



DUALATOR® III

A system for removal of Iron, Manganese, Arsenic and Radium that meets or exceeds USEPA, Canadian and Ten States Standards

The Tonka Dualator® III treatment system is unique and versatile and can be used in a number of different treatment applications. Due to its integral multi-process design, the Dualator® III meets USEPA, Ten States Standards, and Canadian requirements for iron, manganese and arsenic removal applications. The Dualator® III is also ideal for Hydrous Manganese Oxide (HMO) radium removal where indicated by pilot testing.

Climate Versatility

The Dualator® III is a package groundwater treatment system. It integrally incorporates the processes of aeration, detention and filtration in a single vessel. The Dualator® III is a low profile configuration that is typically installed within a treatment building in northern climates. It is completely sealed, and provided with access hatches, making it suitable for outdoor placement in temperate climates.

Iron Oxidation and High Efficiency Aeration

The top-mounted aerator section of the Dualator® III is specifically designed to accomplish iron oxidation and hydrogen sulfide gas stripping by means of induced draft spray aeration. Higher efficiency aerators can also be provided for carbon dioxide stripping when the application so demands. A pipe transfers the aerated flow from the aerator to a multi-chamber detention compartment. This transfer pipe incorporates a low headloss, in-line static mixer for chemical injection. A connection for backwash reclamation is also provided downstream of the in-line static mixer.

Arsenic and/or Radium Removal

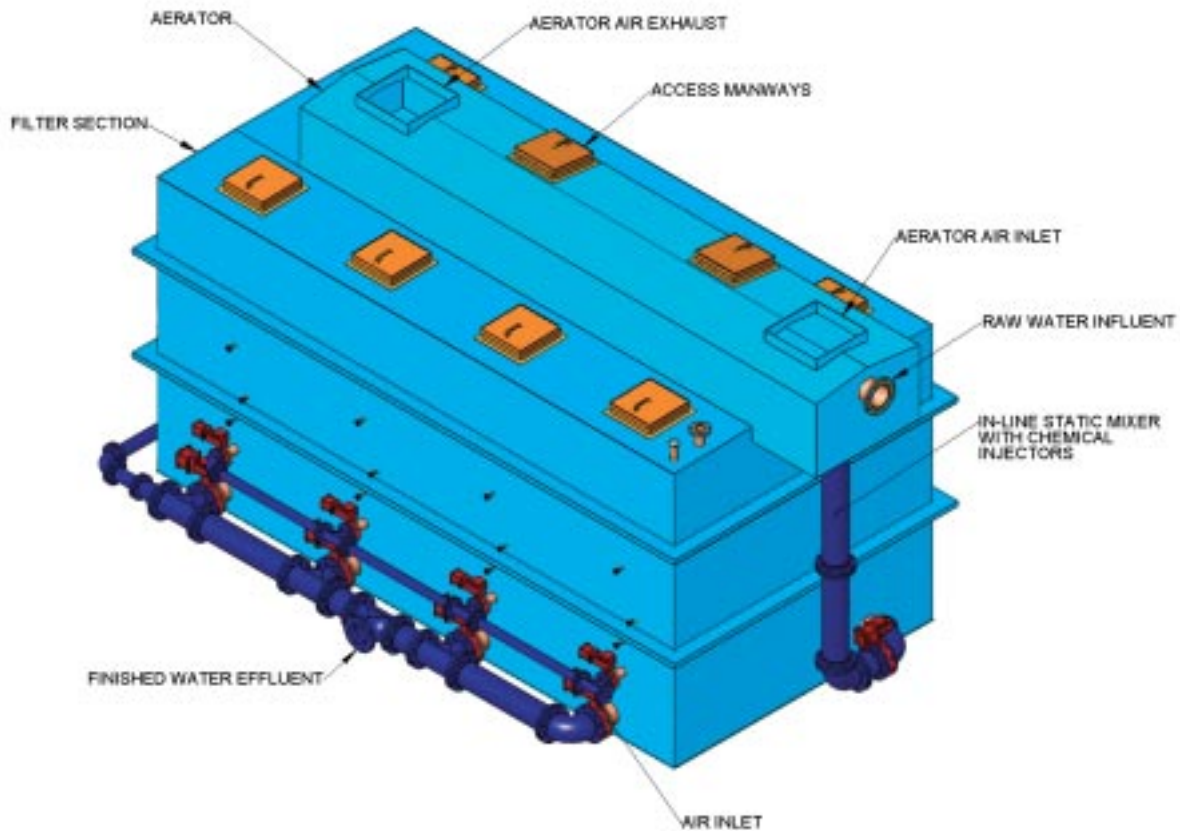
The multi-chamber detention compartment is designed to provide 30 minutes of hydraulic detention, and is baffled to prevent short-circuiting. The detention compartment incorporates a sludge collection and blow-down system for the controlled removal of settled sludge. For applications where supplementary iron is added for arsenic removal, or HMO is added for radium removal, a slow speed mechanical flocculator can be incorporated. Periodic sludge blow-down from this compartment lessens the solids load to the filters, greatly increasing filter run lengths over pressure systems and other package units.



*Dualator® III Iron and Manganese Removal System
Country Estates, Wisconsin*

Uniform Collection of Detention Effluent

The discharge of the detention compartment incorporates an effluent collection system, which is designed to promote uniform collection and prevent short-circuiting. The collection system also provides a convenient location for additional chemical injection as may be necessary in some applications.



Dualator® III Isometric Drawing

Tonka's Simul-Wash™

The flow from the detention compartment is routed and uniformly distributed into a multi-cell gravity filter. The filter incorporates a false bottom underdrain system, airwash distribution system, and the Tonka Simul-Wash™ backwash waste collection system. The filter can be used with a wide variety of filter media including conventional dual media; tri-media; oxide-coated media such as manganese greensand; and arsenic adsorptive material.

Water Level and Effluent Rate of Flow Control

The Dualator® III is commonly used in applications where the effluent from the filter is collected in the underdrain and routed to a clearwell. In such applications Tonka provides the level controls and effluent controller necessary for maintaining the water level in the filter and controlling effluent rate of flow. The Dualator® III can also be used in applications in which the treated flow is pumped directly to elevated storage. Tonka will customize and provide the controls required for these applications, as well as any other control features required.

We Can Help!

Contact Tonka Equipment Company to discuss your iron, manganese, arsenic and radium removal applications so we can show you how the Dualator® III can meet your application requirements.



TONKA EQUIPMENT COMPANY

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