

Marchbank WTW Aluminium Exceedence June 2012

DWQR Inspector:
Matt Bower

Summary of Incident

Maintenance work on one of the dissolved air flotation (DAF) cells at the works resulted in dirtier than usual water entering the washwater recovery system. The monitoring equipment which should have safeguarded against this water being returned to the inlet to the works was not operating correctly and consequently did not shut down the supernatant return. The poor quality of the returned water had a detrimental effect on the treatment process and caused turbidity and aluminium levels to rise, with both parameters exceeding the PCV in the final water for a number of hours the following day.

DWQR Assessment of Cause of Incident

A faulty sample pump that supplied the supernatant return turbidity monitor prevented the supernatant return stream from shutting down and it did not create an alarm as it should. If settled water is to be returned to the start of the treatment process, it is vital that robust safeguards are in place to prevent the returned water from adversely impacting treated water quality. In this case, the safeguards were not operating effectively.

DWQR Assessment of Actions Taken by Scottish Water

Once water quality alarms were generated by the main treatment process, an operator attended site promptly and undertook the correct actions, including the washing of filters. This was not sufficient to prevent aluminium and turbidity levels in the final water from rising, with aluminium peaking at 420µg/l the following morning. Had the works had a means of doing so, it is possible that this high aluminium water could have been discarded and prevented from entering supply.

The operator took the correct actions in increasing chlorine concentrations temporarily and initiating *Cryptosporidium* sampling. Samples were also taken from the distribution system served by Marchbank – these showed no significant evidence of an impact on the quality of water received by consumers.

Scottish Water has replaced the supernatant return monitoring system at Marchbank and changed the way that water draining from the DAFs is handled. This should prevent a recurrence of a similar incident.