

Incident Assessment

Gigha WTW Persistent THM Failures Autumn 2011

DWQR Inspector:
Matthew Bower

Summary of Incident

Persistent exceedences of the standard for total trihalomethanes have occurred in this small water supply on the island of Gigha in Argyll. In line with DWQR's policy for all water quality exceedences not resolved by Scottish Water within two months, this issue has been declared an incident.

DWQR Assessment of the Cause of the Incident

Gigha WTW has a modern membrane treatment process that should be capable of completely removing the naturally occurring organic compounds that react with chlorine to produce THMs. It is of concern that this does not seem to be happening, especially as the amount of chlorine added to the supply does not seem excessive.

DWQR Assessment of Actions Taken by Scottish Water

Scottish Water has investigated the issue thoroughly. The failures are especially disappointing as the works experienced a similar issue in 2010 resulting in the membranes being changed. Scottish Water has concluded that these membranes have been damaged by a process called hydrolysis. A number of actions were taken to reduce THM formation until such time as further replacement membranes could be obtained, including reducing the time that water is in contact with chlorine.

The problem was resolved, and compliant samples obtained, in March 2012 when new membranes were installed at the plant. These membranes are more tolerant of the higher pH water encountered at Gigha and, it is hoped, should not suffer the same degradation.

DWQR is satisfied by the actions taken by Scottish Water, although this does demonstrate the need for Scottish Water to fully understand and deal with the sometimes highly complex scientific processes involved in treating drinking water.