SARS-CoV-2 is the virus that causes COVID-19. It is one of the millions of viruses that exist in nature. While much is still unknown about this novel coronavirus, the science behind wastewater treatment, including the inactivation of harmful viruses and pathogens, is well established. Modern water resource recovery facilities (WRRFs) are designed to remove and destroy a multitude of viruses and pathogens.

What We Know About SARS-CoV-2 and COVID-19
- No reported transmission of SARS-CoV-2 from exposure to sewage. However, in the SARS-CoV outbreak of 2003, transmission via water droplets from feces via air ventilation systems in Hong Kong was reported. (McKinney, 2006)
- No SARS-CoV-2 inactivation studies are currently available, but it is 82% similar to SARS-CoV. Inactivation data on SARS-CoV-2 should be used in the interim. Wang et al. (2005) showed:
  - CT values of 0 to 2.9 are required for inactivation using free chlorine at 20°C.
  - CT values of more than 80 are required for inactivation using chlorine dioxide at 20°C. Typically, however, chlorine dioxide is nearly as effective as free chlorine for inactivation of viruses.
- Darnell et al. (2004) showed SARS-CoV is inactivated by ultraviolet light at 254 nm.
- No inactivation data available for other disinfectants (combined chlorine, ozone peroxide).

Knowledge Gaps
SARS-CoV-2 is an enveloped virus. Generally, enveloped viruses are more readily inactivated than the non-enveloped viruses used to establish federal disinfection criteria. However, research on the effectiveness of wastewater treatment disinfectants on the specific inactivation of SARS-CoV-2 is a critical need to ensure surface waters are adequately protected.