

# 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	
<b>Name of Installation</b>	Cleggan/Claddaghduff
<b>Organisation</b>	Uisce Éireann
<b>Scheme Code</b>	1200PUB1011
<b>County</b>	Galway
<b>Site Visit Reference No.</b>	SV30594

Report Detail	
<b>Issue Date</b>	25/10/2024
<b>Prepared By</b>	Maria O'Connell

Site Visit Detail			
<b>Date Of Inspection</b>	27/09/2024	<b>Announced</b>	No
<b>Time In</b>	11:00	<b>Time Out</b>	12:40
<b>EPA Inspector(s)</b>	Maria O'Connell		
<b>Additional Visitors</b>			
<b>Company Personnel</b>	Uisce Éireann: Vinny McGrath, Fintan Joyce, Cathal Furey. Representing Coffey Group (working under contract to Uisce Éireann): Enda Commons, Conor Tully, Des Joyce, Colm Cloherty.		

## > Summary of Key Findings

1. In response to complaints regarding taste and odour issues on the Cleggan- Claddaghduff public water supply investigative sampling arranged by Uisce Éireann highlighted the presence of algae in the raw water on the 28/06/2024, it was not present in the final water on this date. Subsequent sampling did not indicate the present of algae in the raw, final or network water on 11/07/2024.
2. Sampling conducted on 11/07/2024 indicates that Microcystin, Methyl-Isoborneol (MIB) and Geosmin appear in the normal range.
3. Small floating algae particles were present in this tank at the time of the audit on the 27/09/2024.
4. Uisce Éireann advised that the catchment team are currently investigating the level and nature of the taste and odour event with a view identifying the definitive cause. An enhanced monitoring regime is in place.

## > Introduction

The Cleggan-Claddaghduff Public Water Supply serves a population of 492. The raw water for this supply is abstracted from Lough Coorhoor. The water treatment plant produces approximately 350-380m<sup>3</sup>/day of treated water per day (18 hours) and the stated design capacity of the plant is 389m<sup>3</sup>/day. This plant experiences significant seasonal demand during the summer period. Uisce Éireann confirmed that a source and sanitary survey was completed in 2021 and a 3 log protozoal treatment requirement has been assigned. Treatment consists of screening, pH correction (pre and post), coagulation, DAFF, UV (unvalidated), chlorination and fluoridation. The reservoir has 292m<sup>3</sup> of storage (24 hours of supply). This audit was undertaken in response to taste and odour issues experienced on this supply and Uisce Éireann's response to such issues to date. A routine audit of the plant was also conducted by the EPA on 19/04/2024.

## > Supply Zones Areas Inspected

The audit included a site tour of the abstraction point and treatment processes at the Cleggan- Claddaghduff Water Treatment Plant.



# 1. Incident Management

1.1

	Answer
Was the incident suitably alerted to the plant operators, escalated and managed in order to maintain water quality and protect public health?	No
<b>Comment</b>	
<p>1. On the 05/07/2024 the EPA received a complaint regarding taste and odour issues on the Cleggan-Claddaghduff PWS and referred this complaint to Uisce Éireann. Uisce Éireann confirmed that a number of complaints had been received in relation to taste and odour issues on this supply from the 25/06/2024 and that investigations were underway.</p> <p>2. The DBO contractor carried out a washdown of all filters and equipment on the site and initiated a suite of accredited monitoring on the 24/06/2024 to determine the cause of the issue. All results returned compliant. On the 28/06/2024 Uisce Éireann also initiated a separate suite of accredited monitoring on the raw and treated water at the plant and two locations on the network. Sampled parameters included chlorophyll, microcystin, dissolved oxygen, chlorine, geosmin and MIB. This sampling highlighted the presence of algae in the raw water on the 28/06/2024 however it was not present in the treated (final) water on this date. Sampling conducted on 11/07/2024 indicates that Microcystin, Methyl-Isoborneol (MIB) and Geosmin appear in the normal range. No algae was detected in the raw water on 11/07/2024.</p> <p>3. The EPA were advised on the 26/07/2024 that the main components in relation to taste and odour (Geosmin and MIB) were to be tested by an outsourced contract laboratory as the regular laboratory did not have the capability to do these tests inhouse. On the 13/08/2024 Uisce Éireann advised the EPA that the laboratory could not complete analysis for Geosmin and MIB from the sampling undertaken on 28/06/2024 due to insufficient sample volume. These issues hindered the ability of Uisce Éireann to get a timely return on taste and odour results and to obtain further advise from the HSE on public health.</p> <p>4. Members of the Uisce Éireann operations team attended the site on the 01/07/2024 where a review of operations and an inspection of the raw water source was conducted. Uisce Éireann advised that the catchment scientist also (separately) attended the area, the lake was visually assessed, but no evidence of an algal bloom was observed.</p> <p>5. Uisce Éireann advised that the entire network was flushed at the end of June 2024 in response to complaints and a secondary flushing was conducted along the main lines.</p> <p>6. At the time of the audit Uisce Eireann advised that a weekly monitoring programme was in place, in consultation with the HSE in relation to public health. The following parameters are monitored weekly specifically in response to the taste and odour issues: Dissolved oxygen, temperature, free and total chlorine, odour, algal count, pH, suspended solids, ammonium, nitrate, total phosphorus, turbidity, total nitrogen, DOC, TOC, taste, MIB, Geosmin, soluble reactive orthophosphate, iron, manganese, microcystin and chlorophyll. The frequency of this monitoring is subject to change dependent on the levels of taste and odour compounds present in the results.</p> <p>7. In terms of communications regarding the taste and odour issues on this supply Uisce Éireann issued a number of press releases to local media outlets, posted updates on the Uisce Éireann website and issued updates to public representatives. These campaigns were conducted on the 04/07/2024, 19/07/2024 and 12/08/2024. A local radio interview was also provided by Uisce Éireann on the 03/09/2024. Uisce Eireann confirmed that Galway County Council had issued a letter to landowners under the <i>European Union (Good Agricultural Practice for Protection of Waters) Regulations 2022</i> to local landowners.</p>	



## 2. Filtration

	Answer
2.1 Does monitoring indicate that the filters are operating effectively?	No
<b>Comment</b>	
<p>1. Analysis of final water turbidity trends from 01/05/2024 to 31/07/2024 indicated spikes in final water turbidity in the first week of June which was attributed by the site operator to the cleaning of the DAFF tanks. The site operator advised that this was a routine cleaning operation. No corresponding spikes were noted in the filter turbidity. No spikes were noted subsequent to the date of the first taste and odour complaint received by Uisce Éireann</p> <p>2. No filter maintenance log was not available at the time of the audit to verify the frequency of routine cleaning and the date of the top up to filter media that was undertaken after the 09/08/2024.</p>	



### 3. Management and Control

		Answer
3.1	Is there a documented alarm response procedure?	Yes
<b>Comment</b>		
<p>1. An incident response procedure was displayed at the plant but did not list algal blooms an example of a drinking water incident.</p> <p>2. The EPA requested details of the alarm history for the plant from May 2024 to August 2024 however Uisce Éireann advised that a download is not currently available for the historical alarms at the water treatment plant and that the provider of the PLC has been contacted and requested to facilitate the download.</p>		



## 4. Site Specific Issues

	Answer
4.1 Did a visual assessment of the flocculation tank take place during the audit?	Yes
<b>Comment</b>	
1. The EPA was informed that as component of the HSE consultation on the 09/08/2024 floating small particles of algae were noted in the flocculation tank on site. During the EPA audit on the 27/09/2024 a small quantity of floating algae particles was also noted and photographed in this tank.	

## Recommendations

<b>Subject</b>	Cleggan-Claddaghduff Taste and Odour Audit	<b>Due Date</b>	25/11/2024
<b>Action Text</b>	<p><b>Uisce Éireann is responsible for ensuring a clean and wholesome supply of drinking water and should implement the following recommendations without delay.</b></p> <ol style="list-style-type: none"> <li>1. Continue with the enhanced weekly monitoring programme to build a profile of the source and provide a likely cause of taste and odour issues.</li> <li>2. Report to the EPA on corrective actions to be taken in case of (i) future algal blooms and (ii) taste and odour complaints</li> <li>3. Improve vigilance for algal blooms seasonally on the raw water catchment and via plant operations. The Uisce Éireann site-specific incident response procedure displayed on site should be reviewed to include algal blooms. Provide training on the identification, notification and response processes to be undertaken in the event that surveillance indicates the potential deterioration of the raw water source.</li> <li>4. Examine the feasibility of having a quicker turn around time for the analysis of taste and odour compounds and ensure that sampling personnel obtain sufficient sample volume to enable analysis for taste and odour compounds.</li> <li>5. Submit a copy of the letter issued by Galway County Council to local landowners under the <i>European Union (Good Agricultural Practice for Protection of Waters) Regulations 2022</i>.</li> <li>6. Submit a copy of the filter maintenance log for the plant (as per the <i>EPA Water Treatment Manual: Filtration</i>) and plant alarm history from 01/05/2024 to 30/09/2024.</li> </ol> <p><b>Actions required by Uisce Éireann</b></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 25/11/2024 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>		