

# California Department of Public Health

## Wastewater Surveillance

### Common Terms to Know



**Autosampler:** A device that automatically collects samples of wastewater.

**Composite sample:** Consists of a mixture of several individual subsamples collected at regular and/or specific time periods often over the duration of a day (e.g., 1 per hour for 24hr).

**Flow-weighted:** A composite sample of subsamples collected over a regular time interval, where the volume of each subsample is proportional to the total flow rate of wastewater.

**Time-weighted:** A composite sample of subsamples collected at a preset time interval (e.g., every 15 minutes for 24 hours total).

**Concentration:** A calculated value of measurement (often in units of gene copies/L of wastewater or copies/g solids) quantifying the amount of target analyte present in each sample.

**Effluent:** Treated sewage or wastewater from a treatment plant that is discharged back into the environment or to be recycled.

**Extraction:** A wastewater processing step where purified nucleic acid (RNA) is extracted from samples.

**Flow Rate:** The volume of wastewater that passes through an area (i.e., sample collection location) over a particular time period (i.e., over the 24-hour period during which the sample was collected). Units are commonly reported in million gallons per day (MGD).

**Flow-weighted normalization:** Data adjustment to approximate the fluctuating number of individuals in a sewershed who are shedding SARS-CoV-2 RNA.

$$\textit{Flow – weighted normaliztion} = \frac{([\textit{SARS CoV 2}] \times \textit{Flow rate})}{(\textit{Poulation served})}$$

**Grab sample:** Also known as a catch sample, consists of a single sample taken at a specific time.

**Headworks:** Refers to the start or beginning phase of a wastewater treatment plant process where all wastewater debris is screened and removed.

**Influent:** The raw (untreated) or partially treated wastewater that flows into the headworks of a wastewater treatment plant.



**PMMoV normalized:** A type of data adjustment method using the Pepper Mild Mottle virus (PMMoV) that can provide an estimate of the amount of SARS-CoV-2 RNA on a per-feces amount basis. PMMoV is found in the diets of most healthy human populations and is considered a reliable indicator for the presence of human feces in a wastewater sample. Human fecal indicators like PMMoV are measured to provide insight into the number of people contributing to a sewershed at any given time, and when used as the denominator for normalization can act as a control for fecal strength in a given sample.

$$\text{PMMoV Normalization} = \frac{[\text{SARS CoV 2}]}{[\text{PMMoV}]}$$

**Settled solids:** Organic material that naturally settles out from wastewater and is left when the water is removed/filtered. Also known as biosolids.

**Sewershed:** Refers to the catchment area that is serviced by a wastewater treatment plant. It is comprised of a network of pipes and manholes that transport raw sewage from the catchment area's homes, businesses, and industries, ending up at the headworks of a treatment facility.

**Wastewater Treatment Plant:** A facility in which a combination of various processes (e.g., physical, chemical, and biological) are used to treat industrial and domestic wastewater and remove pollutants.

