

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	Collon
Organisation	Uisce Éireann
Scheme Code	2100PUB1007
County	Louth
Site Visit Reference No.	SV29690

Report Detail	
Issue Date	04/06/2024
Prepared By	Lorcan Farrell

Site Visit Detail			
Date Of Inspection	17/05/2024	Announced	No
Time In	10:30	Time Out	12:00
EPA Inspector(s)	Lorcan Farrell Ruth Barrington		
Additional Visitors	Anna Doyle		
Company Personnel	Uisce Éireann: Daniel Behan, James O'Hagan. Louth County Council (Working in partnership with Uisce Éireann): Patrick Callan, Dennis Grimes, Andrew White.		

> Summary of Key Findings

1. There are no shutdown setpoints in place at Collon Water Treatment Plant (WTP) to protect disinfection processes.
2. There is no chlorine residual monitor in place for verification of chlorine contact time for the treatment plant.
3. The final water turbidity monitor in place at the treatment plant was out of service.

> Introduction

Collon Public Water Supply serves a population of 3,333 (EDEN figure) and is supplied by Collon WTP. The treatment plant produces approximately 1,100 - 1,400 m³/day depending on demand and sources its water from three boreholes located in the vicinity of the treatment plant. Treatment consists of chlorination.

The audit was undertaken to assess Uisce Éireann's performance in producing clean and wholesome water with a focus on the alarms and inhibits in place at the treatment plant and the procedures in place to ensure appropriate oversight of treatment processes.

> Supply Zones Areas Inspected

The audit included a site tour of Collon WTP.



1. Alarms, Inhibits & Oversight Audits 2024

	Answer
1.1	No
Comment	
<p>1. The chlorine contact time validation calculation for the treatment plant identifies the outlet of Collon Reservoir as the point of chlorine contact time validation. There is no residual chlorine monitor located on the outlet of the reservoir to provide verification of chlorine contact time. Uisce Éireann staff confirmed that works are ongoing to install a residual chlorine monitor at this location under an Uisce Éireann upgrade programme. Uisce Éireann confirmed that these upgrade works are expected to be completed in 2026.</p> <p>2. There is a residual chlorine monitor located after sodium hypochlorite dosing at the treatment plant. While high and low warning alarms are in place based on the output of this monitor, there are no high/low plant shutdown setpoints in place to prevent inadequately treated water entering supply in the event of a chlorination system failure.</p>	

	Answer
1.2	No
Comment	
<p>1. The final water turbidity monitor was not operational at the treatment plant. Louth County Council confirmed that the monitor began reading inaccurately at the start of April 2024 and a contractor had been engaged to return the turbidity monitor to service. It was confirmed that the contractor was to return imminently to complete repairs and return the turbidity monitor to service.</p> <p>2. The final water ammonia monitor was not operational at the treatment plant. Louth County council confirmed that the monitor had not been in use for at least 3-4 years.</p>	

	Answer
1.3	No
Comment	
<p>1. Uisce Éireann confirmed that an alarm and inhibit review was completed at the treatment plant previously. However, the status of any potential recommendations or completion dates for any works arising from the review were not available at the audit.</p>	

		Answer
1.4	Are suitable plant shutdowns/inhibits in place to prevent the entry of inadequately treated water entering the distribution network?	No
Comment		
<p>1. There is no treatment plant shutdown setpoint based on the output of the final water turbidity monitor in place at the treatment plant to prevent inadequately treated water entering the supply network.</p> <p>2. A warning alarm set at 1 NTU is in place to inform operational staff that the turbidity disinfection limit has been exceeded.</p>		

		Answer
1.5	Are there appropriate procedures covering verification of alarms and inhibits status following maintenance or other work on site?	Yes
Comment		
<p>1. Louth County Council staff confirmed that an appropriate procedure covering verification of alarms and inhibits status following maintenance or other work on site is in place at the treatment plant. However, the procedure including the tag in/tag out sheet was not available at the audit.</p>		



2. Site Specific Issues

	Answer	
2.1	Is the abstraction source adequately protected against contamination?	No
Comment		
<p>1. The inspection hatch for the borehole located at Collon WTP was closed but unlocked.</p> <p>2. The wellhead of the borehole located at the treatment plant is located below ground level in a concrete chamber. EPA Advice Note 14: Borehole Construction and Wellhead Protection requires a cap on the borehole which was not present.</p>		

	Answer	
2.2	Are duty and standby chlorine pumps in operation?	No
Comment		
<p>1. There are two chlorine dosing pumps at the treatment plant which operate in a duty/assist arrangement. Louth County Council staff confirmed that both pumps, at times, are needed to maintain an appropriate chlorine residual leaving the treatment plant. At these times there is no standby pump available in the event of a mechanical failure of either the duty or assist pumps.</p>		

	Answer	
2.3	Is the treatment plant HMI accessible and fully operational to inform plant operations?	No
Comment		
<p>1. The labelling of alarm setpoints on the treatment plant HMI was not user-friendly leading to the potential for confusion regarding alarm setpoints in place at the treatment plant.</p> <p>2. No past alarms were recorded on the alarm history page of the HMI.</p>		

Recommendations

Subject	Collon Audit Recommendations	Due Date	04/07/2024
Action Text	<p>Uisce Éireann is responsible for ensuring a clean and wholesome supply of drinking water and should implement the following recommendations without delay.</p> <ol style="list-style-type: none"> 1. Disinfection: (i) complete installation of a chlorine residual monitor at Collon Reservoir including appropriate warning alarms and plant shutdown setpoints to ensure target chlorine contact time is achieved and verified at all times, (ii) install appropriate high and low plant shutdown setpoints based on residual chlorine level post-dosing at the treatment plant to prevent inadequately treated water entering supply and (iii) install a standby chlorine dosing pump with automatic switch over or plant shutdown in the event of the failure of one of the duty/assist pumps. 2. Turbidity: (i) return the final water turbidity monitor to service, and (ii) install an appropriate plant shutdown to protect the 1 NTU regulatory limit for disinfection. 3. Source Protection: (i) Ensure all inspection hatches at the treatment plant are securely locked when not in use and (ii) install appropriate caps, where needed on boreholes supplying the treatment plant. Uisce Éireann should have regard to EPA <i>Advice Note No. 14: Borehole Construction and Wellhead Protection</i> when carrying out these works. 4. Return the final water ammonia monitor to service. 5. Complete any recommendations arising out of the Alarm and Inhibit review undertaken at the treatment plant. 6. Ensure a copy of the procedure covering the verification of alarms/shutdowns status following maintenance or other works completed at the treatment plant is available at the plant. 7. HMI: (i) provide clear, user-friendly access to treatment plant alarm/inhibit setpoints and (ii) ensure that the alarm history page is operational and recording/displaying historical plant alarms that previously triggered. <p>Actions required by Uisce Éireann</p> <p>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.</p> <p>Uisce Éireann should submit a report to the EPA on or before 04/07/2024 detailing the actions taken and planned, with timescales, to close out the above recommendations.</p> <p>The EPA advises that the findings and recommendations from this audit report should, where relevant, be addressed at other public water supplies.</p>		