

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	Scrahan
Organisation	Uisce Éireann
Scheme Code	3100PUB1087
County	Waterford
Site Visit Reference No.	SV29599

Report Detail	
Issue Date	02/12/2024
Prepared By	Sean O'Leary

Site Visit Detail			
Date Of Inspection	07/11/2024	Announced	Yes
Time In	12:45	Time Out	13:30
EPA Inspector(s)	Sean O'Leary Paul Buckley		
Additional Visitors			
Company Personnel	Uisce Éireann: Siobhán Clifford Waterford City and County Council (working in partnership with Uisce Éireann): Dave Whelan and David Hourigan		

> Summary of Key Findings

1. There are a number of deficiencies at this plant including a lack of an online turbidity monitor with alarm/shutdowns to verify UV disinfection has been achieved and a lack of automatic alarms/shutdowns on the chlorine monitor and the UV unit to ensure inadequately disinfected water cannot enter the supply.
2. There have been a number of bromate exceedances in the supply, most recent on 02/10/2024 10.6 ug/l. Uisce Éireann have proposed several remedial actions to solve the bromate exceedances however, no timeline has been provided.
3. Uisce Éireann advised that this supply is to be prioritised for a rationalisation but no timeframe is available yet.

> Introduction

The Scrahan Public Water Supply (PWS) supplies an average of 12 m³/day of water, serving a population of 23. The source for the supply is one borehole. Treatment consists of primary ultra violet disinfection and secondary chlorination. The audit was undertaken to assess Uisce Éireann's performance in producing clean and wholesome water with a focus on the alarms and inhibits in place at the water treatment plant (WTP) and to evaluate the progress in dealing with the ongoing Bromate parametric value exceedances in the supply.

> Supply Zones Areas Inspected

The onsite borehole, ultra violet disinfection system, chlorination dosing system and pumps at the water treatment plant were inspected.



1. Source Protection

	Answer
1.1	Is the abstraction source(s) adequately protected against contamination? Comment 1. The borehole is inadequately capped and sealed in line with EPA guidance. 2. The borehole is located beside a rural road adjacent to houses, with grass fields surrounding which are used for agricultural purposes. The borehole is secured with a manhole cover however, it is not adequately capped. Uisce Éireann were unable to confirm if landowners were written to in relation to their obligations under the European Union (Good Agricultural Practice for Protection of Waters) Regulations 2022.



2. Alarms, Inhibits & Oversight Audits 2024

	Answer	
2.1	Is suitable continuous monitoring in place to verify treatment performance?	No
Comment		
1. There is no continuous turbidity monitor with alarm to verify that turbidity remains < 1 NTU at all time.		

	Answer	
2.2	Were online monitors within their calibration dates?	No
Comment		
1. There was no record for the UV unit to show that it was within its calibration date.		
2. There were no calibration records for the chlorine monitor of the chlorine duty and standby pumps to show they were calibrated.		

	Answer	
2.3	Are suitable alarm settings in place to alert operators to deteriorating water quality or the failure of a critical treatment process?	No
Comment		
1. There is no turbidity monitor with alarm in place.		
2. There are no low chlorine or high chlorine alarms in operation.		
3. There are no UV alarms in place.		

	Answer	
2.4	Has UÉ carried out an alarm and inhibit review at the water treatment plant?	No
Comment		
1. Uisce Éireann confirmed that an Alarm and Inhibit review has not been carried out.		

	Answer	
2.5	Are suitable plant shutdowns/inhibits in place to prevent the entry of inadequately treated water entering the distribution network?	No

Comment

1. There is no continuous turbidity monitor with shutdowns to ensure that turbidity remains < 1 NTU at all times.
2. There is no shutdown of the plant based on a) high and low chlorine, b) high turbidity, and c) low UV.

Answer

2.6 Are plant performance trends accessible by operational staff at the water treatment plant? No

Comment

1. Uisce Éireann confirmed there is no HMI onsite and operational staff cannot access trends at the water treatment plant. Staff access trends via a laptop or mobile devices.

Answer

2.7 Are there appropriate procedures covering verification of alarms and inhibits status following maintenance or other work on site? No

Comment

1. There is no documented procedure in place that documents how alarms and inhibits are verified as operational following any works which can affect the systems on-site.



3. Site Specific Issues

3.1

Have remedial actions to address ongoing bromate parametric value exceedance been progressed?

Answer

No

Comment

1. On 08/07/2024, Uisce Éireann received a bromate result of 17 ug/l from an operational sample taken at the Scrahan water treatment plant on the 24/06/2024, which is in exceedance of the drinking water standard of 10 ug/l. Subsequent sampling at the water treatment plant found exceedances on the 02/07/2024, 13/08/2024, 19/08/2024, 02/09/2024 and the most recent on the 02/10/2024.

Uisce Éireann conducted an investigation and stated that the bromate in the supply was due to geological conditions. A number of remedial actions have been proposed however no timeline was given for completion. Uisce Éireann have confirmed no raw water monitoring has been conducted to verify the presence of bromate in raw water. Uisce Éireann previously confirmed on the 08/09/2020 that the raw water sample line was found to be contaminated with chlorine.

Recommendations

Subject	Audit Recommendations	Due Date	02/01/2025
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. Provide an update including timeframe for the rationalisation of the Scrahan water treatment plant. 2. Install a permanent continuous turbidity monitor at the water treatment plant, with associated alarms and shutdowns to verify treatment performance. 3. (i) Review the alarm and inhibit settings to ensure that critical treatment processes and statutory limits are protected, (ii) Install shutdown of the plant based on high and low chlorine levels in the final water, (iii) Complete the Alarm and Inhibit Review for the plant to ensure that all findings of the review are implemented, (iv) install shutdown in the event that the UV unit fails to operate within its validated range, and (v) submit 1 month of UV trend data to verify that the UV unit is operating within its validated operating range. 4. (i) Investigate the ongoing bromate exceedances including raw water monitoring to identify if bromate is naturally occurring within the supply, (ii) provide details of any remedial measures taken or planned to prevent further similar incidents, and (iii) continue to undertake weekly bromate monitoring of the final water and notify any exceedances to the EPA 5. Ensure all plant monitors and equipment are calibrated or serviced in accordance with manufacturer’s instructions, and clearly labelled to show the next calibration due by or service due by date. 6. Ensure the borehole is adequately capped. Uisce Éireann should have regard to EPA Advice Note No. 14: Borehole Construction and Wellhead Protection when carrying out these works. 7. Ensure that operational staff have access to plant performance trends at the water treatment plant. 8. 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. 9. Liaise with Waterford City and County Council to ensure that local landowners have been written to in relation to their obligations under the European Union (Good Agricultural Practice for Protection of Waters) Regulations 2022 as amended. <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 02/01/2025 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>		