

MISCONNECTIONS ARE A MAJOR DIFFUSE WATER POLLUTION, THE SOURCE OF MOST SERIOUS BEING DUE TO MISCONNECTED TOILETS. HOWEVER THE COST OF DETECTING THEM IS CURRENTLY A MAJOR BARRIER TO THE RECTIFICATION OF THIS INDUSTRY-WIDE ISSUE.

THE NEED

Water and Sewage Companies (WaSC) have an obligation to identify misconnections in their networks and manage the remedial work. It has been estimated that a targeted programme to identify misconnected properties in the UK, using current detection techniques would cost approximately £190 million, while the rectification of identified misconnections would cost around £42.5 million. The cost of detecting misconnections using current techniques is a major barrier to the rectification of this industry-wide issue.

BUSINESS BENEFITS

- Development of a reliable technology for detecting toilet misconnections.
- The possibility of influencing the design of the instrument to meet the company needs.
- Early use of pre-production prototype.
- The experience and understanding of how and when to use the tool and how to interpret the results.
- Potential for return on investment through an agreement with the instrument manufacturer.

SOLUTION

This project will develop and test a prototype, portable instrument which meets the needs of the WaSCs to identify washing machine, dishwasher and toilet misconnections.

The work will be undertaken in collaboration with Chelsea Technology Group who have been selected as project partners based on their extensive experience in developing and commercialising water quality monitoring instruments. At the end of the project the developed monitor will be ready for commercialisation.

Additional funding to support this work will be sought from Innovate UK.

WHY WRc

In 2015 WRc successfully completed CP546, a research project to address the issue of washing machine and dishwasher misconnections. These account for approximately 42% of all types of misconnections. Detection of optical brighteners added to laundry and washing up detergents was achieved by using tampons as absorbents. This technique was subsequently developed into a fluorescence detection instrument.

Toilet misconnections were not a focus of the CP546 but have been identified as a significant issue. Misconnections due to toilets account for approximately 7% of the total, but are responsible for many serious pollution problems and are especially important near coastal and bathing waters. Research shows that Tryptophan can be used for detecting toilet misconnections.

WRc has now partnered with a manufacturer and together are enhancing the fluorescence instrument to also detect toilet misconnections.

Duration: 16 Months WRc Contact: Gosia Dolata
Telephone: +44 (0) 1793 865188 Email: m.dolata@wrcplc.co.uk