

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	Edenderry PWS
Organisation	Uisce Éireann
Scheme Code	2500PUB1008
County	Offaly
Site Visit Reference No.	SV29532

Report Detail	
Issue Date	24/05/2024
Prepared By	Lisa Noone

Site Visit Detail			
Date Of Inspection	24/04/2024	Announced	Yes
Time In	14:00	Time Out	15:20
EPA Inspector(s)	Lisa Noone		
Additional Visitors			
Company Personnel	Uisce Éireann: Linda Doran, David Doyle Offaly County Council (in partnership with Uisce Éireann): Clodagh Graham, Brendan McEvoy		

> Summary of Key Findings

1. Alarms and inhibits in place for chlorine residual were not appropriate to ensure that treated water at the extremities of the distribution network contains at least 0.1 mg/l of chlorine.
2. The alarm set point for turbidity was inadequate to allow a timely and effective response by operational staff to elevated turbidity levels.
3. An appropriate cascade system and associated procedures are not in place for responding to alarms generated at the plant allowing for verification that an alarm has been responded to.

> Introduction

The Edenderry Water Supply (PWS) produces circa. 1,900 m³/day of water serving a population of approximately 7,000 people. Raw water is abstracted from a single boreholes located at the WTP and partially supplemented (approximately 50%) by Rhode PWS (Toberdaly WTP). Treatment consists of primary disinfection by UV, and secondary disinfection by 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 water treatment plant WTP and the procedures in place to ensure appropriate oversight of treatment processes.

> Supply Zones Areas Inspected

The borehole was inspected as part of the audit, in addition to treatment processes on-site.



1. Alarms, Inhibits & Oversight Audits 2024

		Answer
1.1	Were online monitors operational?	No
Comment		
<p>1. The combined turbidity meter was not fully operational as it is not able to pick up low level turbidity readings.</p> <p>2. Turbidity could not be assessed by plant operators via SCADA as a result, and combined turbidity readings can only be assessed via the HMI at the WTP.</p>		

		Answer
1.2	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 following setpoints are in place at the WTP for chlorine residual and turbidity:</p> <p>Chlorine residual (3 minute time delay):</p> <ul style="list-style-type: none"> low low (shutdown): 0.2 mg/l; low (alarm): 0.25 mg/l <p>Turbidity (15 minute time delay):</p> <ul style="list-style-type: none"> high (alarm): 0.5NTU high high (shutdown): 1NTU. <p>2. Whilst a chlorine residual in excess of 0.1mg/l is being maintained in the network, the low and low-low chlorine alarm set-points are below the target chlorine residual concentration of 0.8mg/l leaving the WTP. In addition, the low and low low alarms are not appropriate to ensure that treated water at the extremities of the distribution network contains at least 0.1 mg/l residual chlorine to confirm adequate secondary disinfection.</p> <p>3. The 15 minute time delay for turbidity is considered too long to allow a timely and effective response by operational staff.</p>		

		Answer
1.3	Are dial out arrangements suitable to allow a timely response?	No
Comment		
<p>1. Critical alarms are dialled-out on a group-basis to the site caretakers and operational personnel. Alarms are responded to on a hierarchical basis, depending on who is on-call, however there is no way of verifying that alarms have been responded to.</p>		

Answer

1.4	Is there a documented alarm response procedure?	No
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1.5	Are there appropriate procedures covering verification of alarms and inhibits status following maintenance or other work on site?	<table border="1"> <tr> <td data-bbox="1157 235 1428 324" style="text-align: center;">Answer</td> </tr> <tr> <td data-bbox="1157 324 1428 392">No</td> </tr> </table>	Answer	No
Answer				
No				

Comment

1. There are no procedures covering verification of alarms and inhibits following maintenance. This is currently being addressed on a county-wide basis.

Recommendations

Subject	Edenderry PWS Audit Recommendations	Due Date	26/06/2024
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. 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.2. Repair or replace the turbidity meter probe currently in use and ensure all monitors are appropriately maintained.3. Review alarm set points and time delays in place for chlorine residual and turbidity4. 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.5. Put a documented procedure in place for responding to and escalating all alarms generated at the WTP. The procedure should clearly document the corrective actions and set out delegation of responsibilities for operational and relief staff. Ensure all staff are trained in this procedure <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 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>		