## Outcomes from Irrigated Open Space Data Logging Exercise

In response to enquiries from our customers about monitoring water use and associated costs, SA Water's Business Sustainability Group has assisted a number of schools and councils 'data log' their consumption. Data logging equipment can record water use by detecting and storing pulses generated from a water meter. The data can then either be accessed by downloading the information off the logger or remotely accessed. **Figure 1** illustrates a data logger sensor detecting water consumption from a water meter. For technical detail on how it works, a fact sheet on data logging and smart water metering can be downloaded from the Business Technical Support website. Base flow leaks, peak water use, average water use, unscheduled irrigation events and water use anomalies were all observed throughout the data logging exercise. **Figure 2** provides an example of an average flow graph developed from logging data taken from a school oval and building block. Valuable observations are identified on the graph.

Figure 1: Data logging sensor on a meter

Figure 2: Example of data logging graph, average flow.

Red circles indicating 'base flow' of ~ 10L/m

Irrigation patterns

Average Flow
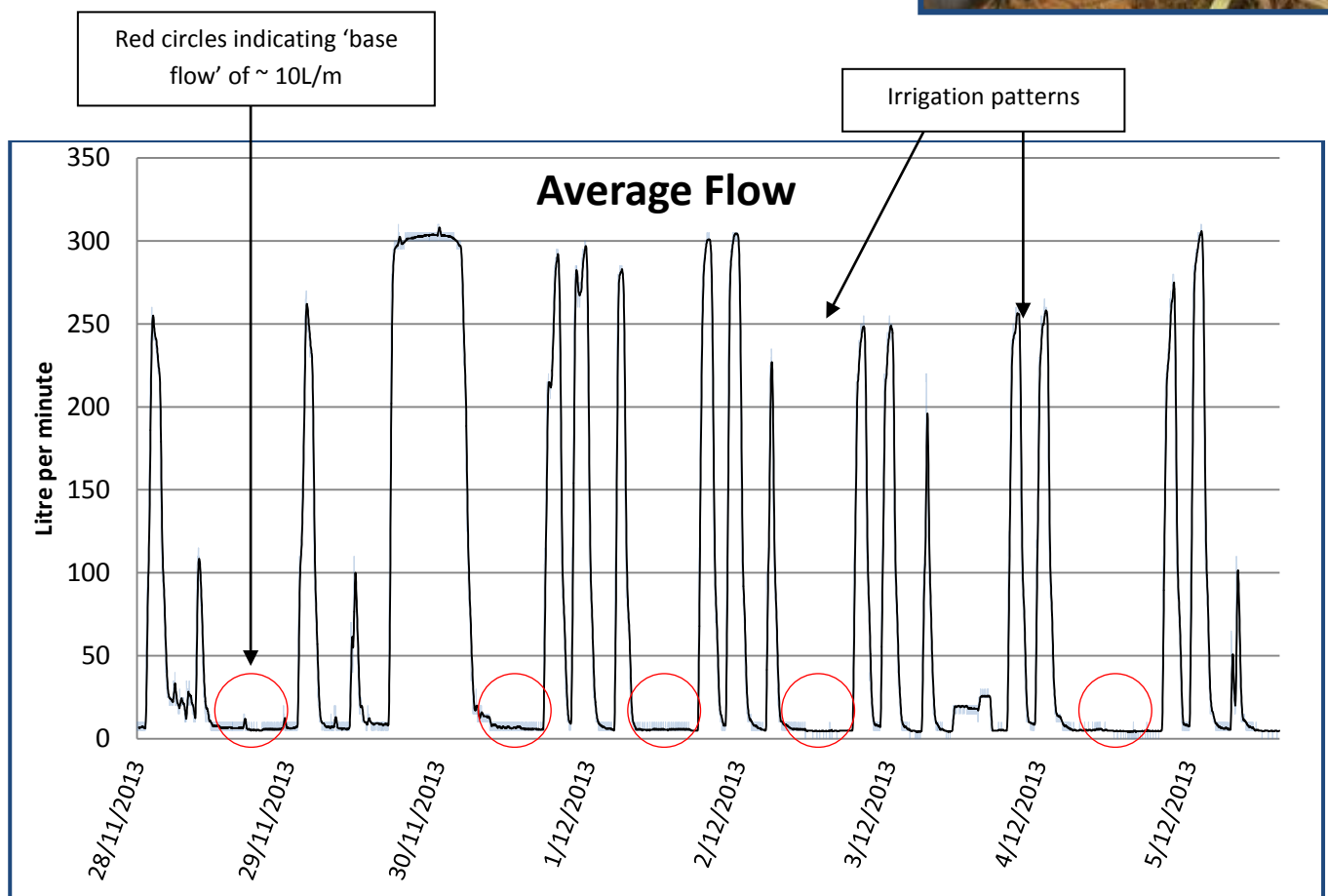
Over 30 council and school sites across South Australia had data loggers attached to their water meters. Leaks in the order of 2 to 15 litres per minute were common. **Table 1** quantifies the different flow rates into annual volumes of water attributed to these leaks and what they can potentially cost if left leaking for a full year. As you can see, a flow of 10L/m, as observed in **figure 2,** equates to just over 5000kL a year and approximately $17,000 dollars of water consumption.

Table 1: Approximate costs of base flows based on 2013-14 SA Water drinking water price.

Litres/minute	Litres/Year	Kilolitres/Year	Dollars/Year
1	525600	526	$1,700
5	2628000	2628	$8,500
10	5256000	5256	$17,000
15	7884000	7884	$25,000
20	10512000	10512	$34,000

Opportunities to improve irrigation scheduling were also identified. On some sites excessive run times for drip irrigation systems were observed. The data comes in excel format can also be manipulated in different ways to provide valuable information. One council for example, were interested in water used over the weekends compared to week days. Another school were interested in their night time water use against day time use.

The next step for SA Water's Business Technical Support is to commence a trial rolling out sub-meters across sections of our customer base to provide remotely accessed and real time water consumption data. This trial will be slightly different to our data logging exercise because all the data will be accessed remotely. A website will provide an interface for customers to observe their water use patterns. Alarms for leak notification and abnormal water use will also be implemented. The trial will provide customers with earlier notification of water consumption patterns through and automated analysis as well as providing SA Water with a greater understanding of the water distribution network.

Conclusions:

The data logging gave customers a better understanding of their water consumption patterns. A significant number of opportunities to improve water efficiency were identified. Leaks in the order of 2-15L/m were common and some cases of excessive irrigation scheduling were also evident. It is important for all customers to ensure the integrity of their pipe work downstream from the SA Water water meter and understand their water consumption patterns.

If you are interested and want to know more about water data logging and smart-metering please contact us on the details in the banner below!

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