

INDEPENDENT STATE OF PAPUA NEW GUINEA

STATUTORY INSTRUMENT

No 28— of 2002

Environment (Water Quality Criteria) Regulation 2002

Being a Regulation relating to water quality criteria,

MADE by the Head of State, acting with, and in accordance with, the advice of the National Executive Council under the *Environment Act 2000*.

1. INTERPRETATION

(1) Subject to Subsection (2), in this Regulation unless the contrary intention appears, the terms used shall have the same interpretation as in *Section 2* of the *Environment Act 2000*.

(2) In this Regulation, unless the contrary intention appears -

“**Act**” means the *Environment Act 2000* as amended.

“**Mixing Zone**” means a discrete body of water into which waste is discharged and where the prescribed water quality criteria are not required to be met and the protection of aquatic life may not be guaranteed.

“**Water Quality Criteria**” means the criteria for water quality as specified in Schedule 1.

2. WATER QUALITY CRITERIA

(1) The water quality criteria for protection of freshwater aquatic life are specified in Column 2 of Table 1 in Schedule 1.

(2) The water quality criteria for protection of marine aquatic life are specified in Column 3 of Table 1 in Schedule 1.

(3) The maximum permitted criteria of ammonia-nitrogen for protection of freshwater aquatic life are specified in Table 2 in Schedule 1.

(4) Unless otherwise permitted under this Regulation or the terms and conditions of a permit, a person shall not discharge into, or use, water where any such discharge, or use, shall cause a lowering of water quality below the prescribed water quality criteria.

Penalty: A fine not exceeding K50,000.

Default penalty: A fine not exceeding K20,000.

3. MIXING ZONE

(1) The terms and conditions of a permit may provide for a mixing zone where, after exploring all methods of waste avoidance and minimisation, it is not viable or practicable to further reduce the level of waste prior to its discharge or emission.

- (2) Where a permit provides for a mixing zone, the terms and conditions of the permit must specify -
 - a). the location and size of the mixing zone, and
 - b). the corresponding water quality criteria that apply at the boundary of the mixing zone.

4. EXCEEDENCE OF WATER QUALITY CRITERIA

(1) Where a water quality criteria is exceeded due to natural background variations, then the water quality criteria for that water body or segment of the water body, shall be deemed for the purposes of this Regulation to be the natural background level of the parameter.

(2) If reliable scientific evidence indicates that the prescribed water quality criteria may be exceeded without causing serious environmental harm, then the Director may increase the criteria to the extent it considers appropriate in any particular case.

SCHEDULE 1

Act, Sec. 133(2)
Reg., Sec. 2

THE INDEPENDENT STATE OF
PAPUA NEW GUINEA

ENVIRONMENT ACT 2000

WATER QUALITY CRITERIA FOR AQUATIC LIFE PROTECTION

Table 1.

All values are in mg/l unless otherwise specified.

Parameters	Fresh water	Seawater
<i>Ammonia-nitrogen</i>	<i>Dependent on pH and temperature (see Table 2.)</i>	
Arsenic	0.05	0.05
Barium	1.0	1.0
Boron	1.0	2.0
Cadmium	0.01	0.001
Chlorine (total residual)	0.005 at pH 6	0.005
Chromium (as hexavalent form)	0.05	0.01
Colour	No alteration to natural colouration (<i>for both fresh and seawater</i>)	
Cobalt	Limit of detectability (<i>for both fresh and seawater</i>)	
Copper	1.0	0.03
Cyanide (as HCN)	0.005	0.01
Faecal Coliform Bacteria	≤200 per 100 ml (<i>see Note below.</i>)	
Fats	None	None
Fluoride	1.5	1.5
Grease	None	None
Insoluble residues	No insoluble residues or sludge formation to occur (<i>for both fresh and seawater</i>)	
Iron (in solution)	1.0	1.0
Lead	0.005	0.004
Manganese (in solution)	0.5	2.0
Mercury	0.0002	0.0002
Nickel	1.0	1.0
Nitrate (as NO ₃ ⁻ + NO ₂ ⁻)	45.0	45.0
Odour	No alteration to natural odour (<i>for both fresh and seawater</i>)	
Oil	None	None
Oxygen	Not less than 6.0	Not less than 5.0
Pesticides	None	None
pH	No alteration to natural pH (<i>for both fresh and seawater</i>)	
Phenols	0.002	0.002
Potassium	5.0	450.0
Radioactivity	None	None
Selenium	0.01	0.01
Silver	0.05	0.05
Sulfate (as SO ₄ ²⁻)	400.0	-
Sulfide (HS ⁻)	0.002	0.002
Tars	None	None
Taste	No alteration to natural taste (<i>for both fresh and seawater</i>)	
Temperature	No alteration greater than 2°C (<i>for both fresh and seawater</i>)	
Tin	0.5	0.5
Toxicants (miscellaneous)	None	None
Turbidity	No alteration greater than 25 N.T.U. (<i>for both fresh and seawater</i>)	
Zinc	5.0	5.0

Note.

Metal concentrations are for dissolved substances (passing through a nominal 0.45µm medium).

Criteria for Faecal Coliform Bacteria is based on not fewer than five samples taken over not more than a 30 day period, in which the median value of the faecal coliform bacteria content of the waters shall not exceed 200 per 100 ml.

N.T.U. - Nephelometric Turbidity Unit.

Table 2.

Maximum Permitted Concentrations of Ammonia-Nitrogen for Protection of Freshwater Aquatic Life

All values are in mg/l unless otherwise specified.

Temperature (°C)	pH values		
	7.0	8.0	9.0
5	16.1	1.6	0.2
10	11.0	1.1	0.1
15	7.5	0.8	0.09
20	5.2	0.5	0.07
25	3.6	0.4	0.06
30	2.6	0.3	0.05
35	1.6	0.2	0.04