



Drinking Water Audit Report

County:	Wicklow	Date of Audit:	26 th July 2016
Plant(s) visited:	Brittas Bay South (scheme code 3400PUB1050)	Date of issue of Audit Report:	17 th August 2016
	Brittas Bay North (scheme code 3400PUB1045)	File Reference:	DW2016/122 & DW2016/123
		Auditors:	Ms. Michelle Roche Ms. Pauline Gillard
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 <i>EPA Drinking Water Report</i>. • EPA Drinking Water Advice Notes No.s 1 to 15. 		

MAIN FINDINGS

- i. **Irish Water need to identify and implement an action plan to address the arsenic, sodium and chloride exceedances in the Brittas Bay North & South public water supplies.**
- ii. **Borehole protection measures should be put in place at both supplies, including borehole caps and locks on each borehole chamber.**
- iii. **Irish Water should review the validation of the UV disinfection systems at both supplies to ensure the systems are providing adequate disinfection.**

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 the notification by Irish Water dated 01/07/16 of the failure to meet the Arsenic parametric value (as specified in Table B of Part 1 of the Schedule of the Regulations) in the Brittas Bay South Public Supply and the Brittas Bay North Public Supply. This audit report will deal with both supplies as both supplies are failing to meet the Arsenic parametric value and have the same treatment in place.

Brittas Bay South public water supply and Brittas Bay North public water supply are groundwater supplies that serve the south and north beach carparks at Brittas Bay. The Brittas Bay South public water supply serves a toilet block, showers, three outdoor taps at the carpark and an on-site hot food kiosk. The Brittas Bay North public water supply serves a toilet block and an outdoor tap. A “Do Not Consume” notice is in place on both supplies since 12/07/16 and the on-site hot food kiosk is currently using bottled water in all its activities. Both supplies also had sodium exceedances in July 2016 and the Brittas Bay North supply had a chloride exceedance. UV disinfection is in place at both supplies.

Photographs taken by Pauline Gillard during the audit are attached to this report and are referred to in the text where relevant.

The opening meeting commenced at 14.00pm at the Brittas Bay South carpark. 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.

<p>Representing Irish Water:</p> <p>Mr. Andrew Boylan – Compliance Specialist</p> <p>Ms. Aoife Lambe – Compliance Analyst</p> <p>Mr. Tom Griffin – Senior Executive Chemist</p> <p>Mr. Michael McLoughlin – Executive Engineer</p> <p>Mr. Bert Kenny – Caretaker</p> <p>Mr. Shane Kinsella – Maintenance Plumber</p> <p>Representing the Environmental Protection Agency:</p> <p>Ms. Michelle Roche – Inspector</p> <p>Ms. Pauline Gillard - Inspector</p>
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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 Brittas Bay South Borehole is located behind the showers at the carpark. No borehole construction details are known. b. The borehole is located in a chamber but the chamber is not locked. The well head is below ground level and uncapped (Photograph 1). c. The Brittas Bay North Borehole is located behind the first north carpark, furthest from the beach. No borehole construction details are known. d. The borehole is located in a chamber but the chamber is not locked. The well head is below ground level however the casing extends approximately 0.15m up from the floor of the chamber. The wellhead is uncapped (Photograph 2).
2.	<p>Disinfection</p> <ul style="list-style-type: none"> a. Both supplies have Trojan UV disinfection systems installed. b. Validation documents for the UV systems were not available at the audit and have not been provided by Irish Water up to the time of writing this report. c. The UV systems are alarmed if the UV dose drops below 40mj/cm² and the alarm calls out by means of a cascade system. d. The UV sensors and bulb sleeves are cleaned and inspected on a monthly basis. Alarms are also tested monthly.

3. Exceedances of the Parametric Values

- a. An initial arsenic exceedance of 15µg/l was detected in the Brittas Bay South supply on 07/06/16. Further exceedances of 23 and 21µg/l were detected in July 2016.
- b. Exceedances of the sodium parametric value of 200 mg/l were also detected at the Brittas Bay South supply in June (235 mg/l) and July 2016 (271 mg/l).
- c. An initial arsenic exceedance of 66µg/l was detected in the Brittas Bay North supply on 07/06/16. Further exceedances of 152 and 147µg/l were detected in July 2016.
- d. Exceedances of the sodium and chloride parametric values of 200 mg/l and 250 mg/l were also detected at the Brittas Bay North supply on 04/07/16 at levels of 316 mg/l and 404 mg/l respectively.
- e. On 12/07/16 “Do Not Consume” notices were put up at the showers at Brittas Bay South and the hot-food kiosk was informed to use bottled water only.
- f. A “Do Not Consume” notice was also put up at the tap at Brittas Bay North.
- g. Toilets at both sites already had “Do Not Drink” signs in place and “Do Not Consume” notices were also erected.
- h. Irish Water and Wicklow County Council are currently investigating options to address the arsenic, sodium and chloride exceedances. The solution may be complicated by the infrequent and inconsistent nature of water usage at these sites.

3. AUDITORS COMMENTS

Irish Water need to identify and implement an action plan to address the arsenic, sodium and chloride exceedances in the Brittas Bay North & South PWS. Borehole protection measures should be put in place at both supplies, including borehole caps and locks on each borehole chamber. Irish Water should review the validation of the UV disinfection systems at both supplies to ensure the systems are providing adequate disinfection.

4. RECOMMENDATIONS

General

- 1. Irish Water should replace the Brittas Bay North and South public water supplies with an alternative source of clean and wholesome drinking water or implement the recommendations numbers 2 to 5 at the existing water treatment plants.

Source Protection

- 2. Irish Water should install a borehole cap at both the Brittas Bay South and Brittas Bay North boreholes and ensure that all borehole linings, seals and caps are maintained in accordance with EPA Advice Note No. 14: Borehole Construction and Wellhead Protection.
- 3. Irish Water should install a locked chamber cover at both the Brittas Bay South and Brittas Bay North boreholes

Disinfection

- 4. Irish Water should ensure that the UV disinfection systems at the Brittas Bay South and Brittas Bay North public water supplies are validated in accordance with an appropriate internationally accepted validation system and are operating within their validated range at all times.

Exceedances of the Parametric Values

- 5. Irish Water should ensure that exceedances of the parametric values are addressed and an action plan is put in place to ensure future compliance with all parametric values.

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 Ms Aoife Loughnane, Drinking Water Team Leader.

Irish Water is recommended to put such measures in place as are necessary to implement the recommendations listed in this report.

Irish Water 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 in any future correspondence in relation to this Report.

Report prepared by:



Date:

17th August 2016

Inspector



Photograph 1: Brittas Bay South Borehole



Photograph 2: Brittas Bay North Borehole