

STATE WATER RESOURCES CONTROL BOARD  
WORKSHOP SESSION—DIVISION OF WATER QUALITY  
OCTOBER 5, 2005

**ITEM 6**

**SUBJECT**

CONSIDERATION OF A RESOLUTION APPROVING AN AMENDMENT TO THE WATER QUALITY CONTROL PLAN FOR THE LAHONTAN REGION TO REMOVE THE MUNICIPAL AND DOMESTIC SUPPLY (MUN) BENEFICIAL USE DESIGNATION FROM SURFACE WATERS OF OWENS LAKE, INYO COUNTY

**DISCUSSION**

The Lahontan Regional Water Quality Control Board (Lahontan Water Board) adopted the revised Water Quality Control Plan for the Lahontan Region (Basin Plan) under Resolution No. 6-93-98 on September 9, 1993. The revised Basin Plan was approved by the State Water Resources Control Board (State Water Board) on January 19, 1995, by the Office of Administrative Law (OAL) on March 31, 1995, and by the U.S. Environmental Protection Agency (USEPA) on May 29, 2000.

The Basin Plan sets standards to protect all waters in the Lahontan Region and prescribes programs to implement these standards. The standards consist of the designated beneficial uses of the waters, narrative and numeric objectives to protect these uses, and the State's Antidegradation Policy.

On July 14, 2005, the Lahontan Water Board adopted Resolution No. R6T-2005-0021, ([Attachment](#)) amending the Basin Plan. The amendment revises Table 2-1 in Chapter 2 (Beneficial Uses) of the Basin Plan by deleting the MUN beneficial use designation for Owens Lake (Hydrologic Unit No. 603.30). The MUN beneficial use is defined in the Basin Plan as: "Beneficial uses of waters used for community, military, or individual water supply systems including, but not limited to drinking water supply."

The amendment would allow the Lahontan Water Board to consider granting an exemption from the Basin Plan's regionwide prohibition against industrial waste discharges to surface waters for a U.S. Borax discharge of brine mining wastes to the Owens Lake brine pool. The absence of a MUN use designation will also change the applicability of certain existing State and federal water quality standards and the applicability of the Proposition 65 prohibition against discharges of toxic substances to surface waters of Owens Lake. This could affect permitting and enforcement activities for other discharges to surface waters on the lakebed, such as discharges for shallow flooding and irrigation under a dust control program.

The MUN use would not be removed from groundwater underlying the lakebed or from the Owens River delta, streams, springs, artesian wells, seeps, and associated wetlands ringing the perimeter of the historic lakebed. Determinations of the applicability of the MUN use to specific waters within the Owens Lake bed would be made on a project-by-project basis through

verification or delineation of wetlands boundaries as appropriate. Owens Lake is located in Owens Valley in Inyo County and is the natural terminus of the Owens River. Owens Lake was the third largest lake in California before diversions of its tributaries (initially for agriculture and later for water supply to the City of Los Angeles) began in 1878. Since the mid-1920s, the lakebed has been essentially dry with only a brine pool in the western central portion of the lakebed remaining of the original lake. The ordinary high water mark of the brine pool has been formally delineated by the U.S. Army Corps of Engineers as 3,553.55 feet, compared with the former shoreline at about 3,600 feet. Most of the Owens Lake bed has become a man-made desert playa frequented by dust storms. However, a chain of streams, springs, seeps, and associated wetlands, with diverse aquatic communities (some endemic to Owens Lake) rings the perimeter of the historic lakebed. These wetlands are relied upon as a source of food and water for shorebirds and other migratory birds.

Owens Lake was saline/alkaline prior to diversions and probably supported an aquatic ecosystem similar to those of other perennial inland saline lakes such as Mono Lake. The present Owens Lake brine pool is now so saline that only algae and bacteria adapted to high salinities can survive. The brine pool consists of crystalline salt deposits and sediments covered by a thin layer of concentrated brine. It contains a mixture of sodium sulfate, chloride, and carbonate salts that precipitated as the lake dried following the diversion of its tributaries. The salt deposit ranges from a few inches to nine feet deep and includes the economically important sodium carbonate/bicarbonate salt, trona. The brine also includes very high concentrations of elements such as arsenic, boron, and fluoride, from natural geothermal and volcanic sources.

The lakebed is mainly owned by the State of California and controlled by the California State Lands Commission (Commission). The Commission leases portions of the lakebed to public and private entities for mining, grazing, and rights-of-way. One of the largest leases belongs to U.S. Borax, which has extracted trona using the “panel” method since 1976. The panel mining method involves isolating a block of ore from the lakebed with clay berms and pumping interstitial brine for washing and processing. Waste brine from the washing and dewatering process contains salts from the original brine and industrial process chemicals, including a flocculant. The current tailings ponds are mined-out panels above the ordinary high water mark of the brine pool. A 2004 Inyo County conditional use permit allows mining of up to 144,000 tons of trona per year using a mobile ore-processing unit, onshore drying and calcining units, and associated infrastructure including roads and a well to supply wash water.

The Lahontan Water Board designated the MUN use for surface waters of Owens Lake in 1989 as part of a “blanket” designation of the use for most waters of the Lahontan Region. To remove the MUN use, the Lahontan Water Board must show that removal is justified under criteria specified in the federal Water Quality Standards Regulation (40 CFR 131.10 (g)) and the California’s Sources of Drinking Water Policy (State Water Board Resolution No. 88-63). The Lahontan Water Board used the following summarized provisions of Resolution No. 88-63 to justify removing the MUN use from surface waters of Owens Lake.

The MUN use can be removed if:

- 1) The total dissolved solids (TDS) exceed 3,000 milligram per liter (mg/L) and it is not reasonably expected by Regional Boards to supply a public water system; or

- 2) There is contamination, either by natural processes or by human activity that cannot reasonably be treated for domestic use using either Best Management Practices or best economically achievable treatment practices.

The Lahontan Water Board staff convincingly documents that the MUN use can be removed from the brine pool under the criteria listed above. Among the evidence cited is a study by the U.S. Geological Survey that estimated the pre-diversion (1872) TDS levels of Owens Lake at about 90,000 mg/L. The salinity of the brine pool is 250,000-470,000 mg/L. Arsenic levels have been measured at 110,000 micrograms per liter ( $\mu\text{g/L}$ ), far exceeding the 10  $\mu\text{g/L}$  federal drinking water standard. Several other naturally occurring constituents were also listed as violating various standards related to the MUN use.

Lahontan Water Board staff considered the possibility of ending diversions, desalination, and arsenic removal and determined that the MUN use could not feasibly be attained for the brine pool or original lake with any of these options. It should be noted that the tiny communities (Olancho, Cartago, and Keeler) surrounding the lake rely on domestic wells to supply most of their drinking water needs and that MUN is an existing use of the groundwater of Owens Valley basin. Groundwater from wells located above the lakeshore is also pumped for export to commercial users.

The federal Water Quality Standards Regulation allows states to remove designated beneficial uses that are not existing uses. "Existing uses" are defined as "those uses actually attained in the water body on or after November 28, 1975, whether or not they are included in the water quality standards." Lahontan Water Board staff found no records indicating historic use of the surface water of Owens Lake as a long-term drinking water source or showing that these waters have been used for domestic supply since the threshold date.

Below is a summary of the provisions of the federal regulation that the Lahontan Water Board staff found most relevant to removal of the MUN use from surface waters of Owens Lake.

States may remove a designated use that is not an existing use if the state can demonstrate that attaining the designated use is not feasible because:

- 1) Naturally occurring pollutant concentrations prevent the use; or
- 2) Natural, ephemeral, intermittent or low flow conditions or water levels prevent the use; or
- 3) Human-caused conditions or sources of pollution prevent the use and cannot be remedied; or
- 4) Dams, diversions or other types of hydrologic modifications preclude attainment of the use; and it is not feasible to restore the water body to its original condition or to operate the modifications in a way that would result in attainment of the use; or
- 5) Controls would result in substantial and widespread economic and social impacts.

The Technical Staff Report describes in detail how each of these criteria were considered and addressed.

**POLICY ISSUE**

Should the State Water Board approve the amendment to the Basin Plan in accordance with the Staff recommendation below?

**FISCAL IMPACT**

Lahontan Water Board and State Water Board staff work associated with or resulting from this action can be accommodated within budgeted resources.

**REGIONAL WATER BOARD IMPACT**

Yes, Lahontan Water Board.

**STAFF RECOMMENDATION**

That the State Water Board:

1. Approves the amendment to the Basin Plan as adopted under Lahontan Water Board Resolution No. R6T-2005-0021.
2. Authorizes the Executive Director to submit the amendment adopted under Lahontan Water Board Resolution No. R6T-2005-0021 and the administrative record for this action to OAL and USEPA for approval.

STATE WATER RESOURCES CONTROL BOARD  
RESOLUTION NO. 2005-

APPROVING AN AMENDMENT TO THE WATER QUALITY CONTROL PLAN  
FOR THE LAHONTAN REGION TO REMOVE THE MUNICIPAL AND  
DOMESTIC SUPPLY (MUN) BENEFICIAL USE DESIGNATION FROM  
SURFACE WATERS OF OWENS LAKE, INYO COUNTY

WHEREAS:

1. The Lahontan Regional Water Quality Control Board (Lahontan Water Board) adopted the revised Water Quality Control Plan for the Lahontan Region (Basin Plan) under Resolution No. 6-93-98 on September 9, 1993. The revised Basin Plan was approved by the State Water Resources Control Board (State Water Board) on January 19, 1995, by the Office of Administrative Law (OAL) on March 31, 1995, and by the U.S. Environmental Protection Agency (USEPA) on May 29, 2000.
2. On July 14, 2005, the Lahontan Water Board adopted Resolution No. R6T-2005-0021 (Attachment), amending the Basin Plan. The amendment revises Table 2-1 in Chapter 2 (Beneficial Uses) of the Basin Plan by deleting the MUN beneficial use designation for Owens Lake (Hydrologic Unit No. 603.30).
3. The State Water Board finds that the Lahontan Water Board staff prepared documents and followed procedures satisfying environmental documentation requirements in accordance with the California Environmental Quality Act and all other applicable State laws and regulations.
4. The State Water Board finds that the amendment is in conformance with the requirements specified in California's Sources of Drinking Water Policy (State Water Board Resolution No. 88-63).
5. The State Water Board finds that the Basin Plan amendment is in conformance with the requirements of Water Code section 13240, which specifies that Regional Water Quality Control Boards shall periodically review and may revise Basin Plans.
6. This Basin Plan amendment will not become effective until approved by the State Water Board, OAL, and USEPA and a Notice of Decision has been filed with the Secretary of the California Resources Agency.

THEREFORE BE IT RESOLVED THAT:

The State Water Board:

1. Approves the amendment to the Basin Plan as adopted under Lahontan Water Board Resolution No. R6T-2005-0021.

2. Authorizes the Executive Director to submit the amendment adopted under Lahontan Water Board Resolution No. R6T-2005-0021 and the administrative record for this action to OAL and USEPA for approval.

CERTIFICATION

The undersigned, Clerk to the Board, does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the State Water Resources Control Board held on October 5, 2005.

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Debbie Irvin  
Clerk to the Board