

Site Visit Report

Under the *European Union (Drinking Water) Regulations 2014* as amended, 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 1 BALLYMORE
Organisation	Uisce Éireann
Scheme Code	0700PUB1001
County	Dublin
Site Visit Reference No.	SV27603

Report Detail	
Issue Date	20/03/2023
Prepared By	Michelle Roche

Site Visit Detail			
Date Of Inspection	22/02/2023	Announced	Yes
Time In	10:30	Time Out	14:10
EPA Inspector(s)	Michelle Roche Cormac MacGearailt		
Additional Visitors			
Company Personnel	Uisce Éireann: Ed Haythornthwaite, Derek Judge, Joe O'Reilly, Jessica Evans Dublin City Council, working in partnership with Uisce Éireann: Eoin Walsh, Jim O'Rourke, Willie Sheehan		

> Summary of Key Findings

1. Dublin City Council operational staff had received the Uisce Éireann incident response training, however no site specific incident response procedure was displayed at the water treatment plant.
2. Floating debris (chipboard and plastic) was observed in the treated water at the inlet of the onsite reservoir on the day of the audit. Dublin City Council staff committed to removing the debris immediately following the audit.

> Introduction

Ballymore Eustace Water Treatment Plant (WTP) is the largest water treatment plant in the country, which supplies water to approximately 877,000 people in Dublin City, South Dublin County, Dun Laoghaire Rathdown and Kildare. The plant currently produces approximately 320 ML/d and has a design capacity of 400 ML/d. Treatment consists of coagulation with alum and poly, clarification in 12 sedimentation tanks, rapid gravity filtration in 32 filters, disinfection using on-site electrolytic chlorination, lime addition for pH correction, and fluoridation.

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 and the reservoir inlet at Ballymore Eustace Water Treatment Plant. Continuous online turbidity trends from all filters and calculated contact time verification trends from were assessed prior to the site visit. The source was not inspected during the audit.



1. Filtration

	Answer	
1.1	Are the filters designed and managed in accordance with EPA guidance?	No
Comment		
<p>1. Filter media depths were unknown at the time of the audit and are not currently checked as part of the filter management schedule.</p> <p>2. A programme is being developed with the aim of checking all filter media depths at least once per year.</p> <p>3. Filter backwashes are initiated based on time, head loss and a filter turbidity greater than 0.3 NTU. The filter turbidity alarm setpoint and backwash trigger is currently being lowered to 0.25 NTU on a phased basis across all 32 filters.</p>		

	Answer	
1.2	Does monitoring indicate that the filters are operating effectively?	Yes
Comment		
<p>An assessment of continuous online filter turbidity trends from 10/02/23 to 17/02/23 was carried out prior to the site visit and found all filters were operating satisfactorily.</p>		



2.1

Is there a chlorine residual ≥ 0.1 mg/l throughout the network?

Answer

No

Comment

1. Chlorine residuals below 0.1 mg/l were recorded at the following locations in January and February 2023:

- 16/1/23 Millmount Library – 0.09 mg/l
- 13/2/23 Millmount Library – 0.06 mg/l
- 3/1/23 Dublin Fire Brigade Station Tallaght – 0.08 mg/l

2. Uisce Éireann confirmed after the audit that follow up microbiological sampling at these locations was clear of any microbiological contamination.



3. Reservoirs and Distribution Networks

3.1

	Answer
Is treated water in tanks and reservoirs suitably protected against contamination?	No
Comment	
<p>1. Reservoir vents were covered with mesh, however the mesh is not fine enough to prevent small animals entering the reservoir.</p> <p>2. A small quantity of debris (chipboard and plastic) was observed to be floating in the reservoir inlet during the audit. It was not clear where the debris had come from.</p> <p>3. Dublin City Council staff committed to removing the debris immediately following the audit and investigating how the debris entered the reservoir.</p>	



4. Alarms, Inhibits & Oversight Audits 2023

		Answer
4.1	Is there a documented site specific incident response and incident escalation process?	No
	Comment	
	<p>1. Dublin City Council operational staff have received the Uisce Éireann incident response training.</p> <p>2. No site specific Incident Response Procedure or contact details were displayed onsite on the day of the audit.</p> <p>3. Signage is displayed around the water treatment plant reminding operators that an incident of filter turbidity greater than 0.3 NTU must be reported to the Plant Engineer and Plant Superintendent.</p> <p>4. A detailed alarm response procedure has been developed for the water treatment plant and circulated to all operators.</p>	
		Answer
4.2	Are there appropriate procedures covering verification of alarms and inhibits status following maintenance or other work on site?	No

Recommendations

Subject	Ballymore Eustace Recommendations	Due Date	20/04/2023
Action Text	<p>Uisce Éireann is responsible for ensuring a clean and wholesome supply of drinking water and should implement the following recommendation(s) without delay.</p> <ol style="list-style-type: none">1. Update and display the Uisce Éireann Incident Communications Response Guidance Form with site specific information including contacts for escalation and relevant trigger levels protecting critical processes at the water treatment plant.2. Ensure filter media depths are maintained in accordance with the <i>EPA Water Treatment Manual: Filtration</i>.3. Ensure that residual free chlorine concentrations in the network are at least 0.1 mg/l to maintain adequate disinfection. Incidents of inadequate disinfection should be notified to the EPA and the HSE consulted in accordance with the Regulations.4. Ensure the reservoir is free of any sources of contamination at all times. i) Remove the floating debris from the reservoir inlet ii) Investigate how the debris got into the reservoir and take any corrective action necessary to protect the reservoir from contamination iii) Ensure reservoir vents are covered with a fine mesh to prevent small animals from entering the reservoir.5. Ensure there is a procedure in place for caretakers and contractors to check and sign-off that all alarms have been correctly re-set on completion of any maintenance work. <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 20/04/23 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>		