Drinking Water Audit Report

County:	Clare	**Date of Audit:**	11/02/2016
Plant(s) visited:	Turlough Public Water Supply (0300PUB1068)	**Date of issue of Audit Report:**	02/03/2016
		File Reference:	DW2016/30
		Auditors:	Mr Niall Dunne
Audit Criteria:	• The *European Union (Drinking Water) Regulations 2014 (S.I. 122 of 2014).* • *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. **There is no duty standby chlorine dosing arrangement in place on this supply, as one of the chlorine dosing pumps is not operational. Irish Water must ensure, for every drinking water supplies under its responsibility, that all chlorine dosing points have duty standby chlorine dosing arrangements in place, as per *EPA Advice Note no 3: E.coli in Drinking Water.***

ii. **There is no alarm cascade system in place on this supply. The caretaker is the only person who is currently notified of the dial out alarms. Irish Water should install an alarm cascade system to ensure that adequate safeguards against non responses to alarms are in place.**

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 treatment plant serves a public water supply with a population of approximately 780. The supply is fed from a borehole and treatment consists of chlorination only.

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 11.00 am at the Turlough 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: (* indicates that person was also present for the closing meeting)

Deirdre O'Loughlin* - Compliance Specialist;
Patrick Duggan* - Compliance Analyst;
Duane O'Brien* - IW operations; and
Kevin Murphy* - Water Engineer.

Representing the Local Authority:
Anthony McNamara* - Senior Executive Engineer;
Derek Tray*- Engineer;
Maeve Lait* - Senior Executive Technician;
Maura Mc Nulty* - Executive Scientist;
Roisin Breheny* - Executive Technician; and
John Hogan* - Caretaker.

Representing the HSE
Rory O'Dea* - Senior EHO.

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.	**Source Protection** a. The Turlough supply is fed from a borehole. CCC (Clare County Council) stated that the borehole is approximately 75 m deep and lined with a PVC ducting to a depth of approximately 66 m. It was observed that there was no grouting between the inner and outer borehole casings, (see photograph 1). b. The well head was observed to be below ground level and there was no well head capping in place, (see photograph 1). The borehole is not constructed as per EPA guidelines, (see photograph 1&2). c. CCC stated that seven farms were identified within the vicinity of the well and that the farmers were written to as per the GAP regulations.
2.	**Disinfection** a. CCC stated that this supply has an adequate residual chlorine contact time (Ct) of 15.6 mg.min/l, based on a flow of 14 m^3/hr. b. According to CCC one of the chlorine dosing pumps is not operational and hence there is no standby system in place. c. The low level chlorine residual alarm is set at 0.2 mg/l and the caretaker is the only person notified of the alarms. d. According to CCC the residual chlorine monitor is linked to SCADA.

	e. CCC confirmed that chlorine is dosed at a fixed rate. The observed residual chlorine reading was 0.54 mg/l. f. Residual chlorine readings of 0.2 mg/l taken at the end of the network were observed in the caretaker's diary. g. CCC stated that chlorine samples are taken within the network on a daily basis.
3.	**Monitoring and Sampling Programme for treated water** a. CCC stated that one audit and three check monitoring samples are taken annually.
4.	**Chemical storage and bunds** a. The chlorine day tanks were adequately bunded, (see photograph 3).

3. AUDITORS COMMENTS

At the time of the audit, there was no duty/standby chlorine dosing pump arrangement in place, as one of the chlorine dosing pumps was not functioning. Irish Water must ensure that this is rectified under the Clare disinfection program. Irish Water must also ensure that, for each water treatment plant under its responsibility that there are duty standby chlorine dosing pump arrangements, with auto switch over, in place at every chlorine doing point; as per *EPA Drinking Water Advice Note No. 3: E.coli in Drinking Water.*

Irish Water should ensure that there is a cascade system in place for all dial out alarms to safeguard against non-response to alarms.

4. RECOMMENDATIONS

1. Irish Water should ensure that a duty standby chlorine dosing system, with auto switchover, is installed as part of the disinfection program. Irish Water must ensure that disinfection program updates are submitted to the EPA on a quarterly basis, the next update is due 31/03/2016.

2. Irish Water, separate to the disinfection program, should put in place an alarm cascade system to ensure, in the event that the first contact is not available that a second appropriate person is alerted within a specific time frame.

3. Irish Water should review the low level chlorine alarm setting to ensure that adequate response times for activated alarms are allowed for.

4. Irish Water should ensure that the borehole is properly grouted and that the well head is covered, constructed and protected as per *EPA Drinking Water Advice Note No 14: Borehole Construction and Wellhead Protection.*

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 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 DW2016/30 in any future correspondence in relation to this Report.

Report prepared by: **Date:** 02/03/2016

Inspector

Photograph 1: No grouting observed between inner and outer casing and no well head capping in place:

Photograph 2: Borehole construction not constructed as per EPA guidelines.

Photograph 3: Chlorine day tank adequately bunded.