CONAMA Resolution 430/11

CONAMA RESOLUTION 430, May 13, 2011
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Correlations:
• Complements and changes Resolution 357/2005.
Provisions the conditions and standards of effluents and complements and changes Resolution 357 from March 17, 2005 issued by the National Environment Council (CONAMA).

THE NATIONAL ENVIRONMENT COUNCIL – CONAMA, in accordance with the power bestowed upon the Council by art. 8, item VII of Law 6.938 from August 31, 1981, regulated by Decree 99.274 from June 6, 1990 and its alterations and in light of the provisions of its Internal Regulations, Annex of Administrative Order 168 from June 13, 2005, decides:

Art. 1 This Resolution Regulates the conditions, parameters, standards and directives for the management of effluent releases into receptor water bodies, partially changing and complementing Resolution 357 from March 17, 2005 issued by the National Environment Council (CONAMA).

Single paragraph. The indirect release of effluents into the receptor body must follow the provisions set by this Resolution in the absence of specific standards and legislation, provisions set by the competent environmental organ as well as directives set by the system operator for the collection and treatment of sanitary sewer systems.

Art. 2 The release of effluents onto the soil, even when treated, is not subjected to the parameters and standards related to effluent releases set by this Resolution, but may not, however, cause the pollution or contamination of surface and groundwaters.

Art. 3 Effluents from any type of polluting source will only be allowed to be directly released into receptor bodies after their duly treatment and as long as they comply with the conditions, standards and demands set by this Resolution and by other applicable standards.

Single paragraph. The competent environmental organ may, at any given time and based on professional foundations:

I – add other conditions and standards for the release of effluents, or make them more restrictive, considering the conditions of the receptor body; or
II – demand the use of adequate environmental technology and economically viable for the treatment of effluents, compatible with the conditions of the receptor body.

CHAPTER I
DEFINITIONS

Art. 4 The following definitions are adopted for all purposes of this Resolution and as a complement to those set by art. 2 of CONAMA Resolution 357 from 2005:

I – Receptor body capacity: Maximum rate of a certain polluter that can be received by a water body without compromising the quality of the waters and its preponderant uses according to the respective framework class;
II – No Observed Effect Concentration (NOEC); largest effluent concentration that does not cause any statistically significant hazards to the organism survival and reproduction, during a certain exposure period and under test conditions;
III – Receptor Body Effluent Concentration (BREC): NOEC expressed in percentage points:
a) For receptor bodies confined by gutters (rivers, streams, etc.):
1. CECR =[(effluent flow) / (effluent flow +receptor body reference flow)] x 100.
b) In marine areas, estuaries and lakes the BREC is established based on physical dispersion studies of then effluent in the receptor water body, and the BREC is limited by the mixing zone defined by the environmental organ;
IV – Median Lethal Dose – LC 50 or Median Effective Dose -ED50: is the effluent concentration that has acute effects (death or immobility) on 50% of the organisms during a certain exposure period and under test conditions;

V – Effluent: is the term used for the characterization of liquid releases from different activities or processes;
VI – Underground emission: tubing provided with diffusor systems aimed at the release of effluents into the sea, the stretch between the base line and the limits of waters under national jurisdiction;
VII – Sanitary sewer: generic denomination for residential liquid releases, commercial, waters that have infiltrated the collection network which may contain parts of industrial effluents and non-domestic effluents;
VIII – Toxicity Factor –TF: dimensionless number that expresses the smallest effluent dilution which does not cause any acute hazards to organisms during a certain period of exposure, under test conditions;
IX – Direct release: when the effluent is directly connected with the receptor body;
X – Indirect release: when the effluent is conducted, submitted, or not, to treatment, through a collection network which also receives other releases before reaching the receptor body;
XI – Trophic level: position of an organism in the trophic chain;
XII – Effluent quality parameters: substances or other indicators that represent the toxicologically and environmentally relevant effluent contaminants;
XIII – Eco-toxicity tests: methods used for the detection and assessment of the capacity of a toxic agent to cause hazardous effects through the use of bio-indicators of large groups within the ecological chain; and
XIV – Mixing zone: region of the receptor body, estimated through theoretical methods approved by the competent environmental organ, that stretches from the effluent release point and is limited by the surface where the balance of the mixture between the physical and chemical parameters is attained, as well as the biological balance of the effluent and the receptor body, is specific for every parameter.

CHAPTER II
EFFLUENT RELEASE CONDITIONS AND STANDARDS
Section 1
General provisions

Art. 5 Effluents may not confer the receptor body qualities that are not in harmony with the intermediary and final framework goals.

§ 1 The compulsory goals for receptor bodies will be established through specific parameters.

§ 2 Parameters that are not included in compulsory goals, and in the absence of progressive intermediary goals, the quality standards that must be present in the receptor body are the same as those of the receptor body framework class.

Art. 6 In exceptional cases, and temporarily, the competent environmental organ may authorize the release of effluents, after well-founded analysis, which are not in accordance with the provisions set by this Resolution as long as the release complies with the following requirements:

I –duly motivated proof that the release is of public interest;
II – compliance with the framework of the receptor body and the intermediary and final goals, progressive and mandatory;
III – undertake an adequate environmental study at the expense of the entrepreneur that is responsible for the release;
IV – establish demands related to the treatment of the particular release;
V – set a maximum release period, extendable at the criteria of the competent environmental organ during the exceptional situation that justified non-compliance with the limitations set by this Resolution;
VI – establish measures aimed at the neutralization of the possible effects caused by the exceptional release.

Art. 7 The competent environmental organ must, through a specific norm or during the activity or enterprise licensing process, establish the maximum pollution charge for the release of substances that may be present or be formed during productive proce sses, listed in art. 16 of this Resolution, in order not to compromise the progressive mandatory goals, intermediary and final, established for the framework of the receptor body.

§ 1 During licensing processes the competent environmental organ may demand the undertaking of studies on the carrying capacity of the receptor body.

§ 2 The carrying capacity study must consider, as a minimum requirement, the difference between the standards established by the classification and the concentrations present in the stretch from the start, and estimate the concentration after the mixing zone.

§ 3 During the licensing process the entrepreneur must provide the environmental organ with information regarding the substances that may be present in the generated effluent, listed or not by CONAMA Resolution 357 from 2005 regarding water quality standards, or risk the suspension or annulment of the granted license.

§ 4 The provisions of § 3 are not applicable to cases when the entrepreneur can present proof that he/she did not have any possibility of knowing of the existence of one or more substances contained in the effluent generated by the

enterprises or activities.

Art. 8 The release of Persistent Organic Polluters (POP:s) into effluents is banned according to current legislation.

Single paragraph. Appropriate technology must be used in processes that may form dioxins and furans, in order to reduce them and aimed at their total elimination.

Art. 9 The mixing of effluents, aimed at the dilution of the effluent during the release control process, with better quality waters such as supply water, sea water and water from open refrigeration systems without circulation is banned.

Art. 10 In cases when the pollution source generates different or individualized effluents the limits established by this Resolution are applicable to each of them or to the group after mixing, at the criteria of the competent environmental organ.

Art. 11 It is banned to dispose effluent into special class waters including the release of domestic, aquaculture, industrial wastes or wastes from any other source, even if treated.

Art. 12 The release of effluents into water bodies, except those related to special class waters, may not exceed the water quality conditions and standards established for the respective classes, in reference flow conditions or available volume, apart from other applicable demands.

Single paragraph. Effluent release into water bodies in recuperation must follow the progressive, intermediary and final, compulsory goals.

Art. 13 Substances that are not in harmony with the quality standards that have been established for the water body are allowed within the mixing zone as long as they do not compromise the usage of the water body.

Single paragraph. The amount and concentration of substances in the mixing zone must be studied, whenever determined by the competent environmental organ, at the expense of the entrepreneur that is responsible for the release.

Art. 14 The competent environmental body may, without any prejudice to item I of the single paragraph of art. 3 of this Resolution, establish additional exceptional and temporary restrictions and measures when the flow of the receptor body is below the reference rate, for the following types of effluents that may cause one of the following consequences, among other:

I – result in acute or chronic toxic effects for aquatic organisms; or
II – hampers water supplies to the population.

Art. 15 The release of effluents treated in dry waterbeds of intermittent water bodies may be subjected to special conditions by the competent environmental organ in cooperation with the water resources management organ.

Section II
Effluent Release Conditions and Standards

Art. 16 The effluents from any pollution source may only be released directly into receptor bodies according to the conditions and standards foreseen by this article, apart from other possible demands:

I – effluent release conditions:
a) pH between 5 and 9;
b) temperature: under 40 degrees Celsius and the temperature variation of the receptor body cannot exceed 3 degrees Celsius at the mixing zone limit area;
c) sedimentable materials: up to 1 mL/L during a one hour test in the Imhoff cone. Sedimentable materials must be virtually non-existent in releases into lakes and lagoons with practically non existing circulation speed;
d) release regimen of maximum flow of up to 1.5 times the flow measured during the daily activity period of the polluting agent, except in cases allowed by the competent authority;
e) oils and greases;
1. mineral oils: up to 20 mg/L;
2. vegetable oils and animal fats: up to 50 mg/L;
f) absence of floating substances; and
g) Biochemical Oxygen Demand (BOD 5 days at 20°C): minimum removal of 60% of BOD and this limit may only be reduced through auto depuration studies of the water body that prove harmony with receptor body framework goals;

II – Effluent release standards:

TABLE I

Inorganic parameters	Maximum value
Arsenic total	0,5 mg/L As
Barium total	5,0 mg/L Ba
Boron total (does not apply to salt water surveys)	5,0 mg/L B
Cadmium total	0,2 mg/L Cd
Lead total	0,5 mg/L Pb
Cyanide total	1,0 mg/L CN
Cyanide free (distillable through weak acids)	0,2 mg/L CN
Copper dissolved	1,0 mg/L Cu
Hexavalent Chromium	0,1 mg/L Cr6+
Trivalent chromium	1,0 mg/L3+
Tin total	4,0 mg/L Sn
Iron dissolved	15,0 mg/L Fe
Fluoride total	10,0 mg/L F
Manganese dissolved	1,0 mg/L Mn
Mercury total	0,01 mg/L Hg
Nickel total	2,0 mg/L Ni
Total ammonia nitrogen	20,0 mg/L N
Silver total	0,1 mg/L Ag
Selenium total	0,30 mg/L Se
Sulfide	1,0 mg/L S
Zinc total	5,0 mg/L Zn
Organic parameters	**Maximum Value**
Benzene	1,2 mg/L
Chloroform	1,0 mg/L
Dichloroethene (sum of 1.1 + 1.2 cis + 1.2 trans)	1,0 mg/L
Styrene	0,07 mg/L
Ethyl benzene	0,84 mg/L
Phenolic compounds (substances that react with 4-aminoantipyrine)	0,5 mg/L C6H5OH
Carbon tetrachloride	1,0 mg/L
Trichloroethene	1,0 mg/L
Toluene	1,2 mg/L
Xylene	1,6 mg/L

§ 1 Effluents originating from final solid residual disposal systems, of any kind of origin, must comply with the conditions and standards established by this article.

§ 2 Effluents originating from sanitary sewer treatment systems must comply with the specific standards defined in Section II of this Resolution.

§ 3 Effluents originating from health services are subjected to the demands established in Section III of this Resolution and conditioned to current sanitary specific standards, and may:

I – be released into a sanitary sewage collection network connected to a sanitary sewer treatment plant, according to the standards and directives set by the operator of the sanitary sewage collection system; and
II – be directly released after special treatment.

Art. 17 The competent environmental organ may define specific standards for phosphor parameters in relation to the release of effluents into water bodies that have previously contained cyanobacteria blooms within stretches that are used for public supply.

Art. 18 Effluents may not cause, or have the potential to cause, and toxic effects to receptor body aquatic organisms and must follow toxicity criteria established by the competent environmental organs.

§ 1 Eco-toxicity criteria that are foreseen in the heading of this article must be based on eco-toxicological tests approved by the environmental organ, undertaken in the effluent and use aquatic organisms from at least two different trophic levels.

§ 2 It is the duty of the competent environmental organ to set specifications related to the reference flow of the effluent and of the water body which will be included in the calculation of Receptor Body Effluent Concentration apart from the used organisms and test methods as well as monitoring frequency.

§ 3 In cases when the environmental organ has not provided any eco-toxicity criteria for the evaluation of effluent toxic effects on the water body, the following directives must be implemented:

I – for effluent releases into Class 1 and 2 receptor bodies, and Class 1 salt and brackish waters, the Receptor Body Effluent Concentration must be inferior or equal to the Non-Observed Concentration Effect in at least two trophic levels, such as:
a) Receptor Body Effluent Concentration must be equal or inferior to Non-Observed Concentration Effect at the time of the ecotoxicity test undertaken to measure the chronically toxic effect; or
b) Receptor Body Effluent Concentration must be equal to the Median Lethal Dose (CL50) divided by 10; or less or equal to 30 divided by the Toxicity Factor when at the time of the test to measure the acute toxic effect;
II – effluents released into Class 3 receptor water bodies, and Class 2 salt and brackish waters, the Receptor Body Effluent Concentration must be equal or inferior to the concentration that does not cause and acute effects to aquatic organisms belonging to at least two trophic levels, such as:
a) Receptor Body Effluent Concentration must be inferior or equal to the Median Lethal Dose (CL50) divided by 3 or inferior or equal to 100 divided by the Toxicity Factor at the time of the acute ecotoxicity test.

§ 4 The number of used trophic levels may be reduced by the competent environmental organ based on the assessment of historical serial results used for the ecotoxicity tests for monitoring purposes.

§ 5 Water bodies that are not subjected to toxicity aquatic organism restrictions and quality conditions and standards foreseen by Resolution 357 from 2005 are not conditioned to the previous paragraphs.

Art. 19 Competent environmental organs must determine which enterprises and activities must undertake ecotoxicity tests in relation to the generated effluent characteristics and to the receptor body.

Art. 20 The release of effluents through underwater emissaries must follow, after treatment, the release conditions and standards foreseen by this Resolution, according to the respective receptor body class standards, after the mixing zone limit, and according to bathing standards and to current standards and legislation.

Single paragraph. The release of effluents through underwater emissaries that are not in harmony with the release conditions and standards established by this Resolution may be authorized by competent environmental organs, according to the provisions foreseen in items III and IV of art 6, and the environmental study specifies in item II must contain, at least:

I – The specific emissary entry conditions and standards;
II – Study on the dispersion within the mixing zone, two scenarios:
a) scenario one: compliance with the rates established by Table I of this Resolution;
b) scenario two: conditions and standards proposed by the entrepreneur; and
III – Environmental monitoring program.

Section III
Conditions and Standards for Effluents from Sanitary Sewer Treatment Plants

Art. 21 The direct release of effluents from sanitary sewer treatment plants must comply with the following specific conditions and standards:

I – Effluent release conditions:
a) pH between 5 and 9;
b) temperature: under 40 degrees Celsius and the temperature variation of the receptor body cannot exceed 3 degrees Celsius at the mixing zone limit area;
c) sedimentable materials: up to 1 mL/L during a one hour test in the Imhoff cone. Sedimentable materials must be virtually non-existent in releases into lakes and lagoons with practically non existing circulation speed;
d) Biochemical Oxygen Demand (BOD 5 days at 20°C): maximum of 120 mg/L, this limit may only be surpassed if it is an effluent from a treatment plant with 60% BOD removal capacity or through auto depuration studies of the water body that prove harmony with receptor body framework goals.
e) hexane-soluble substances (oils and greases) up to 100 mg / L, and
f) absence of floating substances.

§1 The release conditions and standards listed in Section II, art. 16, items I and II of this Resolution are also applicable to sanitary sewer treatment plants, at the criteria of competent environmental organs, depending on local conditions, and are not subjected to total ammoniacal nitrogen standard demands.

§2 The competent environmental organ must define the Table I parameters of art. 6, item II of this Resolution that apply to, and must be monitored, sanitary sewer treatment plants that receive bleaches from sanitary embankments, and are not subjected to total ammoniacal nitrogen standard demands.

§3 The effluent sample must be filtered in order to determine the efficiency of the removal of the polluting charge in terms of Biochemical Oxygen Demand (BOD 5 days at 20°C) for treatment plants with stabilization lagoons.

Art. 22 The release of effluents through underwater emissaries must follow, after treatment, the release conditions and standards foreseen by this Resolution, according to the respective receptor body class standards, after the mixing zone limit, and according to bathing standards and to current standards and legislation.

Single paragraph. This type of effluent release must be preceded by treatment that allows for compliance with the following specific conditions and standards, without prejudice to other applicable demands:

I – pH between 5 and 9;
II – temperature: under 40 degrees Celsius and the temperature variation of the receptor body cannot exceed 3 degrees Celsius at the mixing zone limit area;
III – after desanding;
IV – coarse solids and floating substances: virtually absent; and
V – total solids in suspension: minimum removal efficiency of 20% after desanding.

Art. 23 The effluents from sanitary sewer treatment plants may be subjected to ecotoxicity tests in cases when effluents interfere with characteristics that are potentially toxic for the receptor body, at the criteria of the competent environmental organ.

§1 Ecotoxicity tests performed on effluents from sanitary sewer treatment systems provide valuable data for the management of basins that contribute to the plants as they show the need to control the sources that generate effluents that possess characteristics that are potentially toxic for the receptor body.

§2 The management actions will be shared by sanitation enterprises, the generating sources and the competent environmental organ and must be based on the solid assessment of monitoring results.

CHAPTER III
EFFLUENT MANAGEMENT DIRECTIVES

Art. 24 The responsible parties for water resource polluting sources must undertake the required monitoring for the periodic control and attendance of effluents released into receptor bodies, based on representative samples.

§1 The competent environmental organ may establish the criteria and procedures for the execution and verification of self-monitoring practices related to effluents and for assessments of receptor body quality.

§2 Sources of low pollution potential may be exempted from self-monitoring practices, at the criteria of the competent environmental organ.

Art. 25 The collection of samples and the analysis of liquid effluents and water bodies must be performed in accordance with specific standards and under the responsibility of a legally empowered professional.

Art. 26 The tests must be performed by laboratories accredited by the National Institute of Metrology, Standardization and Industrial Quality (INMETRO) or by another organ that is a signatory of the same mutual cooperation agreement that integrates INMETRO or by laboratories approved by the competent environmental organ.

§1 The laboratories must possess implemented analytical quality control systems.

§2 The analytical reports containing laboratory tests on effluents and receptor bodies must be signed by legally empowered professionals.

Art. 27 Water resource potential or effective polluters must implement effluent management practices aimed at efficient water usage, the application of techniques for the reduction of effluent generation and the improvement of generated effluent quality and, whenever possible, practice recycling.

Single paragraph. Effluents whose original release has been reduced through recycling and thereby increased the concentration of substances that are present in effluents and which are not in harmony with the release conditions and standards established by Table I of art. 16 of this Resolution may be subjected to specific release conditions and standards established by the competent environmental organ, according to the provisions foreseen by items II, III and IV of art. 6 of this Resolution.

Art. 28 The party that is responsible for the potential or effective polluting of water resources must present a Pollution Charge Statement to the respective competent environmental organ until March 31 of every year containing previous year data.

§1 The statement that is the subject of the heading of this article must contain, among other data, the qualitative and quantitative characterization of effluents, based upon representative effluent samples.

§2 The competent environmental organ may define additional and complementing
criteria and information that must be included in the above mentioned statement and may also exempt it, if the source is a low pollution producer.

§3 The reports, appraisals and studies upon which the Pollution Charge Statement is based must be archived by the enterprise or activity as well as a copy of the annual declaration signed by the head administrator and by the legally empowered professional, accompanied by the respective Technical Responsibility Agreement and all of these documents must be available to environmental inspection authorities.

CHAPTER IV
FINAL PROVISIONS

Art. 29 The enterprises and other polluting activities that hold issued environmental
licenses on the date of publication of this Resolution may be granted, at the discretion of the competent environmental organ, a deadline of up to three years in order to allow them to adapt to the new or more restrictive conditions and standards established by this norm.

§1 Entrepreneurs must provide the competent environmental organs with a schedule for the implementation of the measures that are necessary in order to comply with the provisions mentioned in the heading of this article.

§2 The period foreseen in the heading of this article may be extended by an equal period in cases that are technically justified.

§3 Existing effluent treatment plants must operate with the capacity, conditions and fulfill any other conditions that were established for their operation and abide by the provisions set by this Resolution.

Art. 30 Non-compliance with the provisions established by this Resolution will subject
offenders to, among other, sanctions foreseen by Law 9.605 from Feb. 12, 1998 and in its regulations.

Art. 31 This Resolution shall enter into effect on the date of its publication.

Art. 32 Item XXXVIII of art. 2, and articles 24 to 37 and articles 39, 43, 44 and 46 of CONAMA Resolution 357 from 2005 are hereby revoked.

IZABELLA TEIXEIRA – Council President

This text does not substitute the text published in the Official Gazette on May 16, 2011