

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	Waterville PWS 075H
Organisation	Uisce Éireann
Scheme Code	1300PUB1057
County	Kerry
Site Visit Reference No.	SV30315

Report Detail	
Issue Date	28/08/2024
Prepared By	Joanne Creedon

Site Visit Detail			
Date Of Inspection	01/08/2024	Announced	Yes
Time In	11:46	Time Out	12:11
EPA Inspector(s)	Joanne Creedon		
Additional Visitors			
Company Personnel	Uisce Éireann: Tommy Roche. Electrical & Pump Services Ltd (working in partnership with Uisce Éireann): Denise Collins, Sean Matthews, Neil Charlton.		

> Summary of Key Findings

- 1) Disinfection consists of chlorination and UV.
- 2) There are no automatic shutdowns at the water treatment plant linked to residual chlorine alarm setpoints.
- 2) Switchover between the UV units is manual.

> Introduction

The Waterville Public Water Supply (PWS) produces approximately 1,399m³/d of water serving a population of 1,404 (EDEN 2023). The audit focused on the disinfection system at Waterville PWS.

> Supply Zones Areas Inspected

This audit assessed the chlorination and UV disinfection system at Waterville PWS.



1. Disinfection Audits 2024

		Answer
1.1	Is chlorination used for primary disinfection?	No
	Comment	
	Secondary disinfection.	
		Answer
1.2	Did Uisce Éireann confirm the type of chlorine disinfectant in use?	Yes
		Answer
1.3	Are there duty and standby chlorine dosing pumps in place?	Yes
		Answer
1.4	Is there automatic switchover in the event of failure of one of the chlorine dosing pumps?	Yes
		Answer
1.5	Is the chlorine dosing rate flow proportional?	Yes
		Answer
1.6	Is there a continuous residual chlorine monitor, with alarm, to verify chlorine dosing is taking place at the target level?	Yes
		Answer
1.7	Is there a continuous residual chlorine monitor, with alarm, at a suitable sample location after contact time has been completed?	Yes
		Answer
1.8	Can data trends from the online residual monitor be viewed on site?	Yes
		Answer
1.9	Are there low and high chlorine alarm settings on each chlorine monitor?	Yes

		Answer
1.10	Is there a documented alarm response procedure for responding to chlorine alarms?	Yes
		Answer
1.11	Have staff been trained on the chlorine alarm response procedure?	Yes
		Answer
1.12	Are chlorine alarms dialled out via a cascade system to allow a timely response by plant operators?	Yes
		Answer
1.13	Is there automatic shutdown of the supply in the event of the chlorine level dropping below the low level or rising above the high chlorine alarm setting?	No
		Answer
1.14	Are service due / monitoring instrument calibration dates for the chlorine monitors within date?	Yes
		Answer
1.15	Is the site specific target contact time being achieved?	Yes
		Answer
1.16	Is the residual chlorine level \geq 0.1 mg/l at the extremity of the distribution network?	No
		Answer
1.17	Is monitoring of network residual chlorine undertaken several times per week?	No
		Answer
1.18	Is UV treatment used for primary disinfection?	Yes
		Answer
1.19	Are there duty and standby UV units in operation?	Yes

		Answer
1.20	Is there automatic changeover between the duty and standby UV units?	No
	Comment	
	Manual switchover.	
		Answer
1.21	Is there automatic shut-off of the supply in the event of UV units failing or operating outside of their validated range?	Yes
		Answer
1.22	Is there continuous monitoring of the UV units to verify operation within validation range at all times?	Yes
		Answer
1.23	Can data trends from the online UV monitor(s) be viewed on-site?	Yes
		Answer
1.24	Is there a documented alarm response procedure for responding to UV alarms?	Yes
		Answer
1.25	Have staff been trained on the UV alarm response procedure?	Yes
		Answer
1.26	Are UV alarms dialled out via a cascade system to allow a timely response by plant operators?	Yes
		Answer
1.27	Are service due / monitoring instrument calibration dates for the UV units within date?	Yes

	Answer
1.28 Is the UV disinfection system validated to an appropriate international standard ?	Yes

	Answer
1.29 Did UÉ confirm that the UV disinfection system is operating within the validated range?	Yes

Recommendations

Subject	Waterville PWS - Disinfection Audit	Due Date	28/09/2024
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. Install automatic shutdown of the plant linked to the low and high residual chlorine alarm settings.2. Ensure that residual free chlorine concentrations in the network extremities are at least 0.1 mg/l to maintain adequate secondary disinfection.3. Ensure monitoring of residual chlorine is undertaken several times a week at different points of the network to include the network extremities.4. Ensure there is automatic switch over between the duty and standby UV units in the event of failure of one of the UV disinfection units. <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 28/09/2024 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>		