

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 (Radestown) PWS |
| Organisation | Irish Water |
| Scheme Code | 1500PUB1010 |
| County | Kilkenny |
| Site Visit Reference No. | SV26214 |

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

| Site Visit Detail | | | |
|----------------------------|--|------------------|-------|
| Date Of Inspection | 01/12/2022 | Announced | Yes |
| Time In | 09:15 | Time Out | 10:00 |
| EPA Inspector(s) | Orla Harrington | | |
| Additional Visitors | | | |
| Company Personnel | Irish Water: Patrick Duggan, Kevin Hogan, Ornaith Hanna Kilkenny County Council (acting under service level agreement to Irish Water): David O'Brien, John Cleere, Brian Condren, Keith Wall | | |

> Summary of Key Findings

1. Irish Water has not complied with the EPA's Regulation 16(1) Direction issued on 28/11/2019, to ensure that the drinking water supplied to consumers on the Kilkenny City (Radestown) Public Water Supply complies with the trihalomethane parametric value of 100 ug/l by 30/06/2022. The Direction required Irish Water to submit a final report to the EPA by 07/07/2022 confirming completion of works and this report was not submitted. The EPA may consider further enforcement action.
2. Irish Water is progressing construction works that will allow the decommissioning of the Kilkenny City (Radestown) Water Treatment Plant and connection to Kilkenny City (Troyswood) Public Water Supply. Irish Water advised the EPA that the projected date of completion of the works is Quarter 1 2024 which is beyond the Direction deadline of 30/06/2022.
3. Trihalomethane levels in the Kilkenny City (Radestown) Public Water Supply continue to breach the limits in the *European Union (Drinking Water) Regulations 2014, as amended*.

> Introduction

Kilkenny City Water Supply Scheme is served by two water treatment plants (WTP) namely Troyswood WTP and Radestown WTP. The Kilkenny City (Radestown) Public Water Supply (PWS) supplies a population of 14,483 with an average daily volume of 4,000 m³/day. The source of the supply is mainly from the Muckalee impoundment / Douglas River located approximately 8 km from the WTP. Kilkenny County Council stated that a proportion of the supply is supplemented by the River Dinan when the main supply needs boosting. Treatment includes screening, slow sand filtration, disinfection by chlorination and fluoridation. There are two reservoirs with a combined storage capacity of 6,750m³ located onsite, with only one in use storing treated water from Radestown WTP.

The Kilkenny City (Radestown) PWS is on the EPA's Remedial Action List (RAL) for public water supplies, as the supply has trihalomethane (THM) failures dating back to June 2009.

The purpose of the audit was to determine progress with the EPA's Regulation 16(1) Direction issued to Irish Water on 28/11/2019 requiring compliance with the THMs parametric value by 30/06/2022. Irish Water is progressing construction works to decommission the Radestown WTP, with the exception of the existing two reservoirs and replace the supply with water from the Troyswood WTP to ensure that drinking water supplied to consumers complies with the THMs parametric value. At the audit, Irish Water advised the EPA of a construction completion date of Quarter 1 2024 which goes beyond the THMs compliance deadline of 30/06/2022 stated in the Direction.

An audit of Kilkenny City (Troyswood) PWS was also undertaken on 01/12/2022, to assess the performance of Irish Water in progressing works to upgrade the plant which will ultimately replace the supply from Radestown WTP.

> Supply Zones Areas Inspected

The audit consisted of an inspection of the treatment plant.



1. Management and Control

| | Answer |
|---|--------|
| 1.1 Are suitable plant shutdowns/inhibits in place to prevent the entry of inadequately treated water entering the distribution network? | No |
| Comment | |
| <p>1. At the audit, Kilkenny County Council advised that there is no final water turbidity shutdown nor is there a plant shutdown on low and high chlorine concentration in the final water. It was outlined that automatic shutdown linked to turbidity and residual chlorine is close to completion however it has yet to be introduced as Kilkenny County Council are waiting on the installation of an actuator on the valve. A date for completion could not be confirmed.</p> <p>2. SCADA data between 31/10/2022 and 01/12/2022 was examined during the audit. The final water turbidity trend was satisfactory with turbidity generally <0.3 NTU and monitoring takes place on the outlet leaving the reservoir. The final water turbidity was reading 0.07 NTU on the day of the audit. The target residual chlorine at the plant is approximately 1.2 mg/l and trends examined were satisfactory. The final water was reading 1.36 mg/l on the day of the audit.</p> | |



2. Site Specific Issues

| | | Answer |
|--|---|--------|
| 2.1 | Has Irish Water complied with the Direction by the deadline 30/06/2022? | No |
| Comment | | |
| <p>1. A Direction was issued to Irish Water on 28/11/2019 under Regulation 16(1) of the <i>European Union (Drinking Water) Regulations 2014, as amended</i>. The Direction required Irish Water to comply with the THM parametric value of 100ug/l by 30/06/2022.</p> <p>2. In order to tackle the THM issue at Kilkenny City (Radestown) PWS, Irish Water is currently undergoing an upgrade of Troyswood WTP to increase its capacity from 6,000 m3/day to 19,000 m3/day to allow for the supply of treated water to Radestown PWS, thereby making the current plant at Radestown redundant.</p> <p>3. The upgrade works at Troywood WTP commenced onsite in December 2021. The timeline for completion of this upgrade and decommissioning of Radestown WTP is expected to be Quarter 1 2024, which goes beyond the Direction deadline of 30/06/2022.</p> | | |

| | | Answer |
|--|---|--------|
| 2.2 | Is there suitable monitoring locations for trihalomethanes in the distribution network? | No |
| Comment | | |
| <p>1. THMs continue to exceed the parametric value of 100 µg/l as set out in the Drinking Water Regulations 2014, as amended. Since the Direction deadline, there have been THM exceedances found in samples taken on 20/09/2022, 11/10/2022, 29/11/2022 and 13/12/2022 at one location on the network. Irish Water will need to increase the number of representative monitoring locations on the distribution network so as to have more accurate information on the extent and frequency of exceedances.</p> <p>2. Once the construction works are complete, Irish Water will need to undertake a verification monitoring programme across the network at representative locations to demonstrate compliance with the THM parametric value.</p> | | |

Recommendations

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|--------------------|--|-----------------|------------|
| Subject | Kilkenny City (Radestown) PWS - Audit Report | 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 a) decommission Kilkenny City (Radestown) water treatment plant b) progress connection to Kilkenny City (Troyswood) Public Water Supply to ensure that the drinking water supplied to consumers complies with the trihalomethanes parametric value of 100 ug/l as set out in the <i>European Union (Drinking Water) Regulations 2014, as amended</i> and c) notify the EPA when complete.2. Irish Water should extend the monthly trihalomethane monitoring programme to include several representative monitoring locations throughout the network and continue to notify the EPA of any exceedances.3. Irish Water should carry out a verification monitoring programme to demonstrate that the upgrade works completed are effective in ensuring ongoing compliance with the THMs parametric value.4. Irish Water should install automatic shutdown based on residual chlorine and turbidity in the final water. <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 DW20090218 in any future correspondence in relation to this Report.</p> | | |