RMP REGIONAL MONITORING PROGRAM FOR WATER QUALITY IN SAN FRANCISCO BAY
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Plain Language Summary

Latest Findings on QAC Disinfectant Chemicals in Wastewater Treatment Plants

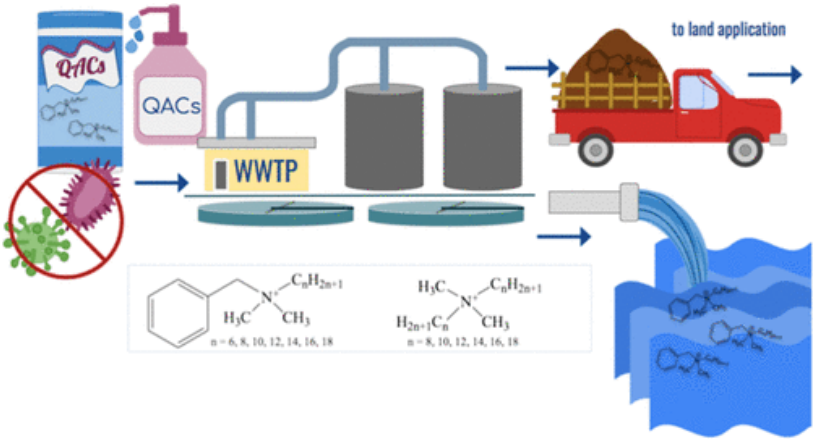
Antimicrobial chemicals called **quaternary ammonium compounds (QACs) pose an unknown but possible risk** to San Francisco Bay health. QACs are common disinfectant ingredients in household products, and have grown more popular since the COVID-19 pandemic. From 2020–2023, San Francisco Estuary Institute scientists and collaborators measured QACs in 12 municipal wastewater treatment plants in the Bay Area and Minnesota.

Key Findings

- Treatment **broke down some of the QACs, but also transferred some to the solid waste** (biosolids) instead. These biosolids can be used as fertilizer. There was a vast range between different plants in how much of the QACs ended up in solid waste.
- Only **one plant removed almost all of the QACs without transferring them to solid waste**. It used microbes that need oxygen (aerobic digestion) to break down solid waste, instead of the more common no-oxygen (anaerobic) process.
- Treatment plants **removed 98% of QACs** on average from the wastewater.

Implications and Future Directions

QACs have been found in San Francisco Bay at elevated levels. Despite high removals from wastewater at treatment plants, QACs are still a possible concern for the Bay's aquatic life. The RMP is further evaluating their presence and effects.



Full study: Mahony, A; Clair, TA; Méndez, M; McNamara, PJ; Arnold, WA. 2025. Quaternary Ammonium Compounds in Wastewater Influents, Effluents, and Biosolids: Analysis from Twelve Wastewater Treatment Plants from 2020 to 2023. *Environmental Science & Technology*. 59(51), 27929–27942. https://doi.org/10.1021/acs.est.5c14775