



Verification of Zone and DMA monitoring in Southern Water

Introduction

The objective was to establish the accuracy and profile of the meters supplying the Botley and Chandlers Ford supply networks in Southern Water. PrimeFlo3 technology was chosen due to the ease of installation and operational benefits associated with a portable ultrasonic non-contact flowmeter. Furthermore, the PrimeFlo3 has a six month battery life and remote communications such that data can be collected via the Web over a long period.

They have been found to be easy to install and simple to use, a key requirement to provide valuable information - for a minimal investment in time. The software is user friendly with good data processing facilities to identify peaks in demand, minimum flow rates, etc., over long periods.

Botley, Hampshire

Here an electromagnetic meter on the 600mm trunk main was suspected of inaccuracy. This supplied a zone with a number of DMA's and the total nightline calculated from all DMA's was higher than the minimum metered flow through the trunk main. This created concern regarding the leakage figures for these zones.

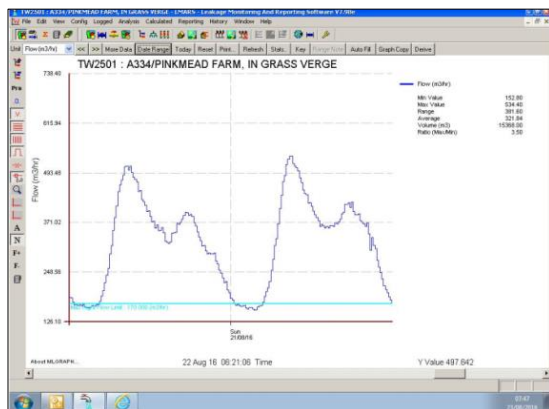


Simple on-site programming

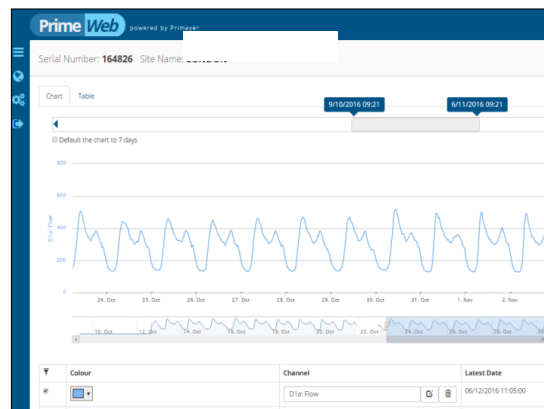
The flooded chamber was quickly drained to attach the waterproof sensors to the pipe. The PrimeFlo3 processor unit was then installed at the top of the chamber above the waterline. It was installed for three months transmitting 15 minute flowrate data every day. The PrimeFlo3 gave a daily minimum flow of 150.3/hr which was approximately 15% higher than the permanent meter. The PrimeFlo3 minimum flow matched the addition of DMA's within the zone giving confidence in nightline and leakage calculations. The electromagnetic meter has now been replaced.



Sensors installed on 600mm ductile iron pipe



Flow data from existing meter



PrimeFlo3 data on PrimeWeb approximately 15% higher flowrate

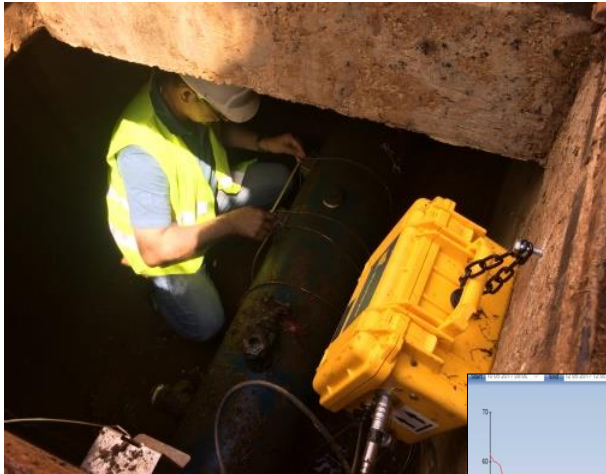




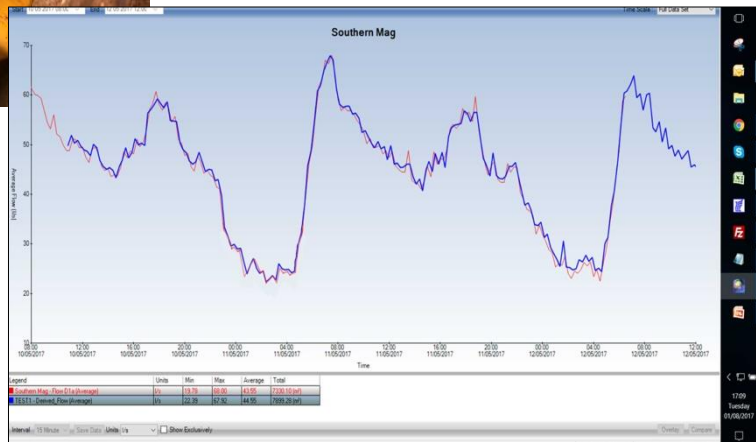
Chandlers Ford, Hampshire

Here a PrimeFlo3 was installed on a DMA to verify the existing electromagnetic meter over a range of flows. It was installed on a 300mm

PVC pipe where the pressure was approximately 7 Bar thus making difficult the installation of an insertion meter. It was installed during May 2017, for an initial period of one month and remains installed at August 2017, with no return visits for battery charging or data collection. The PrimeFlo3 shows good correlation with the existing meter over a range 20 to 70 litres/second hence providing Southern Water confidence in the existing permanent meter. This eliminates the need for planned routine maintenance.



Installation on 300mm PVC pipe



Flow data comparison between PrimeFlo3 (blue trace) and existing Southern Water meter (red trace)

“The PrimeFlo3 has proven a valuable tool to provide confidence in these permanent meter situations. With the long battery life and data collection via the cloud it is also useful to investigate flow conditions where a permanent meter does not exist.” Andrew Bardsley, Leakage Strategy Manager, Southern Water.



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