Quarry De-Watering

North East England

PIONEERPUMP

MINETUFF DE-WATERING CASE STUDY

Pioneer were approached by a national quarrying company requiring a long term solution to their wash plant's pumping solution with a view to minimising downtime in the event of failures.

THE CHALLENGE

Following a site survey of the quarry, Pioneer identified that the quarry's existing pumping solution was considerably exposed to periods of down time. The wash plant was supplied by only a single competitor's pump and a single lagoon which, in the event of a pump failure or the lagoon being emptied, rendered the wash plant unusable.

THE SOLUTION

To minimise the possibility of any downtime for the wash plant, Pioneer installed a temporary MINETUFF 20kW High Volume electric submersible pump which was powered by an on-site generator.

The pump was submerged into a second lagoon and connected into the existing pipeline with temporary pipework and control valves allowing the wash plant use of two pumping solutions.

The added redundancy now significantly reduces the possibility of any downtime and allows the quarry to focus on their core business.

THE RESULTS

After testing, the Pioneer Pump Minetuff electric submersible exceeded expectations.

The Minetuff unit was supplied along with a Variable Frequency Drive which allowed the customer to have an adjustable performance pump running between 1500-3000rpm to meet demand accordingly. Due to the competitor's pump only operating on a fixed speed soft starter running at 3000rpm, utilisation of the Minetuff unit has resulted in a significant reduction in power consumption whilst still meeting the client's performance requirement of 2.5 bar.

At the required pressure, the Minetuff unit was running at 1650rpm - nearly half the speed of the competitor's pump. The lower speed also allowed for a smaller generator to be used when running the pump due to a reduced start up current thus reducing operating costs even further.

Following completion of the temporary solution, the client requested a quotation for a permanent version of the system to be installed, replacing their existing set-up.

REDUCED *OVERALL COST OF OWNERSHIP*

VFD *FITTED FOR ADJUSTABLE PERFORMANCE*

PUMP FEATURES

- *Variable frequency drive installed with MINETUFF pump to allow greater control and reduction of energy usage*
- *Designed for durability and longevity*
- *Interchangeability of serviceable parts*

PERFORMANCE DETAILS

- *20kW High Volume Max Flow: 342m3/h*
- *20kW High Volume Shut-Off: 37m*
- *Max Water Depth: 20m*
- *Voltage / Phase/ Hz: 415v / 3Ø / 50Hz*

RESULTS

- *Smaller generator required*
- *Decreased energy usage*
- *Minimised potential downtimes*