Drinking Water Quality Regulator for Scotland

Incident Summary

Rawburn WTW Coagulation failure 29 May 2018

DWQR Inspector:
Moira Malcolm

Event No. 9333

Event Category: Significant

On 29th May 2018 at 02:30hrs the ICC contacted the standby operator for Rawburn WTW to inform him of a low ferric flow alarm and works shutdown. The operator attended site and found the works had shut down due to low coagulant flow. The ferric dosing pressure reducing valve (PRV) was discharging into the dosing bund rather than the dosing line, and consequently there had been a low dose of coagulant entering the treatment process. After escalating the issue the operator cleaned the blockage from the PRV, recommenced ferric dosing and initiated a controlled re-start of the works.

The incident resulted in elevated filtered turbidity levels which lasted for 2 hours and final turbidity peaked at 0.33NTU. There was a breach of the water quality standard for iron in the final water entering supply for 1 hour 30 minutes, and iron concentrations above the prescribed concentration or value (PCV) were detected in distribution on the 29th and 30th May.

The cause of the incident was a fault with the PRV that controlled ferric coagulant dosing. This resulted in a loss of optimal coagulation, resulting in water with elevated iron levels and turbidity passing forward into the treatment process. The works shut down automatically due to the low coagulant dose, but there is no run to waste facility, so on re-start sub-standard filtered water passed into the clear water tank (CWT). The works was running at a high output flow due to increased network demand and as a result the CWT was only a quarter full. This provided minimal dilution for poor quality water, resulting in an immediate impact on water entering supply.

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.

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