A method for early warning of a potential SARS-CoV-2 outbreak

Studies have established that wastewater can be used as a lead indicator of SARS-CoV-2 infection in a population. Regular and ongoing monitoring of wastewater effluent can provide an early indication of an outbreak, possibly even while the population in question is asymptomatic but potentially contagious.

SARS-CoV-2 can be found up to 3 days in advance of symptoms through wastewater testing

Wastewater sampling is a non-invasive and cost-effective mechanism to monitor the evolution of the SARS-CoV-2 pandemic. As part of the Eurofins Sentinel™ program, wastewater testing can be organized with minimal disruption.

Eurofins has developed wastewater testing:

- That detects and confirms SARS-CoV-2 by targeting two genome sequences in accordance with WHO recommendations.
- Is highly sensitive – Studies have shown that 1 infected person out of a community of over 1000 persons is detectable.
Sampling and Shipping

Untreated wastewater samples should be collected from the waste stream or collection point at a flow-proportional or time-dependent frequency using a composite auto-sampler (e.g. Teledyne ISCO). A subsample is then taken from the composite and decanted to a supplied 250 mL bottle. Once bottled, samples should be chilled. Samples should be expedited in the provided shipping container with ice packs (return label provided) to the following address:

**Eurofins EnvironeX**

2350, Chemin du Lac, Longueuil (QC) J4N 1G8
Frequently Asked Questions

Why monitor presence of COVID-19 in wastewater?

Studies have established that wastewater can be used as a lead indicator of SARS-CoV-2 infection in a population. Regular and on-going monitoring of wastewater effluent can provide an early indication of outbreak, possibly even while occupants are asymptomatic, a considerable advantage.

Thanks to continuous monitoring, you will be able to add to your control arsenal a new indicator of the possible contamination rate of the population studied with SARS-CoV-2 and anticipate the implementation of your actions.

How should the samples be taken?

The use of a 24 hour composite sampler is recommended, (e.g. Teledyne ISCO). A minimum composite sample of 1 Liter is recommended with 250 - 500 mL representative subsample taken at site and sent to the lab. Grab samples direct from the waste stream are also accepted, however they may not be representative of the target population/situation.

Eurofins provides the sampling kit (insulated shipping box, sample bottles, ice packs, shipping label(s), etc.), and can assist in the sourcing of sampling equipment for in-house sampling. Eurofins can arrange ‘turn-key’ sampling solutions for those that are not able to perform the sampling.

Where should samples be taken?

Ideally, sampling point(s) should be determined such that they capture the wastewater outflow from the population to be monitored. This could include wastewater line cleanout ports or manholes just prior to city/municipal sewer lines or at the influent to a wastewater treatment plant. It may be necessary to review construction drawings or engage with a consultant to determine the optimal location(s) to sample along with determining testing frequency.

What is the suggested testing frequency?

Clients should determine sampling frequency based on monitoring objectives and risk profile. Daily 24 hour composite samples are recommended.

Working with a consultant to design your sampling program to meet your risk management goals is suggested. Eurofins can support in sourcing consulting services to assist in the design and sampling/monitoring program.

How should the samples be sent after sampling?

Samples should be packed with ice packs in the provided cooler and shipped to the following address immediately after bottling using the provided shipping label.

Your kit includes:

- Insulated cooler
- 250 mL plastic sample container (per sample)
- Parafilm (one for each container)
- Pair of plastic gloves
- Plastic bag
- Alcoholic wipes
- Ice pack
- Sample submission form
- Return slip

Shipping address:

2350, Chemin du Lac, Longueuil (QC) J4N 1G8