

CIRCULAR

Promulgating the National Technical Regulation on Industrial Effluent

Pursuant to the Law on Standards and Technical Regulations dated June 29, 2006;

Pursuant to the Law on Environmental Protection dated November 17, 2020;

Pursuant to the Government's Decree No. 08/2022/ND-CP dated January 10, 2022 detailing a number of articles of the Law on Environmental Protection and Decree No. 05/2025/ND-CP dated January 06, 2025 amending and supplementing a number of articles of the Government's Decree No. 08/2022/ND-CP dated January 10, 2022 detailing a number of articles of the Law on Environmental Protection;

Pursuant to the Government's Decree No. 127/2007/ND-CP dated August 01, 2007 detailing the implementation of a number of articles of the Law on Standards and Technical Regulations and Decree No. 78/2018/ND-CP dated May 16, 2018 amending and supplementing a number of articles of the Government's Decree No. 127/2007/ND-CP of August 01, 2007 detailing the implementation of a number of articles of the Law on Standards and Technical Regulations;

Pursuant to the Government's Decree No. 68/2022/ND-CP dated September 22, 2022 defining the functions, tasks, powers and organizational structure of the Ministry of Natural Resources and Environment;

At the proposal of the Director of the Pollution Control Department and the Director of the Department of Science and Technology;

The Minister of Natural Resources and Environment hereby issues the Circular promulgating the National Technical Regulation on Industrial Effluent.

Article 1. To promulgate under this Circular the National Technical Regulation on Industrial Effluent (QCVN 40:2025/BTNMT).

Article 2. Effect

1. This Circular takes effect on September 01, 2025.

2. The following Circulars cease to be effective in accordance with the transitional provisions in Article 3 and the roadmap for application in Article 4 of this Circular:

a) Circular No. 47/2011/TT-BTNMT dated December 28, 2011 of the Minister of Natural Resources and Environment prescribing national technical regulations on environment;

b) Circular No. 11/2015/TT-BTNMT dated March 31, 2015 of the Minister of Natural Resources and Environment promulgating national technical regulations on environment;

c) Circular No. 12/2015/TT-BTNMT dated March 31, 2015 of the Minister of Natural Resources and Environment promulgating national technical regulations on environment;

d) Circular No. 13/2015/TT-BTNMT dated March 31, 2015 of the Minister of Natural Resources and Environment promulgating national technical regulations on environment;

dd) Circular No. 76/2015/TT-BTNMT dated December 31, 2015 of the Minister of Natural Resources and Environment promulgating national technical regulations on environment;

e) Circular No. 77/2015/TT-BTNMT dated December 31, 2015 of the Minister of Natural Resources and Environment promulgating national technical regulations on environment;

g) Circular No. 31/2017/TT-BTNMT dated September 29, 2017 of the Minister of Natural Resources and Environment promulgating national technical regulations on environment.

3. The following national technical regulations cease to be effective in accordance with transitional provisions in Article 3 and the roadmap for application in Article 4 of this Circular:

a) QCVN 25:2009/BTNMT - National Technical Regulation on Wastewater of the Solid Waste Landfill Sites (promulgated under Circular No. 25/2009/TT-BTNMT dated November 16, 2009 of the Minister of Natural Resources and Environment prescribing national technical regulations on environment);

b) QCVN 28:2010/BTNMT - National Technical Regulation on Health Care Wastewater (promulgated under Circular No. 39/2010/TT-BTNMT dated December 16, 2010 of the Minister of Natural Resources and Environment prescribing national technical regulations on environment);

c) QCVN 29:2010/BTNMT - National Technical Regulation on the

Effluent of Petroleum Terminal and Stations (promulgated under Circular No. 39/2010/TT-BTNMT dated December 16, 2010 of the Minister of Natural Resources and Environment prescribing national technical regulations on environment);

d) QCVN 52:2017/BTNMT - National Technical Regulation on Wastewater of Steel Industry (promulgated under Circular No. 78/2017/TT-BTNMT dated December 29, 2017 of the Minister of Natural Resources and Environment promulgating national technical regulations on environment).

4. From the effective date of this Circular, in cases where the catchment areas are not specified, Column B of Table 1 and Table 2 of QCVN 40:2025/BTNMT shall apply.

Article 3. Transitional provisions

1. Facilities, that are already in operation, investment projects that have had their environmental impact assessments approved or have had their complete and valid applications for appraisal of environmental impact assessments, environmental permits, or environmental registration accepted by competent State authorities before the effective date of this Circular, may continue to apply the corresponding national technical regulations on wastewater for their type of production, business, and services, and local government regulations (including local technical regulations on wastewater) until the end of December 31, 2031.

2. In cases where competent State authorities issue regulations related to changing the function of the water supply intakes, the entities prescribed in Clause 1 of this Article shall follow the roadmap prescribed by competent State authorities when issuing such regulations.

Article 4. Roadmap for application

1. From the effective date of this Circular, investment projects (including: new investment projects and projects whose scale or capacity is expanded that submit applications for appraisal of environmental impact assessments, environmental permits, environmental registration after the effective date of this Circular) must apply QCVN 40:2025/BTNMT.

2. From January 01, 2032, the cases prescribed in Clause 1, Article 3 of this Circular must meet the requirements prescribed in QCVN 40:2025/BTNMT.

3. It is encouraged that cases prescribed in Clause 1, Article 3 of this Circular apply QCVN 40:2025/BTNMT from the effective date of this Circular.

Article 5. Organization of implementation

1. Ministries, ministerial-level authorities, People's Committees at all levels, provincial-level Departments of Natural Resources and Environment, and relevant organizations and individuals shall be responsible for implementing this Circular.

2. Problems that arise during the implementation of this Circular should be promptly reported in writing by relevant authorities, organizations, and individuals to the Ministry of Natural Resources and Environment for consideration and resolution./.

**FOR THE MINISTER
DEPUTY MINISTER**

Le Cong Thanh

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THE SOCIALIST REPUBLIC OF VIETNAM

QCVN 40:2025/BTNMT

**NATIONAL TECHNICAL REGULATION ON INDUSTRIAL
EFFLUENT**

HANOI - 2025

Foreword

QCVN 40:2025/BTNMT is compiled by the Pollution Control Department, submitted by the Department of Science and Technology for appraisal; appraised by the Ministry of Science and Technology, and promulgated by the Minister of Natural Resources and Environment under Circular No. 06/2025/TT-BTNMT dated February 28, 2025.

QCVN 40:2025/BTNMT supersedes the following National Technical Regulations:

QCVN 25:2009/BTNMT - National Technical Regulation on Wastewater of the Solid Waste Landfill Sites;

QCVN 28:2010/BTNMT - National Technical Regulation on Health Care Wastewater;

QCVN 29:2010/BTNMT - National Technical Regulation on the Effluent of Petroleum Terminal and Stations;

QCVN 40:2011/BTNMT - National Technical Regulation on Industrial Wastewater;

QCVN 01-MT:2015/BTNMT - National Technical Regulation on the Effluent of Natural Rubber Processing Industry;

QCVN 11-MT:2015/BTNMT - National technical regulation on the Effluent of Aquatic Products Processing Industry;

QCVN 12-MT:2015/BTNMT - National Technical Regulation on the Effluent of Pulp and Paper Mills;

QCVN 13-MT:2015/BTNMT - National Technical Regulation on the Effluent of Textile Industry;

QCVN 60-MT:2015/BTNMT - National Technical Regulation on the Effluent of Bioethanol Processing;

QCVN 63:2017/BTNMT - National Technical Regulation on Effluent Discharged from the Cassava Starch Processing Factories;

QCVN 52:2017/BTNMT - National Technical Regulation on Wastewater of Steel Industry.

NATIONAL TECHNICAL REGULATION ON INDUSTRIAL EFFLUENT

1. GENERAL PROVISIONS

1.1. Scope of regulation

1.1.1. This Regulation prescribes the maximum permissible values of pollution parameters of industrial effluent when discharged into water supply intakes.

1.1.2. This Regulation does not apply to produced water discharged from offshore oil and gas facilities; livestock wastewater; domestic and municipal wastewater.

1.2. Subjects of application

This Regulation applies to State authorities, organizations and individuals (hereinafter referred to as organizations and individuals) involved in the discharge of industrial effluent into water supply intakes.

1.3. Interpretation of terms

In this Regulation, the terms below are construed as follows:

1.3.1. *Domestic wastewater* means the wastewater generated from human daily activities including eating, bathing, washing, and personal hygiene.

1.3.2. *Industrial effluent* means the effluent generated from production, business, and service activities specified in Column 2, Appendix 2 of this Regulation, from concentrated production, business, and service areas, and industrial clusters.

1.3.3. *Column A, Column B, Column C* (catchment areas) in Table 1 and Table 2 of this Regulation are specified as follows:

1.3.3.1. *Column A* specifies the maximum permissible values of pollution parameters of effluent when discharged into water supply intakes used for domestic water supply purposes or for managing and improving water environmental quality, such as Level A in Table 2, Table 3 of QCVN 08:2023/BTNMT - National Technical Regulation on Surface Water Quality or as regulated by the provincial-level People's Committees.

1.3.3.2. *Column B* specifies the maximum permissible values of pollution parameters of effluent when discharged into water supply intakes used for managing and improving water environmental quality, such as Level B in Table 2, Table 3 of QCVN 08:2023/BTNMT - National Technical Regulation on

Surface Water Quality or as regulated by the provincial-level People's Committees.

1.3.3.3. *Column C* specifies the maximum permissible values of pollution parameters of the effluent when discharged into water supply intakes not in the cases prescribed in Section 1.3.3.1 and Section 1.3.3.2 of this Regulation.

1.3.4. *Industrial effluent discharging facility* means an investment project, a production, business, or service establishment, a concentrated production, business, or service area, or an industrial cluster that discharges industrial effluent into a water supply intake.

2. TECHNICAL PROVISIONS

2.1. Permissible limit values of COD (or TOC), BOD, TSS of industrial effluent

Pursuant to the regulations in Section 1.3.3 of this Regulation and the discharge flow rate, the maximum permissible values for COD (or TOC), BOD, and TSS in industrial effluent discharged into water supply intakes are prescribed in Table 1.

Table 1. Permissible limit values of COD (or TOC), BOD, TSS

No.	Pollution parameters	Unit	Discharge flow (F, m ³ /day)					
			F ≤ 2 000			F > 2 000		
			A	B	C	A	B	C
1	Biochemical Oxygen Demand (BOD ₅ at 20 °C)	mg/L	≤ 40	≤ 60	≤ 80	≤ 30	≤ 50	≤ 60
2	Chemical Oxygen Demand (COD)	mg/L	≤ 65	≤ 90	≤ 130	≤ 60	≤ 70	≤ 90
	or Total Organic Carbon (TOC)	mg/L	≤ 35	≤ 50	≤ 75	≤ 25	≤ 40	≤ 50
3	Total Suspended	mg/L	≤ 40	≤ 80	≤ 120	≤ 30	≤ 60	≤ 80

	Solids (TSS)							
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Note: Organizations and individuals can choose to apply TOC or COD.

2.2. Permissible limit values of other pollution parameters of industrial effluent

Pursuant to the regulations in Section 1.3.3 of this Regulation, the maximum permissible values of characteristic pollution parameters by type of production, business, and services of industrial effluent discharged into water supply intakes are prescribed in Table 2.

Table 2. Allowable limit values of typical pollution parameters based on types of production, business, and services

No.	Pollution parameters	Unit	A	B	C
1	pH	-	6 - 9	6 - 9	6 - 9
2	Temperature	°C	≤ 40	≤ 40	≤ 40
3	Total Nitrogen (T-N)	mg/L	≤ 20	≤ 40	≤ 60
4	Total Phosphorus (T-P)				
4.1	Water supply intakes that are lakes, ponds, lagoons (collectively called lakes)	mg/L	≤ 2.0	≤ 2.5	≤ 3.0
4.2	Water supply intakes that are rivers, streams, creeks, canals, and ditches (collectively referred to as rivers), and seawaters: Applicable to investment projects and facilities in the fields of aquaculture, seafood processing, cassava starch processing, and natural rubber latex processing		≤ 8.0	≤ 14	≤ 18
4.3	Water supply intakes that are rivers and sea waters: Applicable to investment projects, facilities not in the cases prescribed in item 4.2 of this Table		≤ 4.0	≤ 6.0	≤ 10
5	Total Coliform	MPN or CFU/100 mL	≤ 3 000	≤ 5 000	≤ 5 000
6	Color	Pt/Co	≤ 50	≤ 100	≤ 150

7	Arsenic (As)	mg/L	≤ 0.05	≤ 0.25	≤ 0.25
8	Mercury (Hg)	mg/L	≤ 0.001	≤ 0.005	≤ 0.005
9	Lead (Pb)	mg/L	≤ 0.1	≤ 0.5	≤ 0.5
10	Cadmium (Cd)	mg/L	≤ 0.02	≤ 0.1	≤ 0.1
11	Chromium VI (Cr ⁶)	mg/L	≤ 0.1	≤ 0.5	≤ 0.5
12	Total Chromium (Cr)	mg/L	≤ 0.5	≤ 2.0	≤ 2.0
13	Copper (Cu)	mg/L	≤ 1.0	≤ 3.0	≤ 3.0
14	Zinc (Zn)	mg/L	≤ 1.0	≤ 5.0	≤ 5.0
15	Nickel (Ni)	mg/L	≤ 0.1	≤ 3.0	≤ 3.0
16	Manganese (Mn)	mg/L	≤ 2.0	≤ 10	≤ 10
17	Iron (Fe)	mg/L	≤ 2.0	≤ 10	≤ 10
18	Barium (Ba)	mg/L	≤ 1.0	≤ 10	≤ 10
19	Antimony (Sb)	mg/L	≤ 0.02	≤ 0.2	≤ 0.2
20	Tin (Sn)	mg/L	≤ 0.5	≤ 5.0	≤ 5.0
21	Selenium (Se)	mg/L	≤ 0.1	≤ 1.0	≤ 1.0
22	Cyanide (CN ⁻)	mg/L	≤ 0.2	≤ 1.0	≤ 1.0
23	Ammonium (N-NH ⁴⁺), calculated as N	mg/L	≤ 5.0	≤ 10	≤ 12
24	Phenol (C ₆ H ₅ OH)	mg/L	≤ 0.1	≤ 0.5	≤ 0.5
25	Total Phenol	mg/L	≤ 1.0	≤ 3.0	≤ 3.0
26	Mineral oil and grease	mg/L	≤ 1.0	≤ 5.0	≤ 5.0
27	Animal and vegetable oil and grease	mg/L	≤ 5.0	≤ 30	≤ 30
28	Sulfide (S ²⁻)	mg/L	≤ 0.2	≤ 0.5	≤ 1.0
29	Fluoride (F ⁻)	mg/L	≤ 3.0	≤ 15	≤ 15
30	Chloride (Cl ⁻) (not applicable when discharging into saline or brackish water)	mg/L	≤ 500	$\leq 1\ 000$	$\leq 1\ 000$
31	Residual chlorine	mg/L	≤ 1.0	≤ 2.0	≤ 2.0
32	Total organochlorine pesticides, calculated based on the following components: Aldrin, Lindane, Dieldrin, Total DDT (including: DDT, DDD, DDE), Heptachlor &	mg/L	≤ 0.05	≤ 0.1	≤ 0.1

	Heptachlor epoxide				
33	Total organophosphorus pesticides, calculated based on the following components: Dimethoate, Diazinon, Ethyl-parathion, Monocrotophos, Methamidophos, Phosphamidon, Trichlorfon, Disulfoton, Phorate, Methyl-Parathion	mg/L	≤ 0.3	≤ 1.0	≤ 1.0
34	PCBs (Polychlorinated biphenyls), calculated based on the following components: PCB 28, PCB 52, PCB 101, PCB 138, PCB 153, PCB 180	mg/L	≤ 0.003	≤ 0.003	≤ 0.003
35	Dioxins/Furans	pgTEQ/L	≤ 10	≤ 10	≤ 10
36	Absorbable Organic Halogens (AOX)	mg/L	≤ 7.5	≤ 15	≤ 15
37	Anionic surfactants	mg/L	≤ 3.0	≤ 5.0	≤ 5.0
38	Pentachlorophenol (C_6Cl_5OH)	mg/L	≤ 0.001	≤ 0.01	≤ 0.01
39	Trichloroethylene ($CH-CCl_3$)	mg/L	≤ 0.06	≤ 0.3	≤ 0.3
40	Tetrachloroethylene (C_2Cl_4)	mg/L	≤ 0.04	≤ 0.1	≤ 0.1
41	Benzene (C_6H_6)	mg/L	≤ 0.01	≤ 0.1	≤ 0.1
42	Methylene chloride (Dichloromethane – CH_2Cl_2)	mg/L	≤ 0.02	≤ 0.2	≤ 0.2
43	Carbon tetrachloride (CCl_4)	mg/L	≤ 0.004	≤ 0.04	≤ 0.04
44	1,1-dichloroethylene (CH_2CCl_2)	mg/L	≤ 0.05	≤ 0.3	≤ 0.3
45	1,2-dichloroethane ($C_2H_4Cl_2$)	mg/L	≤ 0.03	≤ 0.3	≤ 0.3
46	Chloroform ($CHCl_3$)	mg/L	≤ 0.3	≤ 0.8	≤ 0.8
47	1,4-Dioxane ($C_4H_8O_2$)	mg/L	≤ 0.05	≤ 4.0	≤ 4.0
48	Di ethylhexylphthalate (DEHP) ($C_6H_4(CO_2C_8H_{17})_2$)	mg/L	≤ 0.02	≤ 0.2	≤ 0.2
49	Vinyl chloride ($CH_2=CHCl$)	mg/L	≤ 0.01	≤ 0.5	≤ 0.5
50	Acrylonitrile (CH_2CHCN)	mg/L	≤ 0.01	≤ 0.2	≤ 0.2
51	Bromoform ($CHBr_3$)	mg/L	≤ 0.1	≤ 0.3	≤ 0.3
52	Naphthalene ($C_{10}H_8$)	mg/L	≤ 0.05	≤ 0.5	≤ 0.5
53	Formaldehyde ($HCHO$)	mg/L	≤ 1.0	≤ 5.0	≤ 5.0
54	Epichlorohydrin (C_3H_5ClO)	mg/L	≤ 0.03	≤ 0.3	≤ 0.3

55	Toluene ($C_6H_5-CH_3$)	mg/L	≤ 0.7	≤ 7.0	≤ 7.0
56	Xylene ($C_6H_4(CH_3)_2$)	mg/L	≤ 0.5	≤ 5.0	≤ 5.0
57	Perchlorate (ClO_4^-)	mg/L	≤ 0.03	≤ 0.3	≤ 0.3
58	Acrylamide ($CH_2=Ch-CONH_2$)	mg/L	≤ 0.015	≤ 0.04	≤ 0.04
59	Styrene ($C_6H_5CH=CH_2$)	mg/L	≤ 0.02	≤ 0.2	≤ 0.2
60	Bis (2-ethylhexyl) adipate ($((CH_2CH_2CO_2C_8H_{17})_2$)	mg/L	≤ 0.2	≤ 2.0	≤ 2.0
61	Sulfite (calculated as SO_3^{2-})	mg/L	≤ 5.0	≤ 10	≤ 15

3. MEASUREMENT METHODS

3.1. Methods and techniques for effluent sampling and determination of pollution parameters of effluent shall comply with the regulations in Appendix 1 of this Regulation.

In cases where a pollution parameter allows the use of multiple different testing (analysis) methods and an arbitration method is needed to resolve disputes, complaints, or lawsuits, the first testing method listed in Column 3 of Appendix 1 of this Regulation shall be used.

3.2. Other testing methods (not incorporated by reference into Column 3, Appendix 1 of this Regulation) are accepted, including: newly-issued TCVN; national standard methods of one of the countries in the Group of Seven (G7), the European Committee for Standardization (CEN/EN), standards of the American Society for Testing and Materials (ASTM), member states of the European Union, Korea, or the International Organization for Standardization (ISO), or Standard Methods for the Examination of Water and Wastewater (SMEWW).

4. MANAGEMENT PROVISIONS

4.1. The pollution parameters and their maximum permissible values of the industrial effluent of investment projects and effluent discharging facilities must be stated in the Decision approving the environmental impact assessment appraisal results, the Environmental Permit, or the written environmental registration, including:

4.1.1. pH, total coliform, and the pollution parameters specified in Table 1 of this Regulation.

4.1.2. Characteristic pollution parameters by type of production, business,

and services specifically prescribed in Column 4, Appendix 2 of this Regulation.

4.1.3. Chlorine, Chloroform in cases where the investment project or industrial effluent discharging facility uses Chlorine or chlorine-based disinfectants.

4.1.4. One or several other pollution parameters from Table 2 of this Regulation.

4.1.5. New characteristic pollution parameters not yet specified in Table 1 and Table 2 of this Regulation, in cases where the investment project or discharging facility has technology or equipment that generates new characteristic pollution parameters.

4.2. If an investment project or facility has technology or equipment that generates new characteristic pollution parameters not yet specified in Table 1 and Table 2 of this Regulation, the maximum permissible values for such characteristic pollution parameters shall apply according to the national environmental protection standards of one of the countries in the Group of Seven (G7).

4.3. Regulations for some specific cases:

4.3.1. For cooling water, only temperature and the pollution parameters regarding Chloroform and Chlorine (in cases where Chlorine or chlorine-based disinfectants are used) are required to be monitored. The maximum permissible values for temperature, Chloroform, and Chlorine in cooling water are prescribed in Table 2 of this Regulation.

4.3.2. For aquacultural effluent, only pollution parameters: COD (or TOC), BOD₅, TSS, pH, Total Coliform, Total Nitrogen, Total Phosphorus shall be controlled. For the pollution parameters: pH, Total Coliform, Total Nitrogen, Total Phosphorus, the maximum permissible values prescribed in Table 2 of this Regulation shall apply; for the pollution parameters: BOD₅, COD (or TOC), TSS, the maximum permissible values based on the discharge flow rate $F \leq 2,000$ m³/day prescribed in Table 1 of this Regulation shall apply, regardless of the actual discharge flow rate.

4.3.3. In cases where the quality of influent for aquacultural purposes has pollution parameters exceeding the values prescribed in Table 1 and Table 2 of this Regulation, the pollution parameters in the effluent discharged into the water supply intake shall not exceed the values of the influent at the aquacultural water intake facility. Sampling of the influent and the effluent discharged into the water supply intake to assess their quality shall be carried out simultaneously.

4.4. The discharge of effluent into the water supply intake shall be assessed as compliant and consistent with this Regulation when the monitoring and analysis results of pollution parameters do not exceed the maximum permissible

values prescribed in Table 1 and Table 2 of this Regulation; and do not exceed the maximum permissible values in accordance with the national environmental protection standards of one of the countries in the Group of Seven (G7) in cases where new characteristic pollution parameters arise as prescribed in Section 4.1.5 of this Regulation.

4.5. The compliance and consistency with this Regulation shall be assessed by the method of monitoring and analysis of effluent samples before discharge into the water supply intake.

4.6. The monitoring and analysis of pollution parameters prescribed in Table 1 and Table 2 of this Regulation to provide information and data to State regulatory authorities must be carried out by an organization that has been granted a Certificate of Eligibility for Providing Environmental Monitoring Services in accordance with the law regulations. The monitoring and analysis of new characteristic pollution parameters prescribed in Section 4.1.5 of this Regulation shall be carried out by an organization that has been granted a Certificate of Registration of Testing Activities in accordance with the Government's Decree No. 107/2016/ND-CP dated July 01, 2016 prescribing conditions for commercially providing conformity assessment services. The results from automatic, continuous effluent monitoring shall be used in accordance with the law regulations.

4.7. The results of assessing compliance and consistency with this Regulation shall serve as the basis for consideration and handling by competent State regulatory authorities in accordance with the law regulations.

4.8. Domestic wastewater and livestock wastewater, when combined with industrial effluent, shall be managed as industrial effluent in accordance with the provisions of this Regulation.

4.9. Domestic wastewater, if collected and treated separately from industrial effluent, shall be managed in accordance with the National Technical Regulation on Domestic and Municipal Wastewater.

4.10. Wastewater generated from production, business, and service activities in urban areas and concentrated residential areas, when connected to the urban or concentrated residential area effluent treatment system, must comply with the regulations of the project owner or the operator of the urban or concentrated residential area effluent treatment system or with the regulations of the local government.

4.11. Effluent from production, business, and service facilities in a concentrated production, business, and service area or industrial cluster, when connected to the centralized effluent collection and treatment system, must meet the requirements of the investor constructing and operating the infrastructure of the concentrated production, business, and service area, or industrial cluster.

4.12. The control of radioactivity in effluent shall be carried out in accordance with the law regulations on atomic energy.

5. RESPONSIBILITIES OF ORGANIZATIONS AND INDIVIDUALS

5.1. The owner of the investment project or the industrial effluent discharging facility shall be responsible for ensuring that the values of pollution parameters do not exceed the maximum permissible values prescribed in Table 1 and Table 2 of this Regulation.

5.2. The owner of the investment project or the facility shall be responsible for identifying the pollution parameters of industrial effluent on the principles prescribed in Section 4.1 of this Regulation based on the following: Information on the type of production, business, and services; raw materials, materials, fuels, and chemicals used; production technology, waste treatment technology, and a list of potentially generated pollution parameters (proposed in the dossier of application for environmental impact assessment appraisal, or the dossier of application for issuance, adjustment, re-issuance of the environmental permit).

5.3. The competent authority appraising environmental impact assessments and issuing environmental permits shall specifically determine the pollution parameters to be controlled at the proposal of the investment project owner or facility in the dossier of application for environmental impact assessment appraisal or the dossier of application for issuance, adjustment, re-issuance of an environmental permit. In cases where other pollution parameters are detected exceeding the maximum permissible values prescribed in Table 2 of this Regulation, supplementary control shall be required in accordance with regulations.

6. ORGANIZATION OF IMPLEMENTATION

6.1. The provincial-level People's Committees shall be responsible for reviewing and adjusting local environmental technical regulations on industrial effluent to be consistent with legal regulations, the local socio-economic development situation, and this Regulation.

6.2. State regulatory authorities in charge of environmental protection shall be responsible for guiding and inspecting the implementation of this Regulation.

6.3. In cases where documents and regulations incorporated by reference into this Regulation are amended, supplemented, or replaced, the respective amendments, supplements, or replacements shall prevail./.

Appendix 1

Methods and techniques for effluent sampling and determination of pollution parameters of industrial effluent

No.	Sampling, pollution parameters	Testing method and Regulation code
(1)	(2)	(3)
1	Sampling, preservation and transportation of effluent samples	TCVN 6663-1:2011 TCVN 5999:1995 TCVN 6663-3:2016
2	Effluent sampling for microbial analysis	TCVN 8880:2011
3	Biochemical Oxygen Demand (BOD ₅ at 20 °C)	TCVN 6001-1:2008 TCVN 6001-2:2008 SMEWW 5210B:2023
4	Chemical Oxygen Demand (COD)	TCVN 6491:1999 SMEWW 5220B:2023 SMEWW 52200:2023 SMEWW 5220D:2023
5	Total Organic Carbon (TOC)	TCVN 6634:2000 SMEWW 5310B:2023 SMEWW 5310C:2023 SMEWW 5310D:2023
6	Total Suspended Solids (TSS)	TCVN 6625:2000 SMEWW 2540D:2023
7	pH	TCVN 6492:2011 SMEWW 4500 H ⁺ .B:2023
8	Temperature	TCVN 4557:1988 TCVN 13088:2020 SMEWW 2550B:2023
9	Total Nitrogen (T-N)	TCVN 6638:2000 TCVN 6624:1-2000

		TCVN 6624:2-2000
10	Total Phosphorus (T-P)	TCVN 6202:2008 SMEWW 4500-P.B&D:2023 SMEWW 4500-P.B&E:2023 ISO 11885:2007
11	Total Coliform	SMEWW 9221B:2023 TCVN 6187-2:2020 TCVN 6187-1:2019 TCVN 8775:2011
12	Color	TCVN 6185:2015 (C) SMEWW 2120C:2023
13	Arsenic (As)	TCVN 6626:2000 ISO 15586: 2003 SMEWW 3113B:2023 SMEWW 3114B:2023 SMEWW 3125B:2023 US EPA Method 200.8 TCVN 13090:2020 TCVN 13091:2020 TCVN 13092:2020
14	Mercury (Hg)	TCVN 7877:2008 TCVN 7724:2007 SMEWW 3112B:2023 US EPA Method 245.1 US EPA Method 7470A US EPA Method 200.8 TCVN 12960:2020
15	Lead (Pb)	TCVN 6665:2011 TCVN 6193:1996 ISO 15586: 2003 SMEWW 3113B:2023

		SMEWW 3125B:2023 US EPA Method 200.8 TCVN 13090:2020 TCVN 13091:2020 TCVN 13092:2020
16	Cadmium (Cd)	TCVN 6197:2008 TCVN 6665:2011 TCVN 6193:1996 SMEWW 3111B:2023 SMEWW 3113B:2023 SMEWW 3125B:2023 US EPA Method 200.8 TCVN 13090:2020 TCVN 13091:2020 TCVN 13092:2020
17	Chromium VI (Cr ⁶⁺)	TCVN 6658:2000 SMEWW 3500-Cr.B:2023 US EPA Method 7198
18	Total Chromium (Cr)	TCVN 6665:2011 TCVN 6222:2008 ISO 15586:2003 SMEWW 3111B:2023 SMEWW 3113B:2023 SMEWW 3120B:2023 SMEWW 3125B:2023 US EPA Method 200.7 US EPA Method 200.8 US EPA Method 218.1 TCVN 13090:2020 TCVN 13091:2020 TCVN 13092:2020

19	Copper (Cu)	TCVN 6665:2011 TCVN 6193:1996 ISO 15586:2003 SMEWW 3111B:2023 SMEWW 3113B:2023 SMEWW 3120B:2023 SMEWW 3125B:2023 US EPA Method 200.7 US EPA Method 200.8 TCVN 13090:2020 TCVN 13091:2020 TCVN 13092:2020
20	Zinc (Zn)	TCVN 6665:2011 TCVN 6193:1996 ISO 15586:2003 SMEWW 3111B:2023 SMEWW 3113B:2023 SMEWW 3120B:2023 SMEWW 3125B:2023 US EPA Method 200.7 US EPA Method 200.8 TCVN 13090:2020 TCVN 13091:2020 TCVN 13092:2020
21	Nickel (Ni)	TCVN 6665:2011 TCVN 6193:1996 ISO 15586:2003 SMEWW 3111B:2023 SMEWW 3113B:2023 SMEWW 3120B:2023 SMEWW 3125B:2023

		US EPA Method 200.7 US EPA Method 200.8 TCVN 13090:2020 TCVN 13091:2020 TCVN 13092:2020
22	Manganese (Mn)	TCVN 6665:2011 ISO 15586:2003 SMEWW 3111B:2023 SMEWW 3113B:2023 SMEWW 3120B:2023 SMEWW 3125B:2023 US EPA Method 200.7 US EPA Method 200.8 TCVN 13090:2020 TCVN 13091:2020 TCVN 13092:2020
23	Iron (Fe)	TCVN 6665:2011 TCVN 6177:1996 ISO 15586:2003 SMEWW 3500-Fe.B:2023 SMEWW 3111B:2023 SMEWW 3113B:2023 SMEWW 3120:2023 US EPA Method 200.7 TCVN 13090:2020 TCVN 13091:2020 TCVN 13092:2020
24	Barium (Ba)	US EPA Method 200.7 US EPA Method 200.8 TCVN 6665:2000 SMEWW 3120B:2023

25	Antimony (Sb)	SMEWW 3111.B:2023 SMEWW 3113.B:2023 SMEWW 3120.B:2023 SMEWW 3125.B:2023 US EPA Method 200.7 US EPA Method 200.8 US EPA Method 243.1 TCVN 13090:2020 TCVN 13091:2020 TCVN 13092:2020
26	Tin (Sn)	TCVN 6665:2011 ISO 15586:2003 SMEWW 3111B:2023 SMEWW 3113B:2023 SMEWW 3120B:2023 SMEWW 3125B:2023 US EPA Method 200.7 US EPA Method 200.8 TCVN 13090:2020 TCVN 13091:2020 TCVN 13092:2020
27	Selenium (Se)	US EPA Method 200.7 US EPA Method 200.8 SMEWW 3114C:2023
28	Cyanide (CN ⁻)	TCVN 6181:1996 SMEWW 4500-CN C&E:2023 TCVN 7723-2:2015 TCVN 7723:2007 ISO 14403-2:2017
29	Ammonium (N-NH ⁴⁺), calculated as N	TCVN 5988-1995 TCVN 9242:2012

		TCVN 6179-1:1996 TCVN 6660:2000 SMEWW 4500-NH3.B&D:2023 SMEWW 4500-NH3.B&F:2023 SMEWW 4500-NH3.B&H:2023 USEPA Method 350.2
30	Phenol (C ₆ H ₅ OH)	SMEWW 6420B:2023 SMEWW 6420C:2023 US EPA Method 8270E US EPA Method 604
31	Total Phenols	TCVN 6216:1996 TCVN 7874:2008 US EPA Method 420.2 ISO 14402:1999 SMEWW 5530.B&C:2023
32	Mineral oil and grease	SMEWW 5520B&F:2023 SMEWW 5520C&F:2023 SMEWW 5520D&F:2023 US EPA Method 1664 TCVN 9718:2013
33	Animal and vegetable oil and grease	SMEWW 5520B&F:2023 SMEWW 5520D&F:2023 US EPA Method 1664
34	Sulfide (S ²⁻)	TCVN 6637:2000 TCVN 6659:2000 SMEWW 4500 S2-.B&D:2023
35	Fluoride (F ⁻)	TCVN 6494-1:2011 TCVN 6490:1999 SMEWW 4500-F-.B&C:2023

		SMEWW 4500-F-.B&D:2023 SMEWW 4110B:2023 SMEWW 4110C:2023 US EPA Method 300.1
36	Chloride (Cl-) (not applicable when discharging into saline or brackish water)	TCVN 6494-1:2011 TCVN 6194:1996 SMEWW 4110B:2023 SMEWW 4110C:2023 SMEWW 4500.Cl-:2023 US EPA Method 300.1
37	Residual chlorine (Cl ₂)	TCVN 6225-1:2017 TCVN 6225-2:2017 SMEWW 4500-Cl:2023
38	Total organochlorine pesticides	TCVN 9241:2017 TCVN 7876:2008 SMEWW 6630B:2023 US EPA Method 8081B US EPA Method 8270E US EPA Method 1699 ISO 6848:1996
39	Total organophosphorus pesticides	US EPA Method 8141B US EPA Method 8270E US EPA Method 1699
40	PCBs (Polychlorinated biphenyls), calculated based on the following components: PCB 28, PCB 52, PCB 101, PCB 138, PCB 153, PCB 180	TCVN 9241:2017 TCVN 8061:2009 SMEWW 6630C:2023 US EPA Method 1668C US EPA Method 8082A US EPA Method 8270E ISO 6848:1996
41	Dioxins/Furans	US EPA Method 1613B

		US EPA Method 8290A
42	Absorbable Organic Halogens (AOX)	TCVN 6493:2008 EPA Method 1650
43	Anionic surfactants	TCVN 6622-1:2009 TCVN 6336-1998 SMEWW 5540 B&C:2023 ISO 16265:2009
44	Pentachlorophenol (C ₆ Cl ₅ OH)	US EPA Method 1653A US EPA Method 1625 US EPA Method 604 US EPA Method 8270E SMEWW 6420B:2023 SMEWW 6420C:2023
45	Trichloroethylene (CH-CCl ₃)	US EPA Method 624 US EPA Method 5021A US EPA Method 8260D US EPA Method 624.1
46	Tetrachloroethylene (C ₂ Cl ₄)	US EPA Method 624 US EPA Method 5021A US EPA Method 5032 US EPA Method 8260D US EPA Method 624.1
47	Benzene (C ₆ H ₆)	US EPA Method 624 US EPA Method 5021A US EPA Method 5032 US EPA Method 8260D US EPA Method 624.1 TCVN 12963:2020 TCVN 7873:2008
48	Methylene chloride (Dichloromethane – CH ₂ Cl ₂)	US EPA Method 432 US EPA Method 5021A

		US EPA Method 8260D US EPA Method 624.1 TCVN 12963:2020
49	Carbon tetrachloride (CCl ₄)	US EPA Method 551.1 US EPA Method 5021A US EPA 8260D US EPA Method 624.1
50	1,1-dichloroethylene (CH ₂ CCl ₂)	US EPA Method 5021A US EPA Method 624 US EPA Method 8260D US EPA Method 624.1
51	1,2-dichloroethane (C ₂ H ₄ Cl ₂)	US EPA Method 5021A US EPA Method 624 US EPA Method 8260D US EPA Method 624.1
52	Chloroform (CHCl ₃)	US EPA Method 5021A US EPA Method 551.1 US EPA Method 502.2 US EPA Method 8260D US EPA Method 624.1
53	1,4-Dioxane (C ₄ H ₈ O ₂)	US EPA Method 522 US EPA Method 8270E US EPA Method 8260D US EPA Method 624.1
54	Diethylhexylphthalate (DEHP) (C ₆ H ₄ (CO ₂ C ₈ H ₁₇) ₂)	US EPA Method 506 US EPA Method 625.1 US EPA Method 8270E SMEWW 6410B:2023 SMEWW 6440C:2023 ES 04501.1b
55	Vinyl chloride (CH ₂ =CHCl)	US EPA Method 5021A

		US EPA Method 624 US EPA Method 8260D US EPA Method 624.1 ES 04602.1b
56	Acrylonitrile (CH_2CHCN)	US EPA Method 8316 US EPA Method 8031 US EPA Method 8260D US EPA Method 624.1 ES 04602.1b
57	Bromoform (CHBr_3)	US EPA Method 5021A US EPA Method 8260D US EPA Method 624.1 ES 04602.1b
58	Naphthalene (C_{10}H_8)	US EPA Method 610 US EPA Method 625 US EPA Method 5021A US EPA Method 8100 US EPA Method 8260D US EPA Method 624.1 TCVN 12963:2020
59	Formaldehyde (HCHO)	US EPA Method 8315A ASTM D6303-98 ES 04605.0 ES 04605.1a ES 04605.2 ES 04605.3
60	Epichlorohydrin ($\text{C}_3\text{H}_5\text{ClO}$)	US EPA Method 8260D US EPA Method 624.1 ES 04608.1
61	Toluene ($\text{C}_6\text{H}_5\text{-CH}_3$)	US EPA Method 5021A US EPA Method 8260D

		US EPA Method 624.1 TCVN 12963:2020
62	Xylene ($C_6H_4(CH_3)_2$)	US EPA Method 5021A US EPA Method 5032 US EPA Method 8260D US EPA Method 624.1
63	Perchlorate (ClO_4^-)	US EPA Method 6850 TCVN 12962:2020 ES 04364.0 ES 04364.1c ES 04364.2b
64	Acrylamide ($CH_2=CH-CONH_2$)	US EPA Method 8316 US EPA Method 8032A ES 04609.0 ES 04609.1 ES 04609.2
65	Styrene ($C_6H_5CH=CH_2$)	US EPA Method 5021A US EPA Method 8260D US EPA Method 624.1 US EPA Method 5032
66	Bis (2-ethylhexyl) adipate ($((CH_2CH_2CO_2C_8H_{17})_2)$)	US EPA Method 625 US EPA Method 625.1 US EPA Method 8270E SMEWW 6410B:2023 SMEWW 6440C:2023 ES 04505.1
67	Sulfite (calculated as SO_3^{2-})	TCVN 6494-3:2000 SMEWW 4500- SO_3^{2-} -C:2023

Notes:

- TCVN: National Standard of Vietnam.
- US EPA Method: United States Environmental Protection Agency Method.

- SMEWW: Standard Methods for the Examination of Water and Wastewater.
- ASTM: American Society for Testing and Materials Standard.
- ISO: International Organization for Standardization Standard.
- ES: Ministry of Environment of Korea Standard.

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Appendix 2

Characteristic pollution parameters by type of production, business, and services

No.	Types of production, business and services	Economic activity code	Characteristic pollution parameters	Some other potential pollution parameters
(1)	(2)	(3)	(4)	(5)
I	Agriculture and fishery	A		
1.	Aquaculture (excluding cage culture and extensive fish farming)	A 032	Determined in accordance with Section 4.3.2 of this Regulation	-
II	Mining and quarrying	B		
2.	Mining of hard coal and lignite	B 05	Color.	Based on actual raw materials, fuels, and chemicals used.
3.	Extraction of crude petroleum and natural gas (excluding activities from oil and gas fields)	B 06	Mineral oil and grease.	Based on actual raw materials, fuels, and chemicals used.
4.	Mining of metal ores	B 07	Color, mineral oil and grease.	Based on the actual amount of ores mined and raw materials, fuels, and chemicals used.
5.	Other mining and quarrying	B 08	Color.	Based on the actual amount of minerals and raw materials, fuels, and chemicals used.
III	Industrial	C		

	processing and manufacturing			
6.	Manufacture and processing of food products, including processing and preservation of meat and meat products; processing and preservation of fish and fish products; processing and preservation of fruit and vegetables; manufacture of animal and vegetable oil and greases; processing of milk and dairy products; grain milling and manufacture of starches and starch products; manufacture of other food products; manufacture of prepared animal feeds	C 10	Ammonia/Ammonium, Total Nitrogen, Total Phosphorus.	- Manufacture and processing of cassava starch: Cyanide. - Manufacture of meat products; fish products; animal and vegetable oil and greases; prepared animal feeds: Animal and vegetable oil/grease. - Based on actual raw materials, fuels, and chemicals used.
7.	Manufacture of beverages	C 11	Ammonia/Ammonium, animal and vegetable oil and grease.	Based on actual raw materials, fuels, and chemicals used.
8.	Manufacture of tobacco	C 12	Color.	Based on actual raw materials, fuels, and

	products			chemicals used.
9.	Spinning, weaving and finishing of textiles	C 13	Total Nitrogen, Total Phosphorus, Ammonia/Ammonium.	- Using dyeing or bleaching processes: Color, Anionic surfactants, Total phenols, Phenols, Cyanide, Sulfide, Cr^{6+}, Total Cr. - Based on actual raw materials, fuels, and chemicals used.
10.	Manufacture of wearing apparel	C 14	Total Nitrogen, Total Phosphorus, Ammonia/Ammonium, Anionic surfactants.	- Using dyeing or bleaching processes: Color, Total phenols, Phenols, Cyanide, Sulfide, Cr^{6+}, Total Cr. - Based on actual raw materials, fuels, and chemicals used.
11.	Manufacture of leather and related products	C 15	Total Nitrogen, Total Phosphorus, Ammonia/Ammonium, Color, Animal and vegetable oil/grease, Anionic surfactants.	- Using tanning process: Cr^{6+}, Total Chromium. - Based on actual raw materials, fuels, and chemicals used.
12.	Wood processing and manufacture of products of wood and bamboo (except beds, cabinets, tables and chairs); manufacture of products of straw and plaiting materials	C 16	Color, mineral oil and grease.	- Using wood preservatives: Pentachlorophenol, Fluoride. - Based on actual raw materials, fuels, and chemicals used.

13.	Production of papers and paper products	C 17	Total Nitrogen, Total Phosphorus, Ammonia/Ammonium, Color, Mineral oil and grease, Sulfide.	- Using Chlorine chemicals in pulp production or bleaching process: AOX, Dioxins, Chloroform, Residual Chlorine. - Based on actual raw materials, fuels, and chemicals used.
14.	Manufacture of coke oven products	C 1910	Total Nitrogen, Total Phosphorus, Ammonia/Ammonium, Mineral oil and grease, Cyanide, Sulfide, Cd, As, Hg, Total phenols, Phenols, Benzene, Toluene, Xylene, Naphthalene.	Based on actual raw materials, fuels, and chemicals used.
15.	Manufacture of refined petroleum products	C 1920	Total Nitrogen, Total Phosphorus, Ammonia/Ammonium, Mineral oil and grease, Cyanide, Sulfide, Total phenols, Phenols, Benzene.	- Vinyl chloride or ethylene dichloride production stage: Dioxins/Furans. - Based on actual raw materials, fuels, and chemicals used.
16.	Manufacture of industrial gases	C 20111		Based on actual raw materials, fuels, and chemicals used.
17.	Manufacture of dyes and pigments	C 20112	Color, Ammonia/Ammonium.	Based on actual raw materials, fuels, and chemicals used.
18.	Manufacture of basic inorganic chemicals	C 20113	Color, Ammonia/Ammonium.	Based on actual raw materials, fuels, and chemicals used.
19.	Manufacture of basic organic chemicals	C 20114	Color, Ammonia/Ammonium.	Based on actual raw materials, fuels, and chemicals used.
20.	Manufacture of other basic	C 20119	Color, Ammonia/Ammonium.	Based on actual raw materials, fuels, and

	chemicals			chemicals used.
21.	Manufacture of fertilizers and nitrogen compounds	C 2012	Total Nitrogen, Total Phosphorus, Ammonia/Ammonium, Color.	Based on actual raw materials, fuels, and chemicals used.
22.	Manufacture of plastics and synthetic rubber in primary forms	C 2013	Ammonia/Ammonium, mineral oil and grease.	- Usage and production of Vinyl chloride: Diethylhexylphthalate. - Based on actual raw materials, fuels, and chemicals used.
23.	Manufacture of pesticides and other agrochemical products	C 2021	Ammonia/Ammonium.	- Manufacture of pesticides (depending on type): Total organochlorine pesticides, Total organophosphorus pesticides. - Based on actual raw materials, fuels, and chemicals used.
24.	Manufacture of paints, varnishes and similar coatings, printing ink and mastic	C 2022		Based on actual raw materials, fuels, and chemicals used.
25.	Manufacture of cosmetics, soaps and detergents, cleaning and polishing preparations	C 2023	Total Nitrogen, Total Phosphorus, Ammonia/Ammonium, Formaldehyde, 1,4-Dioxane, Anionic surfactants, Mineral oil and grease, Animal and vegetable oil/grease.	Based on actual raw materials, fuels, and chemicals used.
26.	Manufacture of other chemical products not elsewhere	C 2029	Total Nitrogen, Total Phosphorus, Ammonia/Ammonium.	Based on actual raw materials, fuels, and chemicals used.

	classified			
27.	Manufacture of man-made fibres	C 203	Total Nitrogen, Total Phosphorus, Ammonia/Ammonium.	Based on actual raw materials, fuels, and chemicals used.
28.	Manufacture of pharmaceuticals, medicinal chemical and botanical products	C 21	Total Nitrogen, Total Phosphorus, Ammonia/Ammonium.	Based on actual raw materials, fuels, and chemicals used.
29.	Manufacture of rubber products	C 221	Total Nitrogen, Total Phosphorus, Ammonia/Ammonium, Mineral oil and grease, Color.	Based on actual raw materials, fuels, and chemicals used.
30.	Manufacture of plastics products	C 222	Ammonia/Ammonium, mineral oil and grease.	- Usage and production of Vinyl chloride: Diethylhexylphthalate. - Based on actual raw materials, fuels, and chemicals used.
31.	Manufacture of glass and glass products	C 231	Color, Fluoride, Mineral oil and grease.	Based on actual raw materials, fuels, and chemicals used.
32.	Manufacture of other non-metallic mineral products (not elsewhere classified)	C 239	Color, Ammonia/Ammonium, mineral oil and grease.	- Co-processing of waste in clinker and cement kilns generating effluent from the exhaust gas treatment stage: Dioxins/Furans, Sulfites. - Based on actual raw materials, fuels, and chemicals used.
33.	Iron, steel, cast iron production	C 241	Color, Total Nitrogen, Total Phosphorus, Ammonia/Ammonium, Mineral oil and grease, As, Hg, Pb, Cd, Total	- Effluent generated from the exhaust gas treatment system (sintering machine, electric arc furnace,

			Cr, Mn, Fe.	induction furnace): Dioxins/Furans, Sulfites. - Based on actual raw materials, fuels, and chemicals used.
34.	Manufacture of precious metals and non-ferrous metals	C 242	Color, Total Nitrogen, Total Phosphorus, Ammonia/Ammonium, Mineral oil and grease.	- Effluent generated from the exhaust gas treatment stage (smelting furnace: Aluminum, Copper, Zinc): Dioxins/Furans, Sulfites. - Based on actual raw materials, fuels, and chemicals used.
35.	Metal casting	C 243	Color, Ammonia/Ammonium, mineral oil and grease.	Based on actual raw materials, fuels, and chemicals used.
36.	Manufacture of products from metal casts (except machinery and equipment)	C 25	Ammonia/Ammonium, mineral oil and grease.	Based on actual raw materials, fuels, and chemicals used.
37.	Manufacture of electronics, computers and optical products	C 26	Ammonia/Ammonium, mineral oil and grease.	Based on actual raw materials, fuels, and chemicals used.
38.	Manufacture of electrical equipment (except manufacture of batteries and accumulators)	C 27	Ammonia/Ammonium, mineral oil and grease.	Based on actual raw materials, fuels, and chemicals used.
39.	Manufacture of batteries and accumulators	C 272	Lead, Ammonia/Ammonium, Mineral oil and grease.	Based on actual raw materials, fuels, and chemicals used.

40.	Manufacture of general purpose and special purpose machinery (not elsewhere classified)	C 28	Ammonia/Ammonium, mineral oil and grease.	Based on actual raw materials, fuels, and chemicals used.
41.	Manufacture of motor vehicles, trailers and semi-trailers and other transport equipment	C 29 C 30	Ammonia/Ammonium, mineral oil and grease.	Based on actual raw materials, fuels, and chemicals used.
IV	Electricity, gas, steam and air conditioning supply	D		
42.	Thermal power plants (coal-fired)	D 35112	Total Nitrogen, Total Phosphorus, Ammonia/Ammonium, Mineral oil and grease, Phenols, Total phenols, Anionic surfactants, Fluoride.	- Effluent generated from the SO ₂ treatment stage: Sulfites. - Based on actual raw materials, fuels, and chemicals used.
43.	Nuclear power generation	D 35114		Based on actual raw materials, fuels, and chemicals used.
44.	Steam, hot water and air conditioning supply and production of ice	D 353		Based on actual raw materials, fuels, and chemicals used.
V	Water supply; sewerage, waste management and remediation activities	E		

45.	Water collection, treatment and supply	E 36	Mn, Fe, As.	Based on actual raw materials, fuels, and chemicals used.
46.	Wastewater treatment (including centralized wastewater treatment systems for concentrated production, business, and service areas, industrial clusters)	E 37002	Total Nitrogen, Total Phosphorus, Ammonia/Ammonium, mineral oil and grease.	- Centralized wastewater treatment systems receiving wastewater from production, business, and service types registered for investment in the concentrated production, business, and service areas or industrial clusters: Based on the type of production, business, and service prescribed in Columns 4 and 5 of this Appendix. - Based on actual raw materials, fuels, and chemicals used.
47.	Waste treatment and disposal (waste treatment)	E 38	Total Nitrogen, Total Phosphorus, Ammonia/Ammonium, mineral oil and grease.	- Wastewater generated from landfills: Color, Animal and vegetable oil/grease, Total phenols, Phenols, Cyanide, Sulfide, As, Hg, Pb, Cd, Cr⁶⁺, Total Cr, Cu, Zn, Fe, Mn, Fluorine, Coliform, PCB (Polychlorinated biphenyls), Total organochlorine pesticides, Total organophosphorus pesticides. - Effluent generated from the exhaust gas

				treatment stage of waste incinerators: Dioxins/Furans, Sulfites. - Based on actual raw materials, fuels, and chemicals used.
VI	Repair of motor vehicles and motorcycles	G		
48.	Maintenance and repair of motor vehicles and motorcycles; Wholesale of petroleum and related products; Retail sale of automotive fuel in specialized stores	G 4520 G 4542 G 46613 G 47300	Mineral oil and grease.	Based on actual raw materials, fuels, and chemicals used.
VII	Professional, scientific and technical activities	M		
49.	Technical testing and analysis (research institutions, laboratories)	M 712	Ammonia/Ammonium.	Based on actual raw materials, fuels, and chemicals used.
50.	Veterinary medicine	M 75	Ammonia/Ammonium, animal and vegetable oil and grease.	Based on actual raw materials, fuels, and chemicals used.
VIII	Human health and social work activities	Q		

51.	Hospitals, medical stations	Q 861	Total Nitrogen, Total Phosphorus, Ammonia/Ammonium, Anionic surfactants, Animal and vegetable oil/grease.	- Effluent generated from the exhaust gas treatment stage of waste incinerators: Dioxins/Furans, Sulfites. - Based on actual raw materials, fuels, and chemicals used.
52.	General and specialist medical and dental clinics	Q 862	Anionic surfactants.	Based on actual raw materials, fuels, and chemicals used.
IX	Arts, entertainment and recreation	R		
53.	Golf courses	R93110	Total Nitrogen, Total Phosphorus, Ammonia/Ammonium, Total organochlorine pesticides, Total organophosphorus pesticides.	Based on actual raw materials, fuels, and chemicals used.
X	Other sectors not specifically mentioned in Decision No. 27/2018/QĐ-TTg			
54.	Others (not specified in Items 1 to 53 and other activities)	-		Based on actual raw materials, fuels, and chemicals used.

Notes:

- Types of production, business, and services are classified according to the Economic Activity Codes specified in Decision No. 27/2018/QĐ-TTg dated July 06, 2018 of the Prime Minister on promulgation of Vietnam's standard industrial classification of economic activities.

- Types of production, business, and services belonging to economic activity codes at a lower level than the economic activity codes specified in Column (3) of this Appendix shall apply characteristic pollution parameters similar to those for the types of production, business, and services belonging to the economic activity codes specified in Column (3) of this Appendix.
- Others listed in item 54 mean other types of production, business, and services not included in the economic activity codes listed in Column (3) of this Appendix and other activities, excluding business and service types already prescribed in the National Technical Regulation on Domestic and Municipal Wastewater./.

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