

# 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	
<b>Name of Installation</b>	Mountshannon PWS
<b>Organisation</b>	Uisce Éireann
<b>Scheme Code</b>	0300PUB1012
<b>County</b>	Clare
<b>Site Visit Reference No.</b>	SV28372

Report Detail	
<b>Issue Date</b>	06/12/2023
<b>Prepared By</b>	Orla Harrington

Site Visit Detail			
<b>Date Of Inspection</b>	23/11/2023	<b>Announced</b>	Yes
<b>Time In</b>	10:30	<b>Time Out</b>	11:10
<b>EPA Inspector(s)</b>	Orla Harrington		
<b>Additional Visitors</b>			
<b>Company Personnel</b>	Uisce Éireann: Tommy Roche, Liam Honan Clare County Council (working in partnership with Uisce Éireann): Mark Silman.		

## > Summary of Key Findings

1. There is no treatment barrier to *Cryptosporidium* entering the water supply from the borehole serving the Mountshannon Public Water Supply. Uisce Éireann were unable to confirm the protozoal log treatment requirement for the supply and no monitoring for *Cryptosporidium* in line with *Uisce Éireann's Rationale for Determining the Frequency of Cryptosporidium in Public Water Supplies* is currently taking place at the water treatment plant.
2. There are no plant shutdowns in place based on chlorine residual levels after chlorine dosing and after contact time has been achieved. There is no automatic shutdown linked to high turbidity levels in the final water in order to prevent inadequately treated water entering the supply.
3. Mountshannon water treatment plant does not have an on-site SCADA terminal and is not connected to the county SCADA system. This limits the accessibility and oversight of plant process information and trended performance data by operational and supervisory staff.

## > Introduction

Mountshannon Public Water Supply (PWS) serves a population of approximately 713 people and produces 517 m<sup>3</sup> of treated water per day. Raw water is abstracted from a single borehole located approximately 50m from the plant. Treatment consists of chlorination. The treated water is then fed to the on-site reservoir.

The audit was undertaken to assess Uisce Éireann's performance in producing clean and wholesome drinking 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 audit included an inspection of the water treatment plant and its critical monitoring equipment and controls. The borehole was also inspected as part of the audit.



## 1. Management and Control

		Answer
1.1	Has the protozoal compliance log treatment requirement been identified for the water treatment plant?	No
<b>Comment</b>		
<p>1. The protozoal compliance log treatment requirement for the plant has been provisionally assigned as log 3 pending completion of the sanitary survey. This give a - 3 log treatment deficit.</p> <p>2. At present, there is no monitoring being carried out in accordance with the <i>Uisce Éireann Rationale for Monitoring Cryptosporidium in Public Water Supplies</i>.</p> <p>3. There is no treatment barrier to <i>Cryptosporidium</i> entering the water supply from the borehole serving the supply.</p>		



## 2. Alarms, Inhibits & Oversight Audits 2023

	Answer	
2.1	Is continuous monitoring located appropriately to verify treatment performance?	No
<b>Comment</b>		
<p>1. Clare County Council advised that elevated turbidity (&gt;1 NTU) coincides with the turning on/off of the raw water pumps and that the information provided from this monitor may be unreliable due to its location.</p> <p>2. Trend data for turbidity was not made available to the inspector prior to or during the audit.</p>		

	Answer	
2.2	Are dial out arrangements suitable to allow a timely response?	No
<b>Comment</b>		
<p>1. There is no alarm cascade system in place on this supply. The caretaker is the only person who is currently notified of the dial out alarms.</p>		

	Answer	
2.3	Were all findings of the UÉ alarm and inhibit review implemented?	No
<b>Comment</b>		
<p>1. Uisce Éireann advised that the findings of the Alarm and Inhibit review had not been finalised.</p>		

	Answer	
2.4	Are suitable plant shutdowns/inhibits in place to prevent the entry of inadequately treated water entering the distribution network?	No
<b>Comment</b>		
<p>1. There are no shutdowns based on low or high chlorine in the final water or based on high turbidity in the final water.</p>		

	Answer	
2.5	Are plant performance trends accessible by operational staff at the water treatment plant?	No

**Comment**

1. There is a continuous turbidity monitor on the raw water but the trend data was not accessible to the caretaker during the audit.

2. The residual chlorine trend was visible on the plant HMI and indicated stable trends, however it has limited functionality as the HMI screens are small, difficult to navigate and it is not possible to view trends for more than 7 days at any one time. A dedicated SCADA terminal at the the treatment plant would allow operational staff increased ease of access to plant process information and trended performance data.

**Answer**

2.6 Are plant performance trends accessible remotely?

No

**Comment**

1. Uisce Éireann advised that they do not have access to performance trend data from the plant.

**Answer**

2.7 Is there appropriate oversight of plant performance trends?

No

**Comment**

1. On the day of the audit, there was no information available on how plant performance trend data is reviewed by supervisory staff.

2. Uisce Éireann advised that the Mountshannon WTP is not linked to the county wide SCADA and they do not have access to trend data from the plant.

**Answer**

2.8 Is there appropriate oversight of alarm responses?

No

**Comment**

1. There is no cascade system in place. The caretaker is the only person getting alarms.

**Answer**

2.9 Is there a documented alarm response procedure?

No

**Comment**

1. On the day of the audit, it was not confirmed if there was a documented alarm procedure in place.

		Answer
2.10	Did staff confirm they have been trained on the alarm response procedure?	No
<b>Comment</b>		
1. On the day of the audit, it was not confirmed if staff had been trained on the alarm response procedure.		

		Answer
2.11	Are there appropriate procedures covering verification of alarms and inhibits status following maintenance or other work on site?	No
<b>Comment</b>		
1. It could not be confirmed at the audit if there are procedures covering verification of alarms following maintenance or other work on site.		

## Recommendations

<b>Subject</b>	Mountshannon PWS - Audit Report	<b>Due Date</b>	17/01/2024
<b>Action Text</b>	<p><b>Uisce Éireann is responsible for ensuring a clean and wholesome supply of drinking water and should implement the following recommendation(s) without delay.</b></p> <ol style="list-style-type: none"> <li>1. a) confirm the protozoal log treatment requirement for the plant b) identify how the log treatment deficit will be addressed and c) monitor the supply in accordance with the <i>Uisce Éireann Rationale for Monitoring Cryptosporidium in Public Water Supplies</i>.</li> <li>2. Ensure the turbidity monitor is in the correct location and representative of final water quality.</li> <li>3. Install automatic shutdown based on low and high levels for chlorine and turbidity in the final water to ensure adequate disinfection.</li> <li>4. Implement the findings of the Alarm and Inhibit review to protect treatment processes and treated water quality.</li> <li>5. Ensure that a) a formal site specific alarm response procedure is in place at the treatment plant. The procedure should clearly document the corrective actions and set out delegation of responsibilities for operational and relief staff; b) provide training to relevant staff on the requirements of the alarm response procedure.</li> <li>6. Ensure that a) the treatment plant is connected to the county SCADA system, b) that plant process information and trended performance data are available to operational and supervisory staff via SCADA and c) that there are robust systems of review and checks on water treatment plant performance data which should include regular review of SCADA trends by operational and supervisory staff.</li> <li>7. Ensure there is a procedure in place for caretakers and contractors to check and sign - off that all alarms have been correctly re-set on completion of any maintenance work.</li> <li>8. Put in place an appropriate cascade system for responding to alarms generated at the plant.</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 17/01/2023 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>		