

# 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	Ballymoe PWS
Organisation	Uisce Éireann
Scheme Code	1200PUB1007
County	Galway
Site Visit Reference No.	SV29693

Report Detail	
Issue Date	04/12/2024
Prepared By	Michelle Roche

Site Visit Detail			
Date Of Inspection	19/11/2024	Announced	Yes
Time In	10:00	Time Out	11:30
EPA Inspector(s)	Michelle Roche		
Additional Visitors			
Company Personnel	Uisce Éireann: Marie Finnernan Galway County Council (working in partnership with Uisce Éireann): Ronan Mannion, Pat McDermott, Declan Mannion.		

## > Summary of Key Findings

1. A source protection zone has not been delineated for the spring source. The field adjacent to the spring collection chamber is used for grazing animals.
2. There are no alarm or inhibit set-points on the turbidity monitor prior to the UV to ensure water is suitable for UV treatment.
3. There was no UV validation certificate available at the audit to verify that alarm set-points are appropriate and UV is operating effectively at all times.

## > Introduction

Ballymoe public water supply serves a population of approximately 680 from a spring source. The spring collection chamber is located at the water treatment plant and undergoes the following treatment; filtration in a single media sand filter, UV treatment and disinfection with sodium hypochlorite.

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 water treatment plant WTP and the procedures in place to ensure appropriate oversight of treatment processes.

## > Supply Zones Areas Inspected

Treatment processes on-site were inspected as part of the audit and water quality trends submitted prior to the audit were assessed.



## 1. Management and Control

1.1

Has the protozoal compliance log treatment requirement been identified for the water treatment plant?

**Answer**

No



## 2. Alarms, Inhibits & Oversight Audits 2024

2.1

Are suitable alarm settings in place to alert operators to deteriorating water quality or the failure of a critical treatment process?

Answer

No

**Comment**

1. A turbidity monitor is in place after the single media filter and before the duty standby UV units.
2. There are no alarm settings in place on the turbidity monitor to alert operators if filter water turbidity is above 1 NTU, making it unsuitable for UV disinfection. Filter water turbidity was 0.07NTU at the time of the audit.
3. The UV treatment is installed with alarm and inhibit set-points to protect the operational envelope outlined on the specification plates attached to the duty and standby UV units, however no validation certificate was provided at the audit to verify either the specification plates or the alarm and inhibit set-points.

2.2

Were all findings of the UÉ alarm and inhibit review implemented?

Answer

No

**Comment**

1. The final water turbidity alarm has a time delay of 15 minutes against the recommended time delay of 3 minutes outlined in the EPA *Water Treatment Manual: Filtration*.
2. A 3 minute time delay was recommended by the Uisce Éireann alarm and inhibit review but Uisce Éireann have not implemented the recommendation.

2.3

Are there appropriate procedures covering verification of alarms and inhibits status following maintenance or other work on site?

Answer

No

**Comment**

There is no procedure in place to ensure operational staff verify that alarm and inhibits are correctly re-installed following maintenance or other work on site.

2.4

Is the chlorine contact time calculation correct?

Answer

No

**Comment**

1. The chlorine contact time did not accurately reflect the following site conditions;

- Maximum flow through the WTP is recorded on the calculation as 26m<sup>3</sup>/hour against the maximum flow allowable at the water treatment plant of 27m<sup>3</sup>/hour.
- The turbidity factor is recorded as <0.5 NTU on the calculation however the final water turbidity alarm set-point at the water treatment plant is 1NTU. Final water turbidity was 0.07NTU at the time of the audit.

## Recommendations

Subject	Ballymoe Audit Recommendations	Due Date	04/01/2025
Action Text	<p><b>Uisce Éireann is responsible for ensuring a clean and wholesome supply of drinking water and should implement the following recommendations without delay.</b></p> <ol style="list-style-type: none"> <li>1. Protozoal Barrier: (i) Complete an assessment to verify that the appropriate log treatment requirement is in place for the supply and (ii) provide details of how any remaining log treatment deficit will be addressed.</li> <li>2. Install an alarm and inhibit on the post-filtration turbidity alarm to prevent water with a turbidity greater than 1NTU entering the UV units.</li> <li>3. Submit a UV validation certificate for both UV units to verify the alarm and inhibit set-points are suitable.</li> <li>4. Implement the findings of the Uisce Éireann alarm and inhibit review to ensure the time delay on the final water turbidity alarm does not exceed 3mins.</li> <li>5. Put in place a procedure to ensure alarm and inhibits are correctly re-installed following maintenance or other work on site.</li> <li>6. Chlorine Contact Time: (i) Update the chlorine contact time calculation to accurately reflect site conditions for flow and maximum allowable turbidity, (ii) submit a copy of the contact time calculation to the EPA and (iii) in the interim, ensure that the first connections are receiving adequately disinfected drinking water at all times in accordance with the WHO specified contact time of 15mg.min/l.</li> </ol> <p><b>Actions required by Uisce Éireann</b></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 04/01/2025 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>		