

Site Visit Report

Under the *European Union (Drinking Water) Regulations 2023*, the Environmental Protection Agency (EPA) is the supervisory authority in relation to Uisce Éireann and its role in the provision of public drinking water supplies. This audit was carried out to assess the performance of Uisce Éireann in providing clean and wholesome water to the public water supply named below.

The audit process is a sample of the performance of a water treatment plant and public water supply on a given date.

Water Supply Zone	
Name of Installation	South Dublin Zone 3
Organisation	Uisce Éireann
Scheme Code	0800PUB1003
County	Dublin
Site Visit Reference No.	SV29651

Report Detail	
Issue Date	08/02/2024
Prepared By	Michelle Roche

Site Visit Detail			
Date Of Inspection	17/01/2024	Announced	Yes
Time In	10:30	Time Out	11:25
EPA Inspector(s)	Michelle Roche		
Additional Visitors			
Company Personnel	Uisce Éireann: Daniel Behan, Ed Haythornthwaite, Linda Doran South Dublin County Council (working in partnership with Uisce Éireann): Derek Sargent, Peter Geogheghan, Declan O'Rourke, Juan Antonio Gragera Rubio.		

> Summary of Key Findings

1. The chlorination failure that occurred on 09/01/2024 was caused by the sodium hypochlorite dosing day tank being pumped dry. The level sensor inside the day tank failed to alarm and daily visual checks of sodium hypochlorite levels were not carried out in the days prior to the failure.
2. There was no automatic shutdown on the supply therefore inadequately disinfected water entered the supply from approximately 10:45pm on 09/01/2024 to 12:30am on 10/01/2024.
3. Uisce Éireann are investigating the installation of automatic shutdown on the supply.

> Introduction

The South Dublin Zone 3 public water supply serves a population of 517 (EDEN figure) from the Brittas borehole in Brittas, County Dublin. The supply operates based on network demand and treatment is chlorination only with sodium hypochlorite. The audit was carried out to investigate a failure of the chlorination system that occurred on 09/01/2024.

> Supply Zones Areas Inspected

The chlorine dosing process and Brittas borehole were inspected during the audit. Continuous online chlorine residual trends for the week before the chlorination failure were also viewed.



1. Management and Control

	Answer	
1.1	Are suitable plant shutdowns/inhibits in place to prevent the entry of inadequately treated water entering the distribution network?	No
Comment		
1. South Dublin Zone 3 public water supply does not currently have automatic shutdown in place in the event of a water treatment failure. Uisce Éireann are investigating the installation of automatic shutdown on the supply.		

	Answer	
1.2	Are suitable alarm settings in place to alert operators to deteriorating water quality and/or the failure of a critical treatment process?	No
Comment		
1. The final water chlorine residual alarm has a time delay of 45 minutes before dialing out to plant operators. This time delay is too long to provide an adequate response in the event of deteriorating water quality.		
2. A level sensor is place in the sodium hypochlorite dosing day tank to alert plant operators to a decreasing level of sodium hypochlorite. The level sensor did not alarm when the day tank ran dry on 09/01/2024.		
3. As a result of the day tank running dry inadequately disinfected water entered the supply from approximately 10:45pm on 09/01/2024 to 12:30am on 10/01/2024.		
4. In addition to the level sensor a visual check on sodium hypochlorite levels in the day tank is included in the daily operational duties of the plant operator. This visual check was not carried out in the days leading up to the incident.		

	Answer	
1.3	Is a suitable cascade system in place for alarm dial outs?	No
Comment		
1. Alarms currently dial out to all operational staff at the same time. There is no system in place to communicate that the alarm is being responded to by an individual operator.		

Recommendations

Subject	South Dublin Zone 3 Audit Recommendations	Due Date	08/03/2024
Action Text	<p>Uisce Éireann is responsible for ensuring a clean and wholesome supply of drinking water and should implement the following recommendations without delay.</p> <ol style="list-style-type: none">1. Install automatic shutdown on the supply linked to low and high chlorine alarm setpoints and high turbidity alarm setpoints.2. Review and amend the time delay on the low and high chlorine alarms in accordance with the EPA Water Treatment Manual: Disinfection.3. Put in place an appropriate cascade system for responding to alarms generated at the plant which allows for verification that an alarm has been responded to.4. Carry out and document all daily operational checks to maintain appropriate oversight of the supply. <p>Actions required by Uisce Éireann</p> <p>During the audit, Uisce Éireann representatives were advised of the audit findings and that action must be taken by Uisce Éireann to address the issues raised.</p> <p>Uisce Éireann should submit a report to the EPA on or before 8th March 2024 detailing the actions taken and planned, with timescales, to close out the above recommendations.</p> <p>The EPA advises that the findings and recommendations from this audit report should, where relevant, be addressed at other public water supplies.</p>		