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# Sewage discharge standards

(Based on Article 5 of the Water Pollution Prevention Regulations)

## Introduction and definitions

The preparation and formulation of this standard based on Article 5 of the Water Pollution Prevention Regulations and considering Article( 3) of these regulations. It developed in cooperation with the Ministries of Health, treatment and Medical Education, Energy, Industry, Mines and Metals, Interior, and Agriculture, as well as the Environmental Protection Organization.

In this standard, the compliments and terms used are as follows.

- Surface water: it is seasonal or permanent water, natural or artificial lakes and wetlands.

- Absorption well: It is a hole or a pit that has the ability to absorb and its floor is at least 3 meters away from the highest water level.

- Absorption trench: Is a set of horizontal channels in which the sewage discharged as absorption in the ground and the distance of their bottom from the highest water level is at least 3 meters.

- Bypass: It is a channel that directs sewage from one part of the treatment plant or all of it to another part and the outlet channel.

- Composite sample: It consists of preparing a 24-hour sample from samples that have been prepared with time intervals of up to 4 hours.

## General considerations

1- Sewage discharge must base on the standards that a expressed as the maximum concentration of pollutants, and compliance with these standards is necessary under the supervision of the Environmental Protection Organization.

2- Those responsible for the polluting sources must treat the produced sewages with engineering investigations using appropriate and economic technology up to the standards.

3- The measurement of the concentration of polluting substances and the amount of flow in the sewage should done immediately after the last unit of the treatment plant, before entering the environment.

4- The measurement in order to comply with the standards announced before the sewage treatment facilities should done based on a composite sample. In systems that have continuous discharge, measurement during the discharge time will be the criterion.

5- Sludge or other solid materials produced in sewage treatment facilities should properly treated before disposal and the final discharge of these materials should not cause environmental pollution.

6- Treated sewage must enter the receiving waters under uniform conditions and in such a way, that maximum mixing takes place.

7- The outgoing sewage should not have an unpleasant smell and should not contain foam or floating objects.

8- The color or turbidity of the outgoing sewage should not significantly change the natural appearance of receiving and local discharge waters.

9- The methods of measuring polluting parameters based on the methods mentioned in the book below

***Standard Methods for the Examination of Water and Waste Water***

10- The use of septic tank and Imhof tank system with the use of wells or absorption trenches is prohibited in areas where the distance of the bottom of the well or trench from the level of underground water is less than 3 meters.

11- While complying with the relevant standards, the sewage outlet should not change the quality of the water for the intended uses.

12- Diluting purified or raw sewage in order to bring the concentration of polluting substances up to the declared standards was not acceptable.

13- The use of sewage evaporation methods allowed with the approval of the Environmental Organization.

10- The use of bypass prohibited, only the bypasses that used to fix the problems of the treatment units or used during the collection of city sewage simultaneously as rain allowed.

15- Sewage treatment facilities should be designed, constructed and operated in such a way that the necessary forecasts are provided to minimize pollution in emergency situations such as unsuitable weather conditions, power outages, failure of mechanical equipment, etc.

That industrial sewage whose pollution does not exceed these standards can dispose of their wastewater without treatment after obtaining the approval of the organization.

| Number | Contaminating substances | Discharge of surface water. | Discharge of absorbent well | Agricultural and |
|---|---|---|---|---|

| | | mg/L | mg/L | irrigation uses mg/L |
|---|---|---|---|---|
| 1 | Silver<br>Ag | 1 | 0/1 | 0/1 |
| 2 | Aluminum<br>Al | 5 | 5 | 5 |
| 3 | Arsenic<br>As | 0/1 | 0/1 | 0/1 |
| 4 | Bor | 2 | 1 | 1 |
| 5 | Barium | 5 | 1 | 1 |
| 6 | Beryllium<br>Be | 0/1 | 1 | 0/5 |
| 7 | Calcium<br>Ca | 75 | - | - |
| 8 | Cadmium<br>Cd | 0/1 | 0/1 | %5 |
| 9 | Chlorine Free<br><br>Cl | 1 | 1 | 2/0 |
| 10 | Chloride<br>Cl | 600 (Note 1) | 600 (Note 1) | 600 |
| 11 | Formaldehyde<br>CH2O | 1 | 1 | 1 |
| 12 | C6H5OH<br>Phenol | 1 | insignificant | 1 |
| 13 | Cyanide<br>CN | 0/5 | 0/1 | 0/1 |
| 14 | Cobalt<br>Co | 1 | 1 | 5% |
| 15 | Chromium<br>$Cr^{+6}$ | 0/5 | 1 | 1 |
| 16 | Chromium<br>$Cr^{+3}$ | 2 | 2 | 2 |
| 17 | Cu<br>Cuprum | 1 | 1 | 2/0 |
| 18 | Fluoride<br>F | 2/5 | 2 | 2 |
| 19 | Iron<br>Fe | 3 | 3 | 3 |
| 20 | Mercury<br>Hg | insignificant | insignificant | insignificant |
| 21 | Lithium | 2/5 | 2/5 | 2/5 |

| | | | | |
|---|---|---|---|---|
| | Li | | | |
| 22 | Magnesium<br>Mg | 100 | 100 | 100 |
| 23 | Manganese<br>Mn | 1 | 1 | 1 |
| 24 | Molybdenum<br>Mo | %1 | %1 | %1 |
| 25 | Nickel<br>Ni | 2 | 2 | 2 |
| 26 | Ammonium according to<br>NH4 | 2/5 | 1 | _ |
| 27 | Nitrite according to<br>NO2 | 10 | 10 | _ |
| 28 | Nitrite according to<br>No3 | 50 | 10 | _ |
| 29 | Phosphate according to phosphorus | 6 | 6 | _ |
| 30 | Lead<br>Pb | 1 | 1 | 1 |
| 31 | Selenium sulfide<br>Se<br>SH2 | 1<br>3 | 0/1<br>3 | 0/1<br>3 |
| 32 | Sulfide<br>SO3 | 1 | 1 | 1 |
| 33 | Sulphate<br>SO4 | 400 (Note 1) | 400 (Note 1) | 500 |
| 34 | Vanadium | 0/1 | 0/1 | 0/1 |
| 35 | Zinc<br>V | 2 | 2 | 2 |
| 36 | Oil fat | 10 | 10 | 10 |
| 37 | Detergent<br>ABS | 1/5 | 0/5 | 0/5 |
| 38 | BOD (Note 3)<br>BOD5 | 30 (momentary 50) | 30 (momentary 50) | 100 |
| 39 | SOD (Note 3)<br>COD | 60 (momentary 100) | 60 (momentary 100) | 200 |
| 40 | Dissolved oxygen (minimum)<br>DO | 2 | _ | 2 |
| 41 | Total dissolved solids<br>TDS | (Note 1) | (Note 1) | _ |
| 42 | Total suspended solids<br>TS | 40 (momentary 60) | _ | 100 |

| | | | | |
|---|---|---|---|---|
| 43 | Settling materials<br>SS | . | . | . |
| 44 | PH(about)<br>$P^H$ | 6/5_8/5 | 5_9 | 6-8/5 |
| 45 | Radioactive materials | . | . | . |
| 46 | Turbidity (turbidity unit) | 50 | - | 50 |
| 47 | color (color unit) | 75 | 75 | 75 |
| 48 | Temperature<br>T | (Note 4) | - | - |
| 49 | Digestive coliform<br>(number in 100 ml) | 400 | 400 | 400 |
| 50 | Total coliform (number in 100 milliliters) | 1000 | 1000 | 1000 |
| 51 | MPN parasite eggs | - | - | (Note 5) |

Note one - Discharge with a concentration exceeding the amount specified in the table will allowed if the effluent does not increase the concentration of chloride, sulfate and soluble substances of the receiving source by more than ten percent within a radius of 200 meters.

Note tow - Discharge with a concentration higher than the amount specified in the table will be allowed if there is an increase in chloride, sulfate, and the effluent solution should not be more than ten percent compared to the consumed water.

Note three - Existing industries will allowed to reduce BOD5 and COD by at least 90%.

Note four - The temperature must be such that it does not increase or decrease the temperature of the receiving source by more than 3 degrees Celsius in a radius of 200 meters from its entrance.

Note five - The number of parasite eggs (nematodes) in treated municipal wastewater, in case of using it for irrigation of raw products, should not be more than one number per liter.