

Incident Summary

Auchneel WTW Ammonium Failures 20th September 2021

DWQR Inspector:
Moira Malcolm

Event No. 12084

Event Category: Significant

On 20th September 2021 a scheduled sample from the final water sampling point from Auchneel WTW failed for ammonium, with a resample taken on 23rd September also failing. The operational response to these failures discovered that the ammonium sulphate dosing was above the normal level of 0.3mg/l, and dosing at a chloramination ratio of 3.7:1 rather than 5:1. The operator reduced ammonium dosing and started taking bench tests, discovering that these became erratic when flow through the works dropped to 15l/s. The works was running at this minimal level due to drought conditions in the source reservoirs. The operators were unable to control ammonium dosing and so the works was run to waste for two weeks until this could be stabilised and was returned to supply on 15th October.

The incident was caused by a number of factors. Scottish Water discovered during the incident investigation that ammonium dosing was configured on a fixed dose rather than flow proportional, which was not noted on SCADA (Supervisory Control and Data Acquisition), therefore as the flow reduced through the works during drought conditions the corresponding rise in dosing was not visible. In addition to this ammonium dosing was set to deliver a pulse every 30 seconds, which led to operators finding it difficult to estimate levels from bench readings

However the dosing issues could have been contained and the event mitigated quickly if there had been adequate ammonium monitoring on site and linked to telemetry. The ammonium monitor had been out of service since May (and not escalated for replacement) and so the operators had no on-site visibility of the increase in ammonium. In the absence of the online monitor, routine bench tests had not been added to task schedules.

The event has been categorised as significant. Scottish Water has identified eleven actions which DWQR accepts are appropriate and will monitor to ensure they are completed prior to signing off the incident. DWQR made zero additional recommendations.

