

# Public Health (Drinking Water) Regulation 1984

## Unvalidated References:

*Public Health Act 1973*

This reprint of this Statutory Instrument incorporates all amendments, if any, made before 25 November 2006 and in force at 1 July 2001.

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Legislative Counsel

Dated 25 November 2006

## INDEPENDENT STATE OF PAPUA NEW GUINEA.

Chapter 226.

### *Public Health (Drinking Water) Regulation 1984*

#### ARRANGEMENT OF SECTIONS.

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### *Public Health (Drinking Water) Regulation 1984*

MADE under the *Public Health Act 1973*.

Dated                    200 .

#### PART I. – PRELIMINARY.

##### 1. INTERPRETATION.

In this Regulation unless the contrary intention appears–

**“consumer”** means any person or body to whom or to which, as the case may be, a water supplier, supplies water for use by that person or body;

**“distribution system”** means the network of pipes through which drinking water is supplied to consumers;

**“drinking water”** means treated water that is supplied for use by consumers;

**“drinking water quality standards”** means the quality standards for drinking water referred to in Section 5;

**“laboratory”** means the Central Public Health Laboratories at Port Moresby or such other laboratory as the Departmental Head designates by notice in the National Gazette;

**“raw water”** means any untreated water;

**“raw water source”** means any source, whether above or below the surface of the earth, from which raw water is taken or abstracted;

**“standards for raw water”** means the standards for raw water referred to in Section 4;

**“treat”**, in relation to raw water, means the application of physical or biological processes to the water with the view to achieving drinking water quality standards;

**“treatment plant”** includes the facilities, equipment and procedures for treating raw water;

**“use”**, in relation to a consumer, means use by the consumer of water supplied by a water supplier, for culinary, domestic or manufacturing purposes;

**“water supplier”** means any person or body (including a Government Department, Local-level Government or statutory authority) that abstracts, treats and supplies water to consumers.

## **PART II. – WATER QUALITY STANDARDS.**

### **2. CONSTRUCTION, ETC., OF TREATMENT PLANT.**

A person who installs or constructs any plant for treating water unless he has, prior to commencing the installation or construction–

- (a) submitted to the Departmental Head–
  - (i) details of chemical and bacteriological analysis of the raw water he proposes to treat; and
  - (ii) particulars of the source of water; and
- (b) subject to Sections 3 and 4–obtained from the Departmental Head, a written approval authorizing him to use that water,

is guilty of an offence.

Penalty: A fine not exceeding K100.00 or imprisonment for a term not exceeding three months or both.

### **3. EFFECT OF APPROVAL.**

An approval by the Departmental Head under Section 3, authorizes the person to whom the approval relates to take or abstract water for the purposes of treatment only from the raw water source named in the approval.

Penalty: A fine not exceeding K100.00 or imprisonment for a term not exceeding three months or both.

### **4. STANDARDS FOR RAW WATER.**

(1) Subject to Subsection (2), the Departmental Head, if he is satisfied that the raw water to which the approval relates, complies with the standards for raw water set out in Schedule 1, shall grant his approval.

(2) A person may apply to the Department Head for approval to abstract or take raw water, for treatment purposes, that does not comply with the standards referred to in Subsection (1).

(3) On receipt of an application under Subsection (2), the Departmental Head may—

(a) refuse the application; or

(b) if he is satisfied that special provision has been made for the proper treatment of the water to drinking water quality standards—grant the application subject to such conditions (if any) as he imposes.

### **5. STANDARDS FOR DRINKING WATER.**

Drinking water shall comply with the drinking water quality standards set out in Schedule 2.

### **6. DUTY OF WATER SUPPLIER.**

(1) It is the duty of a water supplier to ensure that drinking water supplied by him to a consumer complies with the drinking water quality standards.

(2) A water supplier who—

(a) supplies to a consumer; or

(b) has in his distribution system,

drinking water that does not comply with the drinking water quality standards, is guilty of an offence.

Penalty: A fine not exceeding K100.00 or imprisonment for a term not exceeding three months or both.

## **PART III. – SAMPLING AND ANALYSIS.**

### **7. SAMPLING, ETC., OF RAW WATER.**

A water supplier shall, for the purposes of ensuring compliance with the standards for raw water, forward to the laboratory samples of the raw water for analysis and examination—

(a) in the case of water from a surface raw water source—at least once in each year; and

(b) in the case of water from a ground raw water source—at least three times in each year.

### **8. SAMPLING, ETC., OF DRINKING WATER.**

(1) A water supplier shall, for the purposes of ensuring compliance with the drinking water quality standards, forward to the laboratory samples of the water from his treatment plant and his distribution system for analysis and examination.

(2) For the purposes of Subsection (1), the number of samples and the frequency at which the samples are to be taken are as set out in Schedule 3.

(3) The sampling and analysis of drinking water for radio-activity examination shall be at such frequency and in accordance with such requirements as the Departmental Head in each particular case determines.

## **9. COST OF ANALYSIS AND EXAMINATION.**

(1) The cost of analysis and examination shall be—

- (a) borne by the water supplier; and
- (b) paid to the Departmental Head at such rates as he determines.

(2) The Departmental Head may, in his discretion, exempt a water supplier from the requirements of Subsection (1).

## **10. DEPARTMENTAL HEAD TO ORDER CORRECTIVE ACTION.**

(1) Where it is established by analysis and examination that drinking water supplied by a water supplier does not comply with the drinking water quality standards, the Departmental Head shall by written notice direct the water supplier to take such corrective measures as are specified in the notice.

(2) A water supplier who fails to comply with a direction under Subsection (1) is guilty of an offence.

Penalty: A fine not exceeding K100.00 or imprisonment for a term not exceeding three months or both.

## **11. DEPARTMENTAL HEAD MAY ORDER CLOSURE ETC., OF TREATMENT PLANT.**

(1) Where—

- (a) there has been an outbreak of a waterborne disease in an area in which a treatment plant or a distribution system is located; or
- (b) other emergency circumstances exist which, in the opinion of the Departmental Head, have adversely affected or may adversely affect the quality of water supplied by a water supplier,

the Departmental Head may by written notice direct the water supplier to effect such corrective or precautionary measures as are specified in the notice.

(2) Where the corrective measures specified in a notice under Subsection (1) fail to produce the required results, the Departmental Head may order the water supplier to immediately cease treatment and supply of water.

(3) A water supplier who fails to comply with an order under Subsection (1) or (2) is guilty of an offence.

Penalty: A fine not exceeding K100.00 or imprisonment for a term not exceeding three months or both.

## **12. METHODS OF ANALYSIS.**

Analysis, for the purposes of this Regulation, of any water shall be effected in accordance with the methods set out in the National Technical Standard PNGS 1025-82 established under the *National Institute of Standards and Technology Act 1993*.

## **PART IV. – MISCELLANEOUS.**

### **13. INSPECTION, ETC., OF TREATMENT PLANT, ETC.**

(1) The Departmental Head or a person authorized by him in writing may enter on any premises for the purposes of inspecting any water treatment plant or any water distribution system.

(2) The Departmental Head may by written notice require a water supplier to make such alterations, or to effect such repairs, to his treatment plant or distribution system as the Departmental Head considers necessary in the interests of public health.

(3) Where a water supplier refuses or fails to comply with a requirement under Subsection (2), the Departmental Head may–

(a) cause the necessary alterations or repairs to be executed at the cost of the water supplier; and

(b) for the purposes of executing the alterations or repairs, enter and remain, by such servants, agents and workmen as the Departmental Head considers necessary, on the land on which the treatment plant or distribution system is situated.

(4) The costs and expenses incurred by the Departmental Head in and about the execution of the alterations or repairs under Subsection (2) are recoverable from the water supplier as a debt due to the State.

### **14. EVIDENCE.**

In any legal proceedings under the Act, a certificate purporting to be signed by a person appointed under Section 15 and setting out the results of an analysis of any matter or thing submitted for analysis under this Regulation is admissible in evidence and shall be sufficient evidence of–

(a) the identity of the matter or thing analysed; and

(b) the results of the analysis; and

(c) the manner in which the analysis was carried out.

### **15. APPOINTMENT OF ANALYST.**

The Departmental Head may, for the purposes of this Regulation, appoint, by notice in the National Gazette, a person to be an analyst.

## **SCHEDULE 1 – STANDARDS FOR RAW WATER.**

The standards for raw water shall be:

*Maximum  
Allowable*

1. Micro-  
Biological  
Standards:

Coliform            20,000 per 100  
Bacteria                            mil

2. Toxic  
Contaminants  
Standards:

*Substances*

(a) Arsenic (as            0.05 mg/L  
As)

(b) Cadmium            0.01 mg/L  
(as Cd)

(c) Cyanide (as            0.05 mg/L  
Cn)

(d) Lead (as            0.10 mg/L  
Pb)

(e) Mercury            0.001 mg/L  
(total as Hg)

(f) Selenium            0.01 mg/L  
(as Se)

(g) Nitrate            0 mg/L

(h) Silver            0.05 mg/L

(i) Fluorides            5 mg/L  
(as F)

3. Aesthetic  
Quality  
Standards:

*Substance or  
Characteristics*

(a) Colour            50 units

(b) Odour            Unobjectionable

(c) Taste            Unobjectionable

(d) Iron            1 mg/L

(e) Manganese            0.5 mg/L

(f) Sulphate            400 mg/L

(g) Total            1, 500 mg/L  
dissolved  
solids

(h) Chemical            10 mg/L  
oxygen

demand (COD)	
(i) Bio-chemical oxygen demand (BOD)	6 mg/L
(j) Mineral oil	1 mg/L

## SCHEDULE 2 – STANDARDS FOR DRINKING WATER.

Reg. Sec. 5.

*Note* The standards in this Schedule have been adopted from the WHO International Standards for Drinking Water, 1971, and unless stated otherwise, shall comply with these standards.

### 1. Micro-biological Standards:

(a) Chlorinated or otherwise disinfected water supplies–

(i) For water entering the distribution system, the coliform count shall be zero in any 100 ml sample;

(ii) For water in the distribution system–

(A) Throughout any year, 90% of the sample shall not contain any coliform organisms in any sample of 100 ml;

(B) There shall be no E. Coli in any sample of 100 ml;

(C) No sample shall contain more than 10 coliform organisms per 100 ml;

(D) Coliform organisms shall not be detectable in both of any of two consecutive 100 ml samples;

(b) Non-disinfected water supplies– (Individual or Small Community Supplies)

(i) There shall be no E. Coli in any sample of 100 ml;

(ii) If E. Coli is absent, no sample shall contain more than three coliform organisms per 100 ml.

**2. Toxic Contaminants Standards:** No drinking water shall contain the following substances in amounts exceeding the stated upper limit of concentration.

<i>Substances</i>	<i>Upper Limit of Concentration</i>
(a) Arsenic (as As)	0.05 mg L
(b) Cadmium (as Cd)	0.01 mg/L
(c) Cyanide (as Cn)	0.05 mg/L
(d) Lead (as Pb)	0.1 mg/L
(e) Mercury (as Hg)	0.001 mg/L

(f)	Selenium (as Se)	0.01 mg/L
(g)	Nitrate*	00 mg/L
(h)	Silver*	0.05 mg/L

Note Standards for substances marked thus \* are Papua New Guinea requirements as distinct from WHO.

### 3. 3. Aesthetic and other Qualities Standards:

<i>Substances or Characteristics</i>	<i>Highest Desirable Level</i>	<i>Maximum Permissible Level</i>
(a) Colour	5 units	50 units**
(b) Odour	Unobjectionable	Unobjectionable
(c) Taste	Unobjectionable	Unobjectionable
(d) Suspended matter (turbidity)	5 units	25 units***
(e) Total solids	500 mg/L	1,500 mg/L
(f) pH range	0-8.5	5-9.2
(g) Mineral oil	0.01 mg/L	0.30 mg/L
(h) Total hardness*	200 mg/L (CaCo <sub>3</sub> )	600 mg/L (CaCo <sub>3</sub> )
(i) Calcium (as Ca)	75 mg/L	200 mg/L
(j) Chloride*	200 mg/L	1, 000 mg/L
(k) Copper (as Cu)	0.05 mg/L	5 mg/L
(l) Iron (Total as Fe)	0.1 mg/L	0 mg/L
(m) Magnesium (as Mg)	Not more than 30 mg/L if there are more than 250 mg/L of sulphate	150 mg/L
(n) Manganese (as Mn)	0.05 mg/L	0.5 mg/L
(o) Sulphate	200 mg/L	400 mg/L
(p) Zinc (as Zn)	0 mg/L	15 mg/L
(q) Fluoride	0 mg/L	5 mg/L

Note These standards for substances and characteristics affecting the acceptability of water for domestic use, follow the WHO International Standards for Drinking Water, 1971, except for those standards marked thus \*, which indicate that these have been modified to allow for the great variation of physical and chemical qualities for the various sources throughout Papua New Guinea:

\*\* On the platinum-cobalt scale

\*\*\* Jacksons Turbidity Units (J.T.U.)

### **SCHEDULE 3 – WATER SAMPLING FOR COMMUNITY WATER SUPPLY SYSTEMS MONITORING REQUIREMENTS FOR BACTERIOLOGICAL ANALYSIS.**

Reg. Sec. 8(2).

<i>Column 1</i> Population Served	<i>Column 2</i> Minimum number of samples per month	<i>Column 3</i> Frequency
<i>(a) Individual or Small Community Water Supplies</i>		
1,001 to 2,000	3	Once a month
<i>(b) Community Water Supplies for Urban Centres</i>		
2,001 to 4,000	4	Twice per month
4,001 to 5,000	6	“
5,001 to 8,000	8	“
8,001 to 10,000	10	“
10,001 to 15,000	17	Once a week
15,001 to 20,000	15	“
20,001 to 30,000	18	“
30,001 to 50,000	20	“
50,001 to 75,000	25	“
75,001 to 100,000	30	“
100,001 to 150,000	40	“
150,001 and above	40 plus 1 sample per 10,000 population	Once a day.

Office of Legislative Counsel, PNG