



# CONTAINERIZED POTABLE WATER TREATMENT PLANT-CPWTP

Water purification is the removal of contaminants from untreated water to produce drinking water that is pure enough for the most critical of its intended uses, usually for human consumption. Substances that are removed during the process of drinking water treatment include suspended solids, minerals such as iron, manganese and other chemical pollutants.

Measures taken to ensure water quality not only related with the treatment of the water, but also with its conveyance and distribution after treatment as well. It is therefore common practice to have residual disinfectants in the treated water in order to kill any bacteriological contamination during distribution. World Health Organization (WHO) guidelines are generally followed throughout the world for drinking water quality requirements. In addition of the WHO guidelines, each country or territory or water supply body can have their own guidelines in order for consumers to have access to safe drinking water.

Astim designs and manufactures Containerized Potable Water Treatment Plant - CPWTP in order to meet the treated water needs of the small municipal communities and industries. Modular design, low power consumption, plugs & operates installation and easy operation makes CPWTP a compact and well accepted choice for water treatment applications.





### Process Description

CPWTP uses the fundamental water treatment processes; such as coagulation, flocculation, clarification and filtration. This enables simple and most economical procedures for operation and maintenance. The plant capacity can be increased by adding skid mounted containerized modules. Design of the plant is depending on simple basic procedures therefore operation of the plant is very easy. Coagulant (such as Aluminium Sulphate) will be added to the raw water by means of static mixer before it is accepted in the plant. Then after coagulation, polyelectrolyte solution will be added to the coagulated water at the inlet of the flocculation tank. After flocculation, raw water will be transferred to the lamella clarifier. Due to greater surface area of the lamella in clarifier tanks, the flocculated suspended solids will be settled on the bottom of the lamella clarifier, in hoppers. The slurry will be taken out by the help of hydraulic pressure with automatic valves.

The clarified water is transferred to the intermediate tank and collected there to be pumped to the sand filters. The elimination of residual suspended solid in the clarified water will be carried out by sand filter. Disinfection is carried out with the calcium hypochlorite. The filtered water will be collected in the treated water tank.



80 m<sup>3</sup>/h capacity CPWTP pre-assembled in factory



2 x 80 m<sup>3</sup>/h capacity CPWTP during pre-assembly



Control room inside a standard container



Internal view from a Control room



Illustration of 2 x 250 m<sup>3</sup>/h capacity CPWTP

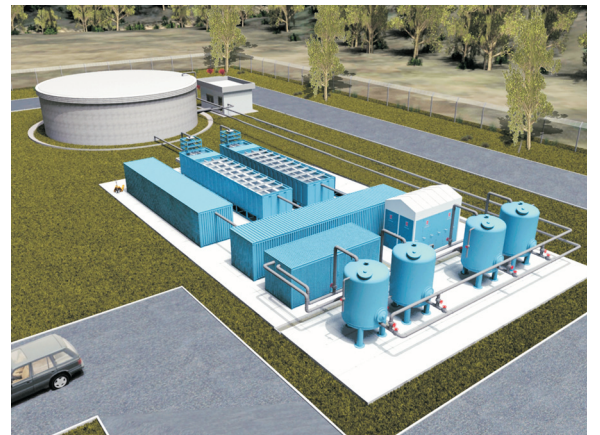
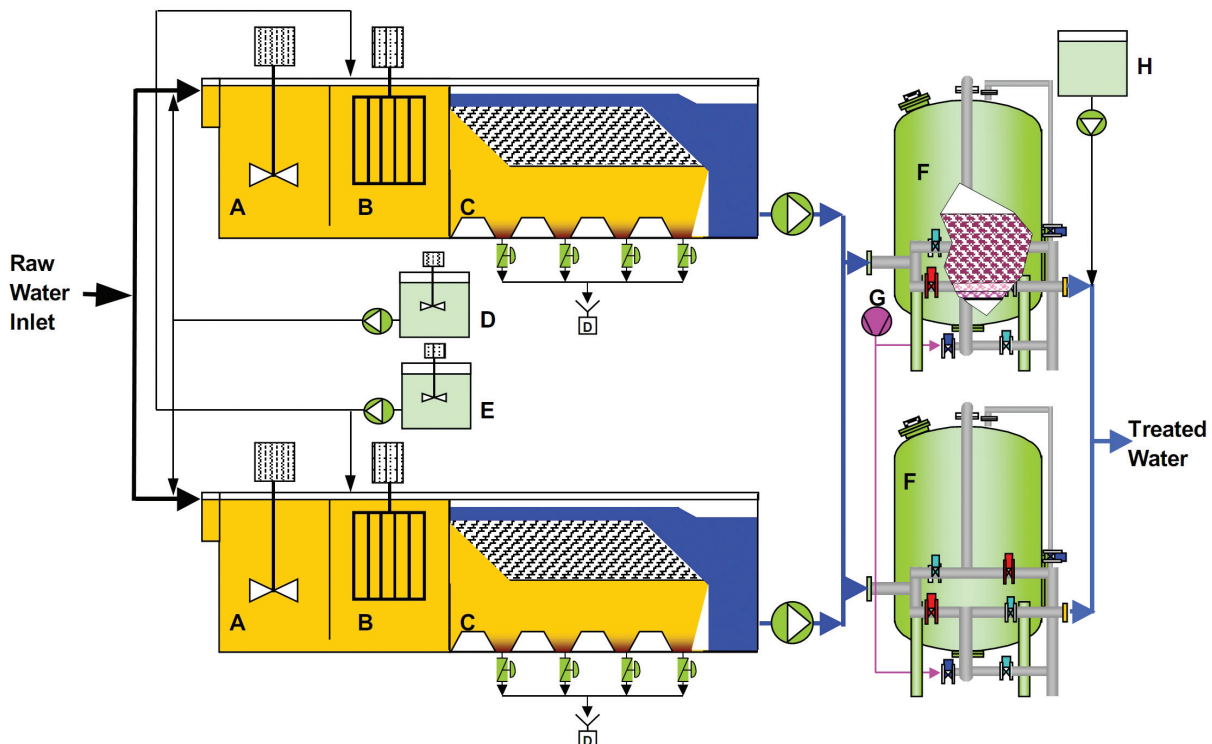


Illustration of 2 x 80 m<sup>3</sup>/h capacity CPWTP

# BENEFITS OF CPWT PLANT

- Fast and easy assembly and installation,
- Minimized civil works: If Skid-mounted units are requested; only a simple slab is required,
- Low power consumption,
- Small footprint and modular design enable application anywhere; almost for any capacity,
- Streamlined operation and maintenance procedures using the fundamental design principles for water treatment,
- Flexible material and engineering solutions according to the requests of Customer.

# PRINCIPLE PLANT FLOW DIAGRAM



A) Coagulation Unit  
B) Flocculation Unit

C) Clarification Unit  
D) Coagulant Dosing Unit

E) Flocculant Dosing Unit  
F) Sand Filter

G) Blower  
H) Disinfection Unit

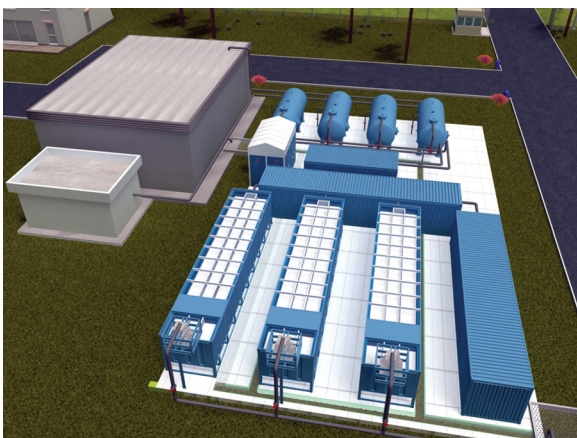


Illustration of 400 m<sup>3</sup>/h capacity CPWTP

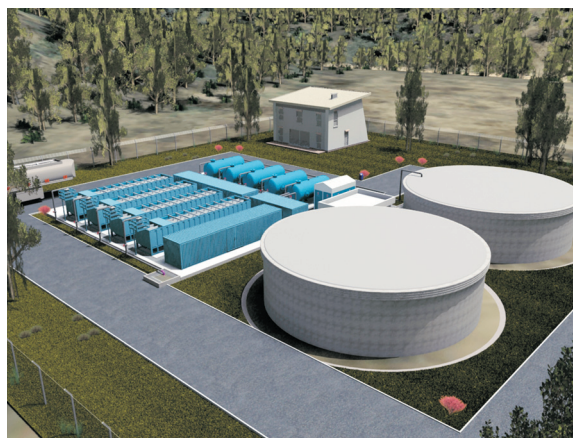


Illustration of 2x300 m<sup>3</sup>/h capacity CPWTP



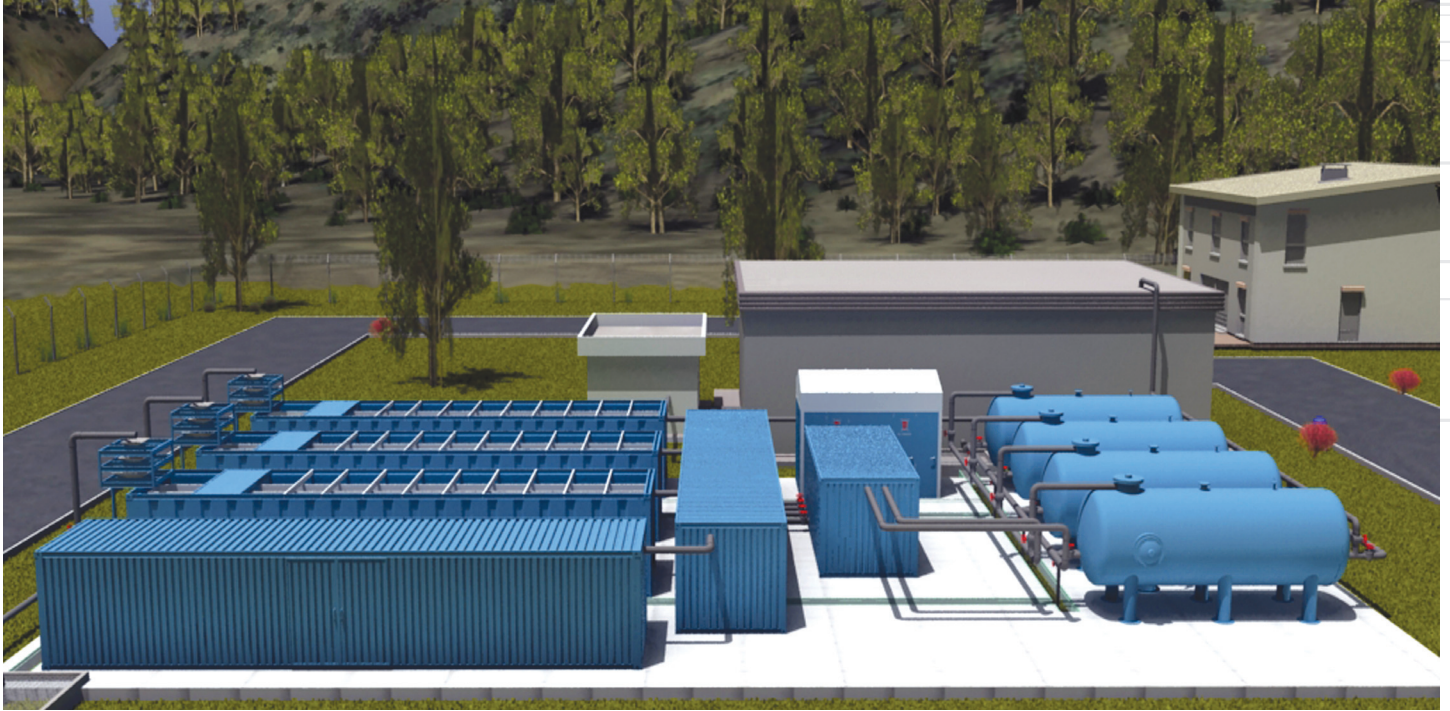


Illustration of 500 m<sup>3</sup>/h capacity CPWTP

**CONTAINERIZED POTABLE WATER TREATMENT PLANT (CPWTP)  
GENERAL SPECIFICATIONS**

ELEMENTS	SPECIFICATIONS
Capacity	50 to 600 m <sup>3</sup> /h. Optional: Up to 1000 m <sup>3</sup> /h
Flow Control	Electromagnetic flow meter (optional)
Material	Standard : Carbon steel, Optional : Stainless Steel
Surface Treatment	Standard : Inside-outside sand blasted and epoxy painted, with food grade epoxy
Dimensions	Standard International Container Sizes (20 to 40 ft , HC)
Lamella	Standard: PVC or PP, Optional: Stainless Steel
Coagulation Unit	Tank: HDPE, Mixer : Stainless Steel
Flocculation Unit	Tank: HDPE, Mixer : Stainless Steel
Filtration Media	Sand or Anthracite
Filtration Tank	Standard: Carbon Steel, Optional : Stainless Steel
Disinfection Unit	Liquid Sodium Hypochloride or Chlorine gas dosing system
Operating Temperature	Standard: 5-50 °C, Optional : lower and higher temperatures with insulation
Piping	Carbon Steel , HDPE, PVC,PP or Stainless Steel
Valves	Electric or pneumatic Actuated Butterfly valves
Control	Manual or PLC
Electrical Requirements	380 V, 50 Hz.
Other Equipment	Air Compressor ( Optional ) Tailor made design according to customer requirements

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