Evoqua's Continuous Backwash Filter is an ideal technology for tertiary nutrient removal.

CONTINUOUS BACKWASH FILTER

Evoqua's Continuous Backwash Sand Filter is a deep-bed upflow filter developed for the physical, chemical, and biological filtration of process water, wastewater, cooling water, and groundwater applications.

The compact modular design of the Continuous Backwash Sand (CBS) Filter allows for easy installation and low maintenance with all critical operating components located in the filter body creating a small footprint.

PRINCIPALS OF OPERATION

Evoqua's Continuous Backwash Filter operates under a constant backwash mode, continuously cleaning the filter bed. This selfcleaning, continuous process allows for consistently high filtrate quality. Unlike conventional filtration with starting and stopping of backwash cycles which are susceptible to increases in flow and loading rates, the continuous wash water flow of the CBS filter is independent of the suspended solids and hydraulic loads.

The hydraulic design capacity of the CBS filter varies between three and seven gallons per minute per square foot, depending on the actual application. The centering of the airlift assembly is a very critical to the uniformity of the sand circulation rate with special assembly procedures developed to ensure the correction position of the airlift pipe.

FEATURES & BENEFITS

- Options for concrete, carbon steel, stainless steel or FRP tanks.
- Deep bed filtration up 120 inches.
- Phosphorus removal to very low levels.
- High performer for tertiary denitrification.
- Utilizing in bed flocculation for tough solids removal applications.
- No moving mechanical parts.
- Robust airlift, washbox, and distribution systems.
- All components made in the USA.

Materials of Construction

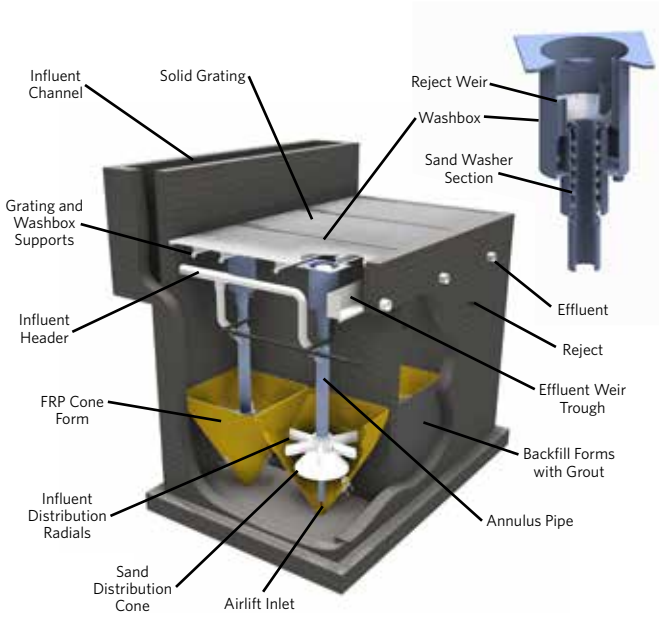
The Continuous Backwash Filters can be provided as package units with tanks constructed out of carbon steel, stainless steel or fiberglass or they can be installed in concrete basins. In larger capacity installations concrete basins may prove to be the most economical. The center airlift and washbox are vital components and are constructed out of high density polyethylene (HDPE), which has been proven to be more durable than PVC or stainless steel given their operational requirements. The internal structural items (like the distribution star and cone) can be constructed out of stainless steel or even duplex steels when needed.

Applications

In municipal wastewater applications, the CBS filter is ideal for biological treatment plants requiring stringent discharge requirements for Biochemical Oxygen Demand (BOD), Nitrogen (TN), Phosphorus (TP), and Suspended Solids Header (TSS). The addition of the continuous backwash filtration process can leave existing infrastructure unchanged without adding excessive capital costs.

Industrial and process water applications utilize the continuous backwash filter for the treatment of surface water, groundwater and sidestream biofiltration for cooling water systems. It has also been proven effective in removing iron and manganese. Washwater or other process streams can also be filtered as part of an overall integrated reuse design and is ideally suited for precipitation and filtration of metals.

Municipal wastewater polishing application for ammonia, BOD, and suspended solids removal.



STANDARD APPLICATIONS FOR THE CBS FILTER

Applications	Elements Removed
Surface Water	TSS, turbidity, color, PO_4-P
Ground Water	Fo, Mn, NH_4+
Cooling Water	biofouling, TSS, turbidity
Washwater	Fe, TSS, turbidity
Wasterwater	P, TSS, NOx, heavy metals
Biofiltration	NH_4+, NOx, heavy metals, aromatic carbons

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