

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	Cappamore Foilean PWSS
Organisation	Uisce Éireann
Scheme Code	1900PUB2001
County	Limerick
Site Visit Reference No.	SV33150

Report Detail	
Issue Date	02/10/2025
Prepared By	Orla Harrington

Site Visit Detail			
Date Of Inspection	25/09/2025	Announced	Yes
Time In	11:00	Time Out	11:45
EPA Inspector(s)	Orla Harrington		
Additional Visitors			
Company Personnel	Uisce Éireann: Tommy Roche, Liam Fanning.		

> Summary of Key Findings

1. A Boil Water Notice was placed on the Cappamore Foileen public water supply on 26/09/2023 in response to the detection of *Cryptosporidium*. The Boil Water Notice was lifted on 09/05/2025 following the installation and commissioning of a new Ultraviolet disinfection system at the water treatment plant and the receipt of four clear *Cryptosporidium* samples.
2. The audit found that the Ultraviolet disinfection system was operating within its validated range, and there were appropriate alarms and controls in place to ensure adequate disinfection of the Cappamore Foileen water supply.
3. Uisce Éireann provided four weeks of operational data (flow, UVT) which demonstrates satisfactory UV performance.

> Introduction

The Cappamore Foileen public water supply (PWS) serves a population of 2,416 and produces 1,162 m³/day. The main source of the supply is the Foileen spring, however this can be supplemented by two boreholes if required.

Treatment consists of disinfection by chlorination and a newly installed UV disinfection system. The treatment reported on EDEN is incorrect and should be updated.

The supply was subject to a Boil Water Notice from 26/09/2023 until 09/05/2025 following the detection of *Cryptosporidium* on the 20/09/2023 and 28/09/2023. Uisce Éireann's response to the detections involved the installation of a duty/standby UV disinfection system with associated alarms and inhibits. The audit was undertaken to assess the performance of Uisce Éireann in providing clean and wholesome drinking water following the installation of a new UV disinfection system in May 2025.

> Supply Zones Areas Inspected

The audit comprised of an on site inspection of the new UV disinfection system at Cappamore Foileen water treatment plant.



1. Disinfection

1.1

Is the UV system suitably validated?

Answer

Yes

Comment

1. A new UV disinfection system has been installed to provide a barrier against *Cryptosporidium*. It is provided by an ATG WF-430-12 UV disinfection system consisting of duty/standby units with automatic switchover if the duty UV fails for any reason. There is also a scheduled changeover of the UV units every two days.

2. The units are validated under the USEPA validation protocol and Uisce Éireann provided a validation letter from the UV manufacturer prior to the audit, confirming that the UV system is validated to operate within a specified range. The UV units are validated to operate at a minimum UVT of 70% for a maximum design flow of 123 m³/hr. The UV units are linked to a continuous UVT and flow monitor. On the day of the audit, the HMI displayed the following for duty unit No. 2: UVT 103%, UV Dose 119 mJ/cm² and flow 38 m³/hr. While the UVT online monitor was reading >100% during the audit, trend data submitted was satisfactory.

3. The minimum validated dose is 40 mJ/cm² and the plant is alarmed and programmed to automatically shutdown if the UV dose falls below 40 mJ/cm² (delay of 180 seconds). There is also automatic shutdown of the UV system if the UVT reaches 75% (delay of 180 seconds). Uisce Éireann advised that the UV units provide a validated UV disinfection specification suitable for a 3 log inactivation for *Cryptosporidium* and *Giardia*.

4. The trends for the UV units are available to view on the countywide SCADA which is accessible to all plant operators on their mobile devices. A copy of one month trend data was provided by Uisce Éireann and demonstrates that the UV units are operating effectively.

1.2

Is there a chlorine residual ≥ 0.1 mg/l throughout the network?

Answer

Yes

Comment

1. 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.

2. The free chlorine residual target is 0.6 mg/l at the plant. The chlorine monitor read 0.84 mg/l during the audit.

3. Chlorine residual monitoring is being carried out on the network on a daily basis. At the audit, chlorine residual monitoring results for the period 15/09/2025 to 24/09/2025 were inspected and satisfactory.



2. Management and Control

2.1

Are online monitors operational?

Answer

No

Comment

1. The UVT online monitor on the UV treatment system was reading > 100 % during the audit.
2. The SCADA printouts submitted were satisfactory where UVT readings had a maximum reading of 100%.
3. There was a calibration sticker on the UVT monitor which was in date.

2.2

Have the recommendations from the previous EPA audit been satisfactorily addressed?

Answer

Yes

Comment

1. The audit found that all recommendations from the previous audit report dated 04/10/2023 have been fully completed.

Recommendations

Subject	Cappamore Foileen PWS - Audit Report	Due Date	03/11/2025
Action Text	<p>Uisce Éireann is responsible for ensuring a clean and wholesome supply of drinking water and should implement the following recommendation.</p> <ol style="list-style-type: none">1. Provide confirmation that the UVT monitor is operating correctly.2. Update EDEN with the correct treatment that is in place at the Cappamore Foileen water 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 03/11/2025 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>		