

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	Carron PWS
Organisation	Uisce Éireann
Scheme Code	0300PUB1031
County	Clare
Site Visit Reference No.	SV31957

Report Detail	
Issue Date	11/06/2025
Prepared By	Orla Harrington

Site Visit Detail			
Date Of Inspection	15/04/2025	Announced	Yes
Time In	11:00	Time Out	12:00
EPA Inspector(s)	Orla Harrington		
Additional Visitors			
Company Personnel	Uisce Éireann: Tommy Roche, Barry O'Mahony. Clare County Council (working in partnership with Uisce Éireann): Martin Carkill.		

> Summary of Key Findings

1. Carron water treatment plant was operating satisfactorily on the day of the audit.
2. Supporting UV validation information was unavailable to enable an assessment of the suitability of UV alarms and inhibits to verify that the UV disinfection system is operating within its validated range.
3. Uisce Éireann were unable to confirm the protozoal log treatment requirement for the supply.

> Introduction

The Carron public water supply serves 41 m³/day to a population of 62 from a spring source. Treatment includes two carbon pressure filters, UV disinfection and chlorination. The treatment reported on EDEN is incorrect and should be updated. The treated water is then fed to a reservoir located approximately 1 km from the water treatment plant.

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 plant and associated equipment and monitors were inspected during the audit.



1. Disinfection

1.1

Is the UV system suitably validated?

Answer

No

Comment

1. UV disinfection provides the primary source of disinfection (via a VISADES T200 UV reactor) followed by secondary disinfection via chlorination.

2. The UV site specific target dose is 40mJ/cm² and was being met on the day of the audit.

3. The UVI monitor was reading 66.2 W/m² on the day of the audit. There is a plant shutdown set point for UVI at <19 W/m². A copy of the UV validation certificate was not available on the day of the audit and due to the lack of UV trend data submitted in advance of the audit; it was not possible to determine if alarm and shutdown set points were appropriate to ensure the UV is operating within its validated range at all times.

4. There is a shutdown set point for max flow at 5 m³/hr. Flow was 2.32 m³/hr on the day of the audit.



2. Management and Control

2.1

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

Answer

No

Comment

1. A Source and Sanitary Survey has not been completed for the Carron public water supply and so the protozoal log treatment requirement for the plant cannot be verified.



3.1

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 chlorine monitor, CL001, monitors chlorine residual levels post the dosing point. The CL001 time delay of 1800 seconds (30 minutes) does not allow for a timely response should an inadequate chlorine dose occur. The EPA's Water Treatment Manual: Disinfection states "Low level alarms are critical ... and a maximum of 0.1 mg/l below the target concentration for a maximum of 5 minutes would be recommended".

2. Chlorine monitor CL002 monitors the chlorine residual leaving the plant. The low alarm setpoint of 0.20mg/l on CL002 is too low as the site specific target concentration set for CL002 is 1.4mg/l.

3. Due to the lack of UV trend data and the UV validation certificate; it was not possible to determine if alarm and plant shutdown set points were appropriate to ensure the UV disinfection system was operating within its validated range at all times.

3.2

Are critical alarms dialled out to operators?

Answer

No

Comment

1. The caretaker is the only person who is currently notified of the dial out alarms.

3.3

Are suitable plant shutdowns/inhibits in place to prevent inadequately treated water entering the distribution network?

Answer

No

Comment

1. Refer to question 3.1 above.

3.4

Are plant performance trends accessible by operational staff at the water treatment plant?

Answer

No

Comment

1. Readings from the UV disinfection units were not trending on SCADA.

		Answer
3.5	Are plant performance trends accessible remotely?	No
Comment		
1. UV disinfection trend data was not provided prior to the audit.		

		Answer
3.6	Did plant performance trends demonstrate that data was being captured and recorded at all times?	No
Comment		
1. There was no access to trended operational data for the UV disinfection systems.		

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

Recommendations

Subject	Carron PWS - Audit Report	Due Date	11/07/2025
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. Confirm the protozoal log treatment requirement for the Carron water treatment plant. 2. (i) Submit a copy of the UV validation certificate; (ii) submit one month of UV trend data to verify the UV unit is operating within its validated operating range and (iii) confirm the UV unit alarm setpoints and shutdown levels meet the validation criteria of the UV units. 3. Review and amend warning alarms / plant shutdown setpoint delays for chlorination, as detailed in the EPA Water Treatment Manual: Disinfection. 4. Provide a means of transmitting trended data to the county SCADA so that trends are available to operational and supervisory staff to inform treatment plant operations. 5. (i) Put a documented procedure in place for operators and contractors covering verification of alarms and inhibit status following maintenance or other work onsite and (ii) ensure staff are trained in the procedure. 6. Ensure that there is an appropriate cascade system in place for responding to alarms generated at the plant which allows for verification that an alarm has been responded to. 7. Update EDEN with the correct treatment types that are in place at the treatment plant. <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 11/07/2025 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>		