

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	Kilkenny City (Troyswood) PWS
Organisation	Irish Water
Scheme Code	1500PUB1011
County	Kilkenny
Site Visit Reference No.	SV26216

Report Detail	
Issue Date	23/12/2022
Prepared By	Orla Harrington

Site Visit Detail			
Date Of Inspection	01/12/2022	Announced	Yes
Time In	10:10	Time Out	11:45
EPA Inspector(s)	Orla Harrington		
Additional Visitors			
Company Personnel	Irish Water: Patrick Duggan, Kevin Horgan, Ornaith Hanna Kilkenny County Council (acting under service level agreement to Irish Water): David O'Brien, Keith Wall, John Cleere, Andrew Flood Glan Agua Ltd: Richard Fitzgibbon, Oliver Nolan, David Flanagan		

> Summary of Key Findings

1. Irish Water is progressing construction works at Kilkenny City (Troyswood) Public Water Supply to increase its capacity from 6,000 m³/day to 19,000 m³/day to allow for the supply of treated water to Kilkenny City (Radestown) Public Water Supply, thereby making the Radestown water treatment plant redundant. Irish Water advised that the projected date of completion of the works is Quarter 1 2024.
2. Irish Water indicated that the Kilkenny City (Troyswood) Public Water Supply source has a protozoal log credit requirement of 4 log. Currently treatment at the plant provides 3 log credit if operated in accordance with the log credit performance approach. The upgrade works at the plant includes installation of UV disinfection which will address the log deficit. Monthly monitoring for *Cryptosporidium* will continue until all upgrade works are complete.

> Introduction

Kilkenny City Water Supply Scheme is served by two water treatment plants (WTP) namely Troyswood WTP and Radestown WTP. The Kilkenny City (Troyswood) Public Water Supply (PWS) supplies a population of approximately 14,011 (EDEN) with an average daily volume of 6,000 m³/day. The source of the supply is from the River Nore. Treatment at the plant includes coagulation, flocculation, clarification, rapid gravity filtration, disinfection and fluoridation.

The Troyswood WTP is currently undergoing an upgrade to increase its capacity from 6,000 m³/day to 19,000 m³/day. At which point Radestown WTP will be decommissioned and water will be pumped to Radestown reservoirs from the Troyswood plant while also maintaining supply to Troyswood customers. The upgrade works at Troyswood WTP are required to address the protozoal treatment log deficit and to allow the decommissioning of Radestown WTP and to ensure that drinking water supplies to Radestown PWS consumers complies with the trihalomethanes parametric value of 100 ug/l.

The purpose of the audit was to assess the performance of Irish Water in progressing works to upgrade the plant and to assess progress with the recommendations from the previous audit undertaken by the EPA on 25/06/2019. An audit of Kilkenny City (Radestown) PWS was also undertaken on 01/12/2022.

> Supply Zones Areas Inspected

The audit consisted of an inspection of the water treatment plant to verify progress with the upgrade works.



	Answer
1.1	Have the recommendations from the previous EPA audit been satisfactorily addressed? Comment 1. The Troyswood WTP is currently undergoing an upgrade to increase capacity to 19,000 m ³ /day and address the -1 log deficit at the plant. Irish Water advised at the audit that recommendations from the previous audit on 25/06/2019 will be fully completed by Quarter 1 2024 under this upgrade. Irish Water's justification for the Quarter 1 2024 completion timeframe is due to time required for planning permissions and other statutory processes. Irish Water have advised that the construction works commenced in December 2021 and are 45 % complete. The works include the following: <ul style="list-style-type: none">• Provision of a treated water rising main from Troyswood WTP to the existing reservoirs at Radestown• New intake including screening, pumping and raw water monitoring• Pre and post treatment chemical dosing, with bulk storage in place• Two new floc tanks, and upgrade works to existing floc tank• One new clarifier, upgrade works to existing two clarifiers• One new filter, upgrade works to existing three filters• UV treatment (at 25% completion). The upgrade also includes works to SCADA and associated site telemetry for control and alarms, which was identified as an audit recommendation in the previous EPA audit. 2. On completion of the upgrade, the contractor (Glan Agua Ltd) will enter a process proving period whereby the plant will be operated at its ultimate operating capacity for sufficient time to demonstrate that it is capable of its design both in terms of quality and quantity. A completion certificate will then be issued, and the plant will be operated by the contractor for one year. During this time Irish Water staff will be trained in the plant operation.



2. Site Specific Issues

2.1

	Answer
Has the protozoal compliance log deficit been addressed at Troyswood water treatment plant?	No
Comment	
<p>1. Irish Water has confirmed that the River Nore has a protozoal log credit requirement of 4 log. Currently the plant provides 3 log credit if operated in accordance with the log credit performance approach. This gives a -1 log deficit.</p> <p>2. Irish Water is currently installing a UV disinfection system at the plant as part of the upgrades to address the protozoal compliance log deficit. It was noted during the audit that construction works are well underway on the extension to house the new UV disinfection system.</p> <p>3. Irish Water will continue to monitor the supply in accordance with the <i>Irish Water Rationale for Determining the Frequency of Cryptosporidium Monitoring in Public Water Supplies</i> until the log deficit is addressed. At the audit, Irish Water stated that all upgrades will be complete at the plant by Quarter 1 2024.</p>	

Recommendations

Subject	Troyswood Audit Recommendations [01/12/2022]	Due Date	20/01/2023
Action Text	<p>Recommendations</p> <p>Irish Water is responsible for ensuring a safe and secure supply of drinking water. To address these issues, Irish Water should implement the following recommendations without delay:</p> <ol style="list-style-type: none">1. Irish Water should complete the planned upgrade works at Troyswood water treatment plant and collate the relevant data and information to verify effectiveness of the works.2. Irish Water should undertake <i>Cryptosporidium</i> monitoring in Kilkenny City (Troyswood) public water supply in accordance with <i>Irish Water's Rationale for Determining the Frequency of Cryptosporidium in Public Water Supplies</i> until the log deficit is addressed. <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 Regina Campbell, Drinking Water Team Leader.</p> <p>Irish Water should submit a report to the Agency on or before 20/01/2023 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 Action Reference Number DW20190087 in any future correspondence in relation to this Report.</p>		