

DAIRY WASTE

Typical Applications

Sanitary
Butter making:
Fats and solids recovery from buttermilk
Fats recovery from wash-down / spillage

Cheese manufacturing :
Fat recovery from whey
Fat recovery from cooker water
Fat recovery from string cheese manufacturing
Cheese fines recovery
Lactose crystal recovery

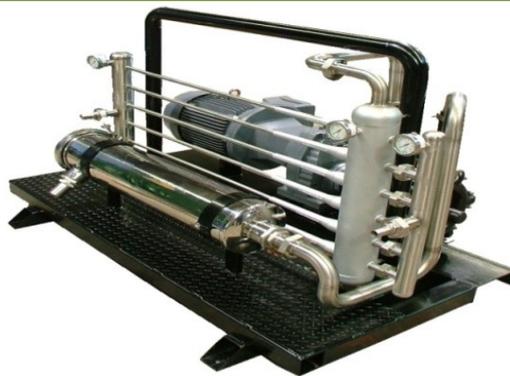
AMF plants:
Fat recovery from separator de-sludge
Fat recovery from caustic wash

Non-Sanitary

Factory Effluent:
Fat recovery for re-sale
Pre-treatment before Anaerobic/Aerobic digester
Fat reduction with DGF, IGF flotation treatment
Pre-treatment before membranes or evaporators
Solid removals
De-aeration



Dairy Waste Recovery



WyunaSep Hydrocyclone use centrifugal force to Physically separate fats or solids from water or water based solutions regardless of the flow rate.

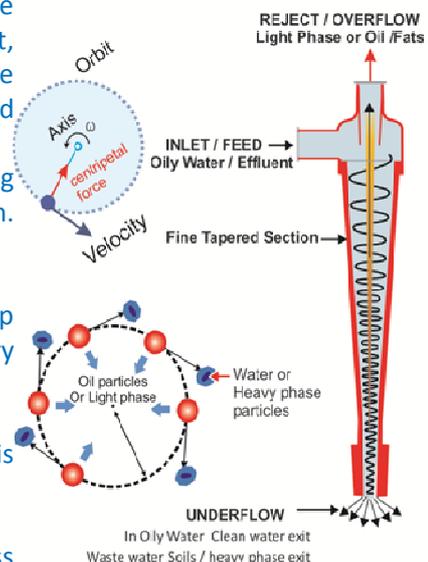
Fluids containing fats are fed tangentially into the hydrocyclone. As the mixture flows through the unit, it accelerates sending the lighter phase (fats) to the centre for removal through the overflow. Cleaned water reports to the underflow.

Our solid separators are equally efficient, sending unwanted solids directly to the underflow stream. Clean water flows through the overflow. Simple !!

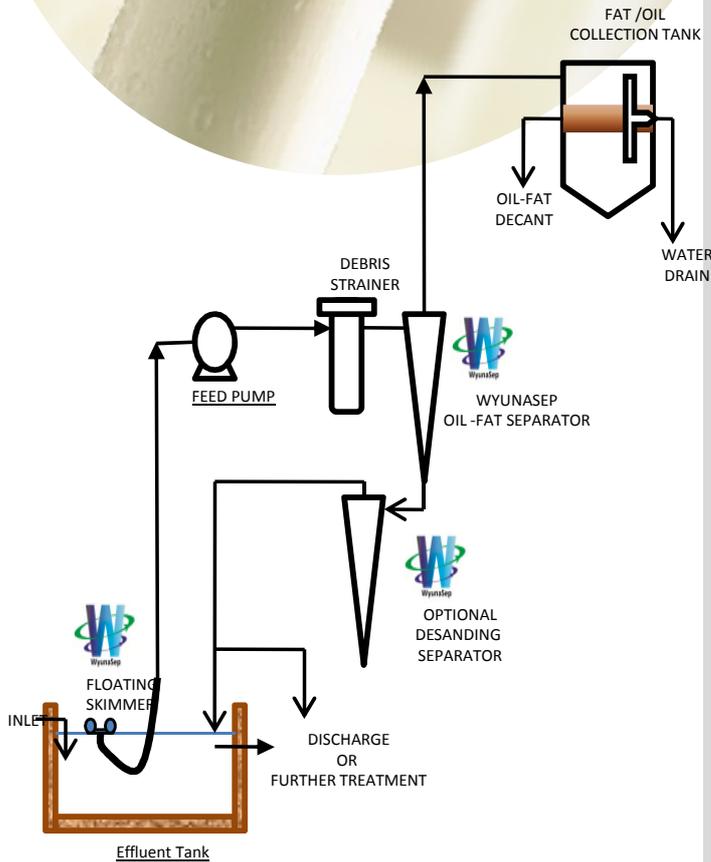
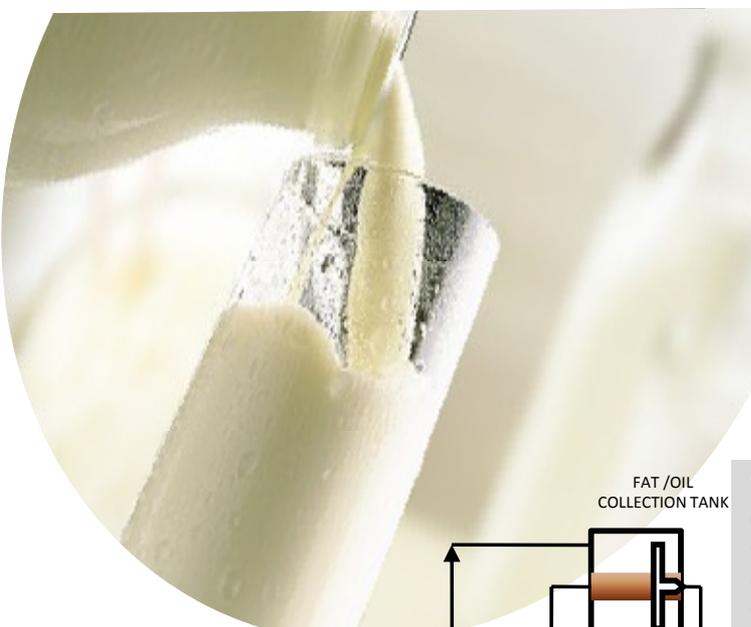
You can use it separately or together, WyunaSep offers a single, cost effective system for your dairy process.

You retain valuable product while unwanted waste is removed in on efficient operation.

Yield is improved End product quality and process performance are greatly enhanced. And downstream equipment, such as ultra-filtration, are protected.



PROCESS DATA	Wyunasep single pass	Wyunasep double pass
Size recovered	Down to 20µm	Down to 5-10µm
Cleaning in Place	Yes	Yes
Flow rates Treated	2 to 500 m3/hr.	2 to 500 m3/hr.
Sp.Gravity Difference	>0.05	>0.05
Operating Temperature	Up to 80°C	Up to 80°C



The WyunaSep separator is powerful, compact, simple, non-chemical, low cost and easy to maintain. It separates out emulsified fat and suspended solids efficiently and quickly. Its power is evident by the speed and high efficiency of separation. The actual time for separation to take place within the separator is two seconds. The quick recovery of fat is desirable to keep free fatty acids low. Typically 75-95% of fat and 65-75% of heavy suspended solids can be recovered from dairy effluent streams. These characteristics make it a sensible choice for Secondary treatment. The inherent benefits of this separation technology are:

Recovery and Reprocessing

Clean (non-chemical) recovery of milk solids that contain valuable milk fat, protein, lactose and lactic acid.

Non hygienic fat and protein can be reprocessed

High Temperature

Separation is enhanced at elevated fluid temperatures. Water can be treated immediately without cooling time or the need to pass through a heat exchanger.

Cleaner

Reduction in costly pump outs, trade waste charges and less sludge cleaning.

Improved Overall Treatment

Consistent inlet stream to tertiary treatment

Electrical power for aeration of ponds reduced

Less maintenance

Increased efficiency of tertiary stage

Dairy Specific

Can be made hygienic and C.I.P. cleanable

Low Acquisition Cost -Simple Installation/Small Space Requirement-

Simple Operation

Minimal or no demands on operation and maintenance staff. Operators will have more time for other duties because they will not be dealing with the effects of fats and solids carryover to other more complex treatment systems. Also, the operation of a system only contributes minimal noise (noise of the pump).

Low Maintenance

Pump is the only moving part

No or minimal cleaning

Robust stainless steel construction

WyunaSep has conducted performance tests at various dairy manufacturing sites on effluent water upstream and downstream of an installed WyunaSep system. Independent laboratory analysis of a multitude of samples proves that the following average separation performance can be achieved:

Contaminant	Efficiency (%)
Oil & Grease	≤ 95
BOD	30 to 60
Suspended Solids	60 to 85
Phosphorous	30 to 60
Total Nitrogen	20 to 40

WYUNASEP SEPARATOR PERFORMANCE

System	WyunaSep	Tank	DGF/IGF chemicals) * (no	DGF/IGF (24 hr operators and full chemical treatment) *
Oil and Grease % reduction	70 to 82	50 to 60	60 to 80	Up to 95
Suspended Solids % reduction	60 to 70	50 to 60	50 to 65	Up to 70

**** Reference
 1. Dissolved Air Floatation for Abattoir Wastewater; D Lovett and S.M. Travers CSIRO
 2. Treatments of Fatty Effluents; P Grant PhD Unilever