

Invercannie & Mannofield RSZ Taste and Odour Complaints 3rd July 2023

DWQR Inspector:
Andrew Kennedy

Event No. 13550

Event Category: Serious

In June 2023, Scottish Water began to receive “earthy/musty” taste & odour (T&O) customer complaints in the area supplied by Invercannie water treatment works (WTW), with contacts increasing significantly through July.

Scottish Water began its seasonal programme of weekly raw and final water geosmin sampling on 5 June 2023, with the first raw water Geosmin sample reported at 4.8ng/l. Levels of raw water geosmin levels continued to rise, peaking at 22.1ng/l (raw water) and 32.1ng/l (final water) in samples taken 13 July 2023, which correlated with a further significant increase in customer contacts over the subsequent days. At the time, Invercannie WTW had no treatment process capable of reducing or removing geosmin from the water supply.

From 11 July 2023, steps were taken by Scottish Water to reduce the output of Invercannie WTW (from 55MI/d to 44MI/d) and increase the blend of water from Mannofield WTW which, despite also taking water from the River Dee and not having a treatment process to remove geosmin, showed lower levels of the compound in the raw and final water (max 6.2ng/l and 1.2ng/l respectively). From 13 July 2023, having used interstage sampling to identify that geosmin levels were increasing through the raw water reservoir, a further 5MI/d flow was run through the yet-to-be commissioned Dissolved Air Flotation (DAF) plant, which was already running approximately 15MI/d to waste in an attempt to increase turnover.

In total, Scottish Water received 213 T&O contacts (179 of which were “earthy/musty”) between 1 June 2023 and 15 August 2023, with these being spread across the operational area supplied by Inverannie WTW. During the same time period, Scottish Water took 94 samples (34 customer enquiry sample and 60 operational samples) across the water operational area, with one sample reported to fail for an “earthy/musty” odour.

The reason for the increased levels of geosmin in the River Dee in 2023 is currently not fully understood, however Scottish Water’s assessment was that this was most likely due to microbial activity proliferating during warm, dry weather in June 2023, which was then broken down and washed into the river during heavy rainfall through early July 2023. This was exacerbated by further breakdown of organics within the raw water reservoir at Invercarnie WTW.

Although I am in agreement with Scottish Water that these factors are likely to have exacerbated the geosmin levels in mid July 2023, the raw water geosmin levels were above the potential threshold for T&O detection (5ng/l) from as early as 13 June 2023 (raw water sample taken 6.2ng/l). This is supported by the 40 customer complaints that were received by Scottish Water before heavy rainfall occurred in early July and the levels in the River Dee significantly increased (4 July 2023). I am therefore of the opinion that the cause of this incident was insufficient water treatment processes to remove taste and odour forming compounds.

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

