



Case Study

TEMPORARY FLOW MONITORING OF COAL MINE WATER



image 1

INTRODUCTION

Temporary flow monitoring was required at several sites following a blow-out of mine water, which had flooded several properties.

OBJECTIVE

The temporary monitoring would allow The Coal Authority to increase its understanding of the source of the mine water, and the connectivity to surface water inflows.



Image 2

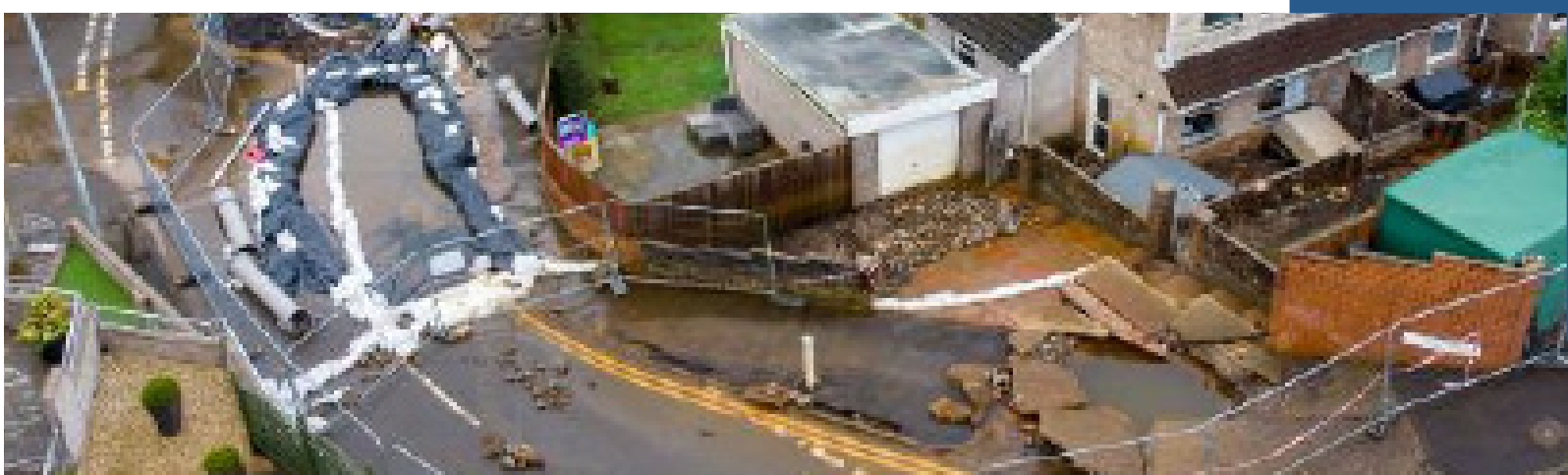
PLANNING & IMPLEMENTATION

Due to the nature of the flow and the environment of the measurement locations, the LIDoTT sensor was selected as the most appropriate device.

The LIDoTT sensor combines a ultrasonic level sensor and a pressure depth sensor, enabling highly accurate continuous measurement during surcharge and dry weather conditions.

The LIDoTT was fixed to a metal road, which was then secured to the rock and an MSFM Lite data logger was used to transmit the data back to Detectronic's user portal.

In the image 1 location above, a weir was used to concentrate the flow into a known cross sectional area. The height of the water in the channel going over the weir is directly proportional to the flow rate and allows the level measurement to be converted to a flow output.



Mine blow out location

RESULTS

Data from flow monitoring using the LIDoTT has allowed the Coal Authority to put in place a temporary flood defence system to protect the local properties from flooding. Over-pumping is being used to alleviate the flood risk. Data from flow monitoring ensured suitable pumps and correct volumes of mine water is discharged elsewhere.

The Coal Authority are developing a capital scheme using data from the LIDoTT to eliminate the chance of flooding in the area again. Data from the LIDoTT allows groundworks and civil engineering to be designed that is fit for purpose and allows for new pipelines to be implemented to ensure the mine water sewer system is not overwhelmed and therefore does not flood again in the future.

Products and Services

- LIDoTT sensor
- MSFM Lite data logger
- Field Services
- Data Reporting



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