

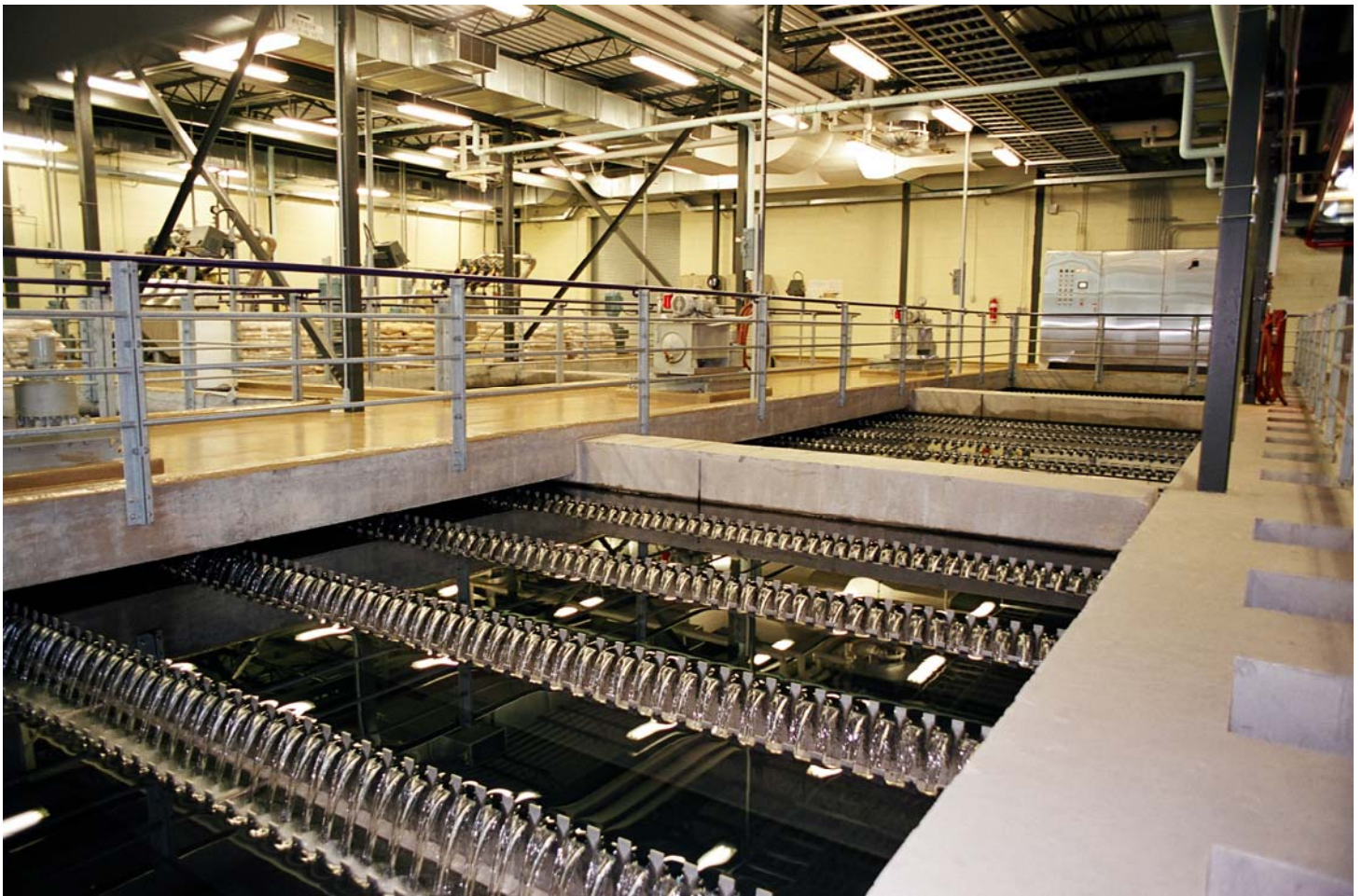
POTABLE WATER



Actiflo[®]

Ballasted Clarification Process

*A major step towards achieving
spring-like water*



JOHN MEUNIER

ACTIFLO®

The product of many years of research and development, the Actiflo® ballasted clarification process, developed by OTV, will solve the most severe treatment problems and meet economic objectives, a growing preoccupation of municipal and industrial managers. The Actiflo® process represents the most advanced available clarification process on the market.

Having quickly achieved worldwide recognition, the Actiflo® process is the solution best suited to the treatment of a wide variety of raw water qualities. Compact, flexible and easy to operate, the Actiflo® ballasted clarification process is ideal for upgrading existing water plants, as well as for installation in new water facilities.

FEATURES

The Actiflo® process represents a breakthrough in water treatment technologies. It combines two well proven principles of rapid settling:

- **Micro-sand** serves as seed for floc formation and ballast to increase floc density and high settling velocity.
- **Plate settling** greatly reduces the clarifier surface.

CHARACTERISTICS

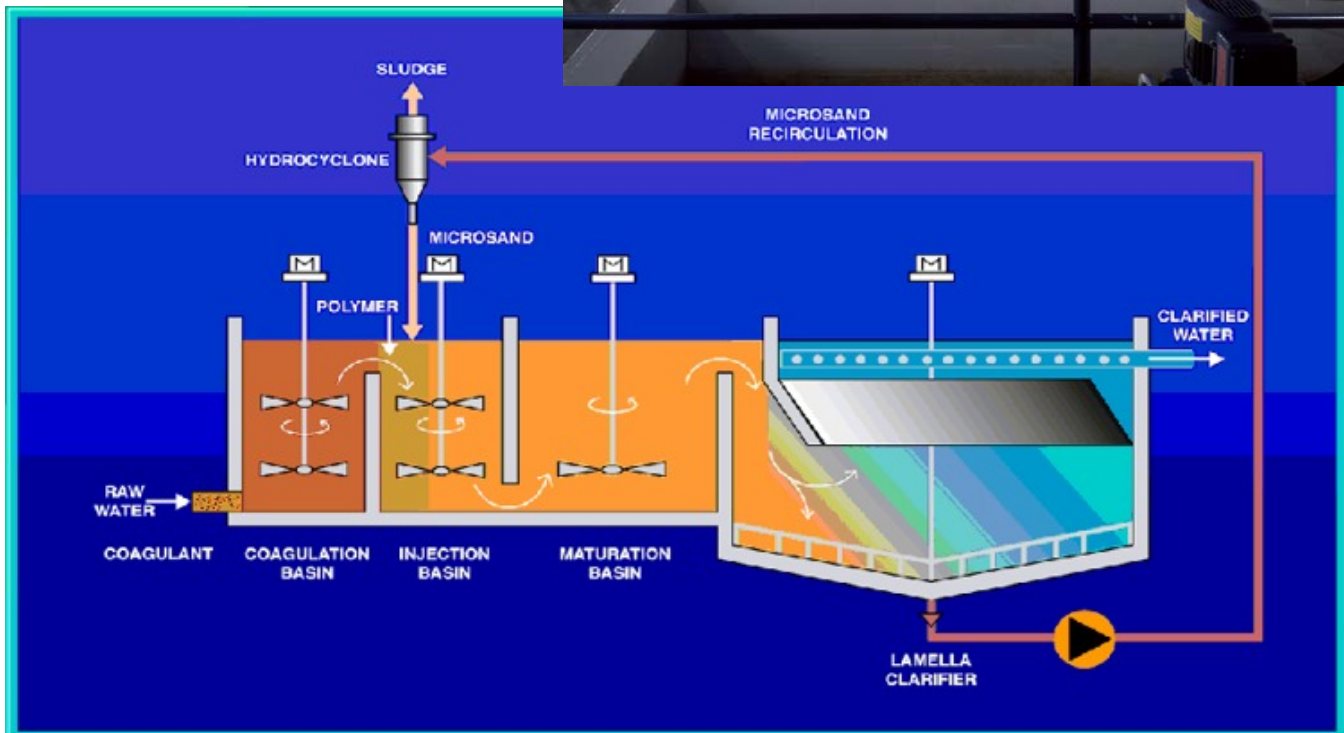
The Actiflo® process provides numerous advantages over all known settling processes presently in use.

- **Economy**
Micro-sand vigorous mixing considerably reduces coagulation and flocculation time and, consequently, the overall footprint of the mixing and flocculation chambers. High flow rates (40 to 70 m³/h per m² of surface) produce compact installations and low civil costs, ideal for upgrading existing plants. Efficient use of chemical dosage produces an important reduction in operating costs.
- **Stability and flexibility**
Changes in raw water characteristics (turbidity, pH, temperature) do not significantly affect the clarified effluent quality. The process will accept wide swings in flow rates (between 0% and 150% of nominal flow) with no effect on effluent quality. The stability of the process simplifies its operation.
- **Water of superior quality**
The coagulation/flocculation phase produces a consistent clarified water of superior quality for all raw water conditions.
- **Responsiveness**
The Actiflo® is capable of very rapid start-up and responds quickly to changed operating conditions. Effluent turbidity exceeding accepted standards will be attained in less than 30 minutes after start-up.



HOW DOES IT WORK

Raw water is admitted into a flash mix chamber where coagulant is introduced to destabilize the suspended solids (coagulation). The water then transits through an injection chamber where polymer and micro-sand are added. The floc is fixed to the micro-sand with the polymer in a flocculation chamber, where it acquires weight and volume. Finally, the flocculated water passes through the lamellar clarifier, where the ballasted floc settles and the clarified water overflows to the filters.



The continuously recycled **micro-sand** plays two essential roles: it enhances the agglomeration of flocs and increases their weight (ballast) and settling rate.

Settled sludge, loaded with micro-sand, is pumped from the bottom of the clarifier and cycled through hydrocyclone concentrators, where the micro-sand is separated from the sludge. The separated sludge is sent to waste and the micro-sand is returned to the process.

A pilot plant to demonstrate effectiveness

John Meunier Inc. can provide the services of mobile pilot plants, with capacity of 51 m³ /h (224 USgpm) (equivalent to a population of about 2,700) and fully equipped with laboratory equipment, metering equipment and analyzers.

The advantages of the Actiflo[®] process are easily demonstrated with the pilot plant. For a given raw water it is a simple matter to determine the degree of reduction of color, turbidity and total organic carbon (TOC), and evaluate the responsiveness of the process to rapid fluctuations in temperature, turbidity and flow.

Proven performance

The Actiflo[®] ballasted clarification process has quickly acquired recognition in North America. It has served to upgrade existing water treatment facilities and has been incorporated into the design of new plants. First introduced to North America by **John Meunier Inc.** in 1993, the Actiflo[®] benefits were quickly recognized by well informed municipalities and water treatment specialists; as a result, numerous systems are in operation, in construction or in design.



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