

Xstream step testing via GPRS

With Portsmouth Water

Case Study XS-CS-UK-1.0

Background

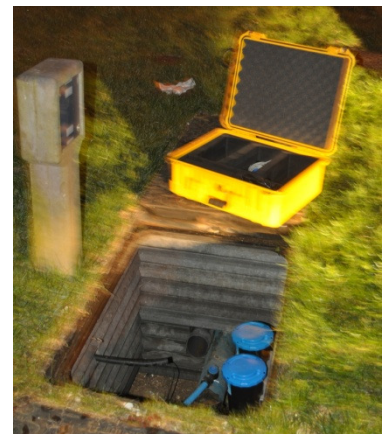
Step testing is a useful method in reducing an area of investigation when trying to locate leaks. By doing so it enables water undertakers to halve leakage detection time and therefore decrease costs too. A defined area is broken down into sections known as 'shuts'. All shuts should have similar consumption level so that the step test results are as accurate as possible. When an area is identified with an increase night line and its cause is attributed to leaks, then a step test is carried at night time. This is typically between the hours of 01:00 and 05:00 when demand is at its lowest as this helps with the precision of the test. Starting with the shut furthest from the meter, each shut is systematically closed off using the valves upon the network. A drop in flow occurs with each shut and subsequently the shut with the biggest drop in flow is an indication of a leak in that area.

Innovative solution....

Xstream was developed with existing Xilog+ technology, utilising its hi-tech antenna that can manage to communicate in areas of limited GPRS signal. Xstream is unique to the Primayer range as it sends its data direct to the Xstream website where real time values can be viewed on a mobile data device. This makes it an ideal tool for step testing as its components can be installed completely underground within the chamber, which means the site no longer has to be manned to protect it from vandals.

Trial with Portsmouth Water, UK

A DMA near Chichester was identified as an area with an unusually high night line and it was put forward to carry out a step test using the Xstream system. The DMA is predominately a residential zone and has been planned to be split into 6 shuts. The step test started at 01:00 with each shut being closed every 15minutes. The Xstream data transmitted to a laptop with a low GPRS signal. It managed to update the webpage every 10 seconds, as programmed into the Xstream. There were two significant drops in shut 2 and 3 which both respectively dropped by 2l/s. Twelve leaks in those shuts were found in the following week by Portsmouth Water leakage inspectors.



DMA Plan



PW Step Test

