

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	Foxford PWS
Organisation	Uisce Éireann
Scheme Code	2200PUB1014
County	Mayo
Site Visit Reference No.	SV30482

Report Detail	
Issue Date	21/10/2024
Prepared By	Veronica Boland

Site Visit Detail			
Date Of Inspection	17/09/2024	Announced	Yes
Time In	10:35	Time Out	12:50
EPA Inspector(s)	Veronica Boland		
Additional Visitors			
Company Personnel	Uisce Éireann: Brian Conmy, Catherine Maughan, Marie Finneran, Siobhán Sheridan. Mayo County Council (working in partnership with Uisce Éireann): Pat Forde, Deirdre Beattie.		

> Summary of Key Findings

1. The audit found that Foxford Water Treatment Plant (WTP) was operating and performing well in providing clean and wholesome water to the Foxford Public Water Supply (PWS).
2. The chlorine low level alarms are not in accordance with the site specific chlorine contact calculation sheet for Foxford WTP and *EPA Treatment Manual: Disinfection*.

> Introduction

The Foxford WTP serves a population of 1,649 people (EDEN figure) and produces an average of 650m³/day of treated water (design capacity of the plant is 800 m³/day). The raw water is gravity fed to Foxford WTP from Lough Muck located 7km away. A source and sanitary survey was completed in May 2021 and a Log 3 requirement is assigned to Foxford WTP. The treatment comprises pH correction, coagulation, clarification, two continuous self cleaning sand filter units, polishing circular slow sand filter, final water pH correction and chlorination. The treated water is pumped to an on-site reservoir with a capacity volume of 430m³.

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 WTP and the procedures in place to ensure appropriate oversight of treatment processes.

> Supply Zones Areas Inspected

The audit included a site visit of the treatment processes at Foxford WTP. The abstraction source and treated water reservoir were not visited as part of the audit.



1. Alarms, Inhibits & Oversight Audits 2024

	Answer	
1.1	Are suitable alarm settings in place to alert operators to deteriorating water quality or the failure of a critical treatment process?	No
Comment		
1. The CL002 'low' level chlorine warning alarm at the CT validation point (outlet of the reservoir) is currently set at 0.5 mg/l. This does not correlate with the site specific minimum free chlorine requirement of 0.7 mg/l as per the site specific contact time calculation sheet.		

	Answer	
1.2	Are suitable plant shutdowns/inhibits in place to prevent the entry of inadequately treated water entering the distribution network?	No
Comment		
1. The chlorine residual (CL002 monitor) 'low' shutdown alarm setpoint is 0.4 mg/l with a time delay of 5 minutes, however the site specific minimum residual chlorine requirement is 0.7 mg/l as per the contact time calculation sheet (dated 2016) submitted in the pre-audit information.		

	Answer	
1.3	Is the chlorine contact time calculation correct?	No
Comment		
1. The site specific chlorine contact calculation sheet (dated 2016) states a contact tank volume of 249.90 m ³ . Staff advised at the audit that the contact time is achieved in the reservoir and the volume of the reservoir is 430m ³ .		
2. The site specific chlorine contact calculation sheet states a maximum flow of 28.5m ³ . Staff advised at audit that there is an average flow of 34 m ³ /hour into the plant and that 3m ³ of this flow is used for process water. The auditor noted that the flow entering the plant at time of audit was 34.156 m ³ /hr.		
3. The Foxford WTP has undergone various upgrades since the site specific chlorine validation calculation was completed (26/01/2016). The WTP has undergone the Uisce Éireann Disinfection Upgrade in 2017, the previous rectangular slow sand filters were decommissioned and replaced with two new self cleaning sand filtration units (Filters 1 and 2) in 2020 and a circular slow sand filter 'Filter 4' is still in operation and is located post Filters 1 and 2 and pre chlorination.		

Recommendations

Subject	Foxford PWS Audit 2024 - Recommendations	Due Date	16/11/2024
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. Review (i) the chlorine contact time (Ct) calculation for the supply and if relevant, (b) change the low chlorine alarm and shutdown setpoints to ensure they align with the site specific requirements for minimum chlorine residual and with the guidance outlined in the <i>EPA Water Treatment Manual:Disinfection</i> as regards levels and time delays. <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 16 November 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>		