Incident Summary

Kyle of Lochalsh WTW Ammonium sulphate exceedance April 2017

DWQR Inspector:
Moira Malcolm

Event No. 8417

Event Category: Significant

On the evening of 19th April the ICC called out a high final water ammonium alarm and the senior operator attended site. The operator found that ammonium sulphate dosing pump A was overdosing so isolated this pump and switched over to pump B. As compliant water was now being produced and entering the clear water tank (CWT), it was assumed that a combination of this and the compliant water already contained in the CWT would dilute the non-compliant water effectively. However the plant stopped production 2 hours later when the CWT reached it's high level stop point, and the ammonium concentration continued to rise. When production resumed in the morning, ammonium levels were still in excess of the regulatory limit. At 12:00 on 20th April the decision was made to empty one of the CWT cells to allow it to fill with compliant water and the final water returned to compliance with the regulatory standard for ammonium on 22nd April at approximately 02:00hrs, with water in supply presumed to follow shortly afterwards.

Scottish Water's investigation found that the ammonium sulphate dosing pump A had developed a control fault and began overdosing ammonium. This was then compounded by the lack of a treated water ammonium monitor, so there was no visibility of the overdose until the final water ammonium monitor downstream of the CWT alarmed. In addition, the inlet and outlet on the CWT are located on the same side of the tank which caused streaming across the tank and therefore the assumed dilution effect within the CWT did not occur.

The event has been categorised as significant. Scottish Water has identified six actions which DWQR accepts are appropriate and will monitor to ensure they are completed prior to signing off the incident. DWQR made no additional recommendations.