



TONKA EQUIPMENT COMPANY

Project Profile

CIDRA WATER TREATMENT PLANT

Puerto Rico

DESIGN ENGINEER

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APPLICATION:

Turbidity Removal

TONKA PROCESS EQUIPMENT:

- Cascade Aerator/Head Tank
- Two 4-cell Centralator™ filters
- Four Heli-Cone™ Upflow Clarifiers
- Tonka's Simul-Wash™ backwash system

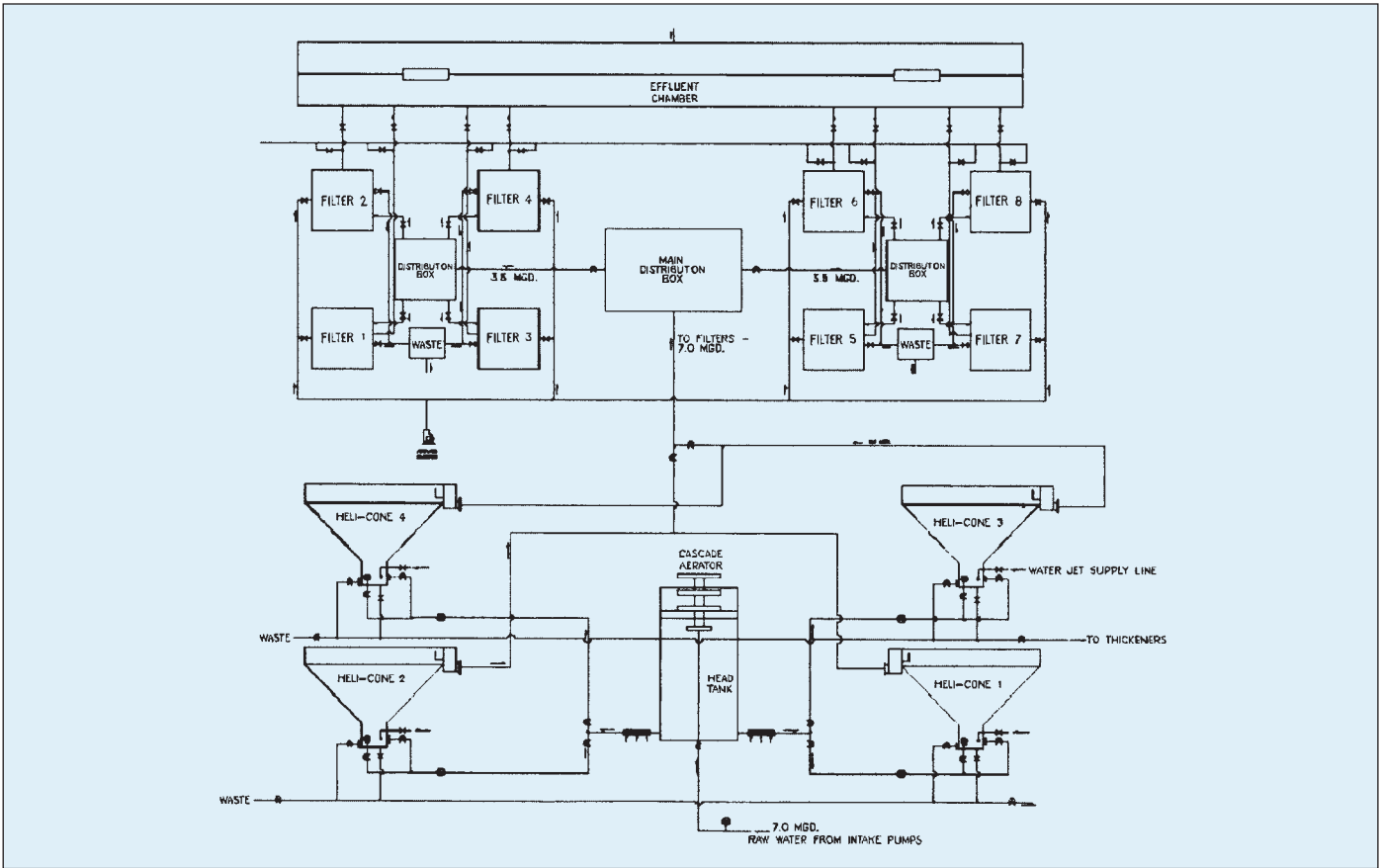
PROJECT

As with many Puerto Rican water treatment facilities, the plant at Cidra uses surface water for raw water supply. Puerto Rican surface water, by nature, experiences widely fluctuating turbidity levels related to rainfall and watershed conditions. At a designed flow rate of 7.5 MGD, a carefully designed and operated water treatment plant was necessary for the Cidra facility to consistently meet USEPA turbidity standards for drinking water.

PROCESS

As the water travels from the intake structure to Tonka's Heli-Cone™ upflow solids contact clarifiers, the water is first aerated. The aeration step provides for oxidation of iron and other easily oxidized inorganic contaminants and for gas removal. By employing aeration as the first step in treatment, chemical requirements are decreased, saving money with regard to chemical purchasing, chemical storage and handling. After aeration, a head tank is provided to eliminate entrained air in the cone influent. Polymers and other chemicals are added for flocculation, coagulation and disinfection as the water leaves the head tank. In-line static mixing ensures proper and complete mixing of the added treatment agents.

As the water enters the bottom of the clarifier, the unique "cone" geometry creates a helical path along which the water flows upward through a sludge blanket and then over a weir edge. From there, the water is gravity fed into the Tonka Centralator™ filters. This gravity filter system consists of eight equal filter cells in two banks. Each cell has a dual media filter bed equipped with Tonka's Simul-Wash™ backwash system. This system is a simultaneous air and water backwash system, employing a specially designed underdrain and baffled trough.



With the incorporation of Simul-Wash,TM the Cidra water treatment plant is able to reduce backwash wastewater by almost 50% when compared to other backwash systems. It also prevents the formation of mudballs and increases the overall life and efficiency of the filter media. *There are no continuously moving mechanical parts in the Tonka system.*

PERFORMANCE

When used to treat Puerto Rican surface water, the Tonka Heli-ConeTM/CentralatorTM combination is unsurpassed in performance. Similar to other Tonka installations on the island, the Cidra installation consistently reduces influent turbidity spikes of up to 1000 NTU and beyond, and produces filtered, potable water well within USEPA and Puerto Rican Health Department standards.

FOR ADDITIONAL DETAILS, CONTACT:
Tonka Equipment Company



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