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Indian Standard

GLOSSARY OF TERMS RELATING TO WATER,
SEWAGE AND INDUSTRIAL EFFLUENTS

PART II

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*Indian Standard*GLOSSARY OF TERMS RELATING TO WATER,
SEWAGE AND INDUSTRIAL EFFLUENTS

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IS : 7022 (Part II) - 1979

(Continued from page 1)

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(Continued on page 24)

Indian Standard

GLOSSARY OF TERMS RELATING TO WATER, SEWAGE AND INDUSTRIAL EFFLUENTS

PART II

0. FOREWORD

0.1 This Indian Standard (Part II) was adopted by the Indian Standards Institution on 12 October 1979, after the draft finalized by the Water Sectional Committee had been approved by the Chemical Division Council.

0.2 Part I of the glossary covered terms used in relation to water, sewage and industrial effluents in the field of analysis and tests; industrial and domestic applications of water; treatment of water, sewage and industrial waste; and disposal of sewage and industrial wastes after treatment. This part covers terms relating to water supply and sewerage.

0.3 In the preparation of this standard, assistance has been derived from the following publications:

A glossary of water and sewage terms used in sanitary engineering practice. Fifth European Seminar for Sanitary Engineers. World Health Organization 1956.

Glossary — water and waste and waste water control engineering. 1969. American Public Health Association. American Society of Civil Engineers. American Water Works Association. Water Pollution Control Federation.

1. SCOPE

1.1 This standard (Part II) defines terms widely used in relation to water supply and sewerage.

2. TERMINOLOGY

A

Absorbing Well — A shaft or well driven through an impermeable stratum to allow water to drain through to a permeable one. Also called drain well, negative well, dead well.

Absorption Loss — The loss of water, or the quantity of water lost, from a reservoir or canal by capillary action and percolation during the process of priming. After a canal or reservoir has reached a stable condition this loss is called seepage.

Abyssinian — A well consisting of a perforated tube with a pointed end, driven into unconsolidated sediments, to tap shallow groundwater.

Abyssinian Well — A tube with perforations above the pointed end, driven into strata of moderate hardness to obtain a supply of water.

Activated Sludge Loading — The mass (in kg) of biochemical oxygen demand (BOD) in the applied liquid per unit volume of aeration capacity or per unit mass (in kg) activated sludge per day.

Aerated Filter — A biological filter of special design in which the sewage or the filter medium is aerated.

Aerated Pond — A natural or artificial waste water treatment pond in which mechanical or diffused-air aeration is used to supplement the oxygen supply.

Aeration Period

- 1) The theoretical time, usually expressed in hours, during which mixed liquor is subjected to aeration in an aeration tank while undergoing activated sludge treatment. It is equal to the volume of the tank divided by the volumetric rate of flow of the waste water and return sludge, daily average volumetric rate of flow of the waste water and return sludge.
- 2) The theoretical time during which water is subjected to aeration.

Aeration Tank — A tank in which sewage is aerated.

Aerobacter Aerogenes — One of the groups of bacteria included in the coliform group which, if present in preponderance, may indicate pollution of old origin or the result of growth such as that sometimes occurring in leather washers, jute packing, wood, etc.

Aerobic Digestion — Digestion of suspended organic matter by means of aeration. *See* digestion.

Afforestation — The planting of trees, commonly for the prevention of soil erosion in catchment areas.

Aftergrowth — The regrowth of vegetation, or bacteria in water after treatment to destroy it.

Afterprecipitation — The precipitation of colloidal calcium carbonate on the sand grains of a filter and/or in the pipe of the distribution system after treatment of the water with lime.

Air Lift — A device for raising liquid by injecting air in and near the bottom of a riser pipe submerged in the liquid to be raised.

Air-lift Pump — A pump, used largely for lifting water from wells, from which air under pressure is discharged into the water at the bottom of the well in fine bubbles. The bubbles mix with the water and reduce the apparent specific gravity of the air-water mixture, and the surrounding water causes the mixture to rise in the discharge pipe to the outlet. Also called airlift.

Air Relief Valve — An air valve placed at the summit of a pipeline to release the air automatically and prevent the pipeline from becoming airbond with a resultant increase of pressure.

Alfalfa Gate — In irrigation, a sheet-metal shear gate in a section of corrugated pipe, used for the control of water flow from sublaterals into fields and ditches.

Algal Bloom — Large masses of microscopic and macroscopic plant life such as green algae, occurring in bodies of water. *See* Bloom.

Alkali Soil — A soil which has either so high a degree of alkalinity (pH 8.5 or higher), or so high a percentage of exchangeable sodium (15 percent or higher), or both, that the growth of most crop plants is reduced.

Alluvial Deposit — Solid material deposited by a stream in its lower reaches.

Alternating Double Filter — Biological filter in which alternating double filtration is carried out.

Alternating Double Filtration — The treatment of sewage by pairs of biological filters, the sewage passing through each unit of the pair in series; the order of passage through the filters is periodically changed.

Anaerobic Contact Process — An anaerobic waste treatment process in which the microorganisms responsible for waste stabilization are removed from the treated effluent stream by sedimentation or other means and held in or returned to the process to enhance the rate of treatment.

Anaerobic Digestion — The degradation of organic matter brought about through the action of microorganisms in the absence of elemental oxygen.

Anaerobic Waste Treatment — Waste stabilization brought about through the action of microorganisms in the absence of air or elemental oxygen. Usually refers to waste treatment by methane fermentation.

Antichlors — Reagents, such as sulphur dioxide, sodium bisulphite, and sodium thiosulphate, which can be used to remove excess chlorine residuals from water or watery wastes by conversion to an inert salt.

Anticorrosion Treatment — Treatment to reduce or eliminate corrosion producing characteristics of the water.

Apron — An impervious cover (for example of concrete) at the top of a dam, sea wall, etc, to prevent turbulent erosion and/or hydrostatic uplift pressure.

Artesian — Pertaining to groundwater, or things connected with groundwater (for example a well or underground basin), where the water is under pressure and will rise to a higher elevation if afforded an opportunity to do so.

Artesian Spring — A spring issuing from a confined aquifer.

Artesian Well — A well which withdraws water from an aquifer in which it is confined, under pressure, below an impermeable stratum.

Artificial Rainfall — Water artificially applied in the form of rain, usually by a rainfall simulator for experimental purposes.

Artificial Watercourse — A surface watercourse constructed by human agencies.

Aspirator — A hydraulic device which creates a negative pressure by forcing liquid through a restriction, thus increasing the velocity head. Used in the laboratory in place of a vacuum pump; sometimes used in place of sump pump. Can be used to aerate liquid.

Assimilative Capacity — The capacity of a natural body of water to receive: (a) waste waters, without deleterious effects; (b) toxic materials, without damage to aquatic or human life who consume the water; and (c) BOD within prescribed dissolved oxygen limits.

B

Backflow — The flow of a liquid in a direction reverse of that intended.

Backshore — The part of the shore covered by water during exceptional storms only, especially those combined with exceptionally high water; the zone of the shore landward of the foreshore, acted upon by waves only during severe storms.

Balancing Reservoir

- 1) A holding basin in which variations in flow and composition of a liquid are averaged. Also called equalizing basin.
- 2) A reservoir interposed in a water supply system at any point between source and consumer for the purpose of elasticity of operation to the distribution system.

Ball Valve — Valve controlled by the rise and fall of a floating ball.

Band Screen — Screen with endless, moving band of screening medium.

Bar Screen — Screen consisting of bars, usually spaced 2.5 to 15 cm apart.

Basin

- 1) A natural or artificially created space or structure, surface or underground, which has a shape and character of confining material that enables it to hold water. The term is sometimes used for a receptacle midway in size between a reservoir and tank.
- 2) A large slip or dock partially surrounded by quays. Its water level is subject to fluctuations with the water level of the main body of water with which it connects.
- 3) The surface area within a given drainage system.
- 4) A small area in an irrigated field or plot surrounded by low earth ridges and designed to hold irrigation water.
- 5) An area upstream from a subsurface or surface obstruction to the flow of water.
- 6) A shallow tank or depression through which liquids may be passed or in which they are detained for treatment or storage.

Beach — The belt or zone along the shore, usually with a gentle slope toward the water, occupied by unconsolidated material, moving sand, or shore drift. The zone from the waterline to the place where there is a marked change in material or physiographic form, or to the line of permanent vegetation (usually the effective limit of normal storm waves).

Bed

- 1) The bottom of a watercourse or any body of water.
- 2) A scam or deposit later in origin than the rock below, a regular member of the series of formations and not an intrusion.

Bed Load — Sand, gravel, etc, carried by a stream along its bed.

Benthal Deposit — Accumulation on the bed of a watercourse of deposits containing organic matter arising from natural erosion or discharges of waste waters.

Bio-aeration — An early name for activated sludge treatment in which the air was introduced by surface diffusion and by slowly moving paddles.

Biochemical Oxygen Demand (BOD), First Stage — The oxygen demand to stabilize the carbonaceous organic matter present in waste water. Generally, the test consists in measuring the oxygen depletion at 20°C for 10 days.

Biochemical Oxygen Demand (BOD), Second Stage — The oxygen demand to stabilize the non-carbonaceous organic matter such as ammonia nitrogen, which is oxidized to nitrites and nitrates. The test consists in measuring the oxygen depletion at 20°C for the subsequent 10 days. The first stage and the second stage BOD is the total BOD for 20 days, expressed as ultimate BOD.

Biodegradation (Biodegradability) — The destruction or mineralization of either natural or synthetic organic materials by the microorganisms populating soils, natural bodies of water, or waste water treatment systems.

Biological Filter, Trickling Filter, Percolating Filter, Sprinkling Filter, Bacteria Bed — A bed of coarse granular material, through which sewage or liquid wastes are allowed to trickle, and in which organic matter is stabilized by biological action.

Biological Filtration — The process of passing a liquid through the medium of a biological filter, thus permitting contact with attached zoogical films that adsorb and absorb fine suspended, colloidal, and dissolved solids and release end products of biochemical action.

Biological Oxidation — The process whereby microorganisms in the presence of oxygen convert the organic matter contained in waste water into a more stable or a mineral form.

Biological Purification — The process whereby microorganisms convert the organic matter contained in waste water into a more stable or a mineral form.

Biological Treatment — The treatment of water or sewage for the removal of organic matter with the assistance of biological organisms.

Bloom — Large masses of microscopic and macroscopic plant life, such as green algae, occurring in bodies of water.

Blow-Off Cock — The outlet on a pipeline used in discharge water or accumulations deposited from the water.

Booster Pump — A pump installed on a pipeline to raise the pressure of the water on the discharge side of the pump.

Booster Station — A pumping station in a water distribution system that is used to increase the pressure in the mains on the discharge side of the pumps.

Bore — The tidal wave in a watercourse.

Bore hole — A deep well of small diameter.

Break Point

- 1) In the chlorination of water, containing ammonia nitrogen, the point at which the residual chlorine is a minimum.
- 2) In water softening, the point at which softening bed starts losing its efficiency.

Brook, Stream — A small watercourse.

Bulking of Sludge — In activated sludge, the occupation by the sludge of an excessive volume so as to hinder efficient sedimentation.

C

Canal — An artificial watercourse for navigation or irrigation.

Capillary Fringe — Heights to which water rises by capillary action above the water-table.

Carbonate Balance — The condition of equilibrium existing in a water which neither deposits carbonate hardness nor dissolves the film of carbonate hardness already deposited.

Catchment, Catchment Area, Catchment Basin — The area drained by a watercourse or surface water drain.

Caulking — Making a joint watertight by wedging in a filling.

Channel— A conduit carrying liquid under gravity, usually open at the top.

Check Valve, Reflux Valve — Valve which, when inserted in a pipeline, does not permit fluid to flow back in the event of a burst.

Chloramine — A group of disinfecting agents formed by the action of chlorine on free or combined ammonia.

Clear Well — Tank in which filtered water is stored at the treatment plant.

Cock — A means of withdrawing liquid from a conduit or reservoir, regulated by a valve. Sometimes used for stopcock.

Colony Count, Plate Count — A determination of the number of bacterial colonies produced on a suitable solid medium.

Combined Waste water — A mixture of surface runoff and other waste water such as domestic or industrial waste water.

Combined Sewer — A sewer intended to receive both waste water and storm or surface water.

Confluence — Place of meeting of two streams.

Contact Bed — A tank for the treatment of sewage, filled with a coarse granular medium. The tank is filled and allowed to stand full, and then emptied and allowed to stand empty.

Contact Filter — *See* Contact Bed.

Contact Period — The time allowed for a disinfecting agent to act on the water under treatment before the water is fed to supply. Occasionally used also for any other reaction period.

Contact Stabilization Process — A modification of the activated sludge process in which raw waste water is aerated with a high concentration of activated sludge for a short period, usually less than 60 minutes to obtain BOD removal by absorption. The solids are subsequently removed by sedimentation and transferred to a stabilization tank where aeration is continued further to oxidize and condition them before their reintroduction to the raw waste water flow.

Critical Depth — The depth at which the change from smooth to streaming non-turbulent to turbulent flow occurs, for a given discharge.

Critical Flow — Flow at critical velocity in an open channel.

Critical Velocity — Velocity at critical depth.

Cross Connection

- 1) A physical connection through which a supply of potable water could be contaminated or polluted.
- 2) A connection between a supervised potable water supply and an unsupervised supply of unknown potability.

Crown — The inside top of the arch in a sewer, covered channel, or conduit.

Current Meter — An instrument for measuring the velocity of flow in a watercourse.

D

Dam — A structure, usually of earth, masonry or concrete, to prevent, impound, or control the flow of a watercourse for navigation, water-supply, hydroelectric power, flood control, etc.

Degradation — The lowering of a river bottom by the action of flowing water.

Degradation-Organic Matter — The oxidation and reduction of organic matter in stream and sewage.

Denitrification — Reduction of dissolved nitrates due to biochemical action.

Deposit — A layer of solid matter formed by sedimentation from a stream of gas or liquid.

Deposition — The process of subsidence of solid material held in suspension in water.

Depressed Sewer — A section of sewer constructed lower than adjacent sections to pass beneath a valley, watercourse, or other obstruction. It runs full or at pressure greater than atmospheric because its crown is depressed below the hydraulic grade line.

Detention Tank — A tank used in water or waste water treatment to provide adequate time for chemical or physical reactions to take place in the body of liquid being treated.

Diffused Air Aeration — A method for supplying air to sewage in activated sludge treatment by blowing air into the sewage.

Diffuser Plate — A porous plate used in aeration tanks to diffuse air or other gases in various water and waste water treatment processes.

Diffuser Tube — An air tube used in aeration tanks to diffuse air or other gases in various water and waste water treatment processes.

Diffusion Aerator — An aerator that blows air under low pressure through submerged porous plates, perforated pipes, or other devices so that small air bubbles rise through the water or waste water continuously.

Digested Sludge — Sludge digested under either aerobic or anaerobic conditions until the volatile content has been reduced to the point at which the solids are relatively nonputrescible and inoffensive.

Digestion Tank — A tank in which digestion is carried out.

Digester — A tank in which sludge is placed to permit digestion to occur. Also called sludge digestion tank.

Dike — An artificial watercourse usually for drainage.

Dilution Disposal — The disposal of sewage by discharge into water.

Direct Irrigation — Application of waste water directly to land by spraying through multiple outlet pipes, or furrows for the purpose of disposal of waste water rather than raising crops.

Disk Screen — Screen in which a perforated screening medium is carried by a revolving disk.

Disinfected Waste Water — Waste water in which chlorine or other disinfecting agents has been added, during or after treatment, to destroy pathogenic organisms.

Ditch — A small artificial watercourse for surface drainage.

Dortmund Tank — Vertical-flow sedimentation tank with a steep-sided pyramidal bottom, mainly used for sewage.

Dosing Siphon — Siphon used for applying sewage to filters.

Double Filtration — Filtration of water in two stages : through rapid sand filters, without a coagulant, and then through slow sand filters, whose capacity is thus increased.

Drain — A conduit for the carriage of storm water, or sewage or other used waters.

Drainage

- 1) In general, the removal of surface water from a given area either by gravity or by pumping. Commonly applied to surface water and groundwater.
- 2) The area from which water occurring at a given point or location on a stream originates. In such cases, synonymous with ' drainage area ' and ' watershed '.

Dredge — To remove deposits from under water.

Drilled Well — Well excavated by means of a rotary or percussion drill which removes material by abrasion.

Drilling — Sinking a borehole by means of a rotary or percussion drill.

Drinking Water Supply — Supply of water fit for drinking.

Driven Well — Well constructed by driving into the soil a well casing fitted with a suitable point.

Drought — An extended period of dry weather or of deficient rainfall.

Drum Screen — Screen in which a perforated screening medium is carried on the circumference of a revolving cylindrical drum.

Dry Weather Flow — The minimum flow in a watercourse in periods of dry weather, or the normal flow in a combined sewer in dry periods.

Dug Well — Shallow well excavated by hand or power tools as distinct from drilled or driven well.

Dunbar Filter — Biological filter in which a comparatively coarse medium is overlaid by a fine medium.

E

Eddy — A surface vortex.

Eddy Current — The velocity in an eddy rather than the normal velocity of a stream.

Elutriation — The removal of soluble matter from solids by washing and decantation.

Embankment — An artificial mound or bank for confining a watercourse, etc, within bounds.

Evaporation — The loss of water as vapour from a body of surface water or from the soil.

Extended Aeration — A modification of the conventional sludge process which provides for aerobic sludge digestion within the aeration system. The concept envisages stabilization of organic matter under aerobic conditions and disposal of the end products into the air as gases and with the plant effluent as finely divided suspended matter and soluble matter.

F

Fermentation Tank — A tank used to ferment organic wastes.

Fetch — The distance over which wind can act on water to produce waves.

Filter, High Rate — A trickling filter operated at a high average daily dosing rate, including any recirculation of effluent. The hydraulic loading is between 100 and 400 mld/hectare, and organic loading is between 0.4 and 2.0 kg/m³.

Filter, Low Rate — A trickling filter operated at a low average daily dosing rate. The hydraulic loading is between 10 and 40 mld/hectare, and organic loading is between 0.1 and 0.4 kg/m³.

Flash-Off — The water lost as steam when a sample of hot boiler water is taken without adequate provision for cooling the sample.

Float — An appliance which rests in the surface of water or sewage, usually used for registering level or for operating a switch.

Floating Cover — An airtight cover to a basin, which floats on the liquid in that basin or is supported by the pressure of gas cover that liquid.

Flood

- 1) Inundation caused by excessive storm runoff.
- 2) The peak runoff in a watercourse following such rainfall.
- 3) Abnormal movement of the tidal wave towards the shore.

Flowing Well — An artesian well in which the water reaches and overflows at the surface.

Flume — A device in the form of an artificial open channel, for the transmission or measurement of flow of water.

Foam — The aggregate of minute bubbles formed in water (or other liquid) by agitation, fermentation, aeration, etc.

Foaming — In sewage treatment, the production of foam due to reduced surface tension.

G

Gravity Filter — A rapid sand filter of the open type, the operating level of which is placed near the hydraulic grade line of the influent and through which the water flows by gravity.

Grease Trap — A basin, fitted with a scum-board, to remove grease from a liquid waste.

Grit Washer — Device for removing organic matter from the grit settled from sewage.

Groundwater Lowering — The artificial local lowering of the water-table to enable work to be carried out in excavation in the dry.

Gutter

- 1) A channel for collecting surface drainage from roads.
- 2) A channel for collecting surface drainage from roofs.
- 3) A channel placed above a rapid sand filter for collecting the wash-water.

H

Head — The pressure at a point defined in terms of the corresponding vertical column of liquid.

Head Race — A channel supplying water to a water turbine.

High Water — The highest level reached by an incoming tide; frequently used also for the time of this occurrence.

Horizontal-Flow Tank — Tank in which the liquid flows horizontally, usually longitudinally, or radially.

House Sewer — A pipe conveying waste water from a single building to a common sewer or point of immediate disposal.

Humus Sludge

- 1) Sludge deposited in final or secondary settling tanks following trickling filters or contact beds.
- 2) Sludge resembling humus in appearance.

Hypochlorination — Chlorination by calcium hypochlorite or similar compounds.

I

Impounding Reservoir — A reservoir built to impound the water from a catchment area and formed by damming the watercourse which drains that catchment.

Infiltration — The movement of water through the surface into the soil or of water into an underwater conduit from the soil.

Inflow — The water (or sewage) entering a basin, reservoir or treatment plant; often used as synonym for influent.

Intermittent Sand Filter — An early type of biological filter, using sand as the medium, and intermittently dosed with sewage to avoid clogging.

Invert — The floor, bottom, or lowest portion of the internal cross section of a conduit. Used particularly with reference to aqueducts, sewers, tunnels and drains.

J

Jar Test — Laboratory scale test for effectiveness of coagulation and/or flocculation.

L

Laminar Flow, Streamline Flow — Flow in which the streamlines remain parallel to the axis of flow.

Leach — To dissolve mineral salts from the ground by the passage of water.

Littoral Drift — The material carried along the shore by the action of wind and waves.

Low Water — The lowest level reached by an outgoing tide; frequently used also for the time of this occurrence.

M

Magnetite Filter — Filter for sewage, using magnetite (magnetic iron oxide) as the medium, which can then be cleaned by agitating the magnetite electromagnetically.

Manhole — An access in a sewer provided for the purpose of permitting a man to enter or leave the sewer.

Main Sewer

- 1) In large systems, the principal sewer to which branch sewers and submains are tributary; also called trunk sewer. In small systems, a sewer to which one or more branch sewers are tributary.
- 2) In plumbing, the public sewer to which the house or building sewer is connected.

Marble Test — A chemical test to determine the carbonate balance of water.

Marginal Chlorination — An obsolescent practice in which chlorination is carried out so as to provide a predetermined residual of chlorine after a rather short contact period, but without any determination of the nature of the residual.

Mechanical Aeration — A method of supplying air to sewage in activated sludge treatment by the mechanical agitation of the sewage.

N

Nonsetttable Matter — That suspended matter which does not settle nor float to the surface of water in a period of one hour.

Nonsetttable Solids — Waste water matter that will stay in suspension for an extended period of time. Such period may be arbitrarily taken for testing purposes as one hour.

O

Oil Remover — *See* Oil Separator.

Oil Separator — Equipment for the removal, by flotation or other means, of oil from contaminated water.

Outlet — The point of exit from a basin, conduit, reservoir, etc, of a stream of water or sewage; frequently used also for the equipment permitting such exit.

Oxygen Balance — Difference between dissolved oxygen content and first stage biochemical oxygen demand at a given point.

Oxygen Depletion — Loss of dissolved oxygen from water or wastewater resulting from biochemical or chemical action.

P

Paddle Wheel — A water wheel with paddles or strips of wood or other material attached to its periphery. Such a wheel may be constructed on the side of a vessel or watercraft and revolved by machinery to move the vessel, or it may be set in a moving stream or under a full stream of water which causes it to revolve and generate water power.

Percolation — The movement of water through a permeable stratum.

Petcock — A small cock used for sampling.

Phytoplankton — Plant plankton.

Pipeline — A conduit, made up of pipes, for carrying water, sewage or other fluid.

Plain Setting Tank — A tank or basin in which water, wastewater, or other liquid containing settleable solids is retained for a sufficient time, and in which the velocity of flow is sufficiently low, to remove by gravity a part of the suspended matter.

Plate Count — Number of colonies of bacteria grown on selected solid media at a given temperature and incubation period, usually expressed in number of bacteria per millilitre of sample.

Plug Cock — Cock with a valve closed by a cylindrical or conical plug.

Plumbo Solvency — The power of a soft water to dissolve lead from pipes and fittings.

Pondage — The holding back of water for later release, especially for water power. Also used for the water so held and for the storage available for such holding.

Precipitation — The overall deposit of meteorological water including rain, snow and hail.

Presumptive Coliform Count — A statistical estimate of the number of coliform in water detected under certain conditions of incubation (medium, temperature, time).

Primary Filtration — The first stage of double filtration.

Primary Sedimentation Basin — A sedimentation basin preceding biological treatment or filtration.

R

Rainfall — The quantity of rain falling in a given time usually measured in units of depth (for example mm per annum).

Raingauge — An instrument for the measurement of rainfall.

Rake — Equipment used for clearing screens or for assisting in the cleaning of sand filters.

Rapid Sand Filter — A filter for the purification of water, in which sand is used as the filter medium, and in which solids are removed mainly by mechanical action which may be assisted by a chemical floc.

Rate of Flow — The volume of water flowing through a cross section of a conduit in a unit time.

Recharging — The addition, by natural or artificial means, of water to an underground aquifer.

Regulating Reservoir — A reservoir designed to enable the regime of the watercourse, upon which it is constructed, to be controlled, especially in times of flood and drought.

Reservoir — A watertight structure for the collection or storage of water.

Ridge and Furrow Tank — Aeration tank for activated sludge in which the bottom of the tank is a series of ridges and furrows.

Rotary Sprinkler — A sewage sprinkler revolving on a centre spindle, frequently driven by the reaction of the discharged sewage.

Runoff — The proportion of the rainfall which reaches the watercourse of surface-water drain.

S

Saline Water — Water containing dissolved salts — usually from 10 000 to 33 000 mg/l.

Salinometer — A hydrometer used to determine the concentration of dissolved salts in boiler water.

Sand Trap — A small basin for the removal of heavy inorganic solids from water.

Sanitary Sewer — A sewer that carries liquid and water-carried wastes from residences, commercial buildings, industrial plants, and institutions, together with minor quantities of ground, storm, and surface waters that are not admitted intentionally.

Scraper — Equipment for the removal of sludge, etc, from the sedimentation basins and after treatment installation.

Scum Board — A baffle in the surface of sewage to prevent the passage of scum.

Scum Chamber — In an Imhoff tank the chamber through which the gas produced by the digestion passes.

Seeding Material — A well-digested or ripened sludge that has undergone decomposition; used for seeding sludge-digestion tanks.

Seiche — Oscillation of the water in a lake.

Sewage Fungus — A filamentous or gelatinous growth in heavily polluted water, containing colonial bacteria, true fungi and colonial protozoa.

Sewer Appurtenances — Structures, devices, and appliances, other than pipe or conduit, that are integral parts of a sewer system.

Sewer Arch — The curved top of a masonry sewer.

Sewer Manhole — A shaft or chamber providing access from the surface of the ground to a sewer.

Sewer Outfall — The outlet or structure through which wastewater is finally discharged.

Sewer Outlet — The point of final discharge of wastewater or treatment plant effluent.

Sewer Rod — A hard wood stick or light metal rod, nearly 1 metre long with a coupling on each end. Rods are joined and pushed into a sewer to dislodge obstructions.

Sewer System — Collectively, all of the property involved in the operation of a sewer utility. It includes land, waste water lines and appurtenances, pumping stations, treatment works, and general property. Occasionally referred to as a sewerage system.

Silt — Suspended matter in water, generally inorganic or such matter deposited of a size between clay and fine sand.

Silting — The reduction of the capacity of a reservoir or basin due to a deposit of silt or other inorganic matter.

Skimming Tank — Tank for the removal of grease and oil by flotation and skimming.

Slow Sand Filter — A filter for the treatment of water, in which sand is used as the filter medium, and in which mechanical removal of solids is assisted by biological action.

Sludge Conditioning — Pretreatment of sludge to assist its drainage and filtration.

Sludge Digestion — Digestion of sludge.

Sludge Rising — The lifting of sewage sludge to the surface due to entrained gases.

Sludge Seeding — In biological treatment of waste water and associated sludges, the inoculation of the unit process with biologically active sludge, resulting in acceleration of the initial stage of the process.

Sluice Gate — Device for controlling the flow of water in an open channel.

Sluice — Gate for the control of water in an open channel.

Sluice Valve — Gate valve used in a pipeline.

Smooth Flow — Flow in an open channel, above the critical depth, in which an obstruction will produce backwater.

Spillway — Waterway in connection with a dam or other hydraulic structure for the passage of excess water.

Spiral Flow Tank — Aeration tank for activated sludge in which air is added in such a way as to promote spiral flow in the liquor.

Spring — Emergence of groundwater at the surface at a defined location.

Sprinkler — Device for scattering water (or sewage) in drops.

Squeegee — A scraping implement, usually a straight edged blade of rubber or similar material.

Stabilization Lagoon — A shallow pond for storage of wastewater before discharge. Such lagoons may serve only to detain and equalize wastewater composition before regulated discharge to a stream, but often they are used for biological oxidation. *See* Stabilization Pond.

Stabilization Pond — A type of oxidation pond in which biological oxidation of organic matter is effected by natural or artificially accelerated transfer of oxygen to the water from air.

Standard-Rate Filter — A type of trickling filter in which both hydraulic and organic loadings are relatively low, usually built to operate without recycling or recirculation of waste water.

Static Head — The head corresponding to no discharge.

Stopcock — A valve.

Storm Sewer — A sewer that carries storm water and surface water, street wash and other wash waters, or drainage, but excludes domestic waste water and industrial wastes. Also called storm drain.

Storm Water — Surface water produced by heavy rainfall.

Straining — Removal of small solids from water (or sewage) by a strainer or screen.

Stratification — The formation of two more or less distinct layers in a body of water, due to differences of real or pseudo-density.

Stream Bank — The natural confines of watercourse.

Streaming Flow — Flow in an open channel, below the critical depth, in which an obstruction will produce a standing wave.

Suction Head — That part of the effective head on a water turbine given by the vertical height between the turbine and the tail water.

Surface Aeration — The absorption of air through the surface of a liquid.

Subsurface Irrigation — The application of water (or sewage) to the ground by means of perforated conduits buried in the ground.

Swallow Hole — A point in a permeable formation, at which a watercourse disappears into the formation.

T

Tailbay — The open chamber receiving the discharge from a water turbine, drowned siphon, spillway, etc.

Tail Water — The water below a water turbine, dam, etc.

Tapered Aeration — Diffused-air aeration in which the amount of air introduced into the sewage is gradually reduced as the sewage passes from the inlet to the outlet.

Taste Threshold — The taste which can just be detected by a sensitive observer when compared with taste-free water.

Thermocline — The region of a rapid change of temperature in a body of water showing temperature stratification.

Time of Flow — In storm-water drainage, the time taken for the storm water to flow in the sewer from the point of entry to the outfall or to the junction with another sewer.

Travelling Sprinkler — A sewage sprinkler reciprocating across the biological filter, often driven mechanically by the sewage.

Tributary — A stream or river which flows into another and thereby augments it.

Turbulent Flow — Flow in which the streamlines do not remain parallel to the axis of flow.

Two Stage Purification — The purification of sewage in two stages, for example first by activated sludge for aeration and second, nitrification by biological filters.

V

Vertical-Flow Tank — Tank in which the liquid flows upwards so that descending solids can assist flocculation.

Viscosity — Resistance of a liquid to relative sliding between two adjacent layers.

W

Water Conditioning — Treatments, exclusive of disinfection, intended to produce a water free of taste, odour, and other undesirable qualities.

Waterlogged — Saturated with water.

Watershed — Often used as a synonym for catchment area.

Water-Table — The free surface of the zone of saturation.

Weir — An artificial obstruction with an horizontal lip used for measuring or controlling the level of a liquid.

Well — A vertical shaft, dug or driven for abstracting water from an aquifer.

Well Casing — The metal, concrete or other material lining in a well.

Wing Screen — Screen in which a perforated screening medium is carried on a series of rotating wings.

Y

Yield — The amount of water that can safely be drawn from a particular source.

IS : 7022 (Part II) - 1979

(Continued from page 2)

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