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	Inishturk PGWS
Organisation	Uisce Éireann
Scheme Code	2200PUB1031
County	Mayo
Site Visit Reference No.	SV32025

Report Detail

Issue Date	04/11/2025
Prepared By	Veronica Boland

Site Visit Detail

Date Of Inspection	23/09/2025	**Announced**	Yes
Time In	11:15	**Time Out**	13:00
EPA Inspector(s) **Additional Visitors**	Veronica Boland		
Company Personnel	Uisce Éireann: Joe Maguire, Siobhán Sheridan, Robert O'Toole.		

Summary of Key Findings

1. Inishturk Water Treatment Plant (WTP) was operating satisfactorily on the day of the audit. The majority of the previous audit recommendations have been implemented and WTP resilience has improved, as well as additional spares of critical equipment and material stored on-site.

2. While there have been improvements regarding critical alarms in place, individual filter turbidity monitors with appropriate alarms and media filter depth gauges are yet to be installed.

3. Chlorine dosing is with 5% sodium hypochlorite and linked to site HMI.

Introduction

The Inishturk water treatment plant (WTP) serves a population of 44 people (EDEN figure) with 30m3/day of treated water produced (design capacity of 60m3/day). The raw water abstraction is from Coolanick Lake and flows by gravity to Inishturk WTP. The treatment processes comprise of a raw water tank, slow sand filtration, GAC filtration (for prevention of trihalomethane formation) and chlorination.

The audit was undertaken to assess Uisce Éireann's progress in actioning previous audit recommendations following an EPA audit in September 2024 and to assess Uisce Éireann’s performance in producing clean and wholesome drinking water.

Supply Zones Areas Inspected

The site areas inspected during the audit included:

• WTP treatment processes.

1. Disinfection

		Answer
1.1	Is the chlorine dosed appropriately?	Yes

Comment

1. At the audit Uisce Éireann advised that the OSEC (chlorine make-up) unit had not been in operation for several months as a result of power failures impacting both the OSEC unit and the associated HMI. Uisce Éireann advised that a new HMI unit was installed but that due to the age of the OSEC unit it was difficult to source replacement parts and service the unit and that as an interim measure staff were manually dosing with 10% sodium hypochlorite.
2. Following the audit, Uisce Éireann advised that chlorine dosing switched from sodium hypochlorite 10% to 5% concentration and that dosing is flow proportional and linked to the HMI. Chlorine residual trends reviewed indicate that the the 5% concentration is providing more stable chlorine residual levels in the treated water.
3. Manual tests of the final water free chlorine residual is carried out by the plant operator with a handheld chlorine monitor and compared with the reading from the continuous monitor. These manual test results should be recorded alongside the continuous monitor results in the site log book/ diary.

		Answer
1.2	Is there a suitable monitoring frequency for residual chlorine in the network with records available?	Yes

Comment

1. Residual chlorine is monitored in the network 3 times per week on the East and West of the network. Chlorine residual results reviewed at the audit were above 0.1mg/l throughout the network

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

1. At the audit it was observed that the raw water and the final water pH alarms were disabled. It is important that the final water pH alarm is re-enabled to ensure that non-compliant water does not enter the network. The Drinking Water Regulations 2023 states that the Hydrogen ion concentration of treated water (pH unit of measurement) must be between 6.5 and 9.5 pH.
2. While the chlorine residual WTP shutdown alarm setpoints of 0.5mg/l (Low) and 1.8 mg/l (High) with a time delay of 180 seconds meet the recommendations of the *EPA Water Treatment Manual: Disinfection*, the chlorine residual warning alarm 'low' setpoint of 0.5mg/l is set at the same level as the shutdown 'low' setpoint, which means that the plant operator would receive the warning and shutdown alarm at the same time. The *EPA Water Treatment Manual: Disinfection* recommends warning alarm of a maximum of 0.1 mg/l below the target concentration for a maximum of 5 minutes.
3. The final turbidity warning alarm of 0.8 NTU with a 3 minute time delay and WTP shutdown alarm of 1 NTU with a 1 minute time delay is suitable and in accordance with the *EPA Water Treatment Manual: Filtration*.

		Answer
2.2	Are online monitors operational?	Yes

Comment

1. All on-line monitors were operational, clearly labelled and within their service/calibration dates. However, the final water turbidity monitor (SC 200) had a warning symbol beside the pH and temperature parameters displayed on the screen.

		Answer
2.3	Have the recommendations from the previous EPA audit been satisfactorily addressed?	No

Comment

1. A previous audit (2024) recommendation refers to upgrading the slow sand filters at Inishturk WTP to enable verification of 2.5 protozoal log treatment removal, which would include continuous turbidity monitoring for each individual filter and for the total combined filtered water.
2. Whilst, a combined treated water turbidity monitor has been installed post the GAC filters and final water turbidity (warning and shutdown) alarms have been installed on the turbidity monitor on the outlet of the treated water reservoir, turbidity monitors on the individual slow sand filters have not been installed and there are no alarms or shutdowns linked to individual filtered water. Uisce Éireann advised that these individual filter monitors will be installed by an external contractor in Q1/Q2 of 2026.
3. To meet the 2.5 Log reduction, the *EPA Water Treatment Manual: Filtration* recommends that the slow sand filters are to be operated at (i) a steady flow rate that does not exceed 0.35 m/h and (ii) the temperature of the water entering the filter does not drop below 6 °C for greater than 24 hours. Records reviewed at the audit indicated that measurement/recording of the temperature of the raw water was not undertaken daily. Operational checks required to be undertaken are set out in Table 4 .3 and section 4.6.4 of *EPA Water Treatment Manual: Filtration*.
4. There are no measurement media depth gauges for the individual filters, Uisce Éireann advised that these have been ordered and will be installed onsite.

Recommendations

Subject	Follow-up Audit 2025 Recommendations	**Due Date**	04/12/2025
Action Text	**Uisce Éireann is responsible for ensuring a clean and wholesome supply of drinking water and should implement the following recommendations without delay.** 1. Continue reporting to the EPA on the progress of recommendations no. 2, no. 3, no. 7 and no. 10, from the EPA's previous audit carried out in 2024. 2. (i) Re-enable the pH alarms and ensure that they are functioning correctly and (ii) check and service/repair the final water turbidity monitor (SAC 200) to ensure it is properly operational and indicative of the final water quality. 3. Ensure that the individual slow sand filter turbidity monitors (when installed) are alarmed and trended. **Actions required by Uisce Éireann** Uisce Éireann should submit a report to the EPA on the abovementioned date detailing the actions taken and planned, with timescales, to close out the above recommendations. The EPA advises that the findings and recommendations from this audit report should, where relevant, be addressed at other public water supplies.		