

Client
Location

Toyota
Altona, Victoria, Australia

ACQUA/Muddy River Product: Inline Swirl Generator (ISG*) Liquid/Liquid (LL) Hydrocyclone
Vertical Gravity Separator (VGS*) Oil/Water (OWS)

Objective

To remove and recover free oil from the wastewater generated during the manufacture of engines at the Toyota production facility in order to reduce associated trade waste charges and allow for the recycling of oil.

Background

The previous wastewater system treated the wastewater by allowing the oil to coalesce in a large settling tank. This allows large contact times and promotes rapid microbial growth. As a result, the pH of the effluent is very low, with a large amount of resulting sludge.



Solution

ACQUA designed and manufactured a wastewater treatment system utilizing the Inline Swirl Generator (ISG*) Liquid/Liquid (LL) hydrocyclone and a Vertical Gravity Separator (VGS*) Oil/Water (OWS) with a throughput capacity of 6,000 liters per hour (L/hr). A floating liquid skimmer (Skimmer*) is used to remove the free oil and emulsified oily water from an in-ground storage pit.

The wastewater is first treated in the ISG* LL where the light phase (oil and high oil emulsion) passes to the VGS* OWS for further separation, while the heavy phase (water) is discharged to the trade waste sewer.

The VGS* OWS separates the discharge from the ISG* LL and further concentrates the oil which is discharged to a holding vessel for removal by a trade waste contractor. The 'clean' water from the VGS* OWS is again discharged to the trade waste sewer.