



Drinking Water Audit Report

County:	Waterford	Date of Audit:	17/02/2017
Plant(s) visited:	Ballyogarty PWS (3100PUB1018)	Date of issue of Audit Report:	09/03/2017
		File Reference:	DW2017/18
		Auditors:	Mr Niall Dunne Ms Criona Doyle
Audit Criteria:	<ul style="list-style-type: none"> • The <i>European Union (Drinking Water) Regulations 2014 (S.I. 122 of 2014)</i>. • 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> • The recommendations specified in the <i>EPA Drinking Water Report</i>. • EPA Drinking Water Advice Notes No.s 1 to 15. • The recommendations in any previous audit reports. 		

MAIN FINDINGS

- i. At the time of the audit Irish Water were unsure of the chlorine contact time to the first consumers. Irish Water should submit a chlorine residual calculation to the first consumers.
- ii. This water treatment plant is not connected to SCADA. Upgrade works at this plant are proposed under the disinfection strategy, proposed completion is Q3 2017. IW should ensure that the supply is connected to SCADA as part of these works.

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

The Ballyogarty supply is fed from a borehole located within the treatment building. The supply serves a population of 608 and supplies a volume of approximately 101 m³/day. Treatment consists of chlorination and arsenic removal via a Bayoxide filter.

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

The opening meeting commenced at 12.30 pm at Ballyogarty WTP. 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 Irish Water (IW):

Brian O’Leary; IW SLA Operations Lead.

Deirdre O’Loughlin; IW Compliance Specialist.

Pat Duggan; IW Compliance.

Representing The Local Authority;

Alan Kirwan; Water Engineer, Waterford City & Council (WCC).

James Power, Caretaker, Waterford City & Council.

Representing the EPA:

Criona Doyle; Inspector. Niall Dunne; 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.	Source Protection <ul style="list-style-type: none">a. This supply is feed from a borehole which is located within the treatment building, see photograph 1. The borehole was capped. IW was not aware of the depth of casing or whether the borehole was lined. WCC stated that the borehole was approximately 68 feet deep.b. WCC stated that they have notified farmers of their obligations under the GAP regulations as they have had issues previously with farmers spreading slurry within the catchment.c. The <i>Cryptosporidium</i> risk assessment score was not available at the time of the audit.
2.	Filtration <ul style="list-style-type: none">a. There are two arsenic filters with Bayoxide media in place, as according to WCC there are elevated levels of arsenic in the raw water.b. According to WCC the filters are set to automatic backwash twice nightly, though there was no record of this or any procedure in place on site.a. WCC stated that the filter media is replaced once arsenic levels in the treated water go above 1µg/l which is approximately every six months, arsenic is sampled monthly within the supply.c. At the time of the audit there were no filter maintenance records available and there were no services stickers on the filter tanks.d. The outlet from the filter media was an uncovered open pipe, see photograph 2.
3.	Disinfection <ul style="list-style-type: none">a. There are duty standby chlorine dosing pumps in place, these are set to a duty and trim dosing arrangement. The dial out chlorine alarms are set to 0.49 mg/l.b. The target residual chlorine dose is 0.75 mg/l. WCC stated that 0.35 mg/l is aimed for at the end of the network. At the time of the audit, the chlorine monitor was reading 0.76 mg/l while a manual reading taken during the audit was 0.53 mg/l.c. WCC stated that they were unsure whether the residual chlorine contact time of 15 mg.min/l was being achieved at the first consumer/s premises. (The contact time in EDEN, IW’s annual monitoring submissions, is 31 mg.min/l).d. The dosing point and the chlorine sampling point were located adjacent to each other with an insufficient residual contact time between the two.

4.	Treated Water Storage and Distribution Network <ol style="list-style-type: none"> While the Kilmacthomas supply was out of service due to the contamination incident on the 14/02/17, this supply was used as an alternative source, as the networks are connected via a valve.
5.	Monitoring and Sampling Programme for treated water <ol style="list-style-type: none"> WCC stated that four check samples and one audit sample are undertaken yearly. IW stated that this supply is not connected to SCADA
6.	Management and Control <ol style="list-style-type: none"> IW stated that this supply was reviewed under the disinfection programme and the site inspection report is to be completed in early March 2017, the estimated date for the completion of the works is Q3 2017. As the site inspection report had not yet been finalised, IW could not fully confirm the extent of the works. No service/calibration stickers were noted on any dosing or monitoring equipment.

3. AUDITORS COMMENTS

IW should confirm the chlorine contact time on this supply to ensure the first consumers are receiving adequately disinfected water.

IW should ensure that the chlorine dosing and sampling points are located an appropriate distance apart so that residual chlorine is measured after an appropriate contact time has been achieved.

IW should submit details of the proposed works along with confirmation of the completion date, once the site inspection report has been completed.

4. RECOMMENDATIONS

General

- Irish Water should submit the *Cryptosporidium* risk score for this supply.
- Irish Water should undertake a survey of the borehole casing to determine its condition.

Filtration (General)

- Irish Water should ensure that the out flow from the arsenic filter is such that vermin access is restricted.
- Irish Water should ensure that a filter logbook for each of the arsenic filters is maintained, containing the following:
 - A record of completed back washes.
 - A record of all maintenance work and inspections carried out on the filter;
 - Details of the media replacement;
 - Details of any changes or required changes to filters.

Disinfection

5. Irish Water should review the contact time for chlorine disinfection to ensure that the effective contact time of 15 mg.min/l is achieved at the first connections and should submit a calculation of the effective contact time to the Agency.
6. Irish Water should ensure that the chlorine sampling point is located at a point where a chlorine contact time of 15 mg.min/l is achieved.
7. Irish Water should investigate the discrepancy between the residual chlorine readings on the chlorine monitor and the results of the manual residual chlorine test carried out on the day of the audit and should put procedures in place to ensure that the hand held monitor and the chlorine monitor are regularly calibrated.

Management and Control

8. Irish Water should submit proposals with timeframes for the upgrade of the treatment work and should ensure that as part of these upgrade works that this supply is connected to SCADA.

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 Mr Darragh Page, Senior Inspector.

Irish Water 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 DW2017/18 in any future correspondence in relation to this Report.

Report prepared by:



Date:

09/03/2017

Inspector

Photograph 1: Capped borehole in the treatment plant.



Photograph 2: Outfall pipe from arsenic filter, potential access for vermin.



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