

Chapter 2401-11 MARINE AND FRESH WATER QUALITY REGULATIONS

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GENERAL PROVISIONS

2401-11-01 Authority

These Regulations are promulgated by the Republic of Palau Environmental Quality Protection Board pursuant to the authority granted it by Title 24 of the Palau National Code. These Regulations shall have the force and effect of law and shall be binding on all persons and other entities subject to the jurisdiction of the Republic of Palau. The Board shall apply these Regulations to all marine and fresh waters in the Republic of Palau.

(Effective February 26, 2022)

2401-11-02 Purpose

It is the purpose of these Regulations to:

- (A) Identify the uses for which the various waters of the Republic of Palau shall be maintained and protected.
- (B) Identify the prohibited uses for the various waters of the Republic of Palau.
- (C) Specify the water quality standards required to maintain the desired uses.
- (D) Prescribe regulation necessary for implementing, achieving, and maintaining the specified water quality, to protect health, welfare, and property, and to assure that no pollutants are discharged into these waters without being given the degree of treatment or control necessary to prevent pollution.

(Effective February 26, 2022)

2401-11-03 Anti-degradation Policy

It is the policy of the Republic of Palau that:

- (A) The maintenance of water quality will provide for the propagation of aquatic life and for recreation in and on the waters is an historical and legitimate right of the people of the Republic of Palau.
- (B) The achievement of the water quality goals of the Republic of Palau is in the public interest and that achievement of these goals should not represent an unreasonable barrier to economic or social development.
- (C) Existing water uses and the level of water quality necessary to protect existing uses shall be maintained and protected. No further water quality degradation which would interfere with or become injurious to these existing uses is allowable. Existing uses are those actually attained in the water body on or after November 28, 1975, whether or not they are included in the water quality standards.
- (D) Waters whose existing quality is less than the quality specified by these standards shall be improved to comply with these standards.
- (E) Waters whose existing quality exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water shall be maintained and protected unless and until the Board finds, after full opportunity for public participation and intergovernmental coordination, that allowing lower water quality is necessary to accommodate an important economic or social development in the area in which the waters

are located. In no event, however, may degradation of water quality interfere with or become injurious to existing uses. Implementation of this policy shall be in accordance with Title 24 of the Palau National Code and the rules and regulations promulgated thereunder.

- (F) Before any new point-source of pollution is allowed to lower the quality of water, the source shall be required to meet and maintain the highest statutory and regulatory requirements. Before a non-point-source is allowed to lower the water quality, the source shall establish and use the best, cost-effective, and reasonable management practices.
- (G) There shall be no direct or indirect discharge of sewage or other wastes into any planned or intended ground or surface source of drinking water.
- (H) All sewage and waste shall receive the degree of treatment necessary to protect the beneficial uses of waters of the Republic of Palau before discharge.
- (I) Outstanding National Resource Waters shall be protected in a pristine state.

(Effective February 26, 2022)

2401-11-04 Definitions

As used herein, unless the context otherwise requires, the terms:

- (A) “Ambient Conditions” means the water quality condition that would occur in the receiving waters if these waters were not influenced by any proposed new human activity or discharge.
- (B) “Board” or “EQPB” means the Republic of Palau Environmental Quality Protection Board or its authorized representative.
- (C) “Buffer Zone” shall mean a strip of land in permanent vegetation adjacent to State waters or waters of Palau, designed to intercept pollutants, control erosion, and manage other environmental concerns.
- (D) “Chairman” means the Chairman of the Republic of Palau Environmental Quality Protection Board personally or his authorized representative.
- (E) “Dilution Ratio” means the ratio of entrained water to quantity of discharged water at the plume centerline after initial dilution.
- (F) “Discharge” includes, but is not limited to, any spilling, leaking, pumping, pouring, emitting, emptying, or dumping.
- (G) “Freshwater Lake” shall mean any body of fresh water that has permanent open water with a surface area that is more than a quarter of an acre, excluding man-made ornamental lakes or ponds and all types of pollution treatment lagoons.
- (H) “Geometric Mean” means the n^{th} root of the products of C_1 to C_n in which n is the number of samples analyzed during the period and C is the concentration of the parameter found in each sample. The geomean is calculated by taking the \log_{10} of sample values, averaging those values, and raising the average to the power of 10.
- (I) “Groundwater” means any and all water found beneath the earth whether in confined or unconfined areas.
- (J) “License” or “Permit” means any license or permit granted by an agency of the National Government to conduct any activity which may result in any discharge into the waters of the Republic of Palau.
- (K) “Licensing or Permitting Agency” means any agency of the National Government to which application is made for a license or permit and which has the authority to issue a license or permit.

- (L) “Mangroves” means distinct area populated by halophytic trees, shrubs, and other plants that grow in brackish to saline waters, in the intertidal zone from approximately the mean higher high water level to the most seaward pneumatophore (mangrove tree root).
- (M) “Mixing Zone” means an area of specified dimensions where a discharge undergoes an initial dilution within a specified sub-area of the mixing zone in the immediate vicinity of the discharge point (zone of initial dilution), then undergoes secondary mixing to the limit of the mixing zone boundary. A mixing zone is an allocated impact zone where specific modifications of applicable water quality regulations are permitted by the Board but where acutely toxic conditions are prevented (except as defined within a limited zone of initial dilution) and where public health and welfare are not endangered.
- (N) “Natural” means free of substances or condition or a combination of both attributable to human activities.
- (O) “Natural Condition” means that state of water quality that would exist at a specified time and place in the absence of human activities.
- (P) “Near-Shore Waters” means those marine waters that begin at the shoreline and extend seaward to the 100-fathom (600-foot or 183-meter) depth contour from mean lower low water.
- (Q) “Non-Point-Source” means any origin from which pollutants emanate in an unconfined and un-channeled manner including, but not limited to, surface runoff and leachate seeps.
- (R) “Off-Shore Waters” means those marine waters that extend from the 100-fathom (600-foot or 183-meter) depth contours.
- (S) “Ordinary High Water Mark” means the line delineating the maximum height reached by marine or fresh water on a periodic basis, excluding unexpected variations resulting from storm surges or heavy rainfall events. In the absence of actual data, the ordinary high water mark shall be determined by the deposit of debris on the shore, other physical markings or characteristics, vegetation lines, tidal gauges or other suitable means.
- (T) “Outstanding National Resource Waters” means the waters of National and State spawning grounds, preserves and water of exceptional recreational or ecological significance including Protected Area Network sites and locations set aside by State or National government as conservation zones.
- (U) “Owner or Operator” means any person owning or operating an on-shore facility or an off-shore facility, and, in the case of an abandoned facility, any person that owned or operated the facility immediately prior to abandonment.
- (V) “Person” means the Republic of Palau, a State, a political subdivision, a public or private institution, corporation, partnership, joint venture, association, firm or company organized or existing under the Laws of Palau or any State or Country, a lessee or other occupant of property, or an individual, acting singly or as a group.
- (W) “Point-source” means any discernible, confined and discrete conveyance including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, vessel or other floating craft, and, open-pen in water fin fish aquaculture facilities, from which pollutants are or may be discharged, and, localized dredging
- (X) “Pollutant” means but is not limited to sediment, dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical waste, biological material, radioactive materials, heat, wrecked or discarded equipment, rock, sand, and industrial, municipal, and agricultural waste.

- (Y) “Pollutant Discharge” means either a point-source or non-point-source of pollutant discharge.
- (Z) “Pollution” means the manmade or man induced alteration of the physical, chemical, biological, or radiological condition of the waters of the Republic of Palau.
- (AA) “Pristine” means untouched unspoiled areas.
- (BB) “Sewage” means human and other animal body wastes and the wastes from toilets and other receptacles intended to receive or retain body wastes.
- (CC) “SPCC Plan” means the Spill Prevention Control and Countermeasures Plan required pursuant to 40 CFR Part 110 and Part 112.
- (DD) “Stream” shall mean a flowing body of fresh water that persists throughout most of the year, except under conditions of drought, and has a visually-defined bed and bank or “ordinary high water mark.”
- (EE) “Surface Water” means any water as found on the surface of the earth or under the influence of run off or other water.
- (FF) “Swamp Forest” means a forest that occurs where soils are flooded most of the year with fresh water.
- (GG) “Undue Hardship” shall mean that the owner of the land has been denied all beneficial uses of the property that includes the buffer zone.
- (HH) “Vessel” includes every description of watercraft or other artificial contrivance used, or capable of being used, as a means of transportation on any waters of or within the Republic of Palau.
- (II) “Water Quality Standards” means standards established for any and all waters located within the Republic of Palau.
- (JJ) “Wetland” means those areas that are inundated or saturated with surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetland generally include saltwater swamps, freshwater/marshes, and cultivated wetlands. These waters shall be classified as surface waters.

(Effective February 26, 2022)

WATER USE CLASSIFICATIONS – PROTECTED AND PROHIBITED USES

2401-11-05 Prohibited Uses and Activities

The following uses and activities are prohibited in all waters:

- (A) Dumping or discharge of solid waste, including but not limited to dead animals, directly into the water or in a manner that could reasonably be expected to adversely affect water quality;
- (B) The discharge of oil, sludge, oil refuse, fuel oil, or bilge waters directly into the water or in a manner that could reasonably be expected to adversely affect water quality;
- (C) The discharge of toxic, hazardous, or radioactive waste directly into the water or in a manner that could reasonably be expected to adversely affect water quality; and
- (D) The dumping or discharge of industrial, domestic, or animal waste except as approved by the Board.

(Effective February 26, 2022)

2401-11-06 Marine Waters

Marine waters are classified in accordance with uses to be protected and prohibited in each class as follows:

(A) Class AA Waters:

- (1) Protected uses of these waters are oceanographic research, the support and propagation of shellfish and other marine life, conservation of coral reefs and wilderness areas, compatible recreation, and other aesthetic enjoyment.
- (2) Prohibited uses and activities include, but are not limited to, animal pens within sixty (60) feet of any shoreline, dredging and filling activities except where approved by the Board, and point-source discharges.
- (3) It is the objective that this class of waters remain as near to their natural state as possible with an absolute minimum of pollution from any source.
- (4) Outstanding Natural Resource Waters are classified as AA Waters.
- (5) To the extent possible, the wilderness character of such areas shall be protected. Destruction of reefs, aquatic habitats or other resources will not be permitted.
- (6) The classification of any water area as Class AA shall not preclude other uses of such water compatible with these objectives and in conformance with the standards applicable to them.

(B) Class A Waters:

- (1) Protected uses of these waters are recreational (including fishing, swimming, bathing, and other water contact sports), aesthetic enjoyment, and the support and propagation of aquatic life.
- (2) Prohibited uses include, but are not limited to, animal pens within sixty (60) feet of any shoreline, dredging and filling activities except where approved by the Board, and whole and limited body-contact recreation (e.g., swimming, snorkeling, surfing, and scuba diving) within any zone of mixing.
- (3) It is the objective that this class of waters, use for recreational purposes and aesthetic enjoyment shall not be limited in any way.
- (4) Class A waters shall be kept clean of any trash, solid materials, and oil; shall not act as receiving waters for any effluent which has not received the highest degree of treatment or control practicable under existing technological and economic conditions; and shall be compatible with the standards established for this class.

(C) Class B Waters:

- (1) Protected uses of these waters are small boat harbors, commercial and industrial shipping, bait fishing, compatible recreation, over-water commercial or residential structures for recreational or domestic use, resource extraction, the support and propagation of aquatic life, and aesthetic enjoyment.
- (2) Prohibited uses include but are not limited to animal pens within sixty (60) feet of any shoreline, dredging and filling activities except where approved by the Board, and whole and limited body-contact recreation (e.g., swimming, snorkeling, surfing, and scuba diving) within any zone of mixing.
- (3) It is the objective for this class of waters that discharges of any pollutant be controlled to the maximum extent possible and shall be compatible with the standards established for this class. Sewage and industrial effluent shall receive the highest degree of treatment practicable under existing technological and economic conditions.

- (4) No near-shore waters with a mangrove area greater than fifty (50) feet in width shall be classified as Class B waters after May 18, 1998.
 - (5) Unless the boundaries of a Class B area are specifically identified, the area is limited to those waters within 1000 feet of a boat docking facility. The rest of the water area in such bay or harbor not falling within the area identified above shall be Class A unless given some other specific designation.
- (D) Class BB Waters:
- (1) Protected uses of these waters are sand mining, compatible recreation, the support and propagation of aquatic life, and aesthetic enjoyment.
 - (2) Prohibited uses include but are not limited to animal pens over or within sixty (60) feet of any shoreline, dredging and filling activities except where approved by the Board, and whole and limited body-contact recreation (e.g., swimming, snorkeling, surfing, and scuba diving) within any zone of mixing.
 - (3) It is the objective of this class of waters that sand mining be allowed but in such a manner and at such times as to minimize impacts to other uses. Discharges of sediment associated with sand mining shall be controlled to the greatest extent practicable under existing technologies and economic conditions, and any live or intact coral within the area shall not be disturbed.
 - (4) The Class BB designation shall only apply to clearly identified and delineated areas and shall be limited to areas that contain little or no coral and which have not been identified as providing important habitat for the support and propagation of aquatic life.

(Effective February 26, 2022)

2401-11-07 Fresh Waters

Fresh waters are classified in accordance with the uses to be protected as follows:

- (A) Class 1 Waters:
- (1) Protected uses of these waters are drinking water supply, food processing, the support and propagation of aquatic life, and compatible recreation.
 - (2) Prohibited uses include, but are not limited to, animal pens within sixty (60) feet of the water body, waste discharge, dredging and filling activities except where approved by the Board, bathing (which also includes washing of clothes and dishes), land disturbing (e.g., grading, tillage) activities within sixty (60) feet of the water body, and wood cutting or clearing within sixty (60) feet of the water body.
 - (3) It is the objective of this class of waters to remain in as near their natural state as possible with an absolute minimum of pollution from any source. To the extent possible, the wilderness character of such areas shall be protected.
- (B) Class 2 Waters:
- (1) Protected uses of these waters are bathing, swimming, the support and propagation of aquatic life, compatible recreation, and agricultural water supply.
 - (2) Prohibited uses include, but are not limited to, animal pens within sixty (60) feet of the water body, dredging and filling activities except where approved by the Board, land disturbing (e.g., grading, tillage) activities within sixty (60) feet of the water body.

- (3) It is the objective for this class of waters that their use for recreational purposes, propagation of fish and other aquatic life, and agricultural and industrial water supply not be limited in any way. Such waters shall be kept clean of trash, solid waste materials, and oils and shall not act as receiving waters for any effluent which has not received the highest degree of treatment or control practicable under existing technological and economic conditions.

(Effective February 26, 2022)

2401-11-08 Groundwater

- (A) Class I: Special Groundwater are those that are highly vulnerable to contamination because of the hydrological characteristics of the areas under which they occur and that are also characterized by either of the following two factors:
- (1) Irreplaceable, in that no reasonable alternative source of drinking water is available to substantial populations; or
 - (2) Ecologically vital, in that the aquifer provides the base flow for a particularly sensitive ecological system that, if polluted, would destroy a unique habitat.
- (B) Class II: Current and potential sources of drinking waters and waters having other beneficial uses and all other groundwater that are currently used or are potentially available for drinking water or other beneficial use.
- (C) Class III: Groundwater not considered potential sources of drinking water and of limited beneficial uses because they are heavily saline, with total dissolved solids levels over 10,000 mg/l, or are otherwise contaminated beyond levels that allow cleanup using methods reasonably employed in public water system treatment. The groundwater also must not migrate to Class I or Class II groundwater or have a discharge to surface water that could cause degradation.

(Effective February 26, 2022)

WATER USE AREAS; CLASSIFICATION, ESTABLISHMENT, AND CHANGES

2401-11-09 Marine Waters

The following classifications of water uses shall apply to the following areas:

(A) Kayangel	
(1)Class AA	All areas (not otherwise classified)
(2)Class A	NA
(3)Class B	Village Docks
(4)Class BB	NA
(B) Ngarchelong	
(1)Class AA	All areas (not otherwise classified)
(2)Class A	NA
(3)Class B	Village Docks
(4)Class BB	NA

(C) Ngaraard	
(1)Class AA	All areas (not otherwise classified)
(2)Class A	NA
(3)Class B	Village Docks
(4)Class BB	NA
(D) Ngiwal	
(1)Class AA	All areas (not otherwise classified)
(2)Class A	NA
(3)Class B	Village Docks
(4)Class BB	NA
(E) Melekeok	
(1)Class AA	All areas (not otherwise classified)
(2)Class A	NA
(3)Class B	(a) Village Docks (b) Medal Ngerubesang Reef (South Reef) measuring approximately 1,337.2 meters (4,386 ft. or 0.83 miles) in length, and 30 meters (98.4 ft.) wide with the four (4) corners of the area at the following GPS locations: NW: 7° 29' 21.006" N 134° 38' 11.085" E NE: 7° 29' 20.837" N 134° 38' 11.363" E SW: 7° 28' 35.75" N 134° 37' 42.469" E SE: 7° 28' 35.556" N 134° 37' 42.632" E
(4)Class BB	NA
(F) Ngchesar	
(1)Class AA	All areas (not otherwise classified)
(2)Class A	NA
(3)Class B	Village Docks
(4)Class BB	NA
(G) Ngardmau	
(1)Class AA	All areas (not otherwise classified)
(2)Class A	NA
(3)Class B	Village Docks
(4)Class BB	NA
(H) Ngeremlengui	
(1)Class AA	All areas (not otherwise classified)
(2)Class A	NA
(3)Class B	Village Docks
(4)Class BB	NA
(I) Ngatpang	
(1)Class AA	All areas (not otherwise classified)
(2)Class A	NA

(3)Class B	Village Docks
(4)Class BB	NA
(J) Aimeliik	
(1)Class AA	All areas (not otherwise classified)
(2)Class A	NA
(3)Class B	Village Docks
(4)Class BB	NA
(K) Airai	
(1)Class AA	All areas (not otherwise classified)
(2)Class A	NA
(3)Class B	(a) Village Docks, (b) Aquaculture site measuring approximately 23,104 square meters with the four (4) corners of the area at the following GPS locations: NW: 7° 19.075'N 134° 33.854'E SW: 7° 18.782'N 134° 33.582'E NE: 7° 18.898'N 134° 34.047'E SE: 7° 18.603'N 134° 33.773'E
(4)Class BB	NA
(L) Koror	
(1)Class AA	All areas (not otherwise classified)
(2)Class A	(a) Meyuns (b) Echang (c) Cholebdechal (Oleblechol) (d) Ngiritang (e) Ngetmeduch (f) Mechang
(3)Class B	(a) Malakal (Ngemelachel) Harbor (b) M-Dock (Singhatoba) including S.E. of Ngerbeched Shore (c) T-Dock (limited to areas within 1,000 feet of the boat ramp) (d) Northwest Malakal (limited to waters extending 100 feet from the shoreline between Mason's Mercury Marine and the Malakal quarry) (e) Ngereksong (Palau Pacific Resort area) (f) Iwayama Bay from Nikko pier to a shoreline boundary approximately 1200 feet N.W. of the Nikko pier and an additional 300 feet of offshore reef flat to the N.W. of the shoreline boundary.

	(g) Waters extending 200 meters from the shoreline of Ngerur Island. (h) Bkul Echol. An area of approximately 17,050 square meters starting from the corner boundary between Cadastral Lot No. 025 A 02 and Cadastral Lot No. 025 A 04 and then proceeding west one hundred and ten (110) meters to the eastern boundary of Cadastral Lot No. 25-A-01 (Ngeriungs Island) and then proceeding in a northerly direction parallel to the western boundaries of Cadastral Lot Nos. 025 A 04, 025 A 05, 024 A 04, and 024 A 03 for one-hundred and seventy-five meters and then east to the shoreline.
(4)Class BB	(a) Designated Mekeyald PTC Sandmining
(M) Peleliu	
(1)Class AA	All areas (not otherwise classified)
(2)Class A	(a) Ngebad to Ngarekkeiukel point
(3)Class B	(a) Akalakul (Elochel) Dock, (b) Btelulachang ra Teliu (Kambek)
(4)Class BB	
(N) Angaur	
(1)Class AA	All areas (not otherwise classified)
(2)Class A	(a) Pkulamekaep (Bkulamekaeb) point to Medorm, (b) Beach south of Pkulagelul (Buklengeluul) point, (c) Beach between Ngedeloch point and Medorm
(3)Class B	(a) Angaur (Ngeaur) Harbor
(4)Class BB	NA
(O) Sonsorol	
(1)Class AA	All areas (not otherwise classified)
(2)Class A	NA
(3)Class B	NA
(4)Class BB	NA
(P) Hatohobei	
(1)Class AA	All areas (not otherwise classified)
(2)Class A	NA
(3)Class B	NA
(4)Class BB	NA

(Effective February 26, 2022)

2401-11-10 Changes to Water Use Classification

Procedure for considering change for a water use classification:

- (A) First, a State must submit a request letter identifying the area to be considered for reclassification and stating the intended use of the area to be reclassified.
- (B) After receipt of the above-stated request letter, EQPB will schedule a scoping meeting with the project proponent and the State to advise of the requirement of conducting an Environmental Assessment (EA) if the proposed new classification is to be a lower classification (less protective). The EA must include all information required for an EA in EQPB Environmental Impact Statement Regulations, a baseline study as required under Chapter 2401-1, a map of the area proposed to be reclassified along with GPS coordinates, and an approval letter from the State Governor.
- (C) After the scoping meeting, the State and EQPB will arrange and hold a public hearing with the project proponent, state government officials, and interested parties. All costs associated with advertising and holding the public hearing shall be paid for by project proponent or State. Any comments received during the public hearing must be addressed by the project proponent in the EA or in a supplemental attachment to the EA.
- (D) Once the EA has been completed and all public comments have been addressed to the satisfaction of EQPB, the EQPB Board will approve or deny the request to reclassify.
- (E) If a request to reclassify waters is approved, EQPB will amend these Regulations in accordance with the Administrative Procedure Act, Title 6, Palau National Code.

(Effective February 26, 2022)

WATER QUALITY STANDARDS

2401-11-11 Basic Criteria Applicable to All Waters

- (A) All waters shall be capable of supporting desirable aquatic life and shall be suitable for recreation in and on the water, except as otherwise provided in these Regulations (e.g. Zones of Mixing).
- (B) All waters shall be:
 - (1) Free of visible floating materials, oils, greases, scum, and other floating matter attributable to human activities;
 - (2) Free from materials attributable to sewage, industrial waste, or other human activities that produce visible turbidity or settle out to form deposits;
 - (3) Free from materials attributable to sewage, industrial waste, or other human activities that produce objectionable color, odor, or taste directly or by chemical or biological action with the water or the life forms in the water;
 - (4) Free from substances attributable to human activities that induce undesirable aquatic life or degrade the indigenous biota;
 - (5) Maintained free of toxic substances in concentrations that are toxic to or that produce detrimental physiological responses in human, plant, animal, or aquatic life; and
 - (6) The Board shall apply natural background levels in place of specified water quality criteria standards if natural background water quality is better than that specified in other provisions of the standards in order to prevent the degradation of natural conditions and implement the anti-degradation provisions in these Regulations.

(Effective February 26, 2022)

2401-11-12 Buffer Zones

- (A) All fresh waters, Outstanding National Resource Waters, and Class AA and Class A marine waters shall be protected through the use of buffer zones. Buffer zones serve to reduce the influence of human activities on surface waters including the introduction of excess sediment, nutrients, and other pollutants, to protect public health and the environment, and protect private and public property from effects of extreme rainfall events, high tides, and wave action. Protection is increasingly important because extreme rainfall, rising sea levels, extreme tides, and increased wave energy due to greater intensity and frequency of tropical cyclones are expected as a consequence of changing climatic conditions.
- (B) Minimum buffer zones shall be applicable as follows:
 - (1) The minimum buffer zones for all freshwater lakes, streams, swamp forests and marine Outstanding National Resource Waters shall be sixty (60) feet.
 - (2) The minimum buffer zones for Class AA and Class A marine waters shall be thirty (30) feet.
- (C) Buffer zones shall be measured as follows:
 - (1) The width of the buffer zones for fresh water lakes, streams, and swamp forest shall be measured from the ordinary high water mark on the shore or stream bank to the point sixty (60) feet distant landward on a horizontal plane.
- (D) The width of the buffer zones for near-shore waters and mangroves shall be measured from the ordinary high water mark to the point sixty (60) feet distant landward on a horizontal plane. Earthmoving activities, as defined by the EQPB Earthmoving Regulations (including, but not limited to, agriculture, forestry, and any form of construction, building, improvement, or maintenance), the use of pesticides and fertilizers, and the clearing or burning of any vegetation are prohibited in all buffer zones, except as stated in Sections (E) and (F) below.
- (E) Building of single family residential structures in buffer zones surrounding near-shore waters and mangroves, but not in buffer zones for freshwater lakes, streams, or swamp forests, shall be permitted, provided that all of the following conditions are met:
 - (1) Only single family residences shall be allowed. No apartments, hotels, or any other commercial structures shall be permitted.
 - (2) Clearing of vegetation in the buffer zone will be limited to the smallest area necessary to construct house and allow human access to the dwelling.
 - (3) The size of the house and all appurtenant structures shall be limited to a total ground area of 1,200 square feet and shall be no more than two stories in height;
 - (4) All access roads or trails within the buffer zone shall be constructed and maintained in accordance with the best management practices developed by the Board;
 - (5) The density of residential housing within the buffer zone shall not exceed one (1) single family residence per acre of buffer zone; and
 - (6) The residence, appurtenant structures, and area cleared shall in no event be located within twenty-five (25) feet of the near-shore waters or mangroves.
- (F) Any applicant may request the Board to grant an exemption or variance from the buffer zone requirements. The Board may grant such a request only if:
 - (1) The Board finds the proposed use necessary and unavoidable for the legitimate use of the property either outside the buffer zone, or within the buffer zone but being

- used pursuant to the provisions of Section (E), supra, (for example, access roads, trails, and stream crossings);
- (2) Enforcement of these provisions will result in unnecessary and undue hardship to the applicant owing to special conditions related to the land itself; or
 - (3) The applicant demonstrates to the satisfaction of the Board that the application of the buffer zone requirement is unwarranted in terms of preventing actual or potential environmental degradation of marine and fresh water quality.
- (G) No exemptions or variances will be allowed in land bordering an Outstanding National Resource Water.
- (H) Completed commercial, residential, and agricultural developments not in compliance with buffer zone requirements as set forth in these Regulations shall not be extended or enlarged after the effective date of these Regulations. If use of a development that is not in compliance with buffer zone requirements is discontinued or abandoned for a period of six (6) months, compliance with these Regulations is required for future use of the development.
- (I) As part of its permitting process, the Board retains discretion to modify these buffer zones requirements to be more restrictive based on its review of the relevant physical and ecological factors, such as, but not limited to, the slope of the property, the proposed use upland of protected waters, the type and condition of vegetation in the buffer zone, the characteristics of the soils in the area, the sensitivity of the affected ecosystem, and similar factors.

(Effective February 26, 2022)

2401-11-13 Microbiological Standards

Parameter	Class AA	Class A	Class B	Class BB	Class 1	Class 2
E. Coli					Concentration shall not exceed a geometric mean of 126/100ml nor shall any single sample exceed 410/100ml.	Concentration shall not exceed a geometric mean of 126/100ml nor shall any single sample exceed 410/100ml.
Enterococci	Concentration shall not exceed a geometric mean of 35/100ml nor shall any single sample exceed 130/100ml.	Concentration shall not exceed a geometric mean of 35/100ml nor shall any single sample exceed 130/100ml.	Concentration shall not exceed a geometric mean of 35/100ml nor shall any single sample exceed 130/100ml.	Concentration shall not exceed a geometric mean of 35/100ml nor shall any single sample exceed 130/100ml.		

(Effective February 26, 2022)

2401-11-14 pH Standards

Parameter	Class AA	Class A	Class B	Class BB	Class 1	Class 2
pH	The pH range shall be 7.7 to 8.5 pH units.	The pH range shall be 7.7 to 8.5 pH units.	The pH range shall be 7.7 to 8.5 pH units.	The pH range shall be 7.7 to 8.5 pH units.	The pH range shall be 6.5 to 8.5 pH units, or pH variation shall not be greater than .2 pH units from ambient conditions.	The pH range shall be 6.5 to 8.5 pH units, or pH variation shall not be greater than .2 pH units from ambient conditions.

(Effective February 26, 2022)

2401-11-15 Nutrients

Parameter	Class AA	Class A	Class B	Class BB	Class 1	Class 2
Total Phosphorus	0.025mg/L as P	0.025mg/L as P	0.500mg/L as P	0.500mg/L as P	0.200mg/L as P	0.200mg/L as P
Total Nitrogen	0.400mg/L as N	0.800mg/L as N	0.800mg/L as N	0.400mg/L as N	0.750mg/L as N	1.500mg/L as N

(Effective February 26, 2022)

2401-11-16 Dissolved Oxygen

Concentration of dissolved oxygen shall not be decreased to less than the percentage indicated below at any time, as influenced by salinity or naturally occurring temperature variations. Where natural conditions cause lower dissolved oxygen levels, controllable water quality factors shall not cause further reduction.

Parameter	Class AA	Class A	Class B	Class BB	Class 1	Class 2
Dissolved Oxygen	80%	80%	80%	80%	75%	75%

(Effective February 26, 2022)

2401-11-17 Current Patterns

There shall be no changes in basin geometry of freshwater inflow that will affect current patterns in such a way as to adversely affect biological populations or sediment distribution. To protect

estuarine organisms, no change in channels, basin geometry, or freshwater influx shall be made which would cause permanent changes in existing isohaline patterns of more than ten percent (10%).

(Effective February 26, 2022)

2401-11-18 Temperature

Temperature shall not vary by more than 1.5 degrees Fahrenheit (0.9 degrees Celsius) from the natural conditions in marine and fresh waters.

(Effective February 26, 2022)

2401-11-19 Turbidity

<u>Parameter</u>	<u>Class AA</u>	<u>Class A</u>	<u>Class B</u>	<u>Class BB</u>	<u>Class 1</u>	<u>Class 2</u>
Turbidity: Nephelometric Turbidity Units (NTU)	Shall not be greater than 1 NTU	Shall not be greater than 1 NTU	Shall not be greater than 2 NTU	Shall not be greater than 2 NTU	Shall not be greater than 5% above natural conditions.	Shall not be greater than 10% above natural conditions.

(Effective February 26, 2022)

2401-11-20 Radioactive Materials

- (A) The concentration of radioactive materials in all waters shall not exceed 1/30th of the maximum permissible limits established for continuous occupational exposure given in the latest edition of the *U.S. National Bureau of Standards Handbook No, 69*.
- (B) No radio nuclides shall be present in any waters in amounts that would exceed the maximum permissible levels established in the EQPB Public Water Supply Regulations.
- (C) The concentration of radioactive materials in any waters shall not result in the accumulation of radioactivity in edible plants or animals that would result in a hazard to humans or aquatic life, as recommended by the US Federal Radiation Council in the latest editions of the *U.S. Radiation Protection Guides*.

(Effective February 26, 2022)

2401-11-21 Oil and Petroleum Products

In all waters, the concentration of oil and petroleum products shall not:

- (A) Be detectable as a visible film, sheen, or discoloration of the water surface nor shall it cause an objectionable odor;
- (B) Cause tainting of fish or other aquatic life or otherwise be injurious to the indigenous biota;
- (C) Cause an objectionable taste in drinking water; or
- (D) Form an oil deposit on beaches or shorelines or on the bottom of a body of water.

(Effective February 26, 2022)

2401-11-22 Toxic Standards

- (A) The concentration of toxic pollutants shall not exceed the more stringent of the aquatic life criteria or the human health concentration criteria for consumption of water and organisms in the priority pollution tables of the National Recommended Water Quality Criteria 2002, EPA-822-R-02-047, November 2002 or the most recent version. Compliance with this objective will be the duty of the person responsible for the discharge of the effluent and will be determined by use of indicator organisms, analysis of species diversity, population density, growth anomalies, bioassay of appropriate duration, or other appropriate methods as specified by the Board. The chronic effect on test organisms outside a zone of mixing, if one exists, in the water body receiving the effluent in question shall not be more than that for the same water body in areas unaffected by the waste discharge, or when necessary for other control water that is consistent with the requirements for “experimental water” as described in Standard Methods for the Examination of Water and Wastewater, latest edition (for ordering information contact the American Public Health Association at <http://www.apha.org>). As a minimum, compliance with the above toxicity standards shall be evaluated with a ninety-six (96) hour bioassay or short term method for estimating chronic toxicity using methods described the most recently updated versions of the following documents:
- (1) EPA/821/R-02-013 Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition, 2002;
 - (2) EPA/600/4-90-027F Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Cincinnati, Ohio, EMSL, Fourth Edition, 1993; and
 - (3) EPA/600/R-95-136 Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms, Cincinnati, Ohio, EMSL, 1995.
- (B) The following additional toxic standards shall apply:
- (1) Arsenic: The human health numeric criteria for arsenic in the EPA 2002 publication are excluded from the EQPB Marine and Fresh Water Quality Regulations and instead, the Palau human health criteria for arsenic in freshwaters is 10 µg/l;
 - (2) Total Mercury: In addition to the methyl mercury criteria for human health from the EPA 2002 publication, the water column concentration of mercury shall not exceed 0.05 µg/l;
 - (3) Total Residual Chlorine: Total residual chlorine in any ambient water shall not exceed 0.011 milligrams per liter for fresh water and 0.0075 milligrams per liter for marine waters; and
 - (4) Ammonia: Ammonia toxicity standards for fresh and marine waters are tabulated in Appendix A.

(Effective February 26, 2022)

2401-11-23 Biocriteria

- (A) The Republic of Palau shall preserve, protect, and restore water resources to as near their natural condition as possible. The condition of these waters shall be determined from measures of physical, chemical, and biological characteristics of each water type, according to its designated uses. As a component of these measures, the biological integrity

of the benthic communities living within waters shall be assessed by comparison to reference conditions with similar abiotic and biotic environmental settings that represent the optimal or least impacted condition for that system and/or statistical change over time. Reference conditions shall be those observed to support the greatest community evenness, diversity, and abundance of aquatic life as is expected or has been historically found in natural settings essentially undisturbed or minimally disturbed by human impacts, development, or discharges. This condition shall be determined by consistent sampling and reliable measures of selected indicator communities of flora and/or fauna and may be used in conjunction with other measures of water quality. Waters shall be of a sufficient quality to support a residential biological community as defined by metrics derived based upon reference conditions. These biological criteria shall apply to fresh water, wetlands, estuaries, swamp forests, coral reefs, and other marine conditions based upon their respective reference conditions and metrics.

- (B) Compliance with biocriteria for coral reefs and seagrass beds shall be determined in accordance with the most recent version of *EQPB Marine and Fresh Water Quality Regulations Implementation Guidance Manual*.

(Effective February 26, 2022)

2401-11-24 General Conditions

- (A) All methods of sample collection, preservation, and analysis used to determine compliance with these standards shall be in accordance with those specified in the latest edition of *Standard Methods for the Examination of Water and Wastewater, by the American Public Health Association* or methods specified by the United States Environmental Protection Agency in 20 CFR Section 136 et. seq., as appropriate.
- (B) All analyses shall be conducted by a laboratory certified by the US National Environmental Laboratory Accreditation Program (NELAP) or at a laboratory approved by EQPB. An appropriate QA package, as determined by EQPB, shall be provided as part of all submitted data packages.
- (C) Compliance with numeric criteria shall be determined in accordance with the most recent version of *EQPB Marine and Fresh Water Quality Regulations Implementation Guidance Manual*.
- (D) Whenever water quality standards are exceeded, additional samples shall be taken at frequent intervals to be determined in accordance with the most recent version of *EQPB Marine and Fresh Water Quality Regulations Implementation Guidance Manual*.
- (E) Whenever natural conditions are of a better quality than the assigned water quality criteria, the natural conditions shall constitute the water quality criteria.
- (F) Whenever two (2) numeric criteria are in conflict, the more stringent criteria shall constitute the water quality criteria.
- (G) Pollutant discharge to either surface or ground waters shall be controlled so as to protect not only the receiving water but also those waters into which the receiving waters may flow.

(Effective February 26, 2022)

NEW OR INCREASED SOURCES OF POLLUTION

2401-11-25 Approval Required for New or Increased Pollutants

- (A) It shall be a violation of these Regulations for any person to initiate any project which may represent a new or increased source of pollution, either point-source or non-point-source, without first obtaining written approval of the EQPB.
- (B) It is incumbent upon the person initiating the project to demonstrate to the EQPB that the project will not directly or indirectly impair any beneficial uses of the affected waters.
- (C) The EQPB may place conditions on the construction and/or operation of the project as necessary to mitigate or eliminate any adverse water quality impacts associated with the project.
- (D) The EQPB may withhold approval for any project until the project has received all necessary permits and clearances from other Government agencies and State Government or has demonstrated that such clearances will be obtained at the appropriate time.

(Effective February 26, 2022)

HAZARDOUS SUBSTANCES

2401-11-26 Written Approval for Hazardous Substances

It shall be in violation of these Regulations for any person to store, dispose of, or allow to accumulate over fifty (50) gallons of any hazardous substances in such a manner that the substance may present reasonable potential to enter the surface or ground waters of the Republic of Palau. Written approval from the EQPB shall be obtained by any person intending to store, dispose of, or accumulate hazardous substances prior to storage, disposal, or accumulation. Such substances include, but are not limited to, petroleum products, pesticides, radioactive substances, and toxic chemicals. The EQPB shall require persons handling hazardous substances to implement effective measures to reduce the potential or possibility of contaminating the surface or ground waters of the Republic of Palau.

(Effective February 26, 2022)

2401-11-27 Response to Spills

- (A) In the event of an accidental spill or discharge of hazardous substances, the responsible person shall immediately notify the EQPB and take all reasonable measures to contain the material so that it will not contaminate the surface or ground waters of the Republic of Palau.
- (B) Failure to immediately notify EQPB and take reasonable mitigation measures shall also constitute a violation of these Regulations.

(Effective February 26, 2022)

POINT-SOURCE DISCHARGE PERMITS

2401-11-28 Point-source Discharge Permit Required

- (A) Any person(s) proposing a point-source discharge shall apply for an EQPB Point-Source Discharge Permit prior to beginning construction or operation of said point-source discharge. This permit shall be required even if it can be demonstrated that the proposed discharge will meet the applicable water quality standards at the point of discharge.

- (B) It shall be a violation of these Regulations for any person to commence discharging from a point-source without first obtaining all required permits.
- (C) No discharge permit shall be granted for fresh surface waters as point-source discharges into fresh waters are prohibited.
- (D) Applications for Aquaculture Point-source Discharge Permits must include evidence that the site of the project is classified as Class B waters and has been zoned for aquaculture by the appropriate State authority.
- (E) All point-source discharges subject to the provisions of these Regulations shall comply with the terms, conditions, provisions, and management plans for any National, State, or traditional conservation area, preserve, or other protected area as established by law.
- (F) No permit shall be issued in violation of the National Anti-Degradation Policy set forth in these Regulations.
- (G) Permits for projects for which there is a viable alternative to point-source discharge shall be denied.
- (H) Permits will be denied if the project will prevent or interfere in the maintenance of applicable water quality standards.
- (I) The Board shall place any conditions on a Point-Source Discharge Permit that are necessary to assure the applicant will comply with water quality standards, effluent limitations, and with any applicable Republic of Palau or State laws or regulations. Such conditions shall include, but are not limited to:
 - (1) Structural and nonstructural mitigation measures;
 - (2) Appropriate influent and effluent treatment systems or methods;
 - (3) Appropriate operations and maintenance plans;
 - (4) Compensation to the fullest extent possible for functional losses to the local ecosystem by the unavoidably loss of wetlands and/or marine habitat; and
 - (5) Compensation for the loss of certain areas with the permanent preservation of other similar ecosystems.
- (J) Each Point-Source Discharge Permit issued pursuant to these Regulations shall be valid for a term not to exceed one (1) calendar year. Any owner or operator wishing to extend their Point Source Discharge Permit for an additional one (1) year term must request to renew their Point-Source Discharge Permit in writing no less than thirty (30) calendar days prior to expiration.

(Effective February 26, 2022)

2401-11-29 Point-source Discharge Permit Required Application Information

- (A) Each application for a Point-Source Discharge Permit must contain the following information:
 - (1) Name, address, and contact information of the applicant.
 - (2) Location map and site plan for the total planned development including proximity to water bodies and the location of discharge conduct and final point of discharge.
 - (3) A complete description of the discharge involved in the activity for which a permit is sought.
 - (4) Characteristics of the discharge and the location or locations at which such discharge may enter waters of the Republic.
 - (5) A description of the function and operation of equipment or facilities to control discharges, including specification of the methods of control to be used.

- (6) The estimated date or dates on which the activity will begin and end or dates on which the discharge(s) will take place.
 - (7) A description of methods and means being used or proposed to monitor the quality and characteristics of the discharge and the operation of equipment or facilities employed in the control of the proposed discharges.
- (B) The Board may require the submission of additional information after a permit application has been filed and shall insure that, if the application is incomplete or otherwise deficient, processing of the application shall not be completed until such time as the applicant has supplied the additional information requested. The Board shall notify the applicant, in writing, within thirty (30) days of the submission of an application, if an application is incomplete or otherwise deficient or if additional information is otherwise needed. A description of the type and additional information necessary to complete the application or correct the deficiency will be included with such a written notice. Failure to provide additional information or to correct a deficiency shall be sufficient grounds for denial of a permit.
- (C) The applicant will be informed, in writing, by the Board, when a permit application is considered to be complete. The Board shall act on a request for a permit within a period which shall not exceed three (3) months unless the Board notifies the applicant, in writing, that additional time is needed to consider the application.
- (D) The applicant is required to notify the Board immediately, in writing, of changes which may affect the application process.
- (E) The Board may require a public hearing(s) to aid in their consideration of the issuance of a Point-Source Discharge Permit. A public hearing notice shall be published in accordance with 24 PNC Section 162. The Board shall inform the applicant, in writing, that such action has been taken. All costs associated with advertising and holding the public hearing shall be paid for by project proponent or State. Failure to do so may result in a delay in the permit application process beyond the three (3) months.
- (F) The level of technical detail in applications shall be sufficient for the Board to determine that no permit would violate water quality standards or become a source of pollution in the future. Such review shall include an examination of but not limited to the following:
 - (1) Impact on water quality at the proposed project site;
 - (2) Impacts on water quality of any or all waters influenced by the project, including groundwater, downstream and upstream waters, tidal influenced water or other fresh, marine, or brackish water influenced by the proposed project as a result of topography, percolation, recharge, currents, or other hydrologic and geologic conditions;
 - (3) Impacts of operation of the project on water quality at site and influenced waters;
 - (4) Impacts of the operation to an Outstanding National Resource Water and its surrounding corridors; and
 - (5) All criteria and standards included in these Regulations shall be considered.
- (G) The Board shall review any project or activity wherever:
 - (1) A permit was issued in absence of applicable water quality standards,
 - (2) Water quality standards applicable to the waters into which the permitted activity may discharge are subsequently established before the activity is completed, and
 - (3) The Board determined that such unpermitted activity is violating water quality standards.

- (H) If after reviewing a project or activity, the Board determines the water quality standards contained in these Regulations are not being met, the Board may order the owner or operator to take corrective actions to ensure compliance with applicable water quality standards and/or may order the owner to apply for a discharge permit. The Board may also order the owner or operator to cease the activity or project operation if the Board determines, in its sole discretion, that such cessation is necessary in order to protect the quality of the receiving waters.

(Effective February 26, 2022)

2401-11-30 Point-Source Discharge Permit Application Fees

Permit application fees shall be as follows:

<u>Discharge Flow Rate</u>	<u>Application Fee</u>	<u>Renewal Fee</u>
<1,000 gallons per day	\$500.00	\$100.00
1,001 – 5,000 gallons per day	\$1,000.00	\$200.00
5,001 – 100,000 gallons per day	\$5,000.00	\$1,000.00
100,000 – 500,000 gallons per day	\$10,000.00	\$2,000.00
>500,000 gallons per day	\$15,000.00	\$3,000.00

(Effective February 26, 2022)

MIXING ZONES

2401-11-31 Mixing Zone Applicability and Limits

- (A) The water quality standards and criteria set forth in these Regulations may or may not apply within a mixing zone, subject to final approval by the Board after review of a complete mixing zone application.
- (B) Mixing zones will not be granted in lieu of reasonable control measures to reduce point-source pollutant discharges but will be granted to achieve the most economically and technically feasible overall treatment effectiveness.

(Effective February 26, 2022)

2401-11-32 Mixing Zone Policy

Human activities may result in the practical need to discharge pollutants through point-sources into the waters of Palau. Because of technological, economic, and other factors, it may not always be feasible to achieve an effluent quality that equals or exceeds the standards for water quality established herein at the point of discharge. Therefore, subject to the prohibitions, criteria, and procedures set forth below, alternate water quality standards may be defined by EQPB in the immediate vicinity surrounding the point of discharge. The area within which the alternate standards apply shall be a zone of mixing. All applicable water quality standards shall be met at the boundary of any zone of mixing. It is the policy of EQPB that zones of mixing shall only be granted upon a finding that no other practicable means of waste treatment and disposal are available. Further, it is the policy of EQPB that zones of mixing shall be limited to the smallest vertical and horizontal dimensions possible.

(Effective February 26, 2022)

2401-11-33 Mixing Zone Criteria

A zone of mixing may only be granted by EQPB if the application and the supporting information clearly shows that all of the following conditions and criteria have been met:

- (A) It is in the public interest that a zone of mixing be granted to begin or continue the function or operation associated with the discharge;
- (B) The proposed zone of mixing does not substantially endanger human health or safety, or the environment;
- (C) Compliance with the existing water quality standards at the point of discharge would produce serious economic hardships without equal or greater benefit to the public, or the environment;
- (D) Alterations of ecosystem dynamics generated by a proposed discharge do not disrupt the marine ecology of the receiving waters outside the zone of mixing;
- (E) A zone of mixing shall not be granted for fresh surface waters;
- (F) All standards set forth in these Regulations shall be met at the boundary of the zone of mixing;
- (G) A zone of mixing shall not be granted if it would include the surface of the water body, any part of the shoreline, or any part of any barrier or fringing reef; and
- (H) Further, the following shall be considered by EQPB in determining whether to grant or deny a zone of mixing:
 - (1) Protected uses of the body of water;
 - (2) Existing ambient conditions of the receiving water;
 - (3) Character of the effluent;
 - (4) Adequacy of the design of the outfall and diffuser system to achieve the desired dispersion and assimilation in the receiving waters; and
 - (5) Other pertinent policies or plans of National or State agencies.

(Effective February 26, 2022)

2401-11-34 Mixing Zone Application Procedures

- (A) The owner and/or operator of a point-source of pollutants where the effluent quality of the discharge does not meet the applicable standards defined in these Regulations at the point of discharge shall be in violation of these standards until such time as EQPB grants a zone of mixing upon receiving and acting upon an application for a zone of mixing from the discharger. At its discretion EQPB may grant extensions to discharges existing on the effective date of these Regulations, but in no event shall an existing discharge requiring a zone of mixing continue to discharge if a complete application for a zone of mixing has not been submitted to EQPB within 180 days of the effective date of these Regulations.
- (B) Every application for a zone of mixing shall be accompanied by a complete and detailed description of:
 - (1) The nature of the discharge including, but not limited to, volume, influent and effluent quality, discharge location and configuration, and treatment processes and technology;
 - (2) Existing ambient water quality conditions in the vicinity of the discharge;
 - (3) How present water quality conditions compare to standards;
 - (4) Proposed alternate water quality standards within the proposed zone of mixing;
 - (5) A calculation of the dimensions and volume of the mixing zone dilution based on modelling of the plume using US EPA approved methodology and software

- (CORMIX) or equivalent, to show how water quality standards are achieved at the boundaries of the zone of mixing;
- (6) Proposed dimensions and volume of the zone of mixing;
 - (7) The reasons why it is not practicable to achieve water quality standards for any specific parameter at the point of discharge or to eliminate the discharge and why the operation of the discharge is in the best interest of the Republic of Palau; and
 - (8) Such other information as EQPB prescribes, including approval of reclassification of the water use for the discharge area if required.
- (C) Each application for a zone of mixing shall be reviewed in light of descriptions, statements, plans, histories, and other supporting information as may be submitted in the application or upon the request of EQPB and the effect on the water quality standards established in these Regulations.
- (D) A zone of mixing, or a renewal, may be granted upon EQPB's determination that the requirements of these standards have been met for the following time periods and conditions:
- (1) If a zone of mixing is granted on the grounds that there is no technically and/or financially efficient means known or available for elimination or adequate prevention, control, or abatement of the discharge involved, it shall be only until the necessary means of prevention, control, or abatement become practicable and it shall be subject to the taking of substitute or alternative measures that EQPB may prescribe. No renewal of a zone of mixing granted under this Section shall be allowed without a thorough review of known and available means of preventing, controlling, or abating the discharge involved;
 - (2) EQPB may grant a zone of mixing for a period not to exceed five (5) years, subject to be reopened if these Regulations are revised during the five (5) year period;
 - (3) Every zone of mixing granted under this Section may include, but may not be limited to, requirements for the applicant to perform effluent and receiving water sampling and testing as specified by EQPB and to report the results to EQPB. A program of research to develop practicable alternatives to the methods of treatment or control in use by the applicant may be required as a condition of the granting of the zone of mixing; and
 - (4) Upon receipt of a renewal application, a zone of mixing granted pursuant to this Section may be renewed periodically for periods not to exceed five (5) years, provided, that:
 - (a) The applicant for renewal has met all of the conditions specified in the previously prescribed zone of mixing;
 - (b) No renewal shall be granted except upon application. Any such application shall be made at least 180 days prior to the expiration of the current zone of mixing;
 - (c) Upon timely application for renewal, the terms and conditions of the original zone of mixing shall remain in effect until such time as EQPB acts upon the application for renewal; and
 - (d) If no timely application for renewal is made, the zone of mixing shall automatically expire on the date specified in the permit.
- (E) EQPB, on its own volition or upon the application of any person, shall terminate a zone of mixing if, after a hearing, it is determined that:

- (1) The water quality outside the zone of mixing does not meet the standards applicable to that water as specified in these Regulations; and/or
- (2) The zone of mixing granted has interfered with any protected uses of the water area.

(Effective February 26, 2022)

2401-11-35 False or Misleading Information Prohibited

It shall be a violation of these Regulations for any person to knowingly present false or misleading information to the Board in an application for a mixing zone.

(Effective February 26, 2022)

2401-11-36 Mixing Zone Application Review

In reviewing a mixing zone application, the Board will consider:

- (A) Present and anticipated uses of the water body;
- (B) Whether an adequate zone of passage will exist for the movement of aquatic life;
- (C) The proximity of other mixing zones;
- (D) Whether the granting of a mixing zone is in the public interest; and
- (E) The Board may request additional information from the applicant that is deemed relevant to the Board's determination.

(Effective February 26, 2022)

2401-11-37 Mixing Zone Determination of Approval

- (A) The Board may either approve, conditionally approve, or deny a mixing zone application. The Board may request a public hearing on the application prior to a decision. The Board will notify the applicant in writing of its determination. The notification will include, but is not limited to:
 - (1) The duration of the mixing zone; and,
 - (2) Any conditions placed upon the Board's approval of the application. Conditions may include, but are not limited to:
 - (a) Effluent and receiving water monitoring and reporting requirements;
 - (b) The parameters for which the mixing zone is being granted; and
 - (c) The alternative water quality standards that will apply within the mixing zone.
- (B) If the Board denies a mixing zone application, it will notify the applicant, in writing, of the reasons for the denial.

(Effective February 26, 2022)

DREDGING AND DISCHARGE OF DREDGED OR FILL MATERIAL

2401-11-38 Dredging Procedures

- (A) Dredging and dredged spoil discharges generally result in short-term disruption and do not represent continuous discharge that will affect beneficial uses over a long term. Other in-water, construction-related activities, such as discharge from the dewatering of excavations and shoreline stabilization projects, can also cause short-term suspension of sediments

similar to that caused by dredge and fill discharges. Mixing zones may therefore be granted for dredging activities, other in-water construction-related activities, and the discharge of dredged or fill material provided that:

- (1) All other requirements of this Section are met; and
 - (2) The proposed activity satisfies the anti-degradation requirements described in these Regulations.
- (B) Dredging and the discharge of dredged or fill material can adversely affect colonies of reef building organisms by burying them, by releasing contaminants such as hydrocarbons into the water column, by reducing light penetration through the water, and by increasing the level of suspended particulates. Coral organisms are extremely sensitive to even slight reductions in light penetration or increases in suspended particulates (i.e., turbidity). These adverse effects will cause a loss of productive colonies which in turn provide habitat for many species of highly specialized aquatic organisms.
- (C) Dredging and the discharge of dredged or fill material can also adversely affect sea grass beds, by smothering vegetation and benthic organisms, and may also create unsuitable conditions for their continued vigor by changing water circulation patterns, releasing nutrients that increase undesirable algal populations, releasing chemicals that adversely affect plants and animals, increasing turbidity levels which reduces light penetration and affects photosynthesis, and changing the capacity of a vegetated shallow to stabilize bottom materials and decrease channel shoaling. Dredging and the discharge of dredged or fill material may reduce the value of vegetated shallows as nesting, spawning, nursery, cover, and forage areas, as well as their value in protecting shorelines from erosion and wave actions. It may also encourage the growth of nuisance vegetation.
- (D) In granting mixing zones for dredging activities, the discharge of dredged or fill material, or other in-water, construction-related activities that cause the suspension of sediments in or near coral reef resources and sea grass beds, the Board shall assure that any disruption to beneficial uses is kept to an absolute minimum, and that all practicable measures are taken to prevent adverse impacts to resources of concern, taking into consideration the magnitude and duration of the proposed activity, and the proximity to resources of concern. This shall be satisfied by placing conditions within the applicable permit requiring the following:
- (1) The use and maintenance of best management practices including such measures as “silt curtains,” closed (“environmental”) buckets, hydraulic dredges, or other methods as appropriate to control the drift and extent of suspended sediment plumes beyond the location of the dredge or fill activity.
 - (2) Water quality monitoring requirements for turbidity and other pollutants of concern that may be identified or expected in the dredge spoil or fill material. Periodic aquatic ecosystem monitoring may also be required for the purpose of assessing the effects of the activity on resources of concern and determining the necessity of additional mitigative measures.
 - (3) For activities which have the potential to adversely affect coral reproduction, a stoppage period starting around 1-7 days after the full moon in January to March and August to September (to be finally determined by EQPB in consultation with local coral reef marine biologists), is required. The stoppage period, if determined to be applicable, shall be no less than twenty-one (21) calendar days. In determining whether an activity has the potential to affect coral spawning,

EQPB shall consider the magnitude of the sediment plume generated by the proposed activity, the most likely extent and direction(s) of drift of the sediment plume, the type of sediment and its composition, and the proximity of broadcast spawning coral species to the proposed activity and expected sediment plume.

- (4) The Board may require, as condition to issuance of a discharge permit, that the mixing zone include a specified distance up-current and down-current from the permitted activity at which applicable water quality criteria must be met. Mixing zones for dredge and fill activities shall be kept as small as practicable, and shall not exceed 300 feet down-current and 150 feet up-current. Down-current distance may be increased to up to 600 feet where typical currents can be shown to make the use of best management practices ineffective; and
 - (5) Any additional protective measures, limitations, monitoring, or mixing zone requirements that the Board identifies as being necessary to protect resources of concern.
- (E) The Board may require an applicant for a permit for dredging, the discharge of dredged or fill material, or similar in-water, construction-related activities, to provide information necessary to support the development of monitoring plans, mitigation measures, or mixing zone requirements, such as surveys of existing currents, water quality data, and baseline aquatic ecosystem and indicator species surveys.

(Effective February 26, 2022)

SPILL PREVENTION CONTROL AND CONTERMEASURES (SPCC)

2401-11-39 Applicability

- (A) These SPCC regulations apply to all facilities that store 500 gallons or more of fuel or other petroleum products in above-ground storage tanks. This includes, but is not limited to, all bulk petroleum product storage facilities within the Republic.
- (B) The SPCC Plan and oil spill requirements of 40 CFR Parts 110 and 112 are hereby adopted by reference, except that the Board shall have the authority to take any action or impose any requirement that said Parts of the CFR authorize the Administrator to take or impose.
- (C) Any person that owns or operates any facility, whether off-shore, or on-shore, shall complete, maintain, and, as either necessary or as required by the EQPB, revise the SPCC plan for that facility to the same extent required by 40 CFR Parts 110 and 112.

(Effective February 26, 2022)

ENFORCEMENT

2401-11-40 Enforcement

Nothing in these Regulations shall be construed to allow any person to avoid the requirements of the Environmental Quality Protection Act, and the regulations promulgated thereunder, including these Marine and Freshwater Quality Regulations. Any person in violation of any of the provisions of these Regulations shall be subject to enforcement and court action under 24 PNC Sections 161 through 172, inclusive.

(Effective February 26, 2022)

MISCELLANEOUS PROVISIONS

2401-11-41 Severability Clause

If any provision(s) of these Regulations, or the application of any provision of these Regulations, to any person or circumstances are held invalid, the application of such provision(s) to other persons or circumstances and the remainder of these Regulations shall not be affected.

(Effective February 26, 2022)

2401-11-42 Effective Date and Repealer

These Regulations shall take effect as provided by 6 PNC § 127, at which time the EQPB Marine and Fresh Water Quality Regulations preexisting heretofore shall be repealed.

(Effective February 26, 2022)

2401-11-43 Protected Areas

All activities subject to the provisions of these Regulations shall comply with the terms, conditions, provisions, and management plans for all National, State, and traditional conservation areas, preserves, or other protected areas as established by law.

(Effective February 26, 2022)

The above EQPB Marine and Fresh Water Quality Regulations were adopted pursuant to the Administrative Procedure Act this 27 day of January 2022:

Board Approval:

	Initial	Date
Elia Yobech, Chairman		1/27/22
Florencio Yamada, Vice Chairman		1/27/22
Juliet Ngotel, Member		1/27/22
Jack Meltel, Member		1/27/22
Glenn Seid, Member		1/27/22

Approved this 2nd day of February 2022



Surangel Whipps, Jr.
President

Appendix A
Ammonia Toxicity Standards for Fresh and Marine Waters

Water Quality Criteria for Ammonia in Freshwater (ACUTE)^{1,2}

pH	Temperature (C°)																
	0-14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
6.5	51	51	51	51	51	51	51	51	51	48	44	40	37	34	31	29	27
6.6	49	49	49	49	49	49	49	49	49	46	42	39	36	33	30	28	26
6.7	46	46	46	46	46	46	46	46	46	43	40	37	34	31	29	26	24
6.8	44	44	44	44	44	44	44	44	44	41	38	35	32	29	27	25	23
6.9	41	41	41	41	41	41	41	41	41	38	35	32	30	27	25	23	21
7.0	38	38	38	38	38	38	38	38	38	35	32	30	27	25	23	21	20
7.1	34	34	34	34	34	34	34	34	34	32	29	27	25	23	21	19	18
7.2	31	31	31	31	31	31	31	31	31	29	26	24	22	21	19	17	16
7.3	27	27	27	27	27	27	27	27	27	26	23	22	20	18	17	16	14
7.4	24	24	24	24	24	24	24	24	24	22	21	19	17	16	15	14	13
7.5	21	21	21	21	21	21	21	21	21	19	18	16	15	14	13	12	11
7.6	18	18	18	18	18	18	18	18	18	17	15	14	13	12	11	10	9.3
7.7	15	15	15	15	15	15	15	15	15	14	13	12	11	10	9.3	8.6	7.9
7.8	13	13	13	13	13	13	13	13	13	12	11	10	9.2	8.5	7.8	7.2	6.6
7.9	11	11	11	11	11	11	11	11	11	9.9	9.1	8.4	7.7	7.1	6.5	6.0	5.5
8.0	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.2	7.5	6.9	6.4	5.9	5.4	5.0	4.6
8.1	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	6.8	6.2	5.7	5.3	4.9	4.5	4.1	3.8
8.2	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	5.6	5.1	4.7	4.4	4.0	3.7	3.4	3.1
8.3	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.6	4.2	3.9	3.6	3.3	3.0	2.8	2.6
8.4	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	3.8	3.4	3.2	3.0	2.7	2.5	2.3	2.1
8.5	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.1	2.9	2.6	2.4	2.2	2.1	1.9	1.8
8.6	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.6	2.4	2.2	2.0	1.9	1.7	1.6	1.4
8.7	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.0	1.8	1.7	1.5	1.4	1.3	1.2
8.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.7	1.5	1.4	1.3	1.2	1.1	1.0
8.9	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.5	1.4	1.3	1.2	1.1	1.0	0.92	0.85
9.0	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.3	1.2	1.1	1.0	0.93	0.85	0.78	0.72

1 Source: Aquatic Life Ambient Water Quality Criteria for Ammonia – Freshwater 2013. EPA-822-R-13-001

2 Units: Total Ammonia Nitrogen (TAN). To convert these units, see source document

Water Quality Criteria for Ammonia in Freshwater (CHRONIC)^{1,2}

pH	Temperature (C°)																	
	0-14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
6.5	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.0	6.6	6.2	5.8	5.4	5.1	4.8	4.5	4.2
6.6	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	6.9	6.5	6.1	5.7	5.4	5.0	4.7	4.4	4.1
6.7	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	6.8	6.4	6.0	5.6	5.3	4.9	4.6	4.3	4.1
6.8	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.6	6.2	5.8	5.5	5.1	4.8	4.5	4.2	4.0
6.9	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.5	6.1	5.7	5.3	5.0	4.7	4.4	4.1	3.9
7.0	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.2	5.8	5.5	5.1	4.8	4.5	4.2	4.0	3.7
7.1	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.0	5.6	5.3	4.9	4.6	4.3	4.1	3.8	3.6
7.2	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.7	5.3	5.0	4.7	4.4	4.1	3.9	3.6	3.4
7.3	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.4	5.0	4.7	4.4	4.1	3.9	3.6	3.4	3.2
7.4	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.0	4.7	4.4	4.1	3.9	3.6	3.4	3.2	3.0
7.5	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.6	4.3	4.1	3.8	3.6	3.3	3.1	2.9	2.8
7.6	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.2	3.9	3.7	3.5	3.2	3.0	2.9	2.7	2.5
7.7	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.8	3.5	3.3	3.1	2.9	2.7	2.6	2.4	2.3
7.8	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.4	3.2	3.0	2.8	2.6	2.4	2.3	2.1	2.0
7.9	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.0	2.8	2.6	2.4	2.3	2.1	2.0	1.9	1.8
8.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.4	2.3	2.1	2.0	1.9	1.7	1.6	1.5
8.1	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.1	1.9	1.8	1.7	1.6	1.5	1.4	1.3
8.2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.1
8.3	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.6	1.5	1.4	1.3	1.2	1.2	1.1	1.0	0.96
8.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.3	1.2	1.1	1.1	0.99	0.93	0.87	0.81
8.5	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.1	1.0	0.95	0.89	0.83	0.78	0.73	0.69
8.6	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.97	0.91	0.85	0.80	0.75	0.70	0.66	0.62	0.58
8.7	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.82	0.77	0.72	0.68	0.64	0.60	0.56	0.52	0.49
8.8	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.70	0.65	0.61	0.58	0.54	0.51	0.47	0.44	0.42
8.9	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.60	0.56	0.52	0.49	0.46	0.43	0.41	0.38	0.36
9.0	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.51	0.48	0.45	0.42	0.40	0.37	0.35	0.33	0.31

¹ Source: Aquatic Life Ambient Water Quality Criteria for Ammonia – Freshwater 2013. EPA-822-R-13-001

² Units: Total Ammonia Nitrogen (TAN). To convert these units, see source document

Water Quality Criteria for Saltwater Aquatic Life Based on Total Ammonia mg/L¹

Criteria Maximum Concentrations

		Temperature (°C)							
		0	5	10	15	20	25	30	35
pH	Salinity = 10 g/kg								
	7.0	270	191	131	92	62	44	29	21
	7.2	175	121	83	58	40	27	19	13
	7.4	110	77	52	35	25	17	12	8.3
	7.6	69	48	33	23	16	11	7.7	5.6
	7.8	44	31	21	15	10	7.1	5.0	3.5
	8.0	27	19	13	9.4	6.4	4.6	3.1	2.3
	8.2	18	12	8.5	5.8	4.2	2.9	2.1	1.5
	8.4	11	7.9	5.4	3.7	2.7	1.9	1.4	1.0
	8.6	7.3	5.0	3.5	2.5	1.8	1.3	0.98	0.75
	8.8	4.6	3.3	2.3	1.7	1.2	0.92	0.71	0.56
	9.0	2.9	2.1	1.5	1.1	0.85	0.67	0.52	0.44
	pH	Salinity = 20 g/kg							
7.0		291	200	137	96	64	44	31	21
7.2		183	125	87	60	42	29	20	14
7.4		116	79	54	37	27	18	12	8.7
7.6		73	50	35	23	17	11	7.9	5.6
7.8		46	31	23	15	11	7.5	5.2	3.5
8.0		29	20	14	9.8	6.7	4.8	3.3	2.3
8.2		19	13	8.9	6.2	4.4	3.1	2.1	1.6
8.4		12	8.1	5.6	4.0	2.9	2.0	1.5	1.1
8.6		7.5	5.2	3.7	2.7	1.9	1.4	1.0	0.77
8.8		4.8	3.3	2.5	1.7	1.3	0.94	0.73	0.56
9.0		3.1	2.3	1.6	1.2	0.87	0.69	0.54	0.44
pH		Salinity = 30 g/kg							
	7.0	312	208	148	102	71	48	33	23
	7.2	196	135	94	64	44	31	21	15
	7.4	125	85	58	40	27	19	13	9.4
	7.6	79	54	37	25	21	12	8.5	6.0
	7.8	50	33	23	16	11	7.9	5.4	3.7
	8.0	31	21	15	10	7.3	5.0	3.5	2.5
	8.2	20	14	9.6	6.7	4.6	3.3	2.3	1.7
	8.4	12.7	8.7	6.0	4.2	2.9	2.1	1.6	1.1
	8.6	8.1	5.6	4.0	2.7	2.0	1.4	1.1	0.81
	8.8	5.2	3.5	2.5	1.8	1.3	1.0	0.75	0.58
	9.0	3.3	2.3	1.7	1.2	0.94	0.71	0.56	0.46

¹ Ambient Water Quality Criteria for Ammonia (Saltwater)-1989, EPA 440/5-88-004, April 1989

Water Quality Criteria for Saltwater Aquatic Life Based on Total Ammonia mg/L
Criteria Continuous Concentrations

pH	Temperature (°C)							
	0	5	10	15	20	25	30	35
	Salinity = 10 g/kg							
7.0	41	29	20	14	9.4	6.6	4.4	3.1
7.2	26	18	12	8.7	5.9	4.1	2.8	2.0
7.4	17	12	7.8	5.3	3.7	2.6	1.8	1.2
7.6	10	7.2	5.0	3.4	2.4	1.7	1.2	0.84
7.8	6.6	4.7	3.1	2.2	1.5	1.1	0.75	0.53
8.0	4.1	2.9	2.0	1.40	0.97	0.69	0.47	0.34
8.2	2.7	1.8	1.3	0.87	0.62	0.44	0.31	0.23
8.4	1.7	1.2	0.81	0.56	0.41	0.29	0.21	0.16
8.6	1.1	0.75	0.53	0.37	0.27	0.20	0.15	0.11
8.8	0.69	0.50	0.34	0.25	0.18	0.14	0.11	0.08
9.0	0.44	0.31	0.23	0.17	0.13	0.10	0.08	0.07
	Salinity = 20 g/kg							
7.0	44	30	21	14	9.7	6.6	4.7	3.1
7.2	27	19	13	9.0	6.2	4.4	3.0	2.1
7.4	18	12	8.1	5.6	4.1	2.7	1.9	1.3
7.6	11	7.5	5.3	3.4	2.5	1.7	1.2	0.84
7.8	6.9	4.7	3.4	2.3	1.6	1.1	0.78	0.53
8.0	4.4	3.0	2.1	1.5	1.0	0.72	0.50	0.34
8.2	2.8	1.9	1.3	0.94	0.66	0.47	0.31	0.24
8.4	1.8	1.2	0.84	0.59	0.44	0.30	0.22	0.16
8.6	1.1	0.78	0.56	0.41	0.28	0.20	0.15	0.12
8.8	0.72	0.50	0.37	0.26	0.19	0.14	0.11	0.08
9.0	0.47	0.34	0.24	0.18	0.13	0.10	0.08	0.07
	Salinity = 30 g/kg							
7.0	47	31	22	15	11	7.2	5.0	3.4
7.2	29	20	14	9.7	6.6	4.7	3.1	2.2
7.4	19	13	8.7	5.9	4.1	2.9	2.0	1.4
7.6	12	8.1	5.6	3.7	3.1	1.8	1.3	0.90
7.8	7.5	5.0	3.4	2.4	1.7	1.2	0.81	0.56
8.0	4.7	3.1	2.2	1.6	1.1	0.75	0.53	0.37
8.2	3.0	2.1	1.4	1.0	0.69	0.50	0.34	0.25
8.4	1.9	1.3	0.90	0.62	0.44	0.31	0.23	0.17
8.6	1.2	0.84	0.59	0.41	0.30	0.22	0.16	0.12
8.8	0.78	0.53	0.37	0.27	0.20	0.15	0.11	0.09
9.0	0.50	0.34	0.26	0.19	0.14	0.11	0.08	0.07

¹ Ambient Water Quality Criteria for Ammonia (Saltwater)-1989, EPA 440/5-88-004, April 1989