

## Food & Beverage Application

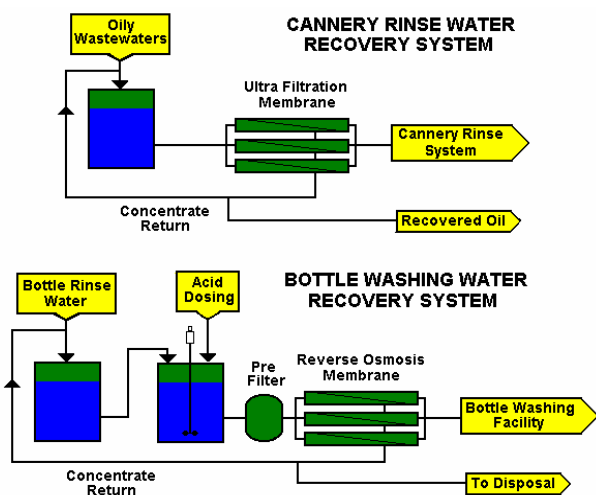
### Bottle Washing Recovery Plant

#### Conventional Bottle Washing Plants

ESMIL PROCESS SYSTEMS has developed systems for the treatment and recovery of wastewater generated during the rinsing / washing of food and beverage containers. Conventional plants are of “once through” water discharge design. Water costs are typically £1.00/m<sup>3</sup>, comprising towns supply water (35p – 70p/m<sup>3</sup>) and the discharge of dirty rinse water to sewer (25 - 50p/m<sup>3</sup>).

#### Cannery and Bottle Washing Recovery Plant Applications

The Esmil Cannery and Bottle Washing Recovery Plants are proven state of the art systems for reducing water intake and effluent disposal thereby realising substantial savings. Both plants produce a high quality permeate, suitable for recovery in the rinsing/washing operations, thus reducing the volume of effluent for disposal by 75 – 90%. This is achieved by a combination of conventional filtration followed by membrane filtration.



#### Cannery rinse water

Cannery rinse water contains high levels of lubricating oil and grease which can be easily removed using Esmil ultra-filtration membranes.

#### Bottle wash water

Bottle wash water contains high levels of soluble organics (COD), from the washing of dirty soft drink or alcoholic beverage bottles. RO membranes remove organics, hardness and bacteria from the water enabling optimum recovery to the washing facility.

The plants are automated - an operator can be fully trained within a matter of hours.

Typical Raw and Treated Water Quality			
	Raw	Treated	Removal
pH	7 – 10	-	-
COD	25 – 50 mg/l	5 – 10 mg/l	~ 90%
TDS	500 – 1000 mg/l	25 – 50 mg/l	~ 95%
Oil & Grease	25 – 50 mg/l	< 1mg/l	~ 99%

Esmil Process Systems have pilot plants that are designed to confirm treatment efficiency prior to capital expenditure.

#### References

Hartridges Soft Drinks Hambledon, Hampshire, UK

## SPECIALISTS IN THE TREATMENT OF CHALLENGING INDUSTRIAL EFFLUENTS

### Benefit Summary

<b>Competitive Edge of Esmil Plant versus Biological Plant</b>	
<b>Esmil Advantage</b>	<b>Justification</b>
Low Capital Cost	Fewer process stages. Minimal civil engineering requirement. Minimal earth working requirement.
Rapid Investment Pay back	Reduced effluent disposal costs. Reduced towns water / natural water take requirement. Reduced man-power requirement. No generation of by product such as waste sludge.
Product/Resource Recovery Effluent Reduction, Recycle & Re-use	Non destructive treatment process. Excellent final effluent quality. Process water recovery for general re-use. RO concentrate recovery for reuse as chemical make up water. Solids recovery for on site incineration.
Confidence of Environmental Compliance	Robust treatment process that is not affected by toxins, overloading or adverse temperature. Fixed physical barrier thereby guaranteeing compliance. No emission of odours or green house gasses. State of the Art Technology.
Modular System	Discrete process units for incremental upgrading.

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