
- Mr. Mark J. Sedlacek, LADWP

²³ Staff Report of the Mercury Provisions, pp. 220-222.

