

APPENDIX A

DEFINITIONS

Definitions of Terms

Alkalinity – The quantitative capacity of water or water solution to neutralize an acid. It is usually measured by titration with a standard acid solution of sulfuric acid, and expressed in terms of its calcium carbonate equivalent. A moderate amount of alkalinity in water is desirable because it reduces the effect of corrosion.

Ammonia – A form of nitrogen that exists in aqueous solution as either the ammonium ion or ammonia, depending on the pH of the solution.

Average day demand or flow – The average daily demand or flowrate occurring over a 24-hour period based on total annual demand or flowrate data.

Biochemical oxygen demand (BOD) – The amount of oxygen consumed in the oxidation of organic matter by biological action under specific standard test conditions. Widely used as a measure of the strength of sewage and wastewater.

“C” factor – Hazen-Williams roughness coefficient describing the roughness of the pipe in which the flow occurs.

Chemical oxygen demand (COD) – The amount of matter, both organic and inorganic, in a water or wastewater which can be oxidized by boiling with a strong oxidizing acid under standard test conditions and expressed as the equivalent amount of oxygen.

Crown – The highest point on a transverse section of conduit.

Duty point – The intersection of the system curve and the pump curve which gives the operating point of the given pump for a given pipeline system.

Fire flow – A volume of water required to provide fire protection.

Hazen-Williams formula – The most widely used empirical headloss equation.

Headloss – A decrease in water pressure during flow due to internal friction between molecules of water, and external friction due to irregularities or roughness in surfaces past which the water flows.

Infiltration - Water entering a sewer system, including sewer service connections, from the ground through such means as defective pipes, pipe joints, connections, or manhole walls.

Infiltration/Inflow (I/I) – Extraneous flows in sewers.

Inflow – Stormwater runoff entering the sewer system from sources such as roof leaders, yard and areaway drains, manhole covers, cross connections from storm drains and catch basins, and combined sewers.

Minimum day demand or flow - The minimum demand or flowrate that occurs over a 24-hour period based on annual operating data.

Nitrate – A form of nitrogen that is the most highly oxidized. Nitrates are commonly found in well water from agricultural areas. It comes from fertilizers, industrial wastes, septic systems, and animal wastes. High amounts of nitrate affect the blood's ability to carry oxygen.

Nitrite – A highly unstable form of nitrogen which is easily oxidized to the nitrate form. It is an indicator of past pollution and is extremely toxic to most fish and other aquatic species.

Parts per million (ppm) – A common basis for reporting the results of water and wastewater analyses, indicating the number of parts by weight of a dissolved or suspended constituent, per million parts by weight of water or other solvent. In dilute water solutions, one part per million is practically equal to one milligram per liter.

Peak (maximum) day demand or flow – The maximum demand or flowrate that occurs over a 24-hour period based on annual operating data.

Peak hour demand or flow – The peak sustained hourly demand or flowrate occurring during a 24-hour period based on annual operating data.

Peaking factor – The ratio of peak flowrate or demand to average flowrate or demand.

pH – The reciprocal of the logarithm of the hydrogen ion concentration. The pH scale is from zero to 14, and 7.0 is the neutral point, indicating the presence of equal concentrations of free hydrogen and hydroxide ions. pH values below 7.0 indicate increasing acidity, and pH values above 7.0 indicate increasing base concentration.

Phosphorus – An essential element to the growth of algae and other biological organisms.

Pump curve – Also referred to as a pump characteristic curve or performance curve shows the relationship between head developed by the pump, its efficiency, its brake horsepower, and the rate of discharge.

Soffit – The bottom of the top of a pipe. In a sewer pipe, the uppermost point on the inside of the structure.

Springline – The line of the outermost points of the sides of the conduit.

Sulfate – Sulfate is a natural forming mineral found in water. Sulfate effects the taste of water and when combined with bacteria or heated may effect the odor.

Sulfide – A product of the biological reduction of sulfates under anaerobic conditions.

System curve – A graphical relationship between system head (developed from ordinates which are the sum of the static lift and the pipe friction) at various discharge/flow conditions.

Total Kjeldahl Nitrogen (TKN) – Total of the organic and ammonia nitrogen.

Total suspended solids (TSS) – The suspended fraction of the solids in a water sample that can be removed through filtration.