

Incident Assessment

Tullich WTW
THM Failure
20th August 2015

DWQR Inspector:
Moira Malcolm

Event No. 7127

Event Category: Significant

Summary of Incident

On 20th August 2015 the operator was called out to Tullich water treatment works (WTW) due to faults in the ozone system. The system was reset, but the operator was called out a further two times overnight to reset the ozone system which faulted every 2 hours. At 04:00 on the 21st the ozone generator shut down due to the high dew point (as designed because condensation damages the generator). Due to the multiple failures the operator escalated the event to the team leader. The generators came back online at 06:30 as the dew point had risen sufficiently to allow operation. Investigation that morning into the cause of the overnight faulting discovered low flow from one of the water cooling pumps to the ozone system. The lack of ozonation at the WTW caused water with a high concentration of natural organic compounds to leave the works. These compounds reacted with chlorine disinfectant to produce trihalomethane (THM) disinfection byproducts which exceeded the prescribed concentration or value (PCV) at the WTW and at service reservoirs in distribution. No customer contacts were received in relation to this event.

DWQR Assessment of Cause of Incident

The cause of the incident was low flow at the water cooling pumps serving the ozone system. The low flow at the coolant pumps caused the air preparation system to shut down on high dew point as it wasn't sufficiently cooled to lose its moisture, this in turn shut down the ozone generators due to the low air flow.

DWQR Assessment of Actions Taken by Scottish Water

Scottish Water site operatives responded promptly and escalated the event appropriately. Several issues were noted and are pertinent:

1. No samples were taken at consumers' taps. As THMs do not degrade in distribution it is likely that had samples been taken, failures would have been found at consumers' taps.
2. An Undertaking with Scottish Water is in place for Tullich WTW to ensure compliance with the standard for THMs by 2017. Until this time Scottish Water are monitoring this parameter closely and aeration has been installed and optimised following this incident to address this in the short term.

The event has been categorised as Significant. Scottish Water has identified a number of actions and DWQR accepts that these are appropriate. Additionally, DWQR has made one recommendation following this incident and will be monitoring to ensure both it and actions are completed prior to signing off the incident.

