Office of Utilities Regulation

Runaway Bay Water Company Limited
Water and Sewerage Rates

Determination Notice

OFFICE OF UTILITIES REGULATION

2021 April 27

DOCUMENT TITLE AND APPROVAL PAGE

1. DOCUMENT NUMBER:

2. DOCUMENT TITLE: RUNAWAY BAY WATER COMPANY LIMITED WATER AND SEWERAGE RATES

3. PURPOSE OF DOCUMENT

This document sets out the Office's decisions on Runaway Bay Water Company Limited's water and sewerage rates.

4. ANTECEDENT PUBLICATIONS

Publication Number	Publication Title	Publication Date

5. Approval

This document is approved by the Office of Utilities Regulation and the decisions therein become effective on 2021 May 1

On behalf of the Office:

.....

Director General
Ansord E. Hewitt

.....

2021 April 27

Table of Contents

Definitions, Acronyms and Abbreviations

ANPAM	-	Annual Reset for Price Adjustment Mechanism
CDL	-	Can-Cara Development Limited
CPI	-	Consumer Price Index
EE	-	Energy efficiency
Government	-	Government of Jamaica
GS	-	Guaranteed Standards – Quality of Service
Licences	-	Runaway Bay Water Company Limited Water Supply Licence, 2004, Runaway Bay Water Company Limited Water Supply Licence, 2014 and Runaway Bay Water Company Limited Sewerage Service Licence, 2014
Licensed Business	-	The supply of water and the provision of sewerage services by the Licensee as authorized pursuant to the Licences
Licensee/RBWC	-	Runaway Bay Water Company Limited
Minister	-	Minister of Government with portfolio responsibility for water
MTAOP	-	"Meter Testing Administrative and Operational Protocol for the Electricity and Water Sectors in Jamaica, 2017" Document No. 2016/GEN/004/RUL.001
NEPA	-	National Environment and Planning Agency
NRCA	-	Natural Resources Conservation Authority
NRW	-	Non-Revenue Water
NWC	-	National Water Commission
OEM	-	Original Equipment Manufacturer
OUR Act	-	The Office of Utilities Regulation Act
OUR/Office	-	Office of Utilities Regulation
PSI	-	Pound per Square Inch
Sewerage Licence	-	Runaway Bay Water Company Limited Sewerage Service Licence, 2014
UFW	-	Unaccounted-for-Water
Water Supply Licences	-	Runaway Bay Water Company Limited Water Supply Licence, 2004 and Runaway Bay Water Company Limited Water Supply Licence, 2014
WRA	-	Water Resources Authority
WSP	-	Water Service Provider

Executive Summary

1.1. Runaway Bay Water Company Limited (RBWC) was incorporated on 1968 January, 17 and is a wholly owned subsidiary of the Urban Development Corporation (UDC). The company is involved in the wholesale water market and the retail water and sewerage market.

1.2. With respect to the wholesale market, the RBWC supplies the National Water Commission (NWC) with bulk water based on a 2008 Water Purchase Contract between the parties. The bulk water supplied to NWC is produced at its Mount Edgecombe water treatment plant in St. Ann.

1.3. At the retail side of the business, RBWC currently supplies potable water service in the Cardiff Hall area of Runaway Bay, St Ann and potable water and sewerage services to Caymanas Country Club Estate, in St. Catherine.

1.4. On 2020 July 01, RBWC submitted a Tariff Application to the Office of Utilities Regulation (OUR) seeking an increase in its water and sewerage rates. In its Application the company argued that the proposed increase is necessary to finance maintenance works and upgrade existing facilities.

1.5. The OUR's preliminary review of the application revealed that the Application was deficient and would not have allowed the OUR to arrive at an informed decision in its tariff determination. Consequently, the OUR requested additional information from RBWC in support of its application. The additional information was received on 2020 October 9.

1.6. RBWC's request is for a rate increase equivalent to that which was approved by the Office for the NWC in the 2019-2021 Interim Tariff Determination Notice, document number 2019/WAS/007/DET.003. The Office approved an average of 16.6% increase for the typical NWC customer with both water and sewerage services.

1.7. RBWC's proposed an average volumetric increase ranging from approximately 7% to 15% across consumption bands for residential and commercial customers respectively with both water and sewerage services.

1.8. RBWC requested an average increase of 46.0% and 36.17% in sewerage rates for services to residential and commercial customers respectively.

1.9. In addition, a rate adjustment was proposed by RBWC for the services it provides to the NWC under the Water Purchase Contract. RBWC proposed an 80% increase in the service charge and 3.0% in volumetric rates.

1.10. The OUR's assessment of the proposal revealed that the wholesale tariff component of the RBWC Application was invalid. The RBWC's bulk water supply to the NWC is based on a contract between the parties. Consequently, the starting point for the adjustments to these rates is price negotiation with the parties and not an application to the OUR.

1.11. It is also important to note that the RBWC's Water Supply Contract stipulates that a rate review is triggered by a cumulative increase of 15% in the Consumer Price Index (CPI). The

last increase to RBWC for bulk water occurred in 2018 February and since then cumulative inflation falls far short of that mark. In light of this, the OUR has no authority to undertake a review of RBWC's wholesale tariff and accordingly this component of the Application was not accepted.

1.12. No proposal was submitted for a change in the company's reconnection fee.

1.13. Additionally, the company is requesting the retention of the current Price Adjustment Mechanism (PAM), which is a month lag relative to the timing of NWC's PAM.

1.14. Based on RBWC's water and sewerage Licences the computation of the company's tariffs should be based on a rate of return (or "cost plus") methodology. However, in the context of limited availability of cost and operational data, the OUR has, over the years, applied what has been referred to as the "No Object Policy" to the approval of rates for private water and sewerage service providers.

1.15. The "No Objection Policy" is based on a principle that if the rates proposed by a private water or sewerage service provider are below those being charged by the NWC for comparable services, the Office would not object to the implementation of the proposed rates.

1.16. In the rate evaluation exercise, it was noted that the RBWC submitted audited financial accounts for the year ending March 2018 and unaudited accounts for the years 2019 and 2020. This information was submitted after the OUR pointed out the information deficiency in its original application.

1.17. The company's financial accounts show a 50% increase in operating costs for 2020 (unaudited) over the 2018 costs (audited). Further, there was no separation of the company's accounts that would allow for objective isolation of costs exclusively attributed to water and sewerage services.

1.18. Given the spike in the company's cost as registered in its unaudited account, the Office deemed that it would be prudent to apply the "No Objection Policy". In the absence of certified accounts, and the unexplained movement in the company's costs the application of the rate of return methodology in the setting of rates may result in an outcome that is not cost reflective.

1.19. In applying the "No Objection Policy" methodology, RBWC's proposed rates were benchmarked to comparable rates for the NWC and Can-Cara Development Limited (CDL), a private water and sewerage provider in our jurisdiction.

1.20. For consumption levels up to 27,000 liters per month, RBWC's proposed rate is 23% less that the rate charged by the NWC and 4% less than the rate charged by CDL for potable water service to residential customers. For sewerage services to residential customers RBWC's proposed rate is 23% less than NWC's rate and 18% greater than the rate charged by CDL for the use of up to 27,000 liters per month.

1.21. In light of this, the Office opted to accept RBWC's rate proposal based on the "No Objection" principle. The details of the approved rates are as shown in Table1.1 below.

Table 1.1 OUR Approved Rates

Runaway Bay Water Company Limited		
Service Charge		
Description (Size)	**Proposed Charges**	**OUR Approved**
	$J/Month	J$/Month
5/8 inch / 15mm	690.34	690.34
1 inch / 25mm	1,978.89	1,978.89
2 inch / 50mm	5,276.99	5,276.99
3 inch / 75mm	9,583.87	9,583.87
4 inch / 100mm	15,481.87	15,481.87
Water Rates		
Gallon Units		
Consumption Bands (gallons)	**Proposed Charges**	**OUR Approved**
	J$/1000 gallons	J$/1000 gallons
Domestic		
0 to 3,000	401.63	401.63
3,001 to 6,000	714.28	714.28
6,001 to 9,000	778.71	778.71
9,001 to 12,000	1,327.04	1,327.04
12,001 to 20,000		
Over 20,000		
Commercial	J$/1000 litres	J$/1000 litres
0 to 2,000	1,533.14	1,533.14
Over 2,000	893.67	893.67
Condominium	760.53	760.53
Litre Units		
Consumption Bands (litres)	**Proposed Charges**	**OUR Approved**
	J$/1000 litres	J$/1000 litres
Domestic		
0 to 14,000	88.30	88.30
14,001 to 27,000	157.04	157.04
27,001 to 41,000	171.26	171.26
41,001 to 55,000	291.88	291.88
55,001 to 91,000		
Over 91,000		
Commercial	J$/1000 litres	J$/1000 litres
0 to 9,100	337.12	337.12
Over 9,100	196.51	196.51
Condominium	167.21	167.21

Sewerage Rates		
Gallon Units		
Consumption Bands (gallons)	**Proposed Charges**	**OUR Approved**
	J$/1000 gallons	J$/1000 gallons
Domestic		
0 to 3,000	467.23	467.23
3,001 to 6,000	826.75	826.75
6,001 to 9,000	905.98	905.98
9,001 to 12,000	1,545.88	1,545.88
12,001 to 20,000	N/A	N/A
Over 20,000		
Commercial	J$/1000 litres	J$/1000 litres
0 to 2,000	1,785.75	1,785.75
Over 2,000	1,040.91	1,040.91
Condominium	885.84	885.84
Litre Units		
Consumption Bands (litres)	**Proposed Charges**	**OUR Approved**
	J$/1000 litres	J$/1000 litres
Domestic		
0 to 14,000	102.72	102.72
14,001 to 27,000	181.77	181.77
27,001 to 41,000	199.25	199.25
41,001 to 55,000	340.02	340.02
55,001 to 91,000		
Over 91,000		
Commercial	J$/1000 litres	J$/1000 litres
0 to 9,100	392.66	392.66
Over 9,100	228.88	228.88
Condominium	194.76	194.76

1.22. The approved rates shall become effective 2020 April and is to remain in effect for a period of, no less than, two years.

1.23. The RBWC is required to maintain separated operating cost accounts for its water and sewerage businesses and the summary of these accounts shall be submitted to the OUR for review within three (3) months of the ending of each financial year.

1.24. The billing data submitted by RBWC shows that on the average a typical residential customer consuming 20,350 liters/month would see a 16.8% increase in the total bill amount as shown in Table 1.2 below.

Table 1.2 – Bill Impact for Residential Customer Based on OUR Approved Rates

Bill Impact - Domestic Customer				
	Rates/"000"liters		Bill Change	
Description	RBWCL Existing Rates	Approved Rates	J$	%
Water Volumetric Charge				
0 to 14,000	$84.00	$88.30	$4.30	5.1%
14,001 to 27,000	$148.11	$157.04	$8.93	6.0%
Sewerage Volumetric Charge				
0 to 14,000	$76.89	$102.72	$25.83	33.6%
14,001 to 27,000	$135.56	$181.77	$46.21	34.1%
Service Charge- 5/8 inch / 15mm	$670.23	$690.34	$20.11	3.0%
Average Consumption ('000 litres)	20.35	20.35		
Total Bill Amount per Month	**$4,724.20**	**$5,516.31**	**$792.11**	**16.8%**

1.25. The OUR's technical review of infrastructure drawings, process flow diagrams and documentation for RBWC's water and sewerage systems, which were submitted by the company in support of the Rate Review Application. The technical review revealed that the orientation of the respective systems generally depict the system design configuration commonly utilized by small water and sewerage utilities across the industry.

1.26. The OUR's review identified a number of issues and limitations which could negatively impact the RBWC's service delivery to its customers. The review also noted that there were several gaps in the existing reporting requirements which present a constraint for effective regulatory assessment and monitoring of RBWC's water and sewerage service performance. As such, a number of reporting requirements relating to technical aspects of the RBWC's water and sewerage service delivery have been highlighted, which the company will be required to satisfy.

1.27. The Guaranteed Standards (GS) as set out in Schedule 2 of the Licence were reviewed. Consequently, six (6) GS have been refined to improve clarity in their descriptions.

1.28. Further, it was emphasized that the RBWC should adhere to the revised Overall Standard D – "Planned and Unplanned Interruptions", the Guaranteed Standards stipulated in Table 7.1 as specified in the Determination Notice, and all the other standards in its Licences and service contracts.

1.29. The RBWC is to compensate its customers for breaches of:

a. Wrongful Disconnection, Reconnection after Wrongful Disconnection and Reconnection after Payment of Overdue Amounts will attract Special Compensation equivalent to six (6) times the applicable Service Charge; and
b. All other Guaranteed Standards will remain at four (4) times the applicable Service Charge

1.30. The Office also determined the following:

- Within thirty (30) working days of the end of the reporting period, the RBWC is to submit quarterly reports to the Office on its performance against the Guaranteed Standards. These reports shall indicate the number of breaches committed against each standard and the potential and actual payout for each breach.
- Within three (3) months of the effective date of this Determination Notice, the RBWC is to develop its GS claim form for submission and approval of the OUR.
- Within three (3) months of this Determination Notice, RBWC shall develop an Operations and Maintenance Manual (OMM) and submit to the OUR for approval.

Introduction

1.1. The Runaway Bay Water Company Limited (RBWC) is a privately owned limited liability company incorporated in Jamaica on 1968 January, 17. It is a wholly owned subsidiary of the Urban Development Corporation (UDC). The company was granted a water and sewerage supply services licences in 2004 and 2014 to provide water services in Runaway Bay, St. Ann and water and sewerage services in Caymanas Estates, St. Catherine.

1.2. The company is also the holder of three licences issued by the Water Resource Authority for the abstraction and use of water in Cardiff Hall and Mount Edgecombe, in Runaway Bay, St Ann as well as the Ellis Golf Club Replacement Well, St. Catherine. The Water Abstraction Licences are for the Cardiff Hall #1 and #2 wells, Mt. Edgecombe #1 well, Top Ellis Domestic well and the Ellis Golf Club Replacement well. RWBC is licensed to collect, on average, 3,539.4m3 per day, ranging from the Top Ellis Domestic well at 1,432.0 m^3 per day with the lowest, and Cardiff Hall #1 and #2 wells at 4545.0m^3 per day with the highest.

1.3. RBWC currently supplies 1,122 customers with water services of which 677 are also sewerage service customers. In 2019 the company sold on average 2.22 million cubic meters of water to its customers. The company sewerage services are connected with its Caymanas Estates sewerage treatment plant.

1.4. On 2020 July 1, RBWC submitted a tariff application ("Application") for an increase in its water and sewerage rates. The company indicated that its Caymanas and Cardiff Hall retail operations were treated as a single operation and therefore the proposed tariffs would be common to all customers in both areas of its operation.

1.5. In addition, RBWC proposed an 80% increase in the service charge and 3.0% in volumetric rates on its wholesale water service to the NWC. Currently, RBWC supplies water to the NWC under the Water Purchase Contract from its Mt. Edgecombe plant in St. Ann.

1.6. The preliminary review of the application revealed that the document was deficient to the extent that it would not have allowed for informed decision making on the tariff. The OUR requested additional information in support of the application. Additional information was received on 2020 October 9, three (3) months later.

1.7. Notwithstanding, the data was still inadequate, as some of the reports were unaudited and lacked the disaggregation required for separate analyses focused on the water and sewerage components of its business. In light of this, going forward the RBWC is required to maintain separated operating cost accounts for its water and sewerage businesses and the summary of these accounts shall be submitted to the OUR for review within three (3) months of the ending of each financial year.

1.8. Given the restrictions imposed on public gathering as a result of the COVID-19 pandemic, the public consultation was conducted virtually on 2020 November 15. The public consultations are designed to provide an opportunity for RBWL's customers to engage with the company on matters relating to the quality of service and the proposed tariff application. Stakeholders were also encouraged to submit their views to the OUR via email.

1.9. The OUR conducted a review of the Application and this Determination Notice outlines RBWC's proposal and sets out the OUR's analysis and determinations on RBWC water and sewerage rates. It also includes a technical assessment of RBWC water production facilities and summarizes customers' feedback from the consultation with residents. The Determination Notice further delineates the service and guaranteed standards that RBWC is required to observe.

1.10. In arriving at its final determinations, the Office took into account the views and submission from stakeholders, and apply industry best practices where necessary.

Legal Framework

2.1. The OUR is a multi-sector utility regulator established pursuant to the Office of Utilities Regulation Act ("OUR Act"), with regulatory oversight of the provision of prescribed utility services in Jamaica. The supply and distribution of water and sewerage are included among the prescribed utility services defined in section 2 and the First Schedule of the OUR Act.

2.2. Section 4 (4) of the OUR Act expressly empowers the OUR to determine the rates charged for the provision of a prescribed utility service. This section reads:

> *"(4) The Office shall have power to determine, in accordance with the provisions of this Act, the rates or fares which may be charged in respect of the provisions of a prescribed utility service."*

2.3. The Licenses issued to the RBWC by the Minister with portfolio responsibility for the water and sewerage sectors, authorizes the company to supply and distribute water and sewerage services to the specified service areas in the parishes of St. Ann and St. Catherine. Specifically, the company was issued with the RBWC Water and Sewerage Licences of 2014 and a Water Supply Licence of 2004. The provisions of the Licences reinforce the OUR's statutory powers to regulate the Licensed Business.

2.4. With respect to price controls, Clauses 13.1and 13.2 of the Licence provide that:

> "13.1 *The Licensee is subject to the conditions and procedures set out in Schedule*
>
> 13.2 *The rates to be charged by the Licensee in respect of the Prescribed Utility Service in relation to the Licensed Business shall be as determined by the Office from time to time.*"

2.5. The Licence stipulates that the rates and charges as determined by the OUR should provide a reasonable opportunity for the Licensee to make a reasonable return on capital employed after taking into account all reasonable costs incurred in the provision of services. Extracts from Schedule 3 of the Licence, provide as follows:

> *"The rates for the supply of services by the Licensed Business shall be set such that the rates provide a reasonable opportunity for the Licensee to make a reasonable return on capital employed after taking into account all reasonable costs incurred in the provision of the services.*
>
> *Revenue Requirement =operating costs + depreciation + taxes + return on investment, with each component defined as follows:*
>
> *"Operating costs": All prudently incurred costs which are not directly associated with investment in capital plant…*
>
> *"Return on Investment": …The return on investment shall be calculated by multiplying the allowed rate-of-return by the Licensee's total investment base ("Rate Base") for the test year. The allowed rate of return is the Licensee's Weighted Average Cost of Capital (WACC). The WACC ("K %") will balance the interests of both consumers and investors and be commensurate with returns in other*

enterprises having corresponding risks which will assure confidence in the financial integrity of the enterprise so as to maintain its credit and to attract capital…"

2.6. The Licensee is permitted to apply to the OUR for a tariff review as needed, but no more frequently than once in every two (2) years. Schedule 3 of the Licence provides that:

2.7. *"At such intervals as the Licensee may determine but no more often than once in every two (2) years, the Licensee may submit an application for a tariff review. The Application must be supported with data and information as the Office will determine."*

2.8. The last tariff approval for RBWC was 2015 August 27.

2.9. Notwithstanding the provisions of Schedule 3 of the Licence, the Office, has applied a "No-Objection Policy" to small private water and sewerage providers, whereby rates proposed by these providers are approved on a "no objection" basis, if they are below those being charged by the NWC for comparable services.

2.10. The Licence expressly states in Schedule 2 that the Licensee shall observe prescribed service standards and it also authorizes the OUR to introduce new or vary existing guaranteed standards that will encourage and facilitate minimum standards of customer service.

Summary of Tariff Proposal

3.1. RBWC, requested that its water and sewerage rates for its retail operations be increased by the same percentage increase approved by the OUR for the NWC in the 2019-2021 Interim Tariff Determination Notice, document number 2019/WAS/007/DET.003. More specifically, this would entail that the respective customer categories replicating the rate increases obtained by NWC. The company argued that this request was warranted as its operations are similar to that of the NWC but on a smaller scale.

3.2. The company further stated that since its last increase in 2015 August, the cost of production, treatment, distribution and transmission of sewerage to the NWC's Soapberry Wastewater Treatment Plant have increased significantly.

3.3. RBWC proposed rate increases would result in the following changes :A service charge increase of :

- 3% for 5/8 inch meter connections;
- 10% for 1 inch and above meter connections;

3.4. Tables 3.1, 3.2 and 3.3 below show RBWC existing and proposed rates.

Table 3.1: RBWC Existing and Proposed Service Charges

Runaway Bay Water Company Limited- Service Charge				
Description (Size)	Existing Charges	Proposed Charges	Rate Change	
	$J/Month	J$/Month	J$	%
5/8 inch / 15mm	670.23	690.34	20.11	3.0%
1 inch / 25mm	1,798.99	1,978.89	179.9	10.0%
2 inch / 50mm	4,797.26	5,276.99	479.73	10.0%
3 inch / 75mm	8,712.61	9,583.87	871.26	10.0%
4 inch / 100mm	14,074.43	15,481.87	1407.44	10.0%
4 inch / 100mm (NWC Contract)	7,113.19	12,803.73	5690.54	80.0%
8 inch / 200mm (NWC Contract)	10,836.19	19,505.15	8668.96	80.0%

Table 3.2: RBWC Existing and Proposed Water Volumetric Rates

	Existing Rates	Proposed Rates	Rate Change (litres)	
Consumption Bands (litres)	**J$/1000 litres**	**J$/1000 litres**	**J$**	**%**
Domestic				
0 to 14,000	**84.00**	**88.30**	**4.30**	**5.12%**
14,001 to 27,000	**148.11**	**157.04**	**8.93**	**6.03%**
27,001 to 41,000	**159.97**	**171.26**	**11.29**	**7.06%**
41,001 to 55,000	**204.20**	**291.88**	**87.68**	**42.94%**
55,001 to 91,000	**254.25**			
Over 91,000	**327.29**			
Commercial				
0 to 9,100	**315.06**	**337.12**	**22.06**	**7.00%**
Over 9,100		**196.51**	**196.51**	
Condominium	**156.27**	**167.21**	**10.94**	**7.00%**
Bulk Water to NWC (Contract)	**38.15**	**44.25**	**6.10**	**3.03%**

Table 3.2: RBWC Existing and Proposed Sewerage Rates

	Existing Rates	Proposed Rates	Rate Change (litres)	
Consumption Bands (litres)	**J$/1000 litres**	**J$/1000 litres**	**J$**	**%**
Domestic				
0 to 14,000	**76.89**	**102.72**	**25.83**	**33.59%**
14,001 to 27,000	**135.56**	**181.77**	**46.21**	**34.09%**
27,001 to 41,000	**146.41**	**199.25**	**52.84**	**36.09%**
41,001 to 55,000	**186.89**	**340.02**	**153.13**	**81.94%**
55,001 to 91,000	**232.70**			
Over 91,000	**299.55**			
Commercial				
0 to 9,100	**288.36**	**392.66**	**104.30**	**36.17%**
Over 9,100	-	**228.88**		
Condominium	**143.03**	**194.76**	**51.73**	**36.17%**

3.5. RBWC is also seeking approval for the continuation of its existing PAM. The PAM previously approved by RBWC is equivalent to the NWC's PAM, which lags by one (1) month.

3.6. RBWC did not submit a proposal for an adjustment to the existing reconnection fee. The reconnection fee of $4,370 remains unchanged.

Evaluation of Application

4.1. The OUR assessment of the proposal revealed that the wholesale tariff component of RBWC's Application was invalid. Bulk water which is supplied to the NWC is based on a contract between the parties. Consequently, the starting point for the adjustments to these rates is price negotiation with the parties and not an application to the OUR.

4.2. It is also important to note that RBWC's Water Supply Contract stipulates that a rate review is triggered by a cumulative increase of 15% in the CPI. The last increase to RBWC for bulk water occurred in 2018 February and since then cumulative inflation falls far short of that mark. In light of this, the OUR has no authority to undertake a review of RBWC's wholesale tariff and accordingly this component of the Application was not accepted.

4.3. In evaluating tariff applications for small private water and sewerage providers, the OUR may choose to adopt one of two (2) methodological approaches, namely;

1. The Rate of Return (or Cost Plus) methodology; or
2. The No-Objection Policy approach

4.4. The Rate of Return methodology is detailed in the rate review process, which is in Schedule 3 of the various RBWC Licences. The methodology includes, but is not limited to the following:

- The establishing a test year, this is the latest twelve (12) months that have audited accounts.
- Adjusting the test year cost if necessary so that the normal operating conditions are reflected.
- Determining the rate base to reflect net investments with adjustments where appropriate.
- Determining the revenue requirement (RR) as follows:

RR= operating costs + depreciation + taxes + return on investment

4.5. This approach to the rate review process is aimed at setting rates for the supply of services, which provide an opportunity for the utility to make a reasonable return on capital employed in the business based on cost efficiency. Additionally, the rates approved should not be unfairly burdensome to customers.

4.6. The "No-Objection Policy" approach is usually applied when adequate and reliable costing and operation data are unavailable for the private provider seeking a rate review.

4.7. In this context, the regulator is without an objective means of determining rates based on the company's actual performance. Consequently, a second-best option is to set the rates by employing a benchmark approach which involves an analysis of the approved rates of other licenced providers in the water and sewerage industry, including the dominant provider, NWC. Should the rates requested by the utility be less than those of NWC, the Office issues a "No-Objection" decision approving the requested rates. If, however, the requested rate exceeds the referenced NWC rates, then the Office would approve rates consistent with a comparable firm in the benchmarking analysis.

4.8. The proposed percentage increase for respective rate categories and consumption bands in each category, are the same rates of increase approved for the dominant water provider, NWC.

4.9. The OUR further conducted an analysis on RBWC's proposed rates to determine the impact of these rates on customers' bills.

Analysis and Impact of RBWC Proposed Rates

4.10. RBWC's consumption data for the year 2019 shows that average consumption per month per customer was 20.35M^3 of water. This amount was used in estimating the bill impact of the proposed rates against existing rates.

4.11. Based on the estimated average consumption of 20.35m^3 per month, under the existing rate arrangements, the typical customer's total bill would amount to $2,786.84. The total bill amount is comprised of a fixed service charge of $670.23 and a volumetric charge of $2,116.61. With the proposed rates the bill would increase to a total of $2,923.86 with service charges amounting to $690.34 and volumetric charge of $2,233.52. This represents a 4.9% increase for customers using water only. Table 4.1 below shows the details of the comparison.

Table 4.1: Comparison between the Existing and Proposed Rates

Bill Impact - Domestic Customer (Water)						
					Bill Change	
Description	Existing Rates & Structure (per 1000 litres)	Bill Amount (Existing Rates & Structure)	Proposed Rates & Structure (per 1000 litres)	Bill Amount (Proposed Rates & Structure)	J$	%
Volumetric Charge ('000 litres)						
0 to 14	$84.00	$1,176.00	$88.30	$1,236.20	$60.20	5.1%
>14 to 27	$148.11	$940.61	$157.04	$997.32	$56.71	6.0%
>27 to 41	$159.97		$171.26			
>41 to 55	$204.20		$291.88			
>55 to 91	$254.25					
Over 91	$327.29					
Service Charge- 5/8 inch / 15mm	$670.23	$670.23	$690.34	$690.34	$20.11	3.0%
Average Consumption ('000 litres)		20.35		20.35		
Total Bill Amount per Month		**$2,786.84**		**$2,923.86**	**$137.02**	**4.9%**

4.12. In RBWC's Application the company stated that customers of Caymanas Estates utilizes both water and sewerage services. Based on the estimated average consumption of 20.35M^3 per month and sewerage volumes being 100% of water volume, a typical consumer's total bill under the existing rates would amount to $4,724.20. With the proposed rates the total bill would be $5,516.31 representing a 16.8% increase. Table 4.2 below shows the details of the comparison.

Table 4.2: Bill Impact Domestic Customer Water and Sewerage Services

Bill Impact - Domestic Customer (Water & Sewerage)						
					Bill Change	
Description	Existing Rates & Structure (per 1000 litres)	Bill Amount (Existing Rates & Structure)	Proposed Rates & Structure (per 1000 litres)	Bill Amount (Proposed Rates & Structure)	J$	%
Water Volumetric Charge ('000 litres)						
0 to 14	$84.00	$1,176.00	$88.30	$1,236.20	$60.20	5.1%
>14 to 27	$148.11	$940.61	$157.04	$997.32	$56.71	6.0%
>27 to 41	$159.97		$171.26			
>41 to 55	$204.20		$291.88			
>55 to 91	$254.25					
Over 91	$327.29					
Total Change in Water		**$2,116.61**		**$2,233.52**	**$116.91**	**5.5%**
Sewerage Volumetric Charge ('000 litres)						
0 to 14	$76.89	$1,076.46	$102.72	$1,438.08	$361.62	33.6%
>14 to 27	$135.56	$860.90	$181.77	$1,154.37	$293.47	34.1%
>27 to 41	$146.41		$199.25			
>41 to 55	$186.89		$340.02			
>55 to 91	$232.70					
Over 91	$299.55					
Total Change in Sewerage		**$1,937.36**		**$2,592.45**	**$655.09**	**33.8%**
Service Charge- 5/8 inch / 15mm	$670.23	$670.23	$690.34	$690.34	$20.11	3.0%
Average Consumption ('000 litres)		20.35		20.35		
Total Bill Amount per Month		**$4,724.20**		**$5,516.31**	**$792.11**	**16.8%**

4.13. The rate structure and proposed rates requested by RBWC for residential customers does not show a significant increase in fixed and variable costs.

4.14. Commercial customers will see a 7% increase in their overall bill due to the change in the rate structure from an increasing block structure to a decreasing block structure.

4.15. Table 4.3 shows the bill amount of a typical commercial customer with water usage of 568.88M^3

Table 4.3: Bill Impact Commercial Customers

Bill Impact - Commerical (Water)						
					Bill Change	
Description	Existing Rates & Structure (per 1000 litres)	Bill Amount (Existing Rates & Structure)	Proposed Rates & Structure (per 1000 litres)	Bill Amount (Proposed Rates & Structure)	J$	%
Volumetric Charge ('000 litres)						
0 to 9,100	$315.06	$179,229.88	$337.12	$191,779.27		
>9,100			$196.51			
Service Charge1 inch / 25mm	$1,798.99	$1,798.99	$1,978.89	$1,978.89	$179.90	10.0%
Average Consumption ('000 litres)		568.88		568.88		
Total Bill Amount per Month		**$181,028.87**		**$193,758.16**	**$12,729.29**	**7.0%**

Analysis of RBWC's Operating Costs

4.16. The data provided by RBWC did not separate the cost of the company's water operation from its sewerage operations. Further, its current audited accounts and details on costs and other critical operational data were unavailable. These weaknesses in the Application represents an obstacle to the setting of cost-reflective rates. However, for analytical purposes the OUR opted to do an examination of the accounts available.

4.17. The evaluation exercise shows that RBWC has two major cost classification, direct costs and administrative expenses. The company's direct costs includes payroll and benefit costs for staff with responsibilities for the maintenance of the water treatment plant, chemicals, electricity, and various expenses incurred as a result of operating the water and sewerage treatment plants. Administrative expenses were represented as those costs incurred by supporting departments such as administrative and consultancy studies.

4.18. An extract of RBWC's operating Costs for the year 2018 to 2020 is shown in Table 4.4 below.

Table 4.4: RBWC' Operating Costs 2018-2020

RBWCL Profit and Loss Accounts			
	Audited (000)	Unaudited	Un-Audited (Year to Date
	2017/2018	2018/2019	2019/2020
INCOME			
Meter Charge	10,100	10,755,556	10,804,249
Water Connection Fee	315	461,270	266,530
Water Income	176,132	178,610,161	186,104,535
Sewerage Income	10,825	16,709,167	20,929,957
Water installation Fee		133,768	42,800
Price Adjustment Mechanism		6,350,064	10,865,693
TOTAL INCOME	**197,372**	**213,019,986**	**229,013,764**
EXPENSES			
Direct Costs:	**82,293**	**97,360,356**	**138,025,787**
Cost of sales	30,169		
Salaries and wages	26,936		
Statutory Contribution	3,011		
Other Staff Costs	3,837		
Electricity	18,340		
Other Direct Costs	0		
Admin Expenses :	**82,291**	**91,067,881**	**108,418,625**
Bad Debt	6,903		
Audit and Accounting	1,950		
Directors Emoluments	0		
Management Fees	56,000		
Legal and Professional Fees	1,761		
Motor Vehicle expense	4,539		
Other Operating Expenses	4,892		
Repar and Maintenance	6,246		
Finance Expense :	-218		
Total Operating Costs	**164,584**	**188,428,237**	**246,444,412**
Change in OPEX		**14%**	**31%**
Overall Change in OPEX over 2018 Base			**50%**
Depreciation	1,374		

Source: RBWC Financial Statement & RBWC Operational/Management Accounts submitted as supplemental information

4.19. RBWC reported a 14% increase in its operating costs for the year 2019 compared to 2018. There was a 31% increase in the company's operating costs in year 2020 over2019, which

is considered to be significant. The data shows that RBWC has incurred additional cost for the purchasing of water supplied by the NWC for its Caymanas operations. The company also incurred additional costs for payment of sewerage treatment services offered by Soapberry Treatment Plant.

4.20. RBWC' operating costs have increased by 50% in year 2020 over its base year 2018 audited costs moving from J$164.5M to $246.4M.

4.21. Given the spike in the company's cost as registered in its unaudited account, the Office deemed that it would be prudent to apply the "No Objection Policy". In the absence of certified accounts, and the unexplained movement in the company's costs the application of the rate of return methodology in the setting of rates may result in an outcome that is not cost reflective.

The Benchmarking Approach

4.22. Benchmarking technique is considered to be a powerful tool as it allows the regulator to reduce informational asymmetries about the feasible scope of cost reductions achievable by comparing the utility company to the best practices and the best companies in the industry.

4.23. The NWC and CDL are the entities that supply water and sewerage services to customers based on tariffs approved by the OUR. Accordingly both utilities were used in the benchmarking exercise.

4.24. The tariff in RBWC's proposed rates (excluding bulk water rates) were compared with the two (2) utilities in the benchmark study and the results are as shown in Table 4.7 below.

Table 4.7 Rate Comparison between RBWC, NWC, and CDL

Runaway Bay Water Company, Can-Cara Development Limited and National Water Commission Comparison			
Service Charge			
Description (Size)	**RBWC Proposed Charges**	**NWC Charges**	**Can-Cara Charge**
	J$/Month	**J$/Month**	**J$/Month**
5/8 inch / 15mm	690.34	854.90	739.28
1 inch / 25mm	1,978.89	2,442.00	N/A
2 inch / 50mm	5,276.99	6,512.00	N/A
3 inch / 75mm	9,583.87	11,825.00	N/A
4 inch / 100mm	15,481.87	19,107.00	N/A
Water Rates			
Gallon Units			
Consumption Bands	**RBWC Proposed Rates**	**NWC Rates**	**Can-Cara Rates**
	J$/1000 gallons	**J$/1000 gallons**	**J$/1000**
Domestic			
0 to 3,000	401.63	495.06	421.29
3,001 to 6,000	714.28	881.08	742.88
6,001 to 9,000	778.71	960.31	802.11
9,001 to 12,000	1327.04	1,638.11	1023.87
Commercial			
0 to 2,000	1,533.14	1,891.76	N/A
Over 2,000	893.67	1,102.68	N/A
Condominium	760.53	938.43	N/A
Litre Units			
Consumption Bands	**RBWC Proposed Rates**	**NWC Rates**	**Can-Cara Rates**
	J$/1000 litres	**J$/1000 litres**	**J$/1000**
Domestic			
0 to 14,000	88.30	108.90	92.67
14,001 to 27,000	157.04	193.81	163.41
27,001 to 41,000	171.26	211.24	176.44
41,001 to 55,000	291.88	360.33	225.22
Commercial			
0 to 9,100	337.12	416.14	N/A
Over 9,100	196.51	242.56	N/A
Condominium	167.21	206.43	N/A

4.25. The benchmarking analysis in Table 4.7 above shows that the RBWC proposed charges are less than that of the NWC. The proposed rates are also lower than most rate classes for CDL's residential water customers. CDL does not supply water to commercial customers hence no comparison was made with RBWC in this regard. However, RBWC's proposed commercial rates are 23% lower than the comparable commercial rates that have been approved for the NWC.

4.26. Given that the proposed rates are lower than current rates that have been approved for the NWC, in accordance with the "No Objection Policy" the Office approves the rates as proposed, which are as set out in Table 4.7 above.

Sewerage Rates

4.27. The sewerage rates proposed by RBWC were benchmarked against those of CDL and NWC. Table 4.8 below shows the comparison.

Table 4.8 Comparison of RBWC, NWC and CDL Sewerage Rates

Sewerage Rates			
Gallon Units			
Consumption Bands	**RBWC Proposed Rates**	**NWC Rates**	**Can-Cara Rates**
	J$/1000 gallons	**J$/1000 gallons**	**J$/1000**
Domestic			
0 to 3,000	467.23	571.80	382.37
3,001 to 6,000	826.75	1017.65	674.19
6,001 to 9,000	905.98	1109.17	727.97
9,001 to 12,000	1545.88	1,892.02	929.18
Commercial			
0 to 2,000	1,785.75	2,184.59	N/A
Over 2,000	1,040.91	1,273.60	N/A
Condominium	885.84	1,083.39	N/A
Litre Units			
Consumption Bands	**RBWC Proposed Rates**	**NWC Rates**	**Can-Cara Rates**
	J$/1000 litres	**J$/1000 litres**	**J$/1000**
Domestic			
0 to 14,000	102.72	125.78	84.11
14,001 to 27,000	181.77	223.85	148.3
27,001 to 41,000	199.25	243.98	160.13
41,001 to 55,000	340.02	416.19	204.39
Commercial			
0 to 9,100	392.66	480.64	N/A
Over 9,100	228.88	280.16	N/A
Condominium	194.76	238.42	N/A

4.28. The rates proposed by RBWC was approximately 22.3% lower than current approved rates for NWC. When compared to Can-Cara's 2018 approved rates these rates were approximately 24% higher. The higher rates being proposed by RBWC over those for Can-Cara is attributed to the costs related to improvement and connection of its sewerage system to the Soapberry sewerage treatment.

Bulk Water Rates

4.29. The OUR is of the view that the analysis of the bulk water rate charged by RBWC to the NWC is outside of the scope of the company's general tariff review. The RBWC's bulk water supply of water to the NWC is based on a contract between the parties. Consequently, the starting point for the adjustments to these rates is price negotiation with the parties and not an application to the OUR.

4.30. It is also important to note that RBWC's Water Supply Contract stipulates that a rate review is triggered by a cumulative increase of 15% in the Consumer Price Index (CPI). The last increase to RBWC for bulk water occurred in 2018 February and since then cumulative inflation falls far short of that mark. In light of this, the OUR has no authority to undertake a review of RBWC's wholesale tariff and accordingly this component of the Application was not accepted.

OUR's Determination

4.31. With NWC being the main water supplier and sewerage service provider, it is not unusual that other private water and sewerage providers aim to replicate the rate design and even water system structure used by the NWC. RBWC, argued in its Application that its operations are similar to that of the NWC but on a smaller scale. Hence, RBWC request for the same level of increase in its rates and a comparable PAM is not unexpected.

4.32. It is within this context that the OUR has determined to approve the rate increases and rate structure proposed by the RBWC along with the company's request to retain the PAM being directly linked to that of the NWC.

4.33. The rate increase approved for the NWC in its Interim Tariff Review Determination saw a non-linear increase in rates for each customer category and so does not result in a uniformed increase across all rate categories and consumption bands with each category.

4.34. The proposed rates, which mirrors the increases approved for the NWC, is an average volumetric rate increase of approximately 15.3% and 7.0% across consumption bands for residential and commercial customers respectively. The average increase in sewerage rate is 46% and 36% for services to residential and commercial customers respectively. Service charges will see average increases of 3% and10% for residential and commercial customers respectively.

Bill Impact of Approved Rates

4.35. For a typical water services only customer with an average consumption of 20,350 litres/month, with the approved rates the total bill will increase by approximately 5.0%. See details in Table 5.9 below.

Table 4 .9 RBWC Bill Impact with OUR Approved Rates for Water Customers

Bill Impact - Domestic Customer (Water)						
					Bill Change	
Description	Existing Rates & Structure (per 1000 litres)	Bill Amount (Existing Rates & Structure)	Proposed Rates & Structure (per 1000 litres)	Bill Amount (Proposed Rates & Structure)	J$	%
Volumetric Charge ('000 litres)						
0 to 14	$84.00	$1,176.00	$88.30	$1,236.20	$60.20	5.1%
>14 to 27	$148.11	$940.61	$157.04	$997.32	$56.71	6.0%
>27 to 41	$159.97		$171.26			
>41 to 55	$204.20		$291.88			
>55 to 91	$254.25					
Over 91	$327.29					
Service Charge- 5/8 inch / 15mm	$670.23	$670.23	$690.34	$690.34	$20.11	3.0%
Average Consumption ('000 litres)		20.35		20.35		
Total Bill Amount per Month		**$2,786.84**		**$2,923.86**	**$137.02**	**4.9%**

4.36. Residential customers who has both water and sewerage services, and who uses the average consumption of 20,350 liters/month will see a 16.8% increase in his/her monthly bills. The impact of the increase in rates on bills will largely be dependent on customers' ability to conserve water. A larger portion of the bill is represented by the variable consumption charge

over which the customer has direct control. The details of the bill impact is shown in Table 5.10 below.

Table 4.10: RBWC Bill Impact with OUR Approved Rates Water & Sewerage

Bill Impact - Domestic Customer (Water & Sewerage)						
					Bill Change	
Description	Existing Rates & Structure (per 1000 litres)	Bill Amount (Existing Rates & Structure)	Proposed Rates & Structure (per 1000 litres)	Bill Amount (Proposed Rates & Structure)	J$	%
Water Volumetric Charge ('000 litres)						
0 to 14	$84.00	$1,176.00	$88.30	$1,236.20	$60.20	5.1%
>14 to 27	$148.11	$940.61	$157.04	$997.32	$56.71	6.0%
>27 to 41	$159.97		$171.26			
>41 to 55	$204.20		$291.88			
>55 to 91	$254.25					
Over 91	$327.29					
Total Change in Water		**$2,116.61**		**$2,233.52**	**$116.91**	**5.5%**
Sewerage Volumetric Charge ('000 litres)						
0 to 14	$76.89	$1,076.46	$102.72	$1,438.08	$361.62	33.6%
>14 to 27	$135.56	$860.90	$181.77	$1,154.37	$293.47	34.1%
>27 to 41	$146.41		$199.25			
>41 to 55	$186.89		$340.02			
>55 to 91	$232.70					
Over 91	$299.55					
Total Change in Sewerage		**$1,937.36**		**$2,592.45**	**$655.09**	**33.8%**
Service Charge- 5/8 inch / 15mm	$670.23	$670.23	$690.34	$690.34	$20.11	3.0%
Average Consumption ('000 litres)		20.35		20.35		
Total Bill Amount per Month		**$4,724.20**		**$5,516.31**	**$792.11**	**16.8%**

Bill Impact Commercial Customers

4.37. With the approved rates and average consumption of 568,880 liters/month, commercial customers will see a 7.0% increase in water rates. If a commercial customer utilizes both water and sewerage services the total bill impact is approximately 21.0%.

4.38. Table 4.11 below shows the bill impact for commercial customers

Table 4.11 Bill Impact Commercial Customers Water and Sewerage

Bill Impact - Commerical (Water & Sewerage)						
					Bill Change	
Description	Existing Rates & Structure (per 1000 litres)	Bill Amount (Existing Rates & Structure)	Proposed Rates & Structure (per 1000 litres)	Bill Amount (Proposed Rates & Structure)	J$	%
Water Volumetric Charge ('000 litres)						
0 to 9,100	$315.06	$179,229.88	$337.12	$191,779.27		
>9,100			$196.51	$0.00		
Total for Water		**$179,229.88**		**$191,779.27**	**$12,549.39**	**7.0%**
Sewerage Volumetric Charge ('000 litres)						
0 to 9,100	$288.36	$164,040.90	$392.66	$223,374.61		
>9,100			$228.88			
Total for Sewerage		**$164,040.90**		**$223,374.61**	**$59,333.70**	**36.2%**
Service Charge- 1 inch / 25mm	$1,798.99	$1,798.99	$1,978.89	$1,978.89	$179.90	10.0%
Average Consumption ('000 litres)		568.88		568.88		
Total Bill Amount per Month		**$345,069.77**		**$417,132.77**	**$72,062.99**	**20.9%**

4.39. The approved rates shall become effective 2020 April and is to remain in effect for a period of, no less than, two years, Table 4.12 below shows the details of the approved rates.

4.40. Going forward RBWC is required to separate its water and sewerage costs in order to facilitate full and accurate analyses and evaluation of tariffs in future reviews.

Table 4.12: OUR Approved Rates

Runaway Bay Water Company Limited		
Service Charge		
Description (Size)	**Proposed Charges**	**OUR Approved**
	$J/Month	J$/Month
5/8 inch / 15mm	690.34	690.34
1 inch / 25mm	1,978.89	1,978.89
2 inch / 50mm	5,276.99	5,276.99
3 inch / 75mm	9,583.87	9,583.87
4 inch / 100mm	15,481.87	15,481.87
Water Rates		
Gallon Units		
Consumption Bands (gallons)	**Proposed Charges**	**OUR Approved**
	J$/1000 gallons	J$/1000 gallons
Domestic		
0 to 3,000	401.63	401.63
3,001 to 6,000	714.28	714.28
6,001 to 9,000	778.71	778.71
9,001 to 12,000	1,327.04	1,327.04
12,001 to 20,000		
Over 20,000		
Commercial	J$/1000 litres	J$/1000 litres
0 to 2,000	1,533.14	1,533.14
Over 2,000	893.67	893.67
Condominium	760.53	760.53
Litre Units		
Consumption Bands (litres)	**Proposed Charges**	**OUR Approved**
	J$/1000 litres	J$/1000 litres
Domestic		
0 to 14,000	88.30	88.30
14,001 to 27,000	157.04	157.04
27,001 to 41,000	171.26	171.26
41,001 to 55,000	291.88	291.88
55,001 to 91,000		
Over 91,000		

Commercial	J$/1000 litres	J$/1000 litres
0 to 9,100	337.12	337.12
Over 9,100	196.51	196.51
Condominium	167.21	167.21
Sewerage Rates		
Gallon Units		
Consumption Bands (gallons)	**Proposed Charges**	**OUR Approved**
	J$/1000 gallons	J$/1000 gallons
Domestic		
0 to 3,000	467.23	467.23
3,001 to 6,000	826.75	826.75
6,001 to 9,000	905.98	905.98
9,001 to 12,000	1,545.88	1,545.88
12,001 to 20,000	N/A	N/A
Over 20,000		
Commercial	J$/1000 litres	J$/1000 litres
0 to 2,000	1,785.75	1,785.75
Over 2,000	1,040.91	1,040.91
Condominium	885.84	885.84
Litre Units		
Consumption Bands (litres)	**Proposed Charges**	**OUR Approved**
	J$/1000 litres	J$/1000 litres
Domestic		
0 to 14,000	102.72	102.72
14,001 to 27,000	181.77	181.77
27,001 to 41,000	199.25	199.25
41,001 to 55,000	340.02	340.02
55,001 to 91,000		
Over 91,000		
Commercial	J$/1000 litres	J$/1000 litres
0 to 9,100	392.66	392.66
Over 9,100	228.88	228.88
Condominium	194.76	194.76

The Price Adjustment Mechanism

4.41. The PAM seeks to compensate RBWC monthly for movements in the costs of inputs over which the company has no control. That is, the PAM applied by the company takes account of the movement in the Consumer Price Index (CPI) as reported by the Statistical Institute of Jamaica (STATIN), the Jamaican dollar exchange rate movement relative to the US dollar as reported by the Bank of Jamaica (BOJ) and movements in the price of electricity as recorded on the electricity bills.

The PAM formula is as follows:

PAM = [w_fe*ΔFE+w_cpi*ΔCPI+w_ec*Δkwh]*100

Where:

ΔFE is the monthly percentage change in the J$/US$ exchange rate;

ΔCPI is the monthly percentage change in the Consumer Price Index;

Δkwh is the percentage change in the kilowatt hour charge for electricity;

w_{fe} is the weight associated with J$/US$ exchange rate;

w_{cpi} is the weight associated with the Consumer Price Index; and

w_{ec} is the weight associated with the kilowatt hour charge for electricity;

Currently, RBWC's PAM adjustments mirrors that of the NWC with a month lag.

4.42. Given the sensitivity of general prices, the exchange rate and international fuel prices the maintenance of PAM to capture these movements between major tariff reviews is reasonable. Accordingly, RBWC request for the PAM to be kept unchanged is approved. Specifically, RBWC shall be allowed to apply the NWC's PAM one month after it is applied by the NWC.

Determination 1

(a) RBWC Application for an increase in its wholesale water rates, based on its Water Supply Contract with NWC has been deemed invalid. The Application was therefore not considered in this Determination Notice.

(b) In accordance with the "No Objection Policy" the Office approves the retail water and sewerage rates as proposed by RBWC. The approved rates are as set out in Table 4.12.

(c) The reconnection fee of $4,370.00 remains in effect until the next rate review.

(d) The PAM currently applicable to RBWC shall remain intact. Specifically, RBWC shall be allowed to apply the NWC's PAM one month after it is applied by the NWC.

(e) The RBWC shall submit its annual audited financial statements to the OUR each year no later than three (3) months after the end of its financial year.

(f) The RBWC is required to maintain separated operating cost accounts for its water and sewerage businesses and the summary of these accounts shall be submitted to the OUR for review within three (3) months of the ending of each financial year.

Technical Review

5.1. RBWC is a small water utility company authorized to distribute and supply potable water to defined "service areas", in Cardiff Hall and Mt. Edgecombe, St. Ann; and Caymanas Estate, St. Catherine under separate Water Supply Licences applicable to each "Licensed Business". Its water system at Mt. Edgecombe exclusively supplies potable water to the NWC's network under a bulk-water supply arrangement which is not subject to this Tariff Determination, and therefore will not be covered in this Technical Review. In addition, the Company also provides sewerage services to customers in the Caymanas Estate service area, subject to the Runaway Bay Water Company Limited Sewerage Service Provider Licence, 2014 ("the Sewerage Licence").

5.2. Subject to the provisions of the Licence, RBWC has the obligation to provide a safe, reliable, and efficient potable water and sewerage services, on a non-discriminatory basis subject to applicable legislation, regulations, codes, standards and prudent utility practice. To satisfy

these requirements, it is critical that the company in the planning, management and operation of the respective water and sewerage systems, contemplate, among other things, the following:

- Ongoing assessment of aggregate water demand /system supply capacity requirements;
- Monitoring of sewage/wastewater flows, volumes, treatment capacity, and treatment facilities;
- Periodic review of the water supply/sewerage infrastructure configuration and capacity for adequacy, flexibility, safety and reliability;
- An operations approach that optimizes system functionality and cost;
- A maintenance approach that bolsters operational performance and ensures service continuity;
- Collection of specified system data/parameters for regulatory assessment/ performance monitoring by the OUR;
- Energy efficiency (EE) measures and power supply options, where applicable, to improve system efficiency, flexibility and reliability; and
- Cost controls and revenue targets to ensure sustainable utility operations.

RBWC Water Supply Systems

5.3. In meeting the current and future potable water demand in the defined service areas, the company's adherence to the aforementioned conditions is critical for ensuring that the respective water supply systems are adequate, adaptable, and capable of operating within the minimum functional specifications for the term of the relevant Licences, as well as ensuring the economic and environmental sustainability of its operations.

Description of the Water Systems

5.4. As permitted by RBWC's Water Supply Licences, the Company operates the following potable water supply systems:

- The Cardiff Hall Water Supply System - serves residential, commercial and bulk-water customers; and
- The Caymanas Estate Supply Water System - serves primarily residential customers.

5.5. Based on the OUR's review of the infrastructure drawings (as-built), process flow diagrams, and technical specifications/documentation for these water systems, which were submitted by RBWC to support the Rate Review Application, it was found that the orientation of each of these systems generally depicts the system design configuration commonly utilized by small water utilities across the industry. As built, these water systems comprise the main infrastructure components, including water abstraction facilities, water treatment and storage, a distribution network, instrumentation & controls and metering devices. These embedded infrastructure facilities and related processes are described in the sections below.

Water Source, Abstraction and Production

5.6. Based on the technical information provided by RBWC for the subject water systems, the source (raw) water requirements for each system reviewed is supplied from "groundwater", extracted through water wells. In each case, permission to abstract raw water is granted by the

WRA to RWBC and UDC through separate licences to abstract and use water. Details and conditions of each WRA water abstraction licence are summarized in Table 5.1 below.

TABLE 5.1: Raw Water Sources for RBWC Water Supply Systems

DETAILS OF WATER SOURCES IN RBWC WATER SUPPLY SYSTEMS							
Water System	**Water Source (Groundwater)**	**WRA Licence Number**	**Licensee**	**Licence Issue Date**	**Licence Term**	**Maximum Extraction Rate**	**Purpose**
Cardiff Hall	Cardiff Hall #1 Well (depth – 80ft/24m)	A2013/96	RBWC	2018/02/26	5 years	4,545 m^3/day	Domestic use
	Cardiff Hall #2 Well (depth - 80ft/24m)	A2013/97	RBWC	2018/02/26	5 years	4,545 m^3/day	
Caymanas Estate	Top Ellis Domestic Well	A2020/04	UDC	2020/05/22	1 year	1,432 m^3/day	Domestic use
	Ellis Golf Club Replacement Well	A2020/05	UDC	2020/05/22	1 year	3,056 m^3/day	

Cardiff Hall Water System

5.7. The Cardiff Hall water supply system, is configured with two (2) submersible well pumps each driven by a 50HP, 440V, 3-phase electric motor. These pumps are used alternately to abstract source water from two groundwater deep wells (Cardiff Hall #1 and 2 Wells - depth of 80ft/24m), within the maximum extraction rate (4,545 m^3/day) stipulated by the WRA licence, to supply the system. Based on the system's design configuration and operational processes, the raw water abstracted from the wells is treated by injecting a disinfectant (chlorine) to produce potable water that is safe for human consumption. The potable water then flows to a storage tank (70,000 IG/ 318m^3) at a higher elevation, after which it is then distributed and delivered to customers in the service area via gravity feed.

Caymanas Estate Water System

5.8. The primary water source for the Caymanas Estate water system is the Top Ellis Domestic Well, developed on the Caymanas Estate property, in close proximity to the water treatment facility. The water treatment facility is linked to the well by a 200 mm diameter steel pipeline.

5.9. The water production infrastructure is designed with a submersible well pump driven by a 40HP, 415V, 3-phase electric motor, which is used to abstract groundwater from the Top Ellis Domestic well, within the maximum extraction rate of 1,432 m^3/day stipulated by the WRA licence, to supply the system. Based on the system's design configuration and operational process, the abstracted raw water from the well is treated through chlorination to produce potable water, which satisfies safe drinking water standards. The potable produced then flows to a storage tank of capacity 175,000USG/ 662m^3 located at higher elevation, after which it is then distributed and delivered to customers in the service area via gravity feed.

5.10. As a secondary water source, RBWC has a deep-well pump installed at the Ellis Golf Club Replacement Well, also developed on the Caymanas Estate property. According to the company this water source normally serves golfing facilities in the area but the pumping system is also interconnected to the main production system supplied by the Top Ellis Domestic Well, as a back-up water source in the event of major contingency conditions,

including problems with the primary well or extended forced outage of the submersible pump/motor assembly. With respect to the water demand of the golfing facilities, RBWC has indicated that this does not pose an impact on the supply to its residential customers.

Water Treatment

5.11. Water treatment in both water supply systems (Cardiff Hall and Caymanas) is accomplished by a disinfection process involving the addition of chlorine to the water through the use of fully automated chlorine injection systems. Verification of water quality is done by testing of water samples collected at designated sampling points within both systems. This procedure is necessary to ensure that the potable water produced in these systems satisfies the water quality standards prescribed by the Licence, and other relevant industry standards.

Water Storage and Distribution

5.12. In the Cardiff Hall system, the treated water flows through a common pipeline arrangement with the aid of inline water pumps to a primary storage tank installed at higher elevation (capacity - 70,000 IG /318m^3). The water in the storage tank is then discharged into the distribution network to supply customers in the service area, mainly through gravity feed. However, a small group of customers are located at elevations above the primary storage tank level, rendering distribution by gravity feed impossible. To ensure full service coverage, two 10HP booster pumps are used to transfer water from the primary storage tank to a secondary storage tank (capacity - 20,000 IG /91m^3), which directly supplies potable water to these customers through a 150mm pipeline.

5.13. For the Caymanas Estate system, the network layout drawings provided by RBWC, indicate that treated water is pumped to a single above-ground storage tank with a capacity of 175,000 USG/662m^3. Distribution of potable water from the storage tank to the service area is accomplished via gravity feed, utilizing a 200mm diameter ductile iron pipe reducing to 150mm pipelines, serving each segment of the water supply network.

<u>Storage Capacity Limitation</u>

5.14. Based on the design specifications and operating parameters provided for the water systems, the storage capacity in the Cardiff Hall and Caymanas Estate systems appears to be limited relative to their average water demand, as exhibited in Table 5.2 below. This limitation is a major concern and needs to be examined by RBWC. The issue is that it is an embedded operating constraint that can potentially cause short-term water shortage, in the event of forced outages and failures of pumping or water treatment facilities for periods of even less than 24 hours. Additionally, this situation also has energy efficiency and cost implications, as a result of frequent water pumping operations.

Table 5.2: Comparison of Avg. Daily Production (2020 Apr – Oct) vs Main Storage Tank

COMPARISON OF AVG DAILY PRODUCTION (2020 APR – OCT) WITH CAPACITY OF MAIN STORAGE TANK			
CARDIFF HALL		CAYMANAS ESTATE	
Avg. Daily Prod. (m^3/day)	Main Storage Tank Capacity (m^3)	Avg. Daily Prod. (m^3/day)	Main Storage Tank Capacity (m^3)
3,372.33	318	1,464	662

Water System Power Requirements

5.15. The main electrical power source to the three water systems is the Jamaica Public Service Company Limited (JPS) electricity grid, delivered as a 415V, three-phase AC supply. As observed, this arrangement appears to be compatible with the power requirements of the relevant electrical equipment (pump motors and other equipment) and should be sufficient for proper electrical operation. For each system, back-up power, in the form of a standby diesel generator with adequate capacity is installed to power all the critical electrical equipment. This standby power supply arrangement appears to be reasonable, and is considered important for enhancing system reliability and resilience, by enabling the critical electrical equipment to maintain utility operations with the loss of the main power supply, thus limiting potential adverse impacts on water service delivery.

Water Demand and Supply Capacity

Production Capacity – Cardiff Hall Water System

5.16. According to RBWC's "Monthly Operations Report October 2020", the estimated daily water production and total production for its Cardiff Hall water system over the months April - October in 2019 and 2020, are as shown in Table 5.3 below.

TABLE 5.3: Water Production – Cardiff Hall

WATER PRODUCTION: CARDIFF HALL (APR TO OCT 2019 & 2020)		
Period	Total Production (m^3)	Average Daily Production (m^3/day)
2019 Apr – Oct	948,838.60	4,433.82
2020 Apr – Oct	721,679.00	3,372.33
Δ (2020 vs. 2019)	-227,159.60	-1,061.49
% Δ (2020 vs. 2019)	-23.94%	

5.17. As indicated, water production decreased for the Cardiff Hall system by almost 24% during the 2020 April – October period relative to the 2019 April – October period. According to RBWC, this decline in water production appears to be due to a number of factors, primarily reduction in the level of rainfall and decreases in sales resulting from the closure of some commercial customers (mainly hotels), due to the ongoing COVID-19 pandemic.

5.18. Based on the capacity requirements of the Cardiff Hall water system, the data provided also shows that the average daily production rates, in each case is within the extraction limits stipulated by the relevant WRA licences, during the stated period. In fact, the approximate daily extraction rate for the two water sources combined, is less than the water extraction limit stipulated for each individual source, with the average daily water production rate for

the period 2020 April - October being approximately 37% of the combined maximum daily water extraction rate (9,090 m^3/day) specified by the WRA. This means that in the event of a reliability issue with the pump/motor assembly associated with one of the water sources, sufficient capacity exists to prevent service disruption to customers.

Water Balance – Cardiff Hall Water System

5.19. As reported by RBWC, during the period April – October in 2019 and 2020, the aggregated water production, billed consumption, and water losses (real and apparent) for the Cardiff Hall water system, which constitutes its aggregate water balance for the stated periods, are as presented as estimates in Table 5.4 below.

TABLE 5.4: RBWC Cardiff Hall Water Balance

RBWC CARDIFF HALL WATER BALANCE (APR TO OCT 2019 & 2020)						
#	Category	2019 April to October		2020 April to October		
		Water Volume (m^3)	Proportion	Water Volume (m^3)	Proportion	Maximum as per WRA Limits (m^3)
1	**Billed Consumption**	**770,361.60**	**81.19%**	**1,040,105.43**	**83.11%**	
2	Unbilled Authorised Consumption	0.00	0.00%	0.00	0.00%	
3	Real & Apparent Water Losses	178,477.00	18.81%	121,893.57	16.89%	
4	**Non-Revenue Water (Rows 2 + 3)**	**178,477.00**	**18.81%**	**121,893.57**	**16.89%**	
5	**Production (Rows 1 + 4)**	**948,838.60**	**100.00%**	**1,161,999.00**	**100.00%**	**1,945,260.00**

5.20. As evidenced by the water balance shown in Table 5.4 above, the relative proportions of potable water allocated to customers' aggregate consumption and water losses, is within the range that is expected for small private water utilities. Further, the current water production levels versus the maximum allowable limits, suggests that the Cardiff Hall water system will have sufficient capacity to satisfy incremental increase in water demand with adequate margins, over the medium to long-term.

5.21. With respect to water losses or non-revenue water (NRW), the levels reported by RBWC, appear to be largely in line with industry thresholds, taking into account the age of the respective systems. But this performance is expected, due to the relatively high water consumption by commercial and bulk-water customers connected, in some cases, to the upper end of the distribution network, diluting the effect of downstream losses, on a percentage basis.

5.22. It should be noted that while global numbers for water losses were reported by RBWC, a full breakdown of the various loss categories was not provided. Also, the system layout drawings provided by the Company indicate that "fire hydrants" are included in the system infrastructure, however, no information was provided specifically addressing potential fire water demand on the water supply system. This is a critical aspect of the water utility operation that needs to be addressed by RBWC.

Production Capacity – Caymanas Estate Water System

5.23. According to RBWC's "Monthly Operations Report October 2020", the estimated average daily water production and total production for Caymanas Estate water system over the

period 2020 April - October are approximately 1,464 m^3/day and 313,295 m^3, respectively. With respect to the average daily production rate, the reported level for the stated period marginally exceeds the maximum extraction rate (1,432 m^3/day) stipulated by the WRA licence for the primary water source, although the average daily production rate is within the combined allowed limit (4,488 m^3/day) for its primary and secondary water sources. However, given that the average daily production capacity has eclipsed the maximum limit of the primary water source and the secondary water source (Ellis Golf Club Replacement Well) is intended to primarily serve the neighbouring golfing facilities, future increases in water demand could adversely impact the reliability of the water supply to the service area covered by the Licensed Business.

Water Balance – Caymanas Estate Water System

5.24. As reported by RBWC, during the period 2020 April – October, the aggregated water production, billed consumption, and water losses (real and apparent) for the Caymanas water system, which constitutes the aggregate water balance for the stated period, is as presented in Table 5.5 below.

TABLE 5.5: RBWC Caymanas Water Balance

RBWC CAYMANAS WATER BALANCE (2020 APRIL TO OCTOBER)					
#	**Category**	**Water Volume (m^3)**	**Proportion**	**Maximum as per WRA Limits (m^3)**	**Remarks**
1	**Billed Consumption**	**99,380.79**	**32%**		
2	Unbilled Authorised Consumption	12,438.00	4%		Water to Caymanas Village – Not Invoiced
3	Real & Apparent Water Losses	201,475.26	64%		
4	**Non-Revenue Water (Rows 2 + 3)**	**213,914.26**	**68%**		
5	**Production (Rows 1 + 4)**	**313,295.05**	**100%**	**960,432**	

5.25. As shown, the system's current water production level accounts for approximately 33% of the maximum production achievable based on the allowed maximum abstraction rate for the two water sources. From this, it can therefore be deduced that the system has sufficient production capacity to meet incremental increases in water demand over time, provided that the arrangement for raw water supply from the Ellis Golf Club Replacement Well, remains intact.

5.26. The water balance for the system also shows that the level of NRW is approximately 68% of water production volume, which is uncharacteristically high for a small water utility system. The water losses data indicates that 4% of water production volume is attributed to unbilled authorized consumption, while 64% is attributable to real and apparent water losses. However, the full breakdown of the NRW into the various loss categories and the related causes were not provided by the company. In that regard, it is not clear as to the factors driving this high level of NRW, especially with the indication in RBWC's Monthly Operations Report October 2020 that there are no leaks within its Caymanas Estate water distribution network, and the significant disparity with the NRW reported for the Cardiff Hall water system. This also raises concerns about the credibility and reliability of the system

performance data being reported by the Company. Considering the issue surrounding this NRW situation, there will be need for further review and assessment.

5.27. In addition, the water demand data provided by RBWC does not specifically address fire water demand on the water supply system. Going forward, this is an important issue that needs to be addressed by RBWC.

Revenue Metering

5.28. The system information provided by RBWC, indicates that approximately 431 revenue meters are installed across its Cardiff Hall water distribution network for recording customers' water usage, and a total of 680 meters are installed in the Caymanas water distribution network. A breakdown of these meters by type and customer category is shown in Table 5.6 below.

TABLE 5.6: Revenue Meters Installed - Cardiff Hall and Caymanas

REVENUE METER INSTALLED - CARDIFF HALL WATER DISTRIBUTION NETWORKS	
Meter Description	**Number**
Sensus 5/8" Meter	407
Sensus 1" Meter	19
Sensus 4" Meter	4
Sensus 6" Meter	1
TOTAL	**431**
REVENUE METER INSTALLED – CAYMANAS WATER DISTRIBUTION NETWORK	
5/8" Arad	330
5/8" Sensus	350
TOTAL	**680**

5.29. The specific "Meter Patterns" for the revenue meters listed were not provided by RBWC, however, a "Type Approval" dated 2012 June 12 for the Sensus SRII Accustream (TESR/22/2012/2216A-L) issued by the BSJ to Industrial & Municipal Supplies was provided. However, it is not clear that the Sensus SRII Accustream is the Meter Pattern being used by RBWC in all instances.

5.30. Additionally, RBWC also provided a copy of a "Type Approval" dated 2010 June 18, for Isratech and Arad 5/8" water meters (TESR/22/2010/2144 A-J) issued by the BSJ to Jamaica Drip Irrigation Limited.

5.31. For the Cardiff Hall system, the quantity of revenue meters provided is appreciably less than the number of customers in the service area. In that regard, an explanation on this discrepancy is required from RBWC.

5.32. As stipulated in the Meter Testing Administrative and Operational Protocol for the Electricity and Water Sectors in Jamaica, 2017 (MTAOP), Pattern (Type) Approvals shall only be issued to Water Service Providers. Since the related Pattern Approvals presented by RBWC were issued to a different entity than RBWC, the OUR will be engaging RBWC on matters involving the MTAOP, in order to rectify any anomalies in the company's revenue metering regime and bring it into compliance with the requirements of the MTAOP.

Management and Operation of Water Supply System

5.33. The approach adopted by RBWC for managing the Cardiff Hall and Caymanas Estate water service operations appears to be workable and should enable the company to fulfil the requirements of each Licensed Business, over the remaining period of the applicable Water Supply Licence, in accordance with the applicable legislation, regulations, codes, standards and prudent utility practice. However, there are areas that can be improved to support optimal system operation. As observed, the current operational arrangements appear to rely heavily on physical interactions and manual procedures, which have certain limitations. The incorporation of system automation and remote monitoring capabilities can improve overall operational efficiency and augment the maintenance regime, thus enhancing the reliability of the water systems.

OUR Technical Review - RBWC Water Supply Systems

5.34. To facilitate the review of the potable water aspect of the Rate Review Application, the OUR carried out a comprehensive technical evaluation of RBWC's water supply systems and related utility operations, including site visits, to support its determinations on the Application. The OUR's findings and positions resulting from the technical review are outlined in the sections below.

Performance Assessment and Regulatory Requirements

5.35. The OUR's technical review of RBWC's water utility operations identified a number of issues and limitations that could negatively impact the Company's water systems' performance and potable water services to its customers. The review also found that there are gaps in the existing reporting requirements which present a constraint for effective regulatory assessment and monitoring of RBWC's water service performance. Given these issues and potential adverse effects, the Company will be required to satisfy the technical requirements and conditions outlined below.

<u>Regulatory Reporting Framework – Potable Water Service</u>

5.36. Pursuant to Schedule 2 of the Water Supply Licence applicable to each of RBWC's Licensed Business as defined, RBWC is required to submit technical information and reports to the Office on an annual basis, including the following:

a) Volume of water produced;
b) Volume of water sold;
c) Assessment of unaccounted-for-water (UFW);
d) Consumption per customer category;
e) Details of any unmet demand;
f) Water quality reports;
g) Schedules of maintenance programme;
h) Reliability of supply report for relevant period detailing:
    - Number of planned interruptions;

- Percentage of planned interruptions where the required 24-hour period of Notice is not adhered to;
- Number of unplanned interruptions;
- Percentage of unplanned interruptions not restored in the required 24-hour period;

i) Number and type of connections to other utilities; and
j) Reports in relation to guaranteed and overall standards

5.37. Given the vital importance of providing the "Prescribed Utility Service" to the defined service areas, these regulatory requirements should be a key focus for RBWC. Therefore, with continuous assessment and monitoring, the Company should be able to improve the operational performance of each water system and service delivery to customers. Further, the Company in adhering to the aforementioned planning, management and operations requirements, should be able to deliver a safe, efficient and reliable potable water supply in each service area on a sustainable basis over the remaining period of the respective Water Supply Licences.

Technical Reports

5.38. To support the OUR's oversight of RBWC's water utility operations, there will be need for supplementary technical information on the performance of the respective water supply systems. In that regard, the Company shall, in addition to the reporting requirements set out under Schedule 2 of the relevant Licences, submit the following information requirements to the OUR:

- Quarterly "Technical Reports" for each Licensed Business, covering the parameters/ indicators set out under Schedule 2 of the applicable Licence, prior to the submission of the full annual reports, for each of the remaining years of the Licence. Such reports shall be submitted within fourteen (14) days after the end of each quarter; and
- Any other technical data/reports related to each water system that the OUR may consider necessary, from time to time.

<u>Water Service Standards</u>

5.39. Based on the design specifications and operating characteristics of the respective water supply systems, it is expected that potable water service delivered by RBWC, in each service area, will meet or exceed the stipulated water service standards and conditions, and should be manifested in the customers' service quality experience. In that regard, to promote customer awareness, RBWC shall in accordance with prudent utility practice, ensure that the definition and performance requirements of the prescribed standards are properly documented, sufficiently quantified (where applicable) and made accessible to its customers. Nevertheless, the Company in observance of these standards, should recognize that non-conformance with defined service level requirements may result in unfavourable outcomes. As defined in the existing regulatory framework, the potable water service standards applicable to RBWC water utility operations mainly entail the following aspects.

Availability and Reliability of Supply

5.40. This component relates to the availability and continuity of water services to all customers connected to the water supply system and is considered a key factor for assessment of overall system reliability and service delivery performance. It involves frequency, duration, and severity of water supply interruptions (planned and unplanned), as well as daily water demand/capacity dynamics, and other relevant indicators.

Water Quality

5.41. This standard covers water conditions, including microbiological concentrations, turbidity, colour, pH, and residual chlorine, which must be continuously analysed and regulated as part of the water treatment process in the operation of each water supply system, subject to requirements of the respective Water Supply Licences, relevant health & safety standards/regulations, prudent utility practice, and international best practice. In the context of this standard, it is important to note that contaminated and unsafe drinking water constitutes a major burden on human health. Therefore, interventions to assure and improve the quality of drinking water can provide significant benefits to human health and society. Given this imperative, RBWC shall supply potable water to the defined service areas that meets the minimum quality standards prescribed by the relevant Licences, for long-term consumption. Notwithstanding these minimum requirements, as a matter of public safety, RBWC should endeavour to maintain potable water quality at the highest possible level.

5.42. Regarding the reporting of water quality, to supplement the annual water quality reports, RBWC shall include all relevant water quality information for each system, including test results, in the quarterly Technical Reports to be submitted to the OUR. The company shall also ensure that the water quality test results and other relevant water quality information are made accessible to customers on an ongoing basis.

Water Pressure

5.43. For each of RBWC's Licensed Business, the applicable Licence stipulates that the pressure of the water supplied to customers shall be maintained in the range of 20 - 60 PSI. Based on inspection, RBWC systems appear to be equipped with the necessary facilities for proper water pressure/flow management. However, as reported in RBWC's Monthly Operations Report October 2020, water pressure recordings at some points within its Cardiff Hall water supply system, exceed the maximum pressure allowed by the relevant Licence. Given the Company's capabilities and obligations under its Licences, it is expected to comply with this service standard and correct any deviations observed, on an ongoing basis. Additionally, all water pressure measurements/indicators recorded by RBWC in the relevant periods, shall be reported in the quarterly Technical Reports to be submitted to the OUR.

Planned and Unplanned Interruptions

5.44. As stipulated under Schedule 2 of the Water Supply Licence applicable to each of RBWC's Licensed Business, the Company shall:

- Provide notification time for at least 90% of planned interruptions; and

- Restore at least 90% of unplanned interruptions of water supply within the time period communicated to its customers.

5.45. Information on the above activities is necessary to support the OUR's periodic review of the RBWC's service quality performance. As such, the Company shall include this quality of service information in the quarterly Technical Reports to the OUR. Additionally, the Company shall also provide a schedule of the total number of outages (planned and forced) that occurred each quarter, which shall include, the start time, duration, outage cause, and total number of customers affected and total number of customers served, for each outage.

Water System Environmental Requirements

5.46. In the operation of each of the Licensed Business as defined, RBWC shall conform to all relevant environmental standards established by the National Environmental Planning Agency (NEPA) and the Natural Resources Conservation Authority (NRCA). RBWC shall also provide the OUR with copies of any related licences, or special permits issued to the Company by these entities, from time to time.

Water Abstraction Authorization

5.47. To ensure authorized raw water extraction, RBWC shall provide timely notification to the OUR of all applications for renewal of water abstraction licences to the WRA, and provide copies of such renewed licences.

5.48. With respect to the Caymanas Estate water system, it is observed that the two WRA water abstraction licences presented by RBWC, were issued to the UDC and not RBWC. But no supporting documentation on any related arrangement between UDC and RBWC was initially provided. However, upon request by the OUR, RBWC provided information by way of letter dated 2021 March 30 to the OUR, showing authorization from the UDC for RBWC to operate the Caymanas wells. Additionally, the referenced WRA licences are only valid for one (1) year, and will be expired on 2021 May 22. In contrast, the WRA licences for the Cardiff Hall wells, all have terms of five (5) years. The basis of the one-year licence term for the Caymanas wells is not clear, also, the relatively short validity period could create uncertainties for the water utility operations in the service area. However, in discussions with RBWC it was indicated that the relevant applications for licence renewal have already been made, and it is expected that renewals will be granted in a timely manner.

Fire Water Requirements

5.49. While the layout drawings for each water systems provided by RBWC indicate that fire hydrants were included as part of their systems, no specific information on fire water requirements was provided. However, this is a critical element of all water utility networks, necessary to fulfil public safety requirements. As such, fire water capacity/flow assessments should be undertaken by the Company to ensure that the related facilities are capable of performing effectively when required. Fire water flow is also critical for pressure management in the water network, which is a feature of the prescribed water service standards. Notably, water required for fighting fires in the service areas is considered an

emergency service that should be provided by RBWC. In that regard, the Company should ensure that there is available water supply, network capacity and functional facilities to guarantee this crucial service in the respective service areas at all times.

Revenue Metering Requirements

5.50. For each Licenced Business, RBWC shall ensure that all revenue-type water meters installed in the respective water supply networks/service areas, are in conformance with the requirements of applicable Licences and the MTAOP. While RBWC has indicated the number of water meters installed in each network, it did not provide some of the necessary information relating to these metering devices. As such, RBWC shall submit the following information to the OUR for review, within one (1) month of the effective date of this Determination Notice.

1) Listing of all water meters (revenue-type) installed at each service connection in each water supply network, compiled in MS Excel format, which shall include:
    a) The specific meter Type/Pattern;
    b) The meter manufacturer's serial number;
    c) RBWC assigned meter number, if any;
    d) Meter installation date;
    e) The specific meter location/service address; and
    f) Copies of any related Pattern Approvals and Acceptance Testing documentation.
2) An indication of the number of unmetered customers and a description of RBWC's plans to rectify this situation, if any.
3) A description of RBWC's water meter procurement process.

Water System Guidance Framework/Action Plan

5.51. RBWC's existing strategy for the management and operation of the Licensed Business indicates that there is a basic structure in place that may allow the respective water supply systems to operate within their functional specifications to deliver safe, adequate, efficient, and reliable potable water services to the defined service areas over the remaining period of the terms of the relevant Licences. Notwithstanding, to ensure that this outcome is realized, it is necessary for RBWC to develop a Framework/Action Plan, including requirements pertaining to system planning, operations, maintenance of facilities, network diagrams, and risk assessment, to guide its utility processes. This Framework/Action Plan shall be submitted to the OUR within three (3) months of the effective date of this Determination Notice.

Water System Operation

5.52. To provide a reliable potable water service to each service area at reasonable rates, it is expected that the company will seek to ensure the optimization of system operations at all times, thereby minimizing total operating costs, while improving efficiency, reliability and service quality. While the achievement of this objective is paramount, it is also imperative for the company to employ prudent measures to limit degradation of key system assets over

time. Taking into consideration these conditions, RBWC shall develop appropriate policies and procedures to guide the long-term operation of each water supply system, focussed on critical infrastructure/equipment, in accordance with prudent utility practice and international best practices. These policies and procedures shall be included in the requested Framework/Action Plan.

Energy Efficiency – Water Service

5.53. Providing safe and reliable potable water services can be a highly energy-intensive activity. Energy is typically needed for raw water extraction and conveyance, water treatment, water storage & distribution, with most of the energy consumption attributed to pumping requirements. This underscores the need to integrate energy efficiency (EE) in the management and operation of water supply systems, which can contribute to long-term sustainability of the utility by lowering energy use and reducing costs. Based on the orientation and operation of RBWC's water systems, opportunities exist for incremental improvements in EE, some of which can be realized through a range of initiatives, including:

- Incorporating EE practices into daily system operations
- Optimization of system operations
- Utilizing new, energy-efficient technologies
- Installing premium efficiency motors and variable speed drives
- Developing alternative pumping schemes and pump system upgrades
- Installing adequate controls and monitoring systems
- Conducting benchmarking and energy audits
- Shifting power consumption from on-peak to off-peak hours
- Adding storage or more effectively using existing storage facilities
- Promoting water conservation and use of energy-efficient products
- Reducing water losses

Water System Maintenance Requirements

5.54. The Water Supply Licence applicable to each of RBWC's water utility operation, stipulates that the Company shall maintain and keep in good repair all equipment used in carrying out the "Licensed Business". Prudent industry practice also supports the development and adherence to appropriate maintenance polices/procedures that will assure efficient, reliable and cost-effective water infrastructure operations.

5.55. Taking into account these conditions, RBWC shall develop appropriate policies and procedures to guide the maintenance of the infrastructure comprising each of its water supply system, which shall be included in the requested Framework/Action Plan. Such policies and procedures shall take into account OEMs' recommendations for equipment maintenance, schedule of inspections & major maintenance activities, contingency equipment & replacement inventories, and statutory maintenance requirements, where applicable. These

policies and procedures shall be reviewed and updated as necessary, and be available for the OUR's review when requested, for the remaining period of the relevant Licences.

Risk Management Strategy - Water Service

5.56. With regards to system risks, the OUR's technical review of the water systems has identified certain contingencies and exceptional circumstances that could adversely affect potable water supply in RBWC's service areas, if they occur. Such circumstances include the following:

- Major failure or forced outage of critical infrastructure/equipment
- Forced outage of storage tanks due to major leaks or contamination;
- Water shortage due to limited storage capacity
- Major power supply failure
- Disruption to raw water inflows
- Contaminated raw water source (well)
- Infiltration and ingress of contamination in the distribution system
- Effects of climate change, seasonal variations and natural disasters
- Risks to water service continuity due to uncertainties involving source water arrangement

5.57. While the design configuration of each water system inherently addresses some degree of risk, these areas of exposure need to be fully assessed by RBWC. Taking into consideration the potential consequences of these conditions on system operation, it is considered prudent that RBWC develop a risk management strategy to assess and mitigate potential risk conditions, with the aim of reducing infrastructure/process vulnerabilities and improving the overall reliability and resilience of each water system, thus minimizing risks of major water supply disruptions. This risk management strategy shall be included in the requested Framework/ Action Plan.

Summary of Water Service Regulatory Requirements

5.58. The regulatory requirements to be addressed by RBWC are summarized in Table 5.7 below.

Table 5.7: Regulatory Requirements to be addressed by RBWC

RBWC WATER SERVICE TECHNICAL REQUIREMENTS – THREE WATER SYSTEMS		
Index	**Aspect**	**Items to be submitted to the OUR**
1	Technical Reports	i. Quarterly "Technical Reports" covering the parameters/requirements set out under Schedule 2 of the relevant Licences, to be submitted within fourteen (14) days after the end of each quarter; and ii. Any other technical data/reports related to the system that the OUR may consider necessary, from time to time.
2	Availability and Reliability of Supply	i. A Framework/Action Plan, including requirements pertaining to the planning, operations, maintenance of facilities, network diagrams, and risk assessment. This shall be submitted to the OUR, within three (3) months after the effective date of this Determination Notice.
3	Water Quality	i. Annual water quality reports and quarterly water quality information, including test results, included in quarterly Technical Reports.
4	Water Pressure	i. Reporting of water pressure measurements in the Quarterly Technical Reports
5	Planned and Unplanned Interruptions	i. Service quality performance information, which shall be included in the Quarterly Technical Reports. ii. Schedule of the total number of outages (planned and forced) that occurred each quarter, which shall include, the start time, duration, outage cause, and total number of customers affected and total number of customers served, for each outage.
6	Revenue Metering	i. Listing of all revenue-type water meters installed in each service area in each water supply network, compiled in MS Excel format, which shall include: a) The specific meter Type/Pattern b) The meter manufacturer's serial number c) RBWC's assigned meter number d) Meter installation date e) The meter location/service address f) Copies of any related Pattern Approvals and Acceptance documents. ii. An indication of the number of unmetered customers (if any) and a description of RBWC's plans to rectify this situation. iii. A description of RBWC's water meter procurement process. iv. This information shall be submitted to the OUR within one (1) month of the effective date of this Determination Notice.
7	System Operation	i. Operating policies and procedures for prudent operation of the system, including critical equipment and facilities, which shall be included in the requested Framework/Action Plan.
8	Maintenance	i. Policies and procedures to guide the maintenance of the infrastructure comprising each water supply system, which shall be included in the requested Framework/Action Plan. ii. Such policies and procedures shall take into account the OEMs' recommendations for equipment maintenance, schedule of inspections & major maintenance activities, contingency equipment & replacement inventories, and statutory maintenance requirements, where applicable. iii. The referenced policies and procedures shall be reviewed and updated as necessary, and be available for the OUR's review when requested, for the remaining period of the Licence.
9	Risk Management	i. Strategy/model to assess and mitigate potential risks to each water supply system, which shall be addressed in the requested Framework/Action Plan.

RBWC Caymanas Estate Sewerage System

5.59. With respect to RBWC sewerage service operations, the Licensed Business as defined in the Sewerage Licence, involves the collection, conveyance, treatment and disposal of sewage, to be carried out in accordance with the Licence and any other licence required by the laws

of Jamaica. The system infrastructure and processes utilized by RBWC to perform the described functions necessary for the provision of "the Prescribed Utility Service" as defined by the Sewerage Licence, are delineated in the sections below.

Sewerage System Description

5.60. The sewerage system was designed and constructed to operate as an independent system, with full capability for sewage collection, conveyance, treatment and disposal, which was the mode of operation initially after commissioning. However, the system was subsequently reconfigured to collect sewage from customers within the service area and convey it through a sewerage network to the "Soapberry Sewage Treatment Plant" for treatment and disposal. Nevertheless, the system as currently configured, appears to contain the essential components/ facilities for the collection and conveyance of sewage, with adequate capacity to handle current and projected future sewage volumes in the service area, over the remaining term of the Sewerage Licence.

Sewage Collection and Conveyance

5.61. The RBWC's sewage collection and conveyance facilities serving the Caymanas Estate service area, is comprised of service connections, where sewage is collected and then conveyed through a sewerage network, which is discharged into a downstream sewage main that conveys raw sewage to the Soapberry Sewage Treatment Plant. As built, the existing sewerage network, includes a total of five (5) lift stations, where sewage is screened to remove materials that could cause damage to downstream equipment, disruption of sewage treatment operations, reduction in overall system efficiency, and objectionable environmental conditions. The screened sewage is then pumped to the Soapberry Sewage Treatment Plant, for treatment and discharge of treated effluent. In order to facilitate operational flexibility and ease of maintenance, the sewerage network also includes a number of manholes located at strategic points along the network.

Sewerage System Power Requirements

5.62. The main electrical power source for the sewerage system is a dedicated 415V, three-phase AC supply provided by JPS. The characteristics of this power supply appear to be compatible with the electrical specifications of the relevant electrical equipment and should support proper electrical operation. For back-up power, standby diesel generators with adequate capacity to power all the critical electrical equipment on site are installed at each of the 5 lift stations. This secondary power supply arrangement improves the reliability and resilience of the sewerage system, in the event of disruptions in the main power supply or major disaster events.

Management and Operation of the Sewerage System

5.63. The approach adopted by RBWC for managing and administering its Caymanas Estate sewerage service operations appears to be workable and should enable the company to fulfil the requirements of the Licensed Business, over the remaining period of the Sewerage Licence, in accordance with the applicable legislation, regulations, codes, standards and

prudent utility practice. However, there are areas that can be improved to support optimal system operation. As observed, the current operational arrangements appear to rely heavily on physical interactions and manual procedures, which have certain limitations. The incorporation of system automation and remote monitoring capabilities can improve overall operational efficiency and augment the maintenance regime, thus enhancing the reliability of the sewerage system.

OUR's Technical Review – Caymanas Estate Sewerage System

5.64. To facilitate the review of the sewerage service aspect of Rate Review Application, the OUR carried out a comprehensive technical evaluation of RBWC's sewerage system and related utility operations, including site visits, to support its determinations on the Application. The OUR's findings and positions resulting from the technical review are outlined in the sections below.

Performance Assessment and Regulatory Requirements

5.65. The OUR's technical review of RBWC sewerage service operations identified a number of issues and limitations that could negatively the Company's sewerage system performance and sewerage services to its customers. The review also found that there are gaps in the existing reporting requirements which present a constraint for effective regulatory assessment and monitoring of RBWC's sewerage service performance. Given these issues and potential adverse effects, the Company will be required to satisfy the technical requirements and conditions outlined below.

Regulatory Reporting Framework – Sewerage Service

5.66. Pursuant to Schedule 2 of the Sewerage Licence, RBWC is required to submit the following information and reports to the Office on an annual basis:
Financial Information

1) Audited Profit and Loss Accounts and Balance Sheet for the relevant period
2) Audited Cash Flow for the relevant period

Technical Information

1) Costs and revenues associated with each customer category
2) Customer based reports showing total number of customers per category (that is, industrial, commercial or domestic)
3) Number and type of connections to other utilities
4) Sewerage report of the relevant period detailing:
   - total volume of sewage collected from other utilities
   - total volume of sewage treated
5) Effluent quality reports for each quarter
6) Schedules of maintenance programme
7) Number of employees
8) Total number of new applications
9) Total number of new sewerage connections

10) Total number of delinquent customers (three billing period in arrears)
11) Fault (blockages) reported in collection, conveyance and treatment
12) Average time taken to clear faults
13) Comparison with NEPA environmental quality standards
14) Facilities in/out of service and period of time out
15) Treatment capacity of sewerage plants:
    - plant type (ponds, package, etc.)
    - installed capacity
    - average throughput
    - availability

5.67. Given the critical importance of providing the "Prescribed Utility Service" to the defined service area, these regulatory requirements should be a key focus for RBWC. Therefore, with continuous assessment and monitoring, the Company should be able to improve the operational performance ofits sewerage system.. Further, the Company in adhering to the aforementioned planning, management and operations requirements, should be able to provide a safe, efficient and reliable sewerage service in the Caymanas Estate service area, on a sustainable basis over the remaining period of the Sewerage Licence.

Technical Reports

5.68. To support the OUR's oversight of RBWC's sewerage service operations, the company shall submit the following information to the Office as part of the regulatory reporting framework:
- Quarterly "Technical Reports" covering the relevant parameters/indicators set out under Schedule 2 of the Licence, prior to the submission of the full annual reports, for each of the remaining years of the licence. Such reports shall be submitted within fourteen (14) days after the end of each quarter
- Any other technical data/reports related to the system that the Office may consider necessary, from time to time

<u>Sewerage Service Standards</u>

5.69. Based on the design specifications and operating characteristics of the sewerage system, it is expected that the service delivered by RBWC will meet or exceed the stipulated service standards, and this should be manifested in customers' quality of service experience. In carrying out the Licensed Business. In that regard, to promote customer awareness, RBWC shall in accordance with prudent utility practice, ensure that the definition and performance requirements of the prescribed standards are properly documented, sufficiently quantified (where applicable) and made accessible to its customers. Notwithstanding, the Company in the observance of these standards, should recognize that non-conformance with defined service requirements may result in detrimental outcomes.

5.70. As defined in the regulatory framework, the sewerage service standards applicable to RBWC utility operations mainly entail the following aspects.

Blockage of Sewer Mains

5.71. RBWC shall clear 90% of all reported blocked sewer mains within 4 hours of receiving such reports. For effectiveness, this performance measure should be coordinated with system monitoring and maintenance strategy for target achievement and limiting service disruptions.

Odour Control

5.72. RBWC shall maintain the sewerage network in such a manner as to minimize unacceptable odour conditions and complaints. The company shall ensure that there is no more than five (5) odour related complaints per one hundred (100) customers in any month of operation. This will require rigorous monitoring and proper operation of the relevant facilities to prevent certain end products of the biological process (chemical compounds) from escaping the system and causing odour problems.

5.73. Given the necessity of the service, the OUR may from time to time, introduce additional or vary these sewerage service standards taking into consideration the company's performance in meeting these standards, which will be assessed at each Rate Review or other intervals.

Sewage Flow Requirements

5.74. Sewage flow is largely a function of population served, population density, and water consumption. As such, it is desirable that the RBWC sewer network is designed for peak flows on the basis of saturation density. Since these networks may be difficult and uneconomical to be enlarged or duplicated, they should have long design periods.

5.75. The entire spent water of the service area should normally contribute to the total flow in the sewer. Although the flow in the sewer varies from hour to hour and also seasonally, under dry weather conditions, mean sewage flow may be less significant than per capita water consumption, since some water can be lost through evaporation, leakages, etc., which means that the sewer design should also contemplate minimum sewage flow. During system operation, sewage flow should be monitored by RBWC to ensure proper performance. Sewage flow should also take into account changes in internal water demand resulting from demand management initiatives.

5.76. Additionally, estimate of sewage flow may also incorporate "inflow and infiltration" volumes of wastewater not produced by sewerage customers entering the network (largely storm water and groundwater breaching the collection system at various points). Since sewers are designed for peak discharge, some allowance for groundwater infiltration should also be taken into account. Notwithstanding, excessive and uncontrolled infiltration could overburden the system. Therefore, prudent action should be taken by the Company to limit sewer infiltration to acceptable levels.

Sewage Flow Velocity

5.77. For proper operation, the flow velocities in the sewer network should be sufficient as to cause an automatic self-cleansing effect (suspended materials not get silted), while limiting erosion of the sewers. This is important to prevent deposition of solids that will obstruct free flow, causing further deposition and eventually blocking the sewer completely. These

sewage flow conditions are critical for ensuring compliance with the stipulated service standard related to "Blocked Mains".

5.78. In addition, the flow velocities should also be self-oxidising. That is, the velocities should be sufficient to prevent the generation of gases that release bad odours, in order to maintain compliance with the stipulated service standard related to "Odour". Given these operational considerations, RBWC shall monitor the sewage flow velocities in the sewerage network and conduct flow analysis to ensure suitable flow velocities during system operation. Flow measurements and reports of such flow analyses shall be included in the quarterly Technical Reports to the OUR.

Environmental Requirements

5.79. In the operation of the Licensed Business, as defined, RBWC shall conform to all relevant environmental standards established by NEPA/NRCA, and shall also provide the OUR with copies of any related licences, or special permits issued to the Company by these entities, from time to time.

Sewerage System Guidance Framework/Action Plan

5.80. RBWC's existing strategy for the management and operation of the Licensed Business indicates that there is a basic structure in place that may allow the sewerage system to operate within the functional specifications to provide, safe, efficient, and reliable sewerage services in the service area over the remaining period of the Licence. Notwithstanding, to ensure that this outcome is achieved, it is necessary for RBWC to develop a Framework/Action Plan including, among other things, requirements pertaining to system planning, operations, maintenance of facilities, network diagrams, and risk assessment, to guide its utility processes. This Framework/Action Plan shall be submitted to the OUR within three (3) months of the effective date of this Determination Notice.

System Operation and Reliability

5.81. To provide a reliable sewerage service to the customers in the service area at reasonable rates, it is expected that the Company will take steps to optimize its system operations at all times, so as to minimize total operating costs, while improving efficiency, reliability and service quality. While the achievement of this objective is critical, it is also imperative that the Company employs prudent measures to maintain operability and limit degradation of key system assets over time. Taking into consideration these conditions, RBWC shall develop appropriate policies and procedures to guide long-term operation of the system, focused on the critical infrastructure/equipment, in accordance with prudent utility practice and international best practices. These policies and procedures shall be included in the requested Framework/Action Plan.

Energy Efficiency – Sewerage System

5.82. Energy represents a substantial cost in the provision of sewerage/wastewater services, as it is typically required for all stages of the process, from the collection of raw sewage to the discharge of treated effluent. Moreover, the design and operation of these facilities do not

usually contemplate EE as a key feature. Recognizing the potential benefits of EE in water and wastewater utility systems, the OUR would urge RBWC to consider the implementation of EE measures in its sewerage service operations as a means of improving overall system operational efficiency and reducing operating costs, as well as improving environmental conditions.

Maintenance of Sewerage Infrastructure

5.83. As set out under Section 8 of the Sewerage Licence, RBWC shall maintain and keep in good repair all equipment used in carrying out the Licensed Business. Prudent industry practice also supports the development and adherence to appropriate maintenance polices/procedures that will assure efficient, reliable and cost-effective sewerage infrastructure operations.

5.84. Taking into account these conditions, RBWC shall develop appropriate policies and procedures to guide the maintenance of the sewerage infrastructure, which shall be included in the requested Framework/Action Plan. I Such policies and procedures shall take into account OEMs' recommendations for equipment maintenance, schedule for sewer system cleaning & inspections, schedule of major maintenance activities, contingency equipment & replacement inventories, and statutory maintenance requirements, where applicable. These policies and procedures shall be reviewed and updated as necessary, and be available for the OUR's review when requested, for the remaining period of the Sewerage Licence.

Risk Management Strategy – Sewerage Service

5.85. With respect to system risks, the OUR's technical review of the sewerage system has identified certain contingencies and exceptional circumstances that could adversely affect the provision of sewerage services in the service area, if they should occur. Such conditions include the following:

- Major failure or forced outage of critical infrastructure/equipment;
- Major sewage spills/overflows;
- Flooding;
- Power supply failure; and
- Uncontrolled odour conditions.

5.86. While the design configuration of the sewerage system inherently addresses some degree of risk, these areas of exposure need to be fully assessed by RBWC. Taking into consideration the potential consequences of these conditions on system operation, it is considered prudent that RBWC develop a risk management strategy to assess and mitigate potential risk conditions, with the aim of reducing infrastructure/process vulnerabilities and improving the overall reliability and resilience of its sewerage system, thus minimizing risks of major service disruptions. This risk management strategy shall be included in the requested Framework/Action Plan.

Summary of Regulatory Requirements - Sewerage Service

5.87. The regulatory requirements to be addressed by RBWC are summarized in Table 5.8 below.

Table 5.8: RBWC Sewerage Service Technical Requirements for Tariff

RBWC SEWERAGE SERVICE TECHNICAL REQUIREMENTS		
Index	**Aspect**	**Items to be submitted to the OUR**
1	Technical Reports	i. Quarterly "Technical Reports" covering the parameters/requirements set out under Schedule 2 of the Licence, prior to the submission of the full Annual Reports, which shall be submitted within fourteen (14) days after the end of each quarter; and ii. Any other technical data/reports related to the system that the Office may consider necessary, from time to time.
2	Sewage Flow	i. Sewage flow measurements and reports on sewage flow analyses, which shall be included in the Quarterly Technical Reports to the OUR.
3	Environment Requirements	i. Copies of any relevant licences, or special permits issued by NEPA/NRCA to the company, from time to time.
4	System Operation	i. A Framework/Action Plan including, requirements pertaining to system planning, operations, maintenance of facilities, network diagrams, and risk assessment. This shall be submitted to the OUR, within three (3) months after the effective date of this Determination Notice. ii. Operating policies and procedures for long-term operation of the system, with focus on the critical infrastructure/equipment, which shall be included in the requested Framework/Action Plan.
5	Maintenance	i. Policies and procedures to guide the maintenance of the sewerage infrastructure, which shall be included in the requested Framework/Action Plan. ii. Such policies and procedures shall take into account OEMs' recommendations for equipment maintenance, schedule for sewer system cleaning & inspections, schedule of major maintenance activities, contingency equipment & replacement inventories, and statutory maintenance requirements, where applicable. iii. These policies and procedures shall be reviewed and updated as necessary and be available for the OUR's review when requested.
6	Risk Management	i. Strategy/model to assess and mitigate potential risks to the sewerage system, which shall be addressed in the requested Framework/Action Plan.

Determination 2:

RBWC shall submit to the OUR:

(a) Quarterly and annual "Technical Reports covering the parameters and requirements set out under Schedule 2 of the respective Licences no later than fourteen (14) days after the end of each period

(b) Within three (3) months of the effective date of this Determination Notice, a Framework/Action Plan including requirements pertaining to operations, maintenance of the relevant facilities, network diagrams, and risk assessment.

(c) Within one (1) month of the effective date of this Determination Notice, a listing of all revenue-type water meters installed in each service area.

Public Consultation

6.1. In keeping with its practice and mandate, the OUR conducted a public consultation with customers of Runaway Bay Water Company Limited (RBWC) as part of its tariff review process. In observance of Government protocols to mitigate the spread of Covid-19 and agreement with RBWC customers, the consultation was held virtually (via Zoom) on Sunday, 2020 November 15. The consultation included residents of the two communities served by RBWC namely, Cardiff Hall in St. Ann and Caymanas Estates in St. Catherine. The public consultation provided an avenue through which RBWC customers were made aware of their service provider's requests and for the OUR to receive comments on the rate application as well as their quality of service experience.

6.2. In presenting the main points in its tariff application, RBWC informed attendees that it has requested a three percent (3%) increase in the monthly Service Charge and a volumetric water rate increase within the range of 3% - 10% for residential customers. The proposed increase for commercial customers is 20%. RBWC further noted that when compared with the main water and sewerage service provider, the National Water Commission, its proposed rates are about 23% less. RBWC also advised that the request for increased rates is necessary to align revenues with increased production costs, support the upgrading activities being undertaken as well as for the ongoing maintenance works.

HIGHLIGHTS OF CUSTOMERS' CONCERNS:

- **Water Quality**

6.3. The main concern raised by customers related to the need for significant improvements in the water quality before any consideration is given for a rate increase. Customers lamented the adverse impact of the high chlorine levels in the water on their piping fixtures and fittings. As a result, the residents advised that they have resorted to purchasing water for consumption and other domestic activities.

6.4. Customers also enquired about the possibility of being compensated when their piping equipment becomes calcified due to the water quality.

RBWC's Response

6.5. In response, RBWC advised that the substance complained of by customers is not chlorine but calcium carbonate, which is contained in the water source. RBWC further advised that a plan has been developed to address this issue, specifically at Caymanas Estate, however, they are awaiting the requisite approval for the funds to be allocated. RBWC also advised that consideration was given to using a water softening equipment, but the cost was prohibitive. It also pointed out that it would affect the taste of the water. RBWC said it is committed to exploring a suggestion made by residents to supply filters at a reasonable rate to its customers.

6.6. With regard to compensation, RBWC advised that it is not aware of any mechanism that requires a water and sewerage service provider to offer compensation in circumstances where

calcification occurs on customer's piping infrastructure. Accordingly, RBWC said it would not be offering compensation to customers affected by calcification.

6.7. The OUR remains cognizant that the level of calcium bicarbonate in the water supplied to Caymanas Estates by RBWC is a longstanding concern for the residents. Accordingly, in its 2015 Determination Notice titled: *Runaway Bay Water Company Limited (RBWC) – Water and Sewerage Rates for Runaway Bay & Caymanas Country Club Estate*, the OUR instructed RBWC to, inter alia, outline a plan to reduce the calcium levels over a specified time period.

6.8. The OUR has received and reviewed the plan submitted by RBWC, which essentially involves changing the existing location of the well from which the water that serves Caymanas Estate is sourced and pumped. RBWC advised that this relocation plan was recommended by the Consultant that was hired to assess and determine a solution for the issue of the high levels of calcium carbonate in the water for Caymanas Estate. However, while RBWC has advised that the plan has received the requisite internal approval, it is awaiting the allocation of funds from the relevant Government Ministry to undertake the necessary works.

- **Service Disruptions and Notification**

6.9. Customers complained about the increase in the disruption of their water supply with little to no notification from the provider. Queries were also made regarding the contingencies in place to operate the pump when there were power outages.

RBWC's Response

6.10. RBWC advised that the increase in service disruptions could be attributed to the adverse impact of the persistent recent rains. RBWC further advised that outside of significant weather related features and natural disaster, customers can expect a reduction in service disruptions as a generator has been installed to provide backup power supply to the pump at Caymanas Estates during power outages. RBWC also committed to providing notification about outages through its social media channels such as on *Twitter* and *Facebook*.

- **Disparity in Operations Costs between communities' services and the basis for an increase to Cardiff Hall customers**

6.11. Customers from Cardiff Hall, St. Ann, queried the reasonableness and basis for the rate increase request given that the financial statements indicate that the water and sewerage provider was in a financially healthy state, particularly for their area.

RBWC's Response

6.12. RBWC advised that it operates as a single entity and as such consolidates the resources for its operations. Additionally, RBWC pointed out that the financial status for both communities will differ since different type of services are offered. For instance, sewerage service is provided to Caymanas Estates and not to Cardiff Hall. Accordingly, customers in Caymanas Estates are also billed for sewerage services.

- **Customer Service Concerns**

6.13. Customers queried the timeline to resolve complaints and the service provider's responsiveness to specific requests.

RBWC's Response

6.14. RBWC advised that it is committed to improve its billing and customer care processes. It was aware of a specific issue which affected its response timeline to a few customers and this has since been addressed.

Quality of Service Standards and Performance Criteria

7.1. In accordance with its regulatory mandate and provisions of RBWC's licence, the Office has established Quality of Service (QOS) standards to be attained by the water and sewerage service provider. These QOS standards comprise the Overall Standards and the Guaranteed Standards.

Overall Standards

7.2. The Overall Standards represent several general performance criteria to be met by RBWC but which will not result in compensatory payments being made to customers in the event of a breach. However, RBWC will be required to submit quarterly reports on its performance against these targets.

Amendment to Overall Standard D – "Planned and Unplanned Interruptions"

7.3. As part of this tariff review, and in keeping with its right to introduce additional or make amendments to the existing ones from time to time, the OUR has reviewed the Overall Standards as set out in Schedule 2 of the Licence. Consequent on its review, the OUR has determined that the Overall Standards will continue to apply with exception to Overall Standard D "Planned and Unplanned Interruptions". The changes effected to Overall Standard D is intended to add specificity with regard to the timeline for advance notice of planned interruptions of service, which was one of the issues raised by customers during the consultation.

7.4. Overall Standard D shall be replaced as follows:

D. Planned and Unplanned Interruptions

At least 24 hours' notice shall be given for at least ninety percent (90%) of planned service interruptions.

At least ninety percent (90%) of unplanned service interruptions should be restored within the time period communicated by RBWC to customers. RBWC shall keep records of all planned and unplanned interruptions detailing: dates, times, affected area, number of affected customers and notice provided to them.

Guaranteed Standards

7.5. The Guaranteed Standards prescribe service levels such as: Service Connection, Billing, Complaint Investigation, Metering, Disconnection, Reconnection and Compensation Payment, to be met by RBWC. Any failure by RBWC to adhere to any individual Guaranteed Standard can result in compensatory payment to the affected customer.

7.6. In keeping with its power to introduce additional or vary the Guaranteed Standards from time to time, the OUR has also reviewed the Guaranteed Standards as set out in Schedule 2 of the Licence. These Guaranteed Standards are now substantially restated, but six (6) have been

refined to improve clarity in their descriptions. The Guaranteed Standards to be met by RBWC, are outlined in Table 7.1 below.

Table 7.1: Guaranteed Standards

Code	Guaranteed Standard	Mode of Compensation
GS1 – Connection of New Customers	RBWC is required to connect all new customers with working meters, where water supply is available at the property boundary, within three (3) working days after signing the contract for connection.	Automatic
GS2 – Issue of First Bill	RBWC must issue (print and mail/deliver) a bill to a customer based on a meter reading within thirty (30) working days after the account is opened.	Claim
GS3(a) – Response to complaints - Acknowledgements	RBWC must acknowledge written customer complaints within three (3) working days of receipt.	Claim
GS3(b) – Response to Complaints - Investigations	RBWC must, within fifteen (15) working days of receipt of a complaint, complete the investigation and inform the customer of the results.	Claim
GS3(c) – Investigations involving 3rd party	RBWC must, within thirty (30) working days, complete investigations into a complaint involving a 3rd party.	Claim

Code	Guaranteed Standard	Mode of Compensation
GS4 (a)– Wrongful Disconnection	RBWC shall not disconnect the service of an account which is neither in arrears nor is the subject of an investigation internally or by the OUR.	Automatic
GS4 (b) – Reconnection after Wrongful Disconnection	RBWC must, within twelve (12) hours, reconnect any supply that the company wrongfully disconnects and a written apology extended.	Automatic
GS5 – Repair or Replacement of Faulty Meter	RBWC must, within ten (10) working days after detection, or after being informed of a meter defect, repair or replace any malfunctioning meter.	Automatic
GS6 – Meter Readings	RBWC must render a bill based on a meter reading each month.	Automatic
GS7 – Reconnection after Payment of Overdue Amount	RBWC must, within twenty-four (24) hours of receipt of all applicable payments (reconnection fee etc.), reconnect customers disconnected for any outstanding balance.	Automatic
GS8 – Payment of Compensation	RBWC shall credit customers' accounts within one (1) billing period after a breach	Automatic

Code	Guaranteed Standard	Mode of Compensation
	of any of the prescribed Guaranteed Standards. For the avoidance of doubt, if RBWC does not compensate the customer within the specified time, this will result in another breach. Where applicable, customer must submit claims within one hundred and twenty (120) days after the breach.	

Guaranteed Standards Compensation

7.7. As is currently presented in Schedule 2 of the Licence, the Office confirms that the compensation mechanism for a breach of a Guaranteed Standard shall include "Claim" and "Automatic Compensation" as the prescribed mode of compensation. In the case of breaches that shall be compensated by way of a claim, such claims shall be made by submission of a written claim by or on behalf of the affected customer on a claim form to be developed by RBWC and approved by the OUR (the "GS claim form"). Where applicable, customers must submit claims within one hundred and twenty (120) days after the date of the occurrence of the breach.

7.8. RBWC will be required to, within three (3) months of the effective date of this Determination Notice, develop its GS claim form for submission and approval of the OUR. Following approval, RBWC will be required to make the claim forms accessible to its customers, such as placing the forms on the company's website. Until the aforementioned claim form has been approved by the OUR, customers shall be permitted to submit their claims in writing to RBWC within one hundred and twenty (120) days after the date of the occurrence of the breach.

7.9. For breaches that attract automatic compensation, customers are not required to submit a claim form. Instead, RBWC will verify the occurrence of the identified or reported breach and apply the applicable credit to the affected customer's account.

7.10. The Office has further determined that, except for the standards identified for *Special Compensation*, compensation for breach of a Guaranteed Standard will remain at four (4) times the applicable service charge.

Special Compensation

7.11. Special *Compensation* is determined for breaches in relation to Reconnection after payment of overdue amounts, Wrongful Disconnection and Reconnection after wrongful disconnection, which will attract compensation of six (6) times the applicable service charge.

7.12. RBWC shall, within thirty (30) working days of the end of the reporting period, submit quarterly reports to the Office on its performance against the Guaranteed Standards. These reports shall indicate the number of breaches committed against each standard and the potential and actual payout for each breach.

7.13. RBWC must submit on a quarterly basis, its water quality test reports, to the OUR, within thirty (30) working days of the end of the reporting period. These reports shall include information on the calcium bicarbonate levels in the water supplied to Caymanas Estate and Cardiff Hall.

7.14. Additionally, the OUR has decided not to introduce any new Guaranteed Standard or convert existing standards to automatic compensation for this tariff review. This is due to the OUR's future intention to undertake a comprehensive review of the Guaranteed Standards Scheme for all small water and/or sewerage providers. The review will be done through a consultative process from which decisions regarding any changes to the Guaranteed Standards scheme will be made.

Issue for Policy Development

7.15. The Office is of the view that some areas of service delivery are more appropriately addressed through the development of policies. Accordingly, RBWC, under the guidance of the OUR, is required to develop the following policies for implementation:

Operations and Maintenance Manual

7.16. Within three (3) months of this Determination Notice, RBWC must develop and submit to the OUR for approval, an Operations and Maintenance Manual (OMM). The OMM should include information on RBWC's maintenance schedule, procedures involved with the disconnection and reconnection of supplies and any other procedure critical to the efficient delivery of a safe, adequate and reliable water supply system.

Determination 3:

The Office has determined that RBWC shall:

a) Adhere to the revised Overall Standard D as specified in paragraph 7.4 above, the Guaranteed Standards stipulated in Table 7.1 and all the other standards in its Licences and service contracts

b) Within thirty (30) working days of the end of the reporting period, submit quarterly reports to the Office on its performance against the Guaranteed Standards. These reports shall indicate the number of breaches committed against each standard and the potential and actual payout for each breach

c) Compensate for breaches of:

   i. Wrongful Disconnection, Reconnection after Wrongful Disconnection and Reconnection after Payment of Overdue Amounts will attract Special Compensation equivalent to six (6) times the applicable Service Charge; and

   ii. All other Guaranteed Standards will remain at four (4) times the applicable Service Charge

d) Within three (3) months of the effective date of this Determination Notice, develop its GS claim form for submission and approval of the OUR

e) Within three (3) months of this Determination Notice, RBWC shall develop an Operations and Maintenance Manual (OMM) and submit to the OUR for approval,