

	<h1>Drinking Water Audit Report</h1>
---	--------------------------------------

County:	Kerry	Date of Audit:	18/07/2014
Plant(s) visited:	Mountain Stage PUB13001119	Date of issue of Audit Report:	18/08/2014
		File Reference:	DW2007/539
		Auditors:	Mr Niall Dunne
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 EPA Report on <i>The Provision and Quality of Drinking Water in Ireland</i>. • The recommendations in any previous audit reports. 		

MAIN FINDINGS

- i. The Mountain Stage supply has been on the RAL since 2008 for the lack of an effective *Cryptosporidium* barrier. At the time of the audit, there was no barrier in place and no proposed date for the installation of a barrier. Irish Water must ensure that plans for the installation of a *Cryptosporidium* barrier are expedited for the protection of public health.
- ii. A boil water notice has been in place on this supply since 2008, as consumers do not receive adequately disinfected water. Irish Water must as a priority ensure that consumers receive disinfected water that has an effective chlorine contact time of 15 mg.min/l to enable the removal of the boil water notice.
- iii. *Cryptosporidium* was detected in this supply on the 10/06/2014. At the time of issue of this audit report; Irish Water had not notified the EPA via the online notification system (<http://web.epa.ie/odwn/login.aspx>) of this detection. Irish Water must ensure that all exceedances are notified to the EPA as per the *European Union (Drinking Water) Regulations 2014 (S.I. 122 of 2014)* and as per Section 6 of the EPA Handbook. Irish Water should also note any detection of pathogenic micro-organisms or parasites in its water supply must now be promptly notified to the EPA. Failure to notify the EPA is an offence under the *European Union (Drinking Water) Regulations 2014 (SI No. 122 of 2014)*.

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 in response to an email from Irish Water dated the 11th July 2014 which stated that on the 10th June 2014 0.027 per 10L *Cryptosporidium* oocysts were detected in the treated water in the Mountain Stage PWSS 062A. 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 Mountain Stage water treatment plant supplies water to approximately 1,080 persons in Co. Kerry and produces approximately 615m³/day. The source of the supply is Coomaglaslaw Lake. Treatment at the plant consists of chlorine disinfection only. The treated water is stored in the Droum reservoir, which is approximately 2km down gradient from the chlorination building. The main supply is supplemented, when required, by water from a borehole located adjacent to Droum reservoir. The water from the borehole is chlorinated at the reservoir. This supply has been on the EPA's Remedial Action List (RAL) since 2008 for inadequate treatment for *Cryptosporidium*. At the time of issue of this report the supply does not have a *Cryptosporidium* barrier in place.

The opening meeting commenced at 15.00 at the Mountain Stage 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: (* indicates that person was also present for the closing meeting)

Conor Foley, Water Above Ground Lead (IW) *; John Ahern, Acting Senior Executive Engineer (KCC)*; Des Fitzgerald, Plant Engineer (KCC)*; P.J McAuliffe, Compliance Technician (KCC)*; Kathleen Casey, O&M Technician (KCC)*; Alan O'Shea, Caretaker (KCC)*.

Representing the Environmental Protection Agency:

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.	<p>Source Protection</p> <ul style="list-style-type: none"> a. The source of the Mountain Stage PWS is Coomaglaslaw Lake, which is an upland lake in Co. Kerry. The source was not visited during this audit. b. Kerry County Council (KCC) stated that the area surrounding the intake was not fenced off; this issue was noted in an EPA audit report dated 03/06/2009 while one of the main recommendations of an audit report dated 7/11/2007 was that proper source protection measures were required at the lake. c. KCC stated that the quality of the raw water was good. d. KCC stated that no <i>Cryptosporidium</i> risk assessment has been carried out; but the risk is assumed to be high. e. The reading on the raw water turbidity monitor was 0.25 NTU; KCC stated that raw water turbidity is typically around this level.
2.	<p>Chlorination and Disinfection</p> <ul style="list-style-type: none"> a. There were duty, stand by and trim dosing pumps in place which were connected to SCADA. The dial out alarm is set to 0.35mg/l. The chlorine set point is 1.00 mg/l. b. KCC stated that the chlorine residual levels within the network were checked two or three times a month. Records inspected showed that, on occasion, chlorine residual tests in the network were almost a month apart. c. KCC confirmed that the first three residents on this supply do not receive adequate chlorine contact time and are on a precautionary boil water notice since 28/07/2009.

3.	<p>Exceedances of the Parametric Values</p> <p>a. Irish Water (IW) stated in an email dated the 11/07/2014 that 0.027 per 10L <i>Cryptosporidium</i> oocysts were detected in the treated water in this supply on the 10/06/2014. During the audit Irish Water was requested to submit the notifications via the EPA on line system (http://web.epa.ie/odwn/login.aspx). At the time of issue of this audit report, Irish Water had not submitted this notification via the EPA online drinking water notification system.</p> <p>b. KCC stated that one further <i>Cryptosporidium</i> sample is scheduled to be taken this year. IW was requested by the auditor to notify the EPA via the online notification system of any further <i>Cryptosporidium</i> detections.</p> <p>c. KCC stated that the reason for the delay in the installation of a <i>Cryptosporidium</i> barrier has been due to issues with land acquisition. KCC stated that a site has been agreed but IW now needs to provide funding for the purchase of the land. IW stated that the purchase of the land was being reviewed by their Asset Strategy Department. IW did not provide a date as to when the new plant would be operational.</p>
4.	<p>Chemical storage and bunds</p> <p>a. The bunding for the chlorine day tank did not appear to be 110% the volume of the tank (see photograph 1).</p>
5.	<p>Management and Control</p> <p>a. There was no calibration sticker observed on the turbidity monitor.</p>

3. AUDITORS COMMENTS

On 10th June 2014 0.027 per 10L *Cryptosporidium* oocysts were detected in the treated water. This supply has been on the RAL since 2008 for inadequate treatment for *Cryptosporidium* and there still is no *Cryptosporidium* barrier in place. The first three residences on the supply are on a boil water notice since 2009, as they receive inadequately disinfected water. This supply is vulnerable to both microbiological and *Cryptosporidium* contamination. The health of the consumers is potentially at risk as there is no effective barrier in place and some consumers do not receive adequately disinfected water. Irish Water must ensure that proposals for the installation of an adequate *Cryptosporidium* and an effective disinfection system are expedited as a priority to ensure that human health is protected and that consumers receive adequately disinfected water.

Cryptosporidium was detected in this supply on 10/06/2014. However, at the time of issue of the audit report the notification had not been submitted via the online drinking water notification system (<http://web.epa.ie/odwn/login.aspx>). Irish Water must ensure that exceedances are notified to the EPA as per the *European Union (Drinking Water) Regulations 2014 (S.I. 122 of 2014)* and as per Section 6 of the EPA Handbook (available at <http://www.epa.ie/pubs/advice/drinkingwater/publicwatersupplieshandbook/>). Irish Water should note any detections of pathogenic micro-organisms or parasites in its water supply must now be promptly notified to the EPA. Failure to notify the EPA is an offence under the *European Union (Drinking Water) Regulations 2014 (SI No. 122 of 2014)*.

4. RECOMMENDATIONS

1. The Water Services Authority should as a priority expedite proposals for the installation of an effective *Cryptosporidium* barrier and for the upgrade of the disinfection system. These remedial actions are required for the protection of public health and to ensure that the supply meets the standards set out in the drinking water regulations. The disinfection system must be upgraded so that the first consumers on the supply receive disinfected water with an effective contact time of 15 mg.min/l. The Water Services Authority should prepare and submit an action programme with time frames for the upgrade of this supply.

2. The Water Services Authority must ensure that all exceedances are promptly notified to the EPA as per EPA as per the *European Union (Drinking Water) Regulations 2014 (S.I. 122 of 2014)* and as per Section 6 of the EPA Handbook. The Water Services Authority should submit via the online drinking water notification system the *Cryptosporidium* detection on 10/06/2014 without delay.
3. The Water Services Authority should ensure that all relevant Irish Water and local authority staff are instructed to promptly notify any detections of pathogenic micro-organisms or parasites, including *Cryptosporidium*, in public water supplies to the EPA via the online drinking water notification system (<http://web.epa.ie/odwn/login.aspx>) and that failure to do so is an offence under the *European Union (Drinking Water) Regulations 2014 (SI No. 122 of 2014)*.
4. The Water Services Authority should review the frequency at which chlorine residuals samples are taken within the network to ensure that consumers receive adequately disinfected water and that chlorine residuals of 0.1 mg/l are maintained at the end of the network.
5. The Water Services Authority should ensure that the source protection and catchment risk assessment score for the *Cryptosporidium* risk assessment is carried out and that appropriate measures implemented to reduce identified risk.
6. The Water Services Authority should take action should to ensure that the source in the vicinity of the abstraction point is made secure and fenced off to prevent livestock access.
7. The Water Services Authority should review chemical storage arrangements at the treatment plant. Chemicals must be stored in bunded areas capable of containing at least 110% of the volume of chemicals stored therein. Fill points for storage tanks inside the bunds should be within the bunded area. Refer to EPA guidance document –“*IPC Guidance Note on Storage and Transfer of Materials for Scheduled Activities*”.

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 Ms 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 Irish Water.

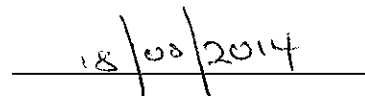
Please quote the File Reference Number DW2007/539 in any future correspondence in relation to this Report.

**Report prepared
by:**



Inspector

Date:



Photograph 1: Bunding did not appear to be 110% capacity of the chlorine day tank.

