

Timetable

Regulation application subjects and requirements

New control items in effluent criteria for business categories in the Water Pollution Control Act and new business subcategories for animal excrement or bioenergy resource processing centers (or biogas reuse centers), seawater desalination plants and steam supply business

From Apr 29
2019 on

Stricter / new effluent control criteria

Desalination plant:

		Item	Existing	Remark
Water temperature	Discharge to surface water bodies other than ocean		< 38 °C	Applicable through May to September
			< 35 °C	Applicable through October to next April
	Direct discharge to ocean		Water temperature at discharge point shall not exceed 42°C, and the surface water temperature difference shall not exceed 4°C 500 m from the discharge point.	
H ⁺ ion concentration index			6.0 – 9.0	--
Chemical oxygen demand			100	--
Suspended solids			50	--
Total residual chlorine (or chlorine-forming oxides)			0.5	1. The total residual chlorine is applicable to discharged water with salinity < 10 psu (practical salinity unit); 2. The chlorine-forming oxides are applicable to discharged water with salinity equal to or greater than 10 psu (practical salinity unit), which shall be determined using the method for chlorine-forming oxide test. However, the test may be performed using the method for total residual chlorine test before the method for chlorine-forming oxide test is promulgated.
Ammonia			20	--
Anionic surfactant			10	--
Grease (n-hexane extract)			10	--
Soluble iron			10	--
Soluble manganese			10	--
Cd			0.03	--
Pb			1.0	--
Total Cr			2.0	--
Hexavalent Cr			0.5	--
Total mercury			0.005	--
Cu			3.0	--
Zn			5.0	--
Ag			0.5	--
Ni			1.0	--
Se			0.5	--
As			0.5	--

Note: water temperature is in °C; H⁺ ion index is unitless; the others are in mg/L.

From July 1 2019 on

**Business subcategories for animal excrement or bioenergy resource processing centers (or biogas reuse centers) –
Businesses involving in collecting animal excrements or liquid and solid digestates after anaerobic fermentation for growing aquaculture feeds, such as algae, rotifers and water fleas, and the farming of other aquatic animals:**

New controls	Item	Existing	Remark
	Biochemical oxygen demand	80	--
	Chemical oxygen demand	600	
	Suspended solids	150	

Note: all values in mg/L

The control values for 43 commonly applicable items, including water temperature and H+ ion index, shall be met for business subcategories for animal excrement or bioenergy resource processing centers (or biogas reuse centers) – businesses involving in collecting animal excrements or liquid and solid digestates after anaerobic fermentation for growing aquaculture feeds, such as algae, rotifers and water fleas, and the farming of other aquatic animals.

From July 1 2020 on

Steam supply business:

New controls	Item	Existing	Remark
	Chemical oxygen demand	100	--
	Suspended solids	30	--
	Item	Existing/new	Remark
	Dioxin	10/5	--

Note: dioxin is in pg-I-TEQ/L and the other values are in mg/L.

The control values for 43 commonly applicable items, including water temperature and H+ ion index, shall be met for the steam supply business.

Existing: those that were built, being built or whose project tendering has completed by April 29 2019.

New: those whose project tendering has not completed by April 29 2019.

New or stricter controls, including true colorimetry, heavy metals, ammonia and harmful substances, in 2017 water discharge criteria

From Jan 1 2021 on

Existing: those that were built, being built or whose project tendering has completed by Dec 25 2017.

New: those whose project tendering has not completed by Dec 25 2017.

Wafer foundry and semiconductor manufacturing:

Stricter thresholds	Item	Existing	Remark
	Cd	0.02	> 500CMD
	Pb	0.5	
	Total Cr	1.5	
	Hexavalent Cr	0.35	
	Cu	1.5	
	Zn	3.5	
	Ni	0.7	
	Se	0.35	
As	0.35		

Note: all values in mg/L

New controls	Item	Existing	Remark
	Sn	2.0	> 500CMD
	Mo	0.6	--
	Item	Existing/new	Remark
	N-Methylpyrrolidone	1.0	Those approved for discharge 10,000 m ³ /day or more; however, this does not apply to those engaging in milling, cutting, testing or packaging.
	2-Methoxy-1-Propanol	0.1	
Dimethylacetamide	0.1		
Co	1.0		
Sb	1.0		

Note: all values in mg/L

From Jan 1 2021 on

Existing: those that were built, being built or whose project tendering has completed by Dec 25 2017.

New: those whose project tendering has not completed by Dec 25 2017.

Photoelectronic material and component manufacturing:

Stricter thresholds	Item	Existing	Remark
	Cd	0.02	> 500CMD
	Pb	0.5	
	Total Cr	1.5	
	Hexavalent Cr	0.35	
	Cu	1.5	
	Zn	3.5	
	Ni	0.7	
	Se	0.35	
	As	0.35	
True colorimetry	400	--	

Note: the true colorimetry is unitless and other values are in mg/L.

New controls	Item	Existing	Remark
	Sn	2.0	> 500CMD
Free available residual chlorine	2.0	--	
New controls	Item	Existing/new	Remark
	N-Methylpyrrolidone	1.0	Those approved for discharge 10,000 m ³ /day or more; however, this does not apply to those engaging in milling, cutting, testing or packaging.
	2-Methoxy-1-Propanol	0.1	
	Dimethylacetamide	0.1	
	N-methylformamide	1.0	
Diethylene glycol dimethyl ether	1.0		

Note: all values in mg/L

From Jan 1

Existing: those that were built, being built or whose project tendering has completed by Dec 25 2017.

New: those whose project tendering has not completed by Dec 25 2017.

Petrochemical industry:

Stricter thresholds	Item	Existing
	True colorimetry	400

Note: true colorimetry is unitless.

New controls	Item	Existing	
	Free available residual chlorine	2.0	
New controls	Item	Existing/new	Remark
	acrylonitrile	0.2	Those approved for discharge 10,000 m ³ /day or more; however, this does not apply to those that only produce natural gas.
1,3-butadiene	0.1		

Note: all values in mg/L

Chemical industry:

Stricter thresholds	Item	Existing	Remark
	Cd	0.02	> 500CMD
	Pb	0.5	
	Total Cr	1.5	
	Hexavalent Cr	0.35	
	Cu	1.5	
	Zn	3.5	
	Ni	0.7	
	Se	0.35	
	As	0.35	
True colorimetry	400	--	

Note: true colorimetry is unitless and the other values are in mg/L.

From Jan 1

Existing: those that were built, being built or whose project tendering has completed by Dec 25 2017.

New: those whose project tendering has not completed by Dec 25 2017.

Chemical industry:

New controls	Item	Existing	Remark
	Sn	2.0	> 500CMD
	Mo	0.6	--
	Free available residual chlorine	2.0	--
	Item	Existing/new	Remark
	acrylonitrile	0.2	Those approved for discharge 10,000 m ³ /day or more; however, this does not apply to those that only produce fertilizers or manufacture lime or coal products.
1,3-butadiene	0.1		

Note: all values in mg/L.

Basic metal works, metal surface treatment, electroplating and PCB manufacturing:

Stricter thresholds	Item	Existing	Remark
	Cd	0.02	Electroplating, metal surface treatment and basic metal works > 150CMD or PCB manufacturing > 500CMD
	Pb	0.5	
	Total Cr	1.5	
	Hexavalent Cr	0.35	
	Cu	1.5	
	Zn	3.5	
	Ni	0.7	
	Se	0.35	
As	0.35		

Note: all values in mg/L

New controls	Item	Existing	Remark
	Sn	2.0	Electroplating, metal surface treatment and basic metal works > 150CMD or PCB manufacturing > 500CMD
Mo	0.6	--	

Note: all values in mg/L

From Jan 1 2021 on

Existing: those that were built, being built or whose project tendering has completed by Dec 25 2017.

New: those whose project tendering has not completed by Dec 25 2017.

Basic metal works, metal surface treatment, electroplating and PCB manufacturing:

New controls	Item			Existing
	Ammonia	metal surface treatment, electroplating	Discharging outside of utility water quality and quantity protection zones	150

Note: all values in mg/L

Power plants:

Stricter thresholds	Item	Existing (coal-fueled)	Remark
	Total mercury	0.002	Existing power plants that operate coal-fueled power generators and produce desulfurization wastewater treated at a wastewater treatment facility
	Se	0.3	
	As	0.1	

Note: all values in mg/L

New controls	Item		Existing
	Ammonia	Discharging outside of utility water quality and quantity protection zones	150

Note: all values in mg/L

Businesses other than the six mentioned above (pharmaceutical, agriculture and 15 others):

Stricter thresholds	Item	Existing
	True colorimetry	400

Note: true colorimetry is unitless.

New controls	Item	Existing
	Free available residual chlorine	2.0

Note: all values in mg/L

**From Jan 1
2021 on**

Existing: those that were built, being built or whose project tendering has completed by Dec 25 2017.

New: those whose project tendering has not completed

Tanneries (making leather from raw hides) and landfills:

New controls	Item		Existing
	Ammonia	Discharging outside of utility water quality and quantity protection zones	150

Note: all values in mg/L

Manufacturing of pesticides and environmental sanitation agents, and others:

New controls	Item		Existing
	Mo		0.6

Note: all values in mg/L

Hotels:

Stricter thresholds	Item		Existing
	BOD		30
	COD		100
	SS		30
	E. coli colonies		200,000

Note: E. coli colonies are in CFU/100 mL and the other values are in mg/L.

New controls	Item		Existing
	Total nitrogen	Discharging outside of utility water quality and quantity protection zones	15
	Total phosphorus		2.0

Note: all values in mg/L

**From Jan 1
2021 on**

Existing: those that were built, being built or whose project tendering has completed by Dec 25 2017.

New: those whose project tendering has not completed by Dec 25 2017.

Science parks:

Stricter thresholds	Item	Existing
	Cd	0.02
	Pb	0.5
	Total Cr	1.5
	Hexavalent Cr	0.35
	Cu	1.5
	Zn	3.5
	Ni	0.7
	Se	0.35
	As	0.35
True colorimetry	400	

Note: the true colorimetry is unitless and the other values are in mg/L.

New controls	Item	Existing
	Sn	2.0
	Free available residual chlorine	2.0
	Item	Existing/new
	N-Methylpyrrolidone	1.0
	2-Methoxy-1-Propanol	0.1
	Dimethylacetamide	0.1
	Co	1.0
	Sb	1.0
N-methylformamide	1.0	
Diethylene glycol dimethyl ether	1.0	

Note: all values in mg/L

**From Jan 1
2021 on**

Existing: those that were built, being built or whose project tendering has completed by Dec 25 2017.

New: those whose project tendering has not completed by Dec 25 2017.

Petrochemical industrial parks:

Stricter thresholds	Item	Existing*
	Cd	0.02
	Pb	0.5
	Total Cr	1.5
	Hexavalent Cr	0.35
	Cu	1.5
	Zn	3.5
	Ni	0.7
	Se	0.35
	As	0.35
True colorimetry	400	

Note: the true colorimetry is unitless and the other values are in mg/L.

New controls	Item	Existing
	Sn	2.0
	Mo	0.6
	Free available residual chlorine	2.0
	Item	Existing/new
	Nitrobenzene	0.4
	Trichloroethylene	0.3
	acrylonitrile	0.2
1,3-butadiene	0.1	

Note: all values in mg/L

From Jan 1 2021 on

Existing: those that were built, being built or whose project tendering has completed by Dec 25 2017.

New: those whose project tendering has not completed by Dec 25 2017.

Other industrial parks:

Stricter thresholds	Item		Existing
		Cd	0.02
		Pb	0.5
		Total Cr	1.5
		Hexavalent Cr	0.35
		Cu	1.5
		Zn	3.5
		Ni	0.7
		Se	0.35
		As	0.35
		True colorimetry	400

Note: the true colorimetry is unitless and the other values are in mg/L.

New controls	Item		Existing
		Sn	2.0
		Free available residual chlorine	2.0
	Ammonia	Discharging outside of utility water quality and quantity protection zones	100

Note: all values in mg/L

Public sewage systems (applicable for flow rate > 250CMD):

Stricter controls	Item			Existing
	Ammonia	Discharging outside of utility water quality and quantity protection zones	Those approved to receive and treat industrial wastewater, intercepted water or liquid manure up to 20% of the maximum design total wastewater (sewage).	75
			Those approved to receive and treat industrial wastewater, intercepted water or liquid manure up to 20% of the maximum design total wastewater (sewage); or those that do not receive and treat industrial wastewater, intercepted water or liquid manure.	10
	Total nitrogen	Discharging outside of utility water quality and quantity protection zones	Those approved to receive and treat industrial wastewater, intercepted water or liquid manure up to 20% of the maximum design total wastewater (sewage); or those that do not receive and treat industrial wastewater, intercepted water or liquid manure.	50

Note: all values in mg/L

**From Jan 1
2024 on**

Existing: those that were built, being built or whose project tendering has completed by Dec 25 2017.

New: those whose project tendering has not completed by Dec 25 2017.

Metal surface treatment and electroplating:

New controls	Item		Existing
	Ammonia	Discharging outside of utility water quality and quantity protection zones	120

Note: all values in mg/L

Regional thresholds	Item		Existing
	Boron	Discharging outside of utility water quality and quantity protection zones	10

Note: all values in mg/L

Power plants:

New controls	Item		Existing
	Ammonia	Discharging outside of utility water quality and quantity protection zones	100

Note: all values in mg/L

Tanneries (making leather from raw hides) and landfills:

New controls	Item		Existing
	Ammonia	Discharging outside of utility water quality and quantity protection zones	60

Note: all values in mg/L

Other industrial parks:

New controls	Item		Existing
	Ammonia	Discharging outside of utility water quality and quantity protection zones	75

Note: all values in mg/L

From Jan 1 2024 on

Existing: those that were built, being built or whose project tendering has completed by Dec 25 2017.

New: those whose project tendering has not completed by Dec 25 2017.

Public sewage systems (applicable for flow rate > 250CMD):

New controls	Item		Existing/new
	Ammonia	Discharging outside of utility water quality and quantity protection zones	
Discharging outside of utility water quality and quantity protection zones		Those approved to receive and treat industrial wastewater, intercepted water or liquid manure up to 20% of the maximum design total wastewater (sewage).	30/20
		Those approved to receive and treat industrial wastewater, intercepted water or liquid manure up to 20% of the maximum design total wastewater (sewage); or those that do not receive and treat industrial wastewater, intercepted water or liquid manure.	10/6
Total nitrogen	Discharging outside of utility water quality and quantity protection zones	Those approved to receive and treat industrial wastewater, intercepted water or liquid manure up to 20% of the maximum design total wastewater (sewage); or those that do not receive and treat industrial wastewater, intercepted water or liquid manure.	35/20

Note: all values in mg/L

From Jan 1 2027 on

Metal surface treatment and electroplating:

New controls	Item		Existing
	Ammonia	Discharging outside of utility water quality and quantity protection zones	60

Note: all values in mg/L

Regional thresholds	Item		Existing
	Boron	Discharging outside of utility water quality and quantity protection zones	5.0

Note: all values in mg/L

From Jan 1

2027 on
Existing: those that were built, being built or whose project tendering has completed by Dec 25 2017.

New: those whose project tendering has not completed by Dec 25 2017.

Power plants:

New controls	Item		Existing
	Ammonia	Discharging outside of utility water quality and quantity protection zones	60

Note: all values in mg/L

Other industrial parks:

New controls	Item		Existing
	Ammonia	Discharging outside of utility water quality and quantity protection zones	30

Note: all values in mg/L