

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	Cork Harbour and City
Organisation	Uisce Éireann
Scheme Code	0500PUB3401
County	Cork
Site Visit Reference No.	SV34833

Report Detail	
Issue Date	15/09/2026
Prepared By	Maeve McHugh

Site Visit Detail			
Date Of Inspection	29/07/2026	Announced	Yes
Time In	10:00	Time Out	12:45
EPA Inspector(s)	Maeve McHugh Orla Harrington		
Additional Visitors	Noel Cosgrove, Pauline Gilliard.		
Company Personnel	Uisce Éireann: Killian Twomey, James Goulding, Gavin Falvey, Duane O'Brien, Kieran Neville, Sharon O'Dwyer, Claire Kelly, Brian O'Flynn.		

> Summary of Key Findings

1. The management of sludge from the treatment processes at Cork Harbour and City treatment plant is unsatisfactory. On the day of the audit, a backwash tank and a picket fence thickener were out of operation. The absence of these two tanks reduced the effective capacity of the sludge treatment plant to 50%. Since the audit Uisce Éireann have confirmed that the picket fence thickener is back in operation and that further works to the second backwash tank are underway.
2. The EPA were notified of five incidents in 2026 up to the date of the audit involving discharges of inadequately treated sludge into the River Lee from treatment processes at Cork Harbour and City Water Treatment Plant at Inniscarra between 04/06/2026 and 17/08/2026. The causes of the incidents were a combination of operator error, SCADA failure and infrastructure failures. In response to the incidents, Uisce Éireann have confirmed that a turbidity meter which will capture all discharges from the sludge treatment plant will be installed on the outfall line by 18/09/2026.
3. The audit found that the drinking water treatment plant was operating satisfactorily on the day of the audit. Drinking water quality was unaffected by the sludge discharge incidents and the drinking water intake location is upstream of the outflow point from the sludge treatment works.
4. In relation to the Leakage audit component of this site visit, where Uisce Éireann were unable to provide the relevant bulk-meter information at the time of the audit, any follow-up recommendations will be dealt with centrally.

Uisce Éireann should submit a report to the EPA on or before 16/10/2026 detailing the actions taken and planned, with timescales, to close out the nine recommendations in this audit report.

> Introduction

The Cork Harbour and City Public Water Supply (PWS) serves a population of 143,855 with an average output of 64,135 m³/day (EPA Eden figures). Raw water is abstracted from the River Lee at the Inniscarra Lake. Treatment at the Inniscarra Water Treatment Plant (WTP) includes coagulation, flocculation, filtration through rapid gravity filters, disinfection including a newly installed on-site electrochlorination (OSEC) system, final pH correction, fluoridation and sludge treatment.

This audit was undertaken to assess Uisce Éireann's performance in producing clean and wholesome water with a focus on the operation of the plant. The audit also addressed the notification by Uisce Éireann to the EPA of five incidents in 2026 regarding the discharge to the River Lee of inadequately treated sludge from the treatment plant processes.

The Leakage audit examined aspects of bulk-flow metering that measures drinking water volumes entering the distribution network (Distribution input), which is a key component of the accuracy of reliability of reported Leakage as per regulatory requirements.

> Supply Zones Areas Inspected

The raw water storage tanks, poly and alum dosing area, clarifiers, rapid gravity filters and OSEC system were viewed during the inspection. The sludge treatment plant was also visited.

The Leakage audit consisted of interviews with Uisce Éireann staff, the inspection of bulk-meter asset locations where accessible, the associated consoles telemetry systems, and central control areas.



1. Sludge Management

1.1

	Answer
Is sludge arising from the treatment processes adequately managed?	No
Comment	
1. The EPA were notified by Uisce Éireann of five incidents in 2026 resulting in discharges to the River Lee of inadequately treated sludge from treatment processes at Inniscarra drinking water treatment plant: 04/06/2026, 09/06/2026, 29/06/2026, 09/07/2026 and 18/08/2026. 2. The causes given for the incidents were a combination of operator error, failure of a flow meter, failure of the poly dosing system and SCADA system failure at the sludge treatment plant leading to absence of poly dosing. 3. In the case of three of the reported incidents, Uisce Éireann became aware of the discharges when they were contacted by Inland Fisheries Ireland. 4. Under normal operation backwash water from the drinking water treatment plant filters is pumped to two backwash tanks at the nearby sludge treatment plant where some settlement takes place. Of the two backwash water holding tanks at the sludge treatment plant, only one was operational at the time of the audit. Backwash tank No. 1 had been out of operation for an unknown period of time. 5. After blending and poly dosing during normal operation, sludge flow is split and passes simultaneously through two picket fence thickeners each receiving a load of approximately 80 cubic meters per hour. When the turbidity of the supernatant from the picket fence thickeners is greater than 10 NTU it is directed to the backwash tanks for settlement. Outlet flow from the backwash tank to the River Lee would then only occur when the supernatant is < 10 NTU. Incidents of sludge discharge to the River Lee arose however because high turbidity supernatant from the PFTs was directed to a backwash tank when the outflow from the backwash tank was decanting to the River Lee. 6. As a mitigation measure Uisce Éireann undertook that the backwash tank would only be operated in manual mode and only when turbidity from the backwash tank was below 10 NTU and there was no supernatant from the PFT entering the backwash tank. Despite this, within the following weeks a further incident occurred when a relief operator placed the decanting operation from the Backwash tank into automatic mode. 7. At the time of the audit only one of the picket fence thickeners was operational due to the breakdown of a gearbox in PFT 1 approximately 3 months prior and PFT 2 was receiving a flow over its capacity of approximately 160 cubic meters per hour.	
Recommendation:	
1. Review current methods of handling and disposal of water treatment sludge to ensure the practice is not in contravention of the Waste Management Act, 1996, as amended. The discharge of water treatment sludge to receiving water, where practiced, should cease immediately. Supernatant or leachate from stored drinking water sludge should not give rise to environmental pollution. 2. Put in place mitigation measures to ensure that sludge is treated adequately including at times when the plant may be receiving a load over its capacity due to infrastructure or equipment failures. 3. Ensure that a standard operating procedure is in place, and that operators including relief operators, are appropriately trained to deal with instances of overloading of sludge handling and treatment infrastructure and when to escalate issues to Uisce Éireann management. 4. Provide a progress update on: (i) the remedial works needed to bring Backwash Tank No 1 back into operation, noting that the planned timeline for completion is the end of December 2026, and (ii) the planned installation of the turbidity monitor with automatic shutdown on the discharge pipe from the sludge treatment plant which should operate when the valve is opened in automatic or manual mode. A continuous flow meter should be installed along with the turbidity monitor. Provide a map of the STP layout showing the turbidity monitor location.	



2.1

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

Answer

No

Comment

Records of network residual chlorine were not available for inspection at the time of the audit.

Recommendation:

5. Submit records of network residual chlorine for the month of July.

2.2

Is there a documented alarm response procedure?

Answer

No

Comment

Uisce Éireann confirmed that there was no site specific documented alarm response procedure.

Recommendation:

6. Ensure that:

(i) a formal documented site specific alarm response procedure is in place at the treatment plant and

(ii) provide training to relevant staff (including relief and temporary staff) on the requirements of the alarm response procedure.

2.3

Are suitable controls in place to prevent accidental or unauthorised changes to alarm or inhibit settings?

Answer

No

Comment

There is password protected access to alarm and inhibit settings for a limited number of staff and contractors. There is no oversight or audit trail however on changes to alarm and inhibit settings.

Recommendation:

7. (a) Ensure suitable controls are in place to prevent accidental or unauthorised changes to alarm or inhibit settings and;

(b) Maintain a record of all changes to alarm and inhibit settings which should be available for inspection.

2.4

Are treatment processes examined during the audit operating satisfactorily?

Answer

Yes

Comment

Filter 4 was non-operational at the time of the audit due to the need for a valve replacement. This however did not affect the operation of the treatment plant.

Recommendation:

8. Provide a timeframe for the works needed to bring Filter 4 back into operation.

2.5

Are instrument calibrations within date?

Answer

No

Comment

Two of the flow meters (soda ash and carbon) in the poly dosing area were without calibration stickers.

Recommendation:

9. Confirm that the two flow meters in the poly dosing area which were without calibration information have been calibrated and ensure that the calibration date and next due date are displayed on the units.



3. DI Bulk Flow Metering (Leakage)

		Answer
3.1	Confirm that the treatment plant supplies above 1000MCD	Yes
	Comment	
	1. Treatment plant supplies approximately 64 million litres per day.	
		Answer
3.2	Is there site-bulk metering for measuring drinking water volumes entering the supply network?	Yes
	Comment	
	2. Treatment plant has 1 bulk-meter which was visually inspected. (M1 Reservoir Outflow)	
		Answer
3.3	Is ALL treated water entering the supply system from the treatment plant currently metered?	Yes
	Comment	
	3. Confirmed, all water entering the supply system is metered.	
		Answer
3.4	Is there a scheduled verification of bulk meter(s) to ensure the accuracy of the meter reading?	Yes
	Comment	
	4. The bulk-meter was verified in April 2026.	
		Answer
3.5	Is there a scheduled verification of bulk meter(s) readings to ensure the correct readings are transmitted to data/network management systems (e.g. SCADA)?	Yes

		Answer
3.6	What is the frequency of the bulk meter(s) readings taken (hourly, daily)?	Yes
	Comment	
	5. Readings taken continuously, confirmed by inspection of trends in control room.	
		Answer
3.7	Is the bulk meter compliant/calibrated to OIML R49 / ISO DIN 4064 Standards?	Not Applicable
	Comment	
	6. Unable to confirm at time of the audit.	
		Answer
3.8	For each on-site bulk meter, is the current bulk-meter flow above the recommended operational minimum and maximum flows for the meter?	Yes
	Comment	
	7. Confirmed for 900mm line M1 to Service Reservoir	
		Answer
3.9	Is there a process in place to alert Operators/Maintenance/Systems when the bulk-meter malfunctions or stops working?	Yes
	Comment	
	8. Operators will be alerted through alarms in the treatment process. Alarms are monitoring 24/7.	
		Answer
3.10	Are bulk-meter flow trends available on-site?	Yes
	Comment	
	9. Confirmed by inspection of telemetry control room.	

3.11

Are there any plans to add or upgrade existing meters within the next 12 months?

Answer

No

Recommendations

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 is responsible for ensuring a clean and wholesome supply of drinking water and should implement the recommendations raised in this report without delay.

Response to Audit Report

Uisce Éireann should submit a report to the EPA on or before the date specified in the Summary of Key Findings detailing the actions taken and planned, with timescales, to close out the recommendations in this audit report.

The EPA advises that the findings and recommendations from this report should, where relevant, be addressed at other public water supplies.

Publication of Reports

Audit reports are published to the EPA's website, www.epa.ie, typically 1 month after the audit report is issued to Uisce Éireann.