

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	Ashbourne/Ratoath
Organisation	Uisce Éireann
Scheme Code	2300PUB2042
County	Meath
Site Visit Reference No.	SV28425

Report Detail	
Issue Date	20/12/2023
Prepared By	Lorcan Farrell

Site Visit Detail			
Date Of Inspection	07/12/2023	Announced	No
Time In	11:50	Time Out	12:50
EPA Inspector(s)	Lorcan Farrell		
Additional Visitors			
Company Personnel	Uisce Éireann: Daniel Behan, Jamie Blacoe. Meath County Council (Working in partnership with Uisce Éireann): Peter Lynch, Helen McDonnell, Norbert McMahon.		

> Summary of Key Findings

1. The outlet of Rath Reservoir is not an appropriate point to verify adequate chlorine contact time has been achieved at Rath Water Treatment Plant (WTP). This is due to the reservoir receiving treated water from Curragha WTP and Windmill Hill Reservoir in addition to the treated water supplied by Rath WTP.
2. Issues with airlock in the sodium hypochlorite dosing pumps is preventing auto-changeover between pumps in the event of a dosing failure occurring.

> Introduction

Ashbourne/Ratoath PWS serves a population of 12,434 (EDEN figure) and is supplied in part by Rath WTP. The treatment plant produces approximately 510 m³/day and sources its water from two boreholes located in close proximity to the plant. Treatment of the combined output of the boreholes consists of pre-chlorination and pressure filtration.

The audit was undertaken to assess Uisce Éireann's performance in producing clean and wholesome water.

> Supply Zones Areas Inspected

The audit included a site tour of Rath WTP.



1. Disinfection

1.1

Is the residual chlorine monitored at a suitable sample location after contact time has been completed?

Answer

No

Comment

1. The chlorine contact time validation calculation submitted before the audit identifies the outlet of Rath Reservoir located at the treatment plant as the point of chlorine contact time validation. Rath Reservoir receives water from Rath WTP (~20 m³/hr), Curragha WTP (~40 m³/hr) and from Windmill Hill Reservoir (~80 m³/hr) and so can not be considered an appropriate point for verification of primary disinfection for Rath WTP.

2. Meath County Council staff confirmed that the treatment plant was assessed for upgrade works under the Uisce Éireann Disinfection Programme in 2019. It was confirmed that works were not progressed under the disinfection programme as Rath WTP was selected to be progressed under the Uisce Éireann Water Treatment Plant Upgrade Programme. Meath County Council Staff confirmed that the preliminary design for the upgrades has been developed however, no timescales were available for when works would start or conclude. Chlorine contact time verification was confirmed to be included under these upgrade works.

3. There is a residual chlorine monitor (with associated alarms and plant shutdown setpoints) located after sodium hypochlorite dosing and pressure filtration at the treatment plant. These settings ensure a suitable plant shutdown response to a dosing failure.

4. There is also a residual chlorine monitor located on the outlet of Rath Reservoir with both high and low warning alarms in place.

5. A copy of the Uisce Éireann Incident Communications Response Guidance Form was present on the wall of the treatment plant containing site specific trigger levels protecting critical plant processes at the treatment plant. However, the Incident Communications Response Guidance Form was missing post sodium hypochlorite dosing shutdown setpoints.



2. Management and Control

	Answer
2.1 Are suitable plant shutdowns/inhibits in place to prevent the entry of inadequately treated water entering the distribution network?	No
Comment	
<p>1. A plant shutdown setpoint of 1 NTU with a 15 minute time delay is in place at the treatment plant based on the output of the final water turbidity monitor. This shutdown time delay is not in accordance with the 3 minute delay specified in Section 5.5.1 of the <i>EPA Water Treatment Manual: Filtration</i>.</p> <p>2. There is no run to waste facility at the treatment plant. Meath County Council confirmed that provision of a run to waste system may be considered for inclusion under the Uisce Éireann Water Treatment Plant Upgrade Programme.</p>	

	Answer
2.2 Are suitable alarm settings in place to alert operators to deteriorating water quality and/or the failure of a critical treatment process?	No
Comment	
<p>1. There is a high final water turbidity shutdown setpoint of 1NTU in place at the treatment plant. However, there were no corresponding warning alarm setpoints in place set at a lower level to alert the operator in the event of deteriorating water quality or the failure of a critical treatment process before a plant shutdown occurs.</p>	

Recommendations

Subject	Ashbourne/Rathoath (Rath WTP) Audit Recommendations	Due Date	22/01/2024
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. Provide and maintain automatic changeover of sodium hypochlorite dosing pumps at Rath Water Treatment Plant.2. Provide a revised location and system for verification of chlorine contact time that is representative of the treated water produced at Rath Water Treatment Plant. This should include the provision of continuous chlorine monitoring and appropriate warning alarm and plant shutdown setpoints to ensure target contact time is achieved and verified at all times.3. Review alarm and inhibit setpoints at the treatment plant and: (i) provide appropriate warning alarms, where absent, to alert operators of deteriorating water quality before a plant shutdown occurs and (ii) ensure that the plant shutdown setpoint based on final water turbidity leaving the plant is controlled by the regulatory 1 NTU (with a maximum delay of 3 minutes) as detailed in the <i>EPA Water Treatment Manual: Filtration</i>.4. Update the Uisce Éireann Incident Communications Response Guidance Form with the appropriate trigger levels that protect critical processes at the water treatment plant.5. Investigate the feasibility of installing a run to waste system at the 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 22/01/2024 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>		