

Site Visit Report

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 water to the visited public supply.

The audit process is a sample on a given date of the facility's operation. Where a finding against a particular issue has been reported this should not be construed to mean that this issue is fully addressed.

Water Supply Zone	
Name of Installation	Kilmuckridge
Organisation	Irish Water
Scheme Code	3300PUB1545
County	Wexford
Site Visit Reference No.	SV17879

Report Detail	
Issue Date	17/04/2019
Prepared By	Ruth Barrington

Site Visit Detail			
Date Of Inspection	20/03/2019	Announced	No
Time In	14:17	Time Out	:
EPA Inspector(s)	Ruth Barrington Daryl Gunning		
Additional Visitors			
Company Personnel	Irish Water Representatives: Siobhan Clifford, Pat Duggan, Colin Cunningham Wexford County Council Representatives: Nicholas Rossiter, Tony Quirke, Michael Kavanagh, Enda Flynn, Donnacha Lynch, Paul Delahunty		

> Summary of Key Findings

Commissioning and final programming of alarm set points and shutdowns must be completed before the UV disinfection and chlorination upgrades installed at the plant may be regarded as secure.

> Introduction

The Kilmuckridge Public Water Supply serves a population of 894 and produces approximately 270 m³/day treated water. The source is a single borehole located within the treatment plant site, and treatment consists of disinfection using a newly installed UV system and upgraded chlorination using sodium hypochlorite to provide a residual disinfectant through to the end of the network. The audit was undertaken in order to establish the status of the disinfection upgrade at the treatment plant.

> Supply Zones Areas Inspected

The audit of Kilmuckridge water treatment plant focussed on the upgrade of the disinfection system on-site.



1. Disinfection

		Answer
1.1	Is the disinfection system verified using monitors and alarms, with trended data recorded and accessible?	Yes
Comment		
<p>1. UV disinfection has been provided at Kilmuckridge as primary disinfection and as a barrier to <i>Cryptosporidium</i> entering supply, monitoring is in place and trends are accessible by operators.</p> <p>2. Warning and shut down UVI alarms are programmed, at the time of the audit these actions were to operate instantaneously without a hold period. It was not known whether there was a system hold period prior to a warning alarm or shutdown being activated.</p> <p>3. The chlorination system has been upgraded with new controls and alarm settings, chlorine residual monitoring is in place and the trend is accessible by operators.</p> <p>4. A cascade system is used to alert staff in the event of an alarm being triggered.</p> <p>5. As the disinfection upgrade has not been completely signed off with the contractor, the alarm settings and time delays on alarms/ inhibits were not fully finalised or accessible by Irish Water/ Wexford County Council. Training on the setting of alarms and on the full functionality of the systems is also awaited.</p>		

		Answer
1.2	Are duty and standby chlorine pumps/ UV units in operation?	Yes
Comment		
<p>1. "Visades" branded UV duty and standby units have been installed, which combined with suitable inhibits and over 24 hours storage in the reservoir is sufficient to maintain supply in the event of a shutdown.</p> <p>2. Duty and standby chlorine pumps have been installed, with an automatic switchover in the event of the failure of a pump. Dosing is on a flow proportional basis with residual trim.</p>		

		Answer
1.3	Is the UV system suitably validated?	Yes
Comment		
<p>1. The Visades UV system is validated under the Austrian OVGW protocols for a 40mJ /cm² dose delivery using the UV Intensity Setpoint approach. It was operating within its validated range during the audit.</p>		

		Answer
1.4	Is there a chlorine residual ≥ 0.1 mg/l throughout the network?	Yes

Comment

Records of chlorine residual sampling in the network were examined for January 2019. These indicated an adequate residual in excess of the minimum free residual chlorine of 0.1 mg/l at network extremities.

Recommendations

Subject	Kilmuckridge audit recommendations	Due Date	17/05/2019
Action Text	<p>Recommendations</p> <ol style="list-style-type: none">1. Irish Water should ensure that the process proving of the upgraded disinfection systems is completed as soon as possible and training provided to staff in the use and functionality of the systems.2. Irish Water should review the alarm and delay settings assigned to disinfection alarms to ensure that they are representative and will prevent inadequately disinfected water from entering the distribution network. <p>Follow-Up Actions required by Irish Water</p> <p>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.</p> <p>This report has been reviewed and approved by Aoife Loughnane, Drinking Water Team Leader.</p> <p>Irish Water should submit a report to the EPA on or before 17/05/2019 detailing how it has dealt with the issues of concern identified during this audit.</p> <p>The report should include details on the action taken and planned to address the various recommendations, including time frame for commencement and completion of any planned work.</p> <p>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.</p> <p>Please quote the Site Visit Number SV17879 in any future correspondence in relation to this report.</p>		