



Drinking Water Quality Regulator
for Scotland

Incident Summary

Mannofield WTW
Loss of the treatment process
27th November 2022

DWQR Inspector:
Andrew Kennedy

Event No. 13005

Event Category: Significant

Heavy rainfall within the River Dee catchment from 15 November 2022 resulted in the river flooding Inchgarth pumping station and overtopping Inchgarth reservoir, leading to a deterioration in raw water quality and solids loading. During this period, raw water turbidity increased with online turbidity monitoring flatlining at the maximum output of 30NTU (bench tests results showing up to 46NTU) and raw water DOC increased to up to 28mg/l. Positive *Cryptosporidium spp.* detections were found in three final water samples from Mannofield water treatment works (WTW) between 27 November 2022 and 2 December 2022.

Between 18 December 2022 and 20 December 2022 and between 9 January 2023 and 14 January 2023, Mannofield WTW flows were incrementally increased to cope with increased network demand due to freezing conditions causing multiple bursts downstream and to allow for planned work at Invercannie WTW to be carried out respectively. During these periods of increased output from Mannofield WTW, there were further *Cryptosporidium spp.* detections from the final water sample point (on 25 December 2022), and from the outlet of Mannofield MPS2 Service Reservoir (on 14 January 2023).

It is clear that this incident was in part caused by a significant deterioration in raw water quality and solids loading due to heavy rainfall within the catchment. This heavy rainfall resulted in the River Dee flooding Inchgarth pumping station and overtopping Inchgarth reservoir on 19 November 2022, with raw water quality returning to normal operating levels from 3 December 2022. During this period, there were three final water *Cryptosporidium spp.* detections (between 27 November 2022 and 2 December 2022).

I am, however, of the opinion that the primary cause of this incident is the fact that there are known limitations in the capability of Mannofield WTW in removing *Cryptosporidium* due to the complex coagulation chemistry and the condition of the filters on site.

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 one additional recommendation.



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