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METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

[Handwritten Signature]
EXECUTIVE SECRETARY

January 31, 1995

To: Board of Directors (Water Problems Committee--Information)
From: General Manager
Subject: Development of a Water Quality Policy for Introduction of
Non-State Water Project (SWP) Groundwater into SWP Facilities

Report

The Department of Water Resources (DWR) recently notified Metropolitan that it intends to develop a long-term water quality policy for the introduction of non-SWP groundwater into the California Aqueduct (Aqueduct). During water shortage conditions in the past, DWR has allowed agencies to introduce groundwater into the Aqueduct and transfer the water to areas with limited supplies. These types of transfers, called groundwater pump-in programs, have been accomplished either through direct conveyance or through exchange with water stored in surface reservoirs. DWR has allowed the groundwater to be pumped directly into the Aqueduct with the condition that the quality was in compliance with an interim water quality protection policy, which was reevaluated each year. Developing an adequate long-term policy has the potential to impact not only the quality of Metropolitan's SWP supplies, but also the success of future water management programs, such as the Semitropic/Metropolitan Groundwater Storage Program. Metropolitan staff is currently working with DWR and others to ensure the adoption of a sound long-term policy.

Introduction of non-SWP groundwater into the Aqueduct began in 1990 in response to the drought, when DWR and the United States Bureau of Reclamation accepted groundwater into the jointly owned and operated San Luis Canal Unit of the Aqueduct. Since 1990, more than 450,000 acre-feet of non-SWP groundwater has been introduced and conveyed through the Aqueduct. The maximum annual groundwater pump-in volume occurred in 1991 when several water agencies cumulatively introduced approximately 175,000 acre-feet of groundwater into the Aqueduct. Although the volume of future groundwater pump-in programs is unknown, these programs will likely continue on an annual basis as a part of a comprehensive water management strategy and will exceed the historical maximum amount in some

years. Westlands Water District (Westlands), a federal Central Valley Project (CVP) contractor, has introduced the largest quantity of groundwater to date, and has indicated a desire to institute groundwater pump-in programs for as much as 220,000 acre-feet per year. In addition, Kern County Water Agency (KCWA), KCWA member agencies, Metropolitan, and other SWP and CVP contractors either have already or may in the future develop water management programs which require groundwater pump-in.

Groundwater quality varies along the length of the Aqueduct and in many cases is of acceptable quality for most constituents. However, a few constituents are of particular concern. In the northern San Joaquin Valley, limited water quality data from Westlands' program wells indicate that total dissolved solids (TDS) and sulfate levels are quite high. In the southern San Joaquin Valley, data from the Semitropic/Metropolitan Groundwater Storage Program and DWR's Kern Fan Element Program indicate that lower TDS levels, but higher arsenic levels are expected to be present.

Water quality impacts due to groundwater pump-in programs are increased during drought years when deliveries from the Delta are limited and the groundwater comprises a greater percentage of the total Aqueduct flow. For example, Figure 1 shows the effect of Westlands' 1991 and 1992 groundwater pump-in programs on TDS and sulfate levels in the Aqueduct. During 1991 and 1992, both critically dry years, large SWP shortages resulted in reduced flow in the Aqueduct. Westlands' introduction of high TDS and high sulfate water during these years caused noticeable increases in concentrations in the Aqueduct. This situation resulted in a reduced blending capability for downstream SWP contractors.

In the past, Metropolitan staff has supported DWR's interim policies because they were short-term drought management measures. However, Metropolitan staff believes that the current DWR interim policy is not adequate for use as a long-term policy for the following reasons: (1) there are standards for certain water quality constituents (TDS, chloride, and sulfate) that are unacceptably high for non-drought related groundwater pump-in operations, (2) there is no limit on the total volume of non-SWP contractor groundwater pump-in allowed, (3) there are water quality and blending impacts on SWP water users that are not addressed, (4) there are no mechanisms to mitigate such impacts, and (5) there is no protection of the SWP contractors' ability to reserve blending or dilution capability for themselves. Metropolitan has indicated these concerns to DWR.

DWR's development of a long-term policy could impact Metropolitan's water management programs in several ways. A policy that is not adequately protective could impact Metropolitan's ability to deliver water that meets all drinking water standards, or could increase treatment costs. Further, an inadequate policy could reduce the ability to use SWP supplies for blending, which could limit local water management programs such as waste water reclamation and local conjunctive-use programs. Conversely, excessively stringent standards could greatly limit Metropolitan from using water obtained through water transfer and exchange programs. Metropolitan staff is currently working with DWR and others to ensure the adoption of a sound long-term policy.

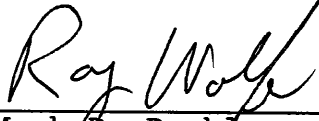
In response to Metropolitan staff concerns, DWR has initiated an ad-hoc committee process to gather the necessary information for establishing the long-term policy, a process which could take up to two years. To protect Metropolitan's overall water quality protection and water supply management objectives in the near-term, staff requested that DWR limit non-SWP contractor groundwater pump-in programs so that impacts to Metropolitan's water quality and potential future water management programs are minimized. Staff will report to your Board as the process for developing a long-term groundwater pump-in policy proceeds and additional information is available.


Recommendation

For information only.

John R. Wodraska
General Manager

Submitted by:

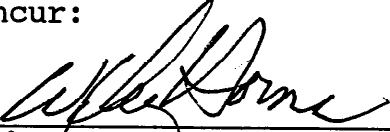
By 
for Mark D. Beuhler
Director of Water Quality

By 
Debra C. Man, Chief
Planning and Resources

KAD:TST:c1

Attachment

Concur:


John R. Wodraska
General Manager

Effects of Westlands' Groundwater Pump-in Programs in the California Aqueduct

