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Title 40

PART 419 - PETROLEUM REFINING POINT SOURCE CATEGORY

Authority: Secs. 301, 304 (b), (c), (e), and (g), 306 (b) and (c), 307 (b) and (c), and 501 of the Clean Water Act (the Federal Water Pollution Control Act Amendments of 1972 as amended by the Clean Water Act of 1977) (the "Act"); 33 U.S.C. 1311, 1314 (b), (c), (e), and (g), 1316 (b) and (c), 1317 (b) and (c), and 1361; 86 Stat. 816, Pub. L. 92-500; 91 Stat. 1567, Pub. L. 95-217.

Source: 47 FR 46446, Oct. 18, 1982, unless otherwise noted.

Subpart A - Topping Subcategory

§ 419.10 Applicability; description of the topping subcategory.

The provisions of this subpart apply to discharges from any facility that produces petroleum products by the use of topping and catalytic reforming, whether or not the facility includes any other process in addition to topping and catalytic reforming. The provisions of this subpart do not apply to facilities that include thermal processes (coking, vis-breaking, etc.) or catalytic cracking.

§ 419.11 Specialized definitions.

For the purpose of this subpart:

(a) Except as provided below, the general definitions, abbreviations, and methods of analysis set forth in part 401 of this chapter shall apply to this subpart.

(b) The term *runoff* shall mean the flow of storm water resulting from precipitation coming into contact with petroleum refinery property.

(c) The term *ballast* shall mean the flow of waters, from a ship, that is treated along with refinery wastewaters in the main treatment system.

(d) The term *feedstock* shall mean the crude oil and natural gas liquids fed to the topping units.

(e) The term *once-through cooling water* shall mean those waters discharged that are used for the purpose of heat removal and that do not come into direct contact with any raw material, intermediate, or finished product.

(f) The following abbreviations shall be used:

(1) Mgal means one thousand gallons;

(2) Mbbl means one thousand barrels (one barrel is equivalent to 42 gallons).

(g) The term *contaminated runoff* shall mean runoff which comes into contact with any raw material, intermediate product, finished product, by-product or waste product located on petroleum refinery property.

[47 FR 46446, Oct. 18, 1982, as amended at 50 FR 28522, July 12, 1985]

§ 419.12 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).

(a) Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT):

Pollutant or pollutant property	BPT Effluent Limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Metric units (kilograms per 1,000 m^3 of feedstock)	
BOD*5*	22.7	12.0
TSS	15.8	10.1
COD[1]	117.0	60.3
Oil and grease	6.9	3.7
Phenolic compounds	0.168	0.076
Ammonia as N	2.81	1.27
Sulfide	0.149	0.068
Total chromium	0.345	0.20
Hexavalent chromium	0.028	0.012
pH	([2])	([2])
	English units (pounds per 1,000 bbl of feedstock)	
BOD*5*	8.0	4.25
TSS	5.6	3.6

Pollutant or pollutant property	BPT Effluent Limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
COD[1]	41.2	21.3
Oil and grease	2.5	1.3
Phenolic compounds	0.060	0.027
Ammonia as N	0.99	0.45
Sulfide	0.053	0.024
Total chromium	0.122	0.071
Hexavalent chromium	0.01	0.0044
pH	([2])	([2])

[1] See footnote following table in § 419.13(d).

[2] Within the range of 6.0 to 9.0.

(b) The limits set forth in paragraph (a) of this section are to be multiplied by the following factors to calculate the maximum for any one day and maximum average of daily values for thirty consecutive days.

(1) Size factor.

1,000 bbl of feedstock per stream day	Size factor
Less than 24.9	1.02
25.0 to 49.9	1.06
50.0 to 74.9	1.16
75.0 to 99.9	1.26
100 to 124.9	1.38
125.0 to 149.9	1.50
150.0 or greater	1.57

(2) Process factor.

Process configuration	Process factor
Less than 2.49	0.62
2.5 to 3.49	0.67
3.5 to 4.49	0.80
4.5 to 5.49	0.95

Process configuration	Process factor
5.5 to 5.99	1.07
6.0 to 6.49	1.17
6.5 to 6.99	1.27
7.0 to 7.49	1.39
7.5 to 7.99	1.51
8.0 to 8.49	1.64
8.5 to 8.99	1.79
9.0 to 9.49	1.95
9.5 to 9.99	2.12
10.0 to 10.49	2.31
10.5 to 10.99	2.51
11.0 to 11.49	2.73
11.5 to 11.99	2.98
12.0 to 12.49	3.24
12.5 to 12.99	3.53
13.0 to 13.49	3.84
13.5 to 13.99	4.18
14.0 or greater	4.36

(3) See the comprehensive example Subpart D, § 419.42(b)(3).

(c) The following allocations constitute the quantity and quality of pollutants or pollutant properties controlled by this paragraph and attributable to ballast, which may be discharged after the application of best practicable control technology currently available, by a point source subject to this subpart, in addition to the discharge allowed by paragraph (b) of this section. The allocation allowed for ballast water flow, as kg/cu m (lb/M gal), shall be based on those ballast waters treated at the refinery.

Pollutant or pollutant property	BPT effluent limitations for ballast water	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Metric units (kilograms per cubic meter of flow)	
BOD*5*	0.048	0.026
TSS	0.033	0.021
COD[1]	0.47	0.24

Pollutant or pollutant property	BPT effluent limitations for ballast water	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
Oil and grease	0.015	0.008
pH	([2])	([2])
	English units (pounds per 1,000 gal of flow)	
BOD*5*	0.40	0.21
TSS	0.26	0.17
COD[1]	3.9	2.0
Oil and grease	0.126	0.067
pH	([2])	([2])

[1] See footnote following table in § 419.13(d).

[2] Within the range of 6.0 to 9.0.

(d) The quantity and quality of pollutants or pollutant properties controlled by this paragraph, attributable to once-through cooling water, are excluded from the discharge allowed by paragraph (b) of this section. Once-through cooling water may be discharged with a total organic carbon concentration not to exceed 5 mg/l.

(e) ***Effluent limitations for contaminated runoff.*** The following effluent limitations constitute the quantity and quality of pollutants or pollutant properties controlled by this paragraph and attributable to contaminated runoff, which may be discharged after the application of the best practicable control technology currently available by a point source subject to this subpart.

(1) If wastewater consists solely of contaminated runoff and is not commingled or treated with process wastewater, it may be discharged if it does not exceed 15 mg/l oil and grease and 110 mg/l total organic carbon (TOC) based upon an analysis of any single grab or composite sample.

(2) If contaminated runoff is commingled or treated with process wastewater, or if wastewater consisting solely of contaminated runoff which exceeds 15 mg/l oil and grease or 110 mg/l TOC is not commingled or treated with any other type of wastewater, the quantity of pollutants discharged shall not exceed the quantity determined by multiplying the flow of contaminated runoff as determined by the permit writer times the concentrations listed in the following table:

Pollutant or pollutant property	BPT effluent limitations for contaminated runoff	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Metric units (kilograms per 1,000 m^3 of flow)	
BOD_5	48.	26.
TSS	33.	21.
COD[1]	360.	180.
Oil and grease	15.	8.

Pollutant or pollutant property	BPT effluent limitations for contaminated runoff	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
Phenolic compounds (4AAP)	0.35	0.17
Total chromium	0.73	0.43
Hexavalent chromium	0.062	0.028
pH	([2])	([2])
	English units (pounds per 1,000 gallons of flow)	
BOD_5	0.40	0.22
TSS	0.28	0.18
COD[1]	3.0	1.5
Oil and grease	0.13	0.067
Phenolic compounds (4AAP)	0.0029	0.0014
Total chromium	0.0060	0.0035
Hexavalent chromium	0.00052	0.00023
pH	([2])	([2])

[1] In any case in which the applicant can demonstrate that the chloride ion concentration in the effluent exceeds 1,000 mg/l (1,000 ppm), the permitting authority may substitute TOC as a parameter in lieu of COD. A TOC effluent limitation shall be based on effluent data from the particular refinery which correlates TOC to BOD_5. If in the judgment of the permitting authority, adequate correlation data are not available, the effluent limitations for TOC shall be established at a ratio of 2.2 to 1 to the applicable effluent limitations for BOD_5.

[2] Within the range of 6.0 to 9.0.

[47 FR 46446, Oct. 18, 1982, as amended at 50 FR 28522, 28523, July 12, 1985; 50 FR 32414, Aug. 12, 1985]

§ 419.13 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

(a) Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT):

Pollutant or pollutant property	BAT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Metric units (kilograms per 1,000 m^3 of feedstock)	

Pollutant or pollutant property	BAT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
COD[1]	117	60.3
Ammonia as N	2.81	1.27
Sulfide	0.149	0.068
	English units (pounds per 1,000 bbl of feedstock)	
COD[1]	41.2	21.3
Ammonia as N	0.99	0.45
Sulfide	0.053	0.024

[1] See footnote following table in § 419.13(d).

(b) The limits set forth in paragraph (a) of this section are to be multiplied by the following factors to calculate the maximum for any one day and maximum average of daily values for thirty consecutive days.

(1) Size factor.

1,000 bbl of feedstock per stream day	Size factor
Less than 24.9	1.02
25.0 to 49.9	1.06
50.0 to 74.9	1.16
75.0 to 99.9	1.26
100 to 124.9	1.38
125.0 to 149.9	1.50
150.0 or greater	1.57

(2) Process factor.

Process configuration	Process factor
Less than 2.49	0.62
2.5 to 3.49	0.67
3.5 to 4.49	0.80
4.5 to 5.49	0.95
5.5 to 5.99	1.07
6.0 to 6.49	1.17

Process configuration	Process factor
6.5 to 6.99	1.27
7.0 to 7.49	1.39
7.5 to 7.99	1.51
8.0 to 8.49	1.64
8.5 to 9.99	1.79
9.0 to 9.49	1.95
9.5 to 9.99	2.12
10.0 to 10.49	2.31
10.5 to 10.99	2.51
11.0 to 11.49	2.73
11.5 to 11.99	2.98
12.0 to 12.49	3.24
12.5 to 12.99	3.53
13.0 to 13.49	3.84
13.5 to 13.99	4.18
14.0 or greater	4.36

(3) See the comprehensive example in subpart D, § 419.42(b)(3).

(c)

(1) In addition to the provisions contained above pertaining to COD, ammonia and sulfide, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT):

(i) For each of the regulated pollutant parameters listed below, the effluent limitation for a given refinery is the sum of the products of each effluent limitation factor times the applicable process feedstock rate, calculated as provided in 40 CFR 122.45(b). Applicable production processes are presented in appendix A, by process type. The process identification numbers presented in this appendix A are for the convenience of the reader. They can be cross-referenced in the *Development Document for Effluent Limitations Guidelines, New Source Performance Standards, and Pretreatment Standards for the Petroleum Refining Point Source Category* (EPA 440/1-82/014), Table III-7, pp. 49-54.

Pollutant or pollutant property and process type	BAT effluent limitation factor	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Metric units (kilograms per 1,000 cubic meters of feedstock)	

Pollutant or pollutant property and process type	BAT effluent limitation factor	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
Phenolic compounds (4AAP):		
Crude	0.037	0.009
Cracking and coking	0.419	0.102
Asphalt	0.226	0.055
Lube	1.055	0.257
Reforming and alkylation	0.377	0.092
Total chromium:		
Crude	0.030	0.011
Cracking and coking	0.340	0.118
Asphalt	0.183	0.064
Lube	0.855	0.297
Reforming and alkylation	0.305	0.106
Hexavalent chromium:		
Crude	0.0019	0.0009
Cracking and coking	0.0218	0.0098
Asphalt	0.0117	0.0053
Lube	0.0549	0.0248
Reforming and alkylation	0.0196	0.0088
	English units (pounds per 1,000 bbl of feedstock)	
Phenolic compounds (4AAP):		
Crude	0.013	0.003
Cracking and coking	0.147	0.036
Asphalt	0.079	0.019
Lube	0.369	0.090

Pollutant or pollutant property and process type	BAT effluent limitation factor	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
Reforming and alkylation	0.132	0.032
Total chromium:		
Crude	0.011	0.004
Cracking and coking	0.119	0.041
Asphalt	0.064	0.022
Lube	0.299	0.104
Reforming and alkylation	0.107	0.037
Hexavalent chromium:		
Crude	0.0007	0.0003
Cracking and coking	0.0076	0.0034
Asphalt	0.0041	0.0019
Lube	0.0192	0.0087
Reforming and alkylation	0.0069	0.0031

(2) See the comprehensive example in subpart D, § 419.43(c)(2).

(d) The following allocations constitute the quantity and quality of pollutants or pollutant properties controlled by this paragraph, attributable to ballast, which may be discharged after the application of best available technology economically achievable by a point source subject to the provisions of this subpart. These allocations are in addition to the discharge allowed by paragraph (b) of this section. The allocation allowed for ballast water flow, as kg/cu m (lb/M gal), shall be based on those ballast waters treated at the refinery.

Pollutant or pollutant property	BAT effluent limitations for ballast water	
	Maximum for any 1 day	Average or daily values for 30 consecutive days shall not exceed
	Metric units (kilograms per cubic meter of flow)	
COD[1]	0.47	0.24
	English units (pounds per 1,000 gal of flow)	
COD[1]	3.9	2.0

[1] In any case in which the applicant can demonstrate that the chloride ion concentration in the effluent exceeds 1,000 mg/l (1,000 ppm), the Regional Administrator may substitute TOC as a parameter in lieu of COD Effluent limitations for TOC shall be based on effluent data from the plant correlating TOC to BOD_5.

If in the judgment of the Regional Administrator, adequate correlation data are not available, the effluent limitations for TOC shall be established at a ratio of 2.2 to 1 to the applicable effluent limitations on BOD*5*.

(e) The quantity and quality of pollutants or pollutant properties controlled by this paragraph, attributable to once-through cooling water, are excluded from the discharge allowed by paragraph (b) of this section. Once-through cooling water may be discharged with a total organic carbon concentration not to exceed 5 mg/l.

(f) ***Effluent limitations for contaminated runoff.*** The following effluent limitations constitute the quantity and quality of pollutants or pollutant properties controlled by this paragraph and attributable to contaminated runoff, which may be discharged after the application of the best available technology economically achievable by a point source subject to this subpart.

(1) If wastewater consists solely of contaminated runoff and is not commingled or treated with process wastewater, it may be discharged if it does not exceed 110 mg/l total organic carbon (TOC) based upon an analysis of any single grab or composite sample.

(2) If contaminated runoff is commingled or treated with process wastewater, or if wastewater consisting solely of contaminated runoff which exceeds 110 mg/l TOC is not commingled or treated with any other type of wastewater, the quantity of pollutants discharged shall not exceed the quantity determined by multiplying the flow of contaminated runoff as determined by the permit writer times the concentrations listed in the following table:

Pollutant or pollutant property	BAT effluent limitations for contaminated runoff	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Metric units (kilograms per 1,000 m^3 of flow)	
Phenolic compounds (4AAP)	0.35	0.17
Total chromium	0.60	0.21
Hexavalent chromium	0.062	0.028
COD[1]	360.	180.
	English units (pounds per 1,000 gallons of flow)	
Phenolic compounds (4AAP)	0.0029	0.0014
Total chromium	0.0050	0.0018
Hexavalent chromium	0.00052	0.00023
COD[1]	3.0	1.5

[1] In any case in which the applicant can demonstrate that the chloride ion concentration in the effluent exceeds 1,000 mg/l (1,000 ppm), the permitting authority may substitute TOC as a parameter in lieu of COD. A TOC effluent limitation shall be based on effluent data from the particular refinery which correlates TOC to BOD_5. If in the judgement of the permitting authority, adequate correlation data are not available, the effluent limitations for TOC shall be established at a ratio of 2.2 to 1 to the applicable effluent limitations for BOD_5

[47 FR 46446, Oct. 18, 1982, as amended at 50 FR 28523, July 12, 1985; 50 FR 32414, Aug. 12, 1985]

§ 419.14 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).

(a) Any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).

Pollutant or pollutant property	BCT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Metric units (Kilograms per 1,000 m^3 of feedstock)	
BOD_5	22.7	12.0
TSS	15.8	10.1
Oil and Grease	6.9	3.7
pH	([1])	([1])
	English units (pounds per 1,000 bbl of feedstock)	
BOD_5	8.0	4.25
TSS	5.6	3.6
Oil and Grease	2.5	1.3
P^H	([1])	([1])

[1] Within the range of 6.0 to 9.0.

(b) The limits set forth in paragraph (a) of this section are to be multiplied by the following factors to calculate the maximum for any one day and maximum average of daily values for thirty consecutive days.

(1) Size factor.

1,000 bbl of feedstock per stream day	Size factor
Less than 24.9	1.02
25.0 to 49.9	1.06
50.0 to 74.9	1.16
75.0 to 99.9	1.26
100 to 124.9	1.38
125.0 to 149.9	1.50
150.0 or greater	1.57

(2) Process factor.

Process configuration	Process factor
Less than 2.49	0.62

Process configuration	Process factor
2.5 to 3.49	0.67
3.5 to 4.49	0.80
4.5 to 5.49	0.95
5.5 to 5.99	1.07
6.0 to 6.49	1.17
6.5 to 6.99	1.27
7.0 to 7.49	1.39
7.5 to 7.99	1.51
8.0 to 8.49	1.64
8.5 to 8.99	1.79
9.0 to 9.49	1.95
9.5 to 9.99	2.12
10.0 to 10.49	2.31
10.5 to 10.99	2.51
11.0 to 11.49	2.73
11.5 to 11.99	2.98
12.0 to 12.49	3.24
12.5 to 12.99	3.53
13.0 to 13.49	3.84
13.5 to 13.99	4.18
14.0 or greater	4.36

(3) See the comprehensive example in subpart D, § 419.43(b)(3).

(c) The following allocations constitute the quantity and quality of pollutants or pollutant properties controlled by this paragraph and attributable to ballast, which may be discharged after the application of best conventional pollutant control technology by a point source subject to this subpart, in addition to the discharge allowed by paragraph (b) of this section. The allocation allowed for ballast water flow, as kg/cu m (lb/1000 gal), shall be based on those ballast waters treated at the refinery.

Pollutant or pollutant property	BCT Effluent limitations for ballast water	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Metric units (kilograms per m^3 of flow)	

Pollutant or pollutant property	BCT Effluent limitations for ballast water	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
BOD_5	0.048	0.026
TSS	0.033	0.021
Oil and grease	0.015	0.008
pH	([1])	([1])
	English units (pounds per 1000 gallons of flow)	
BOD_5	0.40	0.21
TSS	0.26	0.17
Oil and grease	0.126	0.067
pH	([1])	([1])

[1] Within the range of 6.0 to 9.0.

(d) The quantity and quality of pollutants or pollutant properties controlled by this paragraph attributable to once-through cooling water, are excluded from the discharge allowed by paragraph (b) of this section.

(e) ***Effluent limitations for contaminated runoff.*** The following effluent limitations constitute the quantity and quality of pollutants or pollutant properties controlled by this paragraph and attributable to contaminated runoff which may be discharged after the application of the best conventional pollutant control technology by a point source subject to this subpart.

(1) If wastewater consists solely of contaminated runoff and is not commingled or treated with process wastewater, it may be discharged if it does not exceed 15 mg/l oil and grease based upon an analysis of any single grab or composite sample.

(2) If contaminated runoff is commingled or treated with process wastewater, or if wastewater consisting solely of contaminated runoff which exceeds 15 mg/l oil and grease is not commingled or treated with any other type of wastewater, the quantity of pollutants discharged shall not exceed the quantity determined by multiplying the flow of contaminated runoff as determined by the permit writer times the concentrations listed in the following table:

Pollutant or pollutant property	BCT effluent limitations for contaminated runoff	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Metric units (kilograms per 1,000 (m^3 of flow)	
BOD_5	48.	26.
TSS	33.	21.
Oil and grease	15.	8.
pH	([1])	([1])
	English units (pounds per 1,000 gallons of flow)	

Pollutant or pollutant property	BCT effluent limitations for contaminated runoff	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
BOD_5	0.40	0.22
TSS	0.28	0.18
Oil and grease	0.13	0.067
pH	([1])	([1])

[1] Within the range of 6.0 to 9.0.

[50 FR 28524, July 12, 1985]

§ 419.15 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13 any existing source subject to this subpart which introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and achieve the following pretreatment standards for existing sources (PSES). The following standards apply to the total refinery flow contribution to the POTW:

Pollutant or pollutant property	Pretreatment standards for existing sources maximum for any 1 day
	(Milligrams per liter (mg/l))
Oil and Grease	100
Ammonia (as N)	[1] 100

[1] Where the discharge to the POTW consists solely of sour waters, the owner or operator has the option of complying with this limit or the daily maximum mass limitation for ammonia set forth in § 419.13 (a) and (b).

§ 419.16 Standards of performance for new sources (NSPS).

(a) Any new source subject to this subpart must achieve the following new source performance standards (NSPS):

Pollutant or pollutant property	NSPS effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Metric units (kilograms per cubic meter of flow)	
BOD*5*	11.8	6.3
TSS	8.3	4.9
COD[1]	61.0	32
Oil and grease	3.6	1.9
Phenolic compounds	0.088	0.043
Ammonia as N	2.8	1.3

Pollutant or pollutant property	NSPS effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
Sulfide	0.078	0.035
Total chromium	0.18	0.105
Hexavalent chromium	0.015	0.0068
pH	(2)	(2)
	English units (pounds per 1,000 gal of flow)	
BOD*5*	4.2	2.2
TSS	3.0	1.9
COD[1]	21.7	11.2
Oil and grease	1.3	0.70
Phenolic compounds	0.031	0.016
Ammonia as N	1.0	0.45
Sulfide	0.027	0.012
Total chromium	0.064	0.037
Hexavalent chromium	0.0052	0.0025
pH	(2)	(2)

[1] See footnote following table in § 419.13(d).

[2] Within the range of 6.0 to 9.0

(b) The limits set forth in paragraph (a) of this section are to be multiplied by the following factors to calculate the maximum for any one day and maximum average of daily values for thirty consecutive days.

(1) Size factor.

1,000 bbl of feedstock per stream day	Size factor
Less than 24.9	1.02
25.0 to 49.9	1.06
50.0 to 74.9	1.16
75.0 to 99.9	1.26
100 to 124.9	1.38
125.0 to 149.9	1.50

1,000 bbl of feedstock per stream day	Size factor
150.0 or greater	1.57

(2) Process factor.

Process configuration	Process factor
Less than 2.49	0.62
2.5 to 3.49	0.67
3.5 to 4.49	0.80
4.5 to 5.49	0.95
5.5 to 5.99	1.07
6.0 to 6.49	1.17
6.5 to 6.99	1.27
7.0 to 7.49	1.39
7.5 to 7.99	1.51
8.0 to 8.49	1.64
8.5 to 9.99	1.79
9.0 to 9.49	1.95
9.5 to 9.99	2.12
10.0 to 10.49	2.31
10.5 to 10.99	2.51
11.0 to 11.49	2.73
11.5 to 11.99	2.98
12.0 to 12.49	3.24
12.5 to 12.99	3.53
13.0 to 13.49	3.84
13.5 to 13.99	4.18
14.0 or greater	4.36

(3) See the comprehensive example in subpart D, § 419.42(b)(3).

(c) The following allocations constitute the quantity and quality of pollutants or pollutant properties controlled by this paragraph and attributable to ballast, which may be discharged after the application of best practicable control technology currently available, by a point source subject to this subpart, in addition to the discharge allowed by paragraph (b) of this section. The allocation allowed for ballast water flow, as kg/cu m (lb/Mgal), shall be based on those ballast waters treated at the refinery.

Pollutant or pollutant property	NSPS Effluent Limitations for Ballast Water	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Metric units (kilograms per cubic meter of flow)	
BOD*5*	0.048	0.026
TSS	0.033	0.021
COD[1]	0.47	0.24
Oil and grease	0.015	0.008
pH	([2])	([2])
	English units (pounds per 1,000 gal of flow)	
BOD*5*	0.40	0.21
TSS	0.27	0.17
COD[1]	3.9	2.0
Oil and grease	0.126	0.067
pH	([2])	([2])

[1] See footnote following table in § 419.13(d).

[2] Within the range of 6.0 to 9.0

(d) The quantity and quality of pollutants or pollutant properties controlled by this paragraph, attributable to once-through cooling water, are excluded from the discharge allowed by paragraph (b) of this section. Once-through cooling water may be discharged with a total organic carbon concentration not to exceed 5 mg/l.

(e) ***Effluent limitations for runoff.*** [Reserved]

[47 FR 46446, Oct. 18, 1982, as amended at 50 FR 28523, July 12, 1985; 50 FR 32414, Aug. 12, 1985]

§ 419.17 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new source subject to this subpart which introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and achieve the following pretreatment standards for new sources (PSNS).

(a) The following standards apply to the total refinery flow contribution to the POTW:

Pollutant or pollutant property	Pretreatment standards for new sources - maximum for any 1 day
	Milligrams per liter (mg/1)
Oil and grease	100
Ammonia (as N)	[1] 100

[1] Where the discharge to the POTW consists solely of sour waters, the owner or operator has the option of complying with this limit or the daily maximum mass limitation for ammonia set forth in § 419.16 (a) and (b).

(b) The following standard is applied to the cooling tower discharge part of the total refinery flow to the POTW by multiplying:

(1) The standard;

(2) by the total refinery flow to the POTW; and

(3) by the ratio of the cooling tower discharge flow to the total refinery flow.

Pollutant or pollutant property	Pretreatment standards for new sources - maximum for any 1 day
	Milligrams per liter (mg/1)
Total chromium	1

Subpart B - Cracking Subcategory

§ 419.20 Applicability; description of the cracking subcategory.

The provisions of this subpart are applicable to all discharges from any facility that produces petroleum products by the use of topping and cracking, whether or not the facility includes any process in addition to topping and cracking. The provisions of this subpart are not applicable, however, to facilities that include the processes specified in subparts C, D, or E of this part.

§ 419.21 Specialized definitions.

The general definitions, abbreviations and methods of analysis set forth in part 401 of this chapter and the specialized definitions set forth in § 419.11 shall apply to this subpart.

§ 419.22 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).

(a) Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available:

Pollutant or pollutant property	BPT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Metric units (kilograms per 1,000 m^3 of feedstock)	
BOD*5*	28.2	15.6
TSS	19.5	12.6
COD[1]	210.0	109
Oil and grease	8.4	4.5
Phenolic compounds	0.21	0.10
Ammonia as N	18.8	8.5
Sulfide	0.18	0.082

Pollutant or pollutant property	BPT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
Total chromium	0.43	0.25
Hexavalent chromium	0.035	0.016
pH	(2)	(2)
	English units (pounds per 1,000 bbl feedstock)	
BOD*5*	9.9	5.5
TSS	6.9	4.4
COD[1]	74.0	38.4
Oil and grease	3.0	1.6
Phenolic compounds	0.074	0.036
Ammonia as N	6.6	3.0
Sulfide	0.065	0.029
Total chromium	0.15	0.088
Hexavalent chromium	0.012	0.0056
pH	(2)	(2)

[1] See footnote following table in § 419.13(d).

[2] Within the range of 6.0 to 9.0.

(b) The limits set forth in paragraph (a) of this section are to be multiplied by the following factors to calculate the maximum for any one day and maximum average of daily values for thirty consecutive days.

(1) Size factor.

1,000 bbl of feedstock per stream day	Size factor
Less than 24.9	0.91
25.0 to 49.9	0.95
50.0 to 74.9	1.04
75.0 to 99.9	1.13
100.0 to 124.9	1.23
125.0 to 149.9	1.35
150.0 or greater	1.41

(2) Process factor.

Process configuration	Process factor
Less than 2.49	0.58
2.5 to 3.49	0.63
3.5 to 4.49	0.74
4.5 to 5.49	0.88
5.5 to 5.99	1.00
6.0 to 6.49	1.09
6.5 to 6.99	1.19
7.0 to 7.49	1.29
7.5 to 7.99	1.41
8.0 to 8.49	1.53
8.5 to 8.99	1.67
9.0 to 9.49	1.82
9.5 or greater	1.89

(3) See the comprehensive example subpart D, § 419.42(b)(3).

(c) The provisions of § 419.12(c) apply to discharges of process wastewater pollutants attributable to ballast water by a point source subject to the provisions of this subpart.

(d) The quantity and quality of pollutants or pollutant properties controlled by this paragraph, attributable to once-through cooling water, are excluded from the discharge allowed by paragraph (b) of this section. Once-through cooling water may be discharged with a total organic carbon concentration not to exceed 5 mg/l.

(e) ***Effluent limitations for contaminated runoff.*** The following effluent limitations constitute the quantity and quality of pollutants or pollutant properties controlled by this paragraph and attributable to contaminated runoff, which may be discharged after the application of the best practicable control technology currently available by a point source subject to this subpart.

(1) If wastewater consists solely of contaminated runoff and is not commingled or treated with process wastewater, it may be discharged if it does not exceed 15 mg/l oil and grease and 110 mg/l total organic carbon (TOC) based upon an analysis of any single grab or composite sample.

(2) If contaminated runoff is commingled or treated with process wastewater, or if wastewater consisting solely of contaminated runoff which exceeds 15 mg/l oil and grease or 110 mg/l TOC is not commingled or treated with any other type of wastewater, the quantity of pollutants discharged shall not exceed the quantity determined by multiplying the flow of contaminated runoff as determined by the permit writer times the concentrations listed in the following table:

Pollutant or pollutant property	BPT effluent limitations for contaminated runoff	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Metric units (kilograms per 1,000 m^3 of flow)	

Pollutant or pollutant property	BPT effluent limitations for contaminated runoff	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
BOD_5	48.	26.
TSS	33.	21.
COD[1]	360.	180.
Oil and grease	15.	8.
Phenolic compounds (4AAP)	0.35	0.17
Total chromium	0.73	0.43
Hexavalent chromium	0.062	0.028
pH	([2])	([2])
	English units (pounds per 1,000 gallons of flow)	
BOD_5	0.40	0.22
TSS	0.28	0.18
COD[1]	3.0	1.5
Oil and grease	0.13	0.067
Phenolic compounds (4AAP)	0.0029	0.0014
Total chromium	0.0060	0.0035
Hexavalent chromium	0.00052	0.00023
pH	([2])	([2])

[1] In any case in which the applicant can demonstrate that the chloride ion concentration in the effluent exceeds 1,000 mg/l (1,000 ppm), the permitting authority may substitute TOC as a parameter in lieu of COD. A TOC effluent limitation shall be based on effluent data from the particular refinery which correlates TOC to BOD_5. If in the judgment of the permitting authority, adequate correlation data are not available, the effluent limitations for TOC shall be established at a ratio of 2.2 to 1 to the applicable effluent limitations for BOD_5.

[2] Within the range of 6.0 to 9.0.

[47 FR 46446, Oct. 18, 1982, as amended at 50 FR 28522, 28523, July 12, 1985; 50 FR 32414, Aug. 12, 1985]

§ 419.23 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

(a) Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable:

Pollutant or pollutant property	BAT Effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Metric units (kilograms per 1,000 m^3 of feedstock)	
COD[1]	210	109
Ammonia as N	18.8	8.5
Sulfide	0.18	0.082
	English units (pounds per 1,000 bbl of feedstock)	
COD[1]	74.0	38.4
Ammonia as N	6.6	3.0
Sulfide	0.065	0.029

[1] See footnote following table in § 419.13(d).

(b) The limits set forth in paragraph (a) of this section are to be multiplied by the following factors to calculate the maximum for any one day and maximum average of daily values for thirty consecutive days.

(1) Size factor.

1,000 bbl of feedstock per stream day	Size factor
Less than 24.9	0.91
25.0 to 49.9	0.95
50.0 to 74.9	1.04
75.0 to 99.9	1.13
100.0 to 124.9	1.23
125.0 to 149.9	1.35
150.0 or greater	1.41

(2) Process factor.

Process configuration	Process factor
Less than 2.49	0.58
2.5 to 3.49	0.63
3.5 to 4.49	0.74
4.5 to 5.49	0.88
5.5 to 5.99	1.00

Process configuration	Process factor
6.0 to 6.49	1.09
6.5 to 6.99	1.19
7.0 to 7.49	1.29
7.5 to 7.99	1.41
8.0 to 8.49	1.53
8.5 to 8.99	1.67
9.0 to 9.49	1.82
9.5 or greater	1.89

(3) See the comprehensive example in subpart D, § 419.42(b)(3).

(c)

(1) In addition to the provisions contained above pertaining to COD, ammonia and sulfide, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT):

(i) For each of the regulated pollutant parameters listed below, the effluent limitation for a given refinery is the sum of the products of each effluent limitation factor times the applicable process feedstock rate, calculated as provided in 40 CFR 122.45(b). Applicable production processes are presented in appendix A, by process type. The process identification numbers presented in this appendix A are for the convenience of the reader. They can be cross-referenced in the *Development Document for Effluent Limitations Guidelines, New Source Performance Standards, and Pretreatment Standards for the Petroleum Refining Point Source Category* (EPA 440/1-82/014), Table III-7, pp. 49-54.

Pollutant or pollutant property and process type	BAT effluent limitation factor	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Metric units (kilograms per 1,000 cubic meters of feedstock)	
Phenolic compounds (4AAP):		
Crude	0.037	0.009
Cracking and coking	0.419	0.102
Asphalt	0.226	0.055
Lube	1.055	0.257
Reforming and alkylation	0.377	0.092
Total chromium:		
Crude	0.030	0.011

Pollutant or pollutant property and process type	BAT effluent limitation factor	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
Cracking and coking	0.340	0.118
Asphalt	0.183	0.064
Lube	0.855	0.297
Reforming and alkylation	0.305	0.106
Hexavalent chromium:		
Crude	0.0019	0.0009
Cracking and coking	0.0218	0.0098
Asphalt	0.0117	0.0053
Lube	0.0549	0.0248
Reforming and alkylation	0.0196	0.0088
	English units (pounds per 1,000 bbl of feedstock)	
Phenolic compounds (4AAP):		
Crude	0.013	0.003
Cracking and coking	0.147	0.036
Asphalt	0.079	0.019
Lube	0.369	0.090
Reforming and alkylation	0.132	0.032
Total chromium:		
Crude	0.011	0.004
Cracking and coking	0.119	0.041
Asphalt	0.064	0.022
Lube	0.299	0.104
Reforming and alkylation	0.107	0.037
Hexavalent chromium:		

Pollutant or pollutant property and process type	BAT effluent limitation factor	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
Crude	0.0007	0.0003
Cracking and coking	0.0076	0.0034
Asphalt	0.0041	0.0019
Lube	0.0192	0.0087
Reforming and alkylation	0.0069	0.0031

(2) See the comprehensive example in subpart D, § 419.43(c)(2).

(d) The provisions of § 419.13(d) apply to discharges of process wastewater pollutants attributable to ballast water by a point source subject to the provisions of this subpart.

(e) The quantity and quality of pollutants or pollutant properties controlled by this paragraph, attributable to once-through cooling water, are excluded from the discharge allowed by paragraph (b) of this section. Once-through cooling water may be discharged with a total organic carbon concentration not to exceed 5 mg/l.

(f) ***Effluent limitations for contaminated runoff.*** The following effluent limitations constitute the quantity and quality of pollutants or pollutant properties controlled by this paragraph and attributable to contaminated runoff, which may be discharged after the application of the best available technology economically achievable by a point source subject to this subpart.

(1) If wastewater consists solely of contaminated runoff and is not commingled or treated with process wastewater, it may be discharged if it does not exceed 110 mg/l total organic carbon (TOC) based upon an analysis of any single grab or composite sample.

(2) If contaminated runoff is commingled or treated with process wastewater, or if wastewater consisting solely of contaminated runoff which exceeds 110 mg/l TOC is not commingled or treated with any other type of wastewater, the quantity of pollutants discharged shall not exceed the quantity determined by multiplying the flow of contaminated runoff as determined by the permit writer times the concentrations listed in the following table:

Pollutant or pollutant property	BAT effluent limitations for contaminated runoff	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Metric units (kilograms per 1,000 m^3 of flow)	
Phenolic compounds (4AAP)	0.35	0.17
Total chromium	0.60	0.21
Hexavalent chromium	0.062	0.028
COD[1]	360.	180.
	English units (pounds per 1,000 gallons of flow)	
Phenolic compounds (4AAP)	0.0029	0.0014

Pollutant or pollutant property	BAT effluent limitations for contaminated runoff	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
Total chromium	0.0050	0.0018
Hexavalent chromium	0.00052	0.00023
COD[1]	3.0	1.5

[1] In any case in which the applicant can demonstrate that the chloride ion concentration in the effluent exceeds 1,000 mg/l (1,000 ppm), the permitting authority may substitute TOC as a parameter in lieu of COD. A TOC effluent limitation shall be based on effluent data from the particular refinery which correlates TOC to BOD_5. If in the judgement of the permitting authority, adequate correlation data are not available, the effluent limitations for TOC shall be established at a ratio of 2.2 to 1 to the applicable effluent limitations for BOD_5

[47 FR 46446, Oct. 18, 1982, as amended at 50 FR 28523, July 12, 1985; 50 FR 32414, Aug. 12, 1985]

§ 419.24 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).

(a) Any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT):

Pollutant or pollutant property	BCT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Metric units (kilograms per 1,000 (m^3 of feedstock)	
BOD_5	28.2	15.6
TSS	19.5	12.6
Oil and grease	8.4	4.5
pH	([1])	([1])
	English units (pounds per 1,000 bbl of feedstock)	
BOD_5	9.9	5.5
TSS	6.9	4.4
Oil and grease	3.0	1.6
pH	([1])	([1])

[1] Within the range of 6.0 to 9.0.

(b) The limits set forth in paragraph (a) of this section are to be multiplied by the following factors to calculate the maximum for any one day and maximum average of daily values for thirty consecutive days.

(1) Size factor.

1,000 bbl of feedstock per stream day	Size factor
Less than 24.9	0.91
25.0 to 49.9	0.95
50.0 to 74.9	1.04
75.0 to 99.9	1.13
100.0 to 124.9	1.23
125.0 to 149.9	1.35
150.0 or greater	1.41

(2) Process factor.

Process configuration	Process factor
Less than 2.49	0.58
2.5 to 3.49	0.63
3.5 to 4.49	0.74
4.5 to 5.49	0.88
5.5 to 5.99	1.00
6.0 to 6.49	1.09
6.5 to 6.99	1.19
7.0 to 7.49	1.29
7.5 to 7.99	1.41
8.0 to 8.49	1.53
8.5 to 8.99	1.67
9.0 to 9.49	1.82
9.5 or greater	1.89

(3) See the comprehensive example in subpart D, § 419.42(b)(3).

(c) The provisions of § 419.14(c) apply to discharge of process wastewater pollutants attributable to ballast water by a point source subject to the provisions of this subpart.

(d) The quantity and quality of pollutants or pollutant properties controlled by this paragraph, attributable to once-through cooling water, are excluded from the discharge allowed by paragraph (b) of this section.

(e) ***Effluent limitations for contaminated runoff.*** The following effluent limitations constitute the quantity and quality of pollutants or pollutant properties controlled by this paragraph and attributable to contaminated runoff which may be discharged after the application of the best conventional pollutant control technology by a point source subject to this subpart.

(1) If wastewater consists solely of contaminated runoff and is not commingled or treated with process wastewater, it may be discharged if it does not exceed 15 mg/l oil and grease based upon an analysis of any single grab or composite sample.

(2) If contaminated runoff is commingled or treated with process wastewater, or if wastewater consisting solely of contaminated runoff which exceeds 15 mg/l oil and grease is not commingled or treated with any other type of wastewater, the quantity of pollutants discharged shall not exceed the quantity determined by multiplying the flow of contaminated runoff as determined by the permit writer times the concentrations listed in the following table:

Pollutant or pollutant property	BCT effluent limitations for contaminated runoff	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Metric units (kilograms per 1,000 m^3 of flow)	
BOD_5	48	26
TSS	33	21
Oil and grease	15	8
pH	([1])	([1])
	English units (pounds per 1,000 gallons of flow)	
BOD_5	0.40	0.22
TSS	0.28	0.18
Oil and grease	0.13	0.067
pH	([1])	([1])

[1] Within the range of 6.0 to 9.0.

[50 FR 28525, July 12, 1985; 50 FR 32414, Aug. 12, 1985]

§ 419.25 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13 any existing source subject to this subpart which introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and achieve the following pretreatment standards for existing sources (PSES). The following standards apply to the total refinery flow contribution to the POTW:

Pollutant or pollutant property	Pretreatment standards for new sources - maximum for any 1 day
	Milligrams per liter (mg/l)
Oil and grease	100
Ammonia	[1] 100

[1] Where the discharge to the POTW consists solely of sour waters, the owner or operator has the option of complying with this limit or the daily maximum mass limitation for ammonia set forth in § 419.23 (a) and (b).

§ 419.26 Standards of performance for new sources (NSPS).

(a) Any new source subject to this subpart must achieve the following new source performance standards (NSPS):

Pollutant or pollutant property	NSPS effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Metric units (kilograms per 1,000 m^3 of feedstock)	
BOD*5*	16.3	8.7
TSS	11.3	7.2
COD[1]	118.0	61
oil and grease	4.8	2.6
Phenolic compounds	0.119	0.058
Ammonia (as N)	18.8	8.6
Sulfide	0.105	0.048
Total chromium	0.24	0.14
Hexavalent chromium	0.020	0.0088
pH	([2])	([2])
	English units (pounds per 1,000 bbl of feedstock)	
BOD*5*	5.8	3.1
TSS	4.0	2.5
COD[1]	41.5	21
Oil and grease	1.7	0.93
Phenolic compounds	0.042	0.020
Ammonia (as N)	6.6	3.0
Sulfide	0.037	0.017
Total chromium	0.084	0.049
Hexavalent chromium	0.0072	0.0032
pH	([2])	([2])

[1] See footnote following table in § 419.13(d).

[2] Within the range 6.0 to 9.0.

(b) The limits set forth in paragraph (a) of this section are to be multiplied by the following factors to calculate the maximum for any 1 day and maximum average of daily values for 30 consecutive days.

(1) Size Factor.

1,000 bbl of feedstock per stream day	Size factor

1,000 bbl of feedstock per stream day	Size factor
Less than 24.9	0.91
25.0 to 49.9	0.95
50.0 to 74.9	1.04
75.0 to 99.9	1.13
100.0 to 124.9	1.23
125.0 to 149.9	1.35
150.0 or greater	1.41

(2) Process factor.

Process configuration	Process factor
Less than 2.49	0.58
2.5 to 3.49	0.63
3.5 to 4.49	0.74
4.5 to 5.49	0.88
5.5 to 5.99	1.00
6.0 to 6.49	1.09
6.5 to 6.99	1.19
7.0 to 7.49	1.29
7.5 to 7.99	1.41
8.0 to 8.49	1.53
8.5 to 8.99	1.67
9.0 to 9.49	1.82
9.5 or greater	1.89

(3) See the comprehensive example in subpart D, § 419.42(b)(3).

(c) The provisions of § 419.16(c) apply to discharges of process wastewater pollutants attributable to ballast water by a point source subject to the provisions of this subpart.

(d) The quantity and quality of pollutants or pollutant properties controlled by this paragraph, attributable to once-through cooling water, are excluded from the discharge allowed by paragraph (b) of this section. Once-through cooling water may be discharged with a total organic carbon concentration not to exceed 5 mg/l.

(e) ***Effluent limitation for runoff.*** [Reserved]

[47 FR 46446, Oct. 18, 1982, as amended at 50 FR 28523, July 12, 1985; 50 FR 32414, Aug. 12, 1985]

§ 419.27 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new source subject to this subpart which introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and achieve the following pretreatment standards for new sources (PSNS).

(a) The following standards apply to the total refinery flow contribution to the POTW.

Pollutant or pollutant property	Pretreatment standards for new sources - maximum for any 1 day
	Milligrams per liter (mg/l)
Oil and grease	100
Ammonia (as N)	[1] 100

[1] Where the discharge to the POTW consists solely of sour waters, the owner or operator has the option of complying with this limit or the daily maximum mass limitation for ammonia set forth in § 419.26(a) and (b).

(b) The following standard is applied to the cooling tower discharge part of the total refinery flow to the POTW by multiplying:

(1) The standard;

(2) by the total refinery flow to the POTW; and

(3) by the ratio of the cooling tower discharge flow to the total refinery flow.

Pollutant or pollutant property	Pretreatment standards for new sources - maximum for any 1 day
	Milligrams per liter (mg/l)
Total chromium	1

Subpart C - Petrochemical Subcategory

§ 419.30 Applicability; description of the petrochemical subcategory.

The provisions of this subpart are applicable to all discharges from any facility that produces petroleum products by the use of topping, cracking, and petrochemical operations whether or not the facility includes any process in addition to topping, cracking, and petrochemical operations. The provisions of this subpart shall not be applicable, however, to facilities that include the processes specified in subpart D or E of this part.

§ 419.31 Specialized definitions.

For the purpose of this subpart:

(a) The general definitions, abbreviations, and methods of analysis set forth in part 401 of this chapter and the specialized definitions set forth in § 419.11 shall apply.

(b) The term *petrochemical operations* shall mean the production of second-generation petrochemicals (*i.e.*, alcohols, ketones, cumene, styrene, etc.) or first generation petrochemicals and isomerization products (*i.e.*, BTX, olefins, cyclohexane, etc.) when 15 percent or more of refinery production is as first-generation petrochemicals and isomerization products.

§ 419.32 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

(a) Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT):

Pollutant or pollutant property	BPT Effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Metric units (kilograms per 1,000 m^3 of feedstock)	
BOD*5*	34.6	18.4
TSS	23.4	14.8
COD[1]	210.0	109.0
Oil and grease	11.1	5.9
Phenolic compound	0.25	0.120
Ammonia as N	23.4	10.6
Sulfide	0.22	0.099
Total chromium	0.52	0.30
Hexavalent chromium	0.046	0.020
pH	([2])	([2])
	English units (pounds per 1,000 bbl of feedstock)	
BOD*5*	12.1	6.5
TSS	8.3	5.25
COD[1]	74.0	38.4
Oil and grease	3.9	2.1
Phenolic compounds	0.088	0.0425
Ammonia as N	8.25	3.8
Sufide	0.078	0.035
Total chromium	0.183	0.107
Hexavalent chromium	0.016	0.0072
pH	([2])	([2])

[1] See footnote following table in § 419.13(d).

[2] Within the range of 6.0 to 9.0.

(b) The limits set forth in paragraph (a) of this section are to be multiplied by the following factors to calculate the maximum for any one day and maximum average of daily values for thirty consecutive days.

(1) Size factor.

1,000 barrels of feedstock per stream day	Size factor
Less than 24.9	0.73
25.0 to 49.9	0.76
50.0 to 74.9	0.83
75.0 to 99.9	0.91
100.0 to 124.9	0.99
125.0 to 149.9	1.08
150.0 or greater	1.13

(2) Process factor.

Process configuration	Process factor
Less than 4.49	0.73
4.5 to 5.49	0.80
5.5 to 5.99	0.91
6.0 to 6.49	0.99
6.5 to 6.99	1.08
7.0 to 7.49	1.17
7.5 to 7.99	1.28
8.0 to 8.49	1.39
8.5 to 8.99	1.51
9.0 to 9.49	1.65
9.5 or greater	1.72

(3) See the comprehensive example in subpart D, § 419.42(b)(3).

(c) The provisions of § 419.12(c) apply to discharges of process wastewater pollutants attributable to ballast water by a point source subject to the provisions of this subpart.

(d) The quantity and quality of pollutants or pollutant properties controlled by this paragraph, attributable to once-through cooling water, are excluded from the discharge allowed by paragraph (b) of this section. Once-through cooling water may be discharged with a total organic carbon concentration not to exceed 5 mg/l.

(e) ***Effluent limitations for contaminated runoff.*** The following effluent limitations constitute the quantity and quality of pollutants or pollutant properties controlled by this paragraph and attributable to contaminated runoff, which may be discharged after the application of the best practicable control technology currently available by a point source subject to this subpart.

(1) If wastewater consists solely of contaminated runoff and is not commingled or treated with process wastewater, it may be discharged if it does not exceed 15 mg/l oil and grease and 110 mg/l total organic carbon (TOC) based upon an analysis of any single grab or composite sample.

(2) If contaminated runoff is commingled or treated with process wastewater, or if wastewater consisting solely of contaminated runoff which exceeds 15 mg/l oil and grease or 110 mg/l TOC is not commingled or treated with any other type of wastewater, the quantity of pollutants discharged shall not exceed the quantity determined by multiplying the flow of contaminated runoff as determined by the permit writer times the concentrations listed in the following table:

Pollutant or pollutant property	BPT effluent limitations for contaminated runoff	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Metric units (kilograms per 1,000 m^3 of flow)	
BOD_5	48.	26.
TSS	33.	21.
COD[1]	360.	180.
Oil and grease	15.	8.
Phenolic compounds (4AAP)	0.35	0.17
Total chromium	0.73	0.43
Hexavalent chromium	0.062	0.028
pH	([2])	([2])
	English units (pounds per 1,000 gallons of flow)	
BOD_5	0.40	0.22
TSS	0.28	0.18
COD[1]	3.0	1.5
Oil and grease	0.13	0.067
Phenolic compounds (4AAP)	0.0029	0.0014
Total chromium	0.0060	0.0035
Hexavalent chromium	0.00052	0.00023
pH	([2])	([2])

[1] In any case in which the applicant can demonstrate that the chloride ion concentration in the effluent exceeds 1,000 mg/l (1,000 ppm), the permitting authority may substitute TOC as a parameter in lieu of COD. A TOC effluent limitation shall be based on effluent data from the particular refinery which correlates TOC to BOD_5. If in the judgment of the permitting authority, adequate correlation data are not available, the effluent limitations for TOC shall be established at a ratio of 2.2 to 1 to the applicable effluent limitations for BOD_5.

[2] Within the range of 6.0 to 9.0.

[47 FR 46446, Oct. 18, 1982, as amended at 50 FR 28522, 28523, July 12, 1985; 50 FR 32414, Aug. 12, 1985]

§ 419.33 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

(a) Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available techology economically achievable (BAT):

Pollutant or pollutant property	BAT Effluent Limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Metric units (kilograms per 1,000 m^3 of feedstock)	
COD[1]	210.0	109.0
Ammonia as N	23.4	10.6
Sulfide	0.22	0.099
	English units (pounds per 1,000 bbl of feedstock)	
COD[1]	74.0	38.4
Ammonia as N	8.25	3.8
Sulfide	0.078	0.035

[1] See footnote following table in § 419.13(d).

(b) The limits set forth in paragraph (a) of this section are to be multiplied by the following factors to calculate the maximum for any one day and maximum average of daily values for thirty consecutive days.

(1) Size factor.

1,000 bbl of feedstock per stream day	Size factor
Less than 24.9	0.73
25.0 to 49.9	0.76
50.0 to 74.9	0.83
75.0 to 99.9	0.91
100.0 to 124.9	0.99
125.0 to 149.9	1.08
150.0 or greater	1.13

(2) Process factor.

Process configuration	Process factor
Less than 4.49	0.73
4.5 to 5.49	0.80
5.5 to 5.99	0.91
6.0 to 6.49	0.99
6.5 to 6.99	1.08
7.0 to 7.49	1.17
7.5 to 7.99	1.28
8.0 to 8.49	1.39
8.5 to 8.99	1.51
9.0 to 9.49	1.65
9.5 or greater	1.72

(3) See the comprehensive example in subpart D, § 419.42(b)(3).

(c)

(1) In addition to the provisions contained above pertaining to COD, ammonia and sulfide, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT):

(i) For each of the regulated pollutant parameters listed below, the effluent limitation for a given refinery is the sum of the products of each effluent limitation factor times the applicable process feedstock rate, calculated as provided in 40 CFR 122.45(b). Applicable production processes are presented in appendix A, by process type. The process identification numbers presented in this appendix A are for the convenience of the reader. They can be cross-referenced in the *Development Document for Effluent Limitations Guidelines, New Source Performance Standards, and Pretreatment Standards for the Petroleum Refining Point Source Category* (EPA 440/1-82/014), Table III-7, pp. 49-54.

Pollutant or pollutant property and process type	BAT effluent limitation factor	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Metric units (kilograms per 1,000 cubic meters of feedstock)	
Phenolic compounds (4AAP):		
Crude	0.037	0.009
Cracking and coking	0.419	0.102
Asphalt	0.226	0.055
Lube	1.055	0.257

Pollutant or pollutant property and process type	BAT effluent limitation factor	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
Reforming and alkylation	0.377	0.092
Total chromium:		
Crude	0.030	0.011
Cracking and coking	0.340	0.118
Asphalt	0.183	0.064
Lube	0.855	0.297
Reforming and alkylation	0.305	0.106
Hexavalent chromium:		
Crude	0.0019	0.0009
Cracking and coking	0.0218	0.0098
Asphalt	0.0117	0.0053
Lube	0.0549	0.0248
Reforming and alkylation	0.0196	0.0088
	English units (pounds per 1,000 bbl of feedstock)	
Phenolic compounds (4AAP):		
Crude	0.013	0.003
Cracking and coking	0.147	0.036
Asphalt	0.079	0.019
Lube	0.369	0.090
Reforming and alkylation	0.132	0.032
Total chromium:		
Crude	0.011	0.004
Cracking and coking	0.119	0.041
Asphalt	0.064	0.022

Pollutant or pollutant property and process type	BAT effluent limitation factor	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
Lube	0.299	0.104
Reforming and alkylation	0.107	0.037
Hexavalent chromium:		
Crude	0.0007	0.0003
Cracking and coking	0.0076	0.0034
Asphalt	0.0041	0.0019
Lube	0.0192	0.0087
Reforming and alkylation	0.0069	0.0031

(2) See the comprehensive example in subpart D, § 419.43(c)(2).

(d) The provisions of § 419.13(d) apply to discharges of process wastewater pollutants attributable to ballast water by a point source subject to the provisions of this subpart.

(e) The quantity and quality of pollutants or pollutant properties controlled by this paragraph, attributable to once-through cooling water, are excluded from the discharge allowed by paragraph (b) of this section. Once-through cooling water may be discharged with a total organic carbon concentration not to exceed 5 mg/l.

(f) ***Effluent limitations for contaminated runoff.*** The following effluent limitations constitute the quantity and quality of pollutants or pollutant properties controlled by this paragraph and attributable to contaminated runoff, which may be discharged after the application of the best available technology economically achievable by a point source subject to this subpart.

(1) If wastewater consists solely of contaminated runoff and is not commingled or treated with process wastewater, it may be discharged if it does not exceed 110 mg/l total organic carbon (TOC) based upon an analysis of any single grab or composite sample.

(2) If contaminated runoff is commingled or treated with process wastewater, or if wastewater consisting solely of contaminated runoff which exceeds 110 mg/l TOC is not commingled or treated with any other type of wastewater, the quantity of pollutants discharged shall not exceed the quantity determined by multiplying the flow of contaminated runoff as determined by the permit writer times the concentrations listed in the following table:

Pollutant or pollutant property	BAT effluent limitations for contaminated runoff	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Metric units (kilograms per 1,000 m^3 of flow)	
Phenolic compounds (4AAP)	0.35	0.17
Total chromium	0.60	0.21
Hexavalent chromium	0.062	0.028

Pollutant or pollutant property	BAT effluent limitations for contaminated runoff	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
COD[1]	360.	180.
	English units (pounds per 1,000 gallons of flow)	
Phenolic compounds (4AAP)	0.0029	0.0014
Total chromium	0.0050	0.0018
Hexavalent chromium	0.00052	0.00023
COD[1]	3.0	1.5

[1] In any case in which the applicant can demonstrate that the chloride ion concentration in the effluent exceeds 1,000 mg/l (1,000 ppm), the permitting authority may substitute TOC as a parameter in lieu of COD. A TOC effluent limitation shall be based on effluent data from the particular refinery which correlates TOC to BOD_5. If in the judgement of the permitting authority, adequate correlation data are not available, the effluent limitations for TOC shall be established at a ratio of 2.2 to 1 to the applicable effluent limitations for BOD_5

[47 FR 46446, Oct. 18, 1982, as amended at 50 FR 28523, July 12, 1985; 50 FR 32414, Aug. 12, 1985]

§ 419.34 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).

(a) Any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT):

Pollutant or pollutant property	BCT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Metric units (kilograms per 1,000 m^3 of feedstock)	
BOD_5	34.6	18.4
TSS	23.4	14.8
Oil and grease	11.1	5.9
pH	([1])	([1])
	English units (pounds per 1,000 bbl of feedstock)	
BOD_5	12.1	6.5
TSS	8.3	5.25
Oil and grease	3.9	2.1
pH	([1])	([1])

[1] Within the range of 6.0 to 9.0.

(b) The limits set forth in paragraph (a) of this section are to be multiplied by the following factors to calculate the maximum for any one day and maximum average of daily values for thirty consecutive days.

(1) Size factor.

1,000 bbl of feedstock per stream day	Size factor
Less than 24.9	0.73
25.0 to 49.9	0.76
50.0 to 74.9	0.83
75.0 to 99.9	0.91
100.0 to 124.9	0.99
125.0 to 149.9	1.08
150.0 or greater	1.13

(2) Process factor.

Process configuration	Process factor
Less than 4.49	0.73
4.5 to 5.49	0.80
5.5 to 5.99	0.91
6.0 to 6.49	0.99
6.5 to 6.99	1.08
7.0 to 7.49	1.17
7.5 to 7.99	1.28
8.0 to 8.49	1.39
8.5 to 8.99	1.51
9.0 to 9.49	1.65
9.5 or greater	1.72

(3) See the comprehensive example in subpart D, § 419.42(b)(3).

(c) The provisions of § 419.14(c) apply to discharges of process wastewater pollutants attributable to ballast water by a point source subject to the provisions of this subpart.

(d) The quantity and quality of pollutants or pollutant properties controlled by this paragraph, attributable to once-through cooling water, are excluded from the discharge allowed by paragraph (b) of this section.

(e) ***Effluent limitations for contaminated runoff.*** The following effluent limitations constitute the quantity and quality of pollutants or pollutant properties controlled by this paragraph and attributable to contaminated runoff which may be discharged after the application of the best conventional pollutant control technology by a point source subject to this

subpart.

(1) If wastewater consists solely of contaminated runoff and is not commingled or treated with process wastewater, it may be discharged if it does not exceed 15 mg/l oil and grease based upon an analysis of any single grab or composite sample.

(2) If contaminated runoff is commingled or treated with process wastewater, or if wastewater consisting solely of contaminated runoff which exceeds 15 mg/l oil and grease is not commingled or treated with any other type of wastewater, the quantity of pollutants discharged shall not exceed the quantity determined by multiplying the flow of contaminated runoff as determined by the permit writer times the concentrations listed in the following table:

Pollutant or pollutant property	BCT effluent limitations for contaminated runoff	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Metric units (kilograms per 1,000 m^3 of flow)	
BOD_5	48.	26.
TSS	33.	21.
Oil and grease	15.	8.
pH	([1])	([1])
	English units (pounds per 1,000 gallons of flow)	
BOD_5	0.40	0.22
TSS	0.28	0.18
Oil and grease	0.13	0.067
pH	([1])	([1])

[1] Within the range of 6.0 to 9.0.

[50 FR 28526, July 12, 1985]

§ 419.35 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13 any existing source subject to this subpart which introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and achieve the following pretreatment standards for existing sources (PSES). The following standards apply to the total refinery flow contribution to the POTW:

Pollutant or pollutant property	Pretreatment standards maximum for any 1 day
	(Milligrams per liter (mg/l))
Oil and grease	100
Ammonia (as N)	[1] 100

[1] Where the discharge to the POTW consists solely of sour waters, the owner or operator has the option of complying with this limit or the daily maximum mass limitation for ammonia set forth in § 419.33 (a) and (b).

§ 419.36 Standards of performance for new sources (NSPS).

(a) Any new source subject to this subpart must achieve the following new source performance standards (NSPS):

Pollutant or pollutant property	NSPS Effluent Limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Metric units (kilograms per 1,000 m^3 of feedstock)	
BOD*5*	21.8	11.6
TSS	14.9	9.5
COD[1]	133.0	69.0
Oil and grease	6.6	3.5
Phenolic compounds	0.158	.077
Ammonia as N	23.4	10.7
Sulfide	0.140	0.063
Total chromium	0.32	0.19
Hexavalent chromium	0.025	0.012
pH	([2])	([2])
	English units (pounds per 1,000 bbl of feedstock)	
BOD*5*	7.7	4.1
TSS	5.2	3.3
COD[1]	47.0	24.0
Oil and grease	2.4	1.3
Phenolic compounds	0.056	0.027
Ammonia as N	8.3	3.8
Sulfide	0.050	0.022
Total chromium	0.116	0.068
Hexavalent chromium	0.0096	0.0044
pH	([2])	([2])

[1] See footnote following table in § 419.13(d).

[2] Within the range of 6.0 to 9.0.

(b) The limits set forth in paragraph (a) of this section are to be multiplied by the following factors to calculate the maximum for any one day and maximum average of daily values for thirty consecutive days.

(1) Size factor.

1,000 bbl of feedstock per stream day	Size factor
Less than 24.9	0.73
25.0 to 49.9	0.76
50.0 to 74.9	0.83
75.0 to 99.9	0.91
100.0 to 124.9	0.99
125.0 to 149.9	1.08
150.0 or greater	1.13

(2) Process factor.

Process configuration	Process factor
Less than 4.49	0.73
4.5 to 5.49	0.80
5.5 to 5.99	0.91
6.0 to 6.49	0.99
6.5 to 6.99	1.08
7.0 to 7.49	1.17
7.5 to 7.99	1.28
8.0 to 8.49	1.39
8.5 to 8.99	1.51
9.0 to 9.49	1.65
9.5 or greater	1.72

(3) See the comprehensive example in subpart D, § 419.42(b)(3).

(c) The provisions of § 419.16(c) apply to discharges of process wastewater pollutants attributable to ballast water by a point source subject to the provisions of this subpart.

(d) The quantity and quality of pollutants or pollutant properties controlled by this paragraph, attributable to once-through cooling water, are excluded from the discharge allowed by paragraph (b) of this section. Once-through cooling water may be discharged with a total organic carbon concentration not to exceed 5 mg/l.

(e) ***Effluent limitations for runoff.*** [Reserved]

[47 FR 46446, Oct. 18, 1982, as amended at 50 FR 28523, July 12, 1985; 50 FR 32414, Aug. 12, 1985]

§ 419.37 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new source subject to this subpart which introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and achieve the following pretreatment standards for new sources (PSNS).

(a) The following standards apply to the total refinery flow contribution to the POTW:

Pollutant or pollutant property	Pretreatment standards for new sources maximum for any 1 day
	Milligrams per liter (mg/l)
Oil and grease	100
Ammonia (as N)	[1] 100

[1] Where the discharge to the POTW consists solely of sour waters, the owner or operator has the option of complying with this limit or the daily maximum mass limitation for ammonia set forth in § 419.36 (a) and (b).

(b) The following standard is applied to the cooling tower discharge part of the total refinery flow to the POTW by multiplying:

(1) The standard;

(2) by the total refinery flow to the POTW; and

(3) by the ratio of the cooling tower discharge flow to the total refinery flow.

Pollutant or pollutant property	Pretreatment standards for new sources maximum for any 1 day
	Miligrams per liter (mg/l)
Total chromium	1

Subpart D - Lube Subcategory

§ 419.40 Applicability; description of the lube subcategory.

The provisions of this subpart are applicable to all discharges from any facility that produces petroleum products by the use of topping, cracking, and lube oil manufacturing processes, whether or not the facility includes any process in addition to topping, cracking, and lube oil manufacturing processes. The provisions of this subpart are not applicable, however, to facilities that include the processes specified in subparts C and E of this part.

§ 419.41 Specialized definitions.

The general definitions, abbreviations and methods of analysis set forth in part 401 of this chapter and the specialized definitions set forth in § 419.11 shall apply to this subpart.

§ 419.42 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).

(a) Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT):

Pollutant or pollutant property	BPT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Metric units (kilograms per 1,000 m^3 of feedstock)	

Pollutant or pollutant property	BPT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
BOD^5	50.6	25.8
TSS	35.6	22.7
COD[1]	360.0	187.0
Oil and grease	16.2	8.5
Phenolic compounds	0.38	0.184
Ammonia as N	23.4	10.6
Sulfide	0.33	0.150
Total chromium	0.77	0.45
Hexavalent chromium	0.068	0.030
pH	([2])	([2])
	English units (pounds per 1,000 bbl of feedstock)	
BOD*5*	17.9	9.1
TSS	12.5	8.0
COD[1]	127.0	66.0
Oil and grease	5.7	3.0
Phenolic compounds	0.133	0.065
Ammonia as N	8.3	3.8
Sulfide	0.118	0.053
Total chromium	0.273	0.160
Hexavalent chromium	0.024	0.011
pH	([2])	([2])

[1] See footnote following table in § 419.13(d).

[2] Within the range of 6.0 to 9.0.

(b) The limits set forth in paragraph (a) of this section are to be multiplied by the following factors to calculate the maximum for any one day and maximum average of daily values for thirty consecutive days.

(1) Size factor.

1,000 bbl of feedstock per stream day	Size factor

1,000 bbl of feedstock per stream day	Size factor
Less than 49.9	0.71
50.0 to 74.9	0.74
75.0 to 99.9	0.81
100.0 to 124.9	0.88
125.0 to 149.9	0.97
150.0 to 174.9	1.05
175.0 to 199.9	1.14
200.0 or greater	1.19

(2) Process factor.

Process configuration	Process factor
Less than 6.49	0.81
6.5 to 7.49	0.88
7.5 to 7.99	1.00
8.0 to 8.49	1.09
8.5 to 8.99	1.19
9.0 to 9.49	1.29
9.5 to 9.99	1.41
10.0 to 10.49	1.53
10.5 to 10.99	1.67
11.0 to 11.49	1.82
11.5 to 11.99	1.98
12.0 to 12.49	2.15
12.5 to 12.99	2.34
13.0 or greater	2.44

(3) Example of the application of the above factors. Example - Lube refinery 125, 000 bbl per stream day throughput.

Calculation of the Process Configuration

Process category	Process included	Weighting factor

Process category	Process included	Weighting factor
Crude	Atm crude distillation Vacuum, crude distillation Desalting	1
Cracking and coking	Fluid cat. cracking Vis-breaking Thermal cracking Moving bed cat. cracking Hydrocracking Fluid coking Delayed coking	6
Lube	Further defined in the development document	13
Asphalt	Asphalt production Asphalt oxidation Asphalt emulsifying	12

Process	Capacity (1,000 bbl per stream day)	Capacity relative to throughput	Weighting Factor	Processing configuration
Crude:				
Atm	125.0	1.0		
Vacuum	60.0	0.48		
Desalting	125.0	1.0		
Total		2.48	× 1	= 2.48
Cracking-FCC	41.0	0.328		
Hydrocracking	20.0	0.160		
Total		0.488	× 6	= 2.93
Lubes	5.3	0.042		
	4.0	0.032		
	4.9	0.039		
Total		0.113	× 13	= 1.47
Asphalt	4.0	0.032	× 12	= .38
Refinery process configuration				= 7.26

Notes:

See table § 419.42(b)(2) for process factor. Process factor = 0.88.

See table § 419.42(b)(1) for size factor for 125,000 bbl per stream day lube refinery. Size factor = 0.97.

To calculate the limits for each parameter, multiply the limit § 419.42(a) by both the process factor and size factor. BOD5 limit (maximum for any 1 day) = 17.9 × 0.88 × 0.97 = 15.3 lb. per 1,000 bbl of feedstock.

(c) The provisions of § 419.12(c) apply to discharges of process wastewater pollutants attributable to ballast water by a point source subject to the provisions of this subpart.

(d) The quantity and quality of pollutants or pollutant properties controlled by this paragraph, attributable to once-through cooling water, are excluded from the discharge allowed by paragraph (b) of this section. Once-through cooling water may be discharged with a total organic carbon concentration not to exceed 5 mg/l.

(e) ***Effluent limitations for contaminated runoff.*** The following effluent limitations constitute the quantity and quality of pollutants or pollutant properties controlled by this paragraph and attributable to contaminated runoff, which may be discharged after the application of the best practicable control technology currently available by a point source subject to this subpart.

(1) If wastewater consists solely of contaminated runoff and is not commingled or treated with process wastewater, it may be discharged if it does not exceed 15 mg/l oil and grease and 110 mg/l total organic carbon (TOC) based upon an analysis of any single grab or composite sample.

(2) If contaminated runoff is commingled or treated with process wastewater, or if wastewater consisting solely of contaminated runoff which exceeds 15 mg/l oil and grease or 110 mg/l TOC is not commingled or treated with any other type of wastewater, the quantity of pollutants discharged shall not exceed the quantity determined by multiplying the flow of contaminated runoff as determined by the permit writer times the concentrations listed in the following table:

Pollutant or pollutant property	**BPT effluent limitations for contaminated runoff**	
	Maximum for any 1 day	**Average of daily values for 30 consecutive days shall not exceed**
	Metric units (kilograms per 1,000 m^3 of flow)	
BOD_5	48.	26.
TSS	33.	21.
COD[1]	360.	180.
Oil and grease	15.	8.
Phenolic compounds (4AAP)	0.35	0.17
Total chromium	0.73	0.43
Hexavalent chromium	0.062	0.028
pH	([2])	([2])
	English units (pounds per 1,000 gallons of flow)	
BOD_5	0.40	0.22
TSS	0.28	0.18
COD[1]	3.0	1.5
Oil and grease	0.13	0.067

Pollutant or pollutant property	BPT effluent limitations for contaminated runoff	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
Phenolic compounds (4AAP)	0.0029	0.0014
Total chromium	0.0060	0.0035
Hexavalent chromium	0.00052	0.00023
pH	([2])	([2])

[1] In any case in which the applicant can demonstrate that the chloride ion concentration in the effluent exceeds 1,000 mg/l (1,000 ppm), the permitting authority may substitute TOC as a parameter in lieu of COD. A TOC effluent limitation shall be based on effluent data from the particular refinery which correlates TOC to BOD_5. If in the judgment of the permitting authority, adequate correlation data are not available, the effluent limitations for TOC shall be established at a ratio of 2.2 to 1 to the applicable effluent limitations for BOD_5.

[2] Within the range of 6.0 to 9.0.

[47 FR 46446, Oct. 18, 1982, as amended at 50 FR 28522, 28523, July 12, 1985; 50 FR 32414, Aug. 12, 1985]

§ 419.43 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

(a) Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT):

Pollutant or pollutant property	BAT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Metric units (kilograms per	
COD[1]	360.0	187.0
Ammonia as N	23.4	10.6
Sulfide	0.33	0.150
	English units (pounds per 1,000 bbl of feedstock)	
COD[1]	127.0	66.0
Ammonia as N	8.3	3.8
Sulfide	0.118	0.053

[1] See footnote following table in § 419.13(d).

(b) The limits set forth in paragraph (a) of this section are to be multiplied by the following factors to calculate the maximum for any one day and maximum average of daily values for thirty consecutive days.

(1) Size factor.

1,000 bbl of feedstock per stream day	Size factor
Less than 49.9	0.71
50.0 to 74.9	0.74
75.0 to 99.9	0.81
100.0 to 124.9	0.88
125.0 to 149.9	0.97
150.0 to 174.9	1.05
175.0 to 199.9	1.14
200.0 or greater	1.19

(2) Process factor.

Process configuration	Process factor
Less than 6.49	0.81
6.5 to 7.49	0.88
7.5 to 7.99	1.00
8.0 to 8.49	1.09
8.5 to 8.99	1.19
9.0 to 9.49	1.29
9.5 to 9.99	1.41
10.0 to 10.49	1.53
10.5 to 10.99	1.67
11.0 to 11.49	1.82
11.5 to 11.99	1.98
12.0 to 12.49	2.15
12.5 to 12.99	2.34
13.0 or greater	2.44

(3) See the comprehensive example in subpart D, § 419.42(b)(3).

(c)

(1) In addition to the provisions contained above pertaining to COD, ammonia and sulfide, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT):

(i) For each of the regulated pollutant parameters listed below, the effluent limitation for a given refinery is the sum of the products of each effluent limitation factor times the applicable process feedstock rate, calculated as provided in 40 CFR 122.45(b). Applicable production processes are presented in appendix A, by process type. The process identification numbers presented in this appendix A are for the convenience of the reader. They can be cross-referenced in the *Development Document for Effluent Limitations Guidelines, New Source Performance Standards, and Pretreatment Standards for the Petroleum Refining Point Source Category* (EPA 440/1-82/014), Table III-7, pp. 49-54.

Pollutant or pollutant property and process type	**BAT effluent limitation factor**	
	Maximum for any 1 day	**Average of daily values for 30 consecutive days shall not exceed**
	Metric units (kilograms per 1,000 m^3 of feedstock)	
Phenolic compounds (4AAP):		
Crude	0.037	0.009
Cracking and coking	0.419	0.102
Asphalt	0.226	0.055
Lube	1.055	0.257
Reforming and alkylation	0.377	0.092
Total chromium:		
Crude	0.030	0.011
Cracking and coking	0.340	0.118
Asphalt	0.183	0.064
Lube	0.855	0.297
Reforming and alkylation	0.305	0.106
Hexavalent chromium:		
Crude	0.0019	0.0009
Cracking and coking	0.0218	0.0098
Asphalt	0.0117	0.0053
Lube	0.0549	0.0248
Reforming and alkylation	0.0196	0.0088
	English units (pounds per 1,000 bbl of feedstock)	

Pollutant or pollutant property and process type	BAT effluent limitation factor	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
Phenolic compounds (4AAP):		
Crude	0.013	0.003
Cracking and coking	0.147	0.036
Asphalt	0.079	0.019
Lube	0.369	0.090
Reforming and alkylation	0.132	0.032
Total chromium:		
Crude	0.011	0.004
Cracking and coking	0.119	0.041
Asphalt	0.064	0.022
Lube	0.299	0.104
Reforming and alkylation	0.107	0.037
Hexavalent chromium:		
Crude	0.0007	0.0003
Cracking and coking	0.0076	0.0034
Asphalt	0.0041	0.0019
Lube	0.0192	0.0087
Reforming and alkylation	0.0069	0.0031

(2) Example Application of Effluent Limitations Guidelines as Applicable to Phenolic Compounds, Hexavalent Chromium, and Total Chromium.

The following example presents the derivation of a BAT phenolic compound (4AAP) effluent limitation (30-day average) for a petroleum refinery permit. The methodology is also applicable to hexavalent chromium and total chromium.

Refinery process	Process feedstock rate 1,000 bbl/day
1. Atmospheric crude distillation	100
2. Crude desalting	50

Refinery process	Process feedstock rate 1,000 bbl/day
3. Vacuum crude distillation	75
Total crude processes (C)	225
6. Fluid catalytic cracking	25
10. Hydrocracking	20
Total cracking and coking processes (K)	45
18. Asphalt production	5
Total asphalt processes (A)	5
21. Hydrofining	3
Total lube processes (L)	3
8. Catalytic reforming	10
Total reforming and alkylation processes (R)	10

Note:
30 day average effluent limitation for phenolic compounds (4AAP), lb/day = (0.003) (225) + (0.036) (45) + (0.019) (5) + (0.090) (3) + (0.032) (10) = 2.98 lb/day.

(d) The provisions of § 419.13(d) apply to discharges of process wastewater pollutants attributable to ballast water by a point source subject to the provisions of this subpart.

(e) The quantity and quality of pollutants or pollutant properties controlled by this paragraph, attributable to once-through cooling water, are excluded from the discharge allowed by paragraph (b) of this section. Once-through cooling water may be discharged with a total organic carbon concentration not to exceed 5 mg/l.

(f) ***Effluent limitations for contaminated runoff.*** The following effluent limitations constitute the quantity and quality of pollutants or pollutant properties controlled by this paragraph and attributable to contaminated runoff, which may be discharged after the application of the best available technology economically achievable by a point source subject to this subpart.

(1) If wastewater consists solely of contaminated runoff and is not commingled or treated with process wastewater, it may be discharged if it does not exceed 110 mg/l total organic carbon (TOC) based upon an analysis of any single grab or composite sample.

(2) If contaminated runoff is commingled or treated with process wastewater, or if wastewater consisting solely of contaminated runoff which exceeds 110 mg/l TOC is not commingled or treated with any other type of wastewater, the quantity of pollutants discharged shall not exceed the quantity determined by multiplying the flow of contaminated runoff as determined by the permit writer times the concentrations listed in the following table:

Pollutant or pollutant property	BAT effluent limitations for contaminated runoff	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Metric units (kilograms per 1,000 m^3 of flow)	

Pollutant or pollutant property	BAT effluent limitations for contaminated runoff	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
Phenolic compounds (4AAP)	0.35	0.17
Total chromium	0.60	0.21
Hexavalent chromium	0.062	0.028
COD[1]	360.	180.
	English units (pounds per 1,000 gallons of flow)	
Phenolic compounds (4AAP)	0.0029	0.0014
Total chromium	0.0050	0.0018
Hexavalent chromium	0.00052	0.00023
COD[1]	3.0	1.5

[1] In any case in which the applicant can demonstrate that the chloride ion concentration in the effluent exceeds 1,000 mg/l (1,000 ppm), the permitting authority may substitute TOC as a parameter in lieu of COD. A TOC effluent limitation shall be based on effluent data from the particular refinery which correlates TOC to BOD_5. If in the judgement of the permitting authority, adequate correlation data are not available, the effluent limitations for TOC shall be established at a ratio of 2.2 to 1 to the applicable effluent limitations for BOD_5

[47 FR 46446, Oct. 18, 1982, as amended at 50 FR 28523, 28524, July 12, 1985; 50 FR 32414, Aug. 12, 1985]

§ 419.44 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).

(a) Any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT):

Pollutant or pollutant property	BCT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Metric units (kilograms per 1,000 m^3 of feedstock	
BOD_5	50.6	25.8
TSS	35.6	22.7
Oil and Grease	16.2	8.5
pH	([1])	([1])
	English units (pounds per 1,000 bbl of feedstock)	
BOD_5	17.9	9.1

Pollutant or pollutant property	BCT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
TSS	12.5	8.0
Oil and Grease	5.7	3.0
pH	([1])	([1])

[1] Within the range of 6.0 to 9.0.

(b) The limits set forth in paragraph (a) of this section are to be multiplied by the following factors to calculate the maximum for any one day and maximum average of daily values for thirty consecutive days.

(1) Size factor.

1,000 bbl of feedstock per stream day	Size factor
Less than 49.9	0.71
50.0 to 74.9	0.74
75.0 to 99.9	0.81
100.0 to 124.9	0.88
125.0 to 149.9	0.97
150.0 to 174.9	1.05
175.0 to 199.9	1.14
200.0 or greater	1.19

(2) Process factor.

Process configuration	Process factor
Less than 6.49	0.81
6.5 to 7.49	0.88
7.5 to 7.99	1.00
8.0 to 8.49	1.09
8.5 to 8.99	1.19
9.0 to 9.49	1.29
9.5 to 9.99	1.41
10.0 to 10.49	1.53
10.5 to 10.99	1.67

Process configuration	Process factor
11.0 to 11.49	1.82
11.5 to 11.99	1.98
12.0 to 12.49	2.15
12.5 to 12.99	2.34
13.0 or greater	2.44

(c) The provisions of § 419.14(c) apply to discharges of process wastewater pollutants attributable to ballast water by a point source subject to the provisions of this subpart.

(d) The quantity and quality of pollutants or pollutant properties controlled by this paragraph, attributable to once-through cooling water, are excluded from the discharge allowed by paragraph (b) of this section.

(e) ***Effluent limitations for contaminated runoff.*** The following effluent limitations constitute the quantity and quality of pollutants or pollutant properties controlled by this paragraph and attributable to contaminated runoff which may be discharged after the application of the best conventional pollutant control technology by a point source subject to this subpart.

(1) If wastewater consists solely of contaminated runoff and is not commingled or treated with process wastewater, it may be discharged if it does not exceed 15 mg/l oil and grease based upon an analysis of any single grab or composite sample.

(2) If contaminated runoff is commingled or treated with process wastewater, or if wastewater consisting solely of contaminated runoff which exceeds 15 mg/l oil and grease is not commingled or treated with any other type of wastewater, the quantity of pollutants discharged shall not exceed the quantity determined by multiplying the flow of contaminated runoff as determined by the permit writer times the concentrations listed in the following table:

Pollutant or pollutant property	BCT effluent limitations for contaminated runoff	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Metric unit (kilograms per 1,000 m^3 of flow)	
BOD_5	48.	26.
TSS	33.	21.
Oil and grease	15.	8.
pH	([1])	([1])
	English units (pounds per 1,000 gallons of flow)	
BOD_5	0.40	0.22
TSS	0.28	0.18
Oil and grease	0.13	0.067
pH	([1])	([1])

[1] Within the range of 6.0 to 9.0.

[50 FR 28526, July 12, 1985]

§ 419.45 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13 any existing source subject to this subpart which introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and achieve the following pretreatment standards for existing sources (PSES). The following standards apply to the total refinery flow contribution to the POTW:

Pollutant or pollutant property	Pretreatment standards for existing sources - maximum for any 1 day
	Milligrams per liter (mg/l)
Oil and grease	100
Ammonia (as N)	[1] 100

[1] Where the discharge to the POTW consists solely of sour waters, the owner or operator has the option of complying with this limit or the daily maximum mass limitation for ammonia set forth in § 419.43 (a) and (b).

§ 419.46 Standards of performance for new sources (NSPS).

(a) Any new source subject to this subpart must achieve the following new source performance standards (NSPS):

Pollutant or pollutant property	NSPS effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Metric units (kilograms per 1,000 m^3 of feedstock)	
BOD*5*	34.6	18.4
TSS	23.4	14.9
COD[1]	245.0	126.0
Oil and grease	10.5	5.6
Phenolic compounds	0.25	0.12
Ammonia as N	23.4	10.7
Sulfide	0.220	0.10
Total chromium	0.52	0.31
Hexavalent chromium	0.046	0.021
pH	([2])	([2])
	English units (pounds per 1,000 bbl of feedstock)	
BOD[1]	12.2	6.5
TSS	8.3	5.3
COD[1]	87.0	45.0
Oil and grease	3.8	2.0

Pollutant or pollutant property	NSPS effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
Phenolic compounds	0.088	0.043
Ammonia as N	8.3	3.8
Sulfide	0.078	0.035
Total chromium	0.180	0.105
Hexavalent chromium	0.022	0.0072
pH	([2])	([2])

[1] See footnote following table in § 419.13(d).

[2] Within the range 6.0 to 9.0.

(b) The limits set forth in paragraph (a) of this section are to be multiplied by the following factors to calculate the maximum for any one day and maximum average of daily values for thirty consecutive days.

(1) Size factor.

1,000 bbl of feedstock per stream day	Size factor
Less than 49.9	0.71
50.0 to 74.9	0.74
75.0 to 99.9	0.81
100.0 to 124.9	0.88
125.0 to 149.9	0.97
150.0 to 174.9	1.05
175.0 to 199.9	1.14
200.0 or greater	1.19

(2) Process factor.

Process configuration	Process factor
Less than 6.49	0.81
6.5 to 7.49	0.88
7.5 to 7.99	1.00
8.0 to 8.49	1.09
8.5 to 8.99	1.19

Process configuration	Process factor
9.0 to 9.49	1.29
9.5 to 9.99	1.41
10.0 to 10.49	1.53
10.5 to 10.99	1.67
11.0 to 11.49	1.82
11.5 to 11.99	1.98
12.0 to 12.49	2.15
12.5 to 12.99	2.34
13.0 or greater	2.44

(3) See the comprehensive example in subpart D, § 419.42(b)(3).

(c) The provisions of § 419.16(c) apply to discharges of process wastewater pollutants attributable to ballast water by a point source subject to the provision of this subpart.

(d) The quantity and quality of pollutants or pollutant properties controlled by this paragraph, attributable to once-through cooling water, are excluded from the discharge allowed by paragraph (b) of this section. Once-through cooling water may be discharged with a total organic carbon concentration not to exceed 5 mg/1.

(e) ***Effluent Limitations for Runoff.*** [Reserved]

[47 FR 46446, Oct. 18, 1982, as amended at 50 FR 28523, 28528, July 12, 1985; 50 FR 32414, Aug. 12, 1985]

§ 419.47 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new source subject to this subpart which introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and achieve the following pretreatment standards for new sources (PSNS).

(a) The following standards apply to the total refinery flow contribution to the POTW:

Pollutant or pollutant property	Pretreatment standards for new sources, maximum for any 1 day
	Milligrams per liter (mg/l)
Oil and grease	100
Ammonia (as N)	[1] 100

[1] Where the discharge to the POTW consists solely of sour waters, the owner or operator has the option of complying with this limit or the daily maximum mass limitation for ammonia set forth in § 419.46 (a) and (b).

(b) The following standard is applied to the cooling tower discharge part of the total refinery flow to the POTW by multiplying:

(1) The standard;

(2) by the total refinery flow to the POTW; and

(3) by the ratio of the cooling tower discharge flow to the total refinery flow.

Pollutant or pollutant property	Pretreatment standards for new sources, maximum for any 1 day
	Milligrams per liter (mg/l)
Total chromium	1

Subpart E - Integrated Subcategory

§ 419.50 Applicability; description of the integrated subcategory.

The provisions of this subpart are applicable to all discharges resulting from any facility that produces petroleum products by the use of topping, cracking, lube oil manufacturing processes, and petrochemical operations, whether or not the facility includes any process in addition to topping, cracking, lube oil manufacturing processes, and petrochemical operations.

§ 419.51 Specialized definitions.

The general definitions, abbreviations, and methods of analysis set forth in part 401 of this chapter and the specialized definitions set forth in § 419.31 shall apply to this subpart.

§ 419.52 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).

(a) Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT):

Pollutant or pollutant property	BPT Effluent Limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Metric units (kilograms per 1,000 m^3 of feedstock)	
BOD*5*	54.4	28.9
TSS	37.3	23.7
COD[1]	388.0	198.0
Oil and grease	17.1	9.1
Phenolic compounds	0.40	0.192
Ammonia as N	23.4	10.6
Sulfide	0.35	0.158
Total Chromium	0.82	0.48
Hexavalent chromium	0.068	0.032
pH	([2])	([2])
	English units (pounds per 1,000 bbl of feedstock)	
BOD[1]	19.2	10.2

Pollutant or pollutant property	BPT Effluent Limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
TSS	13.2	8.4
COD[1]	136.0	70.0
Oil and grease	6.0	3.2
Phenolic compounds	0.14	0.068
Ammonia as N	8.3	3.8
Sulfide	0.124	0.056
Total chromium	0.29	0.17
Hexavalent chromium	0.025	0.011
pH	([2])	([2])

[1] See footnote following table in § 419.13(d).

[2] Within the range 6.0 to 9.0.

(b) The limits set forth in paragraph (a) of this section are to be multiplied by the following factors to calculate the maximum for any one day and maximum average of daily values for thirty consecutive days.

(1) Size factor.

1,000 bbl of feedstock per stream day	Size factor
Less than 124.9	0.73
125.0 to 149.9	0.76
150.0 to 174.9	0.83
175.0 to 199.9	0.91
200.0 to 224.9	0.99
225 or greater	1.04

(2) Process factor.

Process configuration	Process factor
Less than 6.49	0.75
6.5 to 7.49	0.82
7.5 to 7.99	0.92
8.0 to 8.49	1.00

Process configuration	Process factor
8.5 to 8.99	1.10
9.0 to 9.49	1.20
9.5 to 9.99	1.30
10.0 to 10.49	1.42
10.5 to 10.99	1.54
11.0 to 11.49	1.68
11.5 to 11.99	1.83
12.0 to 12.49	1.99
12.5 to 12.99	2.17
13.0 or greater	2.26

(3) See the comprehensive example in subpart D, § 419.42(b)(3).

(c) The provisions of § 419.12(c) apply to discharges of process wastewater pollutants attributable to ballast water by a point source subject to the provision of this subpart.

(d) The quantity and quality of pollutants or pollutant properties controlled by this paragraph, attributable to once-through cooling water, are excluded from the discharge allowed by paragraph (b) of this section. Once-through cooling water may be discharged with a total organic carbon concentration not to exceed 5 mg/l.

(e) ***Effluent limitations for contaminated runoff.*** The following effluent limitations constitute the quantity and quality of pollutants or pollutant properties controlled by this paragraph and attributable to contaminated runoff, which may be discharged after the application of the best practicable control technology currently available by a point source subject to this subpart.

(1) If wastewater consists solely of contaminated runoff and is not commingled or treated with process wastewater, it may be discharged if it does not exceed 15 mg/l oil and grease and 110 mg/l total organic carbon (TOC) based upon an analysis of any single grab or composite sample.

(2) If contaminated runoff is commingled or treated with process wastewater, or if wastewater consisting solely of contaminated runoff which exceeds 15 mg/l oil and grease or 110 mg/l TOC is not commingled or treated with any other type of wastewater, the quantity of pollutants discharged shall not exceed the quantity determined by multiplying the flow of contaminated runoff as determined by the permit writer times the concentrations listed in the following table:

Pollutant or pollutant property	BPT effluent limitations for contaminated runoff	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Metric units (kilograms per 1,000 m^3 of flow)	
BOD*5*	48.	26.
TSS	33.	21.
COD[1]	360.	180.
Oil and grease	15.	8.

Pollutant or pollutant property	BPT effluent limitations for contaminated runoff	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
Phenolic compounds (4AAP)	0.35	0.17
Total chromium	0.73	0.43
Hexavalent chromium	0.062	0.028
pH	(2)	(2)
	English units (pounds per 1,000 gallons of flow)	
BOD*5*	0.40	0.22
TSS	0.28	0.18
COD[1]	3.0	1.5
Oil and grease	0.13	0.067
Phenolic compounds (4AAP)	0.0029	0.0014
Total chromium	0.0060	0.0035
Hexavalent chromium	0.00052	0.00023
pH	(2)	(2)

[1] In any case in which the applicant can demonstrate that the chloride ion concentration in the effluent exceeds 1,000 mg/l (1,000 ppm), the permitting authority may substitute TOC as a parameter in lieu of COD. A TOC effluent limitation shall be based on effluent data from the particular refinery which correlates TOC to BOD_5. If in the judgment of the permitting authority, adequate correlation data are not available, the effluent limitations for TOC shall be established at a ratio of 2.2 to 1 to the applicable effluent limitations for BOD_5.

[2] Within the range of 6.0 to 9.0.

[47 FR 46446, Oct. 18, 1982, as amended at 50 FR 28522, 28523, July 12, 1985; 50 FR 32414, Aug. 12, 1985]

§ 419.53 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

(a) Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT):

Pollutant or pollutant property	BAT Effluent Limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Metric units (kilograms per 1,000 m^3 of feedstock)	

Pollutant or pollutant property	BAT Effluent Limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
COD[1]	388.0	198.0
Ammonia as N	23.4	10.6
Sulfide	0.35	0.158
	English units (pounds per 1,000 bbl of feedstock)	
COD[1]	136.0	70.0
Ammonia as N	8.3	3.8
Sulfide	0.124	0.056

[1] See footnote following table in § 419.13(d).

(b) The limits set forth in paragraph (a) of this section are to be multiplied by the following factors to calculate the maximum for any one day and maximum average of daily values for thirty consecutive days.

(1) Size factor.

1,000 bbl of feedstock per stream day	Size factor
Less than 124.9	0.73
125.0 to 149.9	0.76
150.0 to 174.9	0.83
175.0 to 199.9	0.91
200 to 224.9	0.99
225 or greater	1.04

(2) Process factor.

Process configuration	Process factor
Less than 6.49	0.75
6.5 to 7.49	0.82
7.5 to 7.99	0.92
8.0 to 8.49	1.00
8.5 to 8.99	1.10
9.0 to 9.49	1.20
9.5 to 9.99	1.30

Process configuration	Process factor
10.0 to 10.49	1.42
10.5 to 10.99	1.54
11.0 to 11.49	1.68
11.5 to 11.99	1.83
12.0 to 12.49	1.99
12.5 to 12.99	2.17
13.0 or greater	2.26

(3) See the comprehensive example in subpart D, § 419.42(b)(3).

(c)

(1) In addition to the provisions contained above pertaining to COD, ammonia and sulfide, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT):

(i) For each of the regulated pollutant parameters listed below, the effluent limitation for a given refinery is the sum of the products of each effluent limitation factor times the applicable process feedstock rate, calculated as provided in 40 CFR 122.45(b). Applicable production processes are presented in appendix A, by process type. The process identification numbers presented in this appendix A are for the convenience of the reader. They can be cross-referenced in the *Development Document for Effluent Limitations Guidelines, New Source Performance Standards, and Pretreatment Standards for the Petroleum Refining Point Source Category* (EPA 440/1-82/014), Table III-7, pp. 49-54.

Pollutant or pollutant property and process type	BAT effluent limitation factor	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Metric units (kilograms per 1,000 cubic meters of feedstock)	
Phenolic compounds (4AAP):		
Crude	0.037	0.009
Cracking and coking	0.419	0.102
Asphalt	0.226	0.055
Lube	1.055	0.257
Reforming and alkylation	0.377	0.092
Total chromium:		
Crude	0.030	0.011
Cracking and coking	0.340	0.118

Pollutant or pollutant property and process type	BAT effluent limitation factor	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
Asphalt	0.183	0.064
Lube	0.855	0.297
Reforming and alkylation	0.305	0.106
Hexavalent chromium:		
Crude	0.0019	0.0009
Cracking and coking	0.0218	0.0098
Asphalt	0.0117	0.0053
Lube	0.0549	0.0248
Reforming and alkylation	0.0196	0.0088
	English units (pounds per 1,000 bbl of feedstock)	
Phenolic compounds (4AAP):		
Crude	0.013	0.003
Cracking and coking	0.147	0.036
Asphalt	0.079	0.019
Lube	0.369	0.090
Reforming and alkylation	0.132	0.032
Total chromium:		
Crude	0.011	0.004
Cracking and coking	0.119	0.041
Asphalt	0.064	0.022
Lube	0.299	0.104
Reforming and alkylation	0.107	0.037
Hexavalent chromium:		
Crude	0.0007	0.0003

Pollutant or pollutant property and process type	BAT effluent limitation factor	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
Cracking and coking	0.0076	0.0034
Asphalt	0.0041	0.0019
Lube	0.0192	0.0087
Reforming and alkylation	0.0069	0.0031

(2) See the comprehensive example in subpart D, § 419.43(c)(2).

(d) The provisions of § 419.13(d) apply to discharges of process wastewater pollutants attributable to ballast water by a point source subject to the provisions of this subpart.

(e) The quantity and quality of pollutants or pollutant properties controlled by this paragraph, attributable to once-through cooling water, are excluded from the discharge allowed by paragraph (b) of this section. Once-through cooling water may be discharged with a total organic carbon concentration not to exceed 5 mg/l.

(f) ***Effluent limitations for contaminated runoff.*** The following effluent limitations constitute the quantity and quality of pollutants or pollutant properties controlled by this paragraph and attributable to contaminated runoff, which may be discharged after the application of the best available technology economically achievable by a point source subject to this subpart.

(1) If wastewater consists solely of contaminated runoff and is not commingled or treated with process wastewater, it may be discharged if it does not exceed 110 mg/l total organic carbon (TOC) based upon an analysis of any single grab or composite sample.

(2) If contaminated runoff is commingled or treated with process wastewater, or if wastewater consisting solely of contaminated runoff which exceeds 110 mg/l TOC is not commingled or treated with any other type of wastewater, the quantity of pollutants discharged shall not exceed the quantity determined by multiplying the flow of contaminated runoff as determined by the permit writer times the concentrations listed in the following table:

Pollutant or pollutant property	BAT effluent limitations for contaminated runoff	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Metric units (kilograms per 1,000 m^3 of flow)	
Phenolic compounds (4AAP)	0.35	0.17
Total chromium	0.60	0.21
Hexavalent chromium	0.062	0.028
COD[1]	360.	180.
	English units (pounds per 1,000 gallons of flow)	
Phenolic compounds (4AAP)	0.0029	0.0014
Total chromium	0.0050	0.0018

Pollutant or pollutant property	BAT effluent limitations for contaminated runoff	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
Hexavalent chromium	0.00052	0.00023
COD[1]	3.0	1.5

[1] In any case in which the applicant can demonstrate that the chloride ion concentration in the effluent exceeds 1,000 mg/l (1,000 ppm), the permitting authority may substitute TOC as a parameter in lieu of COD. A TOC effluent limitation shall be based on effluent data from the particular refinery which correlates TOC to BOD_5. If in the judgement of the permitting authority, adequate correlation data are not available, the effluent limitations for TOC shall be established at a ratio of 2.2 to 1 to the applicable effluent limitations for BOD_5

[47 FR 46446, Oct. 18, 1982, as amended at 50 FR 28523, July 12, 1985; 50 FR 32414, Aug. 12, 1985]

§ 419.54 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).

(a) Any existing point subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT):

Pollutant or pollutant property	BCT effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Metric units (kilograms per 1,000 m^3 of feedstock)	
BOD*5*	54.4	28.9
TSS	37.3	23.7
Oil and grease	17.1	9.1
pH	([1])	([1])
	English units (pounds per 1,000 bbl of feedstock)	
BOD*5*	19.2	10.2
TSS	13.2	8.4
Oil and grease	6.0	3.2
ph	([1])	([1])

[1] Within the range of 6.0 to 9.0.

(b) The limits set forth in paragraph (a) of this section are to be multiplied by the following factors to calculate the maximum for any one day and maximum average of daily values for thirty consecutive days.

(1) Size factor.

1,000 bbl of feedstock per stream day	Size factor

1,000 bbl of feedstock per stream day	Size factor
Less than 124.9	0.73
125.0 to 149.9	0.76
150.0 to 174.9	0.83
175. to 199.9	0.91
200.0 to 224.9	0.99
225.0 or greater	1.04

(2) Process factor.

Process configuration	Process factor
Less than 6.49	0.75
6.5 to 7.49	0.82
7.5 to 7.99	0.92
8.0 to 8.49	1.00
8.5 to 8.99	1.10
9.0 to 9.49	1.20
9.5 to 9.99	1.30
10.0 to 10.49	1.42
10.5 to 10.99	1.54
11.0 to 11.49	1.68
11.5 to 11.99	1.83
12.0 to 12.49	1.99
12.5 to 12.99	2.17
13.0 or greater	2.26

(3) See the comprehensive example in subpart D, § 419.42(b)(3).

(c) The provisions of § 419.14(c) apply to discharges of process wastewater pollutants attributable to ballast water by a point source subject to the provisions of this subpart.

(d) The quantity and quality of pollutants or pollutant properties controlled by this paragraph, attributable to once-through cooling water, are excluded from the discharge allowed by paragraph (b) of this section.

(e) ***Effluent limitations for contaminated runoff.*** The following effluent limitations constitute the quantity and quality of pollutants or pollutant properties controlled by this paragraph and attributable to contaminated runoff which may be discharged after the application of the best conventional pollutant control technology by a point source subject to this subpart.

(1) If wastewater consists solely of contaminated runoff and is not commingled or treated with process wastewater, it may be discharged if it does not exceed 15 mg/l oil and grease based upon an analysis of any single grab or composite sample.

(2) If contaminated runoff is commingled or treated with process wastewater, or if wastewater consisting solely of contaminated runoff which exceeds 15 mg/l oil and grease is not commingled or treated with any other type of wastewater, the quantity of pollutants discharged shall not exceed the quantity determined by multiplying the flow of contaminated runoff as determined by the permit writer times the concentrations listed in the following table:

Pollutant or pollutant property	BCT effluent limitations for contaminated runoff	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Metric units (kilograms per 1,000 m^3 of feedstock)	
BOD*5*	48.	26.
TSS	33.	21.
Oil and grease	15.	8.
pH	([1])	([1])
	English units (pounds per 1,000 gallons of flow)	
BOD*5*	0.40	0.22
TSS	0.28	0.18
Oil and grease	0.13	0.067
pH	([1])	([1])

[1] Within the range of 6.0 to 9.0.

[50 FR 28527, July 12, 1985]

§ 419.55 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7 and 403.13 any existing source subject to this subpart which introduces pollutants into a publicly owned treatment works must comply with 40 CFR 403 and achieve the following pretreatment standards for existing sources (PSES). The following standards apply to the total refinery flow contribution to the POTW:

Pollutant or pollutant property	Pretreatment standards for existing sources - maximum for any 1 day
	Milligrams per liter (mg/l)
Oil and grease	100
Ammonia (as N)	[1]100

[1] Where the discharge to the POTW consists solely of sour waters, the owner or operator has the option of complying with this limit or the daily maximum mass limitation for ammonia set forth in § 419.53 (a) and (b).

§ 419.56 Standards of performance for new sources (NSPS).

(a) Any new source subject to this subpart must achieve the following new source performance standards (NSPS):

Pollutant or pollutant property	NSPS effluent limitation	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	Metric units (kilograms per 1,000 m^3 of feedstock)	
BOD*5*	41.6	22.1
TSS	28.1	17.9
COD[1]	295.0	152.0
Oil and grease	12.6	6.7
Phenolic compounds	0.30	0.14
Ammonia as N	23.4	10.7
Sulfide	0.26	0.12
Total chromium	0.64	0.37
Hexavalent chromium	0.052	0.024
pH	([2])	([2])
	English units (pounds per 1,000 bbl of feedstock)	
BOD*5*	14.7	7.8
TSS	9.9	6.3
COD[1]	104.0	54.0
Oil and grease	4.5	2.4
Phenolic compounds	0.105	0.051
Ammonia as N	8.3	3.8
Sulfide	0.093	0.042
Total chromium	0.220	0.13
Hexavalent chromium	0.019	0.0084
pH	([2])	([2])

[1] See footnote following table in § 419.13(d).

[2] Within the range 6.0 to 9.0.

(b) The limits set forth in paragraph (a) of this section are to be multiplied by the following factors to calculate the maximum for any one day and maximum average of daily values for thirty consecutive days.

(1) Size factor.

1,000 bbl of feedstock per stream day	Size factor

1,000 bbl of feedstock per stream day	Size factor
Less than 124.9	0.73
125.0 to 149.9	0.76
150.0 to 174.9	0.83
175.0 to 199.9	0.91
200 to 224.9	0.99
225 or greater	1.04

(2) Process factor.

Process configuration	Process factor
Less than 6.49	0.75
6.5 to 7.49	0.82
7.5 to 7.99	0.92
8.0 to 8.49	1.00
8.5 to 8.99	1.10
9.0 to 9.49	1.20
9.5 to 9.99	1.30
10.0 to 10.49	1.42
10.5 to 10.99	1.54
11.0 to 11.49	1.68
11.5 to 11.99	1.83
12.0 to 12.49	1.99
12.5 to 12.99	2.17
13.0 or greater	2.26

(3) See the comprehensive example in subpart D, § 419.42(b)(3).

(c) The provisions of § 419.16(c) apply to discharges of process wastewater pollutants attributable to ballast water by a point source subject to the provision of this subpart.

(d) The quantity and quality of pollutants or pollutant properties controlled by this paragraph, attributable to once-through cooling water, are excluded from the discharge allowed by paragraph (b) of this section. Once-through cooling water may be discharged with a total organic carbon concentration not to exceed 5 mg/l.

(e) ***Effluent limitations for runoff.*** [Reserved]

[47 FR 46446, Oct. 18, 1982, as amended at 50 FR 28523, 28528, July 12, 1985; 50 FR 32414, Aug. 12, 1985]

§ 419.57 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7, any new source subject to this subpart which introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and achieve the following pretreatment standards for new sources (PSNS).

(a) The following standards apply to the total refinery flow contribution to the POTW:

Pollutant or pollutant property	Pretreatment standards for new sources - maximum for any 1 day
	Milligrams per liter (mg/l)
Oil and grease	100
Ammonia (as N)	[1] 100

[1] Where the discharge to the POTW consists solely of sour waters, the owner or operator has the option of complying with this limit or the daily maximum mass limitation for ammonia set forth in § 419.56 (a) and (b).

(b) The following standard is applied to the cooling tower discharge part of the total refinery flow to the POTW by multiplying:

(1) The standards;

(2) by the total refinery flow to the POTW; and

(3) by the ratio of the cooling tower discharge flow to the total refinery flow.

Pollutant or pollutant property	Pretreatment standards for new sources - maximum for any 1 day
	Milligrams per liter (mg/1)
Total chromium	1

Appendix A to Part 419 - Processes Included in the Determination of BAT Effluent Limitations for Total Chromium, Hexavalent Chromium, and Phenolic Compounds (4AAP)

Crude Processes

1. Atmospheric Crude Distillation

2. Crude Desalting

3. Vacuum Crude Distillation

Cracking and Coking Processes

4. Visbreaking

5. Thermal Cracking

6. Fluid Catalytic Cracking

7. Moving Bed Catalytic Cracking

10. Hydrocracking

15. Delayed Coking

16. Fluid Coking

54. Hydrotreating

Asphalt Processes

18. Asphalt Production

32. 200 °F Softening Point Unfluxed Asphalt

43. Asphalt Oxidizing

89. Asphalt Emulsifying

Lube Processes

21. Hydrofining, Hydrofinishing, Lube Hydrofining

22. White Oil Manufacture

23. Propane Dewaxing, Propane Deasphalting, Propane Fractioning, Propane Deresining

24. Duo Sol, Solvent Treating, Solvent Extraction, Duotreating, Solvent Dewaxing, Solvent Deasphalting

25. Lube Vac Twr, Oil Fractionation, Batch Still (Naphtha Strip), Bright Stock Treating

26. Centrifuge and Chilling

27. MEK Dewaxing, Ketone Dewaxing, MEK-Toluene Dewaxing

28. Deoiling (wax)

29. Naphthenic Lubes Production

30. SO_2 Extraction

34. Wax Pressing

35. Wax Plant (with Neutral Separation)

36. Furfural Extraction

37. Clay Contacting - Percolation

38. Wax Sweating

39. Acid Treating

40. Phenol Extraction

Reforming and Alkylation Processes

8. H_2SO_4 Alkylation

12. Catalytic Reforming

[50 FR 28528, July 12, 1985; 50 FR 32414, Aug. 12, 1985]