



# ADMINISTRATION COMMITTEE

## Agenda Report

Administration Building  
10844 Ellis Avenue  
Fountain Valley, CA 92708  
(714) 593-7433

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**File #:** 2023-2829

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**FROM:** Robert Thompson, General Manager  
Originator: Lan C. Wiborg, Director of Environmental Services

**SUBJECT:**

**BIOLOGICAL OXYGEN DEMAND (BOD) ANALYZER AND ESTIMATOR SYSTEM**

**GENERAL MANAGER'S RECOMMENDATION**

RECOMMENDATION:

Approve a sole source justification and issue a purchase order to MANTECH for a Biological Oxygen Demand (BOD) Pro AM405 Analyzer and 10-minute BOD Estimator System in an amount not to exceed \$100,000 including the BOD system, installation and training, sales tax, and freight.

**BACKGROUND**

BOD is a time-sensitive and mission critical compliance and operational parameter for the Orange County Sanitation District (OC San). OC San's NPDES permit includes five effluent limitations on BOD and requires daily monitoring. The BOD system is also used to support Operations for process monitoring and the Resource Protection Division's activities such as source control. Annually, OC San analyzes more than 9,000 samples for BOD from 21 locations throughout Plant Nos.1 and 2 and over 500 industries in OC San's service area.

This new BOD system will allow for quicker turnaround of results from the BOD estimator, from 3 hours to 10 minutes, allowing laboratory analysts to quickly make informed decisions on BOD analysis. In addition, this system will eliminate the generation of hazardous waste while maintaining a high throughput of daily samples necessary to meet NPDES permit requirements and provide support to Operations and Resource Protection Divisions.

**RELEVANT STANDARDS**

- Commitment to safety & reducing risk in all operations
- Comply with environmental permit requirements
- Ensure the public's money is wisely spent
- 24/7/365 treatment plant reliability

## **PROBLEM**

BOD testing is a daily NPDES permit requirement, and a critical parameter to measure for the OC San Operations (for process monitoring and optimization) and Resource Protection (for monitoring permitted industries) Divisions.

The current BOD system is more than 15 years old and has experienced several critical failures. The current system also lacks the means to ensure reliability to produce reportable data, which is critical to avoid costs associated with non-reportable data for compliance and source protection.

## **PROPOSED SOLUTION**

Purchasing the BOD Pro AM405 Analyzer and 10-minute BOD Estimator System from MANTECH will help OC San maintain a high throughput, meet stringent daily timelines, and improve reliability for BOD testing.

## **TIMING CONCERNS**

On December 12, 2022, OC San Plant No. 2 officially separated the reclaimable and non-reclaimable treatment trains and started sending treated effluent to the Orange County Water District for reclamation. Per the NPDES permit, this added another compliance monitoring location (non-reclaimable influent) for OC San. The new operational mode of the Plant has also changed the BOD profiles of final effluent and is putting additional demand on BOD testing throughput and reliability.

The current BOD analyzer has experienced several critical failures, some of which have caused work disruption that lasted up to a month.

## **RAMIFICATIONS OF NOT TAKING ACTION**

Without the BOD Analyzer System, OC San will not be able to sustain the high throughput and meet the stringent daily timelines and reliability required for compliance (i.e., NPDES permit), Operations, and source control. If NPDES permit compliance is not met for effluent monitoring, OC San could be subject to enforcement action and daily penalties up to \$25,000 for each violation, in addition to other actions deemed appropriate by the Environmental Protection Agency and Santa Ana Regional Water Quality Control Board.

## **PRIOR COMMITTEE/BOARD ACTIONS**

N/A

## **ADDITIONAL INFORMATION**

This equipment is a sole source purchase request for the BOD Pro AM405 and 10-minute BOD Estimator System from MANTECH.

Skalar and MANTECH were the only two reputable manufacturers identified for BOD systems based on staff's research. Although Skalar is the manufacturer of OC San's current BOD analyzer, they do not have a rapid BOD estimator and their software is difficult to navigate and limited in functionality.

MANTECH was the only manufacturer of a BOD Analyzer System equipped with a rapid BOD estimator, which is based on proprietary technology.

OC San is requesting a sole source for this equipment for numerous beneficial reasons, including superior hardware and software designs. The two main reasons to highlight are speed and green chemistry:

MANTECH's system uses patented nanotechnology based PeCOD® technology to provide BOD estimation in 10 minutes. This fast turnaround will allow analysts to estimate BOD prior to initiating the 5-day BOD tests, drastically lower the risk of having non-reportable BOD data.

The patented technology also does not generate hazardous wastes (including dichromate and mercury) as OC San's current system does. This further protects the environment and the health and safety of workers and aligns with OC San's mission of being an environmental steward.

## **CEQA**

N/A

## **FINANCIAL CONSIDERATIONS**

This request complies with authority levels of OC San's Purchasing Ordinance. The cost for the BOD system has been budgeted as capital equipment for fiscal year 2022-2023. (Line item: Section 8, Page 94).

## **ATTACHMENT**

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

- Presentation