

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	DCC Zone 6
Organisation	Uisce Éireann
Scheme Code	0700PUB1007
County	Dublin
Site Visit Reference No.	SV28231

Report Detail	
Issue Date	23/10/2023
Prepared By	Michelle Roche

Site Visit Detail			
Date Of Inspection	02/10/2023	Announced	Yes
Time In	11:00	Time Out	13:05
EPA Inspector(s)	Michelle Roche David O'Malley		
Additional Visitors	Veronica Boland		
Company Personnel	Uisce Éireann: Hugh Gallagher, Jessica Evans, Edward Haythornthwaite. Veolia (operating under DBO contract to Uisce Éireann): Charlotte O'Hare		

> Summary of Key Findings

1. Varray Water Treatment Plant was operating satisfactorily on the day of the audit.
2. The UVT alarm and inhibit setpoints did not correspond to the UVT setpoint outlined in the validation documentation based on the volume of flow going through the WTP, on the day of the audit.
3. Veolia and Uisce Éireann agreed to review all UV alarm and inhibit setpoints and amend to comply with the validation documentation.

> Introduction

Vartry Water Treatment Plant is the fourth largest water treatment plant in Ireland and provides drinking water to over 200,000 people in North Wicklow and South Dublin. Treatment at the plant comprises the following:

- Raw water conditioning to maintain the optimum coagulation pH;
- Coagulation, flocculation and clarification across 4 Dissolved Air Flotation (DAF) units;
- Rapid gravity filters across 8 dual media (sand & anthracite) rapid gravity filters;
- UV disinfection for protozoal inactivation;
- Chlorine disinfection to provide primary disinfection using sodium hypochlorite;
- Fluoridation;
- Treated water pH correction;
- Return of backwash supernatant to the head of the works (the planning permission prohibits discharge to the Vartry River);
- Sludge treatment facilities.

The audit was conducted as a full audit of the water treatment plant with a focus on the alarms, inhibits and management oversight of the water treatment plant.

> Supply Zones Areas Inspected

The audit inspected all aspects of the treatment process. Continuous online turbidity trends, UV trends and chlorine residual trends were submitted and assessed prior to the site visit.



	Answer
1.1	Are suitable plant shutdowns/inhibits in place to prevent the entry of inadequately treated water entering the distribution network?
	No
Comment	
<p>1. UV validation documentation was submitted prior to the audit outlined limits for minimum UVT corresponding to maximum water flow through the UV unit.</p> <p>2. UV flow data submitted prior to the audit showed UV flow peaking at approximately 3,400m³/hr over the two week period prior to the audit. According to the UV validation documentation a UV flow of 3,400m³/hr should have a corresponding minimum UVT of 85%.</p> <p>3. UVT alarm and inhibit setpoints were 87% and 80% respectively at the time of the audit, meaning that the inhibit setpoint was too low to comply with the validation documentation based on the UV flow examined.</p> <p>4. Final water UVT data over the two week period prior to the audit showed UVT between 90 - 95% at all times, confirming that the UV disinfection treatment was operating satisfactorily.</p>	

Recommendations

Subject	Vartry WTP - Recommendations	Due Date	23/11/2023
Action Text	<p>Uisce Éireann is responsible for ensuring a clean and wholesome supply of drinking water and should implement the following recommendation without delay.</p> <ol style="list-style-type: none">1. Review alarm and inhibit setpoints for UVT and flow, on both UV units, to meet the validation criteria outlined on the validation documentation, provided at the audit. <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 23/11/2023 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>		