

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	Turlough PWS
Organisation	Uisce Éireann
Scheme Code	0300PUB1068
County	Clare
Site Visit Reference No.	SV29577

Report Detail	
Issue Date	25/10/2024
Prepared By	Orla Harrington

Site Visit Detail			
Date Of Inspection	03/10/2024	Announced	Yes
Time In	11:00	Time Out	11:45
EPA Inspector(s)	Orla Harrington		
Additional Visitors			
Company Personnel	Uisce Éireann: Tommy Roche, Barry McMahon, Sharon O'Dwyer. Clare County Council (working in partnership with Uisce Éireann): Martin Carkill.		

> Summary of Key Findings

1. The audit found that the Turlough public water supply was operating satisfactorily on the day of the audit.
2. Uisce Éireann has yet to fully implement the findings of its Alarms and Inhibits Review.
3. There is no documented alarm response procedure to advise operational staff on how specific water quality alarms should be responded to and acted upon.

> Introduction

The Turlough public water supply serves 520 m³/day to a population of 342 from one borehole. Treatment includes UV disinfection and chlorination.

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

> Supply Zones Areas Inspected

The borehole, treatment plant and associated equipment and monitors were inspected during the audit.



1. Reservoirs and Distribution Networks

	Answer
1.1 Are reservoirs adequately inspected and maintained?	No
Comment	
1. Uisce Éireann were unable to confirm when the reservoir was last inspected.	



2. Alarms, Inhibits & Oversight Audits 2024

	Answer	
2.1	Is suitable continuous monitoring in place to verify treatment performance?	Yes
Comment		
<p>1. UV treatment is the primary form of disinfection on the Turlough water supply. The Visades T 860F duty-standby UV units are ONORM validated for a maximum flow of 19.9 m³/hour at a minimum UVT of 74.1% and UVI of 68.8 W/m². The UV units alarm depending on flow, UVI, and lamp status, all of which are continuously monitored at the plant.</p> <p>2. The supply is secondary disinfected with sodium hypochlorite to maintain at least 0.1 mg/l of residual chlorine in the distribution network at all times. The free chlorine residual target is 0.5 mg/l at the plant. The chlorine monitor read 0.62 mg/l during the audit.</p>		

	Answer	
2.2	Were online monitors operational?	No
Comment		
<p>1. At the audit, Uisce Éireann advised that the UVT monitor was not operational.</p> <p>2. A new UVT monitor had been ordered and was due to be installed within the week.</p>		

	Answer	
2.3	Are suitable alarm settings in place to alert operators to deteriorating water quality or the failure of a critical treatment process?	No
Comment		
<p>1. The plant shutdown if chlorine residual falls below 0.3 mg/l (delay 10 minutes). There is no alarm setting in place.</p> <p>2. The 10 minute time delay is considered too long to allow a timely and effective response by operational staff. Whilst a chlorine residual in excess of 0.1 mg/l is being maintained in the network, the inhibit setting (0.3 mg/l) does not protect the 0.5 mg/l chlorine target leaving the plant.</p>		

	Answer	
2.4	Are dial out arrangements suitable to allow a timely response?	No
Comment		
<p>1. At present there is only one person on the cascade system for responding to alarms; the plant operator.</p>		

		Answer
2.5	Were all findings of the UÉ alarm and inhibit review implemented?	No
	Comment	
	1. Uisce Éireann advised that all findings of the alarms and inhibit review had not been implemented.	

		Answer
2.6	Are suitable plant shutdowns/inhibits in place to prevent the entry of inadequately treated water entering the distribution network?	No
	Comment	
	1. Suitable plant shutdowns/inhibits were not in place to protect critical treatment processes and ensure a safe water supply at all times. See Point 2.3 above.	

		Answer
2.7	Is there a documented alarm response procedure?	No

		Answer
2.8	Are there appropriate procedures covering verification of alarms and inhibits status following maintenance or other work on site?	No

Recommendations

Subject	Turlough PWS - Audit Report	Due Date	25/11/2024
Action Text	<p>Uisce Éireann is responsible for ensuring a clean and wholesome supply of drinking water and should implement the following recommendation(s) without delay.</p> <ol style="list-style-type: none">1. Ensure that (i) there is an appropriate cascade system in place for responding to alarms generated at the plant (ii) there are documented site specific alarm response procedures (iii) there are appropriate procedures covering verification of alarms and inhibits status following maintenance of other works at the plant and (iv) training is provided to all relevant staff on the procedures.2. Implement the findings of the Uisce Éireann Alarms and Inhibit Review in order to protect treatment processes and treated water quality.3. Confirm the UVT monitor is operational with appropriate alarm settings and inhibits.4. Ensure appropriate alarms, inhibits and time delays are in place for chlorine residual.5. Ensure the reservoir is on the Uisce Éireann reservoir cleaning programme. <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 25/11/2024 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>		