Professional Certificate in Water Conservation Rainwater Harvesting

Water Storage and Distribution

Aeration refers to the process of introducing air into water to increase the oxygen levels, which is essential for the survival of aquatic life and to prevent the growth of bacteria. In water storage and distribution systems, aeration is used to remove volatile organic compounds and other contaminants, improving the quality of the water. Related terms include oxygenation, ventilation, and aerobic processes.

Aqueduct refers to a structure designed to convey water from a source to a distribution point, often over long distances. Aqueducts can be built above or below ground, and they play a crucial role in supplying water to cities, towns, and agricultural areas. Related terms include canal, pipeline, and waterway.

Aquifer refers to an underground layer of rock or soil that can store and transmit large amounts of water. Aquifers act as natural reservoirs, supplying freshwater to wells, springs, and rivers. Related terms include groundwater, permeability, and porosity.

Backflow refers to the unintended flow of contaminated water into a potable water distribution system, posing a risk to public health. Backflow can occur due to a variety of factors, including cross-connections, back-siphonage, and pressure fluctuations. Related terms include backflow prevention, cross-connection control, and valve installation.

Biosand filter refers to a type of water filtration system that uses a combination of biological and physical processes to remove contaminants from water. Biosand filters are often used in rural areas or developing communities where access to clean drinking water is limited. Related terms include slow sand filter, filtration media, and microorganism removal.

Catchment refers to an area of land that drains water into a common outlet, such as a river, lake, or reservoir. Catchments play a crucial role in the hydrologic cycle, and their management is essential for maintaining water quality and preventing erosion. Related terms include watershed, drainage basin, and runoff coefficient.

Cistern refers to a tank or reservoir used to store rainwater or other sources of water for non-potable purposes, such as flushing toilets or irrigating plants. Cisterns are often used in areas where water conservation is essential, and they can help reduce the demand on municipal water supplies. Related terms include water storage, rainwater harvesting, and greywater reuse.

Coagulation refers to the process of removing particulate matter and other contaminants from water by adding chemicals that cause the particles to cling together and form larger clusters. Coagulation is often used in water treatment plants to improve the efficiency of subsequent treatment processes. Related terms include flocculation, sedimentation, and filtration.

Corrosion refers to the deterioration of metal pipes and other infrastructure due to chemical reactions with

the surrounding environment. Corrosion can lead to the contamination of water supplies, and it is a major concern in water distribution systems. Related terms include scaling, tuberculation, and cathodic protection.

Desalination refers to the process of removing salt and other minerals from seawater or brackish water to produce fresh water. Desalination is often used in areas where freshwater resources are scarce, and it can provide a reliable source of drinking water. Related terms include reverse osmosis, distillation, and electrodialysis.

Distribution system refers to the network of pipes, pumps, and other infrastructure used to deliver water from a treatment plant or storage facility to consumers. Distribution systems play a critical role in maintaining water quality and ensuring that safe drinking water is available to the public. Related terms include pipeline, water main, and valve installation.

Drainage refers to the natural or artificial removal of water from a given area, often to prevent flooding or erosion. Drainage systems can include gutters, downspouts, and storm sewers, and they play a crucial role in maintaining water quality and preventing pollution. Related terms include runoff, infiltration, and detention pond.

Drip irrigation refers to a type of irrigation system that delivers water directly to the roots of plants, reducing evaporation and runoff. Drip irrigation is often used in agricultural settings, and it can help conserve water and reduce the environmental impact of farming practices. Related terms include microirrigation, trickle irrigation, and soil moisture management.

Effluent refers to the wastewater or other liquid waste that is discharged from a facility or process into the environment. Effluent can pose a significant risk to water quality and public health, and it is often subject to regulatory controls and treatment requirements. Related terms include sewage, wastewater treatment, and discharge permit.

Filtration refers to the process of removing particulate matter and other contaminants from water by passing it through a filter medium. Filtration is often used in water treatment plants to improve the quality of the water, and it can be used in conjunction with other treatment processes, such as coagulation and disinfection. Related terms include sedimentation, centrifugation, and microfiltration.

Flow rate refers to the volume of water that flows through a given point in a pipe or channel over a specified period of time. Flow rate is often used to calculate the capacity of a water distribution system, and it can be affected by factors such as pressure, friction, and viscosity. Related terms include velocity, discharge, and hydraulic gradient.

Groundwater refers to the water that is stored beneath the Earth's surface in aquifers and other geological formations. Groundwater is a vital source of drinking water, and it plays a crucial role in maintaining ecosystem health and supporting agricultural production. Related terms include aquifer, recharge, and hydrogeology.

Head refers to the pressure or energy exerted by a column of water at a given point in a pipe or system. Head is often used to calculate the flow rate and pressure drop in a water distribution system, and it can be

affected by factors such as friction, elevation, and viscosity. Related terms include pressure, velocity, and hydraulic gradient.

Hydrology refers to the scientific study of water and its role in the environment. Hydrology encompasses a wide range of topics, including hydrologic cycle, water balance, and flood control. Related terms include hydrogeology, limnology, and meteorology.

Infiltration refers to the process by which water seeps into the soil and becomes part of the groundwater system. Infiltration is an important component of the hydrologic cycle, and it plays a crucial role in maintaining ecosystem health and supporting agricultural production. Related terms include percolation, recharge, and soil moisture management.

Irrigation refers to the artificial application of water to land or soil to support plant growth and agricultural production. Irrigation is a vital component of modern agriculture, and it can help increase crop yields, improve water use efficiency, and reduce the environmental impact of farming practices. Related terms include irrigation system, drip irrigation, and water management.

Leak detection refers to the process of identifying and locating leaks in a water distribution system. Leak detection is an important component of water conservation efforts, and it can help reduce wastewater, prevent property damage, and minimize the risk of waterborne diseases. Related terms include leak repair, pipe inspection, and water auditing.

Metering refers to the process of measuring the volume of water used by a consumer or facility. Metering is an important component of water management, and it can help track water use, detect leaks, and promote water conservation. Related terms include water meter, flow meter, and billing system.

Non-revenue water refers to the water that is lost or unaccounted for in a water distribution system. Non-revenue water can include leaks, theft, and metering errors, and it can have a significant impact on water conservation efforts and utility finances. Related terms include water loss, leakage, and revenue protection.

Pipe refers to a tube or conduit used to convey water or other fluids from one point to another. Pipes are a critical component of water distribution systems, and they can be made from a variety of materials, including metal, plastic, and concrete. Related terms include pipeline, water main, and fittings.

Pumping station refers to a facility that uses pumps to transfer water from one location to another. Pumping stations are often used in water distribution systems to boost pressure and ensure that water is delivered to consumers. Related terms include pump, motor, and control system.

Rainwater harvesting refers to the collection and storage of rainwater for non-potable purposes, such as flushing toilets or irrigating plants. Rainwater harvesting is a vital component of water conservation efforts, and it can help reduce the demand on municipal water supplies and minimize the risk of stormwater pollution. Related terms include cistern, gutter, and downspout.

Reservoir refers to a lake, pond, or other body of water that is used to store water for drinking, irrigation, or other purposes. Reservoirs play a crucial role in maintaining water quality and ensuring that safe drinking

water is available to the public. Related terms include dam, water storage, and hydroelectric power.

Runoff refers to the water that flows over the land and into streams, rivers, and other water bodies. Runoff can pose a significant risk to water quality, and it is often subject to regulatory controls and management practices. Related terms include stormwater, erosion, and sedimentation.

Sanitary sewer refers to a pipe or conduit that carries wastewater or sewage away from homes, businesses, and institutions. Sanitary sewers play a critical role in maintaining public health, and they are often subject to regulatory controls and treatment requirements. Related terms include sewer, wastewater treatment, and discharge permit.

Scaling refers to the buildup of mineral deposits on the inside of pipes and other equipment, which can reduce flow rates and increase the risk of corrosion. Scaling is a common problem in water distribution systems, and it can be controlled through the use of water treatment chemicals and scaling inhibitors. Related terms include corrosion, tuberculation, and water quality management.

Sedimentation refers to the process of removing particulate matter from water by allowing it to settle to the bottom of a tank or basin. Sedimentation is often used in water treatment plants to improve the quality of the water, and it can be used in conjunction with other treatment processes, such as coagulation and filtration. Related terms include clarification, settling, and sludge management.

Service connection refers to the pipe or conduit that connects a building or facility to a water distribution system. Service connections play a critical role in delivering water to consumers, and they are often subject to regulatory controls and inspection requirements. Related terms include water meter, valve, and fittings.

Stormwater refers to the water that flows over the land and into streams, rivers, and other water bodies during rainfall or snowmelt events. Stormwater can pose a significant risk to water quality, and it is often subject to regulatory controls and management practices. Related terms include runoff, erosion, and sedimentation.

Supply chain refers to the network of suppliers, manufacturers, and distributors that provide goods and services to a water utility or municipality. Supply chain management is critical to ensuring that water utilities have access to the materials and equipment they need to operate effectively. Related terms include procurement, logistics, and inventory management.

Treatment plant refers to a facility that uses various processes to remove contaminants from water and produce drinking water that meets or exceeds regulatory standards. Treatment plants play a critical role in maintaining public health, and they are often subject to regulatory controls and inspection requirements. Related terms include water treatment, filtration, and disinfection.

Valve refers to a device that controls the flow of water or other fluids in a pipe or system. Valves play a critical role in water distribution systems, and they can be used to regulate pressure, flow rate, and direction of flow. Related terms include gate valve, ball valve, and check valve.

Wastewater refers to the liquid waste that is generated by human activities, such as sewage, industrial

waste, and agricultural runoff. Wastewater can pose a significant risk to water quality and public health, and it is often subject to regulatory controls and treatment requirements. Related terms include sewage, effluent, and discharge permit.

Water audit refers to a systematic evaluation of a water utility's or municipality's water use and conservation efforts. Water audits can help identify leaks, wastewater, and other areas for improvement, and they can provide a framework for implementing water conservation measures. Related terms include water management, leak detection, and conservation planning.

Water balance refers to the accounting of all the water inputs and outputs in a given system or watershed. Water balance is a critical tool for water management, and it can help identify areas for conservation and efficient use. Related terms include hydrologic cycle, evapotranspiration, and runoff coefficient.

Water conservation refers to the practices and technologies used to reduce water waste and promote efficient use. Water conservation is essential for maintaining water quality, ensuring public health, and supporting economic development. Related terms include water efficiency, drought management, and rainwater harvesting.

Water distribution system refers to the network of pipes, pumps, and other infrastructure used to deliver water from a treatment plant or storage facility to consumers. Water distribution systems play a critical role in maintaining water quality and ensuring that safe drinking water is available to the public.

Water loss refers to the water that is lost or unaccounted for in a water distribution system. Water loss can include leaks, theft, and metering errors, and it can have a significant impact on water conservation efforts and utility finances. Related terms include non-revenue water, leakage, and revenue protection.

Water quality refers to the physical, chemical, and biological characteristics of water that affect its suitability for human consumption, agricultural use, or ecosystem health. Water quality is a critical aspect of water management, and it is often subject to regulatory controls and monitoring requirements. Related terms include water pollution, contaminant, and treatment process.

Water reuse refers to the practice of using treated wastewater or greywater for non-potable purposes, such as flushing toilets or irrigating plants. Water reuse is a vital component of water conservation efforts, and it can help reduce the demand on municipal water supplies and minimize the risk of waterborne diseases. Related terms include water recycling, greywater reuse, and irrigation system.

Water storage refers to the holding of water in a tank, reservoir, or other facility for later use. Water storage is a critical component of water management, and it can help regulate water supply, prevent floods, and support agricultural production. Related terms include reservoir, dam, and water supply system.

Water supply system refers to the network of infrastructure used to collect, treat, and distribute water to consumers. Water supply systems play a critical role in maintaining public health, and they are often subject to regulatory controls and inspection requirements. Related terms include water distribution system, water treatment plant, and storage facility.

Watershed refers to the area of land that drains water into a common outlet, such as a river, lake, or reservoir. Watersheds play a crucial role in maintaining water quality, and they are often subject to regulatory controls and management practices. Related terms include drainage basin, catchment, and hydrologic cycle.