# LAGOON MANAGEMENT

**Quarry - South Wales** 



#### LAGOON MANAGEMENT CASE STUDY



Pioneer recently worked with a national quarrying company based in South Wales to assist with the 'down sizing' of their main lagoon discharge pumping solution whilst maintaining flow rates but reducing fuel burn.

# **THE PROBLEM**

Upon completion of a site survey, Pioneer identified that a number of the existing pumps on hire from competitors could be down sized from the 8" pump in place, to a 6" 150SM Pioneer Pump due to the higher flow rates and lower fuel burn offered by the super efficient Pioneer Pumps.

The client advised that they required the pumps for managing the water levels in a discharge brook, however, they were limited by the amount of water they could discharge. If this was exceeded they would be subject to substantial fines.

### **METHOD**

Having selected three 6" 150SL and two 6" 150SM Pioneer Pumps to cover all of the site applications, the team set about designing a reverse float system which automatically switched off the pump's engines once the water level in the discharge brook was at a high enough level. This system required two bespoke float switches to be made and connections within the Engine Control Unit to be re-configured and effectively reversed, providing the perfect solution for the client. The final piece of the puzzle was the installation of the remote telemetry system. This gave the client the capability to monitor and control the starting and stopping of the pumps via an app that was installed on all operator's smart phones. Not only does the app allow for remote operation, but it will also notify the client should the pump stop running at anytime, which, due to the large site and spread of the pumps will prove invaluable.

# RESULTS

Following completion of the installation, Pioneer re-attended the site to discuss the project with the client. They advised that they had already witnessed a significant improvement in reliability and this, coupled with the higher flow rates they were receiving from the Pioneer Pumps, has lead to the water level in the main lagoon dropping by over two metres - exactly what the client had specified. The client continued, stating that any potential discharge license breeches will be a thing of the past now that the reverse float system is operational. Offering them the piece of mind that by partnering with Pioneer Pump, any potential issues concerning water management at the guarry have been alleviated in an efficient and sustainable way.

# IMPROVED

Max flow rates

REDUCED

Fuel burn

#### **PUMP FEATURES**

- Bespoke reverse float system
- Remote telemetry system

#### **PERFORMANCE DETAILS**

- Standard Max Flow: 620 m3/hr
- Standard Shut-Off: 39m
- Fuel Consumption at BEP: 10.2l/h @ 1800rpm
- Max Running Hours at BEP: 42 h @ 1800 rpm

#### **EQUIPMENT USED**

- 6" 150SL PUMP
- 6" 150SM pump
- Float switches
- Telemetry modules