



Flow measurement for a small quarry stream

At Linhay Quarry, there was a requirement to measure the environmental impacts of a proposed site expansion. Discharges from quarries vary in type, but in any case, it is illegal for a quarry to discharge into local environments with contaminated water. In recent court cases, some quarrying companies have been fined up to £35,000 for discharging into controlled waters.

In this site expansion case, a larger site will generate greater volumes of water runoff into the surrounding environment, and so the impacts needed to be explored further to obtain the permit for expansion. The quarry needed an open channel flow meter that was compact, with logging capability, and could be operated in a remote location with no mains power.

MantaRay provides open channel flow monitoring

The MantaRay is a portable area-velocity flow meter that measures flow using a submersible ultrasonic sensor. The unit is designed for flow surveys in open channels, partially-full sewer pipes, and surcharged pipes – making the portable open channel flow meter suitable for sewer monitoring, industrial flow monitoring, irrigation flow, and natural streams.

Sleep mode for extended battery life

By using the 'Sleep Mode' function to extend battery life while logging flow, the digital display, outputs, and non-essential functions are suspended. Based on the logging



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CASE STUDY: QUARRY DISCHARGE

interval, the MantaRay activates the sensor for 12 seconds to obtain flow readings and then resumes low power mode until the next logger sample interval.

The battery operation has proved to be a success for the quarry, due to the remote location of the measurement point, allowing the unit to be able to collect the flow data required for the expansion permit. The compact size of the unit has also meant it could be installed discreetly in a cabinet on the side of a small bridge. Accurate flow data is now being recorded and logged; 3 years of data is required for the expansion permit to be granted.

Craig Leakey, Regional Sales Manager for the Southwest of England had this to say "This is a great example of how MantaRay can be used for flow surveying in the field. It is robust, portable, and battery powered. Comprehensive logging can accurately record flow measurement at pre-selected intervals, providing the perfect solution for collecting data for any survey or long-term measuring requirements."

To find out more about our full range of open channel flow solutions, visit the Pulsar Measurement website.



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