



THE CITY OF SAN DIEGO
PUBLIC UTILITIES
DEPARTMENT



Water | Demonstration
Purification | Project

Water Purification Demonstration Project Monthly Update

Natural Resources and Culture Committee

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Testing and Monitoring Plan Objectives

- Demonstrate the proposed advanced purification technology meets drinking water standards and poses no threat to public health
- Demonstrate reservoirwater quality can be maintained
- Implement a monitoring plan for chemicals of emerging concern (CEC) that is tailored to the wastewater received at the North City Water Reclamation Plant
- Demonstrate integrity monitoring techniques and performance reliability measures for the treatment equipment



Testing and Monitoring Scope

Water Quality Tests

Sampled:

- purified water for more than 300 compounds
- compounds with regulatory limits for meeting drinking water standards
- compounds under consideration for regulation, including chemicals of emerging concern

Integrity monitoring to verify equipment for each treatment step is performing properly





First Quarter Results - Overview

- Exceptional overall water quality, met all project treatment goals
- Purified water met all drinking water standards
- Equipment at each step in the treatment process is performing properly





Drinking Water Standards

- California Department of Public Health established over 100 Primary and Secondary Maximum contaminant levels (MCLs)
 - Primary MCLs are set for health concerns
 - Secondary MCLs are set for non-health concerns
 - None were detected in the purified water
 - Only two Primary and four Secondary MCLs were exceeded in the tertiary water
- Federal and State Disinfection Byproduct Limits (DBPs)
 - Sampled for all DBPs with regulatory limits and potential UV/advanced oxidation byproducts
 - Formation low for all compounds tested, none above regulatory limit





California Toxics Rule (CTR)

- Applicable to California inland surface waters, enclosed bays and estuaries
- Establishes limits for human health and/or aquatic life for 126 Priority Toxic Pollutants
- Includes 53 compounds not regulated by CDPH
- Establishes limits lower than drinking water MCL for 32 compounds
- Establishes limits lower than detection level for 17 compounds
- Only one detectable and above CTR limit in purified water, at 0.78 *parts per billion (ppb), limit is 0.56 ppb
- Only two detectable and above CTR limit in imported water

*One part per billion is the equivalent of one drop of water in one Olympic-size swimming pool.



Microbial Contaminants

- California Department of Public Health established limits for advanced purified water in potable reuse applications
- Over 70 samples taken throughout treatment process
- No contaminants detected in purified water





Chemicals of Emerging Concern (CECs)

- Encompasses endocrine disruptors and compounds found in personal care products
- Regulatory limits have yet to be established for CECs
- Sampled for 91 compounds – compounds selected based on likelihood of occurrence in wastewater
- 2 compounds detected in purified water
 - 1 @ 10 *parts per trillion
 - 1 @ 30 parts per trillion
- 13 compounds detected in imported water

* One part per trillion is the equivalent of one drop of water in 1000 Olympic-sized swimming pools.



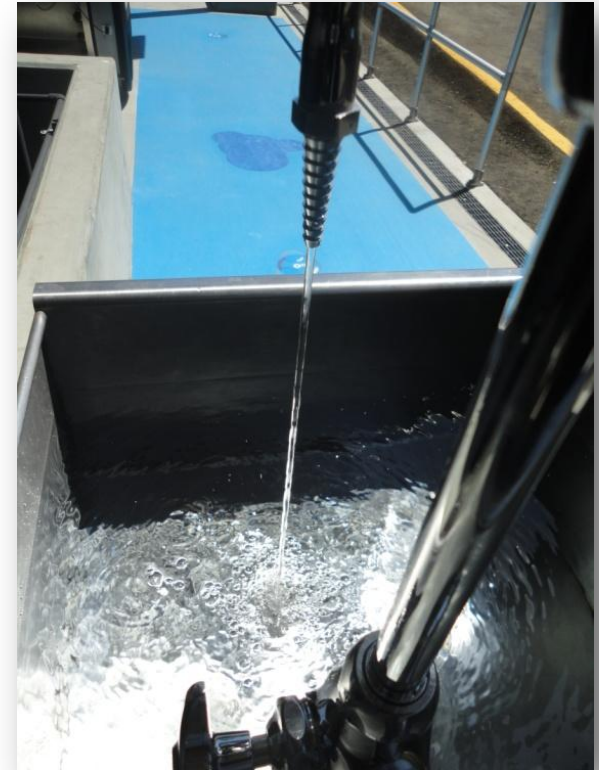
Integrity Monitoring

- Equipment is functioning properly and performing reliably
- Performed continuous and daily integrity tests at each step in the treatment process
- If measurements exceeded a specified parameter limit, the system is set to shut down automatically so operators can identify and resolve the problem
- If equipment performance exceeds pre-set range, alarms would sound or the system would shut down



Summary

- Advanced water purification process is effective at producing water that meets all drinking water standards.
- Only 2 of 91 CECs in sampling plan were detected in the purified water.
- California Toxics Rule requirements may not be totally applicable to the full-scale concept.
- Treatment equipment is functioning well.





Tour Participant Comments

- “Water is recycled.”
- “I learned where my water comes from.”
- “I saw with my own eyes the level of sophistication of the process and equipment to truly understand how pure this water is.”
- “I feel more comfortable with recycled water now.”

Tour Stats (to date)

- Number of tours: 128
- Attendees: 1,697

PUBLIC UTILITIES
Water Purification Project

Tour Survey
Date: _____

Thank you for attending today's tour. Please take a moment to give us feedback that will help us improve our tour program. Check the box that best applies under each question.

1) How informative was the tour?
☐ Not Informative ☐ Informative ☐ Very informative

2) How would you rate your understanding of the water purification process?
☐ Fair ☐ Good ☐ Excellent

3) How would you rate your experience overall?
☐ Fair ☐ Good ☐ Excellent

4) What was the most valuable information gained from the tour?

5) This tour would have been _____

6) Additional comments or questions:

7) Your ZIP code: _____

8) Organization(s) to which we should offer a tour or presentation:

Contact: _____

Thank you. We value your feedback.





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**THE CITY OF SAN DIEGO'S
WATER PURIFICATION
DEMONSTRATION PROJECT**

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Tour San Diego's AWP Facility

From: purewatersd | Nov 23, 2011 | 498 views

The Advanced Water Purification Facility is the centerpiece of the City of San Diego's Water Purification Demonstration Project. The facility is demonstrating the purification of 1 million gallons of water per day using membrane filtration, reverse osmosis and UV light/advanced oxidation. Tours of the facility are available to the public by registering at purewatersd.org/tours.shtml. Come see the latest in water purification technology up close! ... (more info)

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**MARSI STEIRER, DIRECTOR
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