dataTaker®

Application Note

Open Cut Mine Monitors Water Quality

Customer Requirements

An open cut coalmine has a high salinity of water runoff into local retaining dams. The water from this dam can only be released into the local river system when it is of sufficient quality to have no effect on the irrigation of the surrounding farming district. It is therefore necessary to monitor the quality of water in the retaining dam. The logging solution must be compatible with a range of sensors and must be capable of remote access. Solar power is preferable.

dataTaker DT80

1. A cost effective data logger expandable to 100 channels, 200 isolated or 300 single-ended analog inputs

2. Built-in web and FTP server allows for remote access to logged data, configuration and diagnostics

3. Modbus slave and master functionality allows connection to Modbus sensors and devices and to SCADA systems

4. Smart serial sensor channels capable of interfacing to RS232, RS485, RS422 and SDI-12 sensors

5. Rugged design and construction provides reliable operation under extreme conditions

6. Includes USB memory stick support for easy data and program transfer

Retaining dam: Water is released from here into the local river system.

dataTaker Solution

Equipment
dataTaker DT80 data logger
Freewave Radio Modem
Solar panel and conditioner
Battery backup
Weatherproof Enclosure

Sensors
Water Quality Sensor
Conductivity Sensor (salinity)
Turbidity Sensor
PH Sensor
Thermocouples (for water and air temperature)
Water Level Sensor

Implementation Notes
The DT80 data logger can be mounted in weatherproof enclosures and connected to each of the sensors for measuring and logging the water quality. A solar panel and conditioner power the dataTaker and charge the backup battery, which can also be monitored by the DT80.

Using radio telemetry, a connection to a central PC in the mine office can be established. Using the software supplied with the logger, periodical connection to the dataTaker can be made for monitoring purposes. At these same intervals, the data is saved to a database, allowing for data back up and greater storage capacity than in the logger itself. The system also allows manual connection at any time to observe the change in water quality during water management operations, such as mixing water form different sources.

This wireless connection also allows for remotely adjusting calibration parameters in the logger in the event of a sensor replacement or program modification if required by authorities.

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