



Drinking Water Quality Regulator
for Scotland

Incident Summary

Carron Valley B RSZ
Taste and Odour Complaints
14th July 2022

DWQR Inspector:
Colette Robertson-Kellie

Event No. 12737

Event Category: Significant

Twice weekly sampling and analysis of raw and final water for geosmin at Carron Valley WTW started on the 31st of March 2022. This proactive monitoring followed Scottish Water's Operational Response Plan, which had been developed following taste and odour issues caused by geosmin in previous years in the Carron Valley supply. Results from samples taken on the 5th July were made available by the Laboratory on the 14th July; these showed that Scottish Water's trigger value of 5ng/l geosmin in raw water had been exceeded, with results of 7.81 and 14.52ng/l. The final water geosmin concentration was 0.92ng/l, below the 3ng/l trigger value. On Friday 15th July, Scottish Water initiated an Incident Call, and it was decided that dosing of powdered activated carbon (PAC) at the treatment works should be started to help control geosmin levels.

The contractor for the PAC plant attended site the same day to prepare the rig for dosing, which was flushed over the weekend, and PAC dosing was started on the 18th July. That same day, results from samples taken on the 11th July showed that geosmin in the final water had breached Scottish Water's final water trigger value of 3ng/l, with a result of 3.13ng/l.

Process scientists liaised with Operations staff to optimise all treatment processes and monitor the impact of PAC dosing on the site, and analytical data suggests that the removal rate of geosmin routinely exceeded 90%. However, the measured levels of geosmin in the raw water in 2022 were much higher than those in previous years, and final water geosmin levels were significantly higher than the expected taste and odour threshold of around 5ng/l, with one sample exceeding 26ng/l.



An air curtain is in place at Carron Valley Reservoir to help disperse algal blooms, and a routine inspection on the 28th July found that there were leaking air nozzle delivery lines. Divers were needed to make the repairs, so the air curtain was switched off on the 9th August, the repairs made, and the air curtain switched back on. Depth sampling was carried out at the reservoir to confirm that the optimal draw off point was being used.

Substantial rezoning of the network was not possible due to low water levels in other zones, caused by reduced raw water levels in the summer. Additionally, the site cannot operate effectively if flow drops below a minimum level, so the output of the treatment works could not be reduced by any substantial amount.

A number of consumers contacted Scottish Water to report taste and odour concerns - from 1st July to 31st October there were a total of 241 taste and odour contacts, 193 of which were classified as earthy/musty, the classic sign of geosmin in water.



The cause of this incident was insufficient water treatment processes to remove elevated levels of geosmin from the raw water.

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

