

KERN COUNTY
AIR POLLUTION CONTROL DISTRICT

“SERVING EASTERN KERN COUNTY”

ANNUAL CALIFORNIA CLEAN AIR ACT
OZONE AIR QUALITY ATTAINMENT PLAN
IMPLEMENTATION PROGRESS REPORT

#9

December 15, 2005

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Foreword

Section 40924(a) of the California Health and Safety Code (CH&SC) requires:

"On or before December 31 of each year following the State Board's approval of a District's Attainment Plan, the District shall prepare and submit a report to the State Board summarizing its progress in meeting the schedules for developing, adopting, or implementing Air Pollution Control Measures contained in the District's Plan."

Kern County APCD's California Clean Air Act Ozone Air Quality Attainment Plan was approved by the California Air Resources Board (CARB) on February 18, 1993. Therefore, KCAPCD's 9th annual Implementation Progress Report is due to CARB on December 31, 2005.

This document is intended to fulfill this mandate.

Background

KCAPCD's California Clean Air Act (CCAA) Ozone Air Quality Attainment Plan (Plan) was drafted in 1991 and amended in 1992. In 1991, due to the absence of ozone monitoring data collected in East Kern, KCAPCD's planners had no choice but to use Barstow monitoring data in preparation of the plan. This resulted in utilization of a design value of 0.11 ppm. The California Ambient Air Quality Standard (CAAQS) for ozone is 0.09 ppm. (A "design value" is supposed to reflect an area's typical level of "locally-generated-exceedance", i.e., an exceedance unaffected by transport.)

Using this design value and projecting an attainment date of year-end 1994, established East Kern as a "moderate" nonattainment area. This design value, attainment date, and degree of nonattainment combined to dictate volatile organic compound and oxides of nitrogen control measures necessary to attain the standard.

Originally, KCAPCD's plan included Transportation Control Measures (TCMs). However, with downsizing of the District to just include East Kern, a portion of the county with no urban areas of 50,000 or more population, 1993 amendments to the 1988 California Clean Air Act "exempt" KCAPCD from developing mandatory TCMs. These control measures were removed from the plan with KCAPCD's 1994 triennial revisions. Recent state and federal legislation now limit an air district's ability to impose mandatory transportation control measures. Mandatory TCMs are not necessary for East Kern to attain California Ambient Air Quality Standards.

Furthermore, 1993 amendments of the Act combined with ozone monitoring data collected at Mojave have resulted in KCAPCD remaining a "moderate" nonattainment area. 1993 amendments to the CCAA (Section 40921.5) require a District to assign its degree of nonattainment based upon actual monitoring data "minus" impact of transported ozone (Section 40925).

KCAPCD's "Barstow design day" was 0.11 ppm. An analysis of 1993 and 1994 smog season data conducted during preparation of the District's Federal Clean Air Act Attainment Demonstration revealed there are no self-generated exceedances of the ozone CAAQS, all exceedances occurred during transport days. It can be concluded that the actual KCAPCD's design value is lower than 0.11 ppm. The California Air Resources Board staff agrees with this analysis.

Triennial revisions to KCAPCD's Plan made in 1994 reflect these findings.

Introduction

Reduced ambient ozone levels have occurred with implementation of retrofit controls for volatile organic compounds (VOCs) and oxides of nitrogen (NOx) on East Kern's stationary sources, but attainment of the ozone CAAQS can be expected only when inflowing air from upwind air districts do not contain ozone and ozone precursors in sufficient quantities to cause exceedances. In 1995, KCAPCD utilized CH&SC, Section 40925(b) to modify its Plan, i.e., delete control measures inappropriate for an area overwhelmingly impacted by transport. KCAPCD's 1994 Federal Clean Air Act Amendments (FCAA) Ozone Attainment Demonstration projected attainment with National Ambient Air Quality Standards (NAAQS) by 1999; Mojave monitoring data show the federal ozone NAAQS of 0.12 ppm has been attained. Consequently, KCAPCD has been redesignated to attainment for the federal one-hour ozone NAAQS. However, attainment with ozone CAAQS and the new ozone eight-hour NAAQS of 0.08 ppm has not occurred. Due to ozone CAAQS exceedances being caused by overwhelming transport, Section 40925(c) (comprehensive plan revision) did not apply to KCAPCD, but did apply to upwind districts.

Due to reductions in KCAPCD pollutant emissions and upwind emissions, East Kern's ozone air quality has significantly improved since 1987.

In summary, KCAPCD is recognized by CARB staff as a nonurbanized, moderate ozone nonattainment District overwhelmingly impacted by upwind transport. Much progress has been made to reduce ozone precursor emissions. Mandates and intent of the California Clean Air Act have been fulfilled and KCAPCD's Attainment Plan has been revised to reflect new statutory mandates and additional knowledge pertaining to source of air quality standards exceedances.

Rules Adopted 1987-2005

As a "moderate" ozone nonattainment area, KCAPCD is required by the CCAA (Section 40918(b)) to adopt retrofit Reasonably Available Control Technology rules for all sources of ozone precursor emissions. Volatile Organic Compounds (VOCs) and Oxides of Nitrogen (NOx) are both considered ozone precursors.

This mandate has been fulfilled. Table I, Page 3 describes VOC control Rules adopted 1987-2004. Table II, Page 4 describes NOx control Rules adopted 1987-2004. Rules adopted before 1987, but amended since to become more effective, are also listed.

Implementation of these Rules has not only reduced ozone formation, but has also reduced photochemical respirable particulates formation because both VOC and NOx contribute to these reactions.

Table III, Page 5 is taken from KCAPCD's triennially-updated California Clean Air Act Ozone Air Quality Attainment Plan. One can see by comparing expected adoption dates on this Table with actual adoption dates appearing on Tables I and II, original expectations were overly optimistic. However, final implementation dates occurred before year-end 1997 as required by the 1990 Federal Clean Air Act amendments.

TABLE I

VOC Control Rules Adopted (Amended) 1987-2004

<u>Rule</u>	<u>Description</u>	<u>Adoption (amendment) Date</u>
410.1	Architectural Coatings	(5/1/97)
410.3	Organic Solvent Degreasing	(5/7/98)
410.4	Surface Coating of Metal Parts and Products	(3/7/96)
410.4A	Motor Vehicle And Mobile Equipment Refinishing Operations	(3/7/96)
410.5	Cutback, Slow Cure, And Emulsified Asphalt - Paving and Maintenance Operations	(3/7/96)
410.6	Perchloroethylene Dry Cleaning System	(5/6/91)
410.6A	Petroleum Solvent Dry Cleaning Operations	5/6/91
410.7	Graphic Arts	(3/7/96)
411	Storage of Organic Liquids	(3/7/96)
412	Gasoline Transfer into Stationary Storage Containers, Delivery Vessels, and Bulk Plants	(5/6/91)
412.1	Transfer of Gasoline into Vehicle Fuel Tanks	(11/9/92)
413	Organic Liquid Loading	(3/7/96)
414	Waste Water Separators	(3/7/96)
414.1	Valves, Pressure Relief Valves, Flanges, Threaded Connections and Process Drains at	(3/7/96)

	Petroleum Refineries and Chemical Plants	
414.2	Soil Decontamination (Volatile Organic Compounds)	5/6/99
414.5	Pump and Compressor Seals at Petroleum Refineries and Chemical Plants	(3/7/96)
416	Wood Burning Heaters and Wood Burning Fireplaces	7/8/4
417	Agricultural and Prescribed Burning	(7/24/3)
418.1	Medical Waste Incinerators (Dioxins)	7/13/92
422.1	Municipal Solid Waste Landfills (Nonmethane Organic Compounds)	1/8/98
428	Commercial Offsite Multiuser Hazardous Waste and Nonhazardous Waste Disposal Facilities	3/1/88
430	Sterilizers (Ethylene Oxides)	7/13/92

TABLE II

NOx Control Rules Adopted (Amended) 1987-2004

<u>Rule</u>	<u>Description</u>	<u>Adoption Date</u>
424	Residential Water Heaters (Oxides of Nitrogen)	4/19/93
425	Cogeneration Gas Turbine Engines (Oxides of Nitrogen)	8/16/93
425.1	Hot Mix Asphalt Paving Plants (Oxides of Nitrogen)	10/13/94
425.2	Boilers, Steam Generators, and Process Heaters (Oxides of Nitrogen)	(7/10/97)
425.3	Portland Cement Kilns (Oxides of Nitrogen)	10/13/94
427	Stationary Piston Engines (Oxides of Nitrogen)	(11/1/01)

TABLE III

FIVE YEAR RULEMAKING CALENDAR

To demonstrate conformance to mandates of the California Clean Air Act and to demonstrate expeditious progress toward the goal of healthful air, the following rulemaking calendar was proposed in 1992. This calendar shows the District had implemented, in full, all control measures by 1997.

<u>Measures</u>	<u>CM#^{1.}</u>	<u>Draft</u>	<u>Implementation Date</u>	
			<u>Adopt</u>	<u>Comply</u>
Stationary Gas Turbine Engines	S-20	1/92	7/92	1/97
Residential & Commercial Water Heaters	S-18	1/92	1/93	Ongoing ²
Portland Cement Kilns	S-17	1/92	1/93	5/97
Hot Mix Asphalt Batch Plants-Combustion	S-7	7/92	7/93	1/95
Natural Gas Combustion in External Combustion Devices	S-13	7/92	7/93	1/95
Organic Solvent Degreasing	S-15	7/92	7/93	1/95

<u>Measures</u>	<u>CM#^{1.}</u>	<u>Draft</u>	<u>Implementation Date</u>	
			<u>Adopt</u>	<u>Comply</u>
Architectural Coatings	S-3	1/93	1/94	7/95
Motor Vehicle & Mobile Equipment Coating	S-12	1/93	1/94	7/95
Metal Parts Painting	S-11	1/93	1/94	7/95
Gasoline Transfer into Stationary Storage Containers and Bulk Plants	S-5	1/93	1/94	7/95
Industrial and Commercial Package Boilers	S-9	7/93	7/94	1/97
Stationary Piston Engines	S-16	7/93	7/94	1/97

Notes: 1. CM# means control measure number as used in KCAPCD's California Clean Air Act Attainment Plan.

2. New heaters sold had to conform by 11/1/93, existing heaters have to conform upon replacement.

Rules Under Development

When KCAPCD's Plan was first adopted in 1991, KCAPCD (East Kern) was identified as "serious" nonattainment. Consequently, KCAPCD's five year rulemaking calendar reflected "serious" area mandates, i.e. retrofit Best Available Control Technology (BARCT) and Transportation Control Measures (TCMs).

In June of 1992, KCAPCD's Plan was modified to reflect a "moderate" nonattainment designation, but its rulemaking calendar remained unchanged.

Now that TCMs are neither required nor necessary for attainment, and retrofit Reasonably Available Control Technology instead of BARCT is required, KCAPCD's rulemaking activities are complete for purposes of developing VOC and NO_x control Rules to satisfy CCAA mandates. Since 1996, several of these Rules have been amended to bring them up to date and to improve enforceability.

Referring to Table III, Rules adopted include control measures S-20, S-18, S-17, S-7, S-15, S-3, S-12, S-11, S-5, S-9 (and S-13), and S-16.

Rules originally proposed for amendment to meet retrofit BACT, but already satisfying retrofit RACT include control measures S-15, S-3, S-12, S-11, and S-16.

Amendment of Rule 410.1 (Architectural Coatings) to require lowest VOC available coatings is contemplated for 2006.

It is clear, attainment of California's ozone ambient air quality standard will not occur until mobile source emissions have been adequately controlled by CARB and U.S. EPA and transported pollution has been reduced by upwind districts.

Rule Effectiveness

Now that Kern County APCD has adopted Retrofit Reasonably Available Control Technology requirements for all appropriate stationary source categories, KCAPCD has been concentrating its efforts on improving rule effectiveness. Rule effectiveness has been improved in several ways:

1. Insuring stationary source operators are thoroughly familiar with applicable emission limits, work practice, and record keeping requirements;
2. Insuring District inspectors are thoroughly trained; and
3. Insuring sources receive a sufficient number of inspections.

KCAPCD will be expanding its efforts in 2006 to:

1. Coordinate with city and county building inspectors to have them verify only low-NO_x residential water heaters, which meet KCAPCD Rule 424, are being sold and installed and only Rule 416.1 compliant wood burning appliances and fireplaces are installed;
2. Visit retail stores to verify only coatings compliant with Rules 410.1, 410.4, and 410.4A are being sold; and
3. Visit road construction or maintenance sites to verify slow-cure cutback asphalt is being used (Rule 410.5).

Transportation Control Measures

As previously discussed, KCAPCD is not required to develop Transportation Control Measures such as a commute-based trip reduction rule.

KCAPCD and Kern Council of Governments (Kern COG) will continue, however, to encourage East Kern's larger employers to implement such programs where it makes sense.

Because indirect sources (shopping centers, housing subdivisions, etc.) of pollutants are significant, KCAPCD will continue to submit, pursuant to KCAPCD Rule 106 (Land Use), suggestions to developers describing ways to mitigate development project emissions.