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	Arigna Regional PWS
Organisation	Uisce Éireann
Scheme Code	2600PUB1029
County	Roscommon
Site Visit Reference No.	SV32075

Report Detail

Issue Date	21/03/2025
Prepared By	Maria O'Connell

Site Visit Detail

Date Of Inspection	17/02/2025	**Announced**	Yes
Time In	11:00	**Time Out**	12:34
EPA Inspector(s) **Additional Visitors**	Maria O'Connell		
Company Personnel	Uisce Éireann: Marie Finneran. Representing Glanua (working under contract to Uisce Éireann): Ross Sullivan, Shane O' Donnell, Grace Langley and Liam O Reilly.		

Summary of Key Findings

1. Inhibits on high and low residual chlorine were not in place at this supply. Residual chlorine alarms (high and low) are in place in place however details of the minimum free chlorine required to ensure 0.1mg/l in the network requires confirmation.

2. An appropriate validation certificate detailing the validation criteria required to enable the target UV dose was not available. The units of measurement for the UV Dose trend on the plant SCADA require amendment to reflect actual dose applied and to ensure that alarms and inhibits are triggered appropriately.

3. The incident response form and procedure displayed on site was not the most up to date version available from Uisce Éireann.

Introduction

Arigna Public Water Supply (PWS) serves a population of 836 and is operated by Glanua under contract to Uisce Éireann. The raw water for the water treatment plant (WTP) is sourced from two groundwater boreholes on site. The plant has a design capacity of 1350m3 per day (plus process water). The supply has been assigned a 3 log protozoal requirement. The treatment process at the site consists of cascade aeration, pressure filtration, UV, chlorination and fluoridation. This plant also has the capacity for pH adjustment, oxidation and coagulation but the site operator outlined that such processes are not currently required. There is also an offsite reservoir associated with this plant which is under the control of the site operator, this reservoir has a capacity of 1000m3 and can provide > 24 hours supply in the event of issues at the plant.

This audit was undertaken to assess Uisce Éireann's performance in producing clean and wholesome water focusing on alarms, inhibits and management oversight.

Supply Zones Areas Inspected

The audit included an inspection of water treatment processes on-site with site personnel.

1. Filtration

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

Comment

1. Pressure filtration is utilised at this water treatment plant. Filter media type, effective size, uniformity co efficient and supplier were displayed on the unit. The site operator outlined that annual assessments are undertaken on the pressure filter and that such records are stored electronically. Such records were not available at the time of the audit but site operator advised they can be forwarded to the EPA on request. Additional operational checks are collated via software application. It was not possible to undertake a review on such data for alignment with the *EPA Water Treatment Manual: Filtration* at the time of the audit but it is understood that such records can be made available.

2. Alarms, Inhibits & Oversight Audits 2025

		Answer
2.1	Is there a chlorine residual monitor located after contact time for verification of primary disinfection?	Yes

Comment

1. The site operator outlined that a residual chlorine monitor is operational at the outlet of the offsite reservoir. The chlorine contact time calculation submitted detailed the use of three vessels for contact time (two tanks and a pipeline). Separate minimum free chlorine levels were detailed in this calculation for each vessel - 0.2mg/l (tanks) and 0.63mg/l (pipeline). Confirmation that this calculation is still an accurate reflection of the process and the minimum free chlorine required for the combined units should be detailed.

		Answer
2.2	Is there a documented site specific incident response and incident escalation process?	Yes

Comment

1. The Uisce Éireann Water Incident Communication Response Guidance Form (Ref: IW-AO-GL-032-FM-01) was displayed on site along with the Irish Water Incident Management Procedure (Ref: HSQE-SOP-024-PRO-14). It is understood that a revision of incident response procedures has been undertaken by Uisce Éireann and the most relevant revision should be utilised.

2. Training records on incident response procedures are maintained by the site operator.

		Answer
2.3	Were online monitors within their calibration dates?	Yes

Comment

1. Records are maintained electronically regarding calibration of critical process instruments. The site operator provided a sample of such records on site for inspection.

		Answer
2.4	Are suitable alarm settings in place to alert operators to deteriorating water quality or the failure of a critical treatment process?	No

Comment

1. Residual chlorine alarm set points of 0.3mg/l (low) and 1.2mg/l (high) were enabled with a time delay of 180 seconds. Confirmation of the minimum free chlorine requirements at the point of contact time validation is required in order to ensure setpoints are appropriate. Inhibits on high or low residual chlorine levels were not in place at the time of the audit.

2. A low UV dose alarm was enabled at 13.20mj/cm2 and a UV dose inhibit enabled at 12mj/cm2. The target dose at this site is 14mj/cm2. UV dose trends assessed via phone application demonstrated readings of 140-160. The site operator attributed these readings to a misplacement of a decimal point i.e. that these indicated these readings were 14 to 16mj/cm2.

		Answer
2.5	Did plant performance trends demonstrate that data was being captured and recorded at all times?	No

Comment

1. Trend data reviewed for UVT and turbidity parameters highlighted that continuous monitoring experienced a number of outages in December 2024 and early 2025. The site operator outlined that handheld monitors were used during this time. Records on the calibration of such devices prior to or during this timeframe could not be provided during the audit.

2. The cause for the failure of the continuous monitoring was attributed to bad weather.

Recommendations

Subject	Arigna PWS Audit 2025	**Due Date**	11/04/2025
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. Chlorine: (i) Resubmit the chlorine contact time calculation detailing on the minimum free chlorine requirement at the point of contact time validation, (ii) install and commission an inhibit with trigger points and time delays that are in alignment with the EPA's guidance - *Water Treatment Manual: Disinfectio*n, (iii) submit details of the alarm and inhibit setpoints and time delays for residual chlorine to the EPA. 2. UV: (i) Submit a UV validation certificate detailing the criteria required for the supply of the appropriate dose, (ii) submit details of the latest calibration tests conducted on the UV unit, (iii) ensure that the unit readings for the UV Dose on the SCADA system are amended and submit UV Dose trends for the plant for March 2025. 3. Submit details of calibration records for the handheld turbidity and UVT monitoring units used during periods where continuous monitoring was not in place. 4. Submit details of the most recent filter assessments and ensure that filter maintenance manuals/logs record details as outlined in the *EPA Water Treatment Manual: Filtration.* **Actions required by Uisce Éireann** 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. Uisce Éireann should submit a report to the EPA on or before 11th April 2025 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.		