Drinking Water Audit Report

County:	Kilkenny	**Date of Audit:**	02/10/2018
Plant(s) visited:	Inistioge (Scheme Code 1500PUB1009)	**Date of issue of Audit Report:**	16/10/2018
		File Reference:	DW2009/277
		Auditors:	Ms Regina Campbell Ms Aoife Loughnane
Audit Criteria:	• The *European Union (Drinking Water) Regulations 2014 (S.I. 122 of 2014), as amended*. • *The EPA Handbook on the Implementation of the Regulations for Water Services Authorities for Public Water Supplies (ISBN: 978-1-84095-349-7)* • The recommendations specified in the EPA *Drinking Water Report*. • EPA Drinking Water Advice Notes No.s 1 to 15. • The recommendations in any previous audit reports.		

MAIN FINDINGS

i. **Irish Water is progressing construction works in order to decommission the Inistioge Water Treatment Plant and replace the supply with water from the Thomastown Water Treatment Plant. Irish Water have advised the EPA that unexpected and difficult ground conditions have delayed key elements of the construction works and that this will delay completion of the upgrade works until Q1 2019.**

ii. **Irish Water should progress the planned connection to the Thomastown supply without delay in order to ensure that the drinking water supplied to consumers complies with the Trihalomethanes parametric value. The current completion date of Q1 2019 goes beyond the compliance deadline of 31/12/2018 stated in the Direction issued by the EPA under Regulation 16(1) of the European Union (Drinking Water) Regulations 2014.**

1. INTRODUCTION

Under the *European Union (Drinking Water) Regulations 2014, as amended*, 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.

In particular the main focus of the audit was to check that Irish Water is progressing works in order to decommission the Inistioge Water Treatment Plant and replace the supply with water from the Thomastown Water Treatment Plant. Irish Water intend to decommission the Inistioge (Ballygub) Water Treatment Plant with the exception of the existing reservoir at the site and provide a new water source by developing wells at Grennan, Thomastown along with associated reservoirs, pumping station and pipeline.

These works are required to ensure that drinking water supplied to consumers complies with the Trihalomethanes parametric value.

According to the EPA's EDEN system, the current Inistioge PWS supplies a population of 1,590 with a volume of approximately 576 m^3/day. The source of the supply is the Clodiagh Stream. Treatment includes pH correction, coagulation, settlement, filtration, chlorination and fluoridation. Inistioge PWS is on the EPA's Remedial Action List for public water supplies (RAL) as a result of persistent triahalomethanes failures.

The opening meeting commenced at 1.20pm at the Inistioge 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 Irish Water: Patrick Duggan, Compliance Specialist Colin Cunningham, Water Engineer Representing Kilkenny County Council Ken Boland, SEE Operations Larry Hoban, Caretaker Martin Egan, Supervisor Representing the Environmental Protection Agency: Regina Campbell, Inspector Aoife Loughnane, Inspector Erica Bauress, Student/Audit Observer

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** a. The intake was not visited during the audit. b. Raw water turbidity at the time of the audit was 0.966 NTU.
2.	**Treatment** a. There are currently three slow sand filters and a package plant in operation at the water treatment plant. The caretaker said that approximately 21-22m^3/h of raw water is sent to the package plant (coagulation, settlement, filtration) and approximately 9m^3/h goes to the slow sand filters.
3.	**Filtration** a. Combined final water turbidity on the day of the audit was 0.24 NTU.
4.	**Disinfection** a. The water is disinfected using sodium hypochlorite prior to storage in the reservoir. Duty and standby chlorine dosing pumps are in place with automatic switchover. Dosing is flow proportional.

5.	**Treated Water Storage and Distribution Network** a. The final water is stored in the double-celled reservoir on-site (Ballygub reservoir). This storage reservoir will remain in use after the rest of the water treatment plant is decommissioned. b. Residual chlorine monitoring is undertaken in the network every couple of months by the caretaker. Some readings of <0.1mg/l residual chlorine were recorded in February 2018. Scouring is undertaken if low readings are recorded.
6.	**Exceedances of the Parametric Values** a. The most recent exceedance for the Trihalomethanes parametric value was notified to the EPA for a sample taken on 14/08/2018.
7.	**Management and Control** a. The caretaker was very knowledgeable and helpful about the management and control of the water treatment plant.
8.	**Sludge Management** a. Sludge is stored in the storage tank and is taken off-site as necessary.
9	**Progress in relation to Construction Works** Correspondence received from Irish Water on 29/06/2018 in relation to the decommissioning of the current Inistioge water treatment plant and upgrade and connection to the Thomastown Water Treatment Plant indicated that the following works had been completed: · All wayleaves fenced and stripped. · Approximately 15.5km of 17.6km of pipeline laid. · The Grennan and Inistioge reservoirs completed and tested with landscaping works at each site ongoing. · The Kilcross pumping station constructed with site fencing outstanding. At that stage Irish Water anticipated that the construction works would be completed by Q4 2018, which is within the direction deadline of the 31st December 2018. On 29/09/2018 Irish Water advised the EPA that unexpected and difficult ground conditions have delayed key elements of the works including the watermain crossing of the River Nore and that this would result in a delay in completing the works until Q1 2019. On the day of the audit, it was observed that the Grennan and Inistioge reservoirs were constructed and fenced off and that the Kilcross pumping station was constructed with fencing to be completed.

3. AUDITORS COMMENTS

The existing Inistioge Water Treatment Plant is well-operated.

Irish Water should progress the planned connection to the Thomastown supply without delay in order to ensure that the drinking water supplied to consumers complies with the Trihalomethanes parametric value.

4. RECOMMENDATIONS

General

1. Irish Water should progress the planned connection to the Thomastown Water Treatment Plant without delay in order to ensure that the drinking water supplied to consumers complies with the Trihaomethanes parametric value. The current completion date given by Irish Water of Q1 2019

goes beyond the compliance deadline of 31/12/2018 stated in the Direction issued by the EPA under Regulation 16(1) of the European Union (Drinking Water) Regulations 2014.

Slow Sand Filtration

2. Irish Water should progress the decommissioning of the slow sand filters as a priority once water from the Thomastown Water Treatment Plant begins to be introduced into the Inistioge supply and the production from the Inistioge Water Treatment Plant begins to scale down.

Disinfection

3. Irish Water should consider the use of low bromate grade sodium hypochlorite in order to minimise Triahalomethanes formation.

Treated Water Storage

4. Irish Water should ensure that the service reservoir is inspected and cleaned out on a regular basis and any maintenance and repairs completed as soon as possible after the need has been identified.

Distribution System

5. Irish Water should ensure that a minimum of 0.1mg/l free residual chlorine level is maintained at the extremities of the distribution network. It is recommended that monitoring of residual chlorine is undertaken several times a week at different points on the network to include the network extremities.

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 Dr. Michelle Minihan, Drinking Water Senior Inspector.

Irish Water is recommended to put such measures in place as are necessary to implement the recommendations listed in this report. The actions by Irish Water to address the recommendations taken will be verified by the Agency during any future audits.

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: Regina Campbell **Date:** 16/10/2018

Regina Campbell

Inspector