California Regional Water Quality Control Board
San Diego Region

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Edmund G. Brown Jr.
Governor

TO: Tom Howard
Executive Director
State Water Resources Control Board

FROM: David W. Gibson
Executive Officer
SAN DIEGO REGIONAL WATER QUALITY CONTROL BOARD

DATE: February 3, 2011

SUBJECT: Regulation of Brine Waste Discharges from Desalination Facilities

On January 12, 2011, the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) adopted Order No. R9-2011-0016 (Order), an NPDES permit for the City of Oceanside's Ocean Outfall discharge. The point established in the Order for compliance with technology-based effluent limitations (TBELs) for a ground water desalination facility brine discharge was a key issue raised by the City of Oceanside as well as other interested persons in the hearing. At the conclusion of the hearing the San Diego Water Board Members adopted the tentative Order recommended by staff, but requested that I communicate to the State Water Board their concern that the NPDES regulations may not provide sufficient flexibility for setting the point of compliance for TBELs in NPDES permits. The Board Members were particularly concerned that the lack of flexibility may lead to unnecessarily stringent requirements for the discharge of brine and other waste for projects designed to augment local water supply needs.

The Order regulates the combined discharges from three separate facilities including two municipal wastewater treatment plants classified as publicly owned treatment works and a desalination facility classified as an industrial facility. All three facilities are owned and operated by the City of Oceanside. Treated effluent from the three facilities is discharged through the Oceanside Ocean Outfall (Ocean Outfall) to the Pacific Ocean. Under the terms of the Order, discharges from each facility are now regulated under separate TBELs that apply to each discharge prior to mixing with any other wastewater flows directed to the Ocean Outfall.

This is a departure from prior Orders which, contrary to applicable NPDES regulations, implemented TBEL compliance at a single combined discharge point at the Ocean Outfall and not at each individual facility prior to mixing with other wastewater flows

directed to the Ocean Outfall. This change in the application of TBELs in the Order was based on three key NPDES regulations which stipulate that:

1. Technology-based treatment requirements under section 301(b) of the Clean Water Act represent the minimum level of control that must be imposed in an NPDES permit [40 CFR 125.3(a)];

2. Technology-based treatment requirements are applied prior to or at the point of discharge [40 CFR 125.3(e)]; and

3. Technology-based treatment requirements cannot be satisfied through the use of "non-treatment" techniques such as flow augmentation and in-stream mechanical aerators [40 CFR 125.3(f)]

The change was also based on Ocean Plan Table A TBELs which are applicable to 1) publicly owned treatment works discharges and 2) industrial discharges for which effluent limitation guidelines have not been established pursuant to Sections 301, 302, 304, or 306 of the Clean Water Act[1]. Based on these considerations the Order requires that effluent pollutant levels be measured, and compliance with TBELs determined, at the point of discharge following the treatment process at each facility and prior to mixing with discharges from other separate facilities.

In my view, however, the real issue centers on how waste byproducts from desalination facilities are classified rather than the NPDES regulations governing the point of compliance for TBELs in NPDES permits. Waste brine discharges from desalination processes are currently regulated through a default classification as an industrial waste under both the Clean Water Act and the California Ocean Plan because they do not provide specific regulatory distinction for waste byproducts from desalination facilities. While TBELs are indeed appropriate for pollutants associated with industrial wastes, the constituents of concern in brine waste are primarily mineral salts and turbidity. These constituents present a far less significant threat to the ocean than most industrial wastes that are regulated through TBELs. Nonetheless, the San Diego Water Board relied on the default industrial waste classification in its decision to adopt the Order and in recent decisions on regulation of other brine discharges. An appropriate regulatory distinction for brine waste could be provided by the State Water Board through an Ocean Plan amendment establishing a new separate classification for waste byproducts from desalination facilities.

Amendment of the California Ocean Plan is an appropriate means to address issues affecting desalination facilities throughout the state. The 2005 California Ocean Plan Triennial Review and Workplan (State Water Board Resolution No. 2005-2008) identified brine discharge from desalination facilities as a high priority issue. I

[1] 2005 California Ocean Plan adopted by the State Water Resources Control Board on January 20, 2005 and April 21, 2005, Page 12, Table A Effluent Limitations

understand that work is already underway by State Water Board staff to prepare revisions to the Ocean Plan on various issues common to desalination facilities as part of upcoming planning efforts for Ocean Plan amendment. The Ocean Plan revisions could address issues common to desalination facilities such as brine waste classification, intake water specifications, physical and toxicity characteristics of brine discharges, brine waste blending with other wastewater flows directed to a common ocean outfall, and alternative mixing zones for dense brine waste plumes. Ocean Plan revisions could also address adjustment of the Ocean Plan TBELs to reflect the specific types of waste and pollutants discharged from a desalination facility. Given the ever-increasing importance of water reuse and desalination to meet the drinking water supply and reliability needs of California, the San Diego Water Board strongly supports the State Water Board's on-going planning efforts to facilitate permitting of facilities that discharge brine waste.

At the Management Coordinating Committee meeting of January 25, 2011, you described the need for closer collaboration between the Regional Water Boards and the State Water Board on key, emerging issues of both local and statewide importance. I suggest that this is one such issue the San Diego Water Board and State Water Board could take up together to more efficiently address this important issue.

I would appreciate your consideration of the San Diego Water Board's concerns in this matter. If you would like additional information on the Order or other aspects of San Diego Water Board's regulation of brine discharges please contact me.

cc: John Kemmerer, US EPA