



## **KANSAS AIR QUALITY PROGRAM OVERVIEW**

### **INFORMATIONAL SHEET**

**KDHE, BUREAU OF AIR**

**Telephone: (785) 296-1570**

**Fax: (785) 291-3953**

**Web Site: [www.kdhe.state.ks.us](http://www.kdhe.state.ks.us)**

This informational sheet is intended for purposes of summarizing program requirements. Official versions of the Kansas air quality act and regulations should be consulted prior to making any final decision regarding the issues addressed.

Emissions are calculated as potential-to-emit (PTE) for all programs except emissions fees and PSD permitting.

### **I. Kansas Air Quality Program Summary**

#### **A. Preconstruction Review - K.A.R. 28-19-300**

1. Prevention of Significant Deterioration (PSD) Permits
  - K.A.R. 28-19-302(a)
  - K.A.R. 28-19-350, which adopts portions of 40 CFR 52.21
2. State Construction Permits - K.A.R. 28-19-300(a)
3. State Construction Approvals - K.A.R. 28-19-300(b)

#### **B. Operating Permits - K.A.R. 28-19-500**

1. Class I operating permits - K.A.R. 28-19-500(a)
2. Class II operating permits (FESOPs) - K.A.R. 28-19-500(b)

#### **C. Annual Emissions Fee - K.A.R. 28-19-202**

#### **D. Other Requirements**

### **II. Preconstruction Review - K.A.R. 28-19-300**

#### **A. Prevention of Significant Deterioration (PSD) Permits - K.A.R. 28-19-302(a)**

- K.A.R. 28-19-350, which adopts portions of 40 CFR 52.21

1. Purpose: To assure that emissions from new major PSD sources, emissions from major modifications to existing major PSD sources, and emissions from major modifications to existing non-major PSD sources do not cause or contribute to a violation of the national ambient air quality standards (NAAQS) and do not cause or contribute to a violation of the allowable ambient air increments.
2. PSD Major source definition
  - a. 100 tons/yr PTE for listed sources in 40 CFR 52.21 (b)(1)(i)(a)
  - b. 250 tons/yr PTE for other sources in 40 CFR 52.21 (b)(1)(i)(b)

3. Applicability

a. Construction of new major PSD sources and modifications to minor PSD sources

- ≥ 100 tons/yr emission increase for listed sources
- ≥ 250 tons/yr emission increase for all other sources

b. Modifications to major PSD sources

For any regulated pollutant, the emission increase of the modification equals or exceeds the PSD significance levels and the "net emissions increase" equals or exceeds the PSD significance level

4. The following table summarizes PSD significance levels.

<b>Regulated Pollutants</b>	<b>PSD Significance Levels (tons/year)</b>
Carbon monoxide (CO)	100
Nitrogen oxides (NOx)	40
Sulfur dioxide (SO2)	40
Particulate matter - PM	25
PM10	15
PM2.5	10
Ozone, regulated as Volatile Organic Compounds (VOC) or NOx	40
Lead	0.6
Fluorides	3
Sulfuric acid mist	7
Hydrogen sulfide (H2S)	10
Total reduced sulfur compounds (TRS) (including H2S)	10
Reduced sulfur compounds (including H2S)	10
Municipal waste combustor organics	3.5 x 10 <sup>-6</sup>
Municipal waste combustor metals	15
Municipal waste combustor acid gases	40
Municipal solid waste landfills emissions	50
Greenhouse gases (CO2 equivalent)	75,000
A regulated New Source Review (NSR) pollutant not listed above, as defined in 40 CFR 52.21(b)(50), including Appendix A Tables A-1 through A-3	any emission rate

**B. State Construction Permits - K.A.R. 28-19-300(a)**

1. Purpose: To assure that emissions from new construction and modifications do not cause or contribute to violations of the NAAQS and to assure new construction and modifications will comply with applicable regulations.
2. Preconstruction permits are required for following:
  - a. New sources with PTE of a regulated pollutant equal or above state permit PTE thresholds;
  - b. Modifications of existing sources if the PTE increase of a regulated pollutant equals or exceeds the state permit PTE threshold;
  - c. New affected (Title IV) sources or modification that triggers acid rain requirements;
  - d. Incinerators (except small residential incinerators); or
  - e. New major source of hazardous air pollutants (HAPs), project increase above major HAPs thresholds, or causes the source to become a major source.

3. The following table summarizes state permit PTE thresholds.

<b>Regulated pollutants</b>	<b>State permit PTE thresholds (tons per year)</b>
PM	25
PM10	15
PM or PM10 <b>agricultural</b>	100
SO2 or sulfur trioxide (SO3)	40
CO	100
VOC	40
NOx	40
Lead or lead compounds	0.6
Single HAPs	10
Combined HAPs	25

**C. State Construction Approvals - K.A.R. 28-19-300(b)**

1. Purpose: To assure that emissions from new construction and modifications do not cause or contribute to violations of the NAAQS and to assure new construction and modifications will comply with applicable regulations.
2. Preconstruction approvals are required for following if preconstruction permit is not required:
  - a. New sources with emission of regulated pollutant above state approval PTE threshold;
  - b. Modifications of existing sources if increase of regulated pollutant emissions exceeds state approval PTE threshold;
  - c. Most minor NSPS, Part 61 NESHAP and Part 63 NESHAP sources; or
  - d. Sources which apply and qualify for an approval under K.A.R. 28-19-302(c).
3. The following table summarizes state approval regulated pollutants.

<b>Regulated pollutants</b>	<b>State Approval PTE thresholds (lb per hour)</b>
PM	5
PM10 (agricultural)	5
PM10 (other)	2
SO2 or SO3	2
CO	50 lb/24-hour
VOC (except WY or JO counties)	50 lb/24-hour
VOC (WY or JO counties)	15 lb/24-hour or 3 lb/hour
NOx	50 lb/24-hour
Lead or lead compounds	0.1

4. K.A.R. 28-19-302(c)
  - a. Allows most sources with actual emissions below state permit thresholds to take a restriction in an approval and be treated in the same manner as a source with potential emissions below those thresholds;
  - b. An operational restriction in an approval will reduce the PTE below construction permit thresholds if the reduced PTE is not for the purpose of avoiding PSD or a Class I or II operating permit.

**III. Operating Permits - K.A.R. 28-19-500**

**A. Class I operating permits - K.A.R. 28-19-500(a)**

1. Purpose: Development of a single document which contains all air quality requirements with which the source must comply.
2. Kansas Class I operating permit satisfies the requirements of Title V of CAA
3. The following air emission sources are required to obtain a Class I operating permit:

- a. PTE of any individual HAP is greater than or equal 10 tons/yr;
- b. PTE of combined HAPs is greater than or equal 25 tons/yr;
- c. PTE of any other regulated pollutant greater than or equal 100 tons/yr;
- c. Affected (Title IV Acid Rain) source;
- d. Solid waste incinerator regulated under CAA section 129(e);
- e. Non-deferred or non-exempted NSPS source;
- f. Non-deferred or non-exempted 40 CFR Part 61 or Part 63 NESHAP source;
- g. Landfills subject to NSPS WWW.

- 4. See Appendix A for list of regulated pollutants for applicability purposes
- 5. Special rules for non-major or area sources required to get Class I permits - K.A.R. 28-19-511(h)

**B. Class II operating permits (Federally enforceable state operating permits [FESOPs]) -**  
K.A.R. 28-19-500(b)

- 1. Purpose: To provide a means to reduce the potential-to-emit of a source through federally enforceable operating permit restrictions.
- 2. Reduce PTE through federally enforceable limitation on physical or operational capacity
- 3. Permits-by-rule
  - a. Reciprocating engines
  - b. Organic solvent evaporative sources
  - c. Hot mix asphalt facilities
  - d. Sources with actual emissions less than 50% of major source thresholds
- 4. Regulated pollutants same as for Class I operating permits

**IV. Annual Emissions Fee - K.A.R. 28-19-202**

**A. Based on actual emissions**

**B. Pollutants for which fees are charged:**

- 1. Sulfur oxides measured as SO<sub>2</sub>
- 2. PM<sub>10</sub>
- 3. NO<sub>x</sub> measured as NO<sub>2</sub>
- 4. VOCs
- 5. HAPs

**C. Fees are due for:**

- 1. Emissions of an individual HAP if the actual emissions of that HAP exceed 10 tons/yr;
- 2. Emissions of combined HAPs if the actual combined HAP emissions exceed 25 tons/yr; and
- 3. Individual emissions of any of the other four pollutants if the actual emissions of that individual pollutant exceeds 100 tons/yr.

**D. There is no double-charging for any pollutant**

**E. There is a 4000 tons/year per pollutant cap**

## V. Other Requirements

### A. NSPS - K.A.R. 28-19-720

1. Purpose: Standards reflecting economically achievable emission limitations applicable to newly constructed, reconstructed or modified sources promulgated by EPA pursuant to section 111 of the CAA (and section 129(a) of the CAA)
2. 40 CFR Part 60 is adopted by reference as indicated in K.A.R. 28-19-720.
3. Applicability determined by:
  - a. source or facility category
  - b. date of construction, modification, reconstruction
4. Emission rate does not trigger applicability, though capacity is sometimes a factor

### B. Part 61 NESHAPs - K.A.R. 28-19-735

1. Purpose: Health-based standards promulgated by EPA pursuant to section 112 of the CAA as in effect prior to the CAAA of 1990
2. 40 CFR Part 61 is adopted by reference as indicated in K.A.R. 28-19-735.
3. Applicability determined by:
  - a. pollutant emitted
  - b. source category
4. Capacity is sometimes a factor

### C. Part 63 NESHAPs - K.A.R. 28-19-750

1. Purpose: Technology based standards (to be followed by health-based standards) promulgated by EPA pursuant to Title I section 112 of the CAA as in effect after the CAAA of 1990
2. 40 CFR Part 63 is adopted by reference as indicated in K.A.R. 28-19-750.
3. Implements Title III of CAAA of 1990
4. Applicability determined by source category

### D. Johnson and Wyandotte county sources - K.A.R. 28-19-61 through 77, and K.A.R. 28-19-712 through 719

1. Purpose: Reasonable available control technology (RACT) rules promulgated when Wyandotte and Johnson counties were nonattainment for ozone and which remain in effect as part of the maintenance plan
2. Applies only to specified VOC source categories located in Johnson or Wyandotte counties
3. Some source categories have PTE requirements
4. Some source categories have capacity requirements

### E. General requirements

1. PM emissions process weight rates - K.A.R. 28-19-20
2. Hydrocarbon emissions - K.A.R. 28-19-23
3. Carbon monoxide emissions - K.A.R. 28-19-24
4. Sulfuric acid mist emissions from sulfuric acid production units - K.A.R. 28-19-26

5. Emissions from indirect heating equipment - K.A.R. 28-19-30 through 28-19-32
6. Incinerator emissions - K.A.R. 28-19-40 through 28-19-43
7. Open burning restrictions - K.A.R. 28-19-645 through 28-19-648
8. Opacity requirements - K.A.R. 28-19-650
9. Existing municipal solid waste landfills. - K.A.R. 28-19-721 through 28-19-727
10. Hospital/medical/infectious waste incinerators - K.A.R. 28-19-729 through 28-19-729h
11. Construction of new major HAP sources or reconstruction of existing major HAP sources - K.A.R. 28-19-752a
12. HAP sources: USEPA fails to meet certain deadlines (MACT Hammer) - K.A.R. 28-19-753
13. Conformity rules - K.A.R. 28-19-800 through 28-19-801

**F. Acid rain deposition (Title IV of CAA implementation) - K.A.R. 28-19-275**

**APPENDIX: REGULATED POLLUTANTS for purposes of operating permit applicability  
(Does not include the section 112(r) list of pollutants)**

**1. Pollutants for which a NAAQS has been established (criteria pollutants)**

<b>Table A-1. Pollutants for which a NAAQS Has Been Established</b>
nitrogen dioxide (NO <sub>2</sub> )
sulfur dioxide (SO <sub>2</sub> )
carbon monoxide (CO)
particulate matter < 10 microns (PM <sub>10</sub> )
particulate matter < 2.5 microns (PM <sub>2.5</sub> ), including precursors nitrogen oxides and sulfur dioxide
ground level ozone, including precursors nitrogen oxides and volatile organic compounds (VOCs)
Lead

**2. Pollutants regulated under new source performance standards (NSPS)**

<b>Table A-2. Pollutants for which a 40 CFR Part 60 New Source Performance Standard Has Been Established</b>
criteria pollutants (including VOCs and NO <sub>x</sub> )
dioxin/furan
fluorides
hydrogen chloride
hydrogen sulfide (H <sub>2</sub> S)
sulfuric acid mist
total reduced sulfur
reduced sulfur compounds

**3. Class I and Class II substances regulated under Title VI of the Clean Air Act**

<b>Table A-3. Class I and Class II Substances</b>	
<b>Class I Substances</b>	
carbon tetrachloride	chlorofluorocarbon-212 (CFC-212)
chlorofluorocarbon-11 (CFC-11)	chlorofluorocarbon-213 (CFC-213)
chlorofluorocarbon-12 (CFC-12)	chlorofluorocarbon-214 (CFC-214)
chlorofluorocarbon-13 (CFC-13)	chlorofluorocarbon-215 (CFC-215)
chlorofluorocarbon-111 (CFC-111)	chlorofluorocarbon-216 (CFC-216)
chlorofluorocarbon-112 (CFC-112)	chlorofluorocarbon-217 (CFC-217)
chlorofluorocarbon-113 (CFC-113)	halon-1211
chlorofluorocarbon-114 (CFC-114)	halon-1301
chlorofluorocarbon-115 (CFC-115)	halon-2402
chlorofluorocarbon-211 (CFC-211)	methyl chloroform
<b>Class II Substances</b>	
hydrochlorofluorocarbon-21 (HCFC-21)	hydrochlorofluorocarbon-226 (HCFC-226)
hydrochlorofluorocarbon-22 (HCFC-22)	hydrochlorofluorocarbon-231 (HCFC-231)
hydrochlorofluorocarbon-31 (HCFC-31)	hydrochlorofluorocarbon-232 (HCFC-232)
hydrochlorofluorocarbon-121 (HCFC-121)	hydrochlorofluorocarbon-233 (HCFC-233)
hydrochlorofluorocarbon-122 (HCFC-122)	hydrochlorofluorocarbon-234 (HCFC-234)
hydrochlorofluorocarbon-123 (HCFC-123)	hydrochlorofluorocarbon-235 (HCFC-235)
hydrochlorofluorocarbon-124 (HCFC-124)	hydrochlorofluorocarbon-241 (HCFC-241)
hydrochlorofluorocarbon-131 (HCFC-131)	hydrochlorofluorocarbon-242 (HCFC-242)
hydrochlorofluorocarbon-132 (HCFC-132)	hydrochlorofluorocarbon-243 (HCFC-243)
hydrochlorofluorocarbon-133 (HCFC-133)	hydrochlorofluorocarbon-244 (HCFC-244)
hydrochlorofluorocarbon-141 (HCFC-141)	hydrochlorofluorocarbon-251 (HCFC-251)
hydrochlorofluorocarbon-142 (HCFC-142)	hydrochlorofluorocarbon-252 (HCFC-252)
hydrochlorofluorocarbon-221 (HCFC-221)	hydrochlorofluorocarbon-253 (HCFC-253)
hydrochlorofluorocarbon-222 (HCFC-222)	hydrochlorofluorocarbon-261 (HCFC-261)
hydrochlorofluorocarbon-223 (HCFC-223)	hydrochlorofluorocarbon-262 (HCFC-262)
hydrochlorofluorocarbon-224 (HCFC-224)	hydrochlorofluorocarbon-271 (HCFC-271)
hydrochlorofluorocarbon-225 (HCFC-225)	

#### 4. 40 CFR Part 61 NESHAP pollutants

<b>Table A-4. Pollutants for which a 40 CFR Part 61 National Emission Standard for Hazardous Air Pollutants Has Been Established</b>
arsenic
asbestos
beryllium
benzene
mercury
radionuclides
vinyl chloride

#### 5. Hazardous air pollutants (HAPs) Regulated under Title I, Section 112 of the Clean Air Act

<b>Table A-5. Hazardous Air Pollutants</b>	
<b>CAS Number</b>	<b>Chemical Name</b>
79345	1,1,2,2-Tetrachloroethane
79005	1,1,2-Trichloroethane
57147	1,1-Dimethyl hydrazine
120821	1,2,4-Trichlorobenzene
96128	1,2-Dibromo-3-chloropropane
122667	1,2-Diphenylhydrazine
106887	1,2-Epoxybutane
75558	1,2-Propylenimine (2-Methyl aziridine)
106990	1,3-Butadiene
542756	1,3-Dichloropropene
1120714	1,3-Propane sultone
106467	1,4-Dichlorobenzene(p)
123911	1,4-Dioxane (1,4-Diethyleneoxide)
540841	2,2,4-Trimethylpentane
1746016	2,3,7,8-Tetrachlorodibenzo-p-dioxin
95954	2,4,5-Trichlorophenol
88062	2,4,6-Trichlorophenol
94757	2,4-D, salts and esters
51285	2,4-Dinitrophenol
121142	2,4-Dinitrotoluene
95807	2,4-Toluene diamine
584849	2,4-Toluene diisocyanate
53963	2-Acetylaminofluorene
532274	2-Chloroacetophenone
79469	2-Nitropropane
91941	3,3-Dichlorobenzidene
119904	3,3-Dimethoxybenzidine
119937	3,3'-Dimethyl benzidine
101779	4,4'-Methylenedianiline
101144	4,4-Methylene bis(2-chloroaniline)
534521	4,6-Dinitro-o-cresol, and salts
92671	4-Aminobiphenyl
92933	4-Nitrobiphenyl
100027	4-Nitrophenol
75070	Acetaldehyde
60355	Acetamide
75058	Acetonitrile
98862	Acetophenone
107028	Acrolein
79061	Acrylamide
79107	Acrylic acid
107131	Acrylonitrile
107051	Allyl chloride
62533	Aniline

<b>Table A-5. Hazardous Air Pollutants</b>	
<b>CAS Number</b>	<b>Chemical Name</b>
79345	1,1,2,2-Tetrachloroethane
79005	1,1,2-Trichloroethane
1332214	Asbestos
71432	Benzene (including benzene from gasoline)
92875	Benzidine
98077	Benzotrichloride
100447	Benzyl chloride
57578	beta-Propiolactone
92524	Biphenyl
117817	Bis(2-ethylhexyl)phthalate (DEHP)
542881	Bis(chloromethyl)ether
75252	Bromoform
156627	Calcium cyanamide
133062	Captan
63252	Carbaryl
75150	Carbon disulfide
56235	Carbon tetrachloride
463581	Carbonyl sulfide
120809	Catechol
133904	Chloramben
57749	Chlordane
7782505	Chlorine
79118	Chloroacetic acid
108907	Chlorobenzene
510156	Chlorobenzilate
67663	Chloroform
107302	Chloromethyl methyl ether
126998	Chloroprene
1319773	Cresols/Cresylic acid (isomers and mixture)
98828	Cumene
3547044	DDE
334883	Diazomethane
132649	Dibenzofurans
84742	Dibutylphthalate
111444	Dichloroethyl ether (Bis(2-chloroethyl)ether)
62737	Dichlorvos
111422	Diethanolamine
64675	Diethyl sulfite
60117	Dimethyl aminoazobenzene
79447	Dimethyl carbamoyl chloride
68122	Dimethyl formamide
131113	Dimethyl phthalate
77781	Dimethyl sulfate
106898	Epichlorohydrin (1-Chloro-2,3-epoxypropane)
140885	Ethyl acrylate
100414	Ethyl benzene
51796	Ethyl carbamate (Urethane)
75003	Ethyl chloride (Chloroethane)
106934	Ethylene dibromide (Dibromoethane)
107062	Ethylene dichloride (1,2-Dichloroethane)
107211	Ethylene glycol
151564	Ethylene imine (Aziridine)
75218	Ethylene oxide
96457	Ethylene thiourea
75343	Ethylidene dichloride (1,1-Dichloroethane)
50000	Formaldehyde
76448	Heptachlor

<b>Table A-5. Hazardous Air Pollutants</b>	
<b>CAS Number</b>	<b>Chemical Name</b>
79345	1,1,2,2-Tetrachloroethane
79005	1,1,2-Trichloroethane
118741	Hexachlorobenzene
87683	Hexachlorobutadiene
77474	Hexachlorocyclopentadiene
67721	Hexachloroethane
822060	Hexamethylene-1,6-diisocyanate
680319	Hexamethylphosphoramide
110543	Hexane
302012	Hydrazine
7647010	Hydrochloric acid
7664393	Hydrogen fluoride (Hydrofluoric acid)
123319	Hydroquinone
78591	Isophorone
58899	Lindane (all isomers)
108316	Maleic anhydride
108394	m-Cresol
67561	Methanol
72435	Methoxychlor
74839	Methyl bromide (Bromomethane)
74873	Methyl chloride (Chloromethane)
71556	Methyl chloroform (1,1,1-Trichloroethane)
60344	Methyl hydrazine
74884	Methyl iodide (Iodomethane)
108101	Methyl isobutyl ketone (Hexone)
624839	Methyl isocyanate
80626	Methyl methacrylate
1634044	Methyl tert butyl ether
75092	Methylene chloride (Dichloromethane)
101688	Methylene diphenyl diisocyanate (MDI)
108383	m-Xylenes
121697	N,N-Diethyl aniline (N,N-Dimethylaniline)
91203	Naphthalene
98953	Nitrobenzene
62759	N-Nitrosodimethylamine
59892	N-Nitrosomorpholine
684935	N-Nitroso-N-methylurea
90040	o-Anisidine
95487	o-Cresol
95534	o-Toluidine
95476	o-Xylenes
56382	Parathion
106445	p-Cresol
82688	Pentachloronitrobenzene (Quintobenzene)
87865	Pentachlorophenol
108952	Phenol
75445	Phosgene
7803512	Phosphine
7723140	Phosphorus
85449	Phthalic anhydride
1336363	Polychlorinated biphenyls (Aroclors)
106503	p-Phenylenediamine
123386	Propionaldehyde
114261	Propoxur (Baygon)
78875	Propylene dichloride (1,2-Dichloropropane)
75569	Propylene oxide
106423	p-Xylenes

Table A-5. Hazardous Air Pollutants	
CAS Number	Chemical Name
79345	1,1,2,2-Tetrachloroethane
79005	1,1,2-Trichloroethane
91225	Quinoline
106514	Quinone
100425	Styrene
96093	Styrene oxide
127184	Tetrachloroethylene (Perchloroethylene)
7550450	Titanium tetrachloride
108883	Toluene
8001352	Toxaphene (chlorinated camphene)
79016	Trichloroethylene
121448	Triethylamine
1582098	Trifluralin
108054	Vinyl acetate
593602	Vinyl bromide
75014	Vinyl chloride
75354	Vinylidene chloride (1,1-Dichloroethylene)
1330207	Xylenes (isomers and mixture)
-	Antimony Compounds
-	Arsenic Compounds (inorganic including arsine)
-	Beryllium Compounds
-	Cadmium Compounds
-	Chromium Compounds
-	Cobalt Compounds
-	Coke Oven Emissions
-	Cyanide Compounds <sup>1</sup>
-	Glycol ethers <sup>2</sup>
-	Lead Compounds
-	Manganese Compounds
-	Mercury Compounds
-	Fine mineral fibers <sup>3</sup>
-	Nickel Compounds
-	Polycyclic Organic Matter <sup>4</sup>
-	Radionuclides (including radon) <sup>5</sup>
-	Selenium Compounds

NOTE: For all listings above which contain the word "compounds" and for glycol ethers, the following applies: Unless otherwise specified, these listings are defined as including any unique chemical substance that contains the named chemical (i.e., antimony, arsenic, etc.) as part of that chemical's infrastructure.

<sup>1</sup> X'CN where X = H' or any other group where a formal dissociation may occur. For example KCN or Ca(CN)<sub>2</sub>

<sup>2</sup> Includes mono- and di- ethers of ethylene glycol, diethylene glycol, and triethylene glycol R-(OCH<sub>2</sub>CH<sub>2</sub>)<sub>n</sub>-OR' where n = 1, 2, or 3

R = alkyl or aryl groups

R' = R, H, or groups which, when removed, yield glycol ethers with the structure: R-(OCH<sub>2</sub>CH)<sub>n</sub>-OH. Polymers are excluded from the glycol category. **Ethylene glycol monobutyl ether has been delisted.**

<sup>3</sup> Includes mineral fiber emissions from facilities manufacturing or processing glass, rock, or slag fibers (or other mineral derived fibers) of average diameter 1 micrometer or less.

<sup>4</sup> Includes organic compounds with more than one benzene ring, and which have a boiling point greater than or equal to 100 °C.

<sup>5</sup> A type of atom which spontaneously undergoes radioactive decay.