



# Drinking Water Audit Report

|                        |   |                                       |                                       |
|------------------------|---|---------------------------------------|---------------------------------------|
| <b>County:</b>         | Offaly  | <b>Date of Audit:</b>                 | 14/07/2017                            |
| <b>Plant visited:</b>  | Birr Water Treatment Plant<br><br>Scheme Code:<br>2500PUB1002   | <b>Date of issue of Audit Report:</b> | 17/07/2017                            |
|                        |   | <b>File Reference:</b>                | DW2013/56                             |
|                        |   | <b>Auditors:</b>                      | Ms Pauline Gillard<br>Mr Darragh Page |
| <b>Audit Criteria:</b> | <ul style="list-style-type: none"> <li>• The <i>European Union (Drinking Water) Regulations 2014 (S.I. 122 of 2014)</i>.</li> <li>• The <i>EPA Handbook on the Implementation of the Regulations for Water Services Authorities for Public Water Supplies (ISBN: 978-1-84095-349-7)</i></li> <li>• The recommendations specified in the <i>EPA Drinking Water Report</i>.</li> <li>• EPA Drinking Water Advice Notes No's 1 to 15.</li> </ul> |                                       |                                       |

## MAIN FINDINGS

- i. **Birr public water supply had an *E.coli* exceedance on 10<sup>th</sup> July 2017 from a failed sample taken from the area supplied by the Birr water treatment plant. The audit team was satisfied that disinfection at Birr water treatment plant was found to meet the minimum criteria as set out in EPA Advice Note No. 3 – *E. coli* in Drinking Water.**
- ii. **Irish Water should carry out further investigations to determine the *E.coli* exceedance.**

## 1. INTRODUCTION

Under the *European Union (Drinking Water) Regulations 2014* 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 in response to the notification by Irish Water dated 12<sup>th</sup> July 2017 of the failure to meet the *E. coli* parametric value (as specified in Table A of Part 1 of the Schedule of the Regulations) and the subsequent imposition of a boil water notice in the Birr PWS.

The *E. coli* failure was in the area supplied by Birr Water Treatment plant. The scope of the audit focused on the disinfection system only. Treatment at this plant consists of coagulation, rapid gravity filtration, chlorination and fluoridation. The treatment plant produces approximately 2,100 m<sup>3</sup> /day and serves a total population of 5,307 people in the Birr supply area.

The opening meeting commenced at 11.30 am at Birr Water Treatment Plant. The scope and purpose of the audit were outlined at the opening meeting. The audit process consisted of interviews with staff, review of records and observations made during an inspection of the treatment plant. The audits observations and recommendations are listed in Section 2 and 4 of this report. The following were in attendance during the audit.

|                                  |
|----------------------------------|
| <b>Representing Irish Water:</b> |
|----------------------------------|

Aoife Lambe – Compliance Analyst  
Tseolopile Tlou – Operations Water Engineer  
Andrew Boylan – Compliance Specialist

**Representing Offaly County Council**

Bernadette Doheny – Senior Executive Technician  
Joe Coleman – Senior Executive Engineer  
Charlie Brophy - Caretaker

**Representing the Environmental Protection Agency:**

Pauline Gillard – Inspector  
Darragh Page – Senior Inspector

## 2. AUDIT OBSERVATIONS

*The audit process is a random sample on a particular day of a facility's operation. Where an observation or recommendation against a particular issue has not been reported, this should not be construed to mean that this issue is fully addressed.*

|    |  |
|----|--|
| 1. | <p><b>Disinfection</b></p> <ol style="list-style-type: none"> <li>Disinfection consisted of chlorination.</li> <li>The chlorination system met the minimum criteria for disinfection in the EPA Advice Note No. 3 – <i>E. coli</i> in Drinking Water as the following were in place: <ol style="list-style-type: none"> <li>Chlorine monitor and alarm</li> <li>Duty and standby pumps with autochangeover</li> <li>Flow proportional dosing</li> <li>Adequate chlorine contact time (52.5 mg.min/l)</li> </ol> </li> <li>The results of chlorine levels in the final water taken from the chlorine monitor reading at the end of the contact time were stable and adequate the week preceding the exceedance. At no time during this period did the levels drop below the alarm setting of 0.35 mg/l.</li> <li>When the chlorine alarm is triggered there is a documented cascade procedure in place for responding to the alarm.</li> <li>Daily monitoring for chlorine is undertaken in the network and the results were adequate.</li> <li>There was no evidence that the disinfection system failed at any time in the week previous to the exceedance and it was unlikely to have been a cause of the <i>E. coli</i> failure on 10<sup>th</sup> July.</li> </ol> |
| 2. | <p><b>Exceedances of the Parametric Values</b></p> <ol style="list-style-type: none"> <li>An <i>E. coli</i> failure detected in a sample taken on 10<sup>th</sup> July was notified to the EPA on 12<sup>th</sup> July. The sample contained 3 <i>E. coli</i> and 23 coliforms. The sample contained 0.33 mg/l free chlorine and 0.36 mg/l total chlorine. The sample location was supplied by water from the Birr Water treatment plant.</li> <li>The cause of the <i>E. coli</i> failure was under investigation by Irish Water at the time of the audit. Resampling was undertaken on 13<sup>th</sup> July and was to be taken on 14<sup>th</sup> and 15<sup>th</sup> July.</li> <li>Prior to the completion of the audit Irish Water advised that the results of sampling on 13<sup>th</sup> July had been received and were compliant. All samples had adequate levels of chlorine</li> <li>At the time of writing the audit report Irish Water notified the EPA that the Boil Water Notice was lifted on 16/07/17.</li> </ol>  |

### 3. AUDITORS COMMENTS

There was no evidence of an issue with the operation of the disinfection system at the Birr water treatment plant that might have contributed to the *E. coli* failure on 10<sup>th</sup> July 2017. The disinfection system was found to meet the minimum criteria as set out in EPA Advice Note No. 3 – *E. coli* in Drinking Water. The plant was found to be well run and record keeping was up to date and of a good standard.

### 4. RECOMMENDATIONS

#### General

1. Irish Water should carry out a full investigation to determine the cause of this *E. coli* failure (and the others in the Bree, Dunkerrin, Banagher and Mullingar Regional supplies) and determine what actions should be taken to prevent a reoccurrence.

### FOLLOW-UP ACTIONS REQUIRED BY IRISH WATER

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. This report has been reviewed and approved by Darragh Page, Senior Inspector.

Irish Water should submit a report to the Agency within one week of the date of this audit report detailing how it has dealt with the issues of concern identified during this audit. The report should include details on the action taken and planned to address the various recommendations, including timeframe for commencement and completion of any planned work.

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.

Please quote the File Reference Number in any future correspondence in relation to this Report.

**Report prepared by:**



**Date:**

---

Pauline Gillard  
Inspector

---

17/07/17