



BOARD OF SUPERVISORS  
AGENDA LETTER

Agenda Number:

Clerk of the Board of Supervisors  
105 E. Anapamu Street, Suite 407  
Santa Barbara, CA 93101  
(805) 568-2240

**Department Name:** 4<sup>th</sup> District Supervisor  
Peter Adam  
**Department No.:** 011  
**For Agenda Of:** May 17, 2016  
**Placement:** Administrative  
**Estimated Tme:**  
**Continued Item:** No  
**If Yes, date from:**  
**Vote Required:** Majority

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**TO:** Board of Supervisors

**FROM:** Department Peter Adam, 4<sup>th</sup> District Supervisor  
Contact Info: Jayson Parsons, jayson.parsons@countyofsb.org 805-346-8407

**SUBJECT:** Carlsbad Desalination Tour Report

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**County Counsel Concurrence**

As to form: Yes

**Auditor-Controller Concurrence**

As to form: N/A

**Other Concurrence:** N/A

**Recommended Actions:**

It is recommended that your Board take the following actions:

- a) Receive and file this report regarding the May 4, 2016, Carlsbad Desalination Tour attended by Supervisor Adam, CEO Miyasato, and County Staff; and
- b) Determine that this action is not a project pursuant to CEQA Guidelines Section 15378(b)(5) and the attached Notice of Exemption (Attachment 1).

**Summary Text:**

On May 4, 2016, Supervisor Adam led a group consisting of CEO Miyasato and county staff to tour the newly-operational Carlsbad desalination facility. Prior to a physical tour of the plant, county staff met with representatives from Poseidon Water and the San Diego County Water Authority to ask questions about a variety of aspects regarding the project.

This report is to serve as an informational item to relate what was learned and observed on the tour.

## **Background:**



### *History*

In the 1990s, after years of low rainfall, the San Diego County Water Authority (SDCWA) began exploring strategies to diversify its water resource portfolio. These early discussions ultimately resulted in the construction of the Claude “Bud” Lewis Carlsbad Desalination Plant. Opening in December 2015, it has been called the “nation’s ... most technologically advanced and energy-efficient seawater desalination plant,” by the SDCWA, and is the largest desalination facility in the Western Hemisphere. The plant is owned and financed privately by Poseidon Water. Operations are conducted by the Israeli firm IDE Technologies.



In exchange for building the facility, Poseidon entered into a 30-year Water Purchase Agreement with the SDCWA, whereby the SDCWA would purchase a minimum of 48,000 acre-feet per year from Poseidon. As a part of this agreement, all risks were transferred to Poseidon, including bearing cost overruns, permitting, design liability, and operations. Furthermore, the Authority can reject water deliveries if quality requirements are not met.

The plant is sited on a 6-acre parcel and operates continuously. The facility employs 36 full-time employees. Operating costs range from \$49-54M per year, with the cost of an acre-foot of water to ratepayers set at \$2350 for 2016. Increases in costs over inflation are capped by agreement to not increase by more than 30% over 30 years. The SDCWA purchases the entire output of the plant, which has a current capacity of 56,000 acre-feet per year, or about 50 million US gallons of water daily.

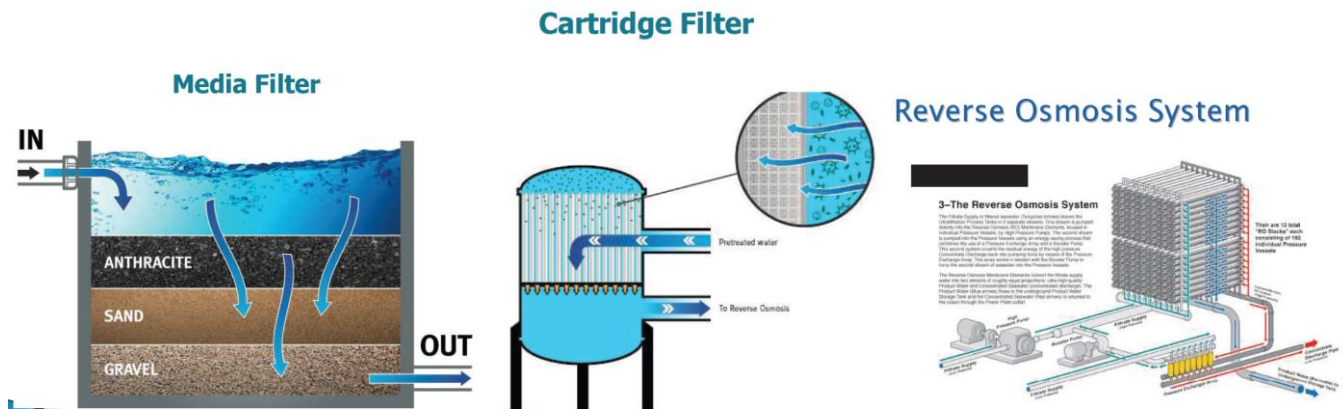
The permitting process took nearly six years, with three of those years spent working through the California Coastal Commission. The project withstood 14 separate legal challenges based on environmental concerns. Poseidon Water claims that the plant is the first water project in California's history to have a net carbon footprint of zero, and the company continues to actively mitigate using greenhouse gas offsets and wetland restoration. Furthermore, energy recovery systems ensure that over 97% of the pressure at the end of the system is conserved, thus reducing the facility's CO2 emissions by nearly 42,000 metric tons annually.



Pictured top: Staff approaching desalination facility  
Bottom: Poseidon rep. explaining RO membrane technology

### The Process

Seawater is first filtered through fish screens so that all biologic material larger than 1 millimeter can be safely returned to the ocean. The screened water is then pretreated by passing it through a media filter, allowing the water to be naturally cleansed of remaining solids as it moves through anthracite, sand, and gravel. This pretreatment also helps filter out algae during algal blooms. The pretreated seawater is then injected through a cartridge filter system to remove any remaining biologic material. Finally, the water is passed through a 16,000-membrane reverse osmosis array to remove salts and dissolved particles. The resultant fresh water is then infused with essential minerals and delivered via a ten-mile pipeline to the SDCWA distribution system in San Marcos. The plant provides approximately 7-10% of the potable water needs for the San Diego region.



Pictured: Media filter system





Pictured: Cartridge filter system



Pictured: Staff with reverse osmosis array

**Attachments:**

1. Notice of Exemption

**Authored by:**

Jayson Parsons, [jayson.parsons@countyofsb.org](mailto:jayson.parsons@countyofsb.org) 805-346-8407