

A Role for Water Treatment Systems in Fighting the COVID-19 Pandemic

Key Points

- Monitoring the movement of the COVID-19 virus in untreated wastewater may provide useful information in tracking the spread of the disease.
- Current methods for treating wastewater supplies appear to be sufficient to protect against further spread of COVID-19.

In the absence of widespread testing and contact tracing, could untreated wastewater hold the key to tracking the spread of COVID-19? Increasingly, the answer appears promising. Australia's national science agency has developed an early warning surveillance system designed to detect the virus that causes COVID-19 in untreated wastewater. The goal of the program is to detect the geographic regions where COVID-19 is present and approximate the number of infected people, without testing every individual in a location. Similar efforts also have begun in the United States, with counties in Massachusetts, Arizona, and northern California venturing into monitoring sewage for COVID-19.

Studies have shown that the virus can appear in feces within three days of infection—much quicker than the time it takes for many individuals to develop symptoms—allowing for faster containment and treatment times. Specifically, a recent [study of city and airport wastewater treatment plants](#) conducted in the Netherlands concluded that circulation of the virus within the population could be monitored through sewage surveillance, providing a potentially effective tool to predict the spread of COVID-19 to previously-unaffected populations or its potential resurgence in the fall and winter months. Another study conducted in Massachusetts shows just how effective wastewater monitoring can be: it estimates there were at least 2,300 people infected with the virus near a treatment plant despite there only being 446 confirmed cases in the area. Early and accurate identification of the virus can help determine its presence in a community in order to focus delivery of much-needed supplies to critically impacted areas and mitigate or prevent a reemergence as populations move from the first phase of infection spread to the next.

After seeing initial successes, the counties in the United States



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employing this approach are looking to expand their testing programs, suggesting that more and more wastewater system operators may eventually be called upon to work with laboratories in testing wastewater for the virus. If so, system operators can feel confident that deploying this approach to tracing the spread of infection, while providing adequate personal protective equipment (“PPE”) to workers, will not increase the risk of potential exposure to their own employees. That’s because the study conducted in the Netherlands concluded that “sewage does not seem to be a transmission pathway of significance” for the virus that causes COVID-19. And the U.S. [Center for Disease Control \(“CDC”\) has issued guidance](#) stating that despite the virus being found in untreated wastewater, there is no evidence to date that the virus can cause disease if a person is exposed to untreated wastewater or sewerage water. According to the CDC, standard practices associated with wastewater treatment plant operations, including engineering and administrative controls, hygiene precautions, specific safe work practices, and PPE should be sufficient to protect wastewater workers from COVID-19.

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