

# BIOPAQ®CBD®

Anaerobic treatment for effluents with high solids

Clean Bottom Digester technology handles effluents with high organic and inert solids.





# Handles effluents with high organic and inert solids

The BIOPAQ®CBD® is an innovative anaerobic reactor operating at a low to medium loading rate employing flocculent biomass. It is capable of effectively treating high strength influent (25-150 g/l COD and up to 100 g/l TSS) and is uniquely designed to handle heavy solids, such as sand, struvite and other inert material by continuously removing them from the process stream to eliminate detrimental accumulation within the reactor.

The advanced engineering of the CBD® Reactor System virtually eliminates the occurrence of operational difficulties and process failures typically caused by poor mixing, dead zones and top layer scum buildup as frequently experienced in many conventional CSTR's and similar anaerobic digesters. As described below, the utilization of the Bottom Scraper for heavy sludge removal, the efficient Influent/Biomass distribution through nozzles at the top of the reactor, along with the downflow of the biomass, operating as a plug flow reactor, results in the highest possible conversion efficiency of COD to valuable biogas.

BIOPAQ®CBD® is the newest member of the anaerobic reactors developed by Paques. Fundamental and applied research into biological, physical and mechanical aspects of the system, together with over 40 years of experience and 1,500 successful anaerobic installations, enables Paques to provide every customer with a tailor made wastewater treatment system that exceeds the client's expectations.

## About BIOPAQ®CBD®

- No dead zones: no accumulation of heavy solids and precipitates
- The plug flow regime results in lower fatty acid concentrations in effluent compared to completely mixed systems
- No short-circuiting
- No scum buildup
- No mechanical mixers
- Optimized mixing
- Maintenance external to tank only
- Simple operation
- Compact footprint
- Worldwide available

## Characteristics of BIOPAQ®CBD®

Wastewater (1) is together with recirculation water (6), evenly distributed across the top of the reactor. The recirculation water is continuously pumped from the bottom of the reactor to the top. The water is pumped through nozzles oriented to break up any floating scum. The scraper collects heavy solids from the bottom of the reactor, moving them to a series of hoppers in tank floor, where they are pumped to the recirculation line (2). In certain applications where detrimental solids, such as sand, struvite and other inert solids are expected, a hydrocyclone (3) is employed to selectively remove these unwanted solids from the process stream.

The treated final effluent (8) is discharged for further treatment and ultimate disposal. Biodegradable COD from the influent is converted by the anaerobic biomass to biogas, which leaves the reactor via the biogas pipe (7) at the top of the reactor and is delivered to the downstream biogas handling system.

The experience and expertise of Paques' engineers ensure that reliability and ease of maintenance are never sacrificed to achieve the CBD's exceptional performance efficiency. The design intention is that all service functions are performed while the system is in operation.



## Together, we're leading the biotech revolution in wastewater and biogas

We are a leading force in biotech wastewater and biogas, driven by a community of scientists, problem solvers, application specialists and exceptional people who all believe in one thing: That protecting the world's water and resources is vital if we are to preserve our planet for generations to come.

Since we founded our company, we've pioneered and developed biotech solutions proven to help our customers' effectively and sustainably treat wastewater and generate biofuel to power their operations.

It's safe to say we've grown from our humble beginnings in Balk—to an international powerhouse with more than 3,300 installs in over 60 countries. Our expertise and technologies are trusted by many the world's most trusted companies.

Whether in brewing, pulp & paper, chemicals or food—we create partnerships that help businesses maximise their resources while reducing their impact.

Our unique blend of expertise, trusted technologies, and global network enables us to guide and empower our customers with solutions proven to help them meet their sustainability goals. By continuing to reinvent, refine, and renovate our technologies we can help protect the planet, communities and best serve our customers.

The world's resources are finite—but our potential is limitless. By working together—we can create a cleaner, more circular future that works for everyone.

Hampton

Balk

Dubai

Chennai

Shanghai

Bangkok

Kuala Lumpur

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