

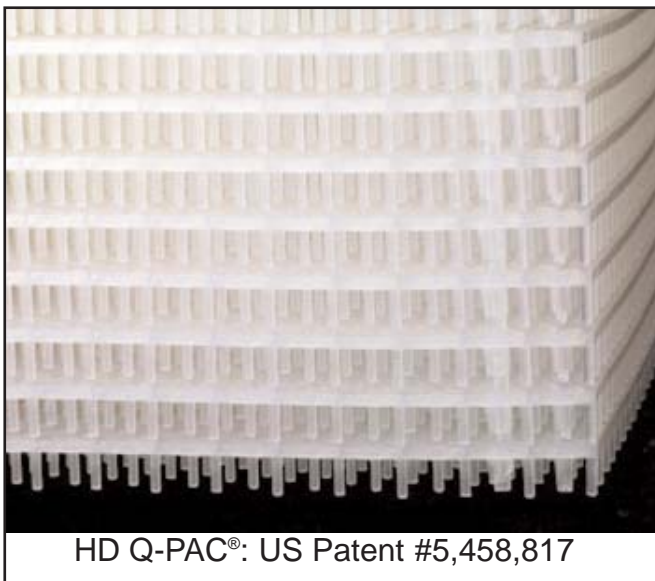


## Oil-Water Separator with New Coalescing Media Handles High Load Stormwater at HydroElectric Powerplant to Yield Zero Oil Discharge

### Background

Removal of oil from water before the water is discharged into a river or other body of water is an important environmental goal. In order to accomplish this, a major hydropower producer in the southern United States contracted with HydroQuip, Inc.\* for the supply of a state of the art oil/water separator.

The power plant had several goals, but the most important was that in addition to removal of oil from normal stormwater and plant wash runoff - the OWS unit also had to be designed to allow oil separation during any possible worst case scenario, a 10 year rainstorm. This worst case is defined as equipment failure with oil loss during the rainstorm. Therefore the separator had to be designed to handle a maximum rated flow of 1900 gpm (432 m<sup>3</sup>/hr) with an oil concentration of 4250 mg/L. HydroQuip consulted with Lantec Products and as a result the oil/water separator was designed using HD Q-PAC<sup>®</sup> as the coalescing media. This allowed for design of the separator to exceed the European Union's specification for OWS units, EN 858-1, that calls for 99.88% removal of all free oils, including those droplets as small as 20 $\mu$  in diameter.



HD Q-PAC<sup>®</sup>: US Patent #5,458,817



### Worst Case Event - No Discharge of Oil Into River

After startup, the separator was tested several times and the concentration of oil in the water being discharged was routinely below detectable level. So compliance with EN 858-1 performance requirement was confirmed.

Approximately six months after the separator was installed, a near worst case scenario took place. An oil spill occurred during a severe thunderstorm. As a result, the oil/water separator experienced the full load water flow of ~ 1900 gpm with 4250 mg/L of oil. Discharge into the dam sluice, as seen in the photo of the separator presented here, remained at nondetectable level for the duration of the event

As a result of the remarkable results obtained with HD Q-PAC<sup>®</sup>, the power company is planning to retrofit several OWS units to HD Q-PAC<sup>®</sup> in the near future.

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