



STEERING COMMITTEE

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Agenda Report

File #: 2026-4947

Agenda Date: 5/27/2026

Agenda Item No: 25.

FROM: Robert Thompson, General Manager

SUBJECT:

SUPERCritical WATER OXIDATION DEMONSTRATION AT PLANT NO. 1, PROJECT NO. RE21-01

GENERAL MANAGER'S RECOMMENDATION

RECOMMENDATION:

Authorize the General Manager to modify the Professional Services Agreement to 374Water Systems, Inc. for the Supercritical Water Oxidation Demonstration at Plant No. 1, Project No. RE21-01, to reduce the acceptance capacity of the Nix6 system to 3.25 tons per day from 6 tons per day, while 374Water Systems, Inc. continues to make process improvements toward achieving the goal of 6 tons per day.

BACKGROUND

The Orange County Sanitation District (OC San) collects and processes approximately 185 million gallons of wastewater per day. Cleaning this water results in concentrated solids. In December 2021, the Board approved a demonstration project for a new type of solids treatment technology called Supercritical Water Oxidation.

The purpose of this research project is to demonstrate the performance and industrial readiness of 374Water Systems, Inc.'s Nix6 to reliably destroy organic solids. The unit was not intended to significantly impact OC San's daily solids treatment of 550 tons per day, but rather to demonstrate the technology potential within the wastewater industry. The Nix6 is envisioned as a first step toward future, larger scale units. The reduction in acceptance capacity criterion will not affect OC San's solids processing capacity.

RELEVANT STANDARDS

- Provide technology leadership to the wastewater industry
- Search for technology solutions to neutralize constituents of emerging concern

PROBLEM

374Water Systems, Inc. continues to develop the Nix6 system. The unit, as currently configured, can consistently process 3.25 tons of solids per day. As a result, the current acceptance criterion cannot be met at this time.

PROPOSED SOLUTION

Modify the acceptance criterion to allow delivery of the unit while 374Water Systems, Inc. continues process improvements and further development of the technology.

TIMING CONCERNS

The research unit is currently being manufactured by 374Water Systems, Inc. Without revisions to the acceptance criterion, there will continue to be a delay in installation and evaluation of the technology.

RAMIFICATIONS OF NOT TAKING ACTION

Not taking action will delay the installation of the research unit currently being manufactured by 374Water Systems, Inc.

PRIOR COMMITTEE/BOARD ACTIONS

December 2021 - Approved a Professional Services Agreement to 374Water Systems, Inc. for the Supercritical Water Oxidation Demonstration at Plant No. 1, Project No. RE21-01, to provide goods and services for demonstration of the 374Water AirSCWO Nix6 System, for an amount not to exceed \$5,139,000; and approved contingency funds for Project No. RE21-01 for a combined total not to exceed \$514,000 (10%).

ADDITIONAL INFORMATION

N/A

CEQA

The project is exempt from CEQA, and a Notice of Exemption was filed with the OC Clerk-Recorder on November 23, 2021.

FINANCIAL CONSIDERATIONS

N/A

ATTACHMENT

The following attachment(s) may be viewed on-line at the OC San website (www.ocsan.gov) with the complete agenda package:

N/A