

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	Grangecon Public Supply
Organisation	Uisce Éireann
Scheme Code	3400PUB1041
County	Wicklow
Site Visit Reference No.	SV32064

Report Detail	
Issue Date	13/06/2025
Prepared By	Derval Devaney

Site Visit Detail			
Date Of Inspection	30/05/2025	Announced	Yes
Time In	10:30	Time Out	11:40
EPA Inspector(s)	Derval Devaney		
Additional Visitors			
Company Personnel	Uisce Éireann (UÉ): Linda Doran. EPS (Contractor working in partnership with UÉ): David Logue, Jimmy Dunne.		

> Summary of Key Findings

1. There is no plant inhibit linked to high and low final water chlorine residual concentrations at the water treatment plant.
2. The alarm setting for minimum water level in the contact tank should match that in the contact time calculation sheet.
3. Turbidity is being monitored monthly in the final water by an accredited laboratory. The monitoring results for April 2005 met the standards set out in the *European Union (Drinking Water) Regulations 2023*.

> Introduction

The Grangecon Public Water Supply (PWS) serves approximately 10 m³/d of treated water to approximately 53 people (EDEN Figures) in Grangecon Co Wicklow. The raw water is abstracted, on demand, from a borehole 50 m from the water treatment plant (WTP), and is disinfected using sodium hypochlorite at the on-site contact tank. There is no reservoir storage for the water supply.

The audit was undertaken to assess Uisce Éireann's performance in producing clean and wholesome water with a focus on the alarms and inhibits in place at the WTP and the procedures in place to ensure appropriate oversight of treatment process.

> Supply Zones Areas Inspected

The audit assessed alarm and automatic shutdown set-points for the treatment process and process verification data from continuous online monitors. Procedures relating to the management and oversight of the water treatment process were also inspected, in addition to the borehole and disinfection process.



1.1

Does the calculation sheet show adequate chlorine contact time?

Answer

Yes

Comment

1. While the calculation sheet illustrates that contact time is adequate for disinfection; the minimum depth provided in the calculation is 0.9 m, which does not correlate with the contact tank's minimum depth alarm setting of 0.85 m.
2. It was unclear if the contact time was sufficient at times where demand in the network was high and at times when flow through the plant was greater than 1.4 m³. This is because:
 - The maximum flow (95%ile) of 1.4 m³/hr is provided in the calculation sheet, taken from the average of peak flows per year.
 - While the flow was 0.17 m³/hr during the audit, the borehole pump has the capability of pumping at 2.5 m³/hr to respond to customer demand (i.e. maintain a target level in the contact tank), and/or to maintain a network target pressure/ in response to a leak in the network.

1.2

Is suitable continuous monitoring in place to verify treatment performance?

Answer

Yes

Comment

1. There is a continuous chlorine residual monitor in place at the water treatment plant to verify disinfection is adequate post contact time. This is sole continuous monitor in place at the WTP.
2. Monthly final water samples were being taken and analysed by an accredited lab. The contractor stated turbidity is not an issue for this supply and is always of low concentrations and below the limit of detection.
3. The lab report for a monthly final water sample taken on 01/04/2025 was reviewed during the audit. The parameters monitored included *E. coli*, coliform bacteria, iron, manganese, pH, TOC, turbidity, nitrate and nitrite. All were within the limits of the Drinking Water Regulations; turbidity was 0.2 NTU.

1.3

Are suitable plant shutdowns/inhibits in place to prevent inadequately treated water entering the distribution network?

Answer

No

Comment

1. While there is a chlorine alarm to alert the plant operator of a high (0.45 mg/l) and low (0.25 mg/l) chlorine residual post contact time, there is no plant inhibit associated with final water chlorine concentrations.

Recommendations

Subject	Grangecon Audit 2025 Recommendations	Due Date	13/07/2025
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 a high and low chlorine plant inhibit, linked to the final water chlorine monitor at the plant.2. Ensure the Ct calculation reflects (i) the alarmed minimum contact depth and (ii) the variability of flows through the plant. <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 the above due date 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>		