



# Drinking Water Audit Report

<b>County:</b>	Kilkenny	<b>Date of Audit:</b>	19/6/2014
<b>Plant(s) visited:</b>	Callan Road, Kilmanagh, County Kilkenny	<b>Date of issue of Audit Report:</b>	4/7/2014
		<b>File Reference:</b>	DW2014/253
		<b>Auditors:</b>	Ms Yvonne Doris
<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 EPA Report on <i>The Provision and Quality of Drinking Water in Ireland</i>.</li> <li>• The recommendations in any previous audit reports.</li> </ul>		

## MAIN FINDINGS

- i. **The Callan Road, Kilmanagh public water supply is served from a borehole abstraction which is not treated or disinfected. Provision of disinfection in this supply should be addressed by Irish Water.**

## 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 to assess the performance of Irish Water in providing clean and wholesome drinking water. Where the text refers to the Water Service Authority this refers to Irish Water in accordance with Section 7 of the Water Services (No. 2) Act 2013.

The Callan Road, Kilmanagh supply serves about ten houses in Kilmanagh. The source is a well of unknown age. The volume supplied is 10m<sup>3</sup>/day. There is no treatment of the raw water. Kilkenny County Council Water Services took the supply in charge in January 2014. It was previously under the charge of Kilkenny County Council Housing Department.

The audit commenced at 13.15 at the Callan Road, Kilmanagh supply. The scope and purpose of the audit were outlined. 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.

Representing Irish Water: (\* indicates that person was also present for the closing meeting)

Name – Job Title

Liam Brett, Water Engineer, Irish Water

Eamonn Morrissey, Kilkenny County Council

Representing the Environmental Protection Agency:

Name – Job Title

Yvonne Doris, 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.	<b>Source Protection</b> <ul style="list-style-type: none"><li>a. The age of the well is unknown and is located within the pumphouse in a field near the houses it serves.</li><li>b. No records of the source were available at the audit (depth, drill logs, details of casing).</li><li>c. The wellhead was unsealed and the top of the wellhead was below ground level. The top of the wellhead was not visible as access was obstructed by a concrete plinth and trailing wiring. The adjacent land slopes towards the pumphouse.</li><li>d. Kilkenny County Council Environment Section is undertaking catchment work under the Good Agricultural Practice Regulations.</li><li>e. No raw water monitoring has been carried out on the Callan Road, Kilmanagh source.</li><li>f. No <i>Cryptosporidium</i> monitoring has been undertaken.</li></ul>
2.	<b>Monitoring and Sampling Programme</b> <ul style="list-style-type: none"><li>a. Prior to 2014 the supply was according to Kilkenny County Council monitored as a private supply. Since Kilkenny County Council took over the supply in 2014 it has been monitored as a public water supply. A single check sample did not detect <i>E.coli</i> in the supply. Further check and audit and sampling has been scheduled.</li></ul>
3.	<b>Management and Control</b> <ul style="list-style-type: none"><li>a. Kilkenny County Council plan to carry out upgrade works on the supply to include raising and capping the wellhead, inspection of the well lining, yield testing, new wiring, installation of duty and standby chlorine dosing with automatic switchover, chlorine monitor with alarm and dial out facility and response procedures, source protection works, raw water and <i>Cryptosporidium</i> monitoring.</li><li>b. There was no turbidity monitor on the supply.</li></ul>

## 3. AUDITORS COMMENTS

The absence of any treatment (including disinfection) or monitoring of the raw water means that the water supplier cannot demonstrate compliance with Regulation 4 of the Drinking Water Regulations for the provision of clean and wholesome water to consumers.

## 4. RECOMMENDATIONS

### Treatment

1. The Water Services Authority should install a disinfection system and the Callan Road, Kilmanagh supply without delay ensuring that appropriate controls are in place to ensure appropriately disinfected water is delivered to consumers.

### Source Protection

1. The Water Services Authority should implement the requirements of the *European Union (Good Agricultural Practice for the Protection of Waters) Regulations 2014 (SI No.31 of 2014)* to ensure, unless an alternative setback distance has been set as per Article 17 that:
  - i. Organic fertiliser or soiled water is not applied to land within 25 m of the abstraction point; and
  - ii. Farmyard manure held in a field prior to landspreading is not placed within 50 m of the abstraction point.

2. The Water Services Authority should characterise the variability in raw water quality and compile a source water safety plan in order to mitigate any risks to the abstracted water ([http://whqlibdoc.who.int/publications/2009/9789241562638\\_eng\\_print.pdf](http://whqlibdoc.who.int/publications/2009/9789241562638_eng_print.pdf)). Trends in raw water quality should be analysed and used to determine the optimum treatment conditions for the water at the plant. Data should be used to identify whether rapid variations in raw water quality give rise to problems with the treatment process.
3. The Water Services Authority should install a continuous automatic turbidity monitor to alert plant operators of any changes in raw water quality.
4. The Water Services Authority should ensure that the wellhead is raised above ground level, borehole linings and seals are maintained and a lockable cover is installed.

#### **Disinfection**

5. The Water Services Authority should ensure that the disinfection system meets the appropriate criteria set out in *EPA Drinking Water Advice Note No. 3: E. coli in Drinking Water*.

#### **Distribution System**

6. The Water Services Authority should investigate whether flushing and scouring of the mains is required and commence a programme of flushing and scouring if required.

#### **Management and Control**

7. A Drinking Water Safety Plan approach to the operation of all treatment plants should be developed by the Water Services Authority and to provide safe and secure drinking water the water supplier must have in place a management system that has identified all potential risks and implemented reduction measures to manage these risks.
8. The Water Services Authority should ensure that hazard mitigation plans, with timeframes, are in place for all hazards identified as high risk in the Drinking Water Safety Plan. Records of progress on these hazard mitigation plans should be kept updated and maintained for inspection by the EPA.
9. A documented system of regular internal auditing and supervision of the treatment plant by Senior experienced personnel in the Water Services Authority should be implemented and copies of quality assurance checks and audits records kept on site for inspection by the Agency.

#### **Monitoring and Sampling Programmes for Treated Water**

10. The Water Services Authority should prepare a programme of monitoring for *Cryptosporidium* in the water supply.
11. If there has been an event in the catchment that may significantly increase the possibility of *Cryptosporidium* oocysts entering the raw water supply, or in the event of significant increases in the turbidity of the treated water, then continuous sampling of the final water for *Cryptosporidium* shall be undertaken by the Water Services Authority in accordance with the guidelines in the *EPA Handbook on the Implementation of the Regulations for Water Services Authorities for Public Water Supplies (ISBN: 978-1-84095-349-7)*.
12. Prior to the provision of disinfection the Water Services Authority should increase the frequency of monitoring and testing for *E.coli* in the supply. This should include monitoring after rainfall when the well is most of risk of contamination.

#### **FOLLOW-UP ACTIONS REQUIRED BY IRISH WATER**

During the audit the Water Services Authority representatives were advised of the audit findings and that action must be taken as a priority by the Water Services Authority to address the issues raised. This report has been reviewed and approved by Mr Brendan Wall, Manager, Drinking Water Team.

The Water Services Authority should submit a report to the Agency within one month 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:**

Yvonne Doris

Yvonne Doris

Inspector

**Date:**

4<sup>th</sup> July 2014