CLEARMAKE OIL/WATER SEPARATOR TRIALS

Tests conducted by: **Mapleston Process Engineers PTY LTD**
Location: **Noosaville, Qld**
Date: **7 July 2006**

Introduction

Trials were conducted on several Clearmake Oil/water Separators to determine the comparative oil removal efficiency of each unit. The feed water was contaminated with approximately 5,000 ppm (v) of free floating 20W/50 SG/CD Super Motor Oil. The Feed Tank was fitted with an SK 40 Clearmake Skimmer and pumped to each Separator at 1800 L/h using a Mono CP25 Helical Rotor Pump. Samples were taken of the water discharging from each Separator and analysed by ALS Laboratories (at Shand Street, Stafford in Brisbane) for Total Petroleum Hydrocarbons (TPH).

Test Conditions

Feed Flow	1800 L/h
Feed Oil Concentration	5000 ppm (v)
Oil Type	20W/50 Super Motor Oil
Feed pH	7.3
Feed Temperature	18.5 C

Separator Configurations

1. Clearmake CL 3.0 SS without Filter Bags **(CL3NFB)**
2. Clearmake CL 3.0 SS with 200 micron Filter Bags **(CL3WFB)**
3. Clearmake CL 3.0 SS with 200 micron Filter Bags filled with loose C-Mat **(CL3WFB/M)**

Results

TPH Concentration at Separator discharge point in (ppm)

Separator Test	CL3NFB	CL3WFB	CL3WFB/M
Discharge Levels	**6.1 ppm**	**4.0 ppm**	**3.2 ppm**

Conclusions

Test result show measurable differences in performance of the various Separator configurations when treating water contaminated with free floating oil, premixed to 5000 ppm, with highest level of TPH Concentration at 6.1ppm measured in the final treated discharge.

The addition of the Clearmake filter as part of the final OWS treatment indicates an additional reduction in the TPH Concentration of 2.1 ppm over the non filtered Separator, achieving a reading of 4.0ppm measured in the final treated discharge.

The Separator test using a combination of the Clearmake filter and Clearmake C-Mat, produced the lowest TPH Concentration of 3.2ppm in the final treated discharge. This represents a total additional reduction of 2.9 ppm over the unfiltered Separator.

All results are significantly lower than trade waste level requirement for discharge.

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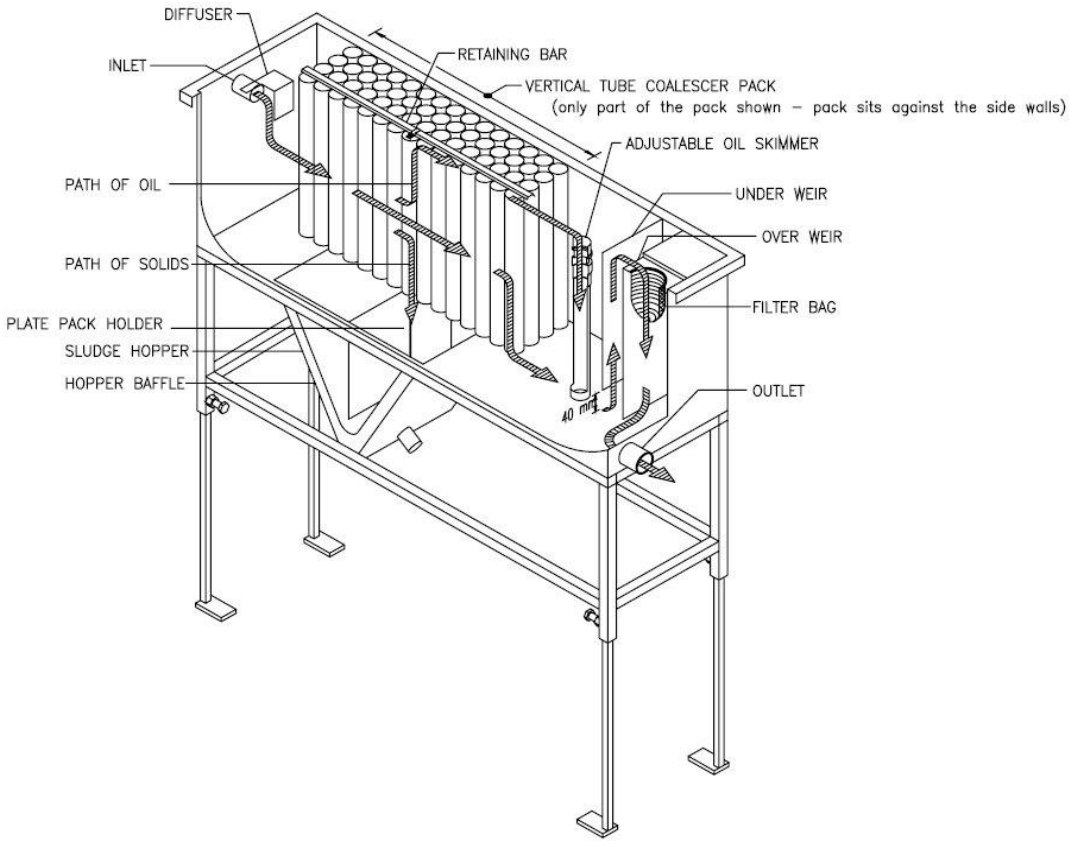
DIFFUSER
INLET
RETAINING BAR
VERTICAL TUBE COALESCER PACK
(only part of the pack shown – pack sits against the side walls)
ADJUSTABLE OIL SKIMMER
PATH OF OIL
UNDER WEIR
OVER WEIR
PATH OF SOLIDS
FILTER BAG
PLATE PACK HOLDER
SLUDGE HOPPER
HOPPER BAFFLE
OUTLET
40 mm