



# Drinking Water Audit Report

<b>County:</b>	Donegal	<b>Date of Audit:</b>	04 April 2016
<b>Plant(s) visited:</b>	Letterkenny PWS (Goldrum Treatment Plant)	<b>Date of issue of Audit Report:</b>	25 April 2016
		<b>File Reference:</b>	DW2009/12
		<b>Auditors:</b>	Ms Derval Devaney 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>• The recommendations in previous audit reports.</li> <li>• The Regulation 10(4) Direction issued by the EPA on 24<sup>th</sup> March 2011 and associated Action Programme.</li> </ul>		

## MAIN FINDINGS

- Irish Water has not met the requirement of the EPA's Regulation 10(4)(c) Direction issued on 24/03/11 and agreed Action Programme to address the THMs failures in the supply as two of the three sources have insufficient treatment to prevent THMs formation.
- The upgrade of the Letterkenny PWS is to be completed by the end of 2018. Planning permission for construction of a new treatment facility was granted in December 2015.
- The Letterkenny PWS does not have adequate treatment in place to prevent potential contamination from *Cryptosporidium*. The Goldrum Treatment Works was upgraded in 2010 providing greater control on the filtration process at the treatment works for source water from Lough Keel. The two remaining sources for the Letterkenny PWS; Lough Salt and Lough Grennan however continue to lack treatment of *Cryptosporidium*.

## 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 the Irish Water in providing clean and wholesome drinking water and to determine compliance with the EPA's Regulation 10(4)(c) Direction issued on 24/03/11 and the subsequent Action Programme approved by the EPA on 31/08/11 under Regulation 10(4) and 10(6), regarding compliance with the THMs parametric value.

Letterkenny Public Water Supply (PWS) is on the EPA's Remedial Action List (RAL), as two of the three sources originate from surface water (Lough Salt and Lough Greenan) and have no treatment barrier in place for *Cryptosporidium*. The supply also has trihalomethanes (THMs) failures dating back to October 2008. The source of the supply is from 3 upland lakes: Lough Greenan, Lough Salt and Lough Keel. The Goldrum Water treatment plant treats water sourced from Lough Keel and makes up almost 50% of the total water supply. Treatment at the

Goldrum plant consists of pressure filtration, chlorination, fluoridation and pH correction. Chlorination, fluoridation and pH correction are the only form of treatment for Lough Salt and Lough Greenan, which is provided at Goldrum treatment plant. The Letterkenny public water supply currently produces 7,940 m<sup>3</sup>/day (330 m<sup>3</sup>/hr) of treated water. Due to increased demand, the Ballymacoole boreholes augment the supply by providing 1,440 m<sup>3</sup>/d via an additional public water supply – the Letterkenny Mixed PWS. The treated groundwater source is blended with 40% of the lake water before distribution to consumers. The Letterkenny Water Treatment Plant serves a population of approximately 19,500 persons (14,075 population served by the Letterkenny PWS).

The opening meeting commenced at 2:15 pm at Donegal County Council's Central Laboratory in Letterkenny. 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 (\*not present at meeting prior to audit):

Martin Temple – Water/Wastewater Engineer – Operations & Maintenance IW; Pat O'Sullivan- Compliance - IW; Fitz Howard – Senior Executive Engineer – DCC; James Kelly – Area Engineer – DCC; Hugh Kerr – Chief Technician – DCC; Patrick Gallagher- Executive Technician – DCC; James Mc Hugh\* – Technician – DCC; Tommy Friel\* – Senior Supervisor DCC; Kieran Friel\* - Water Works inspector – DCC; Charlie O'Donnell\* – Assistant Water Works inspector – DCC

Representing the Environmental Protection Agency:

Darragh Page, Inspector; Derval Devaney, 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. Long-term Solution

- a. Since Irish Water's update submitted to the EPA in October 2015 the following works were completed:
  - The Planning Application for the new treatment plant was submitted by Irish Water to the Planning Authority in October 2015 and Donegal Co. Co. granted permission on 03 December 2015. The Final Grant of Planning Permission for the new Goldrum WTP was signed by the Planning Authority on 15 January 2016.
- b. The following actions are currently being progressed by Irish Water:
  - Land acquisition of the site, now that planning has been granted.
  - Applications for Electricity Supply for the new Goldrum WTPs have been submitted to the ESB and quotations have been received.
  - A Site Investigations contract for the entire scheme with a value in excess of €600k is currently underway. The SI associated with this contract will be completed in advance in order to have SI information available to form part of the tender information for this contract.
  - The tender process for the construction of the new treatment plant has commenced. The first stage of the competition involves the prequalification competition for the short listing of Contractors to undertake construction of Goldrum WTP some associated pipelines. This has been advertised and closing date for this competition stage was Monday 29th February 2016.
- c. Draft Tender Documents have been produced for the contract to construct Goldrum WTP and some associated pipelines. A contract document review workshop was held on 20<sup>th</sup> January

	<p>2016 which was attended by staff from Operations, Asset Programmes, Capital Delivery, Laboratory, the Capital Project Office and the Consulting Engineers. The key components of the WTP contract are as follows:-</p> <ul style="list-style-type: none"> <li>- New WTP with 5 log credit requirement for pathogen compliance with treatment capacity of 9 MLD complete with sludge dewatering facilities.</li> <li>- 4 hours of both raw and treated water storage at the WTP site</li> <li>- Replacement of majority of raw water main from Lough Keel to improve security of supply</li> <li>- New treated water main from the new site to connect into the existing supply network</li> <li>- 18 month construction period to commissioning of the new WTP, at which point IW will engage with EPA to commence removal of the RAL.</li> <li>- 1 year Operation Service Phase (i.e. contractors extended process proving period).</li> </ul> <p>d. Irish Water is progressing the Fire Certificate Application for Goldrum WTP.</p> <p>e. Irish Water is progressing the Disability Access Certificate for Goldrum WTP.</p> <p>f. Irish Water received the Archaeological Test Trenching Licence from National Monuments Service for test trenching works at site of new Goldrum WTP.</p>
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### 3. AUDITORS COMMENTS

During the EPA's meeting and with Donegal County Council and Irish Water prior to the audit of the water treatment plant it was stated that there is commitment to address the elevated trihalomethanes in the Letterkenny Regional Public Water Supply and Irish Water is progressing with a programme of works to meet the requirements of the Project. Irish Water stated that the upgrade to the Letterkenny Water Scheme is on track to be at construction in 2017 and to be completed by the end of 2018, with the granting of planning of the new treatment facility in Q4 2015, which it stated is a significant milestone in the delivery of the project.

Irish Water also stated it is projecting to invest approximately €22 million in this scheme which will also involve the replacement of the Rathmullan and Churchill PWS, taking Rathmullan off the EPA's RAL.

The audit of the water treatment plant following the opening meeting found that there was no change to the treatment process on-site in terms of upgrading the plant to meet the requirements of the Regulation 10(4)(c) Direction issued by the EPA on 24<sup>th</sup> March 2011 and the subsequent Action Programme approved by the EPA under Regulation 10(4) and 10(6), regarding compliance with the THMs parametric value. The Action Programme dated 7<sup>th</sup> July 2011, as amended and agreed by the EPA on 31<sup>st</sup> August 2011, required the implementation of the action programme in the Letterkenny PWS by the 31<sup>st</sup> August 2013 to ensure compliance with the THMs parametric value as set out in the *European Communities (Drinking Water)(No. 2) Regulations, 2007*. The audit found that these works have not been carried out since the Action Programme was agreed and Irish Water's monitoring reports show that THMs continue to exceed the parametric value of 100 ug/l in the network.

### 4. RECOMMENDATIONS

1. Irish Water should review treatment operations and carry out the upgrade works proposed as soon as practicable to ensure that the final water is compliant with the THMs parametric value of 100 ug/l as set out in the Drinking Water Regulations, 2014 and the pre-cursors to THMs formation (DOC, TOC and colour) are reduced so as to inhibit THMs formation.
2. Irish Water should ensure that all sources of the Letterkenny PWS (i.e. Lough Salt and Lough Greenan) are provided with an appropriate treatment barrier capable of removing *Cryptosporidium* from the raw water. Irish Water shall install this barrier on the supply to Letterkenny as soon as practicable.

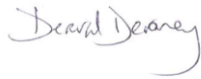
### **FOLLOW-UP ACTIONS REQUIRED BY THE LOCAL AUTHORITY**

During the audit the Irish Water representatives were advised of the audit findings and that there was a breach in meeting the legal requirements of the Regulation 10(4)(c) Direction issued by the EPA on 24<sup>th</sup> March 2011.

This report has been reviewed and approved by Mr Darragh Page, Drinking Water Team Leader.

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

**Report prepared by:**



**Date:**

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Derval Devaney

Inspector

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25/04/2016