Drinking Water Quality Regulator for Scotland

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Chief Executive
Scottish Water
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Our Ref: A52474793
11 April 2025

Dear Alex

DWQR Incident Assessment
Loch Calder – 15225 – December 2024

The purpose of this letter is to inform you of the conclusions and recommendations arising from my incident assessment of the above water quality event. This event has been categorised as Significant.

Impact of Incident
A final water sample taken in response to an water quality alarm exceeded the standard for turbidity by a large margin. This was due to excess lime being added to the water. The upstream treatment process was unaffected, and adequate sampling undertaken by Scottish Water demonstrated that water quality in the distribution system remained satisfactory.

Incident Cause
The incident was caused due to lime being continually overdosed because the treated water pH monitor was providing a false reading. This wasn't spotted by operators until approximately 10 hours after the initial turbidity alarms were passed out. The pH monitor had become blocked, however crystallisation of lime within the sensor prevented a low flow signal from being generated. False bench instrumentation readings mislead operators into thinking that water quality was satisfactory, meaning that the monitor was not physically checked and prolonging the incident.

Incident Resolution
Once the issue was identified, correct actions were taken and water quality was restored promptly.

Contraventions of The Public Water Supplies (Scotland) Regulations 2014 (as amended)
Although the readings taken at the treatment works during the incident indicate exceedences of the regulatory standards for turbidity and pH, these were transient and/or trivial in nature. None of the samples taken by Scottish Water to represent water supplied to consumers breached the regulatory standards.

Actions to be Taken
Scottish Water identified two actions, to clean channels and tanks on site and to review flow switch maintenance on the site in light of the crystallisation issues.

DWQR considers that additional actions are required:

DWQR1 Provide DWQR with a written strategy to ensure inline monitors are correctly maintained and regularly checked at the site, specifically addressing the known issues with lime saturation at the site ;

DWQR2 Investigate the issues with site bench monitors, ensuring that thay are operating correctly and have an ongoing maintenance and calibration plan;

DWQR3 Investigate whether lime is the most appropriate chemical for pH correction at the site, or whether an alternative chemical would alleviate the issues with lime precipitation.

I should be grateful if you could provide dates for completion of the above recommendations by 2 May 2025.

A copy of this letter shall be sent to the chief environmental health officer at Highland Council and to the relevant Consultant in Public Health Medicine at NHS Highland. A summary of the event shall be placed on the DWQR website.

Please contact me if you have any queries regarding this letter.

Yours sincerely,

Matt Bower
Team Leader
Drinking Water Quality Regulator