

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	Cavan RWSS
Organisation	Uisce Éireann
Scheme Code	0200PUB0100
County	Cavan
Site Visit Reference No.	SV29600

Report Detail	
Issue Date	22/03/2024
Prepared By	Veronica Boland

Site Visit Detail			
Date Of Inspection	05/03/2024	Announced	Yes
Time In	10:55	Time Out	13:15
EPA Inspector(s)	Veronica Boland Ruth Barrington		
Additional Visitors			
Company Personnel	Uisce Éireann: Fionnuala Bonner, Yvonne McMonagle. Cavan County Council (working in partnership with Uisce Éireann): Ciaran Fitzpatrick, Eamon Boylan, Ben O'Reilly.		

> Summary of Key Findings

1. The audit found that the Cavan RWSS WTP was operating and performing well in providing clean and wholesome water to the public supply.
2. The time delays in place (15 minutes) for high and low chlorine do not meet the 5 minute time delay recommended in the *EPA Water Treatment Manual: Disinfection*.

> Introduction

The Cavan Regional Water Supply Scheme (Cavan RWSS) serves a population of 11,620 people (EDEN figure), including Cavan Regional Hospital, with 210 m³/hour (24 hours a day) of treated water produced at the Cavan RWSS water treatment plant. The treatment comprises pH adjustment, manganese removal (via potassium permanganate), coagulation, flocculation, clarification, rapid gravity filtration, chlorination and fluoridation. The raw water abstraction is from Lough Acanon.

The audit was undertaken to assess Uisce Éireann's performance in producing clean and wholesome water with a focus on the protozoal barriers in place at the water treatment plant (WTP).

> Supply Zones Areas Inspected

The audit included a site visit of the treatment processes at Cavan RWSS water treatment plant (WTP), interviews with staff, and reviews of online monitoring data and controls. The abstraction source and treated water reservoir were not visited as part of the audit.



1. Disinfection

	Answer
1.1 Are duty and standby chlorine pumps/ UV units in operation?	No
Comment	
1. Duty and standby chlorine dosing pumps are in place but only one pump was available for operation during the audit, due to duty pump failure on 04 March 2024. Cavan Co Co advised that they were awaiting maintenance team to re-instate the duty chlorine pump.	



2. Management and Control

	Answer
2.1	Are suitable alarm settings in place to alert operators to deteriorating water quality and/or the failure of a critical treatment process?
	No
Comment	
1. The chlorine alarm delay setpoints were all set at 900 seconds (15 minutes). The time delays in place do not meet the 5 minute time delay recommended in the <i>EPA Water Treatment Manual: Disinfection</i> .	

	Answer
2.2	Are instrument calibrations within date?
	No
Comment	
1. The potassium permanganate dosing pumps calibration stickers indicated that the last service was 26/02/2023. There was no record on the stickers of the pumps being calibrated since that date.	
2. The polymer dosing pumps had no calibration stickers to indicate when they were last calibrated and when the next calibration was due.	



3. Protozoal Barriers Audits 2024

		Answer
3.1	Are the filters designed and managed in accordance with EPA guidance?	No
Comment		
<p>1. There are four rapid gravity filters in place at the treatment plant. There are no filter media depth gauges in place to visually assess filter media depth.</p> <p>2. Filter media was last replaced in 2017 and there was no record of the media depth and condition having been assessed since that time.</p> <p>3. While filter operation and filter backwashes are visually assessed by staff, there are a number of regular operational checks outlined in Table 5.4 of the <i>EPA Water Treatment Manual: Filtration</i> that are not being completed regularly at the treatment plant including media depth check, media coring, filter media integrity assessment.</p>		

		Answer
3.2	Did treatment process trends demonstrate that data was being captured and recorded at all times?	Yes
Comment		
<p>1. Turbidity spikes above 1 NTU were evident in the turbidity trends viewed on SCADA, all readings were less than 3 minutes in duration. These spikes were attributed to sample location and sample line issues when the on-site reservoir levels drop during backwash.</p>		

Recommendations

Subject	Cavan Protozoal Audit Recommendations	Due Date	19/04/2024
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. Re-instate duty chlorine pump and standby pump functions.2. Review and implement alarm and inhibit delay set points for chlorine, as detailed in the <i>EPA Water Treatment Manual: Disinfection</i>.3. Ensure that: (i) a filter media depth gauge is installed on each filter (ii) the design depth of the filter media is confirmed (iii) a filter media assessment of each filter is completed having regard to the <i>EPA Water Treatment Manual: Filtration</i>.4. Conduct regular operational checks of filters at the treatment plant and maintain adequate records of these checks in accordance with the <i>EPA Water Treatment Manual: Filtration</i>.5. Investigate the feasibility of locating the sample point for final water turbidity to another location to ensure a representative reading of the final water turbidity. <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 19 April 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>		