

RECORDED BENEFITS

- Saving of \$500,000/year in water costs
- Saving of 613,200 m³/year of water
- Water quality standards achieved
- No extra chemical treatment costs required

Refinery Recycles Three Times More Wastewater and Saves Significant Costs

Amerfloc™ 412 Coagulant and Praestol™ 2234-EU Flocculant

Customer Challenge

A 550 m³/h wastewater treatment plant in a large refinery in Western Europe was experiencing challenges due to high hydrocarbon load in the raw wastewater. The treatment process included a DAF (Dissolved Air Flotation) unit for solid-liquid separation followed by secondary biological treatment and tertiary sand filters to allow partial water recycling as cooling make-up. High organics in the raw wastewater were negatively impacting the performance of the DAF and downstream biological treatment. Consequently, the plant could not always achieve the discharge limits and therefore only a small amount of wastewater could be recycled as cooling water make-up by blending with large volumes of fresh water.

Recommended Solution

An extensive survey and lab trial was performed by Solenis to improve the DAF performance and downstream systems. The selected chemical program was based on Amerfloc 412 coagulant combined with Praestol 2234-EU flocculant.

Results Achieved

The dual program achieved the following:

- Outstanding removal of hydrocarbons from the water
- Enhanced clarification performance of the DAF unit
- Low turbidity of DAF outlet
- Discharge limits were controlled and kept within limits
- Increased wastewater recycling to cooling from 30 m³/h to 100 m³/h

Coagulant	Lab dosage (ppm)	Ranking	
		0 = bad; 5 = excellent	
		Floc quality	Water quality
Amerfloc 412	100	4	4
Incumbent	100	2	2

Laboratory Coagulant Selection Performance Test Result

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