

Office of Utilities Regulation

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# **Runaway Bay Water Company Limited**

**BULK WATER RATE TO NWC**

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## **Determination Notice**

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**OFFICE OF UTILITIES REGULATION**

2018 January 10

**DOCUMENT TITLE AND APPROVAL PAGE**

**1. DOCUMENT NUMBER: 2018/WAS/001/DET.001**

**2. DOCUMENT TITLE: Runaway Bay Water Company Limited Bulk Water Rate to NWC: Determination Notice**

**3. PURPOSE OF DOCUMENT**

This document sets out the Office's decision on the rates to be charged by the Runaway Bay Water Company Limited for bulk water services to NWC.

**4. ANTECEDENT PUBLICATIONS**

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**5. Approval**

This document is approved by the Office of Utilities Regulation and the decisions therein becomes effective as of 2018 February 1

On behalf of the Office:



.....  
Ansord E. Hewitt  
**Director-General**

**2018 January 10**

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## Abbreviations, Acronyms and Definitions

2004 Licence	-	Runaway Bay Water Company Limited Water Supply Licence, 2004 dated 2005 January 31
2008 Contract	-	Bulk water supply contract between Runaway Bay Water Company Limited and the National Water Commission dated 2008 March 17
BOJ	-	Bank of Jamaica
CAPM	-	Capital Asset Pricing Model
Commission/NWC	-	National Water Commission
CPI	-	Consumer Price Index
CRP	-	Country Risk Premium
Government	-	Government of Jamaica
M	-	Million
m <sup>3</sup>	-	Cubic Meter
MMRP	-	Mature Market Risk Premium
NBV	-	Net Book Value
O&M	-	Operating and Maintenance
OUR/Office	-	Office of Utilities Regulation
PAM	-	Price Adjustment Mechanism
RBWCL	-	Runaway Bay Water Company Limited
UDC	-	Urban Development Corporation
U.S.	-	United States of America
WACC	-	Weighted Average Cost of Capital
WTP	-	Water Treatment Plant

## Executive Summary

### The Proposed Increase

On 2016, May 30 the Runaway Bay Water Company Limited (RBWCL) submitted an application to the Office of Utilities Regulation (OUR/Office) seeking a non-objection decision for a forty-five percent (45%) increase in bulk water rate to the National Water Commission (NWC).

In its application, RBWCL argued that at the current price of \$34.39 per cubic metres (m<sup>3</sup>), the company was operating at a loss of approximately \$8.53M per annum (loss margin of 30.86%) at its Mount Edgecombe Water Treatment Plant (WTP). RBWCL asserted that if the requested increase were to be approved by the OUR, the company would be in a position to attain an annual profit margin of \$4M or 10%. A forty-five percent (45%) increase in the rate would see the price moving from \$34.39 to \$50 per m<sup>3</sup>.

Table 1 below shows, RBWCL's budgeted costs for the fiscal year 2016/2017 (current situation) the projected net profit margins if approved rates were to be increased under two (2) scenarios, thirty percent (30%) and forty-five percent (45%). Scenarios 2 and 3 reflect what RBWCL considers to be its break-even and proposed case respectively.

**Table 1: Analysis of proposed rate increase to NWC under different Scenarios**

Details	Unit	Current Scenario 1	Break-even Scenario 2	Proposed Scenario 3
Production	Cubic Meter <sup>1</sup>	800,800	800,800	800,800
Price	\$/Cubic Meter	34.39	\$ 45.00	\$ 50.00
Total Sales	\$'Million	\$ 27.51	\$ 36.00	\$ 40.00
Direct Production Cost	\$'Million	\$22.50	\$22.50	\$22.50
Contribution	\$'Million	\$ 5.01	\$ 13.50	\$ 17.50
Overheads	\$'Million	\$ 13.50	\$ 13.50	\$ 13.50
Profit/(loss)	\$'Million	\$ (8.49)	\$ -	\$ 4.00
Profit(loss)/Sales Ratio	\$'Million	-30.86%	0.00%	10.00%

*Source: RBWCL Tariff Application for an increase in potable water bulk rate to the NWC*

### Analysis of RBWCL Submission

In its analysis of RBWCL Rate Submission the OUR applied the 'Rate of Return' methodology in keeping with the procedure outlined in the 2004 Licence. The process involved:

- The establishment of the test year (i.e. 2015/2016);
- The determination of the rate base (appropriately adjusted) to reflect net investments; and
- The determination of the revenue requirement.

<sup>1</sup> One Cubic Meter (m<sup>3</sup>) = 1,000 Litres

## **Operating, Administrative and Depreciation Expenses**

The main challenge the OUR faced in the rate review exercise was that of extracting the cost related specifically to the Mount Edgecombe (WTP) from the rest of RBWCL operations, given that the company also has water production and distribution operations at Cardiff Hall and Caymanas Estates. In its submission, the proposed cost presented by RBWCL for its Mount Edgecombe WTP was, in most part, derived from extractions based on managerial discretion and sales revenue allocation. The OUR, however, took the view that it was important that assignment of cost to the Mount Edgecombe plant be aligned to key cost drivers, which include production volumes, number of workers and sales revenues. Based on this approach, the OUR analysis determined that \$16.86M of the \$17.02M operating and maintenance cost requested is reasonable. Applying the same approach, the OUR concluded that the company's test year administrative cost should be \$11.26M instead of the \$13.20M proposed by RBWCL.

The OUR further assessed that the depreciation expense associated with the Mount Edgecombe WTP represents 53.2% of RBWCL's overall depreciation expense of \$1.07M. Consequently, the depreciation expense was set at \$0.57M for the Mount Edgecombe WTP.

## **Return on investment**

Consistent with the methodology delineated in RBWCL's licence the OUR calculated the company's return on investment based through the application of the Weighted Average Cost of Capital (WACC) to the company's rate base. However, because the company has no long term debt on its books, in keeping with a practice accepted in regulations, the OUR performed the calculation by using a capital structure that would be deemed desirable in such an industry. Accordingly, the WACC was calculated based on a gearing ratio of 50% debt and 50% equity. Additionally, the cost of debt was estimated to be 6.4% which was derived from benchmark data from the National Water Commission (NWC).

Based on a cost of equity of 11.45% and the cost of debt of 6.4% the pre-tax WACC was determined to be 11.79%. Given that the rate base for the Mount Edgecombe plant was assessed to be \$17.43M the pre-tax return on investment was computed to be \$2.05M.

## **Determinations**

Given the OUR's analysis of the RBWCL Rate Submission, the Office has determined the following:

- The total revenue requirement for the Mount Edgecombe WTP shall be \$30.75M.
- The volumetric rate is to be increased from \$34.39 per m<sup>3</sup> to \$38.15 per m<sup>3</sup>.
- The service charge of \$10,196.85 for a 6" meter remains unchanged.

## Introduction

The Runaway Bay Water Company Limited (RBWCL) is a wholly owned subsidiary of the Urban Development Corporation (UDC). The company started its operations providing potable water for the developers of Cardiff Hall Estate and Jewels Runaway Bay under its Runaway Bay Water Company Limited Water Supply Licence, 2004 (the 2004 Licence). Since then, other communities have been added to its supply chain based on production from the company's Cardiff Hall and Mount Edgecombe wells. In addition, the company was granted two licences in 2014, to operate a potable water and sewerage treatment system in Caymanas Estate, St. Catherine.

Under its 2004 Licence, RBWCL currently extracts, treats and sells approximately six thousand (6,000) cubic meters (m<sup>3</sup>) per day or 2.3 million cubic meters per annum of potable water from its two (2) water treatment plants (WTPs) in Runaway Bay, St. Ann. Of this amount, approximately twenty percent (20%) is sold directly to four hundred (400) residential customers and four (4) commercial customers. The remaining eighty percent (80%) is sold as bulk water to the National Water Commission (NWC) for distribution to end users in adjacent communities.

The company's Caymanas Estate operation currently extracts, treats and distributes 1,200 m<sup>3</sup> of potable water per day to approximately six hundred and eighty (680) residential customers in the St. Catherine community.

The 2004 Licence provides in Schedule 2, section F pertaining to the Provision of Prescribed Services to other Utilities that RBWCL is “...entitled to provide any combination of the services specified in the Licensed Business to any other licenced service provider or developer by way of a connection or connections to the Licensee's infrastructure. In such cases the parties may enter into negotiation/commercial agreements. Before concluding such agreements, the Licensee must receive the approval of the Office. Specifically, and for the avoidance of doubt, the rates and charges to be applied under this section by the Licensee must be approved by the Office”.

RBWCL entered into an agreement with NWC on 2008 March 17 for the supply of bulk water to NWC at the rate of \$15.39 per m<sup>3</sup> (or \$70 per thousand imperial gallons). The agreement also provides for monthly adjustments to the RBWCL rates based on NWC's Price Adjustment Mechanism (PAM) and permits a rate reviews if the “cumulative percentage increase in Consumer Price Index is equal to or greater than 15%”. Over the years, RBWCL has applied the PAM to its rate and in 2015 its rates were adjusted from \$29.23 per m<sup>3</sup> to \$34.49 per m<sup>3</sup> based on what appears to be an understanding between the parties in the contract.

On 2016 April 6 the UDC, by way of a letter to the NWC, signalled its desire to secure an increase in the wholesale rates for its subsidiary, RBWCL, in relation to the water supplied to the NWC. The UDC argued that RBWCL was incurring financial losses, since the cost associated with its operations was fifty-six percent (56%) above the revenues it received based on its current rate of



\$34.39 per m<sup>3</sup> charged to the NWC. Further, UDC contended that a rate review was due since the tariff regime had been in effect since 2008. Consequently, it was requesting a seventy-seven percent (77%) increase in the rates which would see the rate move to \$60.99 per m<sup>3</sup>. In response, the NWC suggested to RBWCL that the company make a formal request to the OUR for a rate assessment.

In light of this, the RBWCL submitted a request to the OUR on 2016 May 30 asking the regulator's non-objection to a forty-five percent (45%) increase in its wholesale rate to the NWC. Notably, the increase requested by RBWCL was less than the seventy-seven percent (77%) rate hike requested by the UDC in its submission to the NWC.

Following discussions between the RBWCL and the OUR with respect to the procedure that would be applied in the rate review process, the OUR requested that additional information on the company's costs was necessary to make an informed decision on the submission. The company submitted additional data in 2017 April that facilitated the initiation of the current rate review. Further, RBWCL submitted its 2015/2016 audited financial statements and corrected water production data, which was critical to the OUR's analysis, in 2017 September and November respectively.

This Determination Notice outlines the OUR's analyses of RBWCL's application, with particular attention paid to the appropriateness and fairness of the costs incurred by RBWCL to provide treated bulk water to the NWC from its Mount Edgecombe Water Treatment Plant.

### **Allowed Rate Adjustments**

Based on the contract between the NWC and the RBWCL, the latter is allowed two types of rate adjustments. The first type of adjustment relates to an overall rate review. Such a rate review according to the NWC-RBWCL contract is triggered by a "*cumulative percentage increase in Consumer Price Index equal to or greater than 15%. Any increase in charges shall be subject to the approval of the OUR*". In this respect, even though both parties may agree on the level of the rate adjustment, the OUR has a responsibility to ensure that:

- The cumulative fifteen percent (15%) Consumer Price Index (CPI) threshold has been reached or exceeded; and
- The price increase agreed on is reasonable.

The second type of rate adjustment relates to changes to the rates that are derived from a PAM employed by the NWC. The PAM's construct is a feature of NWC's tariff to its customers that has been approved by the OUR, which allows the NWC to automatically adjust its prices on a monthly basis to reflect movements in inflation, the exchange rate and the NWC's electricity bill. In the

application of the PAM, RBWCL is allowed to apply the same adjustment factor used by NWC to alter the rate on its monthly bills to NWC.

According to the 2004 Licence, the rate review process involves the following:

- a) The establishment of the test year;
- b) The determination of the rate base (appropriately adjusted) to reflect net investments; and
- c) The determination of the revenue requirement.

The test year used in this analysis represents the last set of audited financial statements presented by RBWCL, that is the 2015/2016 audited financials. To establish the test year figures the 2015/2016 outturn was adjusted to reflect normally expected operating conditions, revenues and costs.

The rate base used in the calculation is the total of all long term investments deemed to be made by RBWCL at its Mount Edgecombe Water Treatment Plant, net of accumulated depreciation. This includes buildings, water treatment plants, pipes, office furniture etc. The rate base also includes adjustments for working capital and deferred taxes.

The revenue requirement applicable to the review process is predicated on the 'Rate of Return' methodology. Under this approach, the utility may be allowed to recover all prudently incurred costs plus a rate of return on its investment.

Mathematically the revenue requirement may be expressed as:

$$\text{Revenue Requirement} = \text{O\&M} + \text{A\&G} + \text{T} + \text{D} + (\text{WACC}) * \text{RB}$$

Where:

O&M = Operating and Maintenance Expenses;

A&G = Administrative and General Expenses

T = Taxes

D = Depreciation

WACC = Weighted Average Cost of Capital (capital structure)

RB = Rate Base

## 1.0 Legal Framework

The OUR is a multi-sector utility regulator established pursuant to the OUR Act, to regulate the provision of various prescribed utility services in Jamaica. The supply and distribution of water is identified as a prescribed utility service in the First Schedule to the OUR Act. Section 4(1)(a) of the OUR Act, indicates that it is a function of the OUR to “*regulate the provision of prescribed utility services by licensees or specified organizations*”.

Section 4(4) of the OUR Act expressly provides for the authority of the OUR to determine the rates charged for the provision of a prescribed service. The 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.”*

The 2004 Licence was issued pursuant to the provisions of the OUR Act and, authorises RBWCL to provide the prescribed services of water supply and distribution. The company and its charges for services provided under the authority of the 2004 Licence are therefore respectively subject to regulation and approval of the OUR.

Clause 8 of the 2004 Licence provides as follows:

*The Licensee in carrying out the Licensed Business shall be subject to regulation by the Office pursuant to the OUR Act and any other applicable Act and all regulations and rules made pursuant thereto.*

The 2004 Licence also contains provisions at clause 18 and Schedule 3 regarding the OUR’s regulation of RBWCL’s rates and tariffs including the method by which they are reviewed and the matters to be taken into account. Clause 18(2) for example indicates that:

*“The rates to be charged by the Licensee in respect of the prescribed utility service shall be subject to such limitation as may be imposed from time to time by the Office.”*

Extracts from Schedule 3 of the 2004 Licence indicate the following:

*“The rates for the supply of services by the Licensed Business shall be set such that provides 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”.*

*“...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 interest 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... “*

The Licensee is permitted to apply to the OUR for a tariff review as needed, but no more frequently than once in every two years. Schedule 3 of the 2004 Licence states:

*“At such intervals as the Licensee may determine, but not more often than once in every two 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.”*

It also noted that the 2008 Contract between RBWCL and NWC makes provision for conditions that trigger a rate adjustment. These include automatic adjustments to the monthly service charge that mirror the PAM movements in NWC’s rates to its customers, as well as adjustments that may be requested because of certain changes in the CPI. In particular clauses 2(ii) and (iii) of the 2008 Contract state:

*“2. Mutual Agreement*

*The parties hereto have mutually agreed and hereby agrees as follows:*

...

(ii) *Monthly adjustments for water and meter charges shall be determined by the Price Adjustment Mechanism.*

(iii) *A cumulative percentage increase in the Consumer Price Index equal to or greater than 15% shall trigger a rate review. Any increase in charges shall be subject to the approval of the O.U.R.”*

## 2.0 RBWCL Rate Request

### 2.1 Rate Scenarios

RBWCL in its application to the OUR for a rate review requested a forty-five percent (45%) rate increase. In making its case, the company presented three (3) scenarios (see Table 2 below):

- *Scenario 1*: reflects RBWCL’s perspective of its current financial situation;
- *Scenario 2*: depicts what RBWCL considered to be its break even position (i.e. rate increase of 30%); and
- *Scenario 3*: portrays RBWCL desired financial position which it argues would require a 45% increase in rates.

In all three (3) scenarios RBWCL assumed its annual water production to be 800.8 million litres per year and its direct cost of production and overheads to be \$22.50M and \$13.5M respectively.

**Table 2: Analysis of Proposed Rate Adjustment Scenarios**

Details	Unit	Scenario 1	Scenario 2	Scenario 3
Production	Cubic Meter <sup>2</sup>	800,800	800,800	800,800
Price	\$/Cubic Meter	34.39	\$ 45.00	\$ 50.00
Total Sales	\$’Million	\$ 27.51	\$ 36.00	\$ 40.00
Direct Production Cost	\$’Million	\$22.50	\$22.50	\$22.50
Contribution	\$’Million	\$ 5.01	\$ 13.50	\$ 17.50
Overheads	\$’Million	\$ 13.50	\$ 13.50	\$ 13.50
Profit	\$’Million	\$ (8.49)	\$ -	\$ 4.00
Profit/Sales Ratio	\$’Million	-30.86%	0.00%	10.00%

*Source: RBWCL Tariff Application for an increase in potable water bulk rate to the NWC*

#### 2.1.1 Scenario 1: Current Situation

If the current rate remains at \$34.39 per m<sup>3</sup> the company’s analysis suggested that the direct production costs and sales revenue would be \$22.50M, and \$27.51M respectively. This means that the annual contribution would be \$5.01M. However, when the total overhead costs of \$13.50M is taken into account this would result in a net loss of \$8.49M annually. Hence, RBWCL argued that this position is unsustainable.

#### 2.1.2 Scenario 2: 30% Increase in Rates (Breakeven Position)

If there is a thirty percent (30%) increase in the rates charged to NWC, this would lead to an increase in annual sales revenue from \$27.51M to \$36.00M. In its analysis, RBWCL assumed that direct production cost remains constant at \$22.50M. This increase in sales revenue would see contribution increasing from \$5.01M to \$13.50M per annum which would translate to a net profit

<sup>2</sup> One Cubic Meter (m<sup>3</sup>) = 1,000 Litres

of zero, since by RBWCL's calculations, its annual overhead costs is fixed at \$13.50M. If this scenario is to be realised the company would only be in a breakeven position.

### **2.1.3 Scenario 3: Rate Increase of 45%**

However, if the company's proposed rate hike of forty-five percent (45%) is granted, this will result in sales revenue increasing from \$12.49M annually to \$40.0M. If direct costs and overhead costs remain constant, the company's analysis suggested that it would realise a contribution of \$17.5M and a net profit of \$4.0M annually. In order to achieve this result, RBWCL indicated that the current rate per cubic meter would have to be increased to \$50.

## **2.2 Fixed Charge**

In addition to its proposal that its bulk water rate be increased to \$50/m<sup>3</sup>, RBWCL has requested that its fixed monthly service charge of \$10,196 for 6" meter per month be maintained going forward.

## **2.3 Data Submitted**

RBWCL in its rate submission provided its operations budget for the fiscal year 2016/2017, in which it distinguished between its direct production costs and its administrative costs. RBWCL identified administrative costs to be all expenses other than those directly traceable to the production of the bulk water. In its financials these are consolidated costs, which it apportioned between its Mount Edgecombe and Cardiff Hall operations on the basis of sales revenue received from each distinct operation.

The company provided data on its fixed assets (valued at replacement cost) for the fiscal year 2016/2017. The data also categorised the assets on the basis of its various facilities (i.e. Cardiff Hall, Mount Edgecombe and Caymanas).

In addition, the company submitted audited financials for the years 2014/2015 and 2015/2016, along with the unaudited financials for 2016/2017. In its presentation of audited data, the company attempted to apportion its shared costs between its Mount Edgecombe and Cardiff Hall operations.

### 3.0 OUR's Analysis of RBWCL's Proposal

In the OUR's review and analysis of RBWCL's rate submission, the following questions were considered:

- Is a rate review permissible based on the 2004 Licence provisions and 2008 Contract?
- What level of cost recovery should be considered to be efficient from a regulatory perspective?
- What rate of return on assets should be considered reasonable given the company's investments?

#### 3.1 Is a Rate Review Permissible in the circumstances?

In 2014 April, RBWCL applied to the OUR for a rate review on both its retail and bulk water tariffs. The OUR in its 2015 August Determination on RBWCL's tariff application (Runaway Bay Water Company Limited (RBWC) – Water and Sewerage Rates for Runaway Bay & Caymanas Country Club Estate Document No. 2015/WAS/004/DET.002) approved rates for the retail component of the company's business, but made no ruling on the bulk water tariff chargeable to NWC. At that time, the OUR indicated that the matter should be settled between the parties by way of contract (i.e. NWC and RBWCL). Although RBWCL asserts in its current rate submission that it has not had a rate increase since 2008, this appears not to be the case, since from all indications the bulk water rate of \$34.49/m<sup>3</sup> submitted in RBWCL's 2015 tariff review application has been applied to NWC's bills (see Table 3) at least since 2016.

**Table 3: Comparison of RBWCL Cumulative Rate Increase vs. Cumulative Inflation**

Year	CPI	RBWCL Rates (\$/m <sup>3</sup> )	Cumulative Inflation	Cumulative Rate Increase
2008	122.94	15.39	0%	0%
2009	138.22	18.95	12%	23%
2010	156.63	20.58	27%	34%
2011	168.92	24.87	37%	62%
2012	181.17	27.25	47%	77%
2013	197.72	29.23	61%	90%
2014	214.21	29.23	74%	90%
2015	222.69	29.23	81%	90%
2016	229.29	34.49	87%	124%
2017	238.66	34.49	94%	124%

Source: RBWCL data submission 2017

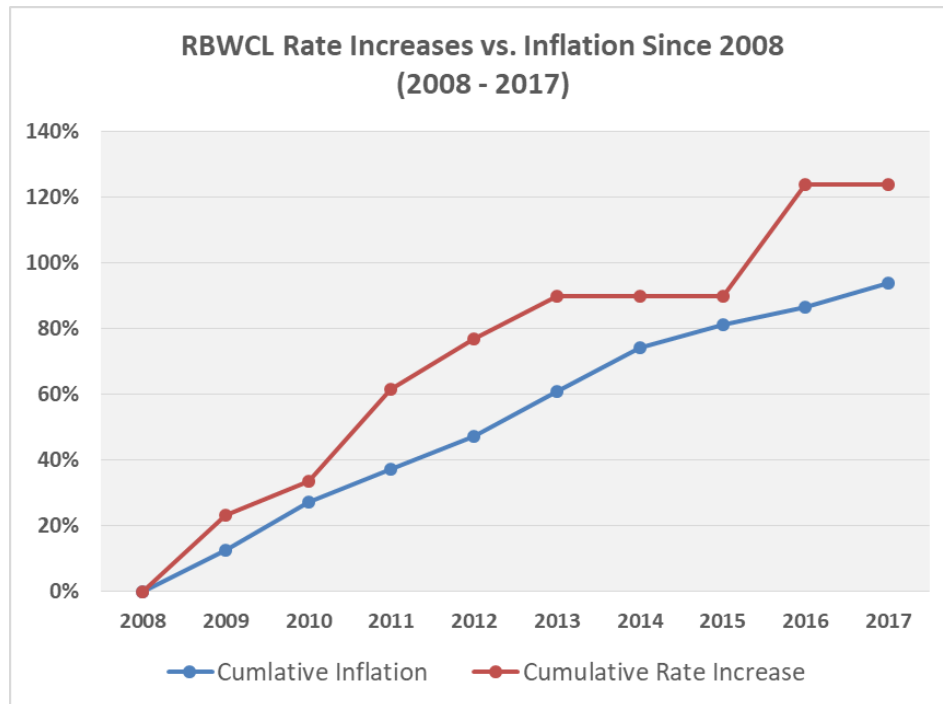
As indicated earlier, the 2004 Licence permits RBWCL to request a rate review at such intervals as it deems fit, provided this is done no more frequently than once every two years. The last such

request was made by RBWCL just over two years prior to the current application. It is correct to say however, that the OUR has not formally reviewed and approved the bulk water rate chargeable by RBWCL since 2008. In light of this, a review of the bulk water rates is clearly permissible under the 2004 Licence at this time.

As previously noted, the 2008 Contract also stipulates that a cumulative percentage increase in the CPI equal to or greater than fifteen percent (15%) will trigger a rate review.

The OUR’s analysis of cumulative inflation over the period 2008 March to 2017 March shows an increase in CPI of ninety-four percent (94%). On the other hand, RBWCL has seen a one hundred and twenty-four percent (124%) increase in its bulk rate over the same period (see Figure 1). This suggests that the rate increases experienced by the company has outstripped inflation. However, a strict application of the fifteen percent (15%) CPI criterion would suggest that the OUR should conduct a formal review of RBWCL’s tariff charged under the 2008 Contract. Following this provision of the contract, a rate review is also permissible at this point.

**Figure 1: RBWCL Rate Increase Vs Inflation 2008-2017**



### 3.2 Cost Recovery & Allocation

In the rate making process the utility company is allowed to recover all prudently incurred operating and capital expenditure through the tariff that is charged to its customers. In evaluating the costs proposed by RBWCL, the OUR used the company’s 2015/2016 consolidated audited



accounts to arrive at its determination on costs to be recovered. Since the bulk water contract relates specifically to the Mount Edgecombe operation from which plant the bulk water is supplied to the NWC, it was necessary to disaggregate and apportion these based on relevant cost drivers to determine a specific estimate of cost of bulk water production at the Mount Edgecombe operation.

As previously indicated RBWCL attempted to allocate costs to its Mount Edgecombe operation on the basis of sales revenue. However, the OUR took the view that sales revenue is not an appropriate allocator for most of its costs. For example, the OUR reasoned that the number of workers at the Mount Edgecombe WTP is a better allocator of other staff costs and statutory contributions, than sales revenue.

The OUR therefore asked RBWCL to submit data on four (4) key cost drivers for its Mount Edgecombe, Cardiff Hall, and Caymanas operations to facilitate the allocation of joint costs in the determination of the bulk rates attributable to water supplied from the Mount Edgecombe WTP. The OUR accepted the costs drivers submitted by RBWCL, these costs drivers were used by the OUR to derive applicable allocation factors that were used to separate RBWCL total consolidated costs. Table four (4) shows the cost drivers and allocation factors applied to RBWCL's total costs.

**Table 4: Cost Drivers & Tariff Allocation Factors**

<b>Cost Driver</b>	<b>Unit</b>	<b>Total</b>	<b>Mount Edgecombe</b>	<b>Cardiff Hall</b>	<b>Caymanas Estates</b>	<b>Tariff Allocation Factor</b>
<b>Water production</b>	m3	2,332,991	803,160	1,426,480	103,351	<b>34.43%</b>
<b>Water Sales</b>	m3	2,234,187	803,160	1,327,676	103,351	<b>35.95%</b>
<b>Number of workers</b>	-	19	5	8	6	<b>26.32%</b>
<b>Sales Revenues</b>	J\$	170,068,700	25,223,000	123,311,000	21,534,000	<b>14.83%</b>

*Source: RBWCL Tariff Application for an increase in potable water bulk rate to the NWC*

It is also worth noting that RBWCL in its application classified its expenses into production and administrative costs. Consistent with the categories outlined in the company's 2004 Licence the OUR reclassified the expenses into (1) operation and maintenance costs; and (2) administrative costs.

Additionally, in keeping with the methodology delineated in Schedule 3 of the 2004 Licence, the allowed costs to be recovered was based on the test year concept. The test year used in the analysis was the fiscal year 2015/2016 as it represents the year in which the last audited financial statements were completed for RBWCL. Details of the analysis of RBWCL's costs and how they were assigned to the Mount. Edgecome operation are discussed below.

### 3.2.1 Operating and Maintenance Costs

As previously indicated RBWCL allocated its joint costs on the basis of its managerial assessment and sales revenues. However, the OUR took the view that sales revenue is not the most appropriate allocator for some cost items and the managerial allocation employed by the company was less than transparent. In light of this, the OUR decided to allocate the company's joint cost on the basis of the cost allocators identified in Table 4 above.

Table 5 below shows direct operating and maintenance costs incurred by RBWCL, along with the cost drivers and allocation factors used by the OUR to apportion these costs to its Mount Edgecombe operation.

**Table 5: Allocation of Operating Costs**

Cost Item	RBWCL Proposal Mount Edgecombe (\$'000)	OUR Approved				Difference (\$'000)
		Test Year Consolidated Total (\$'000)	Cost Driver	Allocation Factor	Mt. Edgecombe Cost (\$'000)	
Salaries & Wages	6,791	23,688	Direct Allocation	N/A	6,791	0
Other Staff Costs	8	2,533	No. of Workers	26.32%	667	659
Statutory Contribution	0	2,600	No. of Workers	26.32%	684	684
Other Direct Costs	873	1,746	No. of workers	26.32%	459	(414)
Electricity	8,449	18,557	Water produced	34.43%	6,388	(2,061)
Repair and Maintenance	658	4,430	Water produced	34.43%	1,525	867
Motor Vehicle Expense	240	2,330	Sales Revenue	14.83%	346	106
<b>Total O&amp;M Costs</b>	<b>17,019</b>	<b>77,860</b>			<b>16,860</b>	<b>(159)</b>

*Source: RBWCL audited 2015/2016 P&L Statement*

### Analysis of Operating and Maintenance Cost

#### Direct Salaries/Wages and Related Expenses

According to RBWCL Salaries/Wages and Related cost items cover the emolument of five (5) employees engaged on three (3) eight-hour shifts to monitor the operation at the WTP. These costs are direct expenses which the OUR accepts as being consistent with the annual wages and salaries as presented in the company's financial audit. **The approved amount for Salaries and Wages is therefore \$6,791,000.**

### Other Staff Costs and Statutory Contribution

The two cost categories – Other Staff Costs and Statutory Contribution - represent the costs of employee benefits obligations/pension, payroll taxes, staff welfare etc. RBWCL proposed an allocation of \$8,000 for these two (2) categories of cost, based on its managerial accounting assessment. Given, that the expenses in these cost categories are related to staff expenses, it suggests that they would be functionally related to the number of workers. In this regard, the OUR took the position that it is more transparent and logical that these cost be apportioned on the basis of the percentage of Mount Edgecombe plant workers (26.32%) in the total number of workers employed by RBWCL. **Consequently, the total cost approved for the Other Staff Costs and Statutory Contribution categories is \$1,351,000.**

### Other Direct Costs

The company proposed that Other Direct Costs should be set at \$873,000. This category includes expenses such as water testing costs, insurance cost and security costs. The OUR in its analysis of this cost category was unclear as to how RBWCL arrived at the allocation for Mount Edgecombe, but reasoned that since they are predominately labour based the allocation should be done using the share of the total labour force. The total consolidated costs of \$1,746,000 has therefore been reallocated using a 26.32% factor derived from the share of Mount Edgecombe workers in the overall workforce. **As such, the Office has approved \$459,000 for Other Direct Costs category at the Mount Edgecombe WTP.**

### Electricity

The RBWCL proposed that electricity costs be set at \$8,449,000 for the Mount Edgecombe WTP. Once again RBWCL's attribution was based on its own managerial assessment of the total annual electricity cost of \$18,557,000 in the 2015/2016 audited financial statement. The OUR, however, apportioned electricity cost to the Mount Edgecombe on the basis of the volume of water produced, since arguably there ought to be a strong causal relationship between water production and electricity usage. Furthermore, it is on the face of it a more straightforward and transparent way of making the allocation. In light of this, **the OUR has approved an electricity cost of \$6,388,370.**

### Repair and Maintenance Cost

Given that maintenance activities are essentially directed at keeping the WTP operating at a satisfactory level, the OUR takes the view that the Repair and Maintenance Costs should be related to the volumes produced by the plant. A total of \$4,430,000 was spent on repair and maintenance by RBWCL across all of its operations in the test year. To arrive at the cost attributable to the Mount Edgecombe WTP, an allocation factor of 34.43% was applied which is representative of the volume of water produced used by the plant as a ratio of total water output. In this regard **the annual repair and maintenance cost approved for the Mount Edgecombe WTP is \$1,525,000.**

### Motor Vehicle Expense

The RBWCL proposed that \$240,000 of the total motor vehicle expense of \$2,330,000 be assigned to the Mount Edgecombe WTP. RBWCL claimed to have allocated its cost on the basis of its managerial assessment. However, the OUR makes the assumption that the use of motor vehicles

might more be related to the company sales activities than any other of the cost allocators identified in Table 4. In this respect, an allocation factor 14.83% derived from the share of plant revenues in the total sales revenue was used in the allocation process. **Consequently, the approved Motor vehicle Expense for the Mount Edgecombe plant is \$346,000.**

Given the OUR's analysis of operating and maintenance cost it has concluded that the total approved cost for this category of expense should be \$16,860,370 (see Table 5 above)

#### **Determination 1**

Total approved operating and maintenance cost for the Mount Edgecombe WTP is \$16.86M.

### **3.2.2 Total Administrative Costs**

This cost category includes all other expenses that the company incurs indirectly and not specifically as a result of the production of RBWCL bulk water. RBWCL in its submission lumped all its administrative costs together and assigned 18.9% of this cost to the Mount Edgecombe WTP. This translates to a proposed cost of \$13.2M. It bears noting that although RBWCL claimed to have used the ratio of plant to total sales revenues as the basis for allocation the 18.89% factor employed in the company's calculation was actually higher than the 14.83% factor derived by the OUR.

As was the case with the company's O&M costs, the OUR, considered it prudent to disaggregate the total administrative cost into its constituent parts (as listed in the company's financial statement) and allocate the respective expenses on the basis of the cost drivers associated at the Mount Edgecombe WTP. On this basis the total administrative costs approved by the OUR for the Mount Edgecombe WTP is \$11.3M (Table 6 below).

#### ***Analysis of Administrative Costs***

##### **Legal and Professional Fees**

Legal and professional fees refers to cost incurred in paying attorneys and other professionals, such as hydrologists, for work done. Throughout the fiscal year 2015/2016, the company spent \$2,525,000 on legal and professional, fees. The OUR has no objection to the allocation of these fees to respective plants on the basis of sales revenues. Applying the plant to total sales revenue ratio for the Mount Edgecombe WTP (of 14.83%) results in an approved legal and professional fees is \$374,930.

### Audit and Accounting Fee

Audit and accounting fee were accorded the same treatment as legal and professional fees since it is not unusual for auditors and accountants to index their fees to the size of the company's revenues. Consequently, the approved Audit and Accounting fees is \$289,000.

### Impairment Losses

While RBWCL suffered impairment losses of \$721,000 which was included in its audited Profit and Loss Statement, it was careful to indicate that these losses were in no way associated with the operations of the Mount Edgecombe WTP. Therefore, this costs was set at zero.

**Table 6: Apportionment of Administrative Costs**

Cost Item	RBWCL Proposal Mt. Edgecombe (\$'000) (a)	OUR Approved				
		Test Year Consolidated Total \$'000 (b)	Cost Driver	Allocation Factor	Mt. Edgecombe Cost (\$'000) (c)	Difference (\$'000) (a-c)
Legal and Professional Fees	-	2,528	Sales Revenue	14.83%	375	375
Audit and Accounting Fee	-	1,950	Sales Revenue	14.83%	289	289
Directors Emoluments	-	52	Number of workers	26.32%	14	14
Impairment Losses	-	721	Disallowed	0%	-	0
Management Fees	-	56,000	Sales Revenue	14.83%	8,306	8,306
Other Expenses	-	8,666	Number of workers	26.32%	2,281	(10,922)
<b>Total Admin Costs</b>	<b>13,200</b>	<b>69,917</b>			<b>11,265</b>	<b>(1,938)</b>

### Management Fees

Management fees represent monetary payments to RBWCL's parent corporation UDC, for services provided to the subsidiary. The audited financial statements highlighted that these transactions were in the ordinary course of business and in the opinion of management, were on terms no less favourable than would have been obtained if the transactions had been with unrelated parties. The OUR has no objection to the management fee proposed and has apportioned this fee

on the basis of sales revenue earned. **Consequently, total management fees allocated to the Mount Edgecombe WTP is \$8,305,000.**

**Arising from its evaluation of RBWCL's Administrative costs submission, the OUR has approved the recovery of \$11.3M through the bulk rates chargeable to NWC.**

#### **Determination 2**

The total administrative cost for the Mount Edgecombe WTP approved by the Office is \$11.3M

### **3.3 Depreciation**

The total annual depreciation expense reported in the 2015/16 audited financial statements of RBWCL was \$1,071,000. The schedule of replacement costs for assets presented by RBWCL for the year 2016/2017 indicated that total cost to replace existing fixed assets at Cardiff Hall and Mount Edgecombe was \$48.3M, with \$25.7M based at the Mount Edgecombe WTP. This would mean that total assets located at the Mount Edgecombe WTP represent 53.2% of total fixed assets located at both business units. This ratio was used as a proxy to allocate total depreciation charge to the Mount Edgecombe WTP. **Consequently, the depreciation expense approved to be recovered in the bulk water rate charged to NWC is \$569,230.**

#### **Determination 3**

The Office determines that that the amount to be allowed for depreciation charge at the Mount Edgecombe WTP is \$569,230.

### **3.4 Return on Investment**

Consistent with the 2004 Licence the rate of return on investment is determined by the calculation of the Weighted Average Cost of Capital (WACC). The key elements in the calculation of the WACC are the company's cost of debt, cost of equity, and capital structure. Mathematically, the post-tax nominal United States Dollar WACC is expressed as:

$$WACC = K_E \times \frac{E}{D + E} + K_d \times (1 - T) \times \frac{D}{D + E}$$

Where:

WACC = the weighted average cost of capital,

$K_E$  = the cost of equity

$\frac{E}{D+E}$  = the ratio of equity to total capital

$K_d$  = the cost of debt

$(1 - T)$  = the tax shield

$\frac{D}{D+E}$  = the ratio of debt to total capital

$T$  = Jamaica tax rate

### 3.4.1 The Cost of Equity

The cost of equity for RBWCL was computed using the Capital Asset Pricing Model (CAPM). This methodology is widely used and is internationally accepted. It has been applied by the OUR across all the sectors that it regulates.

The cost of equity based on the CAPM methodology may be represented as follows:

$$\text{Cost of Equity (nominal)} = R_f + \beta_E \times (MMRP + CRP)$$

Where:

$R_f$  = Risk free rate

$\beta_E$  = Equity beta

$MMRP$  = is the base equity risk premium (in a mature market)

$CRP$  = Country Risk Premium

### 3.4.2 The Risk free rate ( $R_f$ )

The **Risk free rate** is the nominal interest rate that can be obtained by investing in financial instruments with no default risks. In our estimation of the cost of equity in USD, the yield to maturity on 10-year US Treasury Bonds is considered to be an appropriate measure for a long-term risk-free rate of return. The 2.36% rate for such bonds as at the end of 2017 February was

used as a proxy for the risk free rate. This data used in the computation was obtained from website<sup>3</sup> of the Federal Reserve, the central bank of the U.S.

### 3.4.3 The equity beta ( $\beta_E$ )

Beta is a measure of the correlation between the company's risk and general market risk. Deriving an estimate of an equity beta for an investment in a country (or set of countries) for which the stock market is small, non-existent, or has a short history tends to be imprecise. The Jamaica stock market is relatively small hence it was considered necessary to use an appropriate proxy. In this regard the Damodaran revised estimates as at 2017<sup>4</sup> January was used in the analysis. This estimate puts the global unlevered beta for water utility companies at 0.72. The OUR computed the equity beta for RBWCL based on an estimated capital structure (50 percent debt, 50 percent equity) using the following formula:

$$\beta_E = \beta_U \times (1 + (1 - T) \times (\frac{D}{E}))$$

Where:

$\beta_E$  = Equity beta

$\beta_U$  = is the unlevered beta

$T$  = corporate tax rate

$E$  = percent of company financing from equity

$D$  = percentage of a company financing from debt

By using the above formula, this results in an equity beta of 0.96.

### 3.4.4 Mature Market Risk Premium (MMRP)

The mature market risk premium (MMRP) is the expected return over the risk free rate that investors require in order to invest in a well-diversified portfolio of risky assets in a mature market. The MMRP is calculated as the expected return on the market minus the risk free rate. The OUR used the most current available nominal MMRP of 5.69 percent<sup>5</sup>. Again, Damodaran publications were employed to determine the implied equity premium.

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<sup>3</sup><https://www.treasury.gov/resource-center/data-chart-center/interest-rates/Pages/TextView.aspx?data=yieldYear&year>

<sup>4</sup> [http://people.stern.nyu.edu/adamodar/New\\_Home\\_Page/data.html](http://people.stern.nyu.edu/adamodar/New_Home_Page/data.html)

<sup>5</sup> Ibid



### 3.4.5 The Country Risk Premium

Country risk relates to the likelihood that changes in the business environment would reduce the profitability of doing business in a country. Macro-socio-economic factors such as political instability, exchange rate volatility and general economic instability may be a deterrent to foreign investors, thus increasing the riskiness of investments. These factors which are associated with risks in another territory are captured by way of a premium for investing.

**Table 7: GOJ 10 Year U.S. Dollar Bond Yields, U.S. 10 Year Treasury and Jamaica CRP 2015 January to 2017 May**

Dates	GOJ 10yr US\$ Bond Yield (%)	US 10yr Treasury (%)	CRP (%)
1/31/2015	6.94	1.88	5.06
2/28/2015	6.72	1.98	4.74
3/31/2015	6.45	2.04	4.41
4/30/2015	6.39	1.94	4.45
5/31/2015	6.32	2.20	4.12
6/30/2015	6.04	2.36	3.68
7/31/2015	6.23	2.32	3.91
8/31/2015	6.54	2.17	4.37
9/30/2015	6.46	2.17	4.29
10/31/2015	6.50	2.07	4.43
11/30/2015	6.56	2.26	4.30
12/31/2015	6.94	2.24	4.70
1/31/2016	7.00	2.09	4.91
2/29/2016	6.81	1.78	5.03
3/31/2016	6.63	1.89	4.74
4/30/2016	6.46	1.81	4.65
5/31/2016	6.41	1.81	4.60
6/30/2016	6.25	1.64	4.61
7/31/2016	5.88	1.50	4.38
8/31/2016	5.76	1.58	4.18
9/30/2016	5.73	1.60	4.13
10/31/2016	5.85	1.84	4.01
11/30/2016	6.44	2.37	4.07
12/31/2016	6.20	2.45	3.75
1/31/2017	5.84	2.45	3.39
2/28/2017	5.57	2.31	3.26
3/31/2017	5.56	2.40	3.16
4/30/2017	5.54	2.29	3.25
5/31/2017	5.30	2.21	3.09
<b>Averages</b>	<b>(12 Month Average)</b>		<b>3.77</b>

The bond spread approach is used in deriving a Country Risk Premium (CRP) for investors in the Jamaican economy. The computation of the CRP is based on the spread between the 10-year U.S. Dollar denominated Jamaica Treasury bond and the 10-year U.S. Treasury bond. Data used for the Jamaica treasury bonds were obtained from the Bank of Jamaica (BOJ).

Table 7 above shows the twelve (12) month average CRP for Jamaica for the period ending 2017, May 31 at 3.77%. A one (1) year average of the bond spread is the preferred reference point in this calculation, since it captures Jamaica’s current credit rating whilst relying on sufficient data points so that it is not too volatile an estimate.

### 3.4.6 Computation of the Cost of Equity

Based on the approach previously discussed, the cost of equity (nominal) was computed as follows:

$$\begin{aligned}
 K_E (\textit{nominal}) &= R_f + \beta_E \times (\textit{MMRP} + \textit{CRP}) \\
 &= 2.36\% + 0.96*(5.69\% + 3.77\%) \\
 &= 11.45\%
 \end{aligned}$$

#### Determination 4

The Office determines that the Cost of Equity is 11.45% percent.

### 3.4.7 The Cost of Debt

The cost of debt represents the cost that a company must pay to borrow from commercial lenders to fund its operation. There was no long-term debt recorded in the 2015/2016 audited financial statements for RBWCL. However, the Office estimated an average cost of debt for RBWCL. The estimate was based on the weighted average interest rate of 6.40%. This represented the average of the highest USD denominated loan rates that was made available as a part of the NWC’s debt financing programme in 2017 April. Consequently, the applicable interest rate on long term debt to be used in the computation is deemed to be 6.40% percent.

### 3.4.8 The Post-Tax Nominal USD Weighted Average Cost of Capital (WACC)

It is assumed that RBWCL relies on USD as its currency of cash flow, therefore the pre-tax and post- tax WACC in Nominal USD will be calculated. The Office will however apply the pre-tax WACC to the rate base of RBWCL. In light of the fact that deemed gearing ratio is 50% debt and 50% equity, consistent with the approach identified above, the WACC is determined to be

$$\begin{aligned}
 \textit{Post – Tax WACC} &= K_E \times \frac{E}{D + E} + K_d \times (1 - T_{\textit{Firm}}) \times \frac{D}{D + E} \\
 &= 11.45\% *0.50 + 6.40 \%*( 1-0.333)*0.50 \\
 &= 7.88\%
 \end{aligned}$$

**3.4.9 The Pre-Tax WACC is calculated by using the following formula and is applied to the rate base of RBWCL.**

The pre-tax WACC for RBWCL was derived from the cost of debt and the cost of equity as follows:

$$\begin{aligned} \text{Pre-Tax WACC} &= \frac{K_E \times \frac{E}{D+E}}{(1-T)} + K_D \times \frac{D}{D+E} \\ &= \frac{0.1145 \times 0.50}{0.667} + 0.064 \times 0.50 \end{aligned}$$

Hence, the Pre- tax WACC is calculated as 11.79%

**Determination 5**

The Office determines that the Pre-Tax WACC is 11.79 %.

**3.4.10 The Return on Investment**

**The Rate Base**

Schedule 3 of the 2004 Licence defines the rate base as follows:

*... “Rate Base” means the value of the net investment in the Licensed Business. The Rate Base shall be calculated based on the net sewage system investment made by the Licensee at the end of the last financial year for which there are audited accounts, at the time the rates are being set. The Rate Base shall include appropriate rate making investments to take into account known and measurable changes in the plant investment base and shall be increased or reduced by any positive or negative working capital requirement that may exist at such time. Working capital shall include among other things, cost of appropriate levels of inventories.”*

RBWCL’s 2015/16 financials presented the company’s fixed assets in a consolidated format. The OUR however was able to make asset allocations to the Mount Edgecombe WTP based on the 2016/2017 fixed asset data provided by RBWCL (see Table 9 below). In this regard, 53% of the consolidated assets were deemed to belong to the Mount Edgecombe WTP and accordingly the application of the same percentage translates to a rate base of \$17,428,000 for the Mount Edgecombe WTP. Table 9 shows the components of the rate base.

**Table 8: RBWCL: Consolidated Balance Sheet & Mt Edgecombe Plant Rate Base – Period ending March 2016.**

Runaway Bay Water Company		Consolidated Accounts		Mt. Edgecombe Plant	
Items		J\$'000		J\$'000	
Property Plant and Equipment		7,310		3,885.24	
Add					
Intangible Assets		-		-	
Long Term Receivables		76,650		40,739	
Net Fixed Assets		83,960		44,625	
Off-Sets					
Employee Benefits Obligations		(33,929)		(18,033)	
Deferred Expenditure (Tax)		(8,847)		(4,702)	
Deferred Revenue		-		-	
Total Long Term Assets		41,184		21,889	
Add					
Net Current Assets (Working Capital):		J\$'000	(8,394)	J\$'000	(4,461)
Add Current Assets:		33,441		17,774	
Cash and Cash Equivalents		1,053		560	
Trade and Other Receivables		29,674		15,772	
Inventories		2,714		1,442	
Subtract Current Liabilities:		41,835		22,235	
Trade and other payables		16,586		8,815	
Taxation payable		25,249		13,420	
<b>Total Net Assets (RATE BASE)</b>			<b>32,790</b>		<b>17,428</b>

To determine the return on investment, the WACC of 11.79 % was applied to Mount Edgecombe's rate base of \$17,428,000. Consequently, the return on investments (ROI) computed for the Mount Edgecombe Plant is J\$2.05M as show in Table 10 below.

**Table 9: Cost Drivers based on 2016/2017 Fixed Asset Data Provided by RBWCL**

RBWCL Audited Fixed Assets (NBV)	Total Asset \$'000	Replacement Cost \$'000	Replacement Cost \$'000	Allocation Factor
Item	Consolidated 2015/2016	Consolidated 2016/2017	Mt. Edgecombe 2016/2017	
Land & Building	2,054	18,416	14,416	
Machinery & Equipment	2,968	21,350	11,000	
Furniture & Fixtures	1,998	3,524	250	
Other	290	5,000	-	
<b>Total Fixed Assets</b>	<b>7,310</b>	<b>48,290</b>	<b>25,666</b>	<b>53.2%</b>

**Table 10: Rate of Return on Investments**

	Consolidated Accounts	Mt. Edgecombe Plant
% Share	100%	53%
Rate Base (\$'000)	32,790	17,428
Pre- Tax WACC	11.79%	11.79%
ROI (\$'000)	3,865.19	2,053.94

**Determination 6**

The Office determines that the post- tax return on investment for the Mount Edgecombe Plant is J\$2.05M.

**3.5 The Revenue Requirement**

The revenue requirement is the amount of funds deemed necessary to cover the company's cost and allow it to earn a reasonable rate of return on its investment whilst delivering an acceptable quality of service to its customers. In making a determination the following cost factors taken into account:

- Operating cost and administrative costs of \$16.86M and \$11.26M respectively.
- Depreciation expense of \$0.57M
- Pre-tax return on investment of \$2.05M

Based on these considerations the annual total revenue for the Mount Edgecome WTP is set at \$30.75M (See Table 11).

**Table 11: Calculation of the Revenue Requirement (J\$'000)**

Details	Monthly J\$'000	Annually J\$'000
Operating Costs	1,405.03	16,860.37
Administrative Costs	938.65	11,263.74
Depreciation	47.44	569.23
<b>Total Cost</b>	<b>2,391.11</b>	<b>28,693.34</b>
Return on investment (Pre-tax)	171.16	2,053.94
<b>Total Revenue Requirement</b>	<b>2,562.27</b>	<b>30,747.29</b>
Fixed Service Charge Requirement	\$9.58	115
<b>Net Revenue Requirement</b>	<b>2,552.69</b>	<b>30,632.29</b>
<b>Approved Volumetric Rate</b>	<b>\$38.15/m<sup>3</sup></b>	<b>\$38.15/m<sup>3</sup></b>

**Determination 7**

The Office determines that the total revenue requirement for the Mount Edgecombe WTP is \$30.75M.

**3.6 Base Rate and Charges**

RBWCL's current rate structure is based on a fixed service charge and a volumetric charge applied to the monthly bill issued by the company. In its rate submission RBWCL requested that the fixed monthly charge be held constant. The Office has no objection to this request. However, the total revenue requirement must be reduced by the fixed service requirement (see Table 11) in order to derive the net revenue requirement from which the approved volumetric was computed.

As shown in Table 12 below, the annual net revenue requirement is \$30.75M and the test year annual water sales from the Mount Edgecombe WTP is 803,000 m<sup>3</sup>. The net revenue requirement is derived by deducted the revenues associated with the fixed charges (i.e. \$115,000) from the total revenue requirement of \$30.63M. The volumetric rate would therefore be the ratio of the net revenue requirement to the annual sales volume. Consequently, RBWCL's bulk volumetric rate is computed to be \$38.15/m<sup>3</sup>.

**Table 12: Calculation of RBWCL volumetric rate ('000)**

Details	Total Annual Costs
Net Revenue Requirement	\$30,632,287
Annual Sales volume(m <sup>3</sup> )	803,000
<b>Applicable Volumetric Rate</b>	<b>\$38.15</b>

As shown in Table 13 RBWCL had proposed a 45% increase in rates that would give it 10% profit/sales ratio based on its cost assumption. The OUR, however, has approved a 10.9% increase which should allow the company to achieve a profit/sales ratio of 8.19%.

**Table 13: Comparison of RBWCL Current, Proposed & Approved rate increase**

Details	Unit	Current Rate	Proposed Rate	Approved Rate
Production	<b>Million Litres</b>	800	800	803
<b>Price</b>	<b>\$/Cubic Meter</b>	<b>34.39</b>	<b>\$ 50.00</b>	<b>\$ 38.15</b>
Total Sales	\$'Million	\$ 27.51	\$ 40.00	\$30.63
Direct Production Cost	\$'Million	\$22.50	\$22.50	\$16.86
Contribution	\$'Million	\$ 5.01	\$ 17.50	\$13.77
Overheads	\$'Million	\$ 13.50	\$ 13.50	\$11.26
Profit/(loss)	\$'Million	\$ (8.49)	\$ 4.00	\$2.51
Profit(loss)/Sales Ratio	\$'Million	-30.86%	10.00%	8.19%

*Source: RBWCL Tariff Application for an increase in potable water bulk rate to the NWC*

### **Determination 8**

In respect of the charges associated with the supply of bulk water to the NWC from the RBWCL's Mount Edgecome WTP, the Office hereby approves the following:

- a) The maintenance of the monthly fixed service charge of \$10,196.85 for a 6" meter; and
- b) The volumetric rate for bulk water of \$38.15/m<sup>3</sup>.

These rates shall become effective as at 2018 February 1.