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	Batterstown
Organisation	Irish Water
Scheme Code	2300PUB1068
County	Meath
Site Visit Reference No.	SV18391

Report Detail

Issue Date	06/11/2019
Prepared By	Daryl Gunning

Site Visit Detail

Date Of Inspection	08/10/2019	**Announced**	No
Time In	10:00	**Time Out**	10:45
EPA Inspector(s)	Daryl Gunning Aoife Loughnane		
Additional Visitors			
Company Personnel	Irish Water: Andrew Boylan, Francis Glancy Meath County Council: Helen McDonnell, Paul McKown, Declan Keating, Siobhan Johnston		

Summary of Key Findings

1. The audit found that the borehole source is vulnerable to contamination. Source protection risks include: vehicle storage, home heating systems, and creosote sleepers.
2. Irish Water's plan to rationalise Batterstown PWS by connecting to Dunshaughlin PWS has been deprioritised. Due to the planned rationalisation, this supply is not on Irish Water's disinfection programme.
3. There is no auto shutdown of the UV system in the event of a fault or deterioration in water quality, requiring the caretaker to visit the plant if an alarm is received.
4. Filter media was replaced in the pressure filters in December 2018 and August 2019. pH correction (calcium carbonate) was installed in August 2019. There has not been a manganese exceedance since January 2019.

Introduction

The Batterstown Public Water Supply (PWS) is supplied by a borehole that provides 4 m3/day to a population of 96. Treatment consists of sodium hypochlorite dosing (as an oxidising agent) to remove hydrogen sulphide and manganese, pressure filtration, pH correction via limestone (calcium carbonate), and UV disinfection. This audit was undertaken to investigate the progress made to resolve the manganese exceedances (3 in 2018; 2 in 2019) and PAH exceedance (1 in 2019) in this supply.

Supply Zones Areas Inspected

A full site tour of the water treatment plant was conducted; including an inspection of the onsite borehole.

1. Source Protection

		Answer
1.1	Is the abstraction source(s) adequately protected against contamination?	No

Comment

The audit found that the borehole was not capped and is vulnerable to contamination (see picture 1). Source protection risks include vehicle storage, home heating systems, and creosote sleepers.

2. Filtration

		Answer
2.1	Are the filters designed and managed in accordance with EPA guidance?	Yes

Comment

1. There are a total of 3 pressure filters at the Batterstown WTP.
2. Filter media was replaced in two pressure filters in December 2018 and in the remaining (operational) filter in August 2019. Filter media consists of sand and manganese dioxide to remove manganese.
3. pH correction through a limestone (calcium carbonate) contactor was also installed in August 2019 to increase raw water pH (7.1-7.4) for effective removal of manganese.
4. Filters are backwashed daily on a timed basis.
5. Sodium hypochlorite is dosed prior to pressure filtration to oxidise the manganese.
6. Removal performance of manganese from raw to final water is >90%.

3. Disinfection

		Answer
3.1	Is the UV system suitably validated?	Yes

Comment

1. A "Trjoan UV Max Pro" system is in place at the Batterstown WTP and is certified to NSF International/ANSI Standard 55.
2. UV is dosed at 85mJ/cm2 on a demand-basis and is rated for max flow.
3. A cascade system is in place to alert staff in the event of an alarm being triggered.
4. There is no auto shutdown on the UV system; the communication unit alarms via text message in case of failure and a caretaker must visit the site.
5. The WTP is visited daily and a check is carried out to ensure the UV system is operational.
6. Bulbs are checked once a month as part of a maintenance schedule.

4. Drinking Water Quality

		Answer
4.1	Have failures of the parametric values or the detection of pathogenic micro-organisms or parasites in the water supply been adequately investigated?	Yes

Comment

1. Manganese is present in the raw water at a concentration of approximately 250ug/L.
2. There were 3 manganese exceedances in 2018 and 2 manganese exceedances in 2019. In response to these exceedances, filter media replacement and pH correction were implemented in August and September 2019. No manganese exceedances have been detected since January 2019.
3. Following the PAH exceedance (0.174 ug/l) which occurred on 7th August 2019, resampling took place on the 20th August 2019 and was compliant for PAH. Also, no odour or oil was noted when this exceedance was investigated. Meath County Council believe that this exceedance was a laboratory error and are awaiting results of the original PAH exceedance retest.

5. Site Specific Issues

		Answer
5.1	Is this WTP on Irish Water's disinfection programme?	No

Comment

Irish Water stated that as it was planned to rationalise Batterstown WTP, it was not included on the disinfection programme. However, this WTP has since been deprioritised for rationalisation.

Recommendations

Subject	Batterstown Audit Recommendations	**Due Date**	04/12/2019
Action Text	**Recommendations** 1. Irish Water should ensure that the well-head is capped and that the pump can be accessed for maintenance and/or inspection. 2. Irish Water should ensure that automatic shutdown is installed on the UV system to prevent inadequately disinfected water being supplied to consumers. 3. If there are no future plans to rationalise this supply, Irish Water should include Batterstown water treatment plant on their disinfection programme to ensure effective treatment, monitoring, and management of the water treatment plant. **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 Aoife Loughnane, Drinking Water Team Leader. Irish Water should submit a report to the Agency on or before 4th December 2019 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 time frame 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 Action Reference Number DW2018/61 in any future correspondence in relation to this Report.		

Photographs