

First Flush Devices and Pre-Treatment

Aerial Device a device that is used to divert and filter debris from the roof catchment area before it enters the downspout

Abrasion a process of wear and tear of a material due to friction or impact

Acid Rain rain that has a low pH level due to the presence of pollutants

Activated Carbon a type of filter medium used to remove impurities and odors from water

Algae a type of microorganism that can grow in water and cause problems

Aquifer a layer of rock or soil that stores water

Aquatic Ecosystem a community of plants and animals that live in water

Atmospheric Water a source of water that is collected from the air

Baffle a device used to slow down the flow of water in a tank

Bioswale a type of vegetated swale that is used to filter stormwater

Booster Pump a type of pump used to increase the pressure of water

Cistern a type of tank used to store rainwater

Clarifier a device used to remove suspended solids from water

Clean Water Act a law that regulates the quality of water

Coagulation a process used to remove particles from water

Collection Efficiency the percentage of rainwater that is collected

Collection System a network of gutters and downspouts used to collect rainwater

Conveyance Loss the amount of water that is lost during transportation

Cross Connection a connection between two systems that can cause contamination

Dam a structure used to store water in a reservoir

Decentralized System a type of system that is localized

Demand Management a strategy used to reduce the demand for water

Detention Pond a type of pond used to slow down stormwater

Disinfection a process used to kill microorganisms

Distribution System a network of pipes used to distribute water

Downspout a pipe that carries water from the gutter to the ground

Drainage Basin the area of land that drains water into a waterbody

Drip Irrigation a type of irrigation that uses drips to deliver water

Drought a period of abnormally low rainfall

Dry Pond a type of pond that is dry during dry weather

Effluent the wastewater that is discharged from a treatment plant

Efficient Use the practice of using water wisely

Embayment a bay or cove that is connected to a lake or ocean

End Use the purpose for which water is used

Energy Efficiency the practice of using energy wisely

Environmental Impact the effect of human activities on the environment

Erosion the process of wearing away soil or rock

Evapotranspiration the process by which water is lost to the atmosphere

Filtration a process used to remove particles from water

First Flush Device a device that is used to divert the first flow of water from the roof

Flash Flood a sudden and rapid rise in water level

Flood Control the practice of managing floodwater

Floodplain the area of land that is subject to floods

Flow Rate the volume of water that flows through a pipe

Fluid Dynamics the study of the behavior of fluids

Gutter a channel that is used to collect and carry rainwater

Hazardous Waste a type of waste that is hazardous to human health

Hydroelectric Power a type of power that is generated from water

Hydrology the study of the behavior of water

Impervious Surface a surface that does not absorb water

Infiltration the process by which water enters the soil

Inflow the amount of water that enters a system

Inlet a point where water enters a system

Inspection the process of examining a system

Integrated Water Resource Management the practice of managing water resources

Irrigation the practice of applying water to crops

Lagoon a body of water that is separated from the ocean

Lake a body of water that is surrounded by land

Leach Field a system used to treat wastewater

Leak Detection the process of identifying leaks in a system

Level Spreader a device used to distribute water evenly

Linear Programming a method used to optimize the use of resources

Linear Reservoir a type of reservoir that is long and narrow

Load the amount of work that a system is required to do

Low Impact Development a type of development that is designed to reduce the impact on the environment

Maintenance the process of keeping a system in good working order

Manhole a structure that is used to access a sewer

Maximum Contaminant Level the highest level of a contaminant that is allowed

Microfiltration a type of filtration that uses small pores

Microorganism a living thing that is too small to be seen with the naked eye

Model a representation of a system

Monitoring the process of tracking the performance of a system

Nanofiltration a type of filtration that uses very small pores

National Pollutant Discharge Elimination System a program that regulates the discharge of pollutants

Network a system of connected components

Nonpoint Source a source of pollution that is not from a single point

Open Channel a type of channel that is not closed

Outfall the point where a pipe or channel empties into a waterbody

Overflow the amount of water that flows over the top of a structure

Oxygen Demand the amount of oxygen that is required to break down organic matter

Peak Flow the highest rate of flow

Percolation the process by which water moves through the soil

Permeable Pavement a type of pavement that is permeable to water

pH the measure of the acidity or basicity of a solution

Pipe a hollow cylinder that is used to carry water

Point of Use the location where water is used

Pollutant a substance that contaminates the environment

Pond a body of water that is smaller than a lake

Porosity the measure of the void spaces in a material

Potable Water water that is safe to drink

Precipitation the process by which water falls to the ground

Pre-treatment the process of treating water before it is used

Pressure the force that is exerted on a surface

Pump a device that is used to lift or move water

Rain Barrel a container that is used to collect and store rainwater

Rain Garden a type of garden that is designed to collect and filter rainwater

Recharge the process by which water enters the ground

Reclaimed Water water that has been treated and reused

Recycling the process of converting waste into new products

Reservoir a container that is used to store water

Retention Basin a type of basin that is used to slow down stormwater

Return Flow the amount of water that returns to the atmosphere

Reuse the practice of using water again

Riparian a type of land that is adjacent to a waterbody

Runoff the amount of water that flows over the land

Safe Yield the amount of water that can be safely withdrawn from a source

Sanitary Sewer a type of sewer that is used to carry wastewater

Sediment a type of material that is carried by water

Sedimentation the process by which sediment settles to the bottom

Sewer a pipe or channel that is used to carry wastewater

Silt a type of sediment that is smaller than sand

Simulation a representation of a system

Sludge a type of waste that is generated during treatment

Source Water the original source of water

Specific Gravity the ratio of the density of a substance to the density of water

Spray Irrigation a type of irrigation that uses sprays to distribute water

Storm Drain a type of drain that is used to carry stormwater

Stormwater the amount of water that flows over the land during a storm

Stream a small river or creek

Subsurface Flow the amount of water that flows through the soil

Supernatant the upper layer of a liquid

Surface Tension the force that acts on the surface of a liquid

Surface Water water that is found on the surface of the earth

Suspended Solids the amount of solid material that is suspended in water

Sustainable Development the practice of meeting the needs of the present without compromising the ability of future generations

Swale a type of depression that is used to collect and filter stormwater

System a group of connected components

Tank a container that is used to store water

Tertiary Treatment the third stage of wastewater treatment

Total Dissolved Solids the amount of dissolved solids in water

Total Suspended Solids the amount of suspended solids in water

Transient a temporary condition

Transmissivity the measure of the ability of a material to transmit water

Treatment Plant a facility that is used to treat wastewater

Turbidity the measure of the clarity of water

Urban Runoff the amount of water that flows over the land in an urban area

Valve a device that is used to control the flow of water

Vaporization the process by which a liquid turns into a gas

Velocity the measure of the speed of water

Wastewater water that has been used and contains pollutants

Wastewater Treatment the process of removing pollutants from wastewater

Water Balance the accounting of the inputs and outputs of water

Water Conservation the practice of using water efficiently

Water Cycle the process by which water moves through the environment

Water Quality the measure of the condition of water

Water Rights the legal right to use water

Water Table the level below which the soil is saturated with water

Watershed the area of land that drains water into a waterbody

Wet Pond a type of pond that is designed to collect and treat stormwater

Wetland a type of land that is covered with water

Yield the amount of water that can be obtained from a source

Zero Discharge the practice of eliminating all wastewater

Zoning the practice of regulating the use of land

First Flush Devices a device that is used to divert the first flow of water from the roof
the first flush of water from the roof is often contaminated with debris
the device is used to remove debris and contaminants from the water
the device is typically installed at the downspout
the device is designed to divert the first flow of water from the roof
the device is used to improve the quality of the water
the device is typically used in rainwater harvesting systems

Pre-Treatment the process of treating water before it is used
the pre-treatment process is used to remove debris and contaminants from the water
the pre-treatment process is typically used in rainwater harvesting systems
the pre-treatment process is used to improve the quality of the water
the pre-treatment process is typically used before the water is stored in a tank
the pre-treatment process can include sedimentation
the pre-treatment process can include filtration
the pre-treatment process can include disinfection
the pre-treatment process is important to ensure the quality of the water
the pre-treatment process is important to prevent contamination of the water
the pre-treatment process is important to protect the health of people and animals
the pre-treatment process is important to protect the environment

related terms include rainwater harvesting
related terms include water conservation
related terms include water treatment
related terms include wastewater treatment
related terms include stormwater management
related terms include flood control
related terms include irrigation
related terms include drinking water
related terms include water quality
related terms include water quantity
related terms include hydrology
related terms include hydraulics
related terms include civil engineering
related terms include environmental engineering
related terms include chemical engineering
related terms include biological engineering
related terms include ecological engineering

examples of first flush devices include
examples of pre-treatment processes include
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examples of water conservation practices include
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challenges associated with first flush devices include

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practical applications of first flush devices include

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