

Forehill WTW  
*Cryptosporidium* Detection  
25 October 2013

DWQR Inspector:  
William Byers

Event No. 5680

## Event Category: Significant

### Summary of Incident

*Cryptosporidium* Oocysts were detected in a sample taken from the final water produced at Forehill Water Treatment Works on 25 October 2013. Sampling over the following days showed *Cryptosporidium* to be present again on 26 October and also on 4 November. Whilst individually these were of low level, the repeating nature of the detections gave DWQR concerns over the robustness of processes at the works and their ability to respond to changing raw water conditions.

Forehill Treatment Works has coagulation, clarifier and rapid gravity filter stages in the process and these, operated to best practice standard, should provide a good barrier to *Cryptosporidium*.

### DWQR Assessment of Cause of Incident

Scottish Water has determined there to be no clear cause for these detections. DWQR has however been unable to gain confidence of adequate investigation to provide explanation of the event. Information and records provided by Scottish Water show that although the turbidity values monitored off the filters are low, there is a significant shift in turbidity recorded from some filters following the wash cycle raising questions of the effectiveness of some filters relative to others in the works. A significant increase in the turbidity level on completion of the Clarifier process indicates this also may not have been operating to best effect. With the flows through the works approximating to 60% of design capacity, the plant should have been able to comfortably adjust to the changing raw water challenge.

DWQR considers there to be scope for greater optimisation of processes and asset condition to reduce the risk of *Cryptosporidium* breakthrough.

### DWQR Assessment of Actions Taken by Scottish Water

DWQR is concerned that there is a perception within the organisation of a degree of inevitability at low levels of *Cryptosporidium* being present in final water under certain conditions. There is a lack of importance attached to a sequence of low level *Cryptosporidium* detections and DWQR considers there to be a need for wider appreciation through the organisation of the importance of maintaining treatment assets, equipment and processes in an optimum state to address *Cryptosporidium* risk. This has been identified by DWQR in our assessment of a similar *Cryptosporidium* event at Mannofield WTW, occurring around the same time, and Scottish Water must address the issue.



DWQR welcomes the recent move by Scottish Water to extend the scope of its water quality event root cause investigation process to cover *Cryptosporidium* detections. The process should lead to a better understanding of the issues at treatment works where Oocysts are detected in final water and identify the necessary actions and investment to maintain effective treatment barriers.

The event has been categorised as significant. Scottish Water identified one action and DWQR accepts that this is appropriate. Additionally, DWQR made one recommendation and will be monitoring to ensure both are completed prior to signing off the incident.

