

# 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	
<b>Name of Installation</b>	GLENTIES-ARDARA
<b>Organisation</b>	Irish Water
<b>Scheme Code</b>	0600PUB1070
<b>County</b>	Donegal
<b>Site Visit Reference No.</b>	SV25653

Report Detail	
<b>Issue Date</b>	27/06/2022
<b>Prepared By</b>	Ruth Barrington

Site Visit Detail			
<b>Date Of Inspection</b>	02/06/2022	<b>Announced</b>	Yes
<b>Time In</b>	14:35	<b>Time Out</b>	16:20
<b>EPA Inspector(s)</b>	Ruth Barrington Lisa Noone		
<b>Additional Visitors</b>			
<b>Company Personnel</b>	Irish Water: Pat Collins, Martin Temple, Hugh Kerr  Donegal County Council (working under Service Level Agreement to Irish Water): Patrick Gallagher, Eoin Kerrane, Michael Breslin, Paul McCloskey  Veolia: Oisín McGlinchey, Mattis Boubal		

## > Summary of Key Findings

1. Glenties Ardara Public Water Supply is on the EPA's Remedial Action List due to ongoing persistent failures to meet the trihalomethanes limit specified in the *European Union (Drinking Water) Regulations 2014 as amended*. An Action Programme to provide appropriate treatment to minimise THM formation is underway with Irish Water's completion date being September 2023 and verification date December 2023.
2. The pilot plant in place at Glenties Ardara Water Treatment Plant since February 2022 including ultrafiltration and nanofiltration for the removal of natural organic matter and colour from the raw water is returning promising results. Irish Water's RAL Action programme involves providing full scale treatment for the supply using this proprietary Veolia membrane filtration system.

## > Introduction

Glenties Ardara public water supply provides treated water to a population of 3,647 people. The supply is on the EPA's Remedial Action List (RAL) due to persistent failures to comply with the trihalomethanes (THM) limit specified in the *European Union (Drinking Water) Regulations 2014 as amended*.

A previous upgrade at Glenties Water Treatment Plant (WTP), completed in 2019, provided a barrier to *Cryptosporidium* through UV treatment, and air stripping was added to decrease the concentrations of THM in the public water supply. The air stripping systems were not sufficient to bring THM levels into compliance and therefore the supply was not removed from the Remedial Action List in 2019.

This audit was carried out to assess Irish Water's progress with the RAL Action Programme, which has been revised several times since 2019. Irish Water's preferred solution is currently being trialled on site to prove it can deal with the challenging raw water conditions at Glenties WTP.

## > Supply Zones Areas Inspected

The set up of the proprietary pilot plant assessing the potential of pre-filtration, ultrafiltration and nanofiltration membrane systems for the removal of natural organic matter and colour from the raw water was included in the scope of the audit. The raw water abstraction, existing treatment processes and treated water reservoirs were not examined.



## 1. Supply on the Remedial Action List

1.1

	Answer
Is the Action Programme on track to meet the Remedial Action List completion date?	Yes
<b>Comment</b>	
<p>1. The RAL Action Programme for Glenties Ardara PWS has suffered several setbacks since the under-performance of the air stripping systems for THM removal was identified in 2019. The high levels of organic matter combined with high colour and low alkalinity of the raw water meant that solutions to prevent THM formation were limited. The physical constraints of the Glenties WTP site and hillside access also reduced the number of treatment solutions which were feasible for further evaluation.</p> <p>2. It is noted that while air stripping was insufficient to allow compliance with the THM parametric value of 100ug/l, it has contributed to approximately 30% reduction in the concentrations of THM being detected in the monitoring programme. Irish Water confirmed that the air stripping systems would be maintained in use until the current RAL Action Programme is complete.</p> <p>3. Monitoring results for the Glenties Ardara PWS were provided by Irish Water covering the period May 2020 to March 2022. Taking the 12-month period to March 2022, twelve samples were taken for THM analysis. THM levels in exceedance of the parametric value of 100 ug/l were detected in nine of these samples. These failures ranged in concentration from 108.32 ug/l to 144.55 ug/l. The frequency of non-compliance is considered to be persistent and reflects the current inadequate levels of treatment at Glenties WTP.</p> <p>4. The revised RAL Action Programme now includes a proprietary Veolia package plant including specialised membrane nanofiltration which is designed to remove natural organic matter and colour, and thus limit THM formation. Pre-filtration for iron and manganese removal has also been included. A staged pilot of the system has been in place at the Glenties WTP since February 2022.</p> <p>5. The pilot comprises five stages, four of which had been completed at the time of the audit, with the fifth due for completion before the end of July 2022. Reporting had been completed on three stages of the pilot at the time of the audit. Results indicated a significant decrease in organic matter and colour in the pilot treated water when compared against raw water and against treated water from the existing water treatment plant. The limited THM formation potential (THMFP) testing carried out within the pilot to date demonstrated very good results, in Stage 1 of the pilot THMFP of 35.7 ug/l in the pilot treated water versus THMFP of 230 ug/l in the treated water from the existing water treatment plant.</p> <p>6. Irish Water representatives stated that the RAL completion date of September 2023 and verification date of December 2023 remain achievable, although delays have been encountered, caused by extending the pilot phase and carrying out the required environmental surveys.</p> <p>7. Donegal County Council and Irish Water representatives stated that there are a number of group water schemes due to be formally taken in charge by Irish Water. The current sample locations are within the existing public water supply network so the monitoring programme for RAL verification may need to be extended to ensure it is representative.</p>	



## 2. Site Specific Issues

	Answer
2.1 Is the raw water pipeline secure?	No
<b>Comment</b>	
<p>1. The raw water line from the lake to Glenties WTP was subject to bursts. Raw water was temporarily directed to the WTP through an above ground pipeline running adjacent to the access road where there is some risk of damage to the pipe. Works were at an advanced stage to re-lay an underground raw water mains, with commissioning to take place during June 2022.</p>	

## Recommendations

Subject	Glenties Ardara Audit 02/06/2022	Due Date	27/07/2022
<b>Action Text</b>	<p><b>Recommendations</b></p> <ol style="list-style-type: none"><li>1. Irish Water should continue to progress the RAL Action Programme for Glenties Ardara PWS without further delays so that the supply complies with the THM parametric value specified in the <i>European Union (Drinking Water) Regulations 2014 as amended</i>.</li><li>2. Irish Water should ensure that monitoring programmes are representative of the extent of the public water supply network, as additional areas are formally taken in charge.</li><li>3. Irish Water should finalise the commissioning of the new raw water mains and remove the temporary pipework from use.</li></ol> <p><b>Follow-Up Actions required by Irish Water</b></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 Michelle Minihan, Drinking Water Senior Inspector.</p> <p>Irish Water should submit a report to the Agency on or before 27/07/2022 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>		