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	Allow Regional
Organisation	Uisce Éireann
Scheme Code	0500PUB1101
County	Cork
Site Visit Reference No.	SV30146

Report Detail

Issue Date	27/06/2024
Prepared By	Orla Harrington

Site Visit Detail

Date Of Inspection	11/06/2024	**Announced**	No
Time In	11:50	**Time Out**	13:00
EPA Inspector(s) **Additional Visitors**	Orla Harrington		
Company Personnel	Uisce Éireann: Aine Butler, Niall O'Riordan, Gary Tobin. Cork County Council (working on behalf of Uisce Éireann): Cal O'Callaghan, Jason O'Donoghue, Frances Whorisky, Pauline McAree, Sean McAulfe.		

Summary of Key Findings

1. A chemical spill at Freemount water treatment plant from 08/06/2024 to 09/06/2024 resulted in approximately 3,000 litres of polyaluminium chloride entering the storm water drain and discharging to the River Allow. This caused a substantial fish kill. The audit confirmed that the spillage occurred due to a break in the pipework between the polyaluminium chloride bulk storage tank and the day tank.

2. The audit found that drinking water quality entering the Allow Regional public water supply was not affected as there was sufficient polyaluminium chloride in the day tank to allow normal treatment operations to continue unaffected. At the audit, trend data assessed confirmed the incident did not have any effect on the quality of drinking water entering the supply.

Introduction

Allow Regional public water supply (PWS) provides treated water to a population of 3,272 people. Water is abstracted from the River Allow and treatment consists of coagulation with polyaluminium chloride and polyelectrolyte, clarification, rapid gravity filtration, fluoridation and chlorination.

The audit was carried out in response to Uisce Éireann's notification to the EPA of a chemical spill at the plant which occurred from 08/06/2024 to 09/06/2024 resulting in a significant fish kill in the River Allow downstream of the Freemount water treatment plant (WTP).

Supply Zones Areas Inspected

The inspection focused on chemical storage facilities and drinking water quality trends at the time of the incident.

1. Incident Management

		Answer
1.1	Was the incident suitably alerted to the plant operators, escalated and managed in order to maintain water quality and protect public health?	Yes

Comment

1. Uisce Éireann notified the EPA and Inland Fisheries Ireland (IFI) on Sunday 09/06/2024 of a chemical spill which occurred at the Freemount water treatment plant (WTP) between 08/06/2024 and 09/06/2024 which resulted in approximately 3,000 litres of polyaluminium chloride (PAC) entering the surface water drainage system and discharging to the River Allow where it caused a substantial fish kill. Raw water is abstracted 1km upstream of the discharge point and trends viewed at the audit confirmed that the incident did not have any effect on the quality of drinking water entering the supply.

2. Cause of incident:

- PAC is a coagulant used in the drinking water treatment process and stored outside the plant in an 15m3 double skinned bulk storage tank (BST). PAC is pumped from the BST into a bunded day tank (300 litres) located inside the plant.
- Operational staff checked the plant on Saturday 08/06/2024 and the plant was operating satisfactorily. The BST was not checked during this visit.
- At 8:30am on 09/06/2024 operational staff had difficulty filling the PAC day tank and noted the bulk tank level sensor was reading 0.17m (a refill is ordered at 0.5m). On inspection of the BST a spillage of PAC was noted adjacent to the transfer pumps between the BST and the day tank. These pipes are unbunded which resulted in the PAC entering a storm water drain, then an open ditch before discharging to the River Allow.

3. Action taken:

- At 11:55am Cork County Council notified Uisce Éireann of the spillage and blocked the storm water drain to prevent further discharge into the river.
- Uisce Éireann provided the EPA with monitoring results of three investigative samples taken downstream of the discharge at 1pm on 09/06/2024. These samples were analysed onsite for pH and aluminium, indicating elevated levels of aluminium in the River Allow.
- At 3pm on 09/06/2024 Uisce Éireann contacted IFI. IFI took samples at five locations upstream and downstream of the discharge point and duplicate samples were provided to UÉ. Samples were sent to an accredited laboratory and results were not available at the audit.
- Ambipar Response Ireland Limited arrived at 3:30pm to commence clean-up of the spill which involved the (i) placing of bunds on the River Allow (ii) suctioning out PAC from storm water drain (ii) removal of contaminated soil on the river bank.
- An IBC of PAC was delivered by Chemifloc on 11/06/2024. This will replace the BST until it is recommissioned. IBC bunds are in place.

4. At the audit it was noted that holes were dug in the open drain leading to the River Allow with earthen bunds to allow the PAC to pool. A vacuum truck was suctioning out the PAC and removal of contaminated soil was underway. Additional sandbags were being placed on the drain.

2. Treatment Process Chemicals

		Answer
2.1	Are treatment process chemicals appropriately managed and stored?	No

Comment

1. The audit found that the spillage of PAC occurred due to a break in the transfer pipework between the bulk storage tank and the day tank. Uisce Éireann advised that the external pipework associated with the spill had been replaced in 2023. The pipework was not within a bunded area in order to prevent spillages entering the storm water drain. Investigations are ongoing between Uisce Éireann and the providers to determine the cause of failure in the pipe and what corrective actions should be put in place to prevent similar incidents occurring.

2. There is a level sensor on the bulk storage tank, however this sensor is not connected to a dial out alarm or to SCADA. There is no schedule of checks of chemical storage areas in the operational tasks assigned to caretakers.

Recommendations

Subject	Allow Regional PWS - Audit Report	Due Date	26/07/2024
Action Text	**Uisce Éireann should implement the following recommendations without delay.** 1. i) submit the findings of the investigation into the cause of the break in the pipework between the polyaluminium chloride bulk storage tank and the day tank and ii) put in place corrective actions to ensure a similar incident does not occur. 2. Upgrade the polyaluminium chloride bulk storage tank and associated pipework so that they are all located in a bunded area capable of containing at least 110% of the volume of chemicals stored therein. Refer to EPA guidance document - "*IPC Guidance Note on Storage and Transfer of Materials for Scheduled Activities".* 3. Install appropriate level sensor alarms in the bulk storage tank. 4. Submit the monitoring results of sampling undertaken in response to the incident. Include a full interpretation of results, findings of the impact of the chemical discharges on the river and carry out further remediation works necessary for the River Allow. **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 26/07/2024 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.		