

EXECUTIVE OFFICER SUMMARY REPORT
May 12, 2010

- ITEM: 7
- SUBJECT: NPDES Permit Reissuance: Waste Discharge Requirements for the Sweetwater Authority, Richard A. Reynolds Desalination Facility, discharge to the Lower Sweetwater Basin, San Diego County. (Tentative Order No. R9-2010-0012, NPDES Permit No. CA0108952) (*Michelle Mata*)
- PURPOSE: To adopt reissued Waste Discharge Requirements and an NPDES Permit (tentative Order) for the discharge of up to 2.5 million gallons per day (MGD) of demineralization brine, well purge water, and other miscellaneous wastewater from the Richard A. Reynolds Desalination Facility (Facility).
- PUBLIC NOTICE: A public notice of the tentative Order was published in the San Diego Union Tribune on January 25, 2010. Copies of the tentative Order were mailed on February 2, 2010 to Sweetwater Authority. Copies were made available for public review at the San Diego Water Board office and posted on the San Diego Water Board's website on February 2, 2010.
- The comment period was extended to April 7, 2010 by letter dated March 24, 2010.
- DISCUSSION: **Current Receiving Water Quality Conditions¹**
Based on new information obtained during the current permit cycle, the discharge by Sweetwater Authority (Discharger) at the current location and flow rate of 0.8 MGD has been shown to have adverse chemical and biological impacts on the Lower Sweetwater River in the vicinity of the discharge point just downstream of the confluence with the upper Paradise Creek Flood Control Channel. The discharge causes a depression in the salinity at the current point of release in the receiving waters under dry weather flow conditions. The reduction in salinity in turn adversely affects the naturally occurring saline habitat benthic macroinvertebrate community and wetland vegetation that would exist in the Lower

¹ Current Receiving Water Quality Conditions" is a new standard section the San Diego Water Board will see in Executive Officer Summary Reports for most NPDES-related agenda items

Sweetwater River in the absence of the discharge. Results of a recent vegetation survey conducted indicate that the marsh around the discharge has transitioned from coastal brackish marsh to coastal salt marsh. The current distribution of vegetation makes it apparent that a long-term shift in vegetation toward a more halophyte-dominated condition (i.e., a salt marsh) has occurred since the initiation of nearly continuous inputs of brackish water from the Reynolds Facility.

Environmental Outcome of Tentative Order²

Under the tentative Order, the Discharger would be required to relocate the discharge approximately 2,850 feet downstream of the confluence of the Upper Paradise Creek Flood Control Channel and the Lower Sweetwater River to eliminate the adverse chemical and biological impacts. The schedule for relocating the discharge release has been negotiated with the Discharger and included in the Revised Errata (Supporting Document No. 5). Site studies conducted by the Discharger indicate the receiving waters in the vicinity of the new release point would provide sufficient dilution to minimize the salinity impacts to the tidally influenced portion of the Lower Sweetwater River at all times of the year. Thus, relocating the discharge downstream will help restore the beneficial uses to the tidally influenced portion of the Lower Sweetwater River by creating a more homogenous salinity level throughout the water body.

The discharge release point relocation would also accommodate the Discharger's request to increase the flow rate from 0.8 MGD to 2.5 MGD to allow for increased production of local potable water supply from 5 MGD to 10 MGD, thereby further utilizing the groundwater in the San Diego Formation to augment public water supplies. The project is an important part of a long-term strategy by the Discharger to reduce dependence on imported water.

Background

Order No. R9-2004-0111 establishes requirements for the discharge of up to 0.8 MGD of combined discharges from demineralization brine, well purge water, and miscellaneous wastewater from the Richard A. Reynolds Desalination Facility (Facility). The combined waste discharges regulated under this NPDES permit are routed to the Lower Sweetwater River via the

² "Environmental Outcome of Tentative Order" is a new standard discussion section that will be presented in EOSRs for some NPDES-related agenda items.

upper Paradise Creek Flood Control Channel. The area of discharge at the lower Sweetwater River is within the tidal prism of San Diego Bay.

The Facility is a groundwater desalination plant that draws brackish groundwater for desalination and produces a potable water supply to approximately 180,000 customers through about 35,000 service connections in the communities of Chula Vista and National City. Since the adoption of Order No. R9-2004-0111, the Discharger has increased potable water production at the Facility from 4 MGD to 5 MGD and plans an additional expansion to 10 MGD in the near future. Six groundwater wells draw from the San Diego Formation Aquifer to provide plant feed-water.

An additional five groundwater wells are planned to be added as part of the proposed expansion for a total of eleven groundwater wells. Under the tentative Order, well purge water from the proposed wells would discharge into storm drains that lead to San Diego Bay south of the Sweetwater River Estuary. The discharge of brine to the Lower Sweetwater River would increase from a maximum of 0.8 MGD to no more than 2.5 MGD.

The tentative Order would allow, on an interim basis, an increase in flow from 0.8 MGD to 1.0 MGD, at the existing location during the months of December through May. The increased flow would be generated from the use of groundwater wells SDF- 3, SDF-4, and SDF 5, which are located adjacent to the river, and are only operated during the winter months to lesson the impacts to the freshwater marsh habitat in the Sweetwater River. Generally this occurs after the first rains in late fall to early winter. The 0.2 MGD increase in flow rate at the current location during wet weather conditions would not contribute to the adverse biological impacts caused by dry weather flows described above. Discharge flow rates greater than 1.0 MGD, and up to 2.5 MGD, would only be allowed after the completion of the new outfall location.

The San Diego Water Board received comments on the tentative Order from the Discharger on February 23, 2010. A written Responses to Comments document and an Errata Sheet, including the proposed Compliance Schedule, have been prepared and sent to the Discharger on April 7, 2010. A supplemental Errata has been prepared to provide further clarification and correct typographical errors and was sent by email

to the Discharger on April 28, 2010.

**SIGNIFICANT
CHANGES:**

The following areas in Tentative Order No. R9-2010-0012 differ from current Order No. R9-2004-0111:

1. The tentative Order has a new look based on the statewide template for NPDES permits. While each region is unique, there are many aspects of NPDES permits that can be standardized. Since 2004, staffs of the State and Regional Water Boards, along with USEPA's contractor, have embarked in standardizing NPDES permits in the state.
2. A Reasonable Potential Analysis (RPA) was conducted using data supplied by Sweetwater Authority. Effluent limitations were included for constituents with reasonable potential to exceed water quality objectives. Constituents that do not have reasonable potential or had inconclusive RPA results are assigned performance goals in the tentative Order. These constituents are also assigned monitoring requirements, but the results will be used for informational purposes only, not compliance determination.
3. The tentative Order contains interim Effluent Limitations for the existing discharge location (001a) and final Effluent Limitations for the proposed discharge location (001b).
4. An errata sheet has been prepared to incorporate a time schedule in the tentative Order for relocation of the discharge to a point further downstream to mitigate salinity impacts.

COMPLIANCE:

The Discharger has demonstrated compliance with the Effluent Limitations in current Order No. R9-2004-0111. New information obtained from recent site studies conducted by the Discharger indicates salinity concentrations, associated with the brine discharge, have adverse chemical and biological effects on the Lower Sweetwater River. Thus the discharge is not in full compliance with the Basin Plan narrative toxicity water quality standard expressed as a Discharge Prohibition in Order No. R9-2004-0111. This non-compliance will be addressed with a Compliance Schedule in the tentative Order to move the discharge location further downstream. The San Diego Water Board anticipates that the portion of the Lower Sweetwater River impacted by the current discharge will be restored to naturally

occurring conditions after relocation of the waste discharge release point to the downstream location.

LEGAL ISSUES: None

SUPPORTING DOCS:

1. Site Map
2. Comment Letter from Sweetwater Authority dated February 23, 2010
3. Responses to Comments
4. Transmittal Letter for Responses to Comments and April 7, 2010 Errata Sheet
5. Revised Errata Sheet (including the Errata Sheet changes made on April 7, 2010 and revisions sent to the Discharger by email on April 29, 2010)

RECOMMENDATION: Adoption of Tentative Order No. R9-2010-0012 with Revised Errata Sheet is recommended