



## IRVINE RANCH WATER DISTRICT

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February 3, 2016

Mr. Michael Markus, P.E.  
General Manager  
Orange County Water District  
18700 Ward Street  
Fountain Valley, CA 92708

Subject: Water Quality Impacts Associated with Distribution of Water from Proposed Seawater Desalination Project

Mike:

At tonight's OCWD Board meeting, staff will be presenting options for distributing product water from the proposed seawater desalination project at Huntington Beach. The options being considered include alternatives for recharging desalinated water into the Orange County Basin and alternatives for distributing the water directly to the Groundwater Producers and water agencies in south Orange County. IRWD has reviewed the options and has concluded that recharging the desalinated water is a substantial change to the proposed project that would significantly increase the salt load to the groundwater basin. This increased salt load would result in significant impacts on the quality of groundwater, potable water delivered to IRWD customers, and in the recycled water produced by IRWD.

IRWD requests that you and the OCWD Board recognize the significant impact that the proposed seawater desalination facility would have on the water quality of the Orange County Basin and IRWD's recycled water system. We also request the opportunity to engage with OCWD staff to discuss the proposals for distributing desalinated seawater, the significant impacts to water quality, and IRWD's other concerns before proceeding with further analysis of the proposed seawater desalination project.

### Impacts of Treated Seawater to IRWD's Facilities and Systems:

In 2014 and 2015, IRWD staff worked with engineers at HDR to develop a comprehensive Salt Management Model of IRWD's service area. Modeling results indicate that if desalinated seawater of the quality proposed in the May 2015 term sheet between OCWD and Poseidon Resources is recharged either through direct or in-lieu methods, then significant impacts would occur to IRWD's recycled water system. Recharging the Orange County Basin with desalinated water would increase the concentrations of total dissolved solids (TDS) and chlorides in the groundwater system. When the lesser quality (saltier) groundwater is extracted from the ground, there would be a direct impact to the quality of potable water delivered by IRWD and in sewage flows coming into IRWD's Michelson Water Recycling Plant (MWRP). A higher level of TDS, especially chlorides, is unacceptable in IRWD's recycled water.

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Any substantial increases in TDS in IRWD's recycled water as a result of the proposed desalination project could impair IRWD's ability to meet existing Regional Water Quality Control Board permit requirements for discharges into recycled water storage reservoirs considered Waters of the United States. Additionally, increases in TDS and chlorides in IRWD's recycled water would make it difficult to meet the needs of IRWD's customers, with whom we have decades of experience providing recycled water that meets their water quality needs. These significant impacts could result in IRWD needing to invest in salt removal (e.g., reverse osmosis) treatment facilities at MWRP to treat a portion of the District's recycled water. The construction and operation of these facilities would result in substantial capital and annual operations and maintenance costs that would need to be borne by IRWD and its customers as a direct result of the seawater desalination project as proposed by OCWD.

Considerations of Impacts:

The OCWD Concept Report for the Distribution of Desalinated Water for Recharge that is being presented to the Board tonight recognizes that an Environmental Impact Report (EIR) would need to be prepared to address the large number of injection wells and pipelines that are needed to directly recharge the desalinated water. The report and presentation do not mention the need to evaluate water quality impacts from the changed project or address the pipelines and facilities needed to distribute this water to the Groundwater Producers and south Orange County agencies, which is a substantial oversight. In addition, the report and presentation do not recognize that OCWD's implementation of the project and the option to recharge the desalinated water represents substantive changes to the proposed project that require additional environmental review through the EIR process.

Evaluation of Alternatives:

New information is available related to alternative projects and programs that could increase the water supply reliability of Orange County (e.g., the Orange County Basin Optimization Plan and the Indirect Potable Reuse Project at Carson proposed by Metropolitan Water District). This new information should also be considered in the preparation of a new EIR, particularly as these alternatives could alleviate, if not eliminate, the water quality concerns mentioned above.

Since the OCWD Board is conducting a regular meeting tonight, I am requesting that you pass this paper along to each of the OCWD Board of Directors. Please contact me at (949) 453-5590 to set up a meeting to discuss these concerns. I look forward to hearing from you.

Sincerely,



Paul A. Cook, P.E.  
General Manager