

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	Rockhill
Organisation	Uisce Éireann
Scheme Code	1900PUB0056
County	Limerick
Site Visit Reference No.	SV30652

Report Detail	
Issue Date	13/12/2024
Prepared By	Orla Harrington

Site Visit Detail			
Date Of Inspection	13/11/2024	Announced	Yes
Time In	10:00	Time Out	10:45
EPA Inspector(s)	Orla Harrington		
Additional Visitors			
Company Personnel	Uisce Éireann: Susan Cook, Sharon O'Dwyer, Ted Ahern. Limerick City and County Council (working in partnership with Uisce Éireann): Neal Boyle, Willie Hurley.		

> Summary of Key Findings

1. It was not possible to verify the performance of the UV disinfection systems as the continuous UVT monitor at the plant is out of operation. The UVT monitor is required to verify that the UV system, which provides primary disinfection operates within its validated range at all times.
2. The low alarm set points on the chlorine dose (monitor CL001) are too low and do not protect the site specific target level.
3. Uisce Éireann has yet to undertake an Alarm and Inhibit Review of the Rockhill water treatment plant.

> Introduction

The Rockhill public water supply serves 156 m³/day to a population of approximately 311 from a single borehole. Treatment consists of primary disinfection by UV via duty and standby UV units, and secondary disinfection by chlorination. Treated water is then pumped 400m to the reservoir before distribution.

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 treatment processes were inspected during the audit and monitoring and control systems including alarm set-points were reviewed.



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. Management and Control

		Answer
2.1	Has the protozoal compliance log treatment requirement been identified for the water treatment plant?	No
Comment		
1. Uisce Éireann said that a source sanitary survey must be completed prior to confirming the protozoal log treatment requirement for the plant.		



3. Alarms, Inhibits & Oversight Audits 2024

		Answer
3.1	Is suitable continuous monitoring in place to verify treatment performance?	No
Comment		
<p>1. UV disinfection is the primary source of disinfection followed by secondary disinfection via chlorination on the Rockhill water supply. The ATG UVLX-1800-6 duty / standby UV units are validated to the USEPA validation standard for a flow of 63 m³/hour at a minimum UVT of 75 %.</p> <p>2. Uisce Éireann stated that the online UVT monitor has not been operational for six months. The UVT monitor is required to verify that the UV system, which provides primary disinfection operates within its validated range at all times. Uisce Éireann said that UVT readings are taken once every three weeks with a handheld monitor, however records were not available at the plant for inspection on the day of the audit. It was not confirmed whether the HSE had been informed of the absence of critical equipment (UVT monitor) to determine risk to public health.</p>		

		Answer
3.2	Were online monitors operational?	No
Comment		
<p>1. As outlined in Section 3.1 above, the UVT monitor has not been operational for six months.</p>		

		Answer
3.3	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. An alarm signals when the chlorine monitor (CL001) falls below 0.40 mg/l. The plant shutdown if chlorine residual falls below 0.3 mg/l. These alarms and inhibits do not protect the 0.6 mg/l chlorine target to ensure 0.1 mg/l is met in the distribution network at all times. Uisce Éireann's chlorine contact time calculations demonstrate that the final treated water is achieving the World Health Organisation minimum recommended value of 15 mg.min/l however there is no residual chlorine monitor to verify contact time is being maintained. Uisce Éireann confirmed that primary disinfection is provided by UV disinfection.</p> <p>2. There are no alarm and inhibit setpoints in operation for UVT as the UVT monitor is out of operation. The UVT is required to verify that the UV system, which provides primary disinfection operates within its validated range at all times.</p> <p>3. The pH alarm settings do not protect the treated water statutory limit of between 6.5 and 9.5 pH units.</p>		

		Answer
3.4	Has UÉ carried out an alarm and inhibit review at the water treatment plant?	No
Comment		

1. Uisce Éireann have not undertaken an alarm and inhibit review at the water treatment plant.

		Answer
3.5	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 safe water supply at all times. See Point 3.3 above.		

		Answer
3.6	Are plant performance trends accessible by operational staff at the water treatment plant?	No
Comment		
1. Trend data is not available to operational staff at the water treatment plant. Uisce Éireann confirmed that the current telemetry system is not fit for purpose and that a new server is required. It was confirmed that repairs are scheduled for Quarter 1 2025.		
2. It was also confirmed that plant alarm and inhibits remain fully functional as staff have the ability to remotely view real time process data via remote log in to confirm status of treatment plant operations.		

		Answer
3.7	Is there a documented alarm response procedure?	No

Recommendations

Subject	Rockhill PWS - Audit Report	Due Date	02/01/2025
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. UV Disinfection: (i) confirm that the UVT monitor has been replaced and is operational with appropriate alarms/inhibits in place and (ii) ensure when consulting with the HSE on incidents, that an absence of critical monitoring equipment used to verify the adequateness of treatment is communicated to warrant an informed assessment of the risk to human health. 2. Review alarm and inhibit settings at the plant for chlorine and pH to protect target levels and ensure statutory limits are protected. 3. Undertake an Alarm and Inhibit Review of the plant and implement the findings to protect treatment processes and treated water quality. 4. Confirm the protozoal log treatment requirement for the raw water source and provide details of how any protozoal log treatment deficit, if identified, will be addressed. 5. Confirm the reservoir is on the Uisce Éireann reservoir cleaning programme. 6. Ensure that i) 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 staff and relief staff; ii) provide training to relevant staff on the requirements of the alarm response procedure. 7. Resolve the telemetry issue at the water treatment plant to ensure that treatment process data is captured and available at all times. <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 02/01/2025 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>		