

Orange County Sanitation District Constituents of Emerging Concern Policy

Summary Policy Statement

The Orange County Sanitation District (OC San) will partner with other agencies, associations, and institutions to support the use of sound science to inform policy and regulatory decisions on constituents (or contaminants) of emerging concern (CECs) at the federal, state, and regional levels. Staff will obtain and maintain current knowledge on CECs under regulatory consideration, including occurrence, analytical methods, regulations, and treatment to support the OC San's mission and regulatory compliance.

Background

CECs are pollutants that are not necessarily subject to existing regulations but have the potential to pose significant risk to public health and/or the environment. Wastewater treatment systems are generally not designed to remove or destroy CECs but can serve as a pathway for persistent CECs such as per- and polyfluoroalkyl substances (commonly known as the Forever Compound, or PFAS) and microplastics that enter the system from sources such as residential dwellings, commercial establishments, industrial facilities, dry weather urban runoff diversions, and special purpose discharges. In fact, certain CECs have the potential to compromise wastewater treatment and reuse operations, if found at levels that impair OC San's biological treatment systems, digester gas utilization, or advance water purification at the Groundwater Replenishment System.

As with most pollutants, reduction of CECs at the source is by far the most effective means of safeguarding public health and the environment. However, since the full range of adverse effects associated with each CEC is often unknown until contamination has become wide-spread, OC San routinely coordinates with environmental regulators, industry partners, and community stakeholder to maintain up-to-date scientific knowledge, technological developments, and relevant regulatory and legislative initiatives.

It is worth noting that some of today's regulated pollutants were once considered CECs, such as 1,4-dioxane and polychlorinated biphenyls (PCBs), and OC San is engaged in multiple regional collaborations to continuously increase our collective understanding of pollutant fate and transport and develop integrated water quality improvement strategies.

With steadfast support from the OC San Board of Directors, multiple generations of staff have acquired and conveyed considerable institutional knowledge and experience with identifying, monitoring, and reducing CECs through a combination of source control, treatment optimization, analytical innovations, outreach, and responsible reuse and disposal.

A key takeaway from OC San's decades-long experience with CECs is that there is no such thing as 'away' for some pollutants. Thus, we must consider CEC management in every facet of OC San operation, with special emphasis on advance planning for source control, beneficial reuse, and responsible ocean discharge.

Current Situation

As mentioned above, OC San has prioritized CEC source control to prevent potential adverse impacts to its mission of protecting public health and the environment. Industrial and certain non-domestic discharges are regulated by OC San's Pre-treatment Program through a permitting and source control inspection program that enforces OC San's Waste Discharge Ordinance and federal, state, and local mandates. For CECs that are undergoing regulatory development, OC San may choose to utilize interim guidelines and recommended thresholds from federal, state, and local regulatory agencies to safeguard our ocean discharge and beneficial reuse of water and biosolids.

Specifically, OC San has worked with regulators at the federal, state, and local levels in advance of CEC regulations to develop special projects that can be incorporated into its National Pollutant Discharge Elimination System (NPDES) Permit to evaluate the presence and quantity of CECs in our final discharge to the ocean and the background levels in the receiving environment. OC San's current CEC monitoring program includes constituents in the following category: Hormones (8), Industrial Endocrine Disrupting Compounds (7), Pharmaceuticals and Personal Care Products (13), and Flame Retardants (9). Data from OC San's ongoing CEC program were reviewed by the regulatory and natural resource agencies during the recent NPDES permit renewal consultations, and additional CECs have been added to the pending 2021 NPDES permit (scheduled for tentative adoption in June 2021).

Over time, OC San's source control program has been enhanced and updated to meet the needs of the Groundwater Replenishment System (GWRS) as it underwent expansion to increase water supply reliability for north-central Orange County. Through formal agreements and staff-level coordination, OC San and the Orange County Water District (OCWD) have forged a world-class partnership that currently produces 100 million gallons per day (MGD) of purified water and is on track to increase production to 130 MGD by 2023.

To safeguard this potable reuse effort against CECs and other pollutants that are not removed by conventional wastewater treatment systems, OC San and OCWD established a response plan that is activated whenever a pollutant or pollutant precursor becomes a concern to either agency. Where the source can be identified, the plan organizes responsive actions from the OC San and OCWD for industrial and commercial facilities. A typical response could include source investigation by OC San that begins with data review, accelerated sampling, laboratory analysis and result in inspections and enforcement actions. CECs from suspected domestic and residential sources are typically addressed by way of educational outreach to the public. However, OC San's Board of

Directors have also authorized financial and in-kind services to support targeted research at academic institutions that are investigate CECs from domestic and residential origins.

CECs that are not removed through the treatment process can also be found in biosolids. At high concentrations, CECs may preclude beneficial reuse of biosolids as soil amendments for non-food crop and force OC San to dispose of biosolids in landfills or pursue costly means of destruction.

Thus, responsible legislations and regulations that reduce the production and use CECs, encourage substitution with less toxic materials, and promote adaptive source control programs are essential for sustaining OC San's mission and commitments to the community.

If source control, education and outreach, or legislative and regulatory efforts are not successful, OC San may be required to implement a technological or operational process change/investment to address a CEC.

Policy Statement

OC San shall align its resources to manage CECs throughout its service area and treatment process to comply with existing and anticipated regulatory requirements and sustain beneficial reuse of treated effluent and biosolids.

OC San shall acquire and maintain a high level of subject matter expertise and engagement across the wastewater, water, water reuse, air quality, ocean monitoring, and biosolids sectors to monitor the environmental, operational, and financial threats posed by CECs.

OC San shall continue to work with other agencies and professional organizations to develop robust analytical methods and routinely monitor its local limits in order to comply with regulation and protect public health and the environment.

OC San shall continue to implement and update the GWRS Response Plan to sustain effective water reuse and prepare for next-generation CECs and emerging regulatory obligations.

Initiatives to Support Progress Toward the Policy Goal

Initiative: OC San will continue to actively engage water and wastewater stakeholders to stay abreast of the scientific progress and any potential operational and financial impacts of CECs and provide timely briefings to the OC San's Executive Management Team and Board of Directors to facilitate informed decision making.

Initiative: OC San will continue to develop capacity to identify, detect, quantify, and characterize CEC sources throughout the service area and treatment process to promote source reduction, treatment effectiveness, communication of credible risks, and responsible reuse and disposal.

Initiative: OC San will proactively establish internal expertise and develop laboratory capability to research the potential impact of CECs on beneficial reuse of water and biosolids. OC San will use science-based knowledge to help shape CEC legislation and regulations to protect the public health and environment.

Initiative: In the absence of promulgated regulatory limits for specific CECs, OC San will work with regulatory agencies to establish interim source control measures to safeguard its water and biosolids reuse initiatives and ocean discharge against potential adverse impacts.