**Executive Technology Statement**

Baleen filters are very fine "sieves" designed to effortlessly separate matter from virtually all types of water streams including sewage, storm water and trade waste.

Wastewater, generally speaking is more than 99% water, the water often being polluted as the result of being used as a conveying medium for removal of unwanted wastes, or sewerage. While the total separation of the small percentage of waste matter from the water is extremely difficult and expensive, the introduction of Baleen nevertheless means that all the significant and visible particulate matter can be removed from these waste water flows.

Screenings, the matter caught by Baleen is largely drained of 'free' water during filtration, then subsequently separated and collected by a 'solids' collection bin as a 'natural' or 'spade-able' mass, which may then be moved by screw conveyors to presses to reduce the moisture content still further (in the case of highly 'bound' constituent water screenings that exhibit a sludge or 'gel' like consistency).

Baleen is generally fabricated from stainless steel and uses a specially selected woven wire screen-mesh within its design presented in planar form. The screen's mesh size gives the aperture size (or micron rating) of the filter unit.

Waste water enters a header tank at the top-end of the filter which distributes the flow over the entire width of the screen-mesh. The waste water flows through the screen while the screenings are caught on the screen-mesh. The screenings are then transported by fluidization (by action of a mechanised dual spraybar cleaning/clearing assembly) to the bottom-end of the screen-mesh for collection.

Normal operation is fully automatic and controlled by a micro-processor based industrial control system. As well as process control this system also continuously monitors the filter-performance, any change in operating conditions or malfunction of any component is immediately noted and appropriate action initiated. Alarms may be brought to the operators' attention either locally or by automatic telephone link if the plant is unmanned.

Ancillary decisions regarding selection and number of filter units, self-cleaning duty, screenings collection means etc are determined from onsite survey and discussion with plant personnel.

Baleen is designed for use in traditionally difficult applications for removing any troublesome matter, including 'bio-foulants' such as:

√ Meat & Byproducts Industries – to remove paunch, hair, blood, fats and grease
√ Food & Beverage Industries – to remove visible suspended matter and/or biomass
√ Sewage & Sewerage - to remove organic solids, tissue pulp and oil pre or post 1° or 2° treatments
√ Town and city water supply – to prevent clogging of downstream filters or to polish treated waters
√ Manufacturing & Textile Industries – to separate out lint and grit, precipitate or 'floc' inline

Baleen may be used at any stage in the water treatment process, either at the head of the works or at the point of discharge, wherever there is a requirement to remove, recover or separate float-able, suspended or settle-able matter from the water stream. The matter may be visible, sub-visible, solid, semi-aqueous (e.g. 'gel' like) or immiscible (e.g. oil) and present in either low or excessive quantities, and regardless of origin - if 'free' water is present Baleen is able to filter-out constituent matter from this 'free' water volume.

Baleen's inherent capability to thereby effect substantial improvements in water treatment with or without complementary processes is truly novel and beneficial platform for waste water treatment methodology.

The competitive advantages when applied to conventional & advanced water treatment practices include:

√ continuous or semi-continuous operation for removal of troublesome or 'bio-fouling' matter
√ reliable inline operation with absolutely minimum maintenance and/or utility requirement
√ able to separate traditionally regarded non-filterable semi-aqueous matter such as 'biomass'
√ will remove near 100% of visible matter (measured as SS or FOG) from the influent stream that is directly associated with the 'screenings' regardless of loading quantity or variability
√ will remove near 100% of pollutant loading (measured as non-soluble BOD) from the influent stream that is directly associated with the 'screenings'
√ resultant 'screenings' are collected as a 'natural' or 'spade-able' consistency
√ An affordable, simple, user-friendly and cost-effective stand-alone or complementary means to water and waste water treatment