

Wash Plant Process Water and Dig Area Dewatering



Sand and Gravel Quarry,
East of England

Overview

Atlantic Pumps designed two new electric pumpsets for wash plant process water and dewatering purposes.

Challenge

The client's original request, based on their existing data, was to replace two diesel-powered pumps with a 90kWh and a 37kWh electric pump to reduce energy waste and emissions.

Based on the cited flow rates and power, it would have required new 10" pipework, a significant cost as the lagoon was 600m away from the wash plant.

Solution

Atlantic Pumps site investigation revealed smaller, more efficient pumps could handle the duties, exceeding the client's initial energy-saving target of 73% efficiency rating.

The system optimisations resulted in the recommendation of a 75kW (280m³/hr) and a 22kW (160³/hr max) pump, and allowed the reuse of the existing 6" pipework.

The pumpsets are designed to provide up to 16% surge capability, controlled by VSD inverters.



- Increased pump efficiency from 50% to 80%
- Pump specification matched to duty
- Site emissions slashed

Results

Financial:

Between the original specification requested and the solution recommended by Atlantic Pumps, over £8k was saved on project costs. Working with the existing pipework kept costs to a minimum, and carefully matching the pump with its duty provides ongoing operational savings.

Moving from diesel pumps to energy-efficient electric ones reduced operating and maintenance costs significantly.

Environmental

- Replaced two diesel-powered pumps
- Modern, high-efficiency pumps, along with careful motor and impeller selection optimised the pump's efficiency (up to 80% at BEP)
- Reduction in ongoing energy use and site emissions



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