

Site Visit Report

Under the European Union (Drinking Water) Regulations 2014 as amended, the Environmental Protection Agency is the supervisory authority in relation to Irish Water and its role in the provision of public water supplies. This Audit was carried out to assess the performance of Irish Water in providing clean and wholesome water to the visited public supply.

The audit process is a sample on a given date of the facility's operation. Where a finding against a particular issue has been reported this should not be construed to mean that this issue is fully addressed.

Water Supply Zone	
Name of Installation	Wexford Town
Organisation	Irish Water
Scheme Code	3300PUB1669
County	Wexford
Site Visit Reference No.	SV21025

Report Detail	
Issue Date	22/12/2020
Prepared By	Aoife Loughnane

Site Visit Detail			
Date Of Inspection	17/12/2020	Announced	Yes
Time In	14:00	Time Out	14:50
EPA Inspector(s)	Aoife Loughnane Daryl Gunning		
Additional Visitors	Orla Harrington		
Company Personnel	Irish Water: Patrick Duggan, Brian O'Leary, Samantha Keane Wexford County Council: Fionnuala Callery, Paul Delahunty HSE: Jane Power		

> Summary of Key Findings

1. A Boil Water Notice was issued to 21,760 consumers of Wexford Town public water supply from 10th - 14th December 2020 due to elevated turbidity in treated water at Newtown water treatment plant following heavy rain overnight on 9th - 10th December. The incident was suitably escalated and managed in order to protect public health.
2. Alarms for high turbidity from the clarifiers and filters were generated but were not responded to promptly because the incident happened during the night. The automatic run-to-waste (post clarifiers) function had been switched off due to previous operational difficulties at the plant. This resulted in inadequately treated water with high turbidity levels entering the reservoirs for 5 to 6 hours before the plant was manually switched into run-to-waste mode at 8:30 am on 10th December.
3. The automatic run-to-waste (post clarifiers) has now been re-instated at a more suitable set-point, and a new automatic run-to-waste (post filters) was being installed at the plant on the day of the audit. These fail-safe systems should prevent a reoccurrence of the turbidity incident which resulted in the Boil Water Notice.

> Introduction

Wexford Town public water supply produces approximately 295 m³ per hour of water and serves a population of 21,760. Raw water is abstracted from the Sow River intake at Edenvale (approx. 80% of supply) and the Coolree impoundment reservoir (20% of supply). Treatment at Newtown water treatment plant consists of coagulation, flocculation, clarification, rapid gravity filtration, disinfection by chlorination and fluoridation.

This audit was carried out in response to the Boil Water Notice placed on this supply from 10th - 14th December 2020 due to elevated turbidity in treated water at Newtown water treatment plant following heavy rain overnight on 9th - 10th December.

> Supply Zones Areas Inspected

The audit comprised of a video conference meeting on 17th December 2020. A site visit was not undertaken due to Covid-19 risk and because the EPA recently audited this plant on 2nd October 2020.



1. Incident Management

1.1

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

Answer

Yes

Comment

The timeline of events which resulted in the Boil Water Notice is as follows:

1. Following heavy rain overnight on 9th - 10th December, raw water turbidity at the water treatment plant increased significantly to 150 - 170 NTU. The plant experienced difficulties in adequately treating this water, which caused the turbidity in the clarifiers and filters to rise.
2. Alarms for high turbidity from the clarifiers and filters were generated, starting at approximately 3:00 am on 10th December. These alarms were not responded to promptly. Inadequately treated water with elevated turbidity levels entered the reservoirs for 5 to 6 hours.
3. As soon as Wexford County Council operational staff arrived on site at approximately 8:30 am on 10th December, they immediately switched the plant into run-to-waste mode. The incident was then notified to Engineering staff of Wexford County Council, who subsequently notified Irish Water.
4. The HSE were notified of the incident and a conference call with the HSE was organised as part of the consultative process. The outcome of this consultation meeting was that a Boil Water Notice was to be issued for the Wexford Town supply. The Boil Water Notice was issued on the afternoon of 10th December.



2. Site Specific Issues

2.1

Is the water treatment plant resilient enough to cope with significant variations in raw water quality or demand?

Answer

Yes

Comment

1. There is automatic run-to-waste (post clarifiers) which prevents clarified water with high turbidity levels from entering the filters. However, this function had been switched off due to previous operational difficulties at the plant because the 2 NTU set-point (based on Irish Water's performance criteria for clarifiers) was causing the run-to-waste to activate too regularly. Since the Boil Water Notice incident, the automatic run-to-waste was re-instated to activate at 5 NTU initially, and then reduced to 3.5 NTU, which is considered more suitable for this plant.

2. A new automatic run-to-waste (post filters) was being installed on the day of the audit, to prevent filtered water with high turbidity levels from leaving the treatment plant. Wexford County Council representatives stated that the activation set-point will initially be set at 0.9 NTU. However, that set-point is too high to verify an effective protozoal barrier at the plant.

3. The run-to-waste facilities allow the plant to deal with periods of elevated turbidity without compromising the treatment processes.

4. The SCADA graphs of plant performance from 8th - 17th December demonstrate that in the aftermath of the Boil Water Notice, the treatment plant coped adequately during heavy rain on 13th and 16th December. Wexford County Council representatives confirmed that the automatic run-to-waste (post clarifiers) was not activated over the past week.

5. There is plenty of treated water storage available in this supply; 4,500 m³ in the 2 on-site reservoirs at Newtown water treatment plant, and a further 3,400 m³ in 2 reservoirs at Coolcotts. This means that the water treatment plant can be shut down for an extended period if necessary, for example the shutdown that occurred from approximately 8:30 to 17:00 on 10th December during the Boil Water Notice incident. It also means that there is enough treated water available to backwash the filters.

6. There is an inter-connection to Fardystown public water supply which could be used to supplement the Wexford Town supply if necessary.

Recommendations

Subject	Virtual Audit Recommendations	Due Date	22/01/2021
Action Text	<p>Recommendations</p> <ol style="list-style-type: none"> 1. Irish Water should ensure there is a fail-safe system in place outside of normal working hours, to automatically run-to-waste or shut-down the Wexford Town water treatment plant, to prevent inadequately treated water being supplied into the distribution network. 2. Irish Water should ensure the turbidity set-point for automatic run-to-waste (post clarifiers) is set at an appropriate level to protect the filtration process without causing operational difficulties at Wexford Town water treatment plant. 3. Irish Water should ensure the turbidity set-point for automatic run-to-waste (post filters) is set at an appropriate level to verify the effectiveness of the protozoal barrier at Wexford Town water treatment plant. <p>Follow-Up Actions required by Irish Water</p> <p>During the audit, Irish Water representatives were advised of the audit findings and that action must be taken as a priority by Irish Water to address the issues raised.</p> <p>This report has been reviewed and approved by Dr. Michelle Minihan, Senior Drinking Water Inspector.</p> <p>Irish Water should submit a report to the Agency on or before 22/01/21 detailing how it has dealt with the issues of concern identified during this audit.</p> <p>The report should include details on the action taken and planned to address the various recommendations, including time frame for commencement and completion of any planned work.</p> <p>The EPA also advises that the findings and recommendations from this audit report should, where relevant, be addressed at all other treatment plants operated and managed by Irish Water.</p> <p>Please quote the Compliance Plan Number DW20200207 in any future correspondence in relation to this Report.</p>		