

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	Louisburgh PWS
Organisation	Uisce Éireann
Scheme Code	2200PUB1020
County	Mayo
Site Visit Reference No.	SV31923

Report Detail	
Issue Date	13/03/2025
Prepared By	Veronica Boland

Site Visit Detail			
Date Of Inspection	21/01/2025	Announced	Yes
Time In	11:00	Time Out	13:40
EPA Inspector(s)	Veronica Boland Donal Howley		
Additional Visitors			
Company Personnel	Uisce Éireann: Siobhán Sheridan, Patrick Navin. Mayo County Council (working in partnership with Uisce Éireann): William McDonnell, Catherine Maughan, Joe McGuire.		

> Summary of Key Findings

1. The audit found that Louisburgh Water Treatment Plan (WTP) is well operated and managed and performing well in providing clean and wholesome water to the Louisburgh Public Water Supply (PWS).
2. The management of sludge from the treatment processes at Louisburgh WTP is unsatisfactory. As advised previously, Uisce Éireann should put in place measures to eliminate sludge discharge to Bunowen River.

> Introduction

The Louisburgh WTP provides treated drinking water to the Louisburgh PWS. The raw water abstraction for treatment at the plant is from the Bunowen River. Treatment at the plant includes pre-treatment pH adjustment, coagulation processes, Dissolved Air Flotation and Filtration (DAFF) and disinfection using sodium hypochlorite. The plant, which has a design capacity of 23m³/day, operates 24 hours/day 7 days a week and produces approximately 30m³/day of treated water during high demand periods. Treated water goes to an onsite reservoir (454m³ storage) prior to distribution to the network.

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). The audit also included a review of the interim management measures for sludge from the WTP.

> Supply Zones Areas Inspected

- Raw water abstraction source.
- Louisburgh WTP.
- Sludge and backwash water discharge point and environs.
- Section of the Bunowen River.



1.1

		Answer
Is sludge arising from the treatment processes adequately managed?		No
Comment		
<ol style="list-style-type: none">1. The Louisburgh water treatment plant has no sludge treatment. The sludge generated by on-site treatment processes with the DAFF system, and the washwater from backwashes of the DAFF filters is directed via a pipeline to a small stream/channel flowing to the Bunowen River downstream of the abstraction point. The channel is blocked on one side with a weir (wood plank) and on the other side with sandbags at its entrance to the river to create a 'settlement pond' to retain settled sludge for removal by tanker and to allow cleaner water to overflow to the river.2. At the audit, operational staff advised that the settlement pond had been pumped out the previous day, and that the sediment pond is pumped out every 4 to 5 weeks. Records of pumpout/tankering were provided to the EPA following the audit. These records indicated that during the summer months pumping out of the sediment pond occurred every 6 to 8 weeks.3. On inspection of the settlement pond and the Bunowen river, the EPA inspector observed evidence of sludge discharge at the confluence to the Bunowen River and along the Bunowen riverbank downstream of the 'settlement pond'. The EPA inspector also observed that the settlement pond was almost full at the time it was inspected and it was noted that only two backwashes were performed at the WTP since pumping out from the previous day.4. The EPA inspector observed evidence of DAFF filter media material (sand) on the outer part of the confluence point of the Bunowen river and aluminium sludge deposits indicating that the sandbag structure had failed to prevent sludge and filter material flowing into the Bunowen River.5. The previous EPA audit (2021) included a recommendation that 'Irish Water should ensure that sludge is not discharged to the main channel of the Bunowen River in any river flow conditions ...'. The sludge management practices in place at the time of the audit (settlement pond and sandbag structure) do not satisfy this recommendation.6. Uisce Éireann has undertaken water quality monitoring in the Bunowen river, upstream and downstream of the sludge discharge point, since December 2021. These monitoring results indicate elevated levels of aluminium in the Bunowen river downstream of the WTP sludge discharge point compared to upstream of the WTP.		



2. Protozoal Barriers Audits 2025

2.1

Are online monitors operational?

Answer

No

Comment

1. The pre-chlorine dosing pH/temperature monitor was not working. Operational staff advised that the monitor required a new head and that a head had not been ordered yet. The service sticker on the monitor indicated that last date of service was 18/12/2024 and service due December 2025, and the calibration sticker stated that the monitor was calibrated on 18/12/2024 and next calibration due June 2025.
2. The raw water UVT continuous monitor had a warning symbol flashing on the monitor and a service sticker stating 'Failed' dated 18/12/2024. Operational staff advised that there were no plans to re-instate the monitor due to the cost and that the raw water UVT monitor does not control any of the treatment processes. Staff advised that the raw water UVT can change rapidly following rainfall and changes to the coagulant and pH adjustment dose rates are carried out manually by the operational staff in response to the rapid changes in the raw water quality and to prevent blockage of the DAFF filters. Staff advised that a handheld UVT monitor is used, however raw water UVT results were not recorded in the operational day book for a few days prior to the audit.
3. The final water turbidity trends were submitted prior to the audit. The final water turbidity trend was consistently below 0.1 NTU with a few spikes in turbidity which staff attributed to final water sample line trapped air and blockages that send false readings to the HMI. At the audit the final water sample line had kinks and required straightening out.

2.2

Are the filters designed and managed in accordance with EPA guidance?

Answer

No

Comment

1. Staff advised that the DAFF filter depth was 700 mm. The *EPA Water Treatment Manual: Filtration* recommends a filter depth where feasible of 1000-1200mm. At the audit, there was sand aggregate onsite and operational staff advised that filter refurbishment was planned.

Recommendations

Subject	2025 Audit Recommendations	Due Date	11/04/2025
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 to working order the pre-chlorine dosing pH and temperature monitor. 2. Examine the feasibility of re-instating the raw water UVT monitor. 3. Ensure that the final water turbidity sample line is maintained to prevent blockages in the sample line to ensure that accurate readings are provided to the HMI. 4. Implement an appropriate maintenance programme for equipment and infrastructure at the WTP to ensure appropriate operational control at the plant. 5. Ensure that the depth of the filter is increased to an appropriate level having regard to the guidance in the <i>EPA Water Treatment Manual: Filtration</i>. 6. Revise the current sludge management measures at the Louisburgh WTP to ensure that sludge is not discharged to the main channel of the Bunowen River in any river flow conditions. <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 11 April 2025 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>		