



FAIR TRADING COMMISSION

Proposed Standards of Service for the Barbados Water Authority (BWA) 2022

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ANTECEDENT DOCUMENTS

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FTC/URD/CONSOSBWA-2021-01	Consultation Paper – BWA Standards of Service	May 20, 2021
FTCURD/DECSOS/BWA2017-01	Decision on BWA Standards of Service 2014 - 2017	May 3, 2017
FTC /CONS2016/01	Consultation Paper – BWA Standards of Service	June, 2016

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SECTION 1 SUMMARY

In May, 2021, the Fair Trading Commission (the Commission) commenced a review of the Standards of Service for the Barbados Water Authority (BWA) for the period 2017 - 2020. Standards of Service are an important mechanism for ensuring that the BWA provides a safe, efficient and reliable service to its customers. Intermittent review of the Standards of Service is essential in determining the appropriateness, and where applicable, amendments to facilitate improved performance.

The Commission initiated this review by issuing a Consultation Paper¹. This written consultation was initiated by the Commission to ensure that there is transparency in the review of the Decision on the Standards of Service for BWA issued by the Commission on May 31, 2017. Service providers, representatives of consumer interest groups and any other parties that have an interest in the matter were invited to submit written responses to the Consultation Paper.

Having reviewed and analysed the two (2) submissions, received from the BWA and AnchorBridge Environmental Inc., the Commission proposes that the Standards of Service be revised as follows:

Proposed Guaranteed Standards of Service

- The document will express targets as 'working' days.
- The Guaranteed Standards for Installation of Service (GWS 1) will refer to Installation of Service in Zone 1 or Zone A;
- The time to acknowledge complaints under Guaranteed Standard Response to Complaints (GWS 3) has been adjusted from seven (7) days to five (5) working days;
- A new section has been added to Meter Installation or Meter Repositioning (GWS 5(b)) with a target time of fifteen (15) working days to reposition a meter on request; and

¹ Consultation Paper – Determination & Applicability of Standards of Service for the Barbados Water Authority, May 20, 2021

- A new Guaranteed Standard has been added, Application for Reconnection of a service that was disconnected from the main (GWS 8). There is a target time of seven (7) working days for residential and five (5) working days for commercial customers to effect the re-connection.

Proposed Overall Standards of Service

- The testing requirements under Overall Standard Potable Water Quality (OWS 10) have been modified. The BWA is required to conduct a wide screen analysis bi-annually, Metals and pesticides to be tested quarterly, and primary pollutants tested monthly;
- The percentage compliance rate for Overall Standard Repair of Ruptured Pipes (OWS 11) has been reduced to 80% to be repaired in five (5) working days; and
- A new Overall Standard for Billing Accuracy (OWS 13), will measure the accuracy of the bills issued by the BWA. The new Standard's target will be 90% of bills issued by the BWA must be accurate.

Proposed General Administration

- BWA will be required to institute a standard complaints procedure, inclusive of an official complaint form, to be reviewed by the Commission;
- BWA must implement the following measures:
 - a) Publish the Standards of Service Tables prominently on its website;
 - b) Make available to its customers, by post or electronically within two (2) months of the adoption of this proposal, the Table of the Guaranteed Standards of Service as set out in this proposal;
 - c) Include the weblink to the Table of Guaranteed Standards on customers' utility bills;
 - d) On a quarterly basis, publicise in at least two (2) forms of local media, the Guaranteed Standards of Service, as well as its fault reporting process; and
 - e) Inform customers who make complaints of the means by which compensation may be sought.

When adopted, the proposals will be part of the 2022-2025 Standards of Service, which will be effective for a period to be determined by the Commission but no longer than five years. Note however, that the Commission reserves the right to (i) review these Standards before the end of this period, and (ii) extend its Decision for two additional years (up to 2027), if deemed necessary. Thereafter, the Decision will be subject to review by the Commission, at which time amendments may be made.

SECTION 2 INTRODUCTION

2.0 Background

This proposal sets out the Commission's Standards of Service for the BWA.

The Utilities Regulation Act, CAP.282 of the Laws of Barbados (as amended) (the URA)) provides for the determination of standards of service by the Commission. In discharging this responsibility, the Commission issued a Consultation Paper on May 20, 2021 as mandated by the Fair Trading Commission Act, CAP.326B of the Laws of Barbados (as amended) (the FTCA)). Service providers, representatives of consumer interest groups and other interested parties were invited to comment on the Consultation Paper.

The Standards of Service is a quality of service (QoS) framework. The purpose of such a framework is:

- To ensure that a minimum quality of service is maintained;
- To provide incentives for improvements in the quality of service;
- To monitor service quality; and
- Generally, protect the interests of consumers.

There are two (2) Standards of Service categories: (1) Guaranteed Standards of Service, which require compensation in the form of a credit to each individual customer submitting a claim, when affected by the BWA's failure to meet the defined target for the relevant Standards; and (2) Overall Standards of Service, which are designed to monitor the overall performance of BWA. There is no compensation to customers for the BWA's failure to meet Overall Standards.

This proposal also includes details of exemptions. Exemptions refer to situations where the Commission considers that failure to meet the Standards is due to circumstances outside the control of the BWA.

SECTION 3 LEGISLATIVE FRAMEWORK

The Commission is empowered under the FTCA and the URA to determine, monitor and review the Standards of Service applicable to regulated utilities. The role of the Standards of Service Framework is to ensure operational consistency and outline the minimum standards of quality, customer service and reliability that must be met by the BWA.

Authority to Establish Standards of Service

“Standards of Service” is defined at Section 2 of the FTCA as *‘the quality and extent of service supplied by service providers’*.

The FTCA and the URA set out the Commission’s authority to determine the Standards of Service for a regulated entity and the considerations that must be given when determining the same. These legislative provisions provide the over-arching framework necessary for the development and establishment of the Standards of Service for a regulated sector.

Section 4(3) of the FTCA outlines the Commission’s powers in relation to Standards of Service. Section 4(3) states that:

“The Commission shall, in the performance of its functions and in pursuance of the objectives set out in subsections (1) and (2),

(a) ...

(b)

(c) ...

(d) determine the standards of service applicable to service providers and independent power producers;

(e) monitor the standards of service supplied by service providers and independent power producers to ensure compliance;

(f) ...

(g) carry out periodic reviews of standards of service of service providers and independent power producers...”

The aforementioned powers vested in the Commission by virtue of Section 4(3) of the FTCA are also outlined at Section 3 (d), (e) and (f) of the URA.

Section 4 of the URA outlines the items that the Commission must take into account when determining standards of service, and states as follows:

“In determining standards of service, the Commission shall have regard to

- (a) the rates being charged by the service provider for supplying a utility service;*
- (b) ensuring that consumers are provided with universal access to the services supplied by the service provider;*
- (c) the national environmental policy; and*
- (d) such other matters as the Commission may consider appropriate.”*

Rule 63(2) of the Utilities Regulation Procedural Rules 2003, S.I. 2003 No.104 (Barbados) (URPR), details the issues that may be included in the development of standards of service. Rule 63(2) of the URPR states:

“Service standards may include issues such as

- (a) universality of service;*
- (b) the provision of new services;*
- (c) the extension of services to new customers;*
- (d) the maximum response time permitted for responding to customer complaints and queries; and*
- (e) standards related to service quality which are specific to each sector.”*

Requirement to Consult

When determining standards of service, the Commission is required to consult with interested parties in accordance with Section 4(4) of the FTCA, which states:

“The Commission shall, in performing its functions under subsection (3) (a), (b), (d) and (f) consult with the service providers, representatives of consumer interest groups and other parties that have an interest in the matter before it.”

As previously mentioned, the Commission has already carried out its consultation on the proposed standards of service with interested parties.

Requirement to have hearings

Section 15 (4) of the URA confers upon the Commission the authority to conduct hearings when reviewing standards of service. Section 15 (4) of the URA states as follows:

“In carrying out a review, the Commission shall hold a hearing in accordance with section 33 of the Fair Trading Commission Act.

Section 33 of the FTCA states that hearings of the Commission shall be public, unless the circumstances warrant, or the Commission deems it appropriate to conduct a hearing in private.

Rule 64 of the URPR then outlines the application process by which persons may participate as intervenors in a standards of service hearing.

Fines and Penalties

Standards of Service are binding on BWA and the consequences for breaching such standards of service may include certain fines or penalties. Sections 21, 31(1) and 38 of the URA state as follows:

Section 21 of the URA:

“Where a service provider fails to meet prescribed standards of service, the service provider shall make to any person who is affected by the failure such compensation as may be determined by the Commission.”

Pursuant to Section 38 of the URA, the Commission is then empowered make an order prescribing the amount to be paid by the utility service provider to the affected person.

Section 38 of the URA states:

“The Commission may make

(a) rules;

(b) regulations; and

(c) orders with respect to

(i) imposing penalties for non-compliance with prescribed standards of service;
and

(ii) prescribing amounts to be paid to the person referred to in section 21 for failure to provide a utility service in accordance with the standards of service set by the Commission.”

Failure to obey such an order made by the Commission will then result in further fines, as Section 31(1) of the URA provides that:

“Every service provider which fails or refuses to obey an order of the Commission made under this Act is guilty of an offence and is liable on summary conviction to a fine of \$100,000 and, in the case of a continuing offence, to a further fine of \$10,000 for each day or part thereof during which the offence continues.”

Specific Exemptions

The Commission recognises that there will be instances where a Standard of Service will not be considered to be in breach, due to force majeure circumstances or certain conditions which exempt the BWA from compliance with a particular Standard.

Consultation and Hearing Process

Stakeholders were invited to comment on BWA's Standards of Service Consultation Paper during the consultation period May 20, 2021 to June 17, 2021. BWA and AnchorBridge Environmental Inc. submitted comments on the consultation.

The Commission wishes to thank BWA and AnchorBridge Environmental Inc. for participating in the consultation process.

In furtherance of the process to review and issue revised standards, the Commission is now proceeding to the hearing stage. Persons desirous of becoming an intervenor and participating in the hearing for the standards of service for the BWA are asked to submit an application for intervenor status as outlined by Rule 64 of the URPR.

These proposed amended Standards of Service will be applicable from the effective date of the Decision made by the Commission upon the conclusion of the hearing, until such time as a new Standards of Service Decision is issued.

This paper is intended to:

- I. Clearly outline the proposed Standards of Service framework;**
- II. Provide a rationale and motivation for amendments or retention of standards based on the Commission's 2018 - 2020 Standards of Service Decision;**
- III. Highlight the distinction between the 2018 - 2020 standards enforced and the proposed standards;**
- IV. Clearly define the intended interpretation of each standard, highlighting any applicable exemptions; and**
- V. Facilitate detailed responses and discussion (as part of the hearing process) to the Commission's proposed standards for the development of the Commission's related Standards of Service Decision and Order.**

The amendments and retention of standards proposed by the Commission in this paper are based on the following:

- 1) The Commission's analysis of BWA's Guaranteed and Overall standards performance, within the 2018 - 2020 period;

- 2) The responses of the BWA to the Commission's May 20, 2021 Standards of Service Consultation Paper;
- 3) The Commission's analysis of sectoral issues and challenges; and
- 4) Regional and global Standards of Service.

Participating in the Hearing

Persons may participate in the Commission's hearing by submitting an Application for Intervenor Status, pursuant to Rule 64 of the URPR. Applications for Intervenor Status must be by way of a Letter of Intervention. Pursuant to Rule 64 of the URPR, Letters of Intervention shall:

- (a) be divided into paragraphs and numbered consecutively;
- (b) describe the intervenor, the interest of the intervenor in the proceeding and contain detailed grounds for the intervention;
- (c) contain a concise statement of the nature and scope of the intervenor's intended participation;
- (d) request the written evidence if it is desired; and
- (e) set out the full name, address, telephone number and facsimile number of no more than 2 representatives including counsel of the intervenor for the purpose of service and delivery of documents in the proceeding.

Copies of the URPR as well as all Commission-administered legislation may be inspected at the office of the Commission between the hours of 9.00a.m. and 4.00p.m., Monday to Friday and are available on the Commission's website at <http://www.ftc.gov.bb>

Letters of Intervention may also include views or comments on the matters discussed within this paper or intersecting areas that were not addressed that parties consider should be covered by the Commission's Standards of Service framework. The document may be accessed via the Commission's website, <http://www.ftc.gov.bb>.

Letters of Intervention must be submitted to the Commission no later than **4:00 p.m.** on **Friday May 27, 2022** to:

Chief Executive Officer (Ag).
Fair Trading Commission
Good Hope
Green Hill
St. Michael
E- mail: info@ftc.gov

Letters of Intervention may also be submitted in electronic format to: info@ftc.gov.bb.

Letters of Intervention may also be faxed to the Commission at (246) 424-0300. Mailed or hand delivered responses should be addressed to the **Chief Executive Officer (Ag.) - Dr. Marsha Atherley-Ikechi**

The Commission's hearing process for the proposed Standards of Service for the BWA will commence on **June 1, 2022**.

SECTION 4 WATER SECTOR

The BWA remains the sole entity with responsibility for the supply of potable water and sewerage services and therefore continues to operate in a monopolistic environment. High infrastructural and operational costs are deterrents and barriers to entry. Customers therefore have no alternatives in obtaining this precious resource and have to rely on one supplier who, in absence of competition, has little market-driven incentive to continually improve the quality of its service.

Consequently, in the absence of competition, the Commission must continue to perform the role of proxy. Given that the ramifications for deficient standards in water or wastewater can be significant and have immediate negative economic, health and environmental consequences.

The Commission as regulator has a responsibility to ensure that there is operational accountability and that customers are afforded acceptable standards. The Standard of Service regime should motivate the utility to provide a higher quality of service that redounds to the benefit of the customer.

SECTION 5 THE PROPOSAL BASED ON ASSESSMENT OF RESPONSES TO THE CONSULTATION

5.0 General

The Commission received two (2) responses to its Consultation Paper. The Commission also analysed data from BWA's Standards of Service reports over the period 2018 to 2020 and considered complaints and queries made by its customers. After careful consideration, the Commission is proposing as follows:

- The Guaranteed and Overall Standards of Service, shall remain in place for the foreseeable future.
- Amendments to the Guaranteed and Overall Standards of Service are appropriate.
- BWA shall institute a formal complaints procedure, inclusive of an official complaint form, to be reviewed by the Commission.
- BWA must implement the following measures:
 - a) Publish the Standards of Service Tables prominently on its website;
 - b) Make available to its customers, by post or electronically within two (2) months of the implementation of this proposal, the Table of the Guaranteed Standards of Service as set out in this proposal;
 - c) Include the weblink to the Table of Guaranteed Standards on customers' utility bills;
 - d) On a quarterly basis, publicise in at least two (2) forms of local media, the Guaranteed Standards of Service; and
 - e) Inform customers who make complaints of the means by which compensation may be sought.
- BWA shall continue to be required to submit the value of compensation due for breaches of each Guaranteed Standard of Service.

5.1 Proposed Guaranteed Standards of Service for BWA

The Proposed Guaranteed Standards of Service are first presented in summarised form in Table 1, followed by a more detailed explanation of definitions and applicable exemptions.

The term 'compensation' herein refers to a credit to the customer's account.

Table 1: Proposed Guaranteed Standards of Service for BWA

STANDARD	SERVICE CATEGORY	PREVIOUS TARGET	PROPOSED TARGET	COMPENSATION
<p>GWS 1 (Amended)</p>	<p><u>GWS1</u> Installation of a Service</p> <p>1a. This refers to the time it should take between application, payment for service, and the installation for a standard connection in a Zone other than a Zone 1 (Zone A) area.</p> <p>(After submission of an accurately completed application and the customer is in proximity to the BWA's infrastructure)</p> <p>1b. This refers to the time taken to complete an investigation on receipt of an application for service, in a Zone 1 (Zone A) area.</p> <p>(After submission of an accurately completed application and the customer is in close proximity to the BWA's infrastructure)</p> <p>1c. Installation time after the completion of the investigation and approval in Zone 1 (Zone A) area.</p> <p>(Zones are as defined by the BWA)</p>	<p>Residential - 14 days</p> <p>Commercial - 10 days</p> <p>Residential - 14 days</p> <p>Commercial - 10 days</p> <p>Residential - 14 days</p> <p>Commercial - 10 days</p>	<p>Residential (R)² - Ten (10) working days</p> <p>Commercial (C)³ - Eight (8) working days</p> <p>Residential (R) - Ten (10) working days</p> <p>Residential (R) - Ten (10) working days</p>	<p>Refund of the standard domestic thirty (30) day minimum charge. (R)</p> <p>Refund equivalent to double the standard domestic thirty (30) day minimum charge. (C)</p>

² Residential customers refers to persons that indicate they are applying for a domestic service on their application for water. (R)

³ Commercial customers refers to persons that indicate they are applying for a commercial service on their application for water. (C)

STANDARD	SERVICE CATEGORY	PREVIOUS TARGET	PROPOSED TARGET	COMPENSATION
GWS 2	<p>Issuance of First Bill</p> <p>This refers to the time elapsing between the installation of water service and the issuance of the first water bill.</p> <p>(Interim bill to be issued if read bill cannot be generated)</p>	No more than 30 days after installation of service	No more than twenty (20) working days after installation of service.	\$15 (R) \$30 (C)
GWS 3 Amended	<p>Response to Complaints</p> <p>This refers to the timeframe in which the BWA must acknowledge a customer's complaint about billings or other Standards of Service issues.</p>	<p>Acknowledgment provided within 7 days of receipt of complaint.</p> <p>Investigation of complaint and finding provided within 20 days of receipt of complaint. (Inclusive of acknowledgement time)</p>	<p>Acknowledgement provided within five (5) working days of receipt of written or emailed complaint. (Complaints made via telephone or walk-in will be deemed to have been acknowledged at the time the complaint was made.)</p> <p>Investigation of complaint and findings provided within working fifteen (15) days of receipt of complaint. (Inclusive of acknowledgement time)</p>	\$15 (R) \$30 (C) \$15 (R) \$30 (C)
GWS 4	<p>Wrongful disconnections</p> <p>This refers to the loss of service where the customer has been disconnected in error.</p> <p>(This does not apply where bills have been correctly stamped "due for disconnection")</p>	Reconnected within ten (10) hours after notification of the error.	Reconnected within ten (10) hours after notification of the error.	\$50 (R) \$100 (C)

STANDARD	SERVICE CATEGORY	PREVIOUS TARGET	PROPOSED TARGET	COMPENSATION
<p>GWS 5 Amended</p>	<p><u>GWS 5</u> Meter Installation or Meter Repositioning (Existing Service) 5a) This refers to the time frame in which the BWA will install a meter on the customer's request. (Customer with a fixed rate requesting meter) 5b) This refers to the time it takes between the customer's request for, and the actual repositioning of the meter.</p>	<p>Meter to be installed within 45 days of receipt of request.</p> <p>New standard</p>	<p>Meter to be installed within thirty (30) working days of receipt of request.</p> <p>Meter to be relocated within fifteen (15) working days of receipt of request and payment of deposit where applicable (Assuming the request is feasible)</p>	<p>\$15 (R) \$30 (C)</p> <p>\$15 (R) \$30 (C)</p>
<p>GWS 6</p>	<p>Repair/Replacement of Faulty Meter This refers to the time taken, after the report of a fault, for the BWA to assess and repair/replace a faulty meter, where applicable.</p>	<p>Assess and determine operational status of meter and report findings to the customer within 15 days.</p> <p>Replace/repair faulty meter within 30 days of confirmation of defect.</p>	<p>Assess and determine operational status of meter and report findings to the customer within ten (10) working days.</p> <p>Replace/repair faulty meter within twenty (20) working days of confirmation of defect.</p>	<p>\$15 (R) \$30 (C)</p> <p>\$15 (R) \$30 (C)</p>
<p>GWS 7</p>	<p><u>GWS 7</u> Reconnection After Payment of Overdue Amount and Reconnection Fee This refers to the timely reconnection of a customer's service after satisfactory settlement of overdue</p>	<p>Maximum of 24 hours to restore supply</p>	<p>Maximum of twenty-four (24) hours to restore supply</p>	<p>\$15 (R) \$30 (C)</p>

STANDARD	SERVICE CATEGORY	PREVIOUS TARGET	PROPOSED TARGET	COMPENSATION
	amounts and reconnection fee at the BWA's offices.			
GWS 8 NEW	<p>GWS 8 Application for Reconnection of service that was disconnected from the main.</p> <p>This refers to the timely reconnection of a customer's service that was disconnected from the main, after satisfactory payment of applicable fees at the BWA's offices.</p>	New standard	<p>Residential (R) - Seven (7) working days</p> <p>Commercial (C) - Five (5) working days</p>	<p>\$15 (R)</p> <p>\$30 (C)</p>
GWS 9 (Previously 8)	<p>Scheduling of Field Appointments</p> <p>This refers to appointments scheduled by BWA representatives. Where the BWA is unable to keep an appointment with a customer, the BWA will contact the customer at least twenty-four (24) hours before the scheduled appointment to cancel and notify of a new date. (Monday to Friday)</p> <p>The customer should be given work order numbers as confirmation of scheduled appointment.</p>	<p>All scheduled appointments should be honoured. Appointments may be scheduled: Morning (8:00 a.m. to 12:00 noon) or afternoon (12:01 p.m. to 4:00 p.m.)</p>	<p>All scheduled appointments should be honoured and are to be scheduled between the hours of (8:00-10:00,10:00-12:00,12:00-14:00,14:00-16:00)</p>	<p>\$15 (R)</p> <p>\$30 (C)</p>
GWS 10 (Previously 9)	<p>Reliability of Supply</p> <p>This refers to the provision of a minimum quantity of</p>	<p>Customers shall be supplied with at least 8m³ of</p>	<p>Customers shall be supplied with at least 8m³ of running water</p>	<p>Refund of the standard domestic 30 day minimum charge. (R).</p>

STANDARD	SERVICE CATEGORY	PREVIOUS TARGET	PROPOSED TARGET	COMPENSATION
	running water over a thirty (30) day period (a billing period).	running water over a thirty (30) day period (a billing period).	over a thirty (30) day period (a billing period).	Refund of double the standard domestic 30 day minimum charge. (C)

Guaranteed Standards of Service Definitions and Specific Exemptions

Working Days

“Working Days” refers to Mondays to Fridays (8:00 a.m. to 4:00 p.m.) only and excludes public holidays and weekends. In measuring the response time for targets expressed in terms of working days, the day the complaint is made is excluded.

Drought Conditions

According to the Caribbean Institute for Meteorology and Hydrology (CIMH), there are four classes of drought: meteorological drought, agricultural drought, hydrological drought and socio-economic drought. Socio-economic drought is defined as the excess of demand for water over its natural availability. Hydrological drought occurs where the water reserves in the aquifers and reservoirs fall below an established statistical average. Meteorological drought occurs where there is a prolonged period of below average precipitation, causing a natural shortage of water. Agricultural drought is experienced when there is below average moisture to support crop production. Barbados’ thirty (30) year average rainfall is 1250mm. CIMH is the authority in Barbados with respect to making a determination as to whether drought conditions exist. The Commission will therefore defer to CIMH when the need arises for determining whether or not drought conditions are in effect.

GWS 1- Installation of Service (Amended)

Definition

Installation of Service in a Zone other than a Zone 1 or Zone A Area - No more than ten (10) working days in the instance of residential customers, and eight (8) working days for commercial customers, shall elapse between the application, payment and installation for a standard connection in a Zone other than a Zone 1 or Zone A area.

Installation of Service in a Zone 1 Area - Investigations shall be completed within ten (10) working days for residential customers, after the receipt of an application for service in a Zone 1 or Zone A area.

After completion of the investigation and approval in a Zone 1 or Zone A area, installations shall be completed within ten (10) working days for residential customers.

If the BWA fails to meet the target under this Standard, the affected residential customer will be offered a refund equivalent to the standard domestic thirty (30) day minimum charge. Commercial customers will be offered a refund equivalent to double the standard domestic thirty (30) day minimum charge.

Specific Exemptions:

- Where the customer fails to provide adequate or correct information; and
- Where the customer's water infrastructure does not meet the BWA's requirements for installation or is considered unfit for service, e.g., zonal restrictions, inappropriate materials used at customer end of connection.

GWS 2 - Issuance of First Bill

Definition

No more than twenty (20) working days shall elapse between the installation of service and the issuance of the first water bill. Where the BWA fails to issue the bill in the stipulated time, it must pay a credit of \$15 to the affected residential customer and \$30 to the affected commercial customer.

Specific Exemption:

- Where the BWA is unable to gain access to the customer's premises through the actions of the customer.

GWS 3 - Response to Complaints (Amended)

Definition

The BWA shall acknowledge a customer's complaint about billings or other Standards of Service issues within five (5) working days of receipt of the complaint. The BWA must complete the investigation within fifteen (15) working days and provide findings

(inclusive of the acknowledgment time). Additionally, a customer's service is not to be disconnected while a dispute is ongoing.

If the BWA fails to provide an acknowledgement in the specified time, a credit of \$15 for each affected residential and \$30 for each affected commercial customer shall be applied to the account. If the BWA fails to complete the investigation and communicate its findings to the affected customer, an additional credit of \$15 for a residential and \$30 for a commercial customer is applicable.

Specific Exemptions:

- Where the customer informs the BWA that they do not want further action to be taken on a matter;
- Where the customer requests the BWA to take action at a later date than required by the standard;
- Where industrial action by BWA employees makes it impracticable for a response to be dispatched in the stipulated time; and
- Where the complaint was deemed frivolous or vexatious.

GWS 4 – Wrongful Disconnections

Definition

The BWA shall reconnect customers disconnected in error within ten (10) hours of notification of the error. Failure to accomplish this will result in affected residential customers receiving \$50 and commercial customers receiving \$100 in compensation as credits on their next bills.

GWS 5 – Meter Installations or Meter Repositioning (Existing Service) (Amended)

Definition

- 5a) The BWA shall install a meter within thirty (30) working days of a customer's request, i.e., customers with fixed rates requesting a meter.
- 5b) The BWA shall reposition a meter within fifteen (15) working days of a customer's request and where applicable, the payment of the deposit.

Failure to meet the target in either instance will result in the BWA making a credit of \$15 and \$30 to affected residential and commercial customers, respectively.

Specific Exemption:

- Where the BWA is unable to gain access to premises where needed or locate the service line; and
- Where the delay of installation is solely attributable to the customer.

GWS 6 – Repair/Replacement of Faulty Meter

Definition

After the report of a faulty meter, the BWA has ten (10) working days to assess and determine the operational status of the meter and report the findings to the customer. After confirmation of a defect, the faulty meter shall be repaired or replaced, where applicable, within twenty working (20) days.

Where the BWA fails to complete and report the findings of the assessment to the customer within the stipulated time, each affected residential customer shall receive a credit of \$15 and each affected commercial customer a credit of \$30. If the BWA does not repair/replace the faulty meter in the required time, each affected residential customer shall be compensated an additional credit of \$15 and each affected commercial customer a credit of \$30.

Specific Exemptions:

- Where an offence has been committed through interference with the BWA's metering equipment; and
- Where the BWA is unable to gain access to the customer's premises at the time agreed with the customer for such access.

GWS 7 – Reconnection after Payment of Overdue Amount and Reconnection Fee

Definition

Service that has been disconnected for non-payment (a lock installed on the meter), shall be reconnected within twenty-four (24) hours of satisfactory arrangement to settle the overdue amounts and the reconnection fee at the BWA's offices.

Failure by the BWA to connect the service within the stipulated time will result in each affected residential customer being entitled to a credit of \$15 and each affected commercial customer a credit of \$30.

Specific Exemption:

- Where the customer settles the outstanding balance at an establishment other than the BWA and does not supply the BWA with such proof. (This includes an online payment using a portal other than the BWA).

GWS 8 - Application for Reconnection of service that was disconnected from the main. (New)

Definition

After a request for the reconnection of a service previously disconnected from the water main, and after payment of the requisite charges at the BWA's office, the BWA shall restore service within seven (7) working days for residential customers and five (5) working days for commercial customers.

Failure by the BWA to connect the service within the stipulated time will result in each affected residential customer being entitled to a credit of \$15 and each affected commercial customer a credit of \$30.

GWS 9 - Scheduling of Field Appointments (Previously 8)

Definition

Where the BWA's representative has scheduled an appointment with a customer and is later unable to keep the appointment, the BWA shall contact the customer at least twenty-four (24) hours before the scheduled appointment to reschedule to a date agreeable to both parties (Monday to Friday, 8:00 a.m. to 4:00 p.m.). Where the BWA fails to keep an appointment and does not notify the customer, a credit of \$15 shall be given to each affected residential customer and \$30 to each affected commercial customer.

Specific Exemptions:

- Where the customer cancels the appointment;
- Where it is impracticable to keep the appointment due to the action of a person other than the BWA's representative;

- Where it is impracticable to keep the appointment due to industrial action by the BWA's employees; and
- Where it is impracticable to keep the appointment due to a pandemic, the passage of a hurricane, storm, or other natural event.

GWS 10 – Reliability of Supply (Previously 9)

Definition

Reliability of supply refers to the minimum quantity of running water that is to be supplied to each customer of the BWA over thirty (30) consecutive days (a billing period). The BWA shall supply each customer, with at least 8m³ of running water over a thirty (30) day period (a billing period).

Where the BWA fails to meet this target under the Standard, each affected residential customer is entitled to a refund equivalent to the standard domestic thirty (30) day minimum charge, and each commercial customer will be entitled to a refund equivalent to double the standard domestic thirty (30) day minimum charge.

Customers are advised, that in the absence of a legislative change, the continuous supply of water may be guaranteed, subject to the provision of Regulation 12(1) of the BWA Regulations.

Specific Exemptions:

- Subject to Regulation 12(1) of the BWA Regulations;
- Where persistent drought conditions exist as determined by the CIMH; and.
- Where there is a breakdown of machinery or equipment or any other force or cause of similar nature not within the control of the BWA and which by the exercise of due diligence it is unable to avoid, prevent or mitigate.

5. 2 Compensatory Payments Claim Procedure

Customers are required to submit manual claims to the BWA when there is a breach of the Guaranteed Standards of Service. Compensation is only payable for periods beyond the target times. The BWA is required to design a claim form to facilitate this process. This

form is to be made available to customers on the BWA's website and at its offices. Customer claims must be submitted within three (3) months of occurrence of the event giving rise to the claim. Customers making claims after three (3) months of occurrence of the event are not eligible for compensation.

The BWA shall investigate and resolve all claims within two (2) months. Where applicable, the BWA shall provide compensation in the form of a credit on the customer's bill. If the claim is denied, the BWA shall advise the customer of the reason for denial within two (2) months.

Customers have the right to make a complaint to the Commission if they consider that they have been wrongfully denied compensation.

On receipt of a complaint, the BWA is required to provide the customer with a work order number. This number will serve as the reference number in relation to the particular complaint for identification purposes.

The Commission considered the proration of compensation for the standard, depending on the time the BWA takes to resolve the issue. However, after considering the financial status of the BWA, a decision was taken to forego the prorating at this time.

5.3 Proposed Overall Standards of Service for BWA

The Overall Standards of Service are first presented in summarised form in Table 2, followed by a more detailed explanation of definitions and applicable exemptions.

Table 2 - Proposed Overall Standards of Service

STANDARD	SERVICE CATEGORY	PREVIOUS TARGET	TARGET
OWS 1	<p>Meter Reading</p> <p>This refers to the time- frame between each meter reading.</p>	100% of accessible meters to be read monthly.	100% accessible meters to be read monthly.
OWS 2 (Amended)	<p>Investigation of Water Quality</p> <p>This refers to the time- frame in which the BWA will investigate and submit findings to the Commission where there is a complaint relating to water quality. (This relates to issues other than “White Water” or “Brown Water” that are rectified by the flushing of the mains).</p>	In 95% of instances, preliminary reports are to be submitted within seventy-two (72) hours and comprehensive reports are to be submitted within two (2) weeks of receipt of complaint.	In 95% of instances, preliminary reports are to be submitted within seventy-two (72) hours and comprehensive reports are to be submitted within two (2) weeks of receipt of complaint.
OWS 3	<p>Reinstatement of Service after Electrical Outages by Supplier of Electricity</p> <p>This refers to the timeframe in which service is restored after occurrence of an electrical outage. Customers in the affected areas shall be kept informed of the progress.</p>	In 95% instances, the water supply shall be reinstated within eight (8) hours of restoration of electrical supply	In 95% instances, the water supply shall be reinstated within eight (8) hours of restoration of electrical supply
OWS 4	<p>Reinstatement of Service after In-House Fault (Fault residing within the control of the BWA</p> <p>This refers to the timeframe in which service is restored after and in-house fault, e.g.</p>	In 95% of instances, the supply shall be reinstated within	In 95% instances, the supply shall be reinstated within

STANDARD	SERVICE CATEGORY	PREVIOUS TARGET	TARGET
	mechanical failure, internal electrical fault. Customers in the affected areas shall be kept informed of the progress.	eight (8) hours of occurrence of fault.	eight (8) hours of occurrence of fault.
OWS 5	<p>Reinstatement of Property</p> <p>This refers to the timeframe in which roads, walkways and/or property including guard walls, will be restored after damage due to mains or service pipes repairs, or the installation of new services.</p>	<p>In 95% of instances temporary reinstatement shall occur at the end of work each day.</p> <p>In 95% of instances, permanent reinstatement shall occur within twenty (20) working days of completion of works.</p>	<p>In 95% of instances temporary reinstatement shall occur at the end of work each day.</p> <p>In 95% of instances, permanent reinstatement shall occur within twenty (20) working days of completion of works.</p>
OWS 6	<p>Minimum/Maximum Water Pressure</p> <p>This refers to the water pressure that must be maintained.</p>	A water pressure of between 25 to 80 pounds per square inch (psi) shall be maintained at all times.	A water pressure of between 25 to 80 pounds per square inch (psi) shall be maintained at all times.
OWS 7	<p>Notify Public of Intention to Interrupt Supply</p> <p>This refers to the period of notice to be given to customers when there are planned interruptions. Customers in the affected areas shall be kept informed of the progress.</p>	In 95% of instances customers are to be notified not less than 48 hours before scheduled service interruption.	In 95% of instances customers are to be notified not less than forty-eight (48) hours before scheduled service interruption.
OWS 8	<p>Correction of Sewage Problem</p> <p>This refers to the time in which the BWA has to correct sewerage problems after being informed. (The problems referred to</p>	95% of all sewerage problems shall be corrected within forty-eight (48)	95% of all sewerage problems shall be corrected within

STANDARD	SERVICE CATEGORY	PREVIOUS TARGET	TARGET
	include blockages of sewer lines, overflows and breakage of sewer lines, etc.)	hours of notification of the sewerage problem.	forty-eight (48) hours of notification of the sewerage problem.
OWS 9	<p>Wastewater Effluent Quality</p> <p>This refers to the quality of wastewater effluent being discharged from the BWA's sewerage treatment plants.</p>	95% of samples shall conform to the Environmental Protection Department's (EPD's) wastewater discharge standards.	95% of samples shall conform to the Environmental Protection Department's (EPD's) wastewater discharge standards.
OWS 10 (Amended)	<p>Potable Water Quality</p> <p>This refers to the quality of water supplied to customers. Potable water shall comply with the World Health Organization (WHO) Potable Water Guidelines including those for turbidity, chlorine residual, faecal coliforms, faecal streptococci, nitrates and total dissolved solids.</p>	100% of samples taken shall be within the potable water quality limits established by the WHO.	100% of samples taken shall be within the potable water quality limits established by the WHO.
OWS 11 (Amended)	<p>Repair of Ruptured Pipes</p> <p>This refers to the time taken, after the report of a ruptured pipe, for the BWA to effect repairs (service lines).</p> <p>(Where the rupture appears before the meter, the BWA is responsible for effecting the repairs at no cost to the customer. Ruptures after the meter are the responsibility of the customer).</p>	90% of ruptured pipes shall be repaired within 5 days of notification of rupture.	80% of ruptured pipes shall be repaired within five (5) working days of notification of rupture.
OWS 12	<p>Repair of Ruptured Mains</p> <p>This refers to the time taken, after the report of a ruptured main, for the BWA to effect repairs (transmission lines). Customers in the affected areas shall be kept informed of the</p>	In 95% of instances mains repairs shall be effected within 24 hours of notification of rupture.	In 95% of instances mains repairs shall be effected within twenty-four (24) hours of

STANDARD	SERVICE CATEGORY	PREVIOUS TARGET	TARGET
	progress.		notification of rupture.
OWS 13 (New)	<p>Billing Accuracy</p> <p>This refers to the incidence of errors (typographical, errors of omission, etc.) on customers' individual invoice.</p>	New standard	90% of bills are to be error free.

Proposed Overall Standards of Service Definitions and Specific Exemptions

OWS 1 - Meter Reading

Definition

One hundred percent (100%) of accessible meters are to be read on a monthly basis.

Specific Exemptions:

- Where there are persistent adverse weather conditions or pandemic restrictions; and
- Where access is denied due to overgrown foliage, obstructing structures, locked gates, and/or aggressive animals.

OWS 2 - Investigation of Water Quality (Amended)

Definition

When there is a complaint relating to the water quality, the BWA shall, in a minimum of ninety-five percent (95%) of instances, investigate and submit a preliminary report to the Commission within seventy-two (72) hours of receipt of complaint. This shall be followed up by the submission of a comprehensive report within two (2) weeks of receipt of the initial complaint. These investigations do not include reports of 'white water' or 'brown' water. 'White' water is defined as water that is cloudy in appearance and caused by air bubbles. 'Brown' water usually arises after the repair of ruptured mains, resulting from the dislocation of corrosion in the pipe. Discoloured water complaints are addressed by the flushing of mains, and 'white water' dissipates over time.

OWS 3 – Reinstatement of Service after Electrical Outages by Supplier of Electricity

Definition

In the event of an electrical outage, the BWA shall restore ninety-five percent (95%) of service within eight (8) hours after the reinstatement of the electricity by the service provider, and shall keep customers in the affected areas informed of the progress.

Specific Exemptions:

- Where adverse weather conditions prevented the supply from being restored;
- Where industrial action by the BWA's employees prevented the supply from being restored;
- Where the action of a person other than a BWA representative prevented the supply from being restored; and
- Where there is a breakdown of machinery or equipment, or any other force or cause of similar nature not within the control of the BWA, which by the exercise of diligence it is unable to avoid, prevent or mitigate.

OWS 4 – Reinstatement of Service after In-House Fault (Fault residing within the control of BWA)

Definition

In ninety-five percent (95%) of instances, service shall be restored within eight (8) hours of repair of an in-house fault. Customers in the affected areas shall be kept informed of the progress.

Specific Exemptions:

- Where adverse weather conditions prevented the supply from being restored;
- Where industrial action by the BWA's employees prevented the supply from being restored;
- Where the action of a person other than a BWA representative prevented the supply from being restored; and
- Where there has been the malicious destruction of the BWA's equipment.

OWS 5 - Reinstatement of Property

Definition

Where the BWA has caused damage to roads, walkways and/or property due to mains or service pipe repairs, or the installation of new services, temporary reinstatement shall be effected at the end of work each day, in ninety-five percent (95%) of instances. In ninety-five percent (95%) of instances, permanent reinstatement shall be completed within twenty (20) working days of completion of works.

Specific Exemption:

- Where the action of a person other than a BWA representative prevents reinstatement.

OWS 6 - Minimum/Maximum Water Pressure

Definition

The BWA shall maintain a water pressure of between twenty-five to eighty (25 - 80) psi at all times.

Specific Exemptions:

- During drought conditions;
- Where industrial action by the BWA's employees makes it impracticable to maintain the pressure standard;
- Where the action of a person other than the BWA's representative makes it impracticable to maintain the pressure standard;
- Where necessary work is being carried out that causes the pressure to fall; and
- Where there are major disruptions of distribution lines (mains).

OWS 7 - Notify Public of Intention to Interrupt Supply

Definition

In ninety-five percent (95%) of planned interruptions, potentially affected customers shall be given forty-eight (48) hours' prior notice.

Specific Exemptions:

- Where industrial action by the BWA's employees makes it impracticable to give notice of at least forty-eight (48) hours before the supply is cut off; and
- Where the action of a person other than the BWA's representative made it impracticable to give notice of at least forty-eight (48) hours before the supply is cut off.

OWS 8 - Correction of Sewerage Problem

Definition

In ninety-five percent (95%) of instances, the BWA shall correct sewage problems (blockages of sewer lines, overflows and breakage of sewer lines) within forty-eight (48) hours of notification of fault.

Specific Exemptions:

- Where industrial action by the BWA's employees makes it impracticable;
- Where there is a major breakdown of the wastewater treatment plant; and
- Where the sewer is inundated by storm water intrusion resulting from the passage of a hurricane or storm.

OWS 9 - Sewerage Effluent Quality

Definition

In ninety-five percent (95%) of instances, wastewater effluent should conform to the Environmental Protection Department's (EPD) wastewater disposal standards (see Tables 7 and 8 in Appendix II).

Specific Exemption:

- Where there is a major breakdown of the treatment plant.

OWS 10 - Potable Water Quality

Definition

One hundred percent (100%) of samples taken shall be within the parameter limits established by the WHO for potable water quality inclusive of those for turbidity, chlorine

residual, faecal coliforms, faecal streptococci, nitrates, sulphates and total dissolved solids. The BWA will be required to conduct monthly testing for primary pollutants, quarterly testing for metals, pesticides and petroleum hydrocarbons (PHC). Bi-annually, the BWA will conduct widescreen testing (see Appendix 1 for a detailed list of testing parameters and the frequency of the testing).

OWS 11 - Repair of Ruptured Pipes (Amended)

Definition

Where the BWA has received a report of a ruptured pipe (service line), in eighty percent (80%) of the cases, repairs shall be effected within five (5) days.

Specific Exemption:

- Where industrial action by the BWA's employees makes it impracticable.

OWS 12 - Repair of Ruptured Mains

Definition

Where the BWA has received a report of a ruptured main (transmission line), in ninety-five percent (95%) of instances, the repairs shall be effected within twenty-four (24) hours. Any delays shall be communicated to the affected customers in a timely manner.

Specific Exemptions:

- Where industrial action by the BWA's employees makes it impracticable;
- Where severe weather prevented the repair; for example, hurricane; and
- Where the BWA is unable to gain access through the actions of a person other than an employee of the BWA.

General

It is recommended that the BWA provide truck-borne water where service disruptions are expected to last in excess of six (6) hours.

OWS 13 - Billing Accuracy (New)

Definition

In 90% of instances, the BWA shall issue bills that are accurate, error free and consistent with actual water usage. This includes incidence of errors (typographical, errors of omission, etc.) on customers' individual invoice.

Specific Exemptions:

- Charges due to fraud or faulty customer equipment;
- Overdue amounts reflected on subsequent bills in the event that the previous bill was paid after its due date; and
- Issues pertaining to format.

SECTION 6 GENERAL EXEMPTIONS

6.0 Force Majeure

The Commission acknowledges that failure to meet the Guaranteed Standards of Service may be driven by circumstances or events beyond the control of the service provider. Consequently, the Standards of Service may be placed in abeyance in circumstances where conditions, outside the control of the BWA, make it impossible to meet the targets. The term used to define these events is *Force Majeure*. Black's Law Dictionary, Tenth Edition defines *Force Majeure*⁴ as:

"An event or effect that can be neither anticipated nor controlled; esp., an unexpected event that prevents someone from doing or completing something that he or she had agreed or officially planned to do. The term includes both acts of nature (e.g., floods and hurricanes) and acts of people (e.g. riot, strikes and wars)."

The Standards of Service regime states that the *force majeure* conditions under which the exemptions from the Standards of Service may be granted are:

- (a) An act of war (whether declared or not), hostile invasion, act of foreign enemies, terrorism or civil disorder;
- (b) A strike or strikes and/or other industrial action or blockade or embargo or any other form of civil disturbance (whether lawful or not);
- (c) Landslides, lightning strikes, hurricanes, floods, droughts, tempest, earthquake, volcanic eruption, or any other natural disaster of overwhelming proportions;
- (d) Riots;
- (e) Civil commotion;
- (f) Acts or threats of terrorism;
- (g) Insurrections;
- (h) Epidemics and/or pandemics;
- (i) Trade restrictions;
- (j) Inability to obtain any requisite Government permits; and

⁴ Bryan A. Garner, Black's Law Dictionary (United States: Thomson Reuters, 2009), 718.

- (k) Breakdown of machinery or equipment or any other force or cause of similar nature not within the control of the BWA and which by the exercise of diligence it is unable to avoid, prevent or mitigate.

6.1 Other Exemptions and Conditions

The Commission is cognisant that other circumstances may exist from time to time which may impede the BWA's ability to meet the prescribed Standards of Service. In such circumstances, where a customer is dissatisfied with the utility's application of an exemption, that customer may seek the Commission's guidance. Thereafter, the Commission may authorise the BWA's action or require it to honour the claim.

The situations which might fall into this category may include but are not limited to the following:

- (a) Where the BWA is unable to gain access to the customer's premises at the prearranged time;
- (b) Where inadequate directions have been provided by the customer;
- (c) Where the customer's installation does not meet the BWA's requirements for installation or is considered unfit for service, (e.g. zonal restrictions, inappropriate materials etc.);
- (d) Where the customer or the customer's agent fails to fulfil his/her obligations;
- (e) Where there are legal constraints that may prevent the BWA from meeting the standard;
- (f) Where the customer informs the BWA, in writing, that no further action should be taken on a matter;
- (g) Where the customer requests, in writing, the BWA to take action at a later date than that required by the standard;
- (h) Where the Commission reasonably considers that the customer's request or complaint is frivolous or vexation;
- (i) Where an offence has been committed through interference with the BWA's metering equipment;

- (j) Where the customer's account remains unpaid after the BWA has given the customer notice of its intention to disconnect the supply for non-payment;
- (k) Where the BWA is requested, by a public authority, to provide an emergency water supply to assist in emergency action and the provision of such services restricts the connection of a customer to a specified service or the rectification of a fault or service difficulty;
- (l) Where there is a negligent and willful act by the customer;
- (m) Where the customer is required to pay a charge to the BWA for connection to the service or for the use of the service and the BWA has reasonable grounds to believe, based on the customer's prior debt service record, that the customer would be unwilling or unable to pay the charges as it becomes due; and
- (n) Other unforeseeable circumstances beyond the control of the Parties against which it would have been unreasonable for the affected party to take precautions and which the affected party cannot foresee by using its best efforts.

SECTION 7 REASONS FOR PROPOSALS

In developing the inaugural Standards of Service, the Commission considered issues that were brought to its attention through customer complaints and queries, researched best practices and held discussions with the BWA. The BWA's ability to attain the standards was paramount in setting the targets and therefore the operational and technical challenges were considered. The objective of the standards was to incentivize the utility to improve its service delivery to its customers. Therefore, the final targets were derived from the best practices in other jurisdictions, taking into consideration the BWA's ability to achieve them.

This second iteration follows a similar process. Best practices from countries with Quality of Service standards covering essentially some of the same categories currently outlined in our SOS were considered. The countries include Jamaica, Trinidad and Tobago, Gambia, United Kingdom, Australia and the Emirate of Abu Dhabi.

Additionally, there was an analysis of the performance of the utility over the period 2018 – 2020 and discussions with the BWA. These discussions revealed, that the utility encountered several operational and financial challenges that impacted its ability to attain the targets. The BWA outlined measures being undertaken to mitigate against some of the countervailing issues, inclusive of projects that are ongoing and some that are expected to be implemented. Consideration was given to all of the foregoing in determining the targets for this iteration of the SOS.

Working days

The previous iteration of the SOS included references to calendar days and working days. For the avoidance of confusion and for consistency, in this SOS document the targets are expressed in working days only.

Proposed New Guaranteed Standard - GWS 8 - Reconnection After Payment of Overdue Amount and Reconnection Fee

As a result of challenges expressed by the BWA in relation to attaining the standard for reconnections under GWS 7, in instances where the service had been disconnected from the main, it was considered prudent to add a new standard. GWS 7 addresses the

components of the original standard in relation to reconnections where a lock has been placed on the meter. However, GWS 8, relates to reconnections where the service had been disconnected from the main. In order to effect the reconnection, the BWA have to drill into the ground to access the main. Since the BWA informed that this type of reconnection was akin to the installation of a new service, a target of seven (7) working days was allotted for effecting the reconnection for residential customers and five (5) days for commercial customers.

Table 3 - New Standard - GWS 8

STANDARD	SERVICE CATEGORY	TARGET
GWS 8	<p>Application for Reconnection of service that was disconnected from the main.</p> <p>This refers to the timely reconnection of a customer's service that was disconnected from the main, after satisfactory payment of fees at the BWA's offices.</p>	<p>Residential - 7 working days Commercial - 5 working days</p>

Proposed New Overall Standard - OWS 13 Billing Accuracy

There has been the addition of one new standard, emanating from complaints of erroneous bills received during the 2018 - 2020 period. Customers complained about errors such as incorrect assessments due to inaccurate meter readings, typographical errors, mix-up in account numbers, or customers being billed for incorrect meters. Another common concern was that the graphical depiction of usage on the bill typically is not in alignment with the actual historical usage. As a result, customers were likely to question the charges incurred, given the disconnect between the historical graph and the current charges. The Commission considers the inclusion of this new Standard which addresses this issue directly, is merited. The Commission therefore proposes to introduce a new Overall Standard - OWS 13 Billing Accuracy which addresses the provision of accurate billing information (accuracy of information on bills). Customers should be able to rely on the charges and therefore the utility is required to ensure that at least 90% of the bills issued are accurate. This target should not be onerous on the utility but should

incentivize to ensure its billing function is operating efficiently. This also provides a measure of assurance to the customer that the bill received is relatively error free.

Table 4 - New Standards - OWS13

STANDARD	SERVICE CATEGORY	TARGET
<u>OWS 13</u>	<p>Billing Accuracy</p> <p>This refers to the incidence of errors (typographical, errors of omission, etc.) on customers' individual invoice.</p>	90% of bills are to be error free.

Proposed Amendment to GWS 1 - Installation of a Service

Under the proposals for the new Zones A to E instead of Zones 1-5, which have already been agreed to by Cabinet, commercial activity in Zone A will be prohibited. It would therefore be superfluous to set targets for commercial entities and thus the targets for the completion of an investigation for service in a Zone A or Zone 1 area have been eliminated.

The target days have been revised to working days. The BWA is required to complete the installation of a residential service in ten (10) working days and a commercial service in eight (8) working days after the application. This is comparable to the Regulated Industries Commission (RIC) in Trinidad, which requires the feasibility of the application to be completed in five (5) working days and the installation of service in seven (7) working days. The Office of Utility Regulation (OUR) in Jamaica requires the installation to be completed within (10) working days.

Proposed Amendment to GWS 3 - Response to complaints

The time for the BWA to acknowledge complaints has been adjusted from seven (7) days to five (5) working days. However, this does not constitute a significant change, merely a change for consistency. This is also in alignment with the standards in regulated industries in the Caribbean. The RIC and the OUR require complaints to be acknowledged in five (5) working days.

Proposed Addition to GWS 5 - Meter Installation or Meter Repositioning (Existing Service)

As a result of complaints received from customers on the lengthy process to reposition a meter on request, the Commission addressed the issue with the introduction of a standard. However, instead of a completely new standard, since both issues relate to the meter, the Commission proposes to subdivide GWS 5 into two parts. Part 5b, addresses the time it takes for the meter to be repositioned on a customer's request. The BWA must assess the request to determine its feasibility and the cost of the job. In instances where a deposit is required due to the nature of work to be done to effect the repositioning, the time that elapses between the notification of the necessity of the deposit, and the actual payment, will be taken into consideration. The Commission considers that the allocated time of 15 working days would be adequate to complete the task. This approximates half of the time it takes for a meter to be installed.

Proposed Amendment to OWS 2 - Investigation of Water Quality

This standard was initially designed to address water quality issues that could potentially have an adverse effect on customers. Thus, the necessity for a timely investigation so that corrective action could be taken, in order to minimize or eliminate the threat. It was not intended for this standard to address basic complaints such as 'white water' or 'brown water'. A qualifier was inserted into the standard for avoidance of doubt as to the definition.

Proposed Amendment to OWS 10 - Potable Water Quality

The delivery of safe drinking water is fundamental. Thus, the need for consistent comprehensive testing to ensure that the standard is maintained. However, the original listing of parameters in Appendix 1 - Table 6 of the first iteration of the SOS was extensive and costly to be tested on a daily basis. The Commission thought it prudent to reduce the list of parameters to be tested frequently. However, the BWA will still be required bi-annually to conduct widescreen testing of the extensive list of parameters. Whilst there has been a reduction in the parameters to be tested on a daily basis, there is no compromise in the quality of the water as the key parameters will continue to be tested. Additionally, metals, pesticides and Petroleum Hydrocarbons (PHC) will be tested quarterly (See Appendix 1 - Table 5) -

Proposed Amendment to OWS 11 – Repair of Ruptured Pipes

The aged infrastructure that is prone to breakage has led to the proliferation of leaks. When the target was initially set, there was an average of 800 breaks per month, however, the average number of breaks per month have been increasing with 1,366 for the year 2020. The BWA indicated that the exploding number of breakages coupled with labour, material and transportation challenges, impeded its ability to attain the original target. In light of the challenges, the Commission proposes to amend the target threshold to 80%.

7.0 Discussion of Responses

The Commission received two (2) responses to the Consultation Paper. These were from Yemi Knight on the behalf of AnchorBridge Environmental Inc. and the BWA. This section will outline and discuss the comments submitted by the respondents, provide the Commission’s comments on the issues raised and how these considerations informed the Commission’s final determinations.

7.1 Detailed Analysis

The following is a summary of the responses to the issues raised in the Consultation Paper and the Commission’s corresponding analyses.

Q1: What are your views on the Commission’s continued imposition of Standards of Service for the Barbados Water Authority?

No responses were received with respect to this question.

Q2: What are your views on the Commission’s proposal to define the time period of the targets as ‘working days’?

The BWA agrees with the Commission’s redefinition of the time to ‘working’ days.

The Commission’s response

For consistency and to avoid any confusion, the Commission proposes to redefined the time period to ‘working days’.

Q3: Please note that this question has two options to consider.

a. What are your views on redefining the time under GWS 1 as ‘working’ days?

b. What are your views on allowing the BWA a moratorium, i.e., a temporary suspension of the target for one (1) year?

The BWA is not in favour of a moratorium for the temporary suspension of the target for one (1) year.

The Commission's response

The Commission's proposal for a moratorium of one year, was in relation to the BWA's claim of backlog emanating from challenges that impacted its ability to effect the installations in a timely manner. However, in light of the BWA's submission, the Commission proposes to retract the moratorium suggestion.

Q 4: What are your views on redefining the target time to acknowledge complaints in five (5) working days? What are your views on the redefinition of the target time to complete the investigation as twenty (20) 'working' days (inclusive of the acknowledgment)?

The BWA is of the view that the inclusion of the acknowledgement time in the response to complaints Standard places the department at a disadvantage and should be removed from the time to investigate and report findings to customer. The BWA is of the opinion that if the acknowledgement time is included in the time to investigate and report findings to the customer, it is incorrect to say there are twenty (20) days to investigate and report since investigation commences after acknowledgment.

The Commission's response

The Commission believes that the twenty (20) 'working days' is adequate time for the BWA to investigate and report findings to the customer. There is no reason why the investigation cannot commence before the acknowledgment period has elapsed. As soon as the complaint is received, it can be routed to the relevant department for action, as the investigation is not dependant on the acknowledgment of receipt. One has to consider the customer waiting for the results of the investigation and having to wait an unduly long time. The Commission recognizes that there may be investigations that may be protracted because of the nature of the complaint. However, these types of investigations would be the exception rather than the norm.

Q 5: What is your opinion on the proposed modification to GWS 5, with the addition of the parameter to address the request of the movement of the meter from one location to another? Please give the reason(s) for your response.

The BWA opines that this Standard should be taken in the same context as GWS 6 where, time is needed to assess and determine whether the relocation of the meter is in order and the calculation of the estimate which will constitute a deposit (15 days). The BWA believes that the time to relocate the meter should commence after the customer pays the deposit (30 days) because the completion of the job is dependent on resources being allocated from more than one department to assist with this task. The BWA further submits that coordination of the work may be time consuming depending on the workload in key departments and that out of stock materials or transportation issues can extend the timeline beyond the specified time.

The Commission's response

The Commission has considered the submission by the BWA in relation to the extension of the time for the repositioning of the meter on request by the customer. However, the Commission is of the opinion that the timeframe is adequate to facilitate the process. Where a customer requests a repositioning and pays the relevant deposit, the BWA has adequate time to investigate and assess the feasibility of the request.

In instances where the assessment reveals that there will be additional costs arising from the new positioning, the BWA should inform the customer. The onus then falls on the customer to make the payment to expedite the process. If the customer fails to make the payment within the relevant time, the BWA will not be penalized. However, the Commission believes that the fifteen (15) working days is adequate time for the BWA to complete the repositioning of the meter. This is assuming the request is feasible and can be effected.

Q 6: Do you agree with the proposal to divide GWS 7 - Reconnection After Payment of Overdue Amount and Reconnection Fee into two (2) categories to differentiate between the simple reconnection and the complex reconnections?

The BWA is in agreement with the proposed distinction between the 'simple' and 'complex' targets for the reconnections.

Q 7: Should the current target levels for the Guaranteed Standards of Service be amended generally? If yes, please specify the Standard and the target(s) in your opinion that should be changed.

No responses were received with respect to this question.

Q 8: The Commission proposes several changes for example, changing the installation time, redefining the time period to 'working' days and adding an additional Standard in relation to the repositioning of meters. Do you believe that there should be any other modifications of, additions to or deletions from the current Guaranteed Standards? Please give the reason(s) for your response.

No responses were received with respect to this question.

Q 9: Should BWA be required to publish the Standards of Service, clearly and prominently, to the satisfaction of the Commission, via its website, social media channels, as well as two (2) forms of news media, in addition to informing customers who make complaints of the means via which compensation may be sought? Please give reasons for your answer.

AnchorBridge Environmental Inc. is of the opinion that the BWA makes great use of its social media channels, print, radio and tv announcements to broadcast general announcements about water work projects and disruptions in service. However, its official website is in dire need of an upgrade and modernization which should allow for easier access to important information such as the aforementioned announcements, the Standards of Service, and their Compensation Policy.

AnchorBridge Environmental Inc. believes that the BWAs' Standards of Service and Compensation Policy should be published clearly and promptly via their; website, bills, ground mail, offices, social media channels, and other communication methods. This should include how to access complaint forms and the steps needed to file a complaint. Additionally, the Standards of Service and Compensation Policy should be reinforced and

shared proactively through its Customer Service Representatives to customers who make complaints and seek compensation.

AnchorBridge Environmental Inc. observed that a review of the BWA's customer complaints online via the google review platform and the comment sections of their social media channels, revealed that there appeared to be limited avenues to find information or appropriate recourse for addressing complaints. AnchorBridge Environmental Inc. further noticed that there seemed to be limited effort to address complaints made by the public. AnchorBridge Environmental Inc. believes that by improving the way information is disseminated there might be better customer satisfaction and improvement of service.

The Commission's response

The Commission concurs and proposes to set out a regime for the BWA to improve its outreach to customers in relation to the Standards of Service. The BWA will be required to publish the Standards of Service Tables prominently on its website. Additionally, the BWA must make available to its customers the Table of the Guaranteed Standards of Service as set out in this document, by post or electronically within two (2) months and include the weblink to the Table of Guaranteed Standards on customers' utility bills.

Q 10: Should the compensatory payment continue to be manual where the customer elects to make the claim or should it be switched to automatic compensation, where the BWA automatically applies compensation to the customer's account when a breach occurs? Please give reasons for your answer.

No responses were received with respect to this question.

Q 11: What is your view on the level of compensation remaining the same?

No responses were received with respect to this question.

Q 12: Do you agree with the insertion of the qualifier requiring the investigation of water quality issues other than "white water" issues and temporary "discoloured" water that occur after fixing a burst main?

The BWA is in agreement with the added amendment.

AnchorBridge Environmental Inc. is concerned that using a broad qualifier may allow for water quality concerns to be dismissed in situations where the presence of white water or discoloured water persists regardless of if mains were repaired in the area at that time.

Discoloured water - more specifically brown water, may occur because of the constant movement of pipes due to the extreme wetting and drying of soil, warm spells, and the age of the pipes. AnchorBridge Environmental Inc. believes that there is much work needed to understand why discolored brown water persists, especially in northern the communities in St. Lucy and St. Peter. AnchorBridge Environmental Inc. reported that residents have experienced this issue daily over the last 3 years, and the recommendation of "Pipe Flushing" has been ineffective. AnchorBridge Environmental Inc. believes that having this qualifier will hinder any chance of these communities having a full investigation into the cause of the lasting and persisting discoloured brown water.

AnchorBridge Environmental Inc. is also concerned about the understaffing of the department tasked with tracking complaints related to water quality, as this issue is of great importance because there needs to be an accurate assessment of the scope of water quality issues faced by its customers. Additionally, AnchorBridge Environmental Inc. believes that there should be clear language of exactly what sources of water are being tested. AnchorBridge Environmental Inc. is of the opinion that past and current test results should be made publicly available and easily accessible on their website and on other relevant platforms.

The Commission's response

The Commission has noted the concerns expressed however, it should be noted that the testing under OWS 2 is only in relation to complaints of water quality issues in exceptional circumstances, i.e., issues other than 'white or brown water' complaints. In instances where the 'white' water or 'brown' water are not resolved but continue to persist, the BWA will be required to conduct further testing in order to resolve the situation. Given that the BWA will be performing the necessary test to determine the cause of the issue, the Commission considers it unnecessary to define the parameter to be tested, as this may be restrictive. Moreover, general testing is required under OWS 10

(Potable water quality) which details the parameters to be tested and the frequency of such testing.

Q 13: Do you agree that the target time for the restoration of service should be increased to 10 hours?

The BWA proposes that the target time be amended to “within 24 to 48 hours” as this is more practical. It believes that frequent temporary power outages and the absence of generators at the pumping stations adversely affect their pumping capability. The BWA advises that the network’s aging infrastructure and the limited capacity of some of the pipelines in the network used to transfer water to customers after an outage, also present additional challenges.

The Commission’s response

The Commission considered the challenges outlined by the BWA and in light of the implementation of the ongoing upgrades that aims to alleviate many of the current challenges, the Commission considers the eight (8) hour time period is reasonable.

Q 14: Do you agree with a reduction in the parameters for water quality testing?

The BWA agrees with the reduction in the biological parameters. The BWA further advises that the level of Nitrates or Chloride reported at the well level does not reflect the concentration reaching the customer as in many cases the sources are blended with other sources before reaching the customer. For example, where there are high levels of Chlorides at Carlton & Trents it is mixed with Spring Garden.

AnchorBridge Environmental Inc. does not support the reduction of the parameters for potable water quality testing, but believes that if a reduction is made, priority should be given to testing turbidity, total dissolved solids, total suspended solids, iron, copper, lead, chlorine, nitrate, nitrite, bacteria, hardness, and pH.

In addition, AnchorBridge Environmental Inc. opines that there should be clear directives on ways the public can manage their water at present, for example, information on how to safely treat or use the brown water coming from the taps, or a “Do Not Drink Water Advisory”, which could indicate when a community’s water is, or could be, contaminated with harmful chemicals and toxins.

AnchorBridge Environmental Inc. believes that priority should be given to testing potable water quality at distribution where past and current results should be made publicly available and accessible on all platforms in a timely manner.

The Commission's response

The reduced testing parameters proposed is inclusive of the parameters that AnchorBridge Environmental Inc. believes should be tested in order for there to be a level of confidence in the quality of water supplied by the BWA. The Commission agrees that these parameters are critical and therefore routine testing is essential. The Environmental Protection Department (EPD) routinely conducts samples and analysis testing on all wells and springs and the BWA conducts testing at distribution. There should therefore be no concerns about the absence of or diminished testing. A complete listing of the parameters and the frequency of testing required is detailed in Appendix 1. Under the Widescreen analysis approximately one hundred and twenty (120) parameters including persistent organic pollutants and heavy metals are analysed.

Q 15: What is your opinion on the reduction of the target to 80% of ruptures to be repaired within the five (5) working days of notification?

The BWA concurs with the amendment.

Q 16: Do you agree with the new proposed Overall Standard as it relates to the accuracy of billing? Please give the reason(s) for your response.

The BWA disagrees with the implementation of the proposed Standard. The BWA advises that the Customer Information System is still under development and that it did not have the capability to address errors directly and is reliant on a third party (external developers) to have issues remedied. The BWA further informed that the systems under development usually experience bugs which present as errors such as seen from time to time. It advised that the issue with the accuracy of the graph had been raised with the developers for over eighteen (18) months; however, more critical issues that have been outstanding for over two (2) years had taken priority.

The Commission responds

The Commission notes that for the past three (3) years, the BWA has advanced the argument that the system had issues. However, the Commission considers that adequate time has elapsed to have rectified the matter. It is unfair and detrimental to customers to consistently receive inaccurate bills and therefore the proposed target is not unreasonable.

Q 17: Should the current target levels for the Overall Standards of Service be amended? Please give the reason(s) for your response.

No responses were received with respect to this question.

Q 18: Do you believe that there are other Standards that should be considered? If yes, please state the suggested Standard(s).

No responses were received with respect to this question.

Q 19: What other improvements would you suggest for the level of reporting?

No responses were received with respect to this question.

SECTION 8 ADMINISTRATION

8.0 Monitoring and Enforcement of Standards

BWA is required to submit quarterly regulatory Standards of Service reports no later than one (1) month after the end of the quarter, including information on:

- The number of breaches under each Guaranteed Standard of Service (GWS 1 to GWS 9) and percentage compliance;
- The actual average times taken to respond to and/or rectify issues referred to under each Guaranteed Standard of Service;
- The level of compliance as a percentage of each Overall Standard of Service (OWS 1 to OWS 13);
- Details of any extenuating circumstances that would have prevented BWA from achieving the targets of the Overall Standards of Service; and
- The value of compensation attributable to each Guaranteed Standard of Service.

The first reporting quarter is proposed to be July 2022 to September 2022. Thereafter, the other proposed reporting periods are October 1 to December 31, 2022, January 1 to March 31, 2023, April 1 to June 2023, followed by the four (4) consecutive quarters of 2023 and 2024 and 2025.

In addition to the above information, BWA is required to submit annual Standards of Service reports for 2022, 2023, 2024 and 2025, which also include information on:

- The number of customers eligible for compensation during the previous financial year;
- The total value of eligible compensation;
- The number of customers receiving compensation;
- The amount of compensation paid; and
- The value of compensation attributable to each Guaranteed Standard of Service.

Compliance with the Standards of Service will be evaluated on a quarterly basis and annual reports shall be submitted no later than two (2) months after the end of the applicable reporting year.

The Commission reserves the right to conduct independent investigations that seek to determine the extent to which BWA is meeting the Standards of Service.

Where an Overall Standard is not met, BWA shall provide an explanation to the Commission. Where BWA continually fails to meet an Overall Standard, and it appears that no reasonable effort has been made to rectify the breach, Section 38 of the URA may be invoked.

8.1 Public Disclosure of Information

The Commission shall make public the yearly statistics related to BWA's performance in attaining these Guaranteed and Overall Standards of Service.

8.2 Public Education

BWA shall make available to its customers by post or electronically, the Table of Guaranteed Standards of Service as set out herein when the Decision is issued.

In addition, BWA is required to educate its customers, on the complaints process. BWA shall also place its claim forms and official complaint forms on its website and in its outlets.

8.3 Implementation and Review

The Standards of Service for BWA shall come into effect on a date to be determined by the Commission and continue until such time as the Commission shall determine but in any event for a period no longer than five (5) years. These Standards of Service shall be subject to review by the Commission.

APPENDIX 1

Table 5 - Drinking Water Testing Sampling Regime

Monthly	Quarterly	Quarterly	Quarterly	Bi-annually
Primary Pollutants	Metals	Pesticides	PHC	Widescreen
ALKALINITY	COPPER	Atrazine	Oil and Grease	
AMMONIA_N	DISSIRON	Simazine		
BICARBONATE	DISSMAGANESE			
CALCIUM	DISSMANGANESE			
CHLORIDE	LEAD			
ELECTRICALCOND	MAGNESIUM			
F_COLIFORM	TOTALIRON			
F_STREP	TOTALMAGANESE			
NITRATE_N	TOTALMANGANESE			
NITRITE-N	ZINC			
ORTHO_P				
pH				
POTASSIUM				
SODIUM				
SULPHATE				
T_COLIFORM				
TDS				
TOTAL HARDNESS				
TOTAL_PHOS				
TOTALHARDNESS				
TSS				
TURBIDITY				

Table 6- Drinking Water Quality Standard
Guideline values for chemicals that are of health significance in drinking-water⁵

Chemical	Guideline Value	
	(mg/l)	µg/l
Acrylamide	0.0005 ^a	0.5 ^a
Alachlor	0.02 ^a	20 ^a
Aldicarb	0.01	10
Aldrin and dieldrin	0.00003	0.3
Antimony	0.02	20
Arsenic	0.01 (A, T)	10 (A, T)
Atrazine	0.1	100
Barium	0.7	700
Benzene	0.01 ^a	10 ^a
Benzo[<i>a</i>]pyrene	0.0007 ^a	0.7 ^a
Boron	2.4	2 400
Bromate	0.01 ^a (A, T)	10 ^a (A, T)
Bromodichloromethane	0.06 ^a	60 ^a
Bromoform	0.1	100
Cadmium	0.003	3
Carbofuran	0.007	7
Carbon tetrachloride	0.004	4
Chlorate	0.7 (D)	700(D)
Chlordane	0.0002	0.2
Chlorine	5 (C)	5 000(C)
Chlorite	0.7 (D)	700 (D)
Chloroform	0.3	300
Chlorotoluron	0.03	30
Chlorpyrifos	0.03	30
Chromium	0.05 (P)	50(P)
Copper	2	2 000
Cyanazine	0.0006	0.6
2,4-dichlorophenoxyacetic acid	0.03	30
2,4-Dichlorophenoxybutyric acid	.09	90
DDT and metabolites	0.001	1
Dibromoacetonitrile	0.07	70
Dibromochloromethane	0.1	100
1,2-Dibromo-3-chloropropane,	0.001 ^a	1 ^a
1,2-Dibromoethane,	0.0004 ^a (P)	0.4 ^a (P)
Dichloroacetate	0.05 ^a (D)	50 ^a (D)
Dichloroacetonitrile	0.02 (P)	20 (P)
1,2-Dichlorobenzene	1 (C)	1 000 (C)
1,4-Dichlorobenzene	0.3 (C)	300 (C)
1,2-Dichloroethane	0.03 ^a	30 ^a

⁵ World Health Organization. (2011). Guidelines for Drinking-Water Quality. Fourth Edition.

Chemical	Guideline Value	
	(mg/l)	µg/l
1,2-Dichloroethene	0.05	50
Dichloromethane	0.02	20
1,2-Dichloropropane (1,2-DCP)	0.04 (P)	40 (P)
1,3-Dichloropropene	0.02 ^a	20
Dichlorprop	0.1	100
Di(2-ethylhexyl)phthalate	0.008	8
Dimethoate	0.006	6
1,4-Dioxane,	0.05 ^a	50 ^a
Edetic acid (EDTA)	0.6	600
Endrin	0.0006	0.6
Epichlorohydrin	0.0004 (P)	0.4 (P)
Ethylbenzene	0.3 (C)	300 (C)
Fenoprop	0.009	9
Fluoride	1.5 m	1 500
Hexachlorobutadiene	0.0006	0.6
Hydroxyatrazine	0.2	200
Isoproturon	0.009	9
Lead	0.01 (A,T)	10 (A,T)
Lindane	0.002	2
MCPA ^e	0.002	2
Mecoprop	0.01	10
Mercury	0.006	6
Methoxychlor	0.02	20
Metolachlor	0.01	10
Microcystin-LR	0.001 (P)	1 (P)
Molinate	0.006	6
Monochloramine	3	3 000
Monochloroacetate	0.02	20
Nickel	0.07	70
Nitrate (as NO ₃ ⁻)	50	50 000
Nitrilotriacetic acid (NTA)	0.2	200
Nitrite (as NO ₂ ⁻)	3	3 000
Pendimethalin	0.02	20
Pentachlorophenol	0.009 ^a (P)	9 ^a (9)
Selenium	0.04 (P)	40 (P)
Simazine	0.002	2
Sodium	50	50 000
dichloroisocyanurate	40	40 000
Styrene	0.02 (C)	20 (C)
2,4,5-T	0.009	9
Terbutylazine	0.007	7
Tetrachloroethene	0.04	40
Toluene	0.7 (C)	700 (C)

Chemical	Guideline Value	
	(mg/l)	µg/l
Trichloroacetate	0.2	200
Trichloroethene	0.02 (P)	20 (P)
2,4,6-Trichlorophenol,	0.2 ^a (C)	200 ^a (C)
Trifluralin	0.02	20
Trihalomethanes		
Uranium	0.03(P)	30 (P)
Vinyl chloride	0.0003 ^a	0.3 ^a
Xylenes	0.5(C)	500 (C)

(A), provisional guideline value because calculated guideline value is below the achievable quantification level;

(C), concentrations of the substance at or below the health-based guideline value may affect the appearance, taste or odour of the water, leading to consumer complaints;

(D), provisional guideline value because disinfection is likely to result in the guideline value being exceeded;

(P), provisional guideline value because of uncertainties in the health database;

(T), provisional guideline value because calculated guideline value is below the level that can be achieved through practical treatment methods, source protection, etc.

(a) - For substances that are considered to be carcinogenic, the guideline value is the concentration in drinking water associated with an upper-bound excess lifetime cancer risk of 10⁻⁵ (one additional case of cancer per 100 000 of the population ingesting drinking-water containing the substance at the guideline value for 70 years).

Concentrations associated with upper-bound estimated excess lifetime cancer risks of 10⁻⁴ and 10⁻⁶ can be calculated by multiplying and dividing, respectively, the guideline value by 10.

(d) - Dichlorodiphenyltrichlorethane.

(e) - 4-(2-Methyl-4-chlorophenoxy) acetic acid.

APPENDIX II

Table 7 - Domestic Waste End of Pipe Standards⁶

Parameter	End of Pipe Standard
Biochemical Oxygen Demand	Class 1 ⁷ - 30mg/l Class 2 ⁸ - 150mg/l
Total Suspended Solids (TSS)	Class 1 - 30mg/l Class 2 - 150mg/l
Total nitrogen (inorganic and organic)	Class 1 - 5mg/l Class 2 - 45mg/l
Total Phosphorous (inorganic and organic)	Class 1 - 1mg/l Class 2 - 10mg/l
pH	6-9 in Class 1 and 2 waters
Faecal Streptococci	Class 1 - Geometric mean of min. 5 samples should not exceed 35 colonies/100ml in any 30 day period
Faecal coliform	Class 1 - Geometric mean of min. 5 samples not exceed 200 colonies/100ml in any 30-day period. No more than 10% of samples exceed 400 colonies/100ml
Total Residual Chlorine	Class 1 - 0.1mg/l
Fats, oils and Grease	Class 1 - 15mg/l Class 2 - 50mg/l
Floatables	Not visible in Class 1 and 2 Waters

⁶ University of the West Indies, New Water Inc. (2004). List of Prohibited Concentrations as provided by the Environmental Engineering Division and Coastal Zone Management Unit, Ministry of Housing, Lands and Environment. Public Consultation. These prohibited concentrations have not been approved by the Cabinet of Barbados but with the promulgation of the Marine Pollution Control Act CAP. 392A of the Laws of Barbados have been adopted by the EPD.

⁷ Class 1- Highly sensitive to impacts of domestic wastewater

⁸ Class 2- Less sensitive to domestic wastewater

Table 8 - Petroleum Hydrocarbons End of Pipe Standards for Class 1 Water.⁹

Parameter	End of Pipe Standard
Total Petroleum Hydrocarbons (TPH)	Max. daily discharge (mg/l): 10 Avg. Daily concentration over 30 consecutive days (mg/l):5
Total Oils & Greases	Max. daily discharge (mg/l): 10 Avg. Daily concentration over 30 consecutive days (mg/l): 5
Total Organic Carbon	Max. daily discharge (mg/l): 110 Avg. Daily concentration over 30 consecutive days (mg/l): 55

⁹ University of the West Indies, New Water Inc. (2004). List of Prohibited Concentrations as provided by the Environmental Engineering Division and Coastal Zone Management Unit, Ministry of Housing, Lands and Environment. Public Consultation. These prohibited concentrations have not been approved by the Cabinet of Barbados but with the promulgation of the Marine Pollution Control Act CAP. 392A of the Laws of Barbados have been adopted by the EPD.