

Statutory Instrument No. 18 of 2019

***SIERRA LEONE ELECTRICITY AND WATER REGULATORY COMMISSION
ACT, 2011 (ACT NO. 13 OF 2011)***

Short title. THE BOTTLED AND SACHET WATER PRODUCTION REGULATIONS, 2019

In exercise of the powers conferred on it by section 66 of the Sierra Leone Electricity and Water Regulatory Commission Act, 2011 (Act No. 13 of 2011), the Commission hereby makes the following Regulations-

PART I- PRELIMINARY

Interpretation. 1. In these regulations, unless the context otherwise requires -

“Act” means the Sierra Leone Electricity and Water Regulatory Commission Act, 2011;

“Adulteration” means bottled or sachet water containing a substance at a level considered injurious to health;

“Approved laboratory” means a laboratory approved by the Commission or certified by the Sierra Leone Standards Bureau or accredited by a third party organization acceptable to the Commission;

“approved source” means a source of water whether from a spring, artesian well, drilled well or a water system which has been inspected and the water sampled, analyzed and determined to be of a safe and sanitary quality in accordance with the standards approved by the Commission;

“Aquifer” means a geological formation containing ground water that supplies a well or a spring;

“artesian water” means bottled water from a well tapping a confined aquifer in which the water level occurs above the water table;

“bottled drinking water” means water that is sealed in bottles, packages or other container and offered for sale for human consumption, including mineral water and spring water;

“bottled water plant” means any place or establishment in which bottled water is prepared for sale;

“bulk water” means water intended for potable uses which is transported by means of bowser trucks for use in bottling only;

“Commission” means the Sierra Leone Electricity and Water Regulatory Commission established under section 3 of the Act;

“Director” means the Director of Environmental Health Directorate at the Ministry of Health;

“National Water Resources Management Agency” means the National Water Resources Management Agency established under section 2 of the National Water Resources Management Agency Act 2017;

“natural water” means bottled spring, mineral, artesian or well water which is derived from an underground formation and is not derived from a public water supply system;

“nontoxic materials” means transporting, storing and packaging materials which are free of substances which may render the water injurious to health or which may adversely affect the flavor, colour, odour or bacteriological quality of the product;

“operations water” means water which is delivered under pressure to a plant for container washing, hand washing, plant and equipment clean-up and for other sanitary purposes;

“packaged water” means bottled or sachet water for drinking purposes offered for sale to the public;

“purified water” means packaged water produced by distillation, deionization, reverse osmosis or other suitable process that meets the definition of purified water in Sierra Leone or World Health Organization standard;

“sample” means a unit of equal volume which is analyzed by a consistent method and measured against a standard;

“sanitising” means cleaning and disinfecting products used for packaging and surfaces of equipment used for the operating or manufacturing of packaged water products to prevent a potential health hazard or source of contamination;

“Sierra Leone Institution of Engineers” means the Sierra Leone Institution of Engineers established under the Professional Engineers Act 1990;

“Sierra Leone Water Company (SALWACO)” means the Sierra Leone Water Company established under section 2 of the Sierra Leone Water Company Act 2017;

“Spring Water” means water derived from an underground formation from which water flows naturally to the surface of the earth;

“trihalomethane” means one of the family of organic compounds named as derivatives of methane wherein three of the four hydrogen atoms in methane are each substituted by a halogen the atom;

“Water Advisory Committee” means the Water Advisory Committee established under sub-section (1) of section 21 of the Act;

“well water” means water from a hole bored, drilled or otherwise constructed in the ground which taps the water of an aquifer and meets the requirements of natural water;

Application.

2. These regulations shall apply to a producer or importer of packaged water meant for sale or drinking.

PART II- APPLICATION FOR PERMIT

Requirement permit.

3. A person shall not produce or import packaged water unless that person holds a permit issued by the Commission .

Types of Permits.

4. The Commission shall categorize permits as follows-

- (a) the bottled water production permit which entitles the holder to produce bottled water for sale or drinking;
- (b) the sachet water production permit which entitles the holder to produce sachet water for sale or drinking;
- (c) the importer’s permit which entitles the holder to import bottled water for sale or drinking.

(2) A person that intends to engage in more than one activity shall obtain a permit in respect of each activity.

Mode of application.

5. (1) An application for-

- (a) A packaged water production permit shall be in the form as set out in Schedule 1;
- (b) Bottled water import permit shall be in the form as set out in Schedule 2;

2) An application for a permit shall be-

- (a) signed by the applicant; and
- (b) addressed and submitted to the Commission at its principal place of business or any other place as determined by the Commission .

(3) An application under sub-regulation (1) shall be accompanied by –

- (a) all relevant information to support the application;
- (b) an Abstraction Permit from the National Water Resources Management Agency

Application fee.

6. An applicant shall pay an application fee as determined by the Commission and published in the Gazette

Issuance of permit.

7. (1) The Commission shall within 10 days of receiving the application, acknowledge receipt of the application.

(2) The Commission shall inform the applicant of its decision in writing within 30 days of receiving the application.

(3) Subject to the Act and statutory instruments made under the Act an application shall be granted by the Commission unless the applicant fails to meet the Commission's financial, technical and operational criteria.

(4) Where the Commission refuses an application it shall inform the applicant in writing of its decision and the reason for the refusal.

Transfer of permit.

8. (1) A permit holder shall not transfer the permit to another person unless he submits a written application to the Commission requesting authorization to transfer the permit.

(2) Where the transferee is able to meet all the necessary criteria the Commission shall not unduly withhold its approval.

(3) Where the Commission does not grant the application it shall state the reasons in writing for doing so.

Duration of permit.

9. (1) A permit granted under these regulations shall be valid for a number of years to be determined by the Commission and published in the Gazette

(2) A permit may be renewed at the end of its term subject to the permit holder complying with the terms and conditions of the permit.

Annual fee.

10. The permit holder shall pay on or before each anniversary of the date of first issuance of the permit an annual fee as may be determined by the Commission and published in the Gazette.

Suspension or cancellation of permit.

11. (1) The Commission may suspend or cancel a permit where it is satisfied that -

- (a) the holder of the permit has-
 - (i) violated a term or condition of the permit;
 - (ii) given information to the Commission which is false or misleading; or
- (b) it is in the public interest to do so.

(2) Where the Commission has grounds for the cancellation or suspension of a permit under sub-regulation (1), it shall give notice to the holder to show cause why the permit should not be cancelled.

(3) Where the permit holder is unable to persuade the Commission or fails to respond to the notice under sub-regulation (1), the Commission shall proceed to cancel or suspend the permit in accordance with section 35 of the Act.

(4) The Commission shall restore the permit when the holder remedies the defect that gave rise to the cancellation or suspension.

Conditions of a permit.

12. A permit holder shall where applicable comply with the standards and operational procedures set out in Schedules 3 and 4 including additional guidelines that the Commission may issue.

PART III – TREATMENT OF WATER

Water Advisory Committee

13 (1) The Water Advisory Committee shall consist of a representative each of the following ministries or institutions-

- (a) Ministry responsible for Water Resources;
- (b) Ministry responsible for Health
- (c) The National Water Resources Management Agency
- (d) The Standards Bureau
- (e) The Sierra Leone Water Company
- (f) Sierra Leone Institution of Engineers ; and
- (g) Association of Packaged Water Producers.
- (h) The Commission

Product standards.

14. (1) A holder of a production permit shall ensure that the water produced is of the highest quality and fit for drinking.

(2) All packaged water including mineral water produced shall not fall short of any standard set out in Schedule 3 and shall meet any additional standard established by the Water Advisory Committee.

Sources of water.

15. The Director shall approve the sources of all bulk drinking water that-

- (a) are fit for production; and
- (b) meet minimum construction and maintenance requirements set out in Schedule 3.

Treatment of water.

16. (1) A permit holder shall ensure that treatment of product water by distillation, ion-exchanging, Ozonation, ultraviolet treatment, reverse osmosis, carbonization, mineral addition or any other process shall be performed in a manner that accomplishes the purpose of producing water that meets the required standard.

(2) The processes of treatment under sub-regulation (1) shall be performed by equipment and with substances that will not adulterate the packaged water.

(3)The product water samples shall be taken after the processing by the plant and analysed as often as is necessary to assure uniformity and effectiveness of the processes performed at the plant.

(4) The analysis referred to in sub-regulations (3) shall be recorded, filed and kept in the plant area.

PART IV - PRODUCTION

Plant facilities.

17. (1) A permit holder shall construct a plant for bottling or filling sachets to facilitate cleanliness and to maximize sanitation and public health protection.

(2) The construction referred to in sub-regulation (1) shall meet minimum structural requirements as the Commission in consultation with the Water Advisory Committee may determine.

Personnel.

18 (1) A packaged water production permit holder shall employ personnel of the requisite qualification and experience to undertake construction, operation and maintenance of the plant.

(2) A personnel who works at a water packaging plant shall-

- (a) be certified by the Director as being free from a contagious disease and fit to work in the plant; and
- (b) satisfy the additional requirements set out in paragraph 6 of the Schedule 3.

Production, equipment and packaging.

19.(1) Packaged water production processes, including transporting, packing into boxes or other form of holders or containers and storage shall be conducted under such conditions and controls as are necessary to minimise the potential for undesirable microbiological growth, toxic substance formation, deterioration or contamination of the processed product.

(2) During the process of filling, sealing single service or multiservice containers, the performance filler or sealer shall be monitored and the filled containers shall be visually or electronically inspected to ensure they are sound, properly sealed, coded and labeled.

Bulk Water.

20. (1) A licensee who supplies bulk water to a packaged water production plant shall ensure that the water is adequate and of the required standard.

(2) For the purpose of this section a licensee means a person holding a licence issued by the Commission to supply bulk water.

Sanitation and maintenance.

21. The permit holder shall ensure that -

- (a) buildings and other physical facilities of the plant are kept in a good state of repair;
- (b) all tanks, pipelines and equipment used to store, handle and transport water shall be inspected, maintained, cleaned and sanitised in accordance with guidelines issued by the Commission in consultation with the Water Advisory Committee; and
- (c) product washing equipment are checked daily to ensure proper timing and adequate washing.

Labeling requirements.

22. (1) Each bottle or sachet or its container shall bear a label affixed to it before it leaves the plant.

(2) The wording on the label under sub-regulation (1) shall be printed in English, in legible print which shall contrast with other printed letters on the label or container.

(3) The contents of the label shall be as set out Schedule 3.

Sampling methods.

23. (1) The Director shall certify the personnel and the Standards Bureau shall certify the equipment and laboratories for the purposes of sampling.

(2) The sampling referred to under sub-regulation (1) shall be done in accordance with the requirements set out in Schedule 4 and where no timeline for sampling is provided the packaged water shall be routinely sampled and analyzed for physical, chemical, radiological and microbiological quality.

(3) The result of the analysis referred to under sub-regulation (2) shall be recorded and filed at the plant and submitted to the Director or Inspector.

(4) A result which indicates that a standard established in Schedule 4 has not been met shall be reported to the Director and the Commission.

Recall plan.

24. Each plant shall establish and submit to the Commission for approval, a written recall plan which shall detail procedures for recall of any particular batch as identified.

PART V – RECORD KEEPING

Record keeping

25. (1) The records referred to under these regulations and records of all microbiological and chemical testing shall be open for inspections and the records shall be kept for at least 2 years.

(2) The records shall be kept at the plant and made available to the Director or an Inspector on demand.

Register of permit holders.

26. The Commission shall maintain a register of permit holders and shall publish the list of permit holders in the Gazette.

PART VI – MISCELLANEOUS

Offences.

27. (1) A person who –

- (a) produces or imports packaged water for sale without a permit;
- (b) during production employs staff, or uses equipment or laboratory that are not duly certified by the Director; or
- (c) obstructs or interferes with a member of the Commission or officer or a person employed by the Commission in the exercise of powers conferred by the Act and these Regulations,
- (d) fails to comply with other provisions in these regulations

commits an offence punishable under section 65 of the Act

Transitional Provisions.

28. A person who was engaged in an activity requiring a permit under these regulations before the commencement of these regulations, shall within 3 months of the coming into force of these regulations apply for the relevant permit.

SIERRA LEONE ELECTRICITY AND WATER REGULATORY COMMISSION

SCHEDULE 1: APPLICATION FORM FOR PACKAGED WATER PRODUCTION PERMIT

Section A

State type of Production Permit	Bottled Water	Sachet Water
1.	Full Name of Applicant:	
2.	ID / Social Security No.:	
3.	Business Name:	
4.	Address:	
5.	Contact person if different from presenter	
6.	Telephone No.:	
7.	Email:	
8.	Indicate whether new application or renewal. If renewal state current permit number.	
9.	List of key personnel:	
10.	Qualification and experience of key personnel:	
11.	List of relevant documents attached as required under Section B:	
12.	Description of main plant and equipment:	
13.	Estimated annual production capacity:	
14.	Facilities – Warehouses Production storage Transport	
15.	Maintenance schedule:	

16.	Major customers	

Section B

It is mandatory to provide the following information:

1. Business registration certificates
2. (*Statutory requirements*) Tax certificates| Business Registration
3. Drawings of Plant and Facilities
4. Source of Water
5. Environmental Impact Assessment

Name:	Signature:	Date:
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SIERRA LEONE ELECTRICITY AND WATER REGULATORY COMMISSION

SCHEDULE 2: APPLICATION FORM FOR BOTTLED WATER IMPORT PERMIT

Section A

1.	Full Name of Applicant:	
2.	ID / Social Security No.:	
3.	Business Name:	
4.	Address:	
5.	Contact person if different from presenter:	
6.	Telephone No.:	
7.	Email:	
8.	Indicate whether new application or renewal. If renewal state current permit number.	
9.	Estimated annual import capacity:	
10.	Facilities – Warehouses Transport	
11.	Major customers	

It is mandatory to provide the following information:

1. Company registration certificate
2. Business Registration (Statutory requirement)
3. Tax certificates
4. Source of supply:

SIERRA LEONE ELECTRICITY AND WATER REGULATORY COMMISSION

SCHEDULE 3: STANDARDS FOR FACILITIES AND OPERATIONS

1. GENERAL BUSINESS ENVIRONMENT

1.1 General Requirement

The environment for conducting the water packaging business shall meet the highest standards of cleanliness, hygiene and shall be conducive for the purpose of processing water for drinking.

1.2 Requirements by Director

The Director may establish such additional requirements as may be deemed necessary.

2. SOURCE OF WATER

2.1 Approval of Source

The source of water for processing for drinking purposes other than from a public water supply system shall be safe and shall approved by the Director.

2.2 Construction

The Director shall establish guidelines for construction of wells and for harnessing water from springs and natural sources.

3. PRODUCTION FACILITIES

3.1 Buildings

Minimum Production Requirements are as follows:

- a. Building and rooms shall be of sufficient size to allow proper installation of equipment, allow for movement of personnel during operation;
- b. Bottling and sachet filling operations shall be separated from other plant operation areas by tight walls, ceilings and self-closing doors or other appropriate barriers to isolate and provide protection against incidental contamination;
- c. Plant buildings shall be free of vermin;
- d. Walls and ceilings shall be smooth, light coloured, washable and kept in good repair;
- e. Floors shall be smooth, none absorbent and vermin proof and floors shall be graded to adequate drains and equipped with traps and grills;
- f. Doors and windows to outside areas shall be adequately screened and protected against entry of vermin, airborne contamination and particulates;
- g. All rooms shall be provided with sufficient ventilation to keep them free of excessive heat, steam, condensation, vapours, odours and fumes;
- h. Lighting, natural or artificial shall be provided, adequate for operations with a minimum of ---lumens at the working surface in all rooms where water is packaged;
- i. Washrooms shall be convenient, separate and apart from the rooms where water is processed and from where bottles and packages are sanitised;
- j. Employee locker rooms shall be separate from plant operations and storage areas and the rooms shall be maintained in a clean and sanitary condition and refuse containers should be provided.

3.2 Production, Equipment and Packing

Minimum Equipment Requirements are as follows:

- a. Storage tanks used for packaged water production shall be -
 - i. tightly closed to exclude all foreign matter and vented through inverted approved air filters;
 - ii. without connections to supplies of water not approved;
 - iii. protected from cross connection equipment with backflow prevention devices;
 - iv. equipped with linings or coatings conforming to the listing of acceptable linings for process and potable water tanks;
 - v. used only for water and not for storage of any other food product or non-food substance.
- b. Packaging processes and materials shall not transmit contaminants or objectionable substances to the packaged water;
- c. Containers and closures for packaged water shall be in compliance with those approved by the Director;
- d. Only sanitary, nontoxic lubricants shall be used on container surfaces;
- e. Bottles shall be provided with a tamper-evident seal or cap;
- f. Each container of packaged drinking water shall be identified by product code, identifying a particular batch or segment of a continuous production run, and the day produced;
- g. The plant shall record and maintain the following information:
 - i. product;
 - ii. Volume produced;
 - iii. Date;
 - iv. Lot code;
 - v. distribution

4. SANITISATION AND MAINTENANCE

4.1 Equipment

The minimum requirement for inspecting, maintaining, cleaning and sanitizing all tanks, pipelines and equipment used to store, handle and transport water are –

- a. Storage tanks shall be –
 - i. inspected for cleanliness on a monthly basis and shall be kept free of scale, evidence of oxidation and residue;
 - ii. cleaned on a monthly basis by sanitising with one of the following and flushing with product water:

Chlorinated water solution of 200 ppm for 5 minutes minimum;

Chlorinated water solution by spraying 200 ppm is to be used on surfaces that are not reached by the above soaking treatment;

Bactericides such as organic chlorine compounds and bactericidal agents containing iodine or bromine

0.1 ppm ozonated water solution for not less than 10 minutes contact time

- b. Product water pipelines shall be:
 - i. Kept free of scale, evidence of oxidation and residue;
 - ii. Cleaned on a daily basis by sanitizing with chlorine water of 200 ppm for 5 minutes, followed by product water flushing or continuous recirculation of at least 0.1 ppm ozonated water.

5. SANITARY FACILITIES

Sanitary facilities including drains, effluent disposal and toilet facilities shall be in accordance with guidelines approved by the Director.

6. PERSONNEL

6.1 Workers' Health

No person shall knowingly be permitted to work in a packaged water plant in any capacity who is affected by a communicable disease or other abnormal microbiological contamination.

6.2 Personal Hygiene

- a. All workers shall wash their hands and forearms with soap and warm water and thoroughly rinse them in clean water before beginning work and after any interruption in work activity.
- b. No activity that may cause contamination shall be permitted in the product processing area

6.3 First Aid Kit

There shall be a first aid kit adequately equipped to be used in providing first aid in case of incidents.

6.4 Apparel

Each worker shall wear clean outer garments for any phase of the product water processing; including white overalls and covering for the hair.

7. INSPECTION AND SAMPLING

7.1 Sampling Requirements

- a. Packaged water shall be sampled at the minimum frequency and analysed for water quality parameters in the section of the Schedule titled WATER SAMPLING REQUIREMENTS;
- b. When necessary, more frequent sampling or additional monitoring may be required by the Director.

7.2 Sampling Methods and Analyses

- a. Source water samples shall be taken from each approved source;
- b. Product water (finished products) samples shall be taken from a batch of a continuous production run for each type of packaged water produced during a day's production;
- c. All required product water quality analyses must be performed by a laboratory approved by the Director;
- d. Analyses shall be conducted in accordance with analytical guidelines which are approved by the Director.

7.3 Container Sampling

- a. Containers and closures shall be inspected to ascertain that they are free from contamination.
- b. At least once every three months, a bacteriological swab or rinse count should be made from at least four (4) containers just prior to filling or sealing and -
 - i. no more than one of four samples may exceed more than one bacteria per milliliter of capacity or one colony per square centimeter of surface area; and

- ii. all samples shall be free of coliform organisms.
 - c. The procedure and apparatus for these microbiological tests shall be approved by the Director.
- 7.4 Record Retention and Reports
- a. Records shall be kept of all inspections, cleaning and sanitizing operations and bottling or package production as well as microbiological chemical testing.
 - b. All documents, certificates and reports required shall be made available for official review by the Director.

8. LABELING

Contents of Label

Each label shall indicate the following:

- a. Type of Source Water
 - i. Water coming from springs may be labeled “Spring Water” or “Natural Spring Water”.
 - ii. Artesian or pumped water taken from the ground, from drilled wells may be labeled “Well Water”, “Artesian Water” or “Natural Water”.
 - iii. Water containing carbon dioxide that emerges from the source and is bottled directly with its entrapped gas or from which the gas is mechanically separated and later reintroduced at a level not higher than naturally occurring in the water may be labeled “Naturally Carbonated” or “Naturally Sparkling” and bottled water which contains carbon dioxide other than that naturally occurring in the source of the product shall be labeled “Carbonated”, “Carbon Added” or “Sparkling”.
 - iv. Mineral water may be labeled “Mineral Water” or “Natural Mineral Water” and bottled water to which minerals are added shall be labeled so as to disclose that minerals are added, and shall not be labeled “Natural Mineral Water”.
- b. Other Information
 - i. For water from a public water supply source, the name of the water supply company must be stated.
 - ii. Purified shall be labeled “Purified Water” and the method of preparation shall be stated on the label except that purified water produced by distillation may be labeled as “Distilled Water”.
 - iii. Address and location of the production facility or corporate offices.
 - iv. Net contents and capacity of the container.
 - v. Location of water source.

SIERRA LEONE ELECTRICITY AND WATER REGULATORY COMMISSION

SCHEDULE 4: BOTTLED WATER SAMPLING REQUIREMENT AND STANDARD OF QUALITY

(source: State of RI, USA, Dept. of Health, 1987)

MICROBIOLOGICAL

1. Coliform Count:
 - a. Standard – less than one colony per 100 millilitres (ml), or absence of total coliforms in a sample
 - b. Frequency of samples:
 - i. Public water supply
 - a. source water – one sample every three months
 - b. finished product – minimum one sample per week
 - ii. Private water supply
 - a. Source water – one sample per week
 - b. finished product – minimum one sample per week
2. Standard Plate Count for Containers and closures
 - a. Swab or Rinse Count Method
 - b. Standard – sample shall be free from coliform organisms
 - c. Frequency of samples: minimum of four containers every three months

PHYSICAL

1. Turbidity:
 - a. Standard – shall not exceed five units
 - b. Frequency of samples:
 - i. source water – one sample per year
 - ii. finished product – one sample per year
2. Colour:
 - a. Standard – shall not exceed 15 units
 - b. Frequency of samples:
 - i. source water – one sample per year
 - ii. finished product – one sample per year
3. Odour
 - a. Standard – shall not exceed threshold odour No. 3
 - b. Frequency of Samples:
 - i. source water – one sample per year
 - ii. finished product – one sample per year

RADIOLOGICAL:

1. Gross Alpha Particle Activity:
 - a. Including Radium 226 but excluding Radon & Uranium
 - b. Standard – Shall not exceed 15 pico Curies/litre (pCi/l)
 - c. Frequency of Samples
 - i. source water – one sample every three years
 - ii. finished product – one sample every three years
 - d. If gross alpha particle activity is 5 pCi/l or less, there is no need to analyse for Radium 226 and Radium 228.

- e. If the gross alpha particle activity exceeds 5 pCi/l, the sample must be analysed for Radium 226.
 - f. If the concentration of Radium 226 exceeds 3 pCi/l, the concentration of Radium shall be determined.
2. Combined Radium 226 and Radium 228
- a. Standard – shall not exceed 5 pCi/l
 - b. Frequency of Samples
 - i. source water – one sample every three years
 - ii. finished product – one sample every three years
3. Manmade Beta Particle Activity and Photon Emitters:
- a. Standard – shall not contain beta particle and photon radioactivity from manmade radionuclides in excess of that which produce annual dose equivalent to the total body or any internal organ of 4 millirems per year calculated on the basis of intake of 2 litres of water per day.
 - b. Compliance may be assumed if the average annual concentration of gross beta particle activity is less than 50 pCi/l and the average annual concentration of tritium and strontium 90 are less than 20,000 pCi/l and 8 pCi/l respectively and the sum of their annual dose not to exceed 4 millirems per year.
 - c. Frequency of Samples
 - i. source water – one sample every three years
 - ii. finished product – one sample every three years

INORGANIC CHEMICALS:

1. Frequency of Sampling:

- a. Samples of source water and finished product are to be taken and analysed by the plant as often as necessary, but at a minimum frequency of once each year for the following chemicals:

Chemical Name	Standard (mg/l)
Arsenic (As)	0.05
Barium (Ba)	1.0
Cadmium (Cd)	0.01
Chloride (Cl)	250.0
Chromium (Cr)	0.05
Copper (Cu)	1.0
Fluoride (F)	4.0 (source water)
Iron (Fe)	0.3
Lead (Pb)	0.05
Manganese (Mn)	0.05
Mercury (Hg)	0.02
Nitrate (NO ₃)	10.0
Nitrate/Nitrite, Total	10.0
Nitrite (NO ₂)	1.0
Phenols	0.001
Selenium (Se)	0.01
Silver (Ag)	0.05

Sodium (Na)	0.05
Sulfate (SO ₄)	250
Total Dissolved Solids (TDS)	500.0 (mineral water shall be greater than 500.0 mg/l)
Zinc (Zn)	5.0

ORGANIC CHEMICALS

1. Frequency of Sampling:

Samples of source water and finished product are to be taken and analysed by the plant as often as necessary, but a minimum frequency of once each year for the following chemicals

Chemical Name	Standard (mg/l)
Total Trihalomethanes (TTHM): (Bromodichloromethane, Chlorobromomethane, Chloroform)	0.100
Pesticides	
Endrin	0.0002
Lindane	0.004
Methoxychlor	0.1
Toxaphene	0.005
2,4-D	0.1
2,4,5-TP Slivex	0.01
Total Aldicarb (Aldicarb, Aldicarb Sulfone, Adicarb Sulfoxide)	0.01
Volatile Organic Chemicals	
Benzene	0.005
Carbon Tetrachloride	0.005
1,2 Dichloroethane	0.005
Trichloroethylene	0.005
para-Dichlorobenzene	0.075
1,1-dchloroehylene	0.007
1,1,1-trichloroethane	0.200
Vinyl Chloride	0.002

Made this ____ day of ____ October ____ 2019.

MOHAMED D. B. SEISAY

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Chairman, Sierra Leone Electricity and Water Regulatory Commission