



# Drinking Water Audit Report

<b>Local Authority:</b>	Waterford County Council	<b>Date of Audit:</b>	20/11/2013
<b>Plant visited:</b>	Adramone (3100PUB1001)	<b>Date of issue of Audit Report:</b>	12/12/2013
		<b>File Reference:</b>	DW2013/114
		<b>Auditors:</b>	Nigel Hayes Yvonne Doris
<b>Audit Criteria:</b>	<ul style="list-style-type: none"> <li>• The <i>European Communities (Drinking Water) (No. 2) Regulations, 2007</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. Following a nitrate exceedance on 14/10/2013, a water advisory notice was put in place for infants under six months. However, four samples taken since the exceedance were compliant.
- ii. The *E.coli* exceedance appears to be an internal plumbing issue, rather than a supply issue.
- iii. Effective CT to the first consumers on the supply is inadequate. However, a validated and alarmed UV Unit has been installed at the plant.

## 1. INTRODUCTION

Under the *European Communities (Drinking Water) (No. 2) Regulations 2007* the Environmental Protection Agency is the supervisory authority in relation to the local authorities and their role in the provision of public water supplies. This audit was carried out in response to the notifications by Waterford County Council of the failure to meet the *E. coli* and nitrate parametric values on 14/11/2013 in the Adramone supply. As the result of the nitrate exceedance, a water advisory notice for infants under six months has been placed on the supply.

The Adramone supply is a groundwater source serving approximately 20 consumers and producing 1m<sup>3</sup> per day. Treatment consists of chlorination, UV treatment and nitrate removal.

Photographs taken by Yvonne Doris during the audit are attached to this report and are referred to in the text where relevant.

The opening meeting commenced at 12.30pm at the Adramone 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.

Representing the Local Authority:

Lar Power – Caretaker

Paul Carroll – Executive Scientific Officer

David Hanratty – Water Engineer

Representing the Environmental Protection Agency:

Nigel Hayes – Inspector

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 wellhead was capped (see Photograph No.1) and secured inside a locked concrete enclosure.</li><li>b. In response to a pollution incident in 2006, Waterford County Council issued a Section 12 notice to a nearby farmer to ensure compliance with setback distances as prescribed under the European Communities (Good Agricultural Practice for the Protection of Waters) Regulations 2010 (SI No.610 of 2010).</li></ul>
3.	<b>Nitrate Removal</b> <ul style="list-style-type: none"><li>a. A nitrate removal system is in operation at the plant (see Photograph No.2).</li><li>b. The nitrate removal system contains two pumps with only one pump operating at any one time.</li><li>c. The filter media, Broxo 6-15, is topped up on a weekly basis.</li></ul>
4.	<b>Chlorination and Disinfection</b> <ul style="list-style-type: none"><li>a. Sodium Hypochlorite is the disinfectant used at the plant.</li><li>b. Chlorine dosing is flow proportional.</li><li>c. There is duty/standby chlorine dosing pumps with an automatic changeover function in place.</li><li>d. Chlorine alarms are sent directly to the caretaker's phone and also to a central scada system.</li><li>e. All chlorine monitors are calibrated internally and the calibration is referenced against hand held chlorine analysers which are not calibrated.</li><li>f. Effective CT at the plant is inadequate (9 minutes).</li><li>g. Free chlorine is monitored in the network. However, total chlorine is not routinely monitored.</li><li>h. A validated and alarmed UV Unit has been recently installed at the pumphouse. However, the UV certification was not available at the plant.</li></ul>
7.	<b>Exceedances of the Parametric Values</b> <ul style="list-style-type: none"><li>a) An exceedance (76.3ug/l) of the nitrate parametric value occurred on 14/10/2013. As a corrective action, the nitrate removal system was serviced by the equipment supplier and</li></ul>

	<p>the back-wash flow regime was adjusted to improve performance. Four samples taken since the exceedance were well within the parametric limit.</p> <p>b) An exceedance (8 per 100ml) of the <i>E.coli</i> parametric value occurred on 14/10/2013. The free chlorine residual concentration of the sample was 0.15mg/l. All follow up samples were clear.</p>
<b>9.</b>	<p><b>Hygiene and Housekeeping</b></p> <p>a. The plant was clean, tidy and well maintained.</p>
<b>10.</b>	<p><b>Management and Control</b></p> <p>a. Record keeping at the plant was good.</p>

### 3. AUDITORS COMMENTS

The nitrate and *E.coli* exceedances appeared to be isolated incidents that are not reflective of the quality of the supply. A validated and alarmed UV Unit has been installed at the supply to address the issue of inadequate Effective CT. However, the Water Services Authority should ensure that control measures are put in place to ensure that undisinfected water does not enter the supply.

### 4. RECOMMENDATIONS

#### Disinfection

1. The Water Services Authority should ensure that control measures are put in place to ensure that undisinfected water does not enter the supply.
2. The Water Services Authority should submit a copy of the UV validation certificate to the Agency.
3. The Water Services Authority should have regard to EPA Advice Note No. 3, which sets out the EPA's requirements with regard to UV disinfection;  
<http://www.epa.ie/pubs/advice/drinkingwater/Advice%20Note%20No3.pdf>

### FOLLOW-UP ACTIONS REQUIRED BY THE LOCAL AUTHORITY

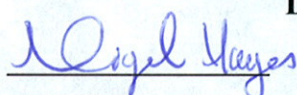
During the audit the Water Services Authority representatives were advised of the audit findings and that action must be taken as a priority by the Water Services Authority to address the issues raised. This report has been reviewed and approved by Yvonne Doris, Drinking Water Team Leader.

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 Waterford County Council.

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

**Report prepared  
by:**

  
Nigel Hayes

**Date:**

12<sup>th</sup> Dec 2013



Photograph No. 1: Wellhead



Photograph No. 2: Nitrate Removal System