South Coast
Air Quality Management District
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BOARD MEETING DATE: March 6, 2009 AGENDA NO. 37

REPORT: Annual RECLAIM Audit Report for 2007 Compliance Year

SYNOPSIS: The annual report on the NOx and SOx RECLAIM program is prepared in accordance with Rule 2015 - Backstop Provisions. The report assesses emission reductions, availability of RECLAIM Trading Credits (RTCs) and their average annual prices, job impacts, compliance issues, and other measures of performance for the fourteenth year of this program. This is the second annual RECLAIM audit report to employ the new price reporting and averaging methodology which analyzes discrete-year RTC trade price data separately from infinite-year block RTC trade price data. In addition, recent trends in trading future year RTCs are analyzed and presented in this report. Further, a list of facilities that did not reconcile their emissions for the compliance year is included with the report.

COMMITTEE: Stationary Source, February 20, 2009, Recommended for Board Consideration of Approval

RECOMMENDED ACTION:
Approve the attached annual report.

Barry R. Wallerstein, D.Env.
Executive Officer

MN:FEL:DL

Background

The Board adopted the RECLAIM program on October 15, 1993, to provide a more flexible compliance program for RECLAIM facilities, which represent AQMD's largest emitters of NOx and SOx pollutants. RECLAIM was designed to meet all state and federal clean air program requirements and a variety of performance criteria in order to ensure public health protection, air quality improvement, effective enforcement, no increase in implementation costs, and minimal job impacts.

RECLAIM represents a significant departure from traditional command-and-control regulations. Therefore, the RECLAIM regulation's Rule 2015 - Backstop Provisions, requires AQMD to conduct annual program audits to assess various aspects of the program to verify that program objectives are being met. AQMD staff completed the program audit of RECLAIM Compliance Year 2007. The audit results show that both aggregate NOx and SOx emissions achieved programmatic compliance with the program's target emission levels (aggregate allocations), based on emissions reported by RECLAIM facilities. Aggregate NOx emissions were 21 percent less than the aggregate NOx allocations and aggregate SOx emissions were 13 percent less than aggregate SOx allocations during Compliance Year 2007. Staff is continuing to conduct emission audits at RECLAIM facilities to further validate these emission reports.

At the September 7, 2007 AQMD Governing Board meeting, the Board approved the "Evaluation and Review of the RECLAIM Program and Assessment of RTC Price Reporting" Report and a new methodology for reporting RTC trade prices and determining average RTC prices. This methodology evaluates price data for trades involving individual discrete years and trades involving blocks of RTCs extending into perpetuity (infinite-year blocks or IYBs), separately. Trade data in the attached report are based on this methodology.

Audit Findings
The audit of RECLAIM's Compliance Year 2007 shows that:

- Aggregate NOx and SOx emissions from RECLAIM facilities were below aggregate allocations.

- The RECLAIM universe consisted of 296 facilities as of June 30, 2007. There was a net decrease of five facilities in the RECLAIM universe during July 1, 2007 through June 30, 2008. Thus, 291 facilities were in the RECLAIM universe on June 30, 2008.

    - Eight RECLAIM facilities shut down. Two of the shutdown facilities indicated that air pollution regulations were a factor in the decision to shut down and a third facility was shut down because the facility had been unable or unwilling to comply with various AQMD regulations and EPA's MACT requirements.

    - One facility, that was previously in RECLAIM but had shut down, restarted operation with new permits and was therefore returned to the active universe of RECLAIM facilities. Two additional facilities entered the RECLAIM program as a result from partial changes of operator at existing NOx RECLAIM facilities.

- The vast majority of RECLAIM facilities complied with their Allocations during the 2007 compliance year (94 percent of NOx facilities and 94 percent of SOx facilities).

At the time of this report's preparation, staff had determined that seventeen facilities exceeded their NOx allocations, one facility exceeded its SOx allocation, and one facility exceeded both its NOx and SOx allocations during the 2007 compliance year. Staff is conducting further audits of the reported emissions for Compliance Year 2007, so additional exceedances may be found.

- RECLAIM had minimal impact on employment during the 2007 compliance year, which is consistent with previous years. RECLAIM facilities reported an overall net loss of 413 jobs, representing 0.33 percent of their total employment. Three RECLAIM facilities reported a combined total of 34 jobs lost due to RECLAIM, and a fourth facility, which shut down during the compliance year, reported an additional 40 jobs lost due to RECLAIM. AQMD has no way to verify whether or not the reported job impacts from the RECLAIM facilities are real or perceived.

- The RTC trading market remained active. A total of $980 million in RTCs has been traded since the adoption of RECLAIM, of which $58 million occurred in calendar year 2008. During calendar year 2008, average annual prices for discrete-year NOx RTCs ranged from $1,047 per ton for Compliance Year 2007, to $10,984 per ton for Compliance Year 2010. The average annual prices for discrete-year SOx RTCs ranged from $877 per ton for Compliance Year 2007, to $1,474 per ton for Compliance Year 2009. The average annual prices of discrete-year NOx and SOx RTCs traded in calendar year 2008 were below the program review threshold of $15,000 per ton established in Rule 2015(b)(6), as well as below the $36,463 per ton for NOx and $26,253 per ton for SOx RTC program review thresholds established by the Governing Board pursuant to Health and Safety Code §39616(f). For calendar year 2008, the average annual price for NOx IYB RTCs was $202,402 per ton, and the average annual price for SOx IYB RTCs was $22,479 per ton. Average annual prices for NOx and SOx IYB during calendar year 2008 were below the predetermined program review price thresholds of $546,948 per ton of NOx IYB RTCs and $393,802 per ton of SOx IYB RTCs established by the Governing Board pursuant to Health and Safety Code Section 39616(f). The average annual prices of RTCs traded during calendar years 2007 and 2008, based on the new price reporting methodology, are summarized in Table 1 and Table 2 below.

Table 1 – Average Prices for Discrete-Years' RTCs during Calendar Years 2007 and 2008

2007	2008
• $3,453 per ton for Compliance Year 2006 NOx RTCs • $5,491 per ton for Compliance Year 2007 NOx RTCs • $12,459 per ton for Compliance Year 2010 NOx RTCs • $444 per ton for Compliance Year 2006 SOx RTCs • $3,500 per ton for Compliance Year 2007 SOx RTCs • $3,500 per ton for Compliance Year 2010 SOx RTCs	• $1,047 per ton for Compliance Year 2007 NOx RTCs • $2,800 per ton for Compliance Year 2008 NOx RTCs • $10,984 per ton for Compliance Year 2010 NOx RTCs • $877 per ton for Compliance Year 2007 SOx RTCs • $1,423 per ton for Compliance Year 2008 SOx RTCs • $1,380 per ton for Compliance Year 2010 SOx RTCs

Table 2 – Average Prices for IYB RTCs during Calendar Years 2007 and 2008

2007	2008
• $194,202 per ton for NOx IYB RTCs • $23,848 per ton for SOx IYB RTCs	• $202,402 per ton for NOx IYB RTCs • $22,479 per ton for SOx IYB RTCs

- The role of investors in the RTC market remains significant. Based on both trading values and number of trades, investor-involved trades constituted the majority of the trades recorded in calendar year 2008, particularly with respect to IYB trades. Investor RTC holdings increased from 4.2 percent to 4.8 percent of total IYB NOx RTCs, and decreased from 8.5 percent to 7.9 percent of total IYB SOx RTCs over the course of calendar year 2008. Concurrently, the average annual price of NOx IYB RTCs increased by four percent (from $194,202 to $202,402 per ton), while the average annual price of SOx IYB RTCs decreased by six percent (from $23,848 to $22,479 per ton) during calendar year 2008.

Attachment
Annual RECLAIM Audit Report for the 2007 Compliance Year

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Annual RECLAIM Audit Report for the 2007 Compliance Year

March 6, 2009

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

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EXECUTIVE OFFICER
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EXECUTIVE SUMMARY

Introduction

The South Coast Air Quality Management District (AQMD) Governing Board adopted the REgional CLean Air Incentives Market (RECLAIM) program on October 15, 1993. The RECLAIM program represents a significant departure from traditional command-and-control regulations. RECLAIM's objective is to provide facilities with added flexibility in meeting emissions reduction requirements while lowering the cost of compliance. This is accomplished by establishing facility-specific emissions reduction targets without being prescriptive regarding the method of attaining compliance with the targets. Each facility may determine for itself the most cost-effective approach to reducing emissions, including purchasing emission credits from facilities that reduce emissions below their target levels.

Rule 2015 - Backstop Provisions includes provisions for annual program audits focusing on specific topics, as well as a one time comprehensive audit of the program's first three years to ensure that RECLAIM is meeting all state and federal requirements and other performance criteria. This document constitutes the Rule 2015 annual audit report for the 2007 compliance year (January 1 through December 31, 2007 for Cycle 1 and July 1, 2007 through June 30, 2008 for Cycle 2).

Chapter 1: RECLAIM Universe

When RECLAIM was adopted in October 1993, a total of 394 facilities were identified as the initial "universe" of sources subject to the requirements of RECLAIM. From program adoption through June 30, 2007, the overall changes in RECLAIM participants were 113 facilities included into the program, 70 excluded from the program, and 141 facilities ceased operation. Thus, the RECLAIM universe consisted of 296 active facilities on July 1, 2007. (The Annual RECLAIM Audit Report for 2006 Compliance Year erroneously stated that there were 295 active RECLAIM facilities as of June 30, 2007.) From July 1, 2007 through June 30, 2008, three facilities were included into the RECLAIM universe, no facility was excluded, and eight facilities shut down and are no longer in the active RECLAIM universe. These changes resulted in a net decrease of five facilities in the universe, bringing the total number of facilities to 291 by June 30, 2008. One of the existing NOx-only facilities was included in the SOx market (i.e., is now in both the NOx and SOx markets), whereas one shutdown facility participated in both the NOx and SOx markets. With the exception to these two changes to the SOx universe, the rest of the changes occurred within the NOx universe.

Chapter 2: RTC Allocations and Trading

Compliance Year 2007 was the first year of implementation of the NOx reductions adopted by the Governing Board on January 7, 2005. This resulted in an 11.7% reduction of the Compliance Year 2007 NOx allocation supply to

11,040 tons. Additionally, the Compliance Year 2007 NOx RECLAIM Trading Credit (RTC) supply was reduced by 5.98 tons and the Compliance Year 2007 SOx RTC supply experienced a net decrease of 13.07 tons. These changes to the NOx and SOx RTC supplies were due to allocation adjustments for clean fuel production pursuant to Rule 2002(c)(12), which did not affect the RTC supplies for future years. Therefore, NOx and SOx RTC supplies for Compliance Year 2007 were 11,034 and 4,286 tons, respectively.

The trading market continued to be active during calendar year 2008, with 573 registered RTC transactions, and a total value of just over $58 million, excluding swaps. Since the inception of the RECLAIM program in 1994, a total value of just over $948 million has been traded in the RTC trading market, excluding swaps.

The average annual price of discrete-year NOx RTCs traded during 2008 ranged from $1,047 per ton for Compliance Year 2007 RTCs, to $10,984 per ton for Compliance Year 2010 RTCs. The average annual price for discrete-year SOx RTCs traded during the same period ranged from $877 per ton for Compliance Year 2007 RTCs, to $1,474 per ton for RTCs for Compliance Year 2009. In calendar year 2008, the average annual price for discrete NOx and SOx RTCs for all compliance years remained below the $15,000 per ton threshold to evaluate and review the compliance aspects of the program set forth by AQMD Rule 2015, as well as the $36,463 per ton of NOx and $26,253 per ton of SOx pre-determined program review thresholds established by the Governing Board pursuant to Health and Safety Code §39616(f).

The average annual price for NOx infinite-year block (IYB) RTCs traded in 2008 was $202,402 per ton, and the average annual price for SOx IYB RTCs traded in 2008 was $22,479 per ton. In calendar year 2008, average annual IYB RTC prices did not exceed the $546,948 per ton of NOx RTCs or the $393,802 per ton of SOx RTCs pre-determined program review thresholds established by the Governing Board pursuant to Health and Safety Code §39616(f).

The role of investors in the RTC market remains significant. Based on both trading values and the number of trades with price, investors were involved in a significant portion of the trades recorded in calendar year 2008. Investors' holdings of NOx IYB RTCs increased to 4.8% at the end of calendar year 2008 from 4.2% at the end of calendar year 2007, while their holdings of SOx IYB RTCs decreased to 7.9% at the end of calendar year 2008 from 8.5% at the end of calendar year 2007.

Chapter 3: Emission Reductions

Aggregate NOx and SOx emissions from RECLAIM facilities continued to be below allocations for Compliance Year 2007. Total aggregate NOx emissions were below total allocations by 21% and total aggregate SOx emissions were below total allocations by 13%. Therefore, aside from the effects of the California energy crisis on Compliance Years 2000 and 2001 NOx emissions, since aggregate emissions have been below aggregate allocations during all other compliance years, it can be concluded that RECLAIM has achieved its targeted emission reductions. Finally, no emissions associated with breakdowns were excluded from facility allocations in Compliance Year 2007. Accordingly, no mitigation is necessary to offset excluded emissions due to approved Breakdown

Emission Reports.

Chapter 4: New Source Review Activity

The annual program audit assesses New Source Review (NSR) activity from RECLAIM facilities in order to ensure that RECLAIM is complying with federal NSR requirements and state no net increase (NNI) in emissions requirements, while providing flexibility to facilities in managing their operations and allowing new sources into the program. In Compliance Year 2007, two facilities joined the RECLAIM NOx market, one facility joined both the NOx and SOx markets, and one existing NOx-only facility joined the SOx market. In Compliance Year 2007, twenty-one NOx RECLAIM facilities and three SOx RECLAIM facilities had NSR NOx emission increases due to expansion or modification. This shows that RECLAIM does not inhibit entry into the program or expansion at existing RECLAIM facilities.

RECLAIM is required to comply with federal NSR requirements at a 1.2-to-1 offset ratio for NOx emission increases and at least at a 1-to-1 offset ratio for SOx emission increases on a programmatic basis. In Compliance Year 2007, RECLAIM provided offset ratios of 39-to-1 for NOx and 10-to-1 for SOx on an aggregate basis, demonstrating federal equivalency. Compliance with the federally-required offset ratio also demonstrates compliance with the state NNI requirements for new or modified sources. In addition, RECLAIM requires application of Best Available Control Technology (BACT) for all new or modified sources with emission increases.

Chapter 5: Compliance

There were 296 NOx and 31 SOx active facilities in the RECLAIM program at the start of the 2007 compliance year. During the 2007 compliance year, one facility that was previously shutdown re-started operations and two additional inclusions to the NOx RECLAIM Program were due to partial change of operator. For the SOx universe, an already existing NOx RECLAIM facility was included as a SOx facility. Of these 299 NOx RECLAIM facilities active during the 2007 compliance year, 281 facilities (94%) complied with their NOx allocations, and all but two of the 32 SOx facilities (94%) complied with their SOx allocations. Verification of facility-reported emissions and audits of facility records for the compliance year are still on-going. Initial results for Compliance Year 2007 revealed that the overall RECLAIM NOx and SOx emission goals were met for the compliance year (i.e., aggregate emissions were below aggregate allocations for Compliance Year 2007). Nineteen facilities exceeded their individual allocations. The combined excess NOx emissions totaled 34.5 tons and the excess SOx emissions totaled 57.9 tons. These amounts are relatively small when compared to the overall allocations for the compliance year (0.3% of NOx and 1.5% of SOx allocations).

Chapter 6: Job Impacts

According to the Compliance Year 2007 employment survey, the RECLAIM program had no impact on jobs at most facilities. RECLAIM facilities reported a net loss of 413 jobs, representing 0.33% of their total employment. Most of these

losses were attributed to factors other than RECLAIM. Eight RECLAIM facilities were listed as shutdown during Compliance Year 2007. One of these facilities reported on their Annual Permit Emissions Program (APEP) that RECLAIM was a contributing factor in their decision to close, and attributed a loss of 40 jobs to RECLAIM. Three other facilities reported a combined loss of an additional 34 jobs due to RECLAIM.

Chapter 7: Air Quality and Public Health Impacts

Rule 2015 specifies that each annual RECLAIM program audit include, among other elements, assessments of emissions trends and seasonal fluctuations in emissions, geographic distribution of emissions, per capita exposure to air pollution, and toxic risk reductions. This chapter addresses each of these issues.

Emissions reported by RECLAIM facilities have been in an overall downward trend since the program's inception. When compared to the previous compliance year, NOx emissions in Compliance Year 2007 continued their downward trend (five percent). SOx emissions in Compliance Year 2007 increased slightly (five percent) in comparison to the previous year, although they remained well below total allocations. Quarterly calendar year 2007 NOx emissions ranged from approximately three percent below to three percent above the mean NOx emissions for the year. Quarterly calendar year 2007 SOx emissions ranged from approximately four percent below to nine percent above the year's mean SOx emissions. Thus, there were no significant seasonal fluctuations in emissions. Furthermore, this year's analysis of the geographical distribution of emissions on a quarterly basis, as in each previous year's analysis, does not show any distinct shift in the geographical distribution of emissions.

The California Clean Air Act (CCAA) required a 50% reduction in population exposure to ozone by December 31, 2000. Analysis of per capita exposure (the length of time each person is exposed) to ozone in 1998 and 2000 shows that the Basin achieved the December 2000 target for ozone well before the deadline. In fact, Los Angeles County, Orange County, and the South Coast Air Basin overall achieved compliance with the December 2000 target prior to 1994, and Riverside and San Bernardino Counties achieved compliance in 1996. In calendar year 2008, the per capita exposure to ozone continued to be well below the target set for December 2000.

Air toxic health risk is primarily caused by emissions of certain volatile organic compounds (VOCs) and metals, rather than NOx or SOx emissions, and RECLAIM facilities are subject to the same air toxic regulations as other sources in the Basin. Therefore, it can be concluded that, the RECLAIM program creates no toxic impact beyond what would have occurred with the rules and control measures RECLAIM subsumed.

INTRODUCTION

The South Coast Air Quality Management District's REgional CLean Air Incentives Market program (RECLAIM) was adopted in October 1993 and replaces certain command-and-control rules with a new market incentives program for facilities that meet the inclusion criteria. The goal of RECLAIM is to provide facilities with added flexibility in meeting emissions reduction requirements and to lower the cost of compliance. The RECLAIM program was designed to meet all state and federal clean air program requirements, as well as other performance criteria, such as equivalent air quality improvement, equivalent enforcement, lower implementation costs, lower job impacts, and no adverse public health impacts.

Since RECLAIM represents a significant change from traditional command-and-control regulations, RECLAIM rules include provisions for program audits in order to verify that the RECLAIM objectives are being met. The rules provide for a comprehensive audit of the first three years of program implementation and annual audits. The audit results are used to help determine whether any program modifications are appropriate.

This report presents the annual audit and progress report of RECLAIM's fourteenth compliance year (January 1 through December 31, 2007 for Cycle 1 and July 1, 2007 through June 30, 2008 for Cycle 2), also known as the 2007 compliance year. As required by Rule 2015– Backstop Provisions, subdivision (b), paragraph (1), this audit assesses:

- Emission reductions;
- Per capita exposure to air pollution;
- Facilities permanently ceasing operation of all sources;
- Job impacts;
- Average annual price of each type of RECLAIM Trading Credit (RTC);
- Availability of RTCs;
- Toxic risk reductions;
- New Source Review permitting activity;
- Compliance issues;
- Emission trends/seasonal fluctuations;
- Emission control requirement impacts on stationary sources in the program compared to other stationary sources identified in the Air Quality Management Plan (AQMP); and
- Emissions associated with equipment breakdowns.

The annual audit is organized into the following chapters:

1. RECLAIM Universe
   This chapter discusses changes in the universe of RECLAIM sources that occurred from July 1 2007 through June 30, 2008.

2. RTC Allocations and Trading
   This chapter summarizes changes in emissions allocations in the RECLAIM universe, RTC trading activity, and the average annual price, availability, and supply of RTCs.
3. Emission Reductions
   This chapter assesses emissions trends and reductions for RECLAIM sources and emissions control requirement impacts on these sources compared to other stationary sources. It also discusses the latest amendments to the RECLAIM program and emissions associated with equipment breakdowns.
4. New Source Review Activity
   This chapter summarizes New Source Review activity at RECLAIM facilities.
5. Compliance
   This chapter discusses compliance activities and the compliance status of RECLAIM facilities. It also evaluates the effectiveness of the South Coast Air Quality Management District's (AQMD's) compliance program, as well as the monitoring, reporting, and recordkeeping protocols for oxides of nitrogen (NOx) and oxides of sulfur (SOx).
6. Job Impacts
   This chapter addresses job impacts.
7. Air Quality and Public Health Impacts
   This chapter discusses air quality trends in the South Coast Air Basin, seasonal and geographic emission trends for RECLAIM sources, per capita exposure to air pollution, and the toxic impacts of RECLAIM sources.

CHAPTER 1
RECLAIM UNIVERSE

Summary

*When RECLAIM was adopted in October 1993, a total of 394 facilities were identified as the initial "universe" of sources subject to the requirements of RECLAIM. From program adoption through June 30, 2007, the overall changes in RECLAIM participants were 113 facilities included into the program, 70 excluded from the program, and 141 facilities ceased operation. Thus, the RECLAIM universe consisted of 296 active facilities on July 1, 2007. (The Annual RECLAIM Audit Report for 2006 Compliance Year erroneously stated that there were 295 active RECLAIM facilities as of June 30, 2007.) From July 1, 2007 through June 30, 2008, three facilities were included into the RECLAIM universe, no facility was excluded, and eight facilities shut down and are no longer in the active RECLAIM universe. These changes resulted in a net decrease of five facilities in the universe, bringing the total number of facilities to 291 by June 30, 2008. One of the existing NOx-only facilities was included in the SOx market (*i.e.*, is now in both the NOx and SOx markets), whereas one shutdown facility participated in both the NOx and SOx markets. With the exception to these two changes to the SOx universe, the rest of the changes occurred within the NOx universe.*

Background

The RECLAIM program replaced the traditional "command-and-control" rules for a defined list of facilities participating in the program (the RECLAIM "universe"). The criteria for inclusion in the RECLAIM program are specified in Rule 2001 – Applicability. Facilities are generally subject to RECLAIM if they have NOx or SOx emissions greater than or equal to four tons in 1990 or any subsequent year. However, certain facilities are categorically excluded from RECLAIM. The categorically excluded facilities include restaurants, police and fire fighting facilities, potable water delivery operations, and facilities, other than electric generating facilities established after 2001, located in the Riverside County portions of the Mojave Desert Air Basin and the Salton Sea Air Basin. Furthermore, other categories of facilities have the option to enter the program at their discretion. These categories include ski resorts, prisons, hospitals, publicly-owned municipal waste-to-energy facilities, agricultural facilities, and electric generating facilities new since 2001 and located in the Riverside County portions of the Mojave Desert Air Basin and the Salton Sea Air Basin. An initial universe of 394 RECLAIM facilities was developed using these criteria based on 1990, 1991 and 1992 facility emissions data.

A facility that is not categorically excluded from the program may voluntarily join RECLAIM, regardless of its emission level. Additionally, a facility may be required to enter the RECLAIM universe if:

- It increases its emissions above the four-ton threshold; or
- It ceases to belong to an exempt category; or

- It is determined by AQMD staff to meet the applicability requirements of RECLAIM, but was initially misclassified as not subject to RECLAIM.

The facilities in the initial RECLAIM universe, as well as existing facilities that were included in the program (either voluntarily or based on emissions above four tons per year), were issued an annually declining allocation of emission credits ("RECLAIM Trading Credits" or "RTCs") that constitutes an annual emissions budget. RTCs may be bought or sold as the facilities deem appropriate.

RECLAIM facilities that permanently go out of business after January 1, 1994 (Cycle 1) or after July 1, 1994 (Cycle 2) are removed from the active emitting RECLAIM universe, but may retain their RTCs and participate in the trading market.

Universe Changes

The RECLAIM rules include several mechanisms to exclude facilities originally included in the program and to add new facilities. The overall changes to the RECLAIM universe from the date of adoption (October 15, 1993) through June 30, 2007 were: the inclusion of 113 facilities (85 new facilities and 28 facilities created by partial change of operator of existing RECLAIM facilities), the exclusion of 70 facilities, and the shutdown of 141 facilities. Thus, the net change in the RECLAIM universe during the first 13 compliance years was a decrease from 394 to 296 facilities. (The RECLAIM universe was reported to be 295 in the Compliance Year 2006 Annual report because one facility was inadvertently left out.) From July 1, 2007 through June 30, 2008, three facilities were included, no facility was excluded, and six facilities shut down. In addition, two shutdowns from prior compliance year that were not confirmed until recently are included in this report, making a total of eight shutdowns. These changes brought the total number of facilities in the RECLAIM universe to 291 facilities by June 30, 2008. The inclusion of one facility to the SOx market did not add to the number of facilities in the entire RECLAIM universe because it was an already existing NOx-only RECLAIM facility. One shutdown facility participated in both the NOx and SOx markets. These were the only two changes to the SOx universe; the rest of the changes occurred within the NOx universe. The list of facilities in the RECLAIM universe as of June 30, 2008 is provided in Appendix A.

Facility Inclusions and Exclusions

Between July 1, 2007 and June 30, 2008, a total of three facilities were added to the RECLAIM universe. One of these facilities was a power plant that previously shut down in Compliance Year 2005, but submitted new applications to undergo re-powering, and was reactivated as a NOx-only facility in Compliance Year 2007. Two facilities were created through partial changes of operator of existing RECLAIM facilities. A fourth facility was included to the SOx market, but did not change the number of facilities in the RECLAIM universe because it was an existing NOx-only facility. These facilities were brought into the program in accordance with RECLAIM entry election criteria in Rule 2001 - Applicability. These four facilities are listed in Appendix B.

A facility may apply for entry into the RECLAIM program, but is not officially included in the program until it is issued a Facility Permit. From July 1, 2007 through June 30, 2008, two additional facilities filed applications to enter the RECLAIM program, but their Facility Permits were not issued by June 30, 2008.

No facility was excluded from the RECLAIM universe during Compliance Year 2007.

Facilities Permanently Ceasing Operations

Six RECLAIM facilities permanently ceased operations between July 1, 2007 and June 30, 2008. Two shutdowns prior to this compliance year are included in this report. These two facility shutdowns were discovered after the facilities did not file their Compliance Year 2007 Annual Permit Emissions Program (APEP) Reports and were later verified by staff. Two of the of eight facilities cited air pollution regulations, and one facility failed to comply with terms of an AQMD Order for Abatement, and ceased operation. Seven shutdown facilities were NOx-only facilities, and one was a NOx and SOx facility. Appendix C lists the shutdown facilities and brief descriptions of the reported reasons for their closures.

These shutdowns, along with the new inclusions, resulted in a net decrease of five facilities in the RECLAIM Universe. Table 1-1 summarizes the changes in the RECLAIM universe between the start of the program and June 30, 2008. Additionally, overall changes to the RECLAIM universe that occurred from July 1, 2007 through June 30, 2008 are illustrated in Figure 1-1.

Table 1-1
RECLAIM Universe Changes

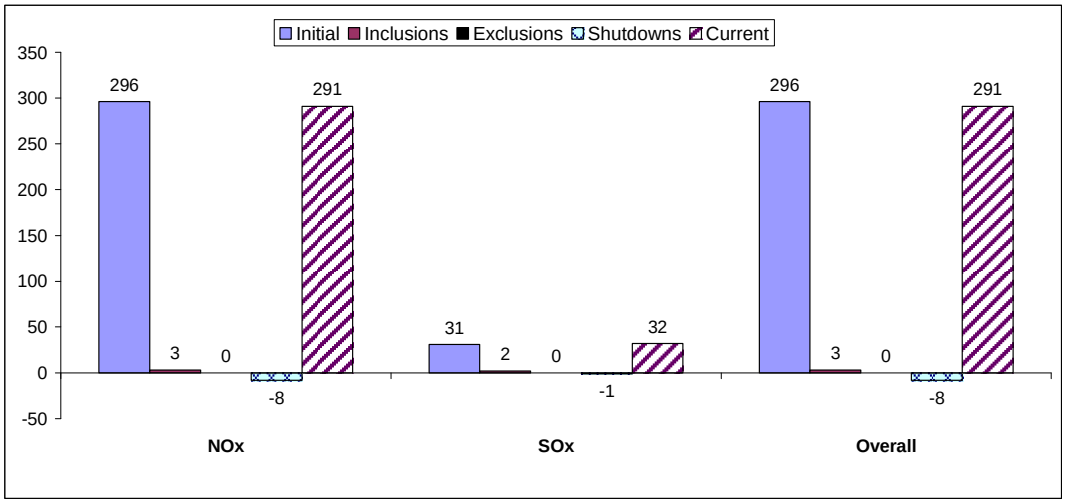
	NOx Facilities	SOx Facilities	Total Facilities
Start of Program	392	41	394
Inclusions—October 15, 1993 through June 30, 2007	113*	8	113
Exclusions—October 15, 1993 through June 30, 2007	69	4	70
Shutdowns—October 15, 1993 through June 30, 2007	140	14	141
Total (October 15, 1993 through June 30, 2007)	296**	31	296
Inclusions—July 1, 2007 through June 30, 2008	3	2***	3
Exclusions—July 1, 2007 through June 30, 2008	0	0	0
Shutdowns—July 1, 2007 through June 30, 2008	8	1	8
Total (July 1, 2007 through June 30, 2008)	291	32	291

*- One of these facilities underwent a partial change of operator and shutdown in the same year, Compliance Year 2006. It was listed as a shutdown in Appendix C, but mistakenly omitted as an inclusion in Appendix B of Compliance Year 2006 Annual Report.

**- One facility was inadvertently omitted from Appendix A of the Compliance Year 2006 Annual Report.

***- One of these facilities was included as a SOx facility, as identified in Appendix B, but did not add to the RECLAIM universe because it was an existing NOx-only facility.

Figure 1-1
Universe Changes from July 1, 2007 through June 30, 2008



CHAPTER 2
RTC ALLOCATIONS AND TRADING

Summary

Compliance Year 2007 was the first year of implementation of the NOx reductions adopted by the Governing Board on January 7, 2005. This resulted in an 11.7% reduction of the Compliance Year 2007 NOx allocation supply to 11,040 tons. Additionally, the Compliance Year 2007 NOx RECLAIM Trading Credit (RTC) supply was reduced by 5.98 tons and the Compliance Year 2007 SOx RTC supply experienced a net decrease of 13.07 tons. These changes to the NOx and SOx RTC supplies were due to allocation adjustments for clean fuel production pursuant to Rule 2002(c)(12), which did not affect the RTC supplies for future years. Therefore, NOx and SOx RTC supplies for Compliance Year 2007 were 11,034 and 4,286 tons, respectively.

The trading market continued to be active during calendar year 2008, with 573 registered RTC transactions, and a total value of just over $58 million, excluding swaps. Since the inception of the RECLAIM program in 1994, a total value of just over $948 million has been traded in the RTC trading market, excluding swaps.

The average annual price of discrete-year NOx RTCs traded during 2008 ranged from $1,047 per ton for Compliance Year 2007 RTCs, to $10,984 per ton for Compliance Year 2010 RTCs. The average annual price for discrete-year SOx RTCs traded during the same period ranged from $877 per ton for Compliance Year 2007 RTCs, to $1,474 per ton for RTCs for Compliance Year 2009. In calendar year 2008, the average annual price for discrete NOx and SOx RTCs for all compliance years remained below the $15,000 per ton threshold to evaluate and review the compliance aspects of the program set forth by AQMD Rule 2015, as well as the $36,463 per ton of NOx and $26,253 per ton of SOx pre-determined program review thresholds established by the Governing Board pursuant to Health and Safety Code §39616(f).

The average annual price for NOx infinite-year block (IYB) RTCs traded in 2008 was $202,402 per ton, and the average annual price for SOx IYB RTCs traded in 2008 was $22,479 per ton. In calendar year 2008, average annual IYB RTC prices did not exceed the $546,948 per ton of NOx RTCs or the $393,802 per ton of SOx RTCs pre-determined program review thresholds established by the Governing Board pursuant to Health and Safety Code §39616(f).

The role of investors in the RTC market remains significant. Based on both trading values and the number of trades with price, investors were involved in a significant portion of the trades recorded in calendar year 2008. Investors' holdings of NOx IYB RTCs increased to 4.8% at the end of calendar year 2008 from 4.2% at the end of calendar year 2007, while their holdings of SOx IYB RTCs decreased to 7.9% at the end of calendar year 2008 from 8.5% at the end of calendar year 2007.

Background

The AQMD issues each facility emissions allocations for each compliance year, according to the methodology specified in Rule 2002, based on the facility's operational history. These allocations are issued as RTCs, denominated in pounds of NOx or SOx

within a specific year. Each RTC may only be used for emissions occurring within the term of that RTC. The RECLAIM program has two staggered compliance cycles—Cycle 1 with a compliance period of January 1 through December 31 of each year, and Cycle 2 with a compliance period of July 1 of each year through June 30 of the following year. Each RECLAIM facility is assigned to either Cycle 1 or Cycle 2 and the RTCs it is issued (if any) have corresponding periods of validity.

The issuance of allocations for future years provides RECLAIM facilities guidance regarding their future emission reduction requirements. Facilities can plan their compliance strategies by reducing actual emissions or securing required RTCs through trades (or a combination of the two), based on their operational needs.

RECLAIM facilities may acquire through trading RTCs issued for either cycle and apply them to emissions, provided that the RTCs are used for emissions occurring within their period of validity and the trades are made during the appropriate time period. RECLAIM facilities have 30 days at the end of each of the first three quarters to reconcile their quarterly emissions, and 60 days after the end of each compliance year to reconcile their total annual emissions by securing adequate RTCs.

In an effort to achieve additional NOx reductions pursuant to 2003 AQMP Control Measure #2003 CMB-10 ("Additional NOx Reductions for RECLAIM (NOx)") and to comply with requirements for demonstrating Best Available Retrofit Control Technology (BARCT) equivalency under state law, AQMD began the RECLAIM rule amendment process in early 2004. The process included a detailed analysis of control technologies that qualified as BARCT, and lengthy discussions with stakeholders—including regulated industry, environmental groups, the California Air Resources Board (CARB), and the United States Environmental Protection Agency (USEPA). On January 7, 2005, the Governing Board adopted several changes to the RECLAIM program. Among other amendments, the changes resulted in cumulative reductions of 7.7 tons NOx per day, a more than 20% reduction, from all RECLAIM facilities when fully implemented in Compliance Year 2011 (the reductions are being phased in from 2007 through 2011: 4.0 tons per day in 2007 and an additional 0.925 tons per day in each of the following four years). By adopting these rule amendments, AQMD showed that, relative to the subsumed control measures, RECLAIM is achieving "equivalent or greater emission reductions at equivalent or less cost," as is required by Health and Safety Code §39616(e).

Although other chapters in this report present and discuss Compliance Year 2007 data, RTC trading and price data discussed in this chapter are for calendar year 2008. (Other portions of this chapter address Compliance Year 2007 data.)

RTC Allocations and Supply

The methodology for determining RTC allocations is established by Rule 2002. According to the rule, allocations may change when, the universe of RECLAIM facilities changes, emissions associated with the production of re-formulated gasoline increase, or reported historical activity levels are updated. In addition to the allocation, RTCs can be generated by conversion of emissions reductions from mobile and area sources. Pursuant to the 2003 AQMP #2003 CMB-10 - "Additional NOx Reductions for RECLAIM (NOx)", the Governing Board adopted additional NOx reductions on January 7, 2005. Compliance Year 2007 was the first year of implementation of these NOx reductions, resulting in an 11.7% reduction of the compliance year's NOx allocation. Other changes in the RTC supply during Compliance Year 2007 are discussed below. The total RTC

supply in RECLAIM is made up of all RECLAIM facilities' allocations, conversions of Emission Reduction Credits (ERCs) owned by RECLAIM and non-RECLAIM facilities (the window of opportunity to convert ERCs to RTCs other than during the process of a non-RECLAIM facility entering the program closed June 30, 1994), emissions associated with the production of re-formulated gasoline, and conversion of ERCs from mobile sources and area sources.

Allocations Adjustments Due to Inclusion and Exclusion of Facilities

Allocations for a facility are based on the facility's historical operations, the emission reduction requirements under the command-and-control rules subsumed by RECLAIM, the AQMP control measures subsumed by RECLAIM, and, for NOx, an adjustment for BARCT equivalency. No facilities opted to join the NOx RECLAIM program during Compliance Year 2007. However, one existing facility also opted into the SOx RECLAIM Program during the year, but this facility did not qualify for SOx initial allocations because it did not report any SOx emissions for 1989 through 1992. No facility was excluded during this compliance year. Therefore, no changes to the NOx or SOx RTC supplies occurred as a result of changes to the RECLAIM universe in Compliance Year 2007.

Allocations Adjustments Due to Clean Fuel Production

Rule 2002(c)(12) – Clean Fuel Adjustment to Starting Allocation, provides refineries with RTCs to compensate for their actual emissions increases caused by the production of CARB Phase II reformulated gasoline. The amount of these RTCs is based on actual emissions for the subject compliance year and historical production data. Based on the historical production data submitted, qualifying refineries were issued an aggregate baseline of 86.5 tons of NOx and 42.3 tons of SOx for Compliance Year 1999, 101.8 tons of NOx and 41.4 tons of SOx for Compliance Year 2000, and 98.4 tons of NOx and 40.2 tons of SOx for each subsequent Compliance Year. These refineries are required to submit records to substantiate actual emission increases due solely to the production of reformulated gasoline. If actual emission increases for a subject year are different than the projected amount, the RTCs issued are adjusted accordingly (*i.e.*, excess RTCs issued will be deducted if emissions were less than projected; conversely, additional RTCs will be issued if emissions were higher than projected). For Compliance Year 2007, actual NOx and SOx emissions were lower than those projected at the time the applications were approved. As a result, 5.98 tons of NOx RTCs and 13.07 tons of SOx RTCs were deducted from refineries' Compliance Year 2007 holdings.

Changes in RTC Allocations Due to Activity Corrections

RECLAIM facilities' allocations are determined by their reported historical activity levels (*e.g.*, fuel usage, material usage, or production). If a facility makes corrections to its reported activity levels, the allocation is adjusted accordingly. There were no changes in RTC allocations due to activity corrections in Compliance Year 2007.

Conversions of Mobile Source Emission Reductions

Conversions of Mobile Source Emission Reduction Credits (MSERCs) to RTCs are allowed under Rule 2008 – Mobile Source Credits, and several programs under Regulation XVI – Mobile Source Offset Programs. There were no new RTCs issued as a result of conversion of MSERCs in Compliance Year 2007.

Net Changes in RTC Allocations

The changes to RTC supplies described in the above sections resulted in a net decrease in the RTC supply of 5.98 tons of NOx RTCs and a decrease of 13.07 tons of SOx RTCs for Compliance Year 2007. Table 2-1 summarizes the changes in NOx and SOx RTC supplies that occurred in Compliance Year 2007 pursuant to Rule 2002.

Table 2-1
Changes in NOx and SOx RTCs supplies during Compliance Year 2007 (tons/year)

Source	NOx	SOx
Universe changes	0	0
Clean Fuel/Reformulated Gasoline	-5.98	-13.07
Activity corrections	0	0
Mobile Source Emission Reduction Credits	0	0
Net change	-5.98	-13.07

Figures 2-1 and 2-2 illustrate the total NOx and SOx RTC supplies at the end of Compliance Year 2007.

Figure 2-1
NOx RTC Supply

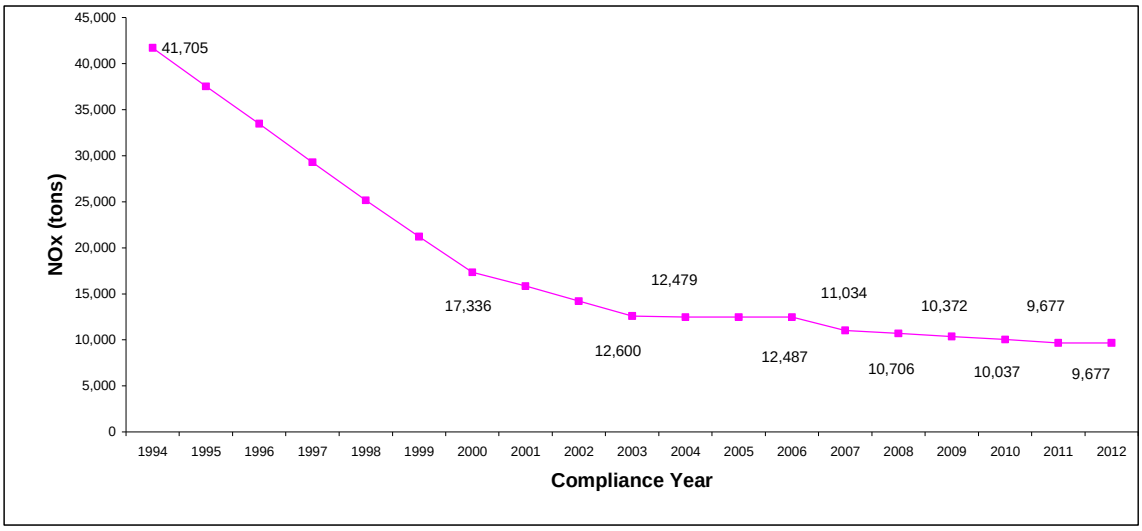
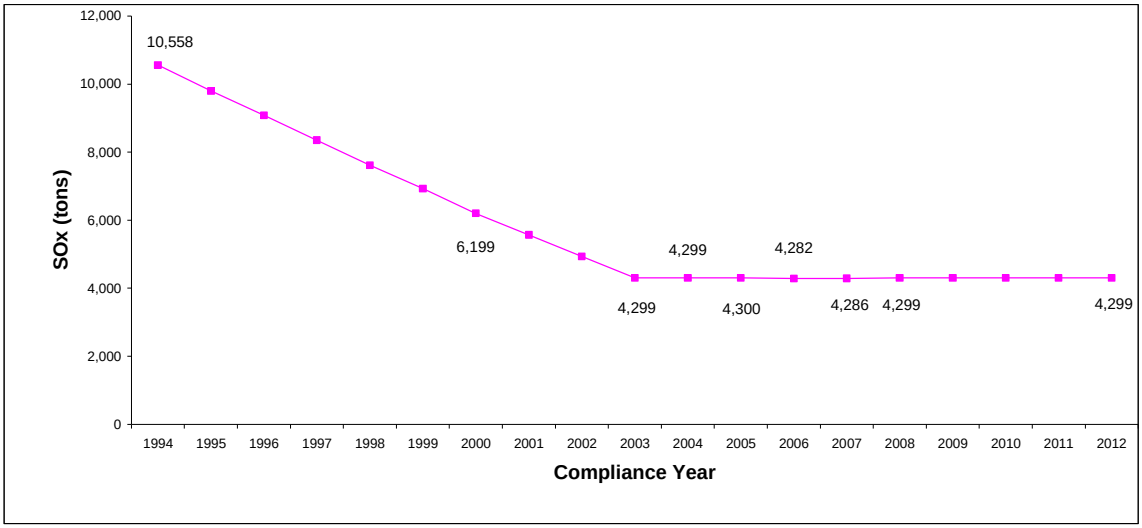


Figure 2-2
SOx RTC Supply



RTC Price Reporting Methodology

On September 7, 2007, the Governing Board approved a new reporting methodology for RTC trades that is more reflective of the market and minimizes the potential for price manipulation. Under this new reporting methodology, trades of specific, discrete-year RTCs are reported to AQMD separately from trades involving blocks of RTCs with a specified start year and continuing into perpetuity (also known as infinite-year blocks or IYBs). Discrete-year trades continue to be reported in terms of dollars per pound and averaged in dollars per ton of RTCs for each discrete compliance year while IYB trade prices are reported as total dollar value for total IYB pounds and averaged as a total dollar value per ton of IYB RTC.

The Governing Board identifies swap trades as having the potential to adversely impact the calculated average annual prices of RTCs, because prices reported for swap trades are based on the agreed upon value of the trade by the participants, and do not involve any exchange of funds. Therefore, reported prices for swap trades are excluded from the calculation of average annual RTC price under this new reporting methodology. Further details regarding the new reporting methodology for RTC trades can be found in the report entitled "Evaluation and Review of the RECLAIM Program and Assessment of RTC Price Reporting," dated September 7, 2007.

Along with approving the new reporting method for RTC trades, the Governing Board established new program review thresholds for IYB trades through Board Resolution No. 07-20. Accordingly, the new program review price thresholds for IYB RTCs (equivalent to 15 times the 1993 thresholds including CPI adjustments) are $546,948 per ton of NOx RTCs and $393,802 per ton of SOx RTCs in 2008 dollars.

To implement the new reporting methodology for RTC trades, staff revised the RTC transaction registration process to require that discrete and IYB RTC portions of an RTC trade be reported separately. In addition, for the IYB RTC trades, the total value of the

trade must be reported instead of the dollar per pound price. The trading partners are also required to identify and report swap trades on the registration form.

In addition to RTC trades with prices, there are RTC transfers made with zero prices. These zero priced trades generally occur when a seller transfers or escrows RTCs to a broker, when there is a transfer between facilities under common operator or a transfer between facilities that have gone through change of operator. Trades with zero price also occur when the trading parties have mutual agreements where one party provides a specific service (*e.g.,* providing steam or other process components) for the second party. In return, the second party will transfer the RTCs necessary to offset emissions generated from the service.

RTC Trading Activity

Overall Trading Activity

The RTC market continued to be active in calendar year 2008 with 573 approved trades (500 NOx trades and 73 SOx trades). These trades included discrete and IYB RTCs traded with prices, discrete and IYB RTCs transfers with zero prices, and discrete and IYB RTCs swap trades. Excluding swaps, a total value of $58.8 million was traded in calendar year 2008 ($54.4 million for NOx and $4.4 million for SOx). Figure 2-3 shows historical trading values (excluding swaps). Figure 2-4 summarizes overall trading activity in calendar year 2008 by pollutant.

Figure 2-3
Annual Trading Values (Excluding Swaps since 2002)

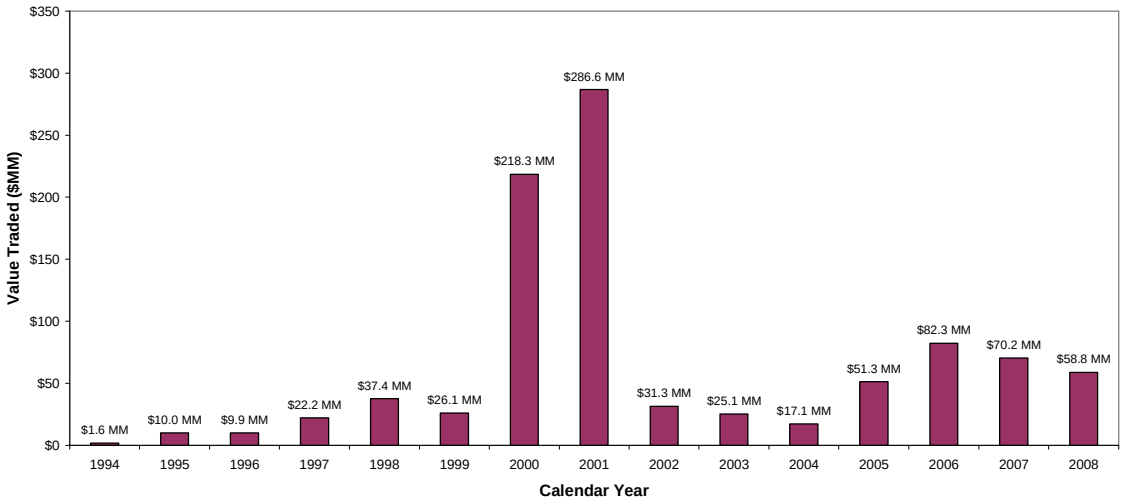
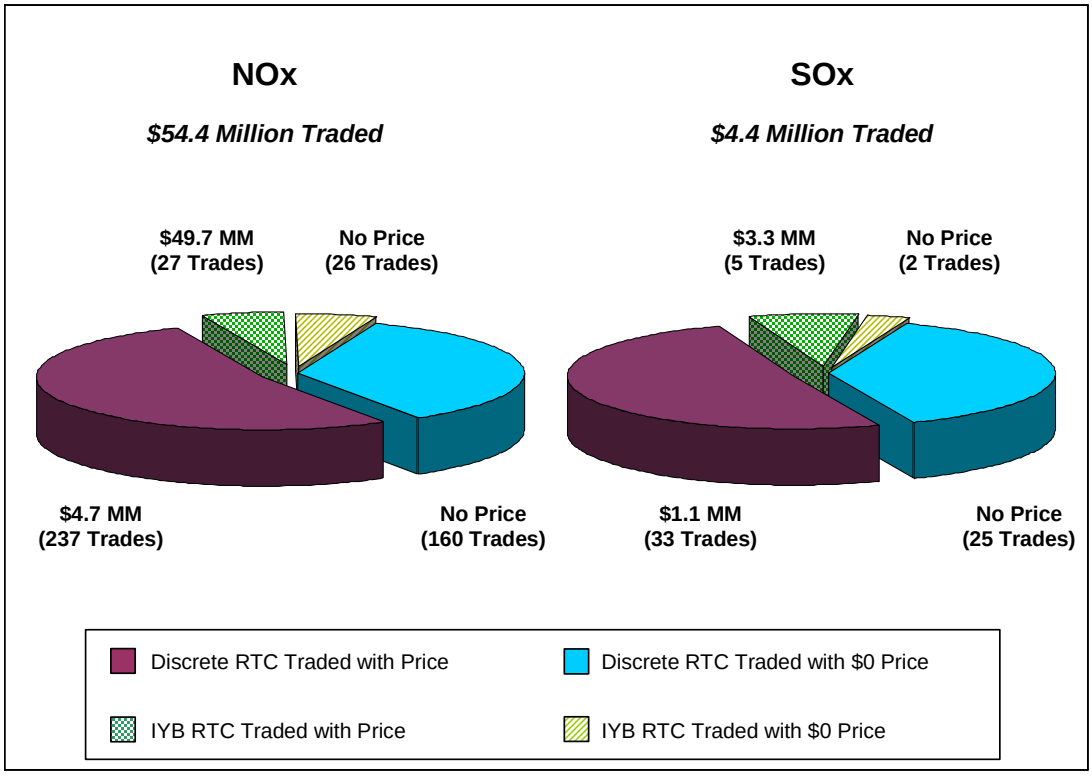


Figure 2-4
Calendar Year 2008 Overall Trading Activity Excluding Swaps

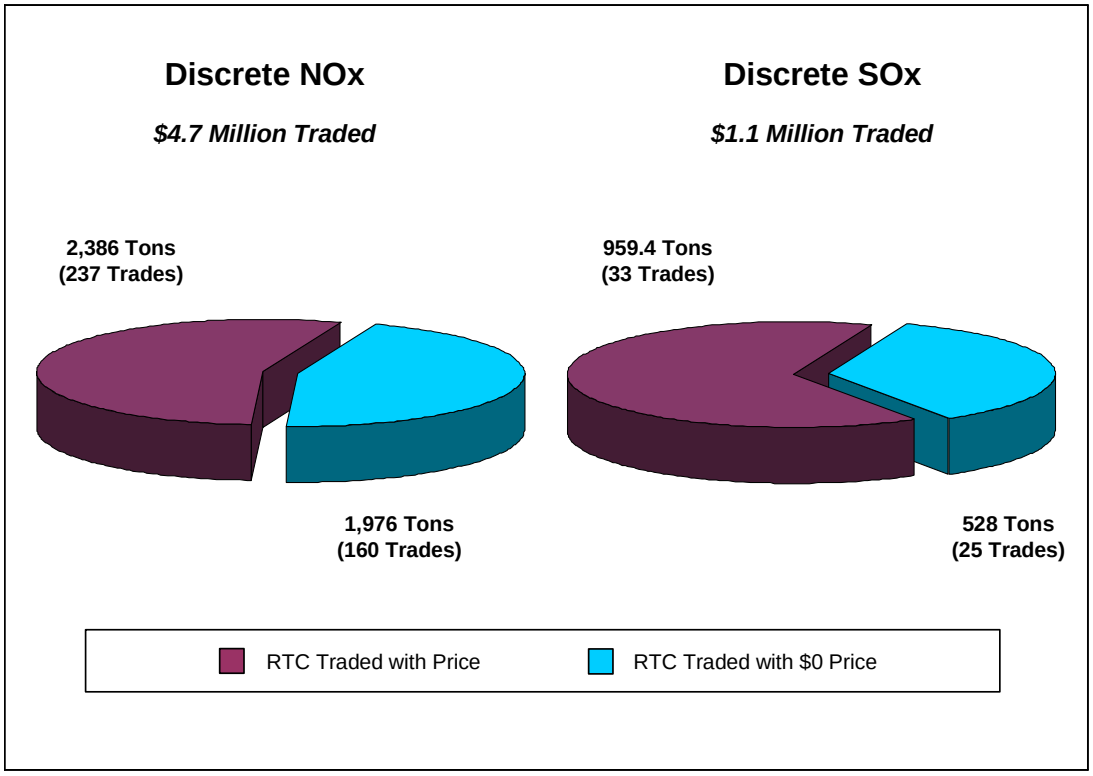


Discrete RTC Trading Activity

Figure 2-5 shows that in calendar year 2008 there were a total of 397 trades and 58 trades of discrete NOx and SOx RTCs, respectively (excluding swap trades, which are addressed separately later in this chapter). Of the 397 discrete NOx trades, 237 were traded with price totaling 2,386 tons in volume and $4.7 million in value. Of the 58 SOx trades, 33 were traded with price totaling 959.4 tons in volume and $1.1 million in value.

Trades of discrete NOx RTCs showed a significant decrease in both total value (from $21.1 million to $4.7 million) and quantity traded (3,403 tons with price and 6,320 tons total to 2,386 tons with price and a total of 4,362 tons) from 2007 to 2008, whereas discrete SOx RTCs showed an increase in value and volume (from $18 thousand for 36.5 tons with price and a total of 1,028.5 tons in 2007 to $1.1 million for 959.4 tons with price and 1,487.4 total tons in 2008). All discrete year RTC trades involved RTCs for Compliance Year 2010 and earlier. This trading pattern is consistent with activities in previous years even though 2011 is soon approaching. IYB trades generally involve a block of RTCs with 2011 as the starting year and all years thereafter.

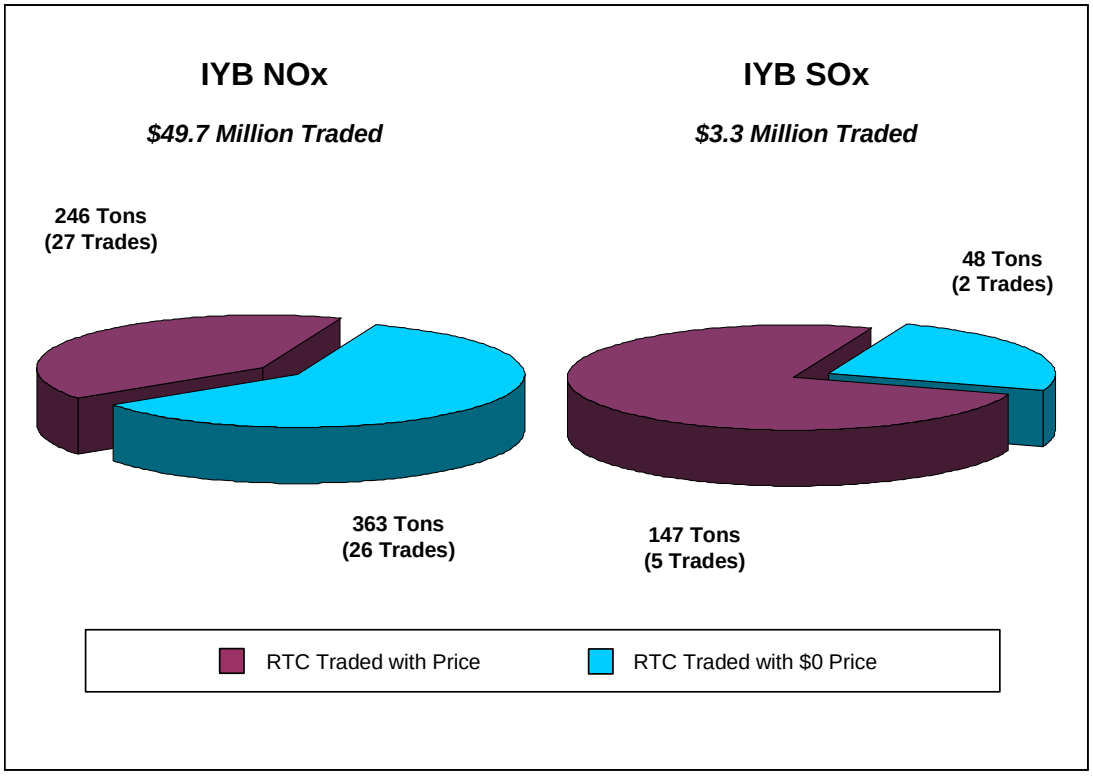
Figure 2-5
Calendar Year 2008 Trading Activity for Discrete RTCs Excluding Swaps



IYB RTC Trading Activity

RTCs with a certain specified start year and continuing into perpetuity are termed infinite-year blocks or IYBs. Figure 2-6 illustrates the calendar year 2008 IYB RTC trading activity excluding swap trades. In 2008, there were 53 IYB NOx trades and seven IYB SOx trades. Of the 53 IYB NOx trades, there were 27 NOx IYB RTCs trades with price totaling 246 tons. The total value of NOx IYB RTCs traded in 2008 was $49.7 million which was higher than in 2007 ($45.2 million). There were five SOx IYB RTC trades with price totaling 147 tons. The total value of these SOx IYB trades was $3.3 million which was slightly less than in 2007 ($3.7 million).

Figure 2-6
Calendar Year 2008 Trading Activity for IYB RTCs Excluding Swaps



Similar to calendar years 2006 and 2007 trade data in the previous report, trading data for calendar years 2004 and 2005 were reviewed and compiled using the new trade reporting methodology. For calendar years 2002 and 2003, there were no discrete portions in the IYB RTC trades. Swap information and details of discrete and IYB trades were not required prior to the amendment of Rule 2007 - Trade Requirements in May 2001. Therefore, for calendar years 1994 through 2001, any trade registration involving infinite-year RTCs was considered a single IYB trade and swap trades were not identified. Trading activity since inception of the RECLAIM program is illustrated in Figures 2-7 through 2-10 (discrete NOx trades, discrete SOx trades, IYB NOx trades, and IYB SOx trades, respectively) based on the new trade reporting methodology.

Figure 2-7
Discrete NOx RTCs Trades (Excluding Swaps since 2002)

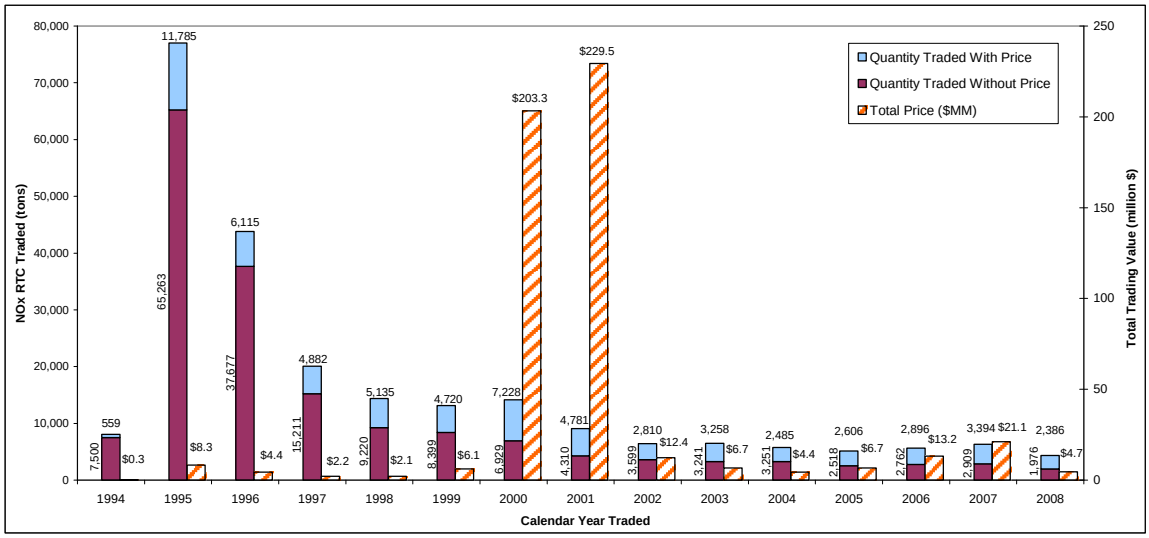


Figure 2-8
Discrete SOx RTCs Trades (Excluding Swaps since 2002)

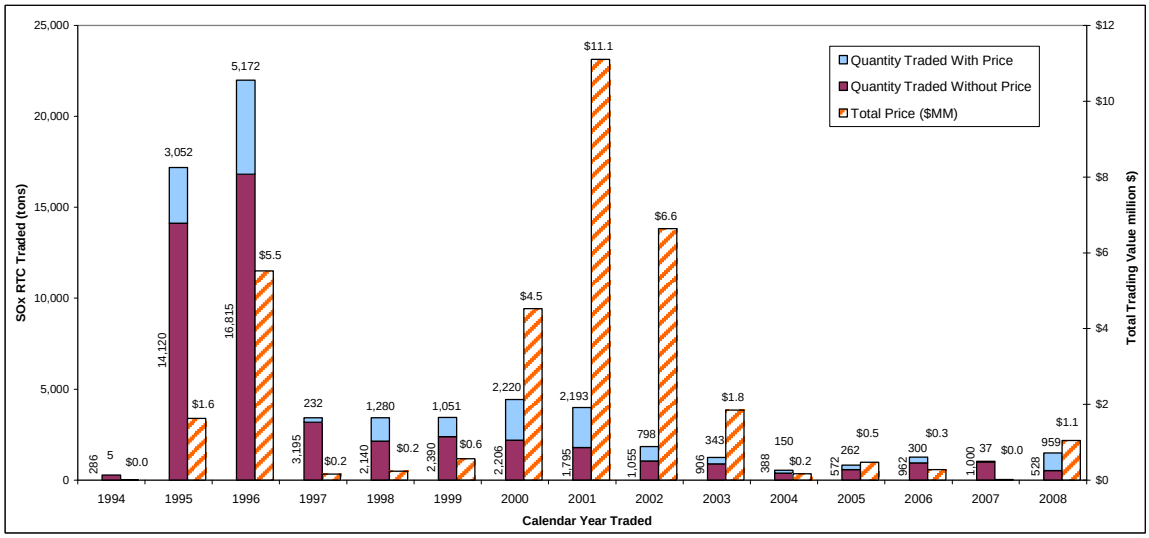


Figure 2-9
IYB NOx RTCs Trades (Excluding Swaps since 2002)

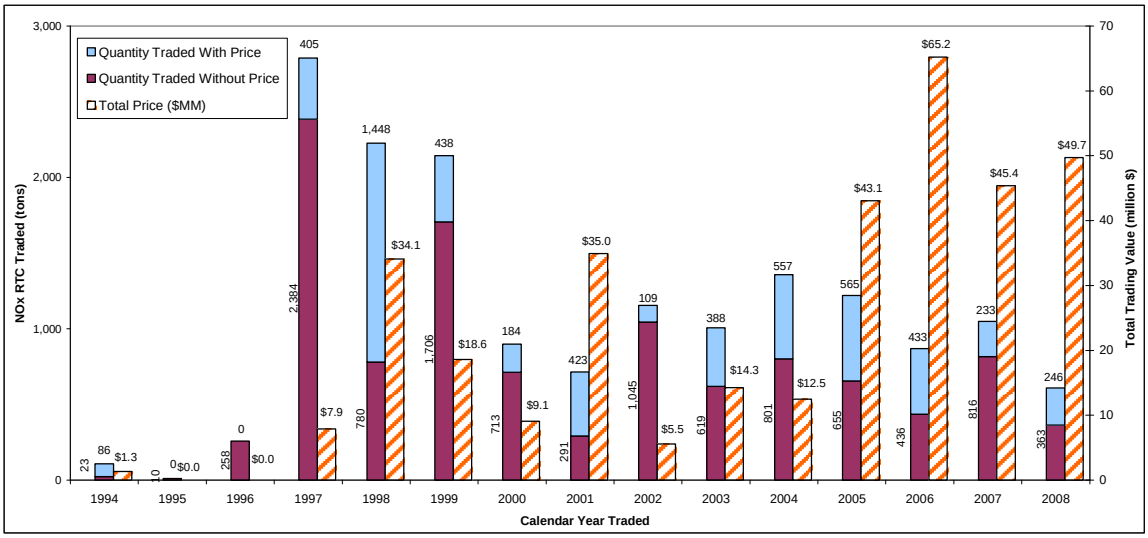
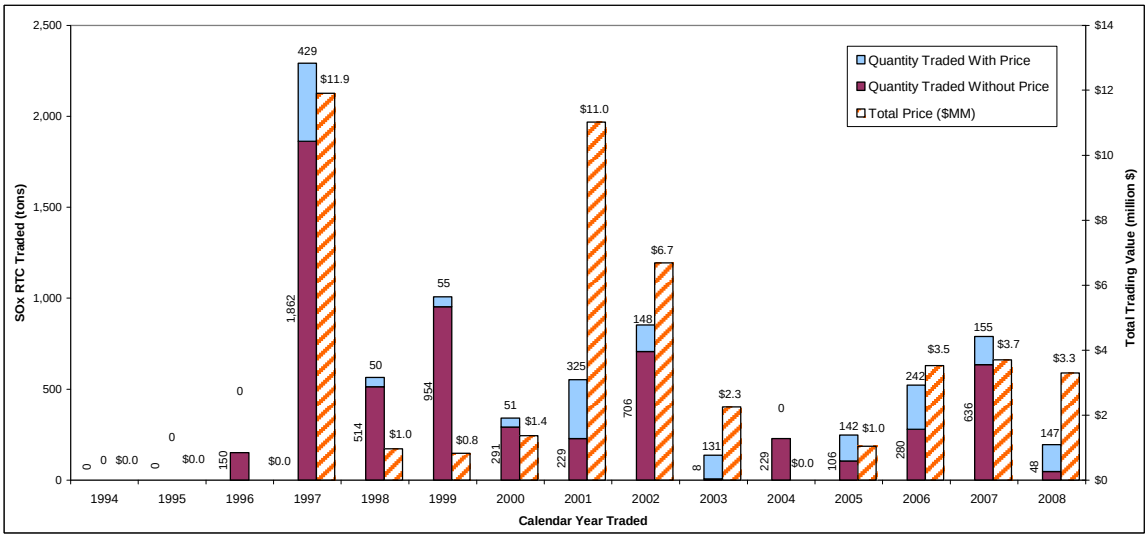


Figure 2-10
IYB SOx RTCs Trades (Excluding Swaps since 2002)



Swap Trades

In addition to traditional trades of RTCs for a price, RTC swaps also occurred between the trading partners. For 2008, swaps of RTCs with different zones, cycles, expiration years, and pollutants occurred. In some cases, swaps involved a combination of RTCs and cash payment as a premium. Two of the NOx RTC swaps in calendar year 2008 involved IYB RTCs. Trading parties swapping RTCs were required to report the equivalent price of RTCs under individual trades. About $9 million in total value was reported from RTCs that were swapped in 2008. The swap values are based on the prices reported on the RTC trade registrations. Values reported on a pair of swap trades

are summed in the total value reported. In cases where commodities other than RTCs are involved in the swap, these commodity values are not included in the above reported total value. For example, in the case of a swap of NOx RTCs valued at $10,000 for another set of RTCs valued at $8,000 together with a cash payment of $2,000, the value of such a swap would have been reported at $18,000 under Table 2-2. The prices of swap trades are excluded from analysis of average trade prices. Tables 2-2 and 2-3 present the calendar years 2002 through 2008 RTC swaps for NOx and SOx, respectively.

Table 2-2
NOx Registrations Involving Swaps

Calendar Year	NOx						
	2002	2003	2004	2005	2006	2007	2008
Total Value ($MM)	$14.31	$7.70	$3.74	$3.89	$7.29	$4.14	$8.41
IYB RTC Swapped with Price (tons)	64	70	0	19	15	0	4
Discrete RTC Swapped with Price (tons)	1,702	1,198	1,730	885	1,106	820	1,946
Number of Swap Registrations with Price	94	64	90	53	49	43	48
Total Number of Swap Registrations	N/A*	N/A*	N/A*	N/A*	N/A*	49	50

*Note: Staff is currently reviewing the trade data for calendar years 2002 through 2006 to properly account for swap trades through brokers without prices in these years. The number of swap registrations will be included in the next annual report.

Table 2-3
SOx Registrations Involving Swaps

Calendar Year	SOx						
	2002	2003	2004	2005	2006	2007	2008
Total Value ($MM)	$6.11	$4.26	$0.39	$2.16	$0.02	$0.00	$0.40
IYB RTC Swapped with Price (tons)	27	1	0	44	0	0	0
Discrete RTC Swapped with Price (tons)	408	656	162	228	24	0	197
Number of Swap Registrations with Price	13	31	13	13	2	0	5
Total Number of Swap Registrations	N/A*	N/A*	N/A*	N/A*	N/A*	0	8

*Note: Staff is currently reviewing the trade data for calendar years 2002 through 2006 to properly account for swap trades through brokers without prices in these years. The number of swap registrations will be included in the next annual report.

RTC Trade Prices

Discrete RTC Prices

Figure 2-11 presents the average annual prices for NOx RTCs for discrete-year trades. The average NOx RTC prices in calendar year 2008 were significantly lower than in calendar years 2006 and 2007. In 2008 the average annual price for discrete-year NOx RTCs ranged from $1,047 per ton for Compliance Year 2007 to $10,984 per ton for Compliance Year 2010. Figure 2-12 shows the average price for discrete-year SOx RTCs ranged from $877 per ton for Compliance Year 2007 to $1,474 per ton for Compliance Year 2009. The discrete-year SOx RTC prices for 2008 were much lower than those traded in calendar year 2007.

Figure 2-11
Average Annual Price for NOx RTCs during Calendar Years 2004 through 2008 for Discrete-Year Trades

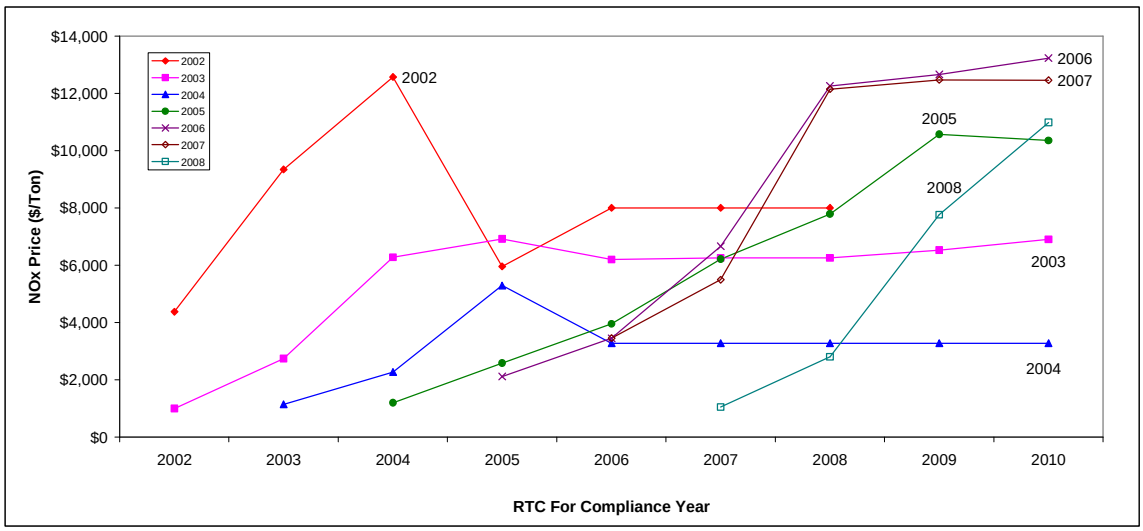
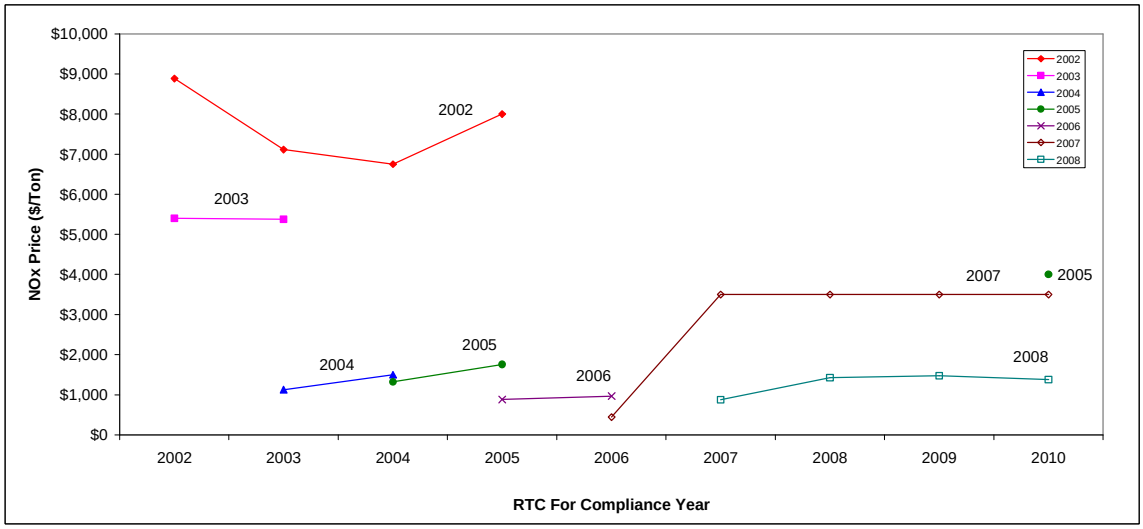


Figure 2-12
Average Annual Price for SOx RTCs during Calendar Years 2004 through 2008 for Discrete-Year Trades



Twelve-Month Rolling Average Price of Compliance Year 2008 NOx RTCs

The Governing Board amended Rule 2002(f) in January 2005 to reduce Compliance Year 2007 and beyond NOx RTC holdings by 22.5% over five years (11.7% in 2007 and additional 2.7 % in each of the years 2008 through 2011), to convert the 10.8% adjustment applied over years 2008 through 2011 to Non-Tradable/Non-Usable RTCs,

and to issue them to the parties that held the RTCs prior to conversion. These amendments also directed the Executive Officer to calculate the 12-month rolling average price of NOx RTCs ("rolling average price") "for all trades for the current compliance year" excluding "RTC transactions reported at no price." Pursuant to the RTC price reporting and averaging methodology approved by the Governing Board in September 2007, "swap" transactions (the exchange of RTCs for other RTCs or for other emissions credits) were also excluded from the calculation of rolling average prices. In the event that this rolling average price exceeds $15,000 per ton, the Executive Officer is required to report the rolling average price to the Governing Board. If the Governing Board determines that the rolling average price exceeds $15,000 per ton it may direct the Executive Officer to convert the annual incremental Non-Tradable/Non-Usable RTCs (2.7%) back to active, tradable RTCs valid for the compliance year in which Cycle 1 facilities are operating at the time the finding is made. In its resolution amending Rule 2002(f), the Governing Board directed the Executive Officer to report the NOx RTC 12-month rolling average price data to the Stationary Source Committee at least quarterly.

As shown in Table 2-4, the twelve-month rolling average prices of Compliance Year 2008 NOx RTCs since January 2008 have been declining and have not exceeded the $15,000 per ton threshold specified in Rule 2002(f). Therefore, it was not necessary for the Executive Officer to report the rolling average price to the Governing Board or for the Governing Board to consider reinstating the incremental NOx RTC adjustment for Compliance Year 2008.

Table 2-4
Twelve-Month Rolling Average Price Data for Compliance Year 2008 NOx RTCs

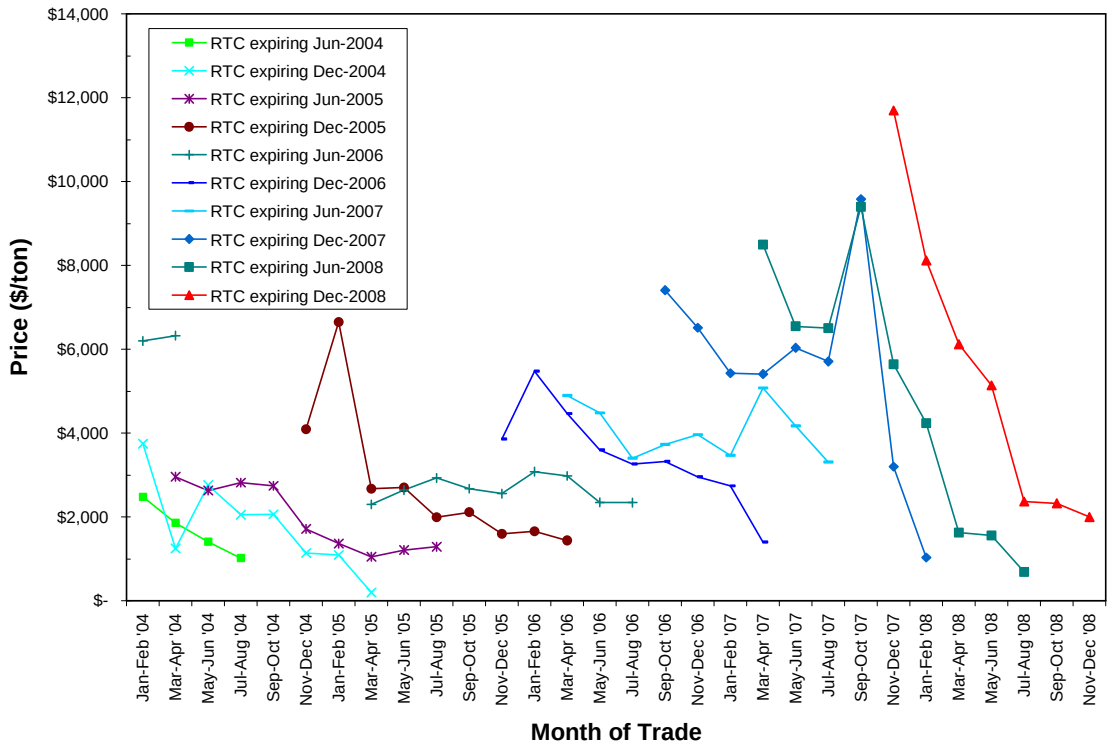
Reporting Month	12-Month Period	Average Price
January 2008	January through December 2007	$12,144 per ton
February 2008	February 2007 through January 2008	$11,806 per ton
March 2008	March 2007 through February 2008	$11,593 per ton
April 2008	April 2007 through March 2008	$11,593 per ton
May 2008	May 2007 through April 2008	$11,493 per ton
June 2008	June 2007 through May 2008	$11,404 per ton
July 2008	July 2007 through June 2008	$11,287 per ton
August 2008	August 2007 through July 2008	$10,800 per ton
September 2008	September 2007 through August 2008	$ 8,175 per ton
October 2008	October 2007 through September 2008	$ 4,953 per ton
November 2008	November 2007 through October 2008	$ 3,811 per ton
December 2008	December 2007 through November 2008	$ 2,945 per ton

Average Price for NOx RTCs Nearing Expiration

Generally, RTC prices decrease as their expiration dates approach. RTC prices are usually lowest during the 60 day-period following their expiration date during which facilities are allowed to trade to reconcile their emissions. This pattern has been repeated every year since 1994 except for Compliance Years 2000 and 2001 (the time of the California energy crisis), when NOx RTC prices increased as the expiration dates approached because there was a shortage of NOx RTCs. In calendar year 2008, prices for NOx RTCs that expired within the same calendar year followed the general trend of RTC prices declining over the course of the Compliance Year.

The bi-monthly average price for these near-expiration NOx RTCs is shown in Figure 2-13 to illustrate the general price trend for these RTCs, which shows an adequate supply to meet RTC demand during the final reconciliation period following the end of the compliance years. A similar analysis is not performed for the price of SOx RTCs nearing expiration because there are not enough SOx trades over the course of the year to generate meaningful data.

Figure 2-13
Bi-Monthly Average Price for NOx RTCs near Expiration



Note: A limited set of data points are used to avoid overcrowding the graph.

IYB RTC Prices

The average annual price for NOx IYB RTCs traded in 2008 is $202,402 per ton, which is higher than the average annual price of $194,369 per ton traded in 2007. The average annual price for SOx IYB RTCs is $22,479 per ton, which is slightly lower than the $23,848 per ton traded in 2007. Data regarding IYB RTCs traded with price (excluding swap trades) for NOx and SOx RTCs are summarized in Tables 2-5 and 2-6, respectively. In calendar year 2008, the average annual IYB RTC prices did not exceed the $546,948 per ton of NOx RTCs or the $393,802 per ton of SOx RTCs program review thresholds established by the Governing Board pursuant to California Health and Safety Code §39616(f).

Investors were involved in a significant proportion of IYB trades in calendar year 2008. They made 60% of all purchases and 37% of all sales of IYB NOx RTCs with price in calendar year 2008. A more detailed discussion of investor participation is presented later in this chapter.

Table 2-5
NOx IYB Pricing Excluding Swap Registrations

Calendar Year	NOx						
	2002	2003	2004	2005	2006	2007	2008
Total Reported Value ($MM)	$5.5	$14.3	$12.5	$43.1	$65.2	$45.4	$49.7
Quantity (tons)	109.5	388.3	557.0	565.3	432.9	233.5	245.6
Number of Trades With Price	31	28	52	71	50	25	27
Average Price ($/ton)	$50,686	$36,797	$22,429	$76,197	$150,665	$194,369	$202,402

Table 2-6
SOx IYB Pricing Excluding Swap Registrations

Calendar Year	SOx						
	2002	2003	2004	2005	2006	2007	2008
Total Reported Value ($MM)	$6.7	$2.3	$0.0	$1.0	$3.5	$3.7	$3.3
Quantity (tons)	147.5	130.9	0	141.5	241.7	155.2	146.8
Number of Trades With Price	5	2	0	74	12	5	5
Average Price ($/ton)	$45,343	$17,228	N/A	$7,409	$14,585	$23,848	$22,479

Market Participants

RECLAIM market participants have traditionally included RECLAIM facilities, brokers, commodity traders, and private investors. Starting in calendar year 2004, mutual funds joined the traditional traders in RTC trades. Market participation expanded further in 2006, when foreign investors started participating in RTC trades.

RECLAIM facilities are the sources and users of RTCs. They usually sell their RTC surpluses by the end of the compliance year or when they have a long-term decrease in emissions. Brokers match buyers and sellers, and usually do not purchase or own the RTCs. Commodity traders and private investors actually invest in and own RTCs and seek profit by trading them. Unlike RECLAIM facilities, investors do not have the burden of allocation compliance. At the end of 2008, three mutual funds were actively participating in the RTC market and two foreign entities were registered with AQMD for the purpose of trading RTCs. The three mutual funds are controlled by a common fund manager. These three mutual funds held 2.4% (234 tons) of the total NOx IYB RTCs and 5.4% (233 tons) of the total SOx IYB RTCs as of the end of 2008. For discussion in this report, "investors" include everyone who holds RTCs and is not a RECLAIM facility permit holder or a broker.

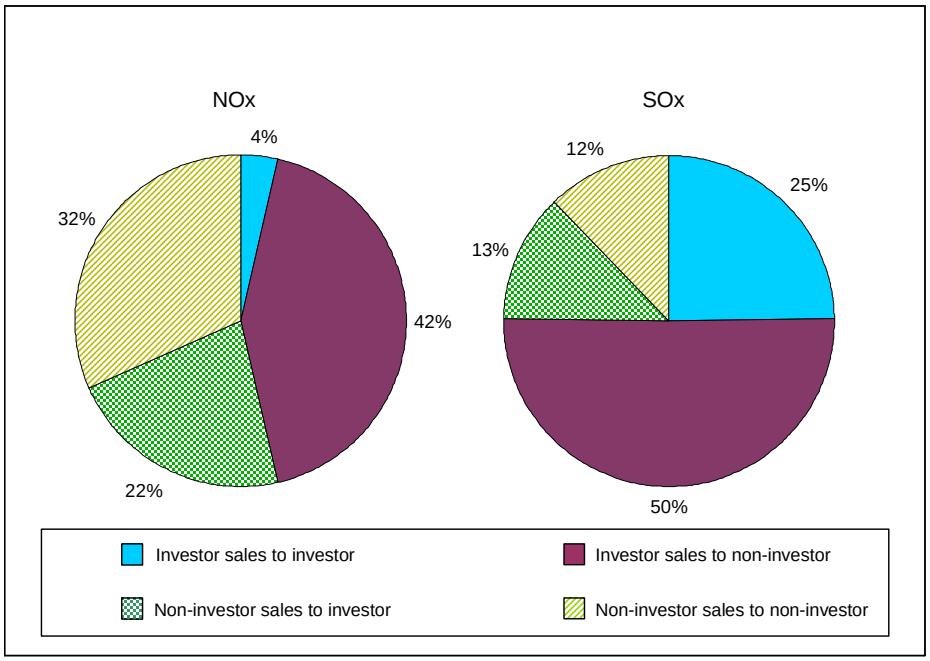
Investors' Participation

Commodity traders, mutual funds, and private investors invest in and own RTCs and seek profit by trading them. Investors' involvement in discrete NOx and SOx trades registered with price[1] in calendar year 2008 is illustrated in Figures 2-14 and 2-15. In

[1] Trades reported without price are excluded from this analysis because they typically represent movement between facilities under common ownership and trades associated with changes of facility ownership, and are therefore not reflective of market behavior.

compiling data for these two figures, staff removed brokers' involvement[2]. Figure 2-14 is based on total value of discrete NOx and SOx RTCs traded, and shows that investors were involved in 68% and 88%, respectively, of the NOx and SOx trades reported by value. Figure 2-15 is based on discrete volume traded with price and shows that investors were involved in 73% and 83% of the NOx and SOx trades, respectively. Figures 2-16 and 2-17 provide similar data for NOx and SOx IYB trades, and show that investors were involved in 97% of NOx IYB trades and 55% of SOx IYB trades on a reported value basis, and 96% of NOx IYB and 67% of SOx IYB trades on the basis of the number of pounds traded with price. As of the end of 2008, investors increased their holding of NOx IYB RTCs to 4.8% (from 4.2% in calendar year 2007), while they decreased their holding of SOx IYB RTCs to 7.9% (from 8.5% in calendar year 2007).

Figure 2-14
Investor-Involved Discrete NOx and SOx Trades Based on Value Traded



[2] The established convention for registering brokered RTC trades is to do so in two sequential steps: first from the seller to the broker, then from the broker to the buyer. However, to avoid double counting of brokered trades in this analysis, they are treated as if each brokered trade had been registered from the seller to the buyer in a single step.

Figure 2-15
Investor-Involved Discrete NOx and SOx Trades Based on Volume Traded with Price

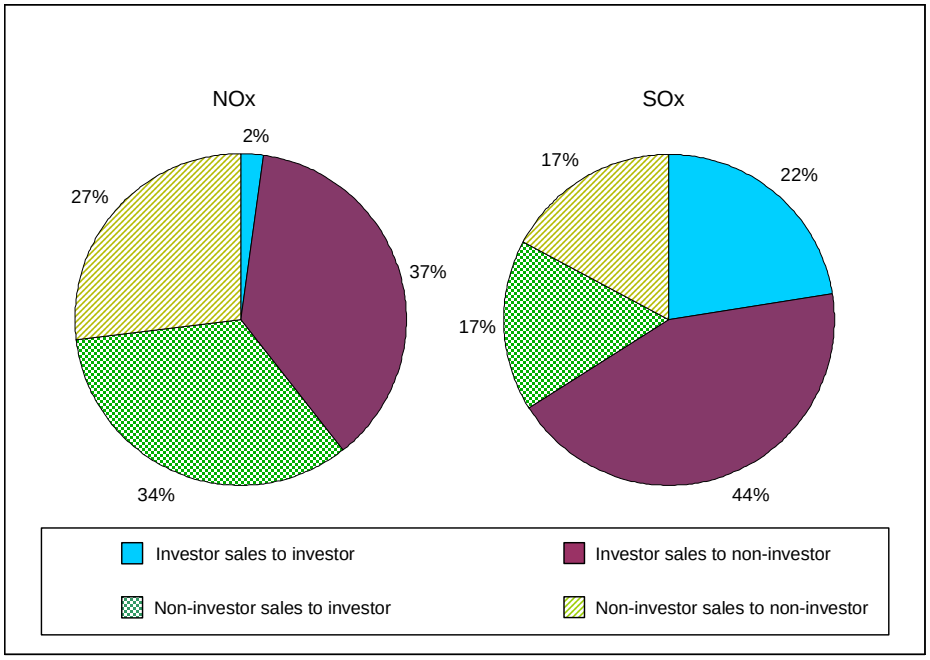


Figure 2-16
Investor-Involved NOx and SOx IYB Trades Based on Value Traded

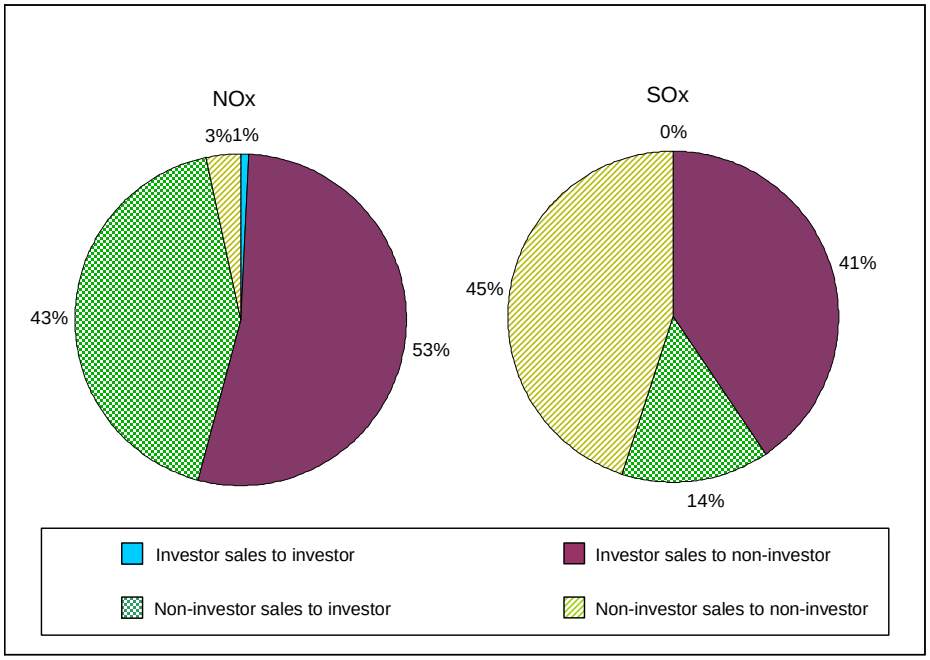
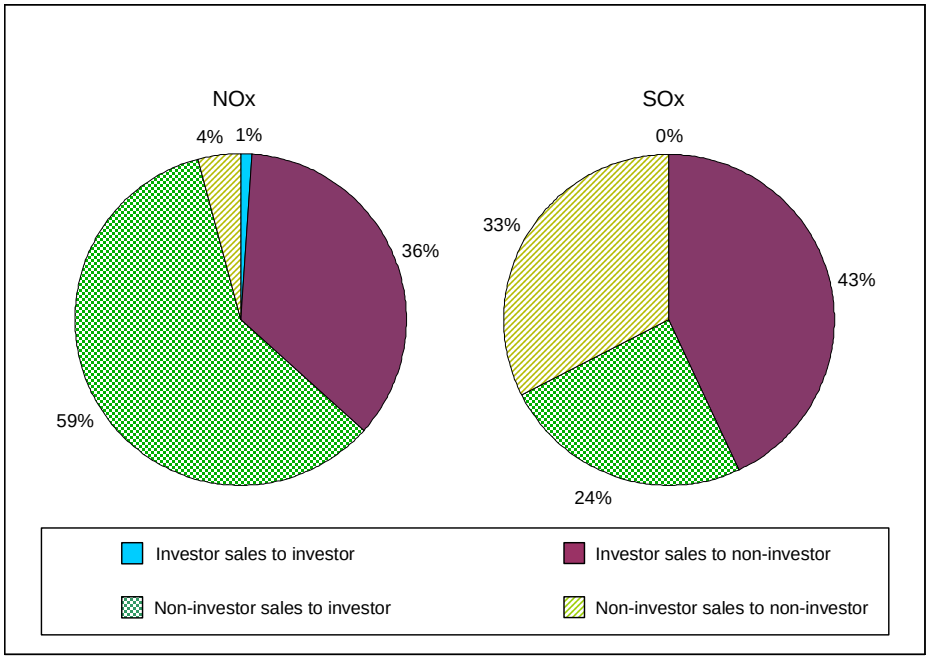


Figure 2-17
Investor-Involved NOx and SOx IYB Trades Based on Volume Traded with Price



The supply of IYB RTCs available for sale has been mainly from facilities that have permanently shut down. Investors have continued to be active in purchasing IYB RTCs from RECLAIM facilities that were shutting down. The eight RECLAIM facilities that shut down during Compliance Year 2007 (refer to Chapter 1) sold a total of 151 tons of NOx IYB RTCs, of which 73 tons (48%) were sold to investors. All SOx IYB RTCs (36 tons) from the one shutdown SOx facility were sold to an investor.

Investors' Impacts on RTC Market

Theoretically, the role of investors in this market is to provide capital for installing air pollution control equipment that costs less than the market value of credits. In addition, investors can also improve price competitiveness. The RECLAIM program may alter this market theory because RECLAIM facility operators have no substitute for RTCs, and pollution controls cannot be implemented within a short time period. That is, there is no alternative source of credits available to RECLAIM facilities when RTC prices increase (they do not have the option to switch to apples when oranges become expensive). Therefore, they may be at the mercy of owners of surplus RTCs in the short term, particularly during times of rapid price increases, as evidenced in 2000 and 2001 during the California energy crisis.

To put investors' holdings in context, RECLAIM facilities have generally held back approximately 10% of their allocations each compliance year as a margin to ensure that they did not inadvertently find themselves exceeding (failing to reconcile) their allocations if their reported emissions were increased as the result of any problems or errors discovered by AQMD inspectors during annual audits. For Compliance Year 2007, the total RECLAIM NOx emissions were 8,742 tons. If total RECLAIM NOx emissions were to remain constant, the NOx RTC surplus in 2011 would only be 935 tons (9.7%), which

is slightly less than the traditional 10% compliance margin. Therefore, the current aggregate investors' holdings of 4.8% of NOx RTCs valid for Compliance Year 2011 and beyond (IYB RTCs) have the potential to result in a sellers' market.

While it can be argued that the holding of IYB RTCs by investors as a group is still small relative to the total supply of IYB RTCs (4.8% of NOx and 7.9% of SOx), there is no clear basis to estimate the level of IYB RTCs available for sale by non-investors or the extent of additional emissions reductions that will be achieved by 2011. IYB RTCs represent an even more critical aspect of the program because these streams of RTCs are sought after to support growth at new or existing facilities. Accordingly, active facilities are less likely to sell their future year RTCs as IYB. As a result, new RECLAIM facilities or facilities with emissions increases are potentially at the mercy of investors holding IYB RTCs. Moreover, investors may have the potential for greater market influence if the recent rise in investor-held NOx IYB RTCs continues.

On the other hand, overall emissions in RECLAIM will certainly change from now through 2011, and can be affected by various factors including installation of more emission control equipment, production change, and shifts in industry sectors. In January 2005, AQMD identified cost-effective control opportunities outside the power producing industry that would amount to 3.7 tons per day of additional NOx reductions based on historical production rates. The significance of investors' holdings will certainly depend on the ability of RECLAIM facilities to generate adequate surplus RTCs in time to dampen the effect of a sellers' market that may exist if demand surges in a short period of time, as it did during the California energy crisis of 2000-2001. Nonetheless, AQMD staff remains concerned about investor participation and is evaluating ways to ensure that such participation does not adversely impact the RECLAIM program.

Other Types of RTC Transactions and Uses

Another type of RTC trade, besides traditional trading and swapping activities, is a trade involving the contingent right (option) to buy or sell RTCs. In those transactions, one party pays a premium for the right to purchase or sell RTCs owned by the other party at a pre-determined price within a certain time period. Until RTCs are transferred from seller to buyer, prices for options are not reported, because the seller is not paid for the actual RTCs, but only for the right to purchase or sell the RTCs at a future date. These rights may or may not be actually exercised. RTC traders are obligated to report options to the AQMD within five days of reaching an agreement. These reports are posted on the AQMD website.

As in prior years, RTCs were used in other programs during 2008. RTCs were provided to mitigate impacts from construction projects under the California Environmental Quality Act. RTCs were also surrendered to satisfy variance conditions and in settlements with the AQMD. In most of these cases, RTCs were retired to mitigate excess emissions.

CHAPTER 3
EMISSION REDUCTIONS

Summary

Aggregate NOx and SOx emissions from RECLAIM facilities continued to be below allocations for Compliance Year 2007. Total aggregate NOx emissions were below total allocations by 21% and total aggregate SOx emissions were below total allocations by 13%. Therefore, aside from the effects of the California energy crisis on Compliance Years 2000 and 2001 NOx emissions, since aggregate emissions have been below aggregate allocations during all other compliance years, it can be concluded that RECLAIM has achieved its targeted emission reductions. Finally, no emissions associated with breakdowns were excluded from facility allocations in Compliance Year 2007. Accordingly, no mitigation is necessary to offset excluded emissions due to approved Breakdown Emission Reports.

Background

One of the major objectives of the annual RECLAIM program audits is to assess whether RECLAIM is achieving its targeted emission reductions. The annual allocations issued to RECLAIM facilities reflect required emission reductions under the subsumed command-and-control rules and control measures. In January 2005, the Board adopted an amendment to Rule 2002 to further reduce RECLAIM NOx allocations to implement the latest BARCT. The adopted NOx allocation reductions are to be phased in during Compliance Years 2007 through 2011. These changes result in cumulative NOx allocation reductions of 22.5% from all RECLAIM facilities when fully implemented in Compliance Year 2011, with the biggest single-year reduction of 11.7% in Compliance Year 2007.

In 2000, power producing facilities increased their power generation in response to the California energy crisis. The corresponding increases in RECLAIM NOx emissions caused a sudden surge in NOx RTC prices. This increase in NOx emissions adversely impacted other RECLAIM participants, as well as the overall NOx emission reduction objective of the program during that time period. To correct this problem, the Governing Board amended Regulation XX in 2001 to bifurcate power producing facilities (as defined in Rule 2000(c)(56)) from the rest of RECLAIM participants to stabilize RTC prices[1]. Power producing facilities were still subject to RECLAIM Program requirements, but they could not purchase additional RTCs to offset their emissions. Instead these facilities were eligible to participate in the Mitigation Fee Program that was in effect through the end of Compliance Year 2004. The RECLAIM rules were subsequently amended by the Governing Board on January 7, 2005 to allow power producing facilities to purchase NOx RTCs, valid for Compliance Year 2005 and after, from any party. For Compliance Year 2007 and on, these January 2005 rule

[1] Bifurcation meant that the largest existing power producing facilities were temporarily isolated from RECLAIM RTC trading, until it was determined that their reentry into RECLAIM RTC trading would not result in any negative impact on facilities in the RECLAIM universe.

amendments impose no remaining trade restrictions on power producing facilities.

Emissions Audit Process

Since the inception of the RECLAIM program, AQMD has conducted regular audits of the emissions data submitted by RECLAIM facilities to ensure the integrity and reliability of facility reported data. The process begins when each facility submits a comprehensive APEP report within sixty days of the end of each compliance year. AQMD staff initially conducts a preliminary review of the APEP reports to assess the accuracy of reported emissions. This audit process is then followed up with field inspections to check the equipment, monitoring devices, and operational records, as well as to review recorded data and calculations to verify accuracy of emission reports submitted during the course of the year (daily, monthly, quarterly, and annually).

Common findings from these audits reveal that some facilities made errors in quantifying their emissions, such as arithmetic errors, use of inappropriate emission factors, or inappropriate use of Missing Data Procedures (MDP). AQMD staff adjusted the APEP reported emissions based on audit results, as necessary, to correct such errors. Whenever AQMD staff finds discrepancies, they discuss the findings with the facility operators, and provide the operators an opportunity to review changes resulting from facility audits and to present additional data or arguments in support of the data stated in their APEP reports. This rigorous audit process, although resource intensive, reinforces RECLAIM's emissions monitoring and reporting requirements and enhances the validity and reliability of the reported emissions data. The audited emissions are used to determine if a facility complied with its allocations. Audited emissions since 2004 for each facility are posted on the AQMD's web page after the audits are completed. The audits of Compliance Year 2007 emission reports submitted by RECLAIM facilities are still on-going for the majority of facilities at the time when this report is compiled.

Emission Trends and Analysis

RECLAIM achieves its emission reduction goals on an aggregate basis by ensuring that annual emissions in total are below allocations. It is important to understand that the RECLAIM program is successful at achieving these emission reduction goals even when some individual RECLAIM facilities exceed their RTC account balances, provided aggregate RECLAIM emissions do not exceed aggregate RTC balances by pollutant. Therefore, aggregate NOx or SOx emissions from all RECLAIM sources are the basis for determining whether the programmatic emission reduction goals for that emittant are met each year. In aggregating emissions from RECLAIM facilities, audited emissions are used in the Annual RECALIM Report for that Compliance Year, where they are available. Where emissions audits are not completed, emissions reported by each facility, either under its APEP report or, if the APEP report is not available, its Quarterly Certification of Emissions Reports (QCERs), are used. At the time of compiling data for each annual report, only a portion of RECLAIM emissions reported under APEP for the year addressed in that report have been audited by AQMD. The emissions listed in Table 3-1, therefore, are based primarily on data reported by

RECLAIM facilities. As the number of completed audits for each compliance year increases, emissions figures from these audits may change the total annual emissions listed in Table 3-1.

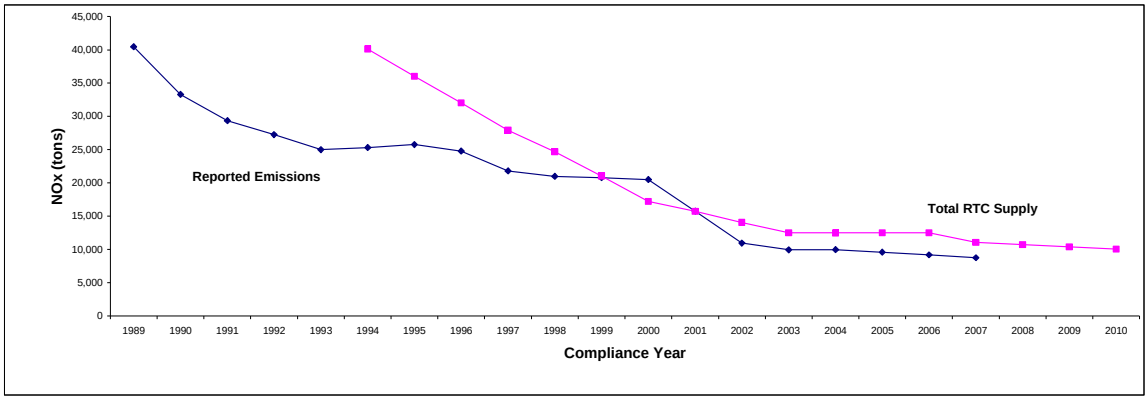
Table 3-1
Annual NOx Emissions for Compliance Years 1994 through 2007

Compliance Year	Annual NOx Emissions[1] (tons)	% Change from 1994	Total NOx RTCs[2] (tons)	NOx RTCs Left Over (tons)	NOx RTCs Left Over (%)
1994	25,314	0.0%	40,127	14,813	37%
1995	25,764	1.8%	36,031	10,267	28%
1996	24,796	-2.0%	32,017	7,221	23%
1997	21,786	-13.9%	27,919	6,133	22%
1998	20,982	-17.1%	24,678	3,696	15%
1999	20,775	-17.9%	21,013	238	1.1%
2000	20,491	-19.1%	17,197	-3,294	-19%
2001	15,721	-37.9%	15,699	-22	-0.14%
2002	10,943	-56.8%	14,062	3,119	22%
2003	9,942	-60.7%	12,486	2,544	20%
2004	9,953	-60.7%	12,477	2,524	20%
2005	9,556	-62.3%	12,484	2,928	23%
2006	9,166	-63.8%	12,487	3,321	27%
2007	8,742	-65.5%	11,034	2,292	21%

[1] The RECLAIM universe is divided into two cycles with compliance schedules staggered by six months. Compliance years for Cycle 1 facilities run from January 1 through December 31 and Cycle 2 compliance years are from July 1 through June 30.
[2] Total RTCs = Allocations + Converted ERCs.

Table 3-1 and Figure 3-1 show that, programmatically, there were excess NOx RTCs remaining after accounting for NOx emissions for every compliance year since 1994, except for Compliance Years 2000 and 2001 when NOx emissions exceeded the total RTC allocations for those two years. Even though there was a programmatic reduction to Compliance Year 2007 NOx holdings of 11.7% of the total RTC allocations as part of the January 2005 rule amendments, Compliance Year 2007 NOx emissions still achieved aggregate RECLAIM emission reduction goals and were below the total allocations by 21%. During Compliance Years 2000 and 2001, power producing facilities operated at production levels significantly higher than their past operation levels due to California's energy crisis. The higher production resulted in elevated emissions from the power producing sector causing the aggregate NOx emissions to rise above the programmatic NOx allocations for both Compliance Years 2000 and 2001.

Figure 3-1
NOx Emissions and Available RTCs



Similar to Table 3-1 and Figure 3-1 for NOx, Table 3-2 presents aggregate annual SOx emissions data for each compliance year, and Figure 3-2 compares aggregate annual SOx emissions with the aggregate annual SOx RTC supply. RECLAIM facilities have not exceeded their SOx allocations on an aggregate basis since program inception. The data indicates that RECLAIM met its programmatic SOx emission reduction goals and demonstrated equivalency in SOx emission reductions compared to the subsumed command-and-control rules and control measures. Since 1995, annual SOx emissions have decreased every year, except for slight increases in Compliance Years 1998, 2005, and lately 2007. Typically, the reductions in SOx emissions resulted mainly from emission reduction projects (*e.g.*, removal of sulfur compounds from feed streams and refinery fuel gas, and the use of catalysts to reduce SOx emissions) implemented at the area's refineries. However, the Compliance Year 2007 SOx emissions from one of the area's refineries increased by 188 tons relative to its average SOx emissions from the previous three compliance years, primarily due to a planned turnaround of the refinery's Fluid Catalytic Cracking Unit (FCCU). The higher SOx emissions were associated with the re-starting of the FCCU. Also, during this turnaround, the facility shutdown the Light-Ends Recovery Unit (LRU) that reduces sulfur content from its fuel stream. As a result, the refinery combustion devices' use of higher sulfur-content fuel caused the higher SOx emissions.

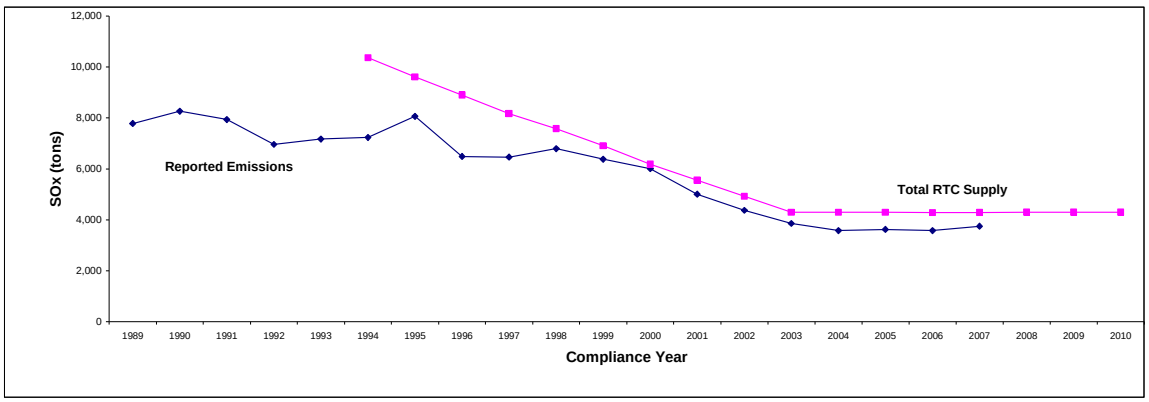
Tables 3-1 and 3-2 list annual emissions at the time individual annual audit reports were compiled. As described in previous paragraphs, staff continues to conduct audits of emission reports from RECLAIM facilities. As such, the aggregate emissions as reported under these two tables may change as additional audits are completed. Generally, based on the results of completed audits, aggregate emissions for past compliance years may increase by small percentages from these reported emissions. Nonetheless, the aggregate emissions remain below programmatic emission reduction goals, except for 2000 and 2001 compliance year NOx emissions, which already exceeded the total RTC allocations, as shown in Table 3-1. Starting with the next annual audit report, staff intends to update the data in these two tables with audited results for all years (back to 1994) for which emission audits are completed.

Table 3-2
Annual SOx Emissions for Compliance Years 1994 through 2007

Compliance Year	Annual SOx Emissions[1] (tons)	% Change from 1994	Total SOx RTCs[2] (tons)	SOx RTCs Left Over (tons)	SOx RTCs Left Over (%)
1994	7,232	0.0%	10,365	3,133	30%
1995	8,064	+11.5%	9,612	1,548	16%
1996	6,484	-10.3%	8,894	2,410	27%
1997	6,464	-10.6%	8,169	1,705	21%
1998	6,793	-6.1%	7,577	784	10%
1999	6,378	-11.8%	6,911	533	8%
2000	6,009	-16.9%	6,185	176	3%
2001	5,003	-30.8%	5,557	554	10%
2002	4,374	-39.5%	4,924	550	11%
2003	3,855	-46.7%	4,292	437	10%
2004	3,580	-50.5%	4,292	712	17%
2005	3,621	-49.9%	4,292	671	16%
2006	3,580	-50.5%	4,282	702	16%
2007	3,750	-48.2%	4,286	536	13%

[1] The RECLAIM universe is divided into two cycles with compliance schedules staggered by six months. Compliance years for Cycle 1 facilities run from January 1 through December 31 and Cycle 2 compliance years are from July 1 through June 30.
[2] Total RTCs = Allocations + Converted ERCs.

Figure 3-2
SOx Emissions and Available RTCs



Impacts from Power Producing Facilities

Tables 3-3 and 3-4 illustrate emission trends between Compliance Years 2000 and 2007, and the emission impacts from power producing facilities. Table 3-3 illustrates the impact of NOx emissions from the power producing facilities on the overall RECLAIM NOx allocations in Compliance Year 2000. Table 3-4 presents Compliance Year 2007 emissions in the same fashion as Table 3-3. Although

power producing facilities were initially allocated 1,506 tons of NOx RTCs for Compliance Year 2007 based on their historical operations, these facilities only reported 546 tons of NOx emissions in Compliance Year 2007. This level was approximately 6,147 tons (92%) below emissions from power producing facilities in Compliance Year 2000. The decrease in emissions was due to the installation of NOx control equipment at power producing facilities and a reduction in electricity generation. To a lesser extent, there was also an appreciable reduction in emissions from non-power producing facilities. Non-power producing facilities emitted 8,196 tons of NOx in Compliance Year 2007, which was 4,259 tons (34%) less than their emissions in Compliance Year 2000. In aggregate, annual NOx emissions in Compliance Year 2007 totaled 8,742 tons from RECLAIM facilities. This total is over 54% less than the 19,148 tons of NOx emissions in Compliance Year 2000. Thus, both power producing and non-power producing sectors contributed to emission decreases between Compliance Years 2000 and 2007.

Table 3-3
Impact of NOx Emissions from Power Producing Facilities on the Overall NOx Allocations for Compliance Year 2000

	Compliance Year 2000				
	Non-Power Producing Facilities (a)		Power Producing Facilities (b)		All Facilities (a) + (b)
	RTCs Held	Initial Allocations	RTCs Held	Initial Allocations	
Allocations [tons]	12,345	14,895	4,852	2,302	17,197
Emissions [tons]	12,455		6,693		19,148
Difference [tons] (Exceedance)	(110)	2,440	(1,841)	(4,391)	(1,951)

Table 3-4
NOx Emissions and Allocations for Compliance Year 2007

	Compliance Year 2007				
	Non-Power Producing Facilities (a)		Power Producing Facilities (b)		All Facilities (a) + (b)
	RTCs Held	Initial Allocations	RTCs Held	Initial Allocations	
Allocations [tons]	9,830	9,528	1,204	1,506	11,034
Emissions [tons]	8,196		546		8,742
Difference [tons] (Exceedance)	1,634	1,332	658	960	2,292

Comparison to Command-and-Control Rules

RECLAIM subsumed a number of command-and-control rules[2] and sought to achieve reductions equivalent to these subsumed rules. RECLAIM facilities are exempt from the subsumed rules' requirements, that apply to SOx or NOx emissions once the facilities comply with the applicable monitoring requirements of Rules 2011 and 2012, respectively. During Compliance Year 2007, Rule 1110.2 – Emissions from Gaseous and Liquid-Fueled Engines, Rule 1470 – Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines were amended, and Rule 1309.1 – Priority Reserve and Rule 1315 – Federal New Source Review Tracking System was re-adopted.

In February 2008, Rule 1110.2 was amended to strengthen source testing requirements, an inspection and monitoring plan, air-to-fuel ratio controllers, and additional Continuous Emission Monitoring Systems (CEMSs) for groups of engines over 1,500 horsepower. The amendment also removed the efficiency correction of the current NOx and volatile organic compound (VOC) emission limits, reduced the CO limit, and added new NOx and VOC emission limits equivalent to current Best Available Control Technology (BACT). Additionally, the amendment included new emission standards for new electrical generating engines equivalent to the CARB Distributed Generation (DG) standard for NOx, and CO and VOC standards substantially lower than current BACT. With respect to Biogas (digester or landfill gas) engines, the rule amendment added a 10% limit on natural gas usage except when the operator demonstrates that a higher limit is required to prevent biogas flaring or to meet certain operating requirements. The amendment also provided that if a technology assessment in 2010 demonstrates that cost-effective technology was commercially available for biogas engines to meet the same future emission limits as natural gas engines by 2012, they would be required to do so. Finally, the Rule 1110.2 amendment clarified the exemption status of non-road engines, removed emission standards for portable engines, removed exemptions for ski area engines and engines

[2] See Tables 1 and 2 of Rule 2001.

outside South Coast and Salton Sea Air Basins, and added new exemptions for startups, overhauls, and initial commissioning of engines.

Approximately 860 stationary engines are subject to Rule 1110.2, and about 16% of those engines are at RECLAIM facilities. Since RECLAIM's New Source Review (NSR) provisions under Rule 2005 requires BACT, the new BACT NOx limits and the new DG standards for NOx are applicable to new or modified engines at RECLAIM facilities. The amendments pertaining to biogas engines do not impact RECLAIM facilities, because there are currently no facilities with biogas engines in the program, and they are initially exempt from entering the RECLAIM universe per Rule 2001.

Finally, Rule 1470 was amended in June 2007. This rule was originally adopted in April 2004, and implements CARB's Airborne Toxic Control Measure (ATCM) for Stationary Compression Ignition Engines. The main goal of this rule is to reduce airborne toxics, mainly diesel particulate matter, from the subject equipment. This latest amendment will allow use of new Tier II engines for direct-drive fire pumps to provide manufacturers additional time to complete safety certifications for Tier III engines. The amendment clarified and made Rule 1470 more consistent with AQMD's BACT requirements for new engines enrolled in demand response programs. Since this rule does not provide any exemption for sources operated by RECLAIM facilities, and Rule 2005 also requires equivalency to T-BACT, RECLAIM sources are subject to the applicable provisions of Rule 1470.

Program Amendments

The only amendments to Regulation XX during calendar year 2007 were to Rule 2004 - Requirements, Rule 2007 – Trading Requirements, and Rule 2010 – Administrative Remedies and Sanctions. These amendments to the RECLAIM program were addressed in the previous annual report (March 7, 2008).

In March of 2007, the USEPA issued the "Clean Air Fine Particle Implementation Rule", which required non-attainment areas to meet particulate matter with aerodynamic diameter less than 2.5 microns (PM2.5) standards by 2010. This rule specifically required non-attainment areas to evaluate all control measures to reduce direct PM2.5 emissions, as well as emissions of PM2.5 precursors, especially SOx. Additionally, the California Clean Air Act (CCAA) required the AQMD to achieve and maintain state standards by the earliest practicable date for extreme non-attainment areas and to implement all BARCT for existing sources. Health and Safety Code (H&SC) §40406 specifically defines BARCT as "…an emission limitation that is based on the maximum degree of reduction achievable taking into account environmental, energy, and economic impacts by each class or category of source."

Since the Basin is classified as a federal non-attainment area, the AQMD had to develop an Air Quality Management Plan (AQMP) by 2008 to address the implementation process to meet the PM2.5 standards by 2010. The AQMP revision in 2007 served as the region's attainment demonstration for the PM2.5 standards and included a formal request to extend USEPA's PM2.5 attainment date to 2015. In order to meet the PM2.5 standards, the 2007 AQMP identified NOx and SOx reductions as the two most effective tools in reaching attainment. Consequently, the 2007 AQMP revision included Control Measure CMB-02

("Further SOx Reductions for RECLAIM") which estimated that implementation of SOx BARCT could achieve at least 3 tons per day SOx emission reductions from 2011 to 2014.

Projected BARCT from the 1991 AQMP was used when establishing each facility's original NOx and SOx annual allocation reductions. More recently, a BARCT analysis was conducted for NOx RECLAIM facilities that resulted in the previously-discussed further RECLAIM NOx allocation reductions by 22.5%. Currently, a similar BARCT analysis is being performed for SOx RECLAIM facilities as an element of the implementation of CMB-02. It is expected that this analysis will result in proposed amendments to Rule 2002 – Allocations for Oxides of Nitrogen (NOx) and Oxides of Sulfur (SOx). A Public Hearing regarding such proposed amendments is anticipated in 2009.

Rule 2015 – Backstop Provisions

Rule 2015 requires that AQMD review the RECLAIM program and implement necessary measures to amend it whenever aggregate emissions exceed the aggregate allocations by five percent or more, or whenever the average annual price of RTCs exceeds $15,000 per ton. Compliance Year 2007 aggregate NOx and SOx emissions were both below aggregate allocations as shown in Figures 3-1 and 3-2. Average annual prices for NOx and SOx RTCs in calendar year 2007 were below $15,000 per ton, as shown in Chapter 2.

Breakdowns

Pursuant to Rule 2004(i) – Breakdown Provisions, a facility may request that breakdown emissions in excess of normal emission levels not be counted toward the facility's allocations. In order to qualify for such exclusion, the facility must demonstrate that the excess emissions were the result of a fire or a mechanical or electrical failure caused by circumstances beyond the facility's reasonable control. The facility must also take steps to minimize emissions resulting from the breakdown, and mitigate the excess emissions to the maximum extent feasible. Applications for exclusion of unmitigated breakdown emissions from a facility's total reported annual RECLAIM emissions must be approved by AQMD in writing. In addition, facilities are required to quantify unmitigated breakdown emissions, for which an exclusion request has been approved, in their APEP report.

As part of the annual audit report, Rule 2015(d)(3) requires AQMD to determine whether excess emissions approved as exclusions from allocations have been programmatically offset by unused RTCs within the RECLAIM program. If the breakdown emissions exceed the unused RTCs, any excess breakdown emissions must be offset by either: (1) deducting the RTC holdings for the subsequent compliance year from facilities that had unmitigated breakdown emissions, proportional to each facility's contribution to the total amount of unmitigated breakdown emissions; and/or (2) RTCs obtained by the Executive Officer for the compliance year following the completion of the annual audit report in an amount sufficient to offset the unmitigated breakdown emissions.

As shown in Table 3-5, a review of APEP reports for the 2007 compliance year found that no facilities requested to exclude breakdown emissions from being

counted against their allocations. Thus, for Compliance Year 2007, no additional offset is required pursuant to Rule 2015(d)(3).

Table 3-5
Breakdown Emission Comparison for Compliance Year 2007

Emittant	Unmitigated Breakdown Emissions[1] (tons)	Compliance Year 2007 Unused RTCs[2] (tons)
NOx	**0**	**2,292**
SOx	**0**	**536**

[1] Data for unmitigated breakdown emissions (not counted against Allocation) as reported under APEP reports.

[2] Unused RTCs = RTC supply – Reported Emissions.

Impact of Changing Universe

As discussed in Chapter 1, changes to the NOx RECLAIM universe from July 1, 2007 to June 30, 2008 were: three facilities were included into RECLAIM, no facilities were excluded, and eight facilities ceased operations. An additional facility was included in the SOx market. However, because this facility was an existing NOx-only facility, it did not affect the overall number of facilities in the RECLAIM universe. Staff conducted an analysis to evaluate the impact on emissions reductions due to these changes in the RECLAIM universe.

During Compliance Year 2007, three facilities entered the RECLAIM program. Two facilities were partial changes of operator of existing RECLAIM facilities. Even though these partial changes of operator may change emissions, the splitting of one facility into two only means that the facilities now share the same "slice of pie", in terms of allocations. As such, partial changes of operator have no impact on the fixed supply of NOx RTCs. The third inclusion was actually a reactivation of a previously shutdown facility as explained in Chapter 1. As explained below, a shutdown facility still retains its RTC holdings. So as with the case of this facility deciding to start back up, there is no impact on the fixed supply of NOx RTCs because the facility still retained its RTC holdings. However, the new emissions represent renewed demands on the RTC holdings.

When a newly-constructed facility joins the RECLAIM universe, it is required to obtain sufficient RTCs to offset its NOx or SOx emissions. These RTCs must be obtained through the trading market and are not issued by AQMD to the facility. Such facilities increase the overall demand for the fixed supply of RTCs because they increase total RECLAIM emissions without increasing the total supply of RTCs. No newly-constructed facility was added to RECLAIM during Compliance Year 2007.

The shutdown of a RECLAIM facility results in a reduction in actual emissions. The shutdown facility retains its RTC holdings, which it may continue to hold as an investment, transfer to another facility under common ownership, or trade on the market. Therefore, although the facility is no longer emitting, its RTCs may be used at another facility. Shutdown facilities have the opposite effect on the

RTC market as do new facilities: the overall demand for RTCs is reduced while the supply remains constant. Seven NOx-only RECLAIM facilities and one NOx-and-SOx RECLAIM facility shut down permanently during Compliance Year 2007.

A facility is excluded from the RECLAIM universe if AQMD staff determines that the facility was included in the program in error. In such cases, both the emissions and the RTCs that were issued to the facility for future years are withdrawn, thereby having a neutral impact on the RTC supply. No facilities were excluded in Compliance Year 2007.

Facilities that were in operation prior to October 15, 1993 and are not categorically excluded may choose to enter the program even though they did not initially meet the inclusion criteria. They may also be included by AQMD if their facility-wide emissions increase to four tons or more per year of NOx or SOx or both. When one of these facilities opts-in to the program, they are issued RTC allocations based on their operational history using the same methodology applied to facilities in the initial universe. Overall, inclusions shift the accounting of emissions from the universe of non-RECLAIM sources to the universe of RECLAIM sources without actually changing the overall emissions inventory. Inclusions also change the rules and requirements that apply to the affected facilities. There were no facilities that were in operation prior to October 15, 1993 and chose to opt-in to the RECLAIM program. From January 1, 2007 to June 30, 2008, no facilities were included into the RECLAIM program based on the Rule 2001 threshold of actual NOx and/or SOx emissions greater than or equal to four tons.

In short, new facilities and shutdown facilities change the demand for RTCs without changing the supply, while exclusions and inclusions of existing facilities make corresponding changes to both the demand and the supply, thereby mitigating their own impact on the markets and shifting emissions between the RECLAIM and non-RECLAIM universes. Note that this does not apply to the previously discussed case of the inclusion of facilities resulting from partial change of operator.

Compliance Year 2007 NOx and SOx emissions and initial allocations for facilities which were included into the program, were shutdown, or were excluded are summarized in Tables 3-6 and 3-7.

Table 3-6
NOx Emissions Impact from the Changes in Universe (Tons)

Category	Compliance Year 2007 NOx Emissions (tons)	Compliance Year 2007 NOx Initial Allocations (tons)
Shutdown Facilities	32	226
Excluded Facilities	Not applicable	Not applicable
Included Facilities*	12	216
RECLAIM Universe	8,742	11,034

* Represents only facilities that had RTC holdings, then shutdown, and eventually decided to re-start operations.

Table 3-7
SOx Emissions Impact from the Changes in Universe (Tons)

Category	Compliance Year 2007 SOx Emissions (tons)	Compliance Year 2007 SOx Initial Allocations (tons)
Shutdown Facilities	6	36
Excluded Facilities	Not applicable	Not applicable
Included Facilities*	Not applicable	Not applicable
RECLAIM Universe	3,750	4,286

* Represents only facilities that had RTC holdings, then shutdown, and eventually decided to re-start operations.

CHAPTER 4
NEW SOURCE REVIEW ACTIVITY

Summary

The annual program audit assesses New Source Review (NSR) activity from RECLAIM facilities in order to ensure that RECLAIM is complying with federal NSR requirements and state no net increase (NNI) in emissions requirements, while providing flexibility to facilities in managing their operations and allowing new sources into the program. In Compliance Year 2007, two facilities joined the RECLAIM NOx market, one facility joined both the NOx and SOx markets, and one existing NOx-only facility joined the SOx market. In Compliance Year 2007, twenty-one NOx RECLAIM facilities and three SOx RECLAIM facilities had NSR NOx emission increases due to expansion or modification. This shows that RECLAIM does not inhibit entry into the program or expansion at existing RECLAIM facilities.

RECLAIM is required to comply with federal NSR requirements at a 1.2-to-1 offset ratio for NOx emission increases and at least at a 1-to-1 offset ratio for SOx emission increases on a programmatic basis. In Compliance Year 2007, RECLAIM provided offset ratios of 39-to-1 for NOx and 10-to-1 for SOx on an aggregate basis, demonstrating federal equivalency. Compliance with the federally-required offset ratio also demonstrates compliance with the state NNI requirements for new or modified sources. In addition, RECLAIM requires application of Best Available Control Technology (BACT) for all new or modified sources with emission increases.

Background

Emissions increases from the construction of new or modified stationary sources in non-attainment areas are regulated by both federal NSR and state no net increase (NNI) requirements to ensure that progress toward attainment of ambient air quality standards is not hampered. RECLAIM is designed to comply with federal NSR and state NNI requirements without hindering a facility's ability to expand or modify its operations.

Title 42, United States Code §7511a, paragraph (e), requires major sources in extreme non-attainment areas to offset emission increases of extreme nonattainment pollutants and their precursors at a 1.5-to1 ratio based on potential to emit. However, if all major sources in the extreme non-attainment area are required to implement federal BACT, a 1.2-to-1 offset ratio may be used. Federal BACT is comparable to California's BARCT. AQMD requires all major sources to employ federal BACT/California BARCT and, therefore, is eligible for a 1.2-to-1 offset ratio for ozone precursors (*i.e.*, NOx and VOC). The federal offset requirement for major SOx sources is at least a 1-to-1 ratio. Health and Safety Code §40920.5 requires "no net increase in emissions from new or modified stationary sources of nonattainment pollutants or their precursors" (*i.e.*, a 1-to-1 offset ratio on an actual emissions basis). RTCs are allocated based on

actual (not potential) historical emissions adjusted (reduced) to reflect changes in BARCT.

RECLAIM requires California BACT/federal Lowest Achievable Emission Rate (LAER) analysis for new or modified sources with emissions increases of RECLAIM pollutants. This provision complies with both the state and federal requirements regarding control technologies. In addition to offset and BACT requirements, RECLAIM subjects RTC trades that are conducted to mitigate emissions increases over the sum of the facility's starting allocation and non-tradable credits to trading zone restrictions to ensure net ambient air quality improvement within the sensitive zone established by Health and Safety Code §40410.5. Furthermore, facilities with actual RECLAIM emissions that exceed their initial allocation by 40 tons per year or more are required to analyze the potential impact of their emissions increases through modeling.

Rule 2005 – New Source Review for RECLAIM requires RECLAIM facilities to provide, when permits to operate are issued, sufficient RTCs to offset the annual increase in potential emissions for the first year of operation at a 1-to-1 ratio. After the first year of operation, the same rule also requires RECLAIM facilities to provide sufficient RTCs to offset at a 1-to-1 ratio the annual potential emissions from newly permitted equipment at the commencement of each compliance year. Although RECLAIM allows a 1-to-1 offset ratio for emissions increases, RECLAIM complies with the federal offset requirement by complying with the 1.2-to-1 offset requirement for NOx on an aggregate basis. The annual reductions of aggregate allocations generate sufficient excess emissions reductions to mitigate the difference between the emissions offset ratio required by RECLAIM and the higher offset ratios required under federal law for NOx. Similarly, provided aggregate RECLAIM emissions do not exceed aggregate allocations for a specific RECLAIM pollutant, RECLAIM inherently complies with the state's NNI requirement on a programmatic basis.

This annual audit report assesses NSR permitting activities for the 2007 compliance year to verify that programmatic compliance of RECLAIM with federal and state NSR requirements has been maintained.

NSR Activity

Evaluation of NSR data for Compliance Year 2007 shows that RECLAIM facilities continue to successfully expand or modify their operations while complying with NSR requirements. During Compliance Year 2007, twenty-two existing RECLAIM facilities triggered NSR provisions and had a total of 59 tons per year of NOx emission increases due to expansion or modification. Similarly, three existing SOx RECLAIM facilities increased SOx emissions by a total of 56 tons per year, and were subject to NSR provisions due to expansion or modification.

NSR Compliance Demonstration

RECLAIM is designed to comply with the federal NSR offset requirements. Meeting the NSR requirement (offset ratio of 1.2-to-1 for NOx and at least 1-to-1 for SOx) also demonstrates compliance with the state NNI requirements. Section 173 (c) of the federal Clean Air Act (Act) states that only emissions reductions beyond the requirements of the Act, such as federal Reasonably Available

Control Technology (RACT), shall be considered creditable as emissions reductions for offset purposes. Since the initial allocations (total RTC supply in Compliance Year 1994) already met federal RACT requirements when the program was initially implemented, any emissions reductions beyond the initial allocations are available for NSR offset purposes until RACT becomes more stringent. The programmatic offset ratio calculations presented in the Annual RECLAIM Audit Reports for Compliance Years 1994 through 2004 have relied upon aggregate Compliance Year 1994 allocations as representing RACT. However, staff recognizes that RACT may have become more stringent in the intervening years, so it may no longer be appropriate to calculate the programmatic offset ratio based upon aggregate 1994 allocations. Aggregate allocations for each compliance year represent federal BACT, which is equivalent to local BARCT). Federal BACT is more stringent than federal RACT (*i.e.*, the best available control technology is more stringent than that which is reasonably available), so staff started using current allocations (BACT) as a surrogate for RACT as the basis for calculating programmatic offset ratios in the annual audit report for Compliance Year 2005 and is continuing to do so in this report. This is a more conservative (*i.e.*, more stringent) approach than using actual RACT and is much more conservative than using aggregate Compliance Year 1994 allocations. The advantage of this approach is that, as long as the calculated offset ratios are at least 1.2-to-1 for NOx and 1-to-1 for SOx, it provides certainty that RECLAIM has complied with federal and state offset requirements without the need to know exactly where RACT lies for RECLAIM facilities.

Provided aggregate RECLAIM emissions do not exceed aggregate allocations, all RECLAIM emissions are offset at a ratio of 1-to-1. This leaves all unused allocations available to provide offsets beyond the 1-to-1 ratio for NSR emission increases. Unused allocations are based on all Cycle 1 and Cycle 2 RTCs of a given compliance year and the aggregate RECLAIM emissions for the selected time period. The NSR emission increase is the sum of emission increases due to permit activities at all RECLAIM facilities during the same compliance year. The aggregate RECLAIM offset ratios are expressed by the following formula:

$$\text{Offset Ratio} = \left(1 + \frac{\text{compliance year's total unused allocations}}{\text{total NSR emission increases}}\right)\text{-to-1}$$

The Compliance Year 2007 NOx programmatic offset ratio calculated from this methodology is 40-to-1:

$$\text{Offset Ratio} = \left(1 + \frac{2{,}292 \text{ tons}}{59 \text{ tons}}\right)\text{-to-1}$$

$$= 39 \text{ -to-1}$$

The Compliance Year 2007 SOx programmatic offset ratio calculated from this methodology is 11-to-1:

$$\text{Offset Ratio} = \left(1 + \frac{536 \text{ tons}}{56 \text{ tons}}\right)\text{-to-1}$$

$$= 10 \text{ -to-1}$$

RECLAIM continues to generate sufficient excess emissions reductions to provide greater than 1.2-to-1 and 1-to-1 offset ratios for both NOx and SOx as required by federal law. This compliance with the federal offset requirements is built into the RECLAIM program through annual reductions of the allocations assigned to RECLAIM facilities and the subsequent allocation adjustments adopted by the Governing Board to implement BARCT.

BACT and modeling are also required for any RECLAIM facility that installs new equipment or modifies existing sources if the installation or modification results in an increase in emissions of RECLAIM pollutants. Furthermore, the RTC trading zone restrictions in Rule 2005 – New Source Review for RECLAIM, limit trades conducted to offset emission increases over the sum of the facility's starting allocation and non-tradable credits to ensure net ambient air quality improvement within the sensitive zone, as required by state law.

The result of the review of the NSR activity in Compliance Year 2007 shows that RECLAIM is in compliance with both state NNI and federal NSR requirements. AQMD will continue to monitor NSR activity under RECLAIM in order to assure continued progress toward attainment of ambient air quality standards without hampering economic growth in the Basin.

Rule 2004(q) Modeling Requirements

Rule 2004 as amended in May 2001, requires RECLAIM facilities with actual NOx or SOx emissions exceeding their initial allocation in Compliance Year 1994 by 40 tons per year or more to conduct modeling to analyze the potential impact of the increased emissions. The modeling analysis is required to be submitted within 90 days of the end of the compliance year. For Compliance Year 2007, three RECLAIM facilities were found to be subject to this requirement. Two of these facilities had emissions that exceeded their Compliance Year 1994 NOx allocation by at least 40 tons. Both of these facilities submitted modeling analyses that showed the requirements of Rule 2004 were met. The third facility exceeded its 1994 SOx allocation by at least 40 tons and has not submitted the required modeling analysis and, as a result, AQMD took enforcement action.

CHAPTER 5
COMPLIANCE

Summary

*There were 296 NOx and 31 SOx active facilities in the RECLAIM program at the start of the 2007 compliance year. During the 2007 compliance year, one facility that was previously shutdown re-started operations and two additional inclusions to the NOx RECLAIM Program were due to partial change of operator. For the SOx universe, an already existing NOx RECLAIM facility was included as a SOx facility. Of these 299 NOx RECLAIM facilities active during the 2007 compliance year, 281 facilities (94%) complied with their NOx allocations, and all but two of the 32 SOx facilities (94%) complied with their SOx allocations. Verification of facility-reported emissions and audits of facility records for the compliance year are still on-going. Initial results for Compliance Year 2007 revealed that the overall RECLAIM NOx and SOx emission goals were met for the compliance year (*i.e.*, aggregate emissions were below aggregate allocations for Compliance Year 2007). Nineteen facilities exceeded their individual allocations. The combined excess NOx emissions totaled 34.5 tons and the excess SOx emissions totaled 57.9 tons. These amounts are relatively small when compared to the overall allocations for the compliance year (0.3% of NOx and 1.5% of SOx allocations).*

Background

RECLAIM facilities have the flexibility to choose among compliance options to meet their annual allocations, by either trading RTCs or reducing emissions. However, this flexibility must be supported by standardized emission monitoring, reporting, and recordkeeping (MRR) requirements to ensure the reported emissions are real, quantifiable, and enforceable. In order to meet clean air goals, AQMD must guarantee that the annual emissions targets for the RECLAIM facilities are being met. As a result, compliance is one of the most critical elements of the RECLAIM program.

The MRR requirements were designed to provide accurate and up-to-date emission reports. Once facilities install and complete certification of the required monitoring and reporting equipment, they are relieved from command-and-control rule limits and requirements. Mass emissions from RECLAIM facilities are then determined by monitoring and reporting equipment. If monitoring equipment fails to produce quality-assured data or the facility fails to file timely emissions reports, RECLAIM rules require emissions be determined by a rule-prescribed methodology known as Missing Data Procedures (MDP). Depending on the performance of the monitoring equipment (*i.e.*, availability of quality-assured data), MDP use a tiered approach to calculate emissions. As availability of quality-assured data increases, the calculated emissions become more representative of the actual emissions, but when the availability of quality-assured data is low, MDP calculations approach “worst case” assessments.

Allocation Compliance

Requirements

At the beginning of the RECLAIM program, each RECLAIM facility received an annual allocation for each compliance year from 1994. Upon entry to the RECLAIM program, an existing facility new to the program is also issued annual allocations according to the same methodology as those facilities that were included at the start of the program. However, a facility without an operating history prior to 1994 receives no allocation and must purchase enough RTCs to cover the emissions for their operations. Knowing their emission goals, RECLAIM facilities have the flexibility to decide how to manage their emissions in order to meet their allocations in the most cost-effective manner. Facilities may buy RTCs to increase their allocations, sell unneeded RTCs, or employ emission control technology to further curtail emissions.

At the end of the reconciliation period for each quarter and each compliance year, a RECLAIM facility must hold sufficient RTCs in its allocation account to cover its quarterly as well as year-to-date emissions for the compliance year. Facilities may buy or sell RTCs from each other at any time during the year in order to ensure that their emissions are covered. In addition, at the end of each compliance year, there is a 60-day reconciliation period during which facilities have a final opportunity to buy or sell RTCs for that year. By the end of this reconciliation period, each facility is required to certify the emissions for the preceding compliance year by submitting its APEP Report.

Compliance Audit

AQMD has conducted annual audits of the data submitted by RECLAIM facilities to ensure the integrity and reliability of the data each compliance year since the beginning of the program in 1994. The audit process includes conducting field inspections to check the equipment, monitoring devices and operational records, and emissions calculations to verify the emissions reported electronically to AQMD or submitted in QCERs and APEP reports. These inspections revealed that some facilities made errors in quantifying their emissions, such as arithmetic errors, used inappropriate emission factors, or used MDP, inappropriately. Therefore, some of the reported emissions in the QCER or APEP reports were adjusted upon completion of the audits.

Whenever an audit revealed a facility's emissions to be in excess of its annual allocation and the facility data appeared incomplete or inaccurate, the facility was provided an opportunity to review the audit and to present additional data to further refine the audit results. Emissions data are ensured to be valid and reliable through this extensive and rigorous audit process.

Compliance Status

At the beginning of Compliance Year 2007, there were 296 NOx RECLAIM facilities and 31 SOx facilities. As stated in Chapter 1, three facilities were included in the NOx RECLAIM program and an already existing NOx RECLAIM facility was included into the SOx universe, bringing the number of NOx RECLAIM facilities to 299 and the numbers of SOx facilities to 32 during

Compliance Year 2007. Based on QCERs, APEP reports, or completed AQMD audit results, enforcement action was taken on seventeen facilities exceeding their NOx allocations, one facility exceeding its SOx allocation, and one facility for exceeding both its NOx and SOx allocations. Of these nineteen facilities, seventeen facilities exceeded their allocations in Compliance Year 2007 because they failed to acquire sufficient RTCs to cover their reported emissions during either the quarterly or annual reconciliation periods. One facility exceeded its allocation because it failed to include emissions from its Rule 219 exempt equipment in its emission reports and failed to consider those emissions during reconciliation. The one remaining facility exceeded its allocation due to calculation errors related to its major source CEMS. This corresponded to an overall allocation compliance rate of 94% (281 out of 299 facilities) for NOx RECLAIM facilities and 94% (30 out of 32 facilities) for SOx RECLAIM facilities as of the writing of this report. The amounts of excess emissions from these facilities were 34.5 tons of NOx and 57.9 tons of SOx (0.3% of aggregate NOx and 1.5% of aggregate SOx allocations). Appendix D lists the facilities that AQMD determined had failed to reconcile their emissions with their allocations for Compliance Year 2007. Audits of emissions reported by facilities are still on-going as stated in Chapter 3. As facility-reported emissions are verified and audits are completed, the list of facilities that exceeded their allocations is updated whenever applicable. Additional cases of allocation violation may be identified. On the other hand, facility audits may reveal that a facility that reported an allocation exceedance did not actually exceed its allocation. The up-to-date list is available to the public at AQMD Headquarters in Diamond Bar by contacting RECLAIM Administration Team staff.

Impact of Missing Data Procedures

MDP was designed to provide a method for determining emissions when an emission monitoring system fails to yield valid emissions. For major sources, these occurrences may be caused by failure of the monitoring systems of the Data Acquisition And Handling System (DAHS). Major sources are also required to use MDP for determining emissions whenever daily emissions reports are not submitted by the applicable deadline. When comparing actual emissions with a facility's use of substituted MDP emissions, the range of MDP emissions can vary from "more representative" to emissions being overstated in a "worst case" scenario. For instance, an MDP "worst case" scenario may occur for major sources that fail to have their CEMS certified in a timely manner, and therefore, have no valid CEMS data that can be used in the substitution. In other cases, where prior CEMS data is available, MDP is applied in tiers depending on the duration of missing data periods and the availability of monitoring systems. As the duration of missing data periods gets shorter and the historical availability of monitoring systems gets higher, the substitute data yielded by MDP becomes more representative of actual emissions.

In addition to MDP for major sources, RECLAIM rules also define MDP for large sources and process units. These MDP procedures are applicable when a process monitoring device fails or when a facility operator fails to record process rates or fuel usage. The resulting MDP emissions reports are reasonably representative of the actual emissions because averaged or maximum emissions from previous operating periods may be used.

Based on Compliance Year 2007 APEP reports, 78 NOx facilities and 14 SOx facilities used MDP in reporting their annual emissions. In terms of mass emissions, 5.6% of the total reported NOx emissions and 7.0% of the total reported SOx emissions in the APEP reports were calculated using MDP for Compliance Year 2007. Table 5-1 compares the impact of MDP on annual emissions for the last few compliance years versus the second compliance year, 1995 (MDP was not fully implemented during the 1994 compliance year).

Table 5-1
MDP Impact on Annual Emissions

	Percent of Reported Emissions Using Substitute Data[1]							
Emittant	**1995**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**
NOx	23.0% (65)	8.1% (47)	3.4% (85)	4.5% (87)	8.3% (106)	3.0% (88)	2.5% (48)	5.6% (78)
SOx	40.0% (12)	11.0% (9)	4.8% (14)	4.7% (15)	10.4% (16)	3.6% (15)	0.0% (0)	7.0% (14)

[1] Numbers in parenthesis represent the number of facilities that reported use of MDP in each compliance year.

As indicated in Table 5-1, the current impact of MDP on reported emissions is within the normal range of recent years. In most of the cases where MDP was used, the substituted data were representative of actual emissions, as explained below.

Most of the issues associated with CEMS certifications were resolved prior to the 1999 compliance year. Since then, very few facilities have had to submit emissions reports based on the worst case scenario under MDP, which may considerably overstate the actual emissions from major sources. As an example, most facilities that reported emissions using MDP in 1995 did so because they did not have their CEMS certified in time to report actual emissions. Since their CEMS had no prior data, MDP called for an application of the most conservative procedure to calculate substitute data by assuming continuous operation at the maximum rated capacity of the facility's equipment, regardless of the actual operational level during the missing data periods. As a result, the calculation yielded substitute data that may have been much higher than the actual emissions. In comparison to the 65 NOx facilities implementing MDP in Compliance Year 1995, 78 facilities reported NOx emissions using MDP in Compliance Year 2007. Even though this number is higher, the percentage of emissions reported using MDP during Compliance Year 2007 is much lower. Since most CEMSs were certified and had been reporting actual emissions by the beginning of the 2007 compliance year, facilities that had to calculate substitute data were able to apply less conservative methods of calculating MDP for systems with high availability and shorter duration of missing data periods. Therefore, the substitute data they calculated for their missing data periods were more representative of the actual emissions.

It is important to note that the portions of annual emissions that are attributed to MDP include actual emissions from the sources as well as the possibility of overestimated emissions. For example, it is estimated that 5.6% of NOx annual emissions were reported using MDP in Compliance Year 2007. This does not mean that 5.6% of Compliance Year 2007 reported NOx emissions were not real. A portion of the 5.6% may be overestimated emissions due to conservative MDP, but a significant portion (or possibly all) of it could have been actual emissions from the sources. Unfortunately, the portion that represents the actual emissions cannot be readily estimated because the extent of this effect varies widely, depending on source categories and operating parameters, as well as the tier of MDP applied. As an example, refineries tend to operate at maximum capacity for 24 hours per day and seven days per week, except for scheduled shutdowns for maintenance and barring major breakdowns or other unforeseeable circumstances. Therefore, missing data emissions calculated for such facilities could be more reflective of the actual emissions than those calculated for facilities that do not operate on a continuous basis. On the other hand, MDP could significantly overestimate emissions from sources that operate intermittently and have low monitoring system availability, and/or lengthy missing data periods.

For Compliance Year 2007, a significant portion of NOx and SOx emissions data quantified using MDP (79% and 77%, respectively) were reported by refineries. However, as mentioned before, these reported emissions are more likely to be actual emissions instead of overstated emissions due to the continuous nature of refinery operations.

Emissions Monitoring

Overview

The accuracy of reported RECLAIM facility emissions—and thereby the enforceability of the RECLAIM program—is assured through a three-tiered hierarchy of MRR requirements. The MRR category into which equipment at a facility falls is based on what kind of equipment it is and on the level of emissions produced or potentially produced by the equipment. RECLAIM divides all NOx sources into major sources, large sources, process units, and equipment exempt pursuant to Rule 219. All SOx sources are divided into major sources, process units, and equipment exempt pursuant to Rule 219. Table 5-2 shows the monitoring requirements applicable to each of these categories.

Table 5-2
Monitoring Requirements for RECLAIM Sources

Source Category	Major Sources (NOx and SOx)	Large Sources (NOx only)	Process Units and Rule 219 Equipment (NOx and SOx)
Monitoring Method	Continuous Emission Monitoring System (CEMS)	Fuel Meter or Continuous Process Monitoring System (CPMS)	Fuel Meter and/or Timer
Reporting Frequency	Daily	Monthly	Quarterly

Continuous Emission Monitoring System (CEMS)

Requirements

CEMSs represent both the most accurate and the most reliable method for continuously monitoring all of the parameters necessary to directly determine mass emissions of NOx and SOx, as well as the most costly method. These attributes make CEMSs the most appropriate method for the largest emission-potential equipment in the RECLAIM universe, major sources, which are relatively few in number but represent a majority of the total emissions from all equipment.

Alternatives to CEMSs, or Alternative Continuous Emission Monitoring System (ACEMS), are allowed under the RECLAIM regulation. These are devices that do not directly monitor NOx or SOx mass emissions; instead, they correlate multiple process parameters to arrive at mass emissions. ACEMS must be determined by the AQMD to be equivalent to CEMS in relative accuracy, reliability, reproducibility, and timeliness.

Compliance Status

By the end of calendar year 1999, almost all facilities that were required to have CEMSs had their CEMSs certified or provisionally approved. The only remaining uncertified CEMSs are for sources that recently became subject to major source reporting requirements and sources that modified their CEMS. It is expected that there will be a few new major sources each year. Therefore, there will continue to be a small number of CEMSs in the certification process at any time. There are no longer any CEMSs that have been in the certification process for a significant length of time and that have been delayed due to unusual circumstances.

Standing Working Group on RECLAIM CEMS Technical Issues

CEMS technical issues, which delayed certification of many CEMSs, arose over the course of RECLAIM implementation. To address these issues and further assist facilities in complying with major source monitoring requirements, a Standing Working Group on RECLAIM CEMS Technical Issues (SWG) was

formed to provide a forum in which facility representatives, consultants and AQMD staff could discuss and work out technically-sound and reasonable solutions to CEMS issues. In the past, the SWG met quarterly to discuss progress and also bring up new issues. However, since existing issues have been resolved and new issues are infrequent, the SWG currently is only convened as necessary.

Semiannual and Annual Assessments of CEMSs

RECLAIM facilities conduct their Relatively Accuracy Test Audit (RATA) of certified CEMSs using private sector testing laboratories approved under the AQMD Laboratory Approval Program (LAP) at their prescribed intervals. These tests are conducted either semiannually or annually, depending on the most recent relative accuracy value (the sum of the average differences and the confidence coefficient). The interval is annual only when all required relative accuracies obtained during an audit are 7.5% or less.

To verify the quality of CEMSs, the RATA report compares the CEMS data to reference method data taken simultaneously by a LAP-approved source testing contractor. The relative accuracy performance requirements for the RATAs are ±20% for pollutant concentration, ±15% for stack flow rate, and ±20% for pollutant mass emission rate (the product of concentration and stack flow rate). The RATAs also determine whether CEMS data must be adjusted for low readings compared to the reference method (bias adjustment factor), and by how much. The RATA presents two pieces of data, the CEMS bias (how much it differs from the reference method on the average) and the CEMS confidence coefficient (how variable that bias or average difference is).

Tables 5-3 and 5-4, respectively, summarize the 2007 and 2008 calendar years' passing rates for RATAs of certified CEMSs for NOx and SOx concentration, total sulfur in fuel gas concentrations, stack flow rate (in-stack monitors and F-factor based calculations), and NOx and SOx mass emissions. However, the tables do not include SOx mass emissions calculated from total sulfur analyzer systems because such systems serve numerous devices, and therefore are not suitable for mass emissions-based RATA testing.

Table 5-3
Passing Rates Based on Relative Accuracy Test Audits of Certified CEMSs in 2007[1]

Concentration						Stack Flow Rate				Mass Emissions			
NOx		SO_2		Total Sulfur		In-Stack Monitor		F-Factor Based Calc.		NOx		SOx[2]	
No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass
364	100	57	100	20	100	49	100	374	100	364	100	57	100

1. All passing rates calculated from data submitted before January 9, 2008 and may exclude some data from the 4th quarter of calendar year 2007. About five percent of test audits were still submitted in paper form. RATAs include Cylinder Gas Audit (CGA) tests.
2. Does not include SOx emissions calculated from total sulfur analyzers.

Table 5-4
Passing Rates Based on Relative Accuracy Test Audits of Certified CEMSs in 2008[1]

Concentration						Stack Flow Rate				Mass Emissions			
NOx		SO_2		Total Sulfur		In-Stack Monitor		F-Factor Based Calc.		NOx		SOx[2]	
No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass
403	100	59	100	22	100	51	100	381	100	403	100	59	100

1. All passing rates calculated from data submitted before January 2, 2009 and may exclude some data from the 4th quarter of calendar year 2008. About five percent of test audits were still submitted in paper form. RATAs include Cylinder Gas Audit (CGA) tests.
2. Does not include SOx emissions calculated from total sulfur analyzers.

As indicated in Tables 5-3 and 5-4, the passing rates for NOx/SO_2 concentration, stack flow rate, and mass emissions were high. Since the inception of RECLAIM there have been significant improvements with respect to the availability of reliable calibration gas, the reliability of the reference method, and an understanding of the factors that influence the ability to obtain valid total sulfur analyzer data. Additionally, the use of AQMD LAP-approved source testing contractors by RECLAIM facilities has contributed to the high passing rates.

Electronic Data Reporting of RATA Results

Facilities operating CEMSs under RECLAIM are required to submit RATA results. Traditionally, these results are presented in formal source test reports. AQMD, with help of the SWG, set up an electronic reporting system, known as Electronic Data Reporting (EDR), to allow RATA results to be submitted on diskettes or by electronic mail using a standardized format. This system minimizes the amount of material the facility must submit to the AQMD and also facilitates the RATA review process. With this added option, many facilities have employed the EDR system to report RATA results, which has helped the AQMD expedite the review process.

Non-Major Source Monitoring, Recordkeeping, and Reporting

Emissions quantified for large sources are primarily based on a concentration limit or an emission rate specified in the Facility Permit. Other variables used in the calculation of large source emissions are dependent on the specific process of the equipment, but generally include fuel usage, applicable dry F-factor, and the higher heating value of the fuel used. RECLAIM requires large sources to be source tested within defined three-year windows in order to validate the equipment's concentration limit or emission rate. Since emissions are fuel-based, the monitoring equipment required to quantify emissions is a non-resettable fuel meter must be corrected to standard temperature and pressure. Large source emission data must be submitted electronically on a monthly basis.

Process unit emission calculations are similar to those of large sources in that emissions are quantified using either the fuel-based calculations for a concentration limit or an emission factor specified in the Facility Permit. Similar to large sources, variables used in emission calculations for process units are

dependent on the equipment's specific process, but generally include fuel usage, applicable dry F-factor, and the higher heat content of the fuel used. Emissions of equipment exempt under Rule 219 are quantified using emission factors and fuel usage. Process units that are permitted with concentration limits are required to be source-tested within specified five-year windows. No source testing is required of equipment exempt under Rule 219. Since emissions are fuel-based for both process units and equipment exempt under Rule 219, the monitoring equipment required to quantify emissions is a non-resettable fuel meter, corrected to standard temperature and pressure. Process units and equipment exempt under Rule 219 must submit emission reports electronically on a quarterly basis.

Emissions Reporting

Requirements

RECLAIM is designed to take advantage of electronic reporting technology to streamline reporting requirements for both facilities and AQMD, and to help automate tracking compliance. Under RECLAIM, facilities report their emissions electronically on a per device basis to the AQMD's Central Station computer as follows:

- Major sources must use a Remote Terminal Unit (RTU) to telecommunicate emission data to the AQMD Central Station. The RTU collects data, performs calculations, generates the appropriate data files, and transmits the data to the Central Station. This entire process is to be performed by the RTU without human intervention.
- Emission data for all equipment other than major sources may be transmitted via RTU or compiled manually and transmitted to the Central Station via modem. Alternatively, since January 2005, the existing AQMD internet based application, Web Access To Electronic Reporting System (WATERS), was upgraded to allow RECLAIM facilities to transmit emission data for these sources. The data may be transmitted directly by the facility or through a third party.

Compliance Status

The main concern for emission reporting is the timely submittal of daily reports from major sources. If daily reports are not submitted by the specified deadlines, RECLAIM rules may require that emissions from CEMSs be ignored and the emissions be calculated using MDP. Daily emission reports are submitted by the RTU of the CEMS to the AQMD Central Station via telephone lines. Often communication errors between the two points are not readily detectable by facility operators. Undetected errors can cause facility operators to believe that daily reports were submitted when they were not received by the Central Station. In addition to providing operators a means to confirm the receipt of their reports, the WATERS application can also display electronic reports that were submitted to, and received by, the Central Station. This system helps reduce instances where MDP must be used for late or missing daily reports, because the operators

can verify that the Central Station received their daily reports, and can resubmit them if there were communication errors.

Protocol Review

Even though MRR protocols were only required by Rule 2015(b)(1) for the first three compliance years of the RECLAIM program, staff continues to review the effectiveness of enforcement and MRR protocols. Based on such review, appropriate revisions to the protocols may be needed to achieve improved measurement and enforcement of RECLAIM emission reductions, while minimizing administrative costs to AQMD and RECLAIM participants.

Since the RECLAIM program was adopted, staff has produced rule interpretations and implementation guidance documents to clarify and resolve specific concerns about the protocols raised by RECLAIM participants. In situations where staff could not interpret existing rule requirements to adequately address the issues at hand, the protocols or rules have been amended. During calendar year 2007, amendments were made to Rule 2004 - Requirements, Rule 2007 – Trading Requirements, and Rule 2010 – Administrative Remedies and Sanctions. These amendments to the RECLAIM program were addressed in the previous annual report (March 7, 2008). No amendment was made to the RECLAIM rules during calendar year 2008. Staff will continue to work closely with RECLAIM participants to resolve any issues and concerns that may arise.

CHAPTER 6
JOB IMPACTS

Summary

According to the Compliance Year 2007 employment survey, the RECLAIM program had no impact on jobs at most facilities. RECLAIM facilities reported a net loss of 413 jobs, representing 0.33% of their total employment. Most of these losses were attributed to factors other than RECLAIM. Eight RECLAIM facilities were listed as shutdown during Compliance Year 2007. One of these facilities reported on their Annual Permit Emissions Program (APEP) that RECLAIM was a contributing factor in their decision to close, and attributed a loss of 40 jobs to RECLAIM. Three other facilities reported a combined loss of an additional 34 jobs due to RECLAIM.

Background

The APEP reports submitted by RECLAIM facilities include survey forms that are used to evaluate the socioeconomic impacts of the program. Facilities were asked to indicate on the forms the number of jobs at the beginning of Compliance Year 2007 and any changes that took place in each of three categories; manufacturing, sale of products, and non-manufacturing. The number of jobs gained and lost in each category during the compliance year was tabulated on the basis of data reported by facilities.

Additionally, the APEP reports ask facilities that shutdown during Compliance Year 2007 to provide the reasons for their closure. The APEP reports also allow facilities to indicate whether the RECLAIM program led to the creation or elimination of jobs during Compliance Year 2007. Those facilities that reported a change in the number of jobs due to RECLAIM were asked to specify the number of jobs lost or gained, and to state why the job loss or creation was attributed to RECLAIM.

Since data regarding job impacts and facility shutdowns are derived from the APEP reports, the submittal of these reports are essential in assessing the influence that the RECLAIM program has on these issues. The following discussion represents data obtained from APEP reports submitted to AQMD and clarifying information collected by AQMD staff. AQMD has no way to verify whether or not the reported job impacts from the RECLAIM facilities are real or perceived.

Job Impacts

Table 6-1 summarizes job impact data gathered from Compliance Year 2007 APEP reports and follow-up telephone interviews. It should be noted that the total number of facilities reporting job gains or losses does not equal the sum of the number of facilities reporting job changes in each category (*i.e.*, the manufacture, sales of products, and non-manufacture categories) due to the fact that some facilities may report changes under more than one of these categories.

A total of 138 facilities reported 11,259 job gains, while 158 facilities reported a total of 11,672 job losses. Net job losses were reported in the manufacturing (1,011) and the sale of products (23) categories. A net gain of 621 jobs was reported in the non-manufacturing category. The total net loss of 413 jobs represents a net decrease in jobs at RECLAIM facilities of 0.33% during Compliance Year 2007.

Table 6-1
Job Impacts at RECLAIM Facilities for Compliance Year 2007

Description	Manufacture	Sale of Products	Non-Manufacture	Total
Initial Jobs	56,257	969	66,157	123,383
Overall Job Gain	4,379	112	6,768	11,259
Overall Job Loss	5,390	135	6,147	11,672
Final Jobs	55,246	946	66,778	122,970
Net Job Change	-1,011	-23	621	-413
Percent Net Job Change	-2%	-2%	1%	-0.33%
Facilities Reporting Job Gains	99	29	83	138
Facilities Reporting Job Losses	130	32	92	158

Appendix C identifies eight RECLAIM facilities as shutdown during Compliance Year 2007. Two of the facilities shut down manufacturing operations before this compliance year, but remained in the program because they did not file APEPs. Since these two shutdown facilities did not submit APEPS, job impact information is unavailable. Consequently, Table 6-1 does not include employment data from these two shutdown facilities. One of these shut down due to declining demand for its products and its inability to meet the monitoring, reporting, and recordkeeping requirements of RECLAIM imposed as part of a condition of an AQMD Abatement Order. The other facility shut down solely due to declining demand for its products. No employment data is available for these two shutdowns.

Of the remaining six facilities that reported shutting down their manufacturing operations during Compliance Year 2007, one shut down due to high manufacturing costs in California and moved the plant out of state. Two more of these facilities listed declining demand for their products, and high cost of manufacturing, production, and raw materials as the reasons for shutdown; one of them also listed cost of meeting governmental and air pollution regulations as an additional reason for shutdown. One facility shut down because its steam host was shutting down. Another shut down because its new owner wanted to redevelop the property on which the facility stood. Lastly, one facility listed cost of meeting air pollution regulations, specifically RECLAIM, as the reason for shutdown. In summation, seven of the eight shut down facilities did not cite RECLAIM as a factor in the decision to shut down (although one of the seven did cite the cost of complying with air pollution regulations).

Four facilities reported job impacts attributed to the RECLAIM program (refer to Appendix E). The single facility that cited RECLAIM as a cause for shutting down, reported a loss of 40 jobs. Of the remaining three facilities that reported job impacts but did not shut down, two facilities cited a total of 34 jobs lost due to

the RECLAIM program. One of these facilities attributed a loss of 20 jobs due to increased environmental compliance costs of which RECLAIM was a part, whereas the other indicated a loss of 14 jobs due to stringent air regulations that caused them to close their alkyd production line. The fourth facility reported a job gain by hiring one additional staff to help with other responsibilities in addition to fulfilling monitoring, recordkeeping and reporting requirements for environmental compliance, including RECLAIM.

It should be noted that this analysis of socioeconomic impacts based on APEP reports and follow-up interviews is focused only on changes in employment that occurred at RECLAIM facilities. The effect of the program on the local economy outside of RECLAIM facilities, including consulting and source testing jobs, is not considered.

CHAPTER 7
AIR QUALITY AND PUBLIC HEALTH IMPACTS

Summary

Rule 2015 specifies that each annual RECLAIM program audit include, among other elements, assessments of emissions trends and seasonal fluctuations in emissions, geographic distribution of emissions, per capita exposure to air pollution, and toxic risk reductions. This chapter addresses each of these issues.

Emissions reported by RECLAIM facilities have been in an overall downward trend since the program's inception. When compared to the previous compliance year, NOx emissions in Compliance Year 2007 continued their downward trend (five percent). SOx emissions in Compliance Year 2007 increased slightly (five percent) in comparison to the previous year, although they remained well below total allocations. Quarterly calendar year 2007 NOx emissions ranged from approximately three percent below to three percent above the mean NOx emissions for the year. Quarterly calendar year 2007 SOx emissions ranged from approximately four percent below to nine percent above the year's mean SOx emissions. Thus, there were no significant seasonal fluctuations in emissions. Furthermore, this year's analysis of the geographical distribution of emissions on a quarterly basis, as in each previous year's analysis, does not show any distinct shift in the geographical distribution of emissions.

The California Clean Air Act (CCAA) required a 50% reduction in population exposure to ozone by December 31, 2000. Analysis of per capita exposure (the length of time each person is exposed) to ozone in 1998 and 2000 shows that the Basin achieved the December 2000 target for ozone well before the deadline. In fact, Los Angeles County, Orange County, and the South Coast Air Basin overall achieved compliance with the December 2000 target prior to 1994, and Riverside and San Bernardino Counties achieved compliance in 1996. In calendar year 2008, the per capita exposure to ozone continued to be well below the target set for December 2000.

Air toxic health risk is primarily caused by emissions of certain volatile organic compounds (VOCs) and metals, rather than NOx or SOx emissions, and RECLAIM facilities are subject to the same air toxic regulations as other sources in the Basin. Therefore, it can be concluded that, the RECLAIM program creates no toxic impact beyond what would have occurred with the rules and control measures RECLAIM subsumed.

Background

RECLAIM is designed to achieve the same, or higher level of, benefits in terms of air quality and public health as would have been achieved from implementation of the control measures and command-and-control rules that RECLAIM subsumed. Therefore, as a part of each annual program audit, AQMD evaluates per capita exposure to air pollution, toxic risk reductions, emission trends, and seasonal fluctuations in emissions. AQMD also generates quarterly emissions

maps depicting the geographic distribution of RECLAIM emissions. This chapter addresses:

- Emission trends for RECLAIM facilities;
- Seasonal fluctuations in emissions;
- Geographic patterns of emissions;
- Per capita exposure to air pollution; and
- Toxics impacts.

Emission Trends for RECLAIM Sources

Concerns were expressed during program development that RECLAIM might cause sources to increase their aggregate emissions during the early years of the program due to perceived over-allocation of emissions. The analysis of emissions from RECLAIM sources indicates that this did not occur. Figures 7-1 and 7-2 show NOx and SOx emissions from RECLAIM sources since 1989.

Figure 7-1
NOx Emission Trend for RECLAIM Sources

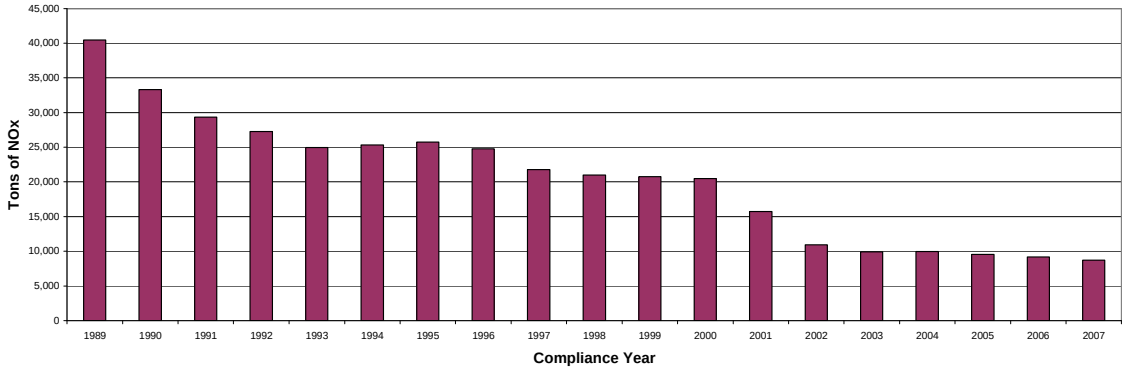
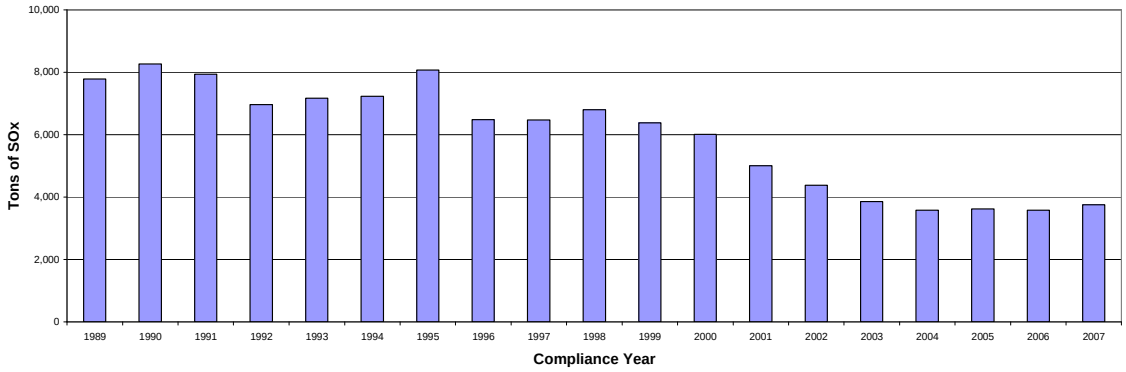


Figure 7-2
SOx Emission Trend for RECLAIM Sources



Overall, Figures 7-1 and 7-2 indicate a general downward trend in both NOx and SOx emissions since the inception of RECLAIM. NOx emissions have decreased every year since 1995, except for a slight increase in the 2004 compliance year when compared to the 2003 compliance year. Similarly, since 1995, annual SOx emissions have decreased every year except for slight increases in Compliance Years 1998, 2005, and now 2007.

The increase in NOx emissions from Compliance Year 1994 to 1995 can be attributed to the application of MDP at the onset of RECLAIM implementation. At RECLAIM's adoption in 1993, facilities with major sources were allowed to report emissions (interim reporting) for their first year in the program by quantifying emissions using an emission factor and fuel throughput. This interim period allowed major sources the time to certify their CEMSs. However, many facilities with major sources had difficulties in certifying their CEMSs by the end of the interim period, and consequently, reported emissions using MDP during Compliance Year 1995. As discussed in Chapter 5, since CEMSs for these major sources had no prior data, MDP required the application of the most conservative procedure to calculate substitute data by assuming continuous operation at the maximum rated capacity, regardless of the actual operational level during missing data periods. As a result, the application of MDP during this time period yielded substitute data that may have been much higher than the actual emissions. Overall, the figures clearly show that RECLAIM facilities did not increase their aggregate emissions during the earlier years of the program, dispelling the concerns about increased emissions in the early years.

Seasonal Fluctuation in Emissions for RECLAIM Sources

During program development, another concern was that RECLAIM might cause facilities to shift emissions from the winter season into the summer ozone season, thus exacerbating poor air quality. To address this concern, AQMD staff analyzed quarterly emissions during calendar year 2007 to assess if there had been such a shift in emissions. Where available, completed audited quarterly emissions data was used for this analysis. Where completed audits were unavailable, emissions as reported by facilities (either under the APEP reports or the QCERs) were used.

Figure 7-3
Calendar Year 2007 NOx Quarterly Emissions

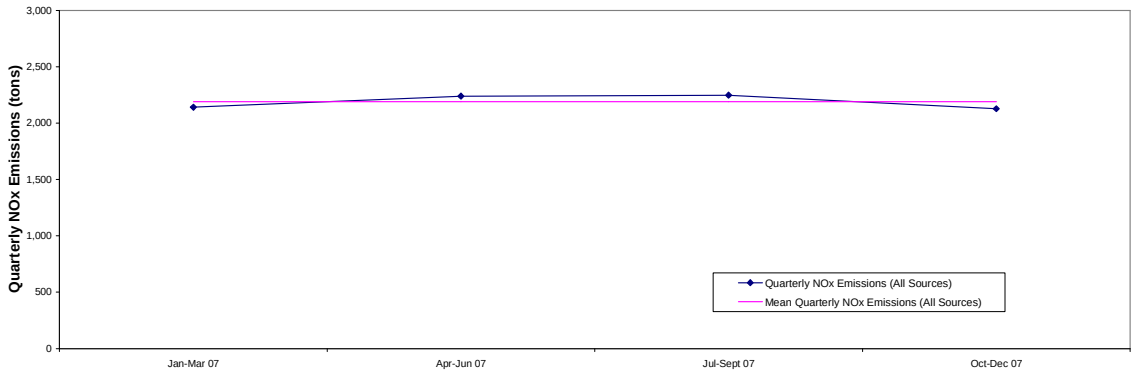


Figure 7-3 shows the mean quarterly NOx emissions, which is the average of the four quarterly emissions, versus the actual quarterly emissions. Aggregate quarterly NOx emissions varied from about three percent below the mean in the fourth quarter (October through December) to about three percent above the mean in the third quarter (July through September). Although Figure 7-3 shows that emissions during the summer of 2007 were slightly higher than the annual average, this fluctuation is not a significant shift in NOx emissions.

Figure 7-4
Calendar Year 2007 SOx Quarterly Emissions

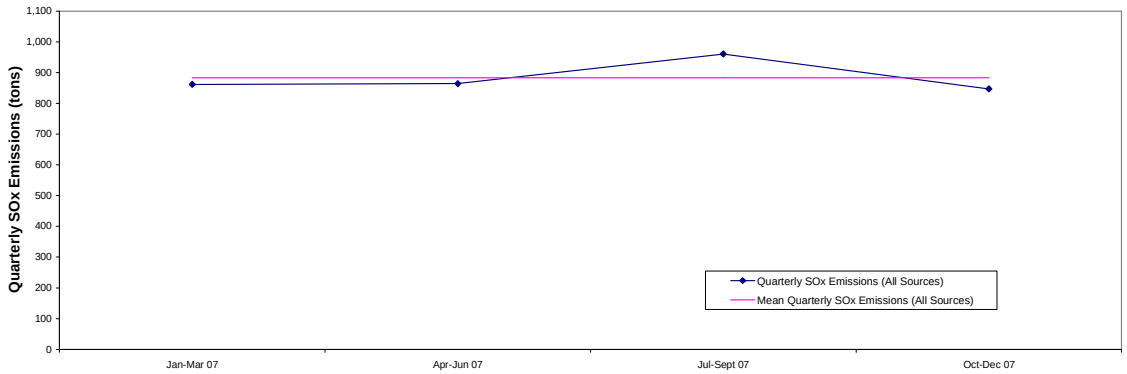


Figure 7-4 shows that quarterly SOx emissions during calendar year 2007 varied from about nine percent above the mean in the third quarter (July through September) to about four percent below the mean in the fourth quarter (October through December). The slight peak during the July through September period was mainly caused by increased SOx emissions from three local refineries. According to one refinery, the increased SOx emissions during this period were due to normal fluctuations of the sulfur content of the fuel stream. Another refinery represented that the increased emissions were within the normal range of SOx emissions for any given quarter. At the third refinery, their peak in the third quarter was actually a result of decreased SOx emissions in the other three quarters due to planned and unplanned unit outages. The facility's third quarter was the only period without appreciable planned and unplanned unit outages.

Geographic Distribution of Emissions

As part of this program audit, AQMD staff examined the quarterly emissions maps (developed pursuant to Rule 2015(b)(2)), for any notable changes in the geographic distribution of emissions. RECLAIM facilities have the flexibility to increase emissions as much as they need to, as long as they can provide RTCs to offset the emissions exceeding their allocations; however, there are NSR implications if they increase their annual emissions above their Compliance Year 1994 Allocation including non-tradable credits. This emission increase flexibility and the ability of RECLAIM facilities to purchase RTCs from other facilities caused people to be concerned that RECLAIM could alter the geographic distribution of emissions in the Basin and adversely affect air quality in certain areas.

Quarterly emissions for both NOx and SOx were mapped for Compliance Year 2007 (all four quarters of 2007 and the first two quarters of 2008). These maps are included in Appendices F and G. These quarterly emission maps for Compliance Year 2007 do not show any distinct shift in the geographic pattern of emissions. AQMD will continue to review additional quarterly maps and assess the geographic patterns of emissions as the information becomes available.

Per Capita Exposure to Pollution

The predicted effects of RECLAIM on air quality and public health were thoroughly analyzed through modeling during program development. The results were compared to projected impacts from continuing traditional command-and-control regulations and implementing control measures in the 1991 AQMP. One of the criteria examined in the analysis was per capita population exposure.

Per capita population exposure reflects the length of time each person is exposed to unhealthful air quality. The modeling performed in the program development analysis projected that the reductions in per capita exposure under RECLAIM in calendar year 1994 would be nearly identical to the reductions projected for implementation of the control measures in the 1991 AQMP, and the reductions resulting from RECLAIM would be greater in calendar years 1997 and 2000. As reported in previous annual reports, actual per capita exposures to ozone for 1994 and 1997 were below the projections.

As part of the Children's Environmental Health Protection Act that was passed in 1999, and in consultation with the Office of Environmental Health Hazard Assessment, CARB is to "review all existing health-based ambient air quality standards to determine whether these standards protect public health, including infants and children, with an adequate margin of safety." As a result of that requirement, CARB adopted a new 8-hour ozone standard (0.070 ppm) in addition to the 1-hour standard (0.09 ppm) currently in place. Table 7-1 shows the number of days that this new state 8-hour ozone standard of 0.070 ppm, which became effective May 17, 2006, was exceeded as well as the number of days the 1-hour standard was exceeded. Future annual reports will show both the state 8-hour and 1-hour standards.

In July 1997, the USEPA established a new ozone National Ambient Air Quality Standard (NAAQS) of 0.085 ppm based on an 8-hour average measurement. As part of the Phase I implementation that was finalized in June 2004, the federal 1-

hour ozone standard (0.12 ppm) was revoked. Effective May 27, 2008, the 8-hour NAAQS ozone standard was reduced to 0.075 ppm. To reflect this revised standard, Table 7-1 shows for comparison purposes, the number of days that the new revised federal 8-hour ozone standard was exceeded, as well as the number of days the old federal 8-hour ozone standard was exceeded. Future annual reports will show monitoring results based on only the new revised 8-hour federal standard.

Table 7-1 summarizes ozone data for calendar years 2001 through 2008 in terms of the number of days that exceeded the state and federal ambient ozone standards and the Basin's maximum concentration in each calendar year. This table shows that calendar year 2008 contained the fewest days exceeding the state 1-hour standard. The table also shows that the calendar year 2008 Basin maximum is about the same as the two previous calendar years.

Table 7-1
Summary of Ozone Data

	Calendar Year							
	2001	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**
Days exceeding state 1-hour standard	121	118	133	110	111	102	99	98
Days exceeding state new 8-hour standard	156	149	161	161	142	121	128	136
Days exceeding federal old 8-hour standard	100	99	120	90	84	86	79	79
Days exceeding federal new 8-hour standard	132	135	141	126	116	114	108	121
Basin Maximum 1-hour ozone concentration (ppm)	0.191	0.169	0.216	0.163	0.163	0.175	0.171	0.176
Basin Maximum 8-hour ozone concentration (ppm)	0.146	0.148	0.200	0.148	0.145	0.142	0.137	0.131

The CCAA, which was enacted in 1988, established targets for reducing overall population exposure to severe non-attainment pollutants in the Basin – a 25% reduction by December 31, 1994, a 40% reduction by December 31, 1997, and a 50% reduction by December 31, 2000 relative to a calendar years 1986-88 baseline. These targets are based on the number of hours on average a person

("per capita exposure"[1]) is exposed to ozone above the state one-hour standard of 0.09 ppm. Table 7-2 shows, for each of the four counties and the Basin overall, the 1986-88 baseline, the actual per capita exposures each year since 1994 (RECLAIM's initial year), and the 1997 and 2000 targets set by the CCAA. As shown in Table 7-2, the CCAA reduction targets were achieved as early as 1994 (actual 1994 Basin per capita exposure was 37.6 hours, which is below the 2000 target of 40.2 hours). The per capita exposure continued to remain much lower than the CCAA targets since RECLAIM started in 1994. For calendar year 2008, the actual per capita exposure for the Basin was 4.14 hours, which represents a 95% reduction from the 1986-88 baseline level.

Table 7-2
Per Capita Exposure to Ozone above the State One-Hour Standard of 0.09 ppm (hours)

Calendar Year	Basin	Los Angeles	Orange	Riverside	San Bernardino
1986-88 baseline[1]	80.5	75.8	27.2	94.1	192.6
1994 actual	37.6	26.5	9	71.1	124.9
1995 actual	27.7	20	5.7	48.8	91.9
1996 actual	20.3	13.2	4	42.8	70
1997 actual	5.9	3	0.6	13.9	24.5
1998 actual	12.1	7.9	3.1	25.2	40.2
2000 actual	3.8	2.6	0.7	8.5	11.4
2001 actual	1.73	0.88	0.15	6	5.68
2002 actual	3.87	2.16	0.13	11.12	12.59
2003 actual	10.92	6.3	0.88	20.98	40.21
2004 actual	3.68	2.26	0.50	6.82	12.34
2005 actual	3.11	1.43	0.03	6.06	12.54
2006 actual	4.56	3.08	0.68	8.02	13.30
2007 actual	2.90	1.50	0.35	4.65	10.53
2008 actual	4.14	2.04	0.26	7.50	14.71
1997 target[2]	48.3	45.5	16.3	56.5	115.6
2000 target[3]	40.2	37.9	13.6	47	96.3

[1] Average over three years, 1986 through 1988.
[2] 60% of the 1986-88 baseline exposures.
[3] 50% of the 1986-88 baseline exposures.

Table 7-2 shows that actual per capita exposures during all the years mentioned were well under the projected exposures in the 1991 AQMP. It should also be noted that air quality in the Basin is a complex function of meteorological conditions and an array of different emission sources, including mobile, area, RECLAIM stationary sources, and non-RECLAIM stationary sources. Therefore, the reduction of per capita exposure beyond the projected level is not necessarily attributable to implementation of the RECLAIM program. It is possible that actual

[1] AQMD staff divides the air basin into a grid of square cells and interpolated recorded ozone data from ambient air quality monitors to determine ozone levels experienced in each of these grids. The total person-hours in a county experiencing ozone higher than the state ozone standard is determined by summing over the whole county the products of the number of hours exceeding the state ozone standard per grid cell with the number of residents in the corresponding cell. The per capita ozone exposures are then calculated by dividing the sum of person-hours by the total population within a county. Similar calculations are used to determine the Basin-wide per capita exposure by summing and dividing over the whole Basin.

per capita exposure might have been as low, if not lower, with continuation of command-and-control regulations.

Toxic Impacts

Based on a comprehensive toxic impact analysis performed during program development, it was concluded that RECLAIM would not result in any significant impacts on air toxic emissions. Nevertheless, to ensure that the implementation of RECLAIM does not result in adverse toxic impacts, each annual program audit is required to assess any increase in the public health exposure to toxics caused by RECLAIM.

RECLAIM sources are subject to the same air toxic statutes and regulations (*e.g.*, AQMD Regulation XIV, State AB 2588, Federal National Emissions Standards for Hazardous Air Pollutants, etc.) as other sources in the Basin. These regulations ensure that RECLAIM does not result in adverse air toxic health impacts. In addition, air toxic health risk is primarily caused by emissions of VOC and certain metals, rather than NOx or SOx emissions. The majority of VOC sources at RECLAIM facilities are subject to source-specific command-and-control rules, in addition to the toxics requirements described above. Sources of toxic metals emissions are also subject to the above-identified regulations pertaining to toxic emissions. As a result, implementation of NOx and SOx RECLAIM is not expected to significantly impact air toxic emissions. That is, the substitution of NOx and SOx RECLAIM for the command-and-control rules and the measures RECLAIM subsumes are irrelevant to toxic emissions; the same toxics requirements and VOC rules and control measures apply in either case. However, AQMD will continue to monitor and assess toxic risk reduction as part of future annual audits.

LIST OF ABBREVIATIONS

ACEMS	Alternative Continuous Emissions Monitoring System
APEP	Annual Permit Emissions Program
AQMD	South Coast Air Quality Management District
AQMP	Air Quality Management Plan
BACT	Best Available Control Technology
BARCT	Best Available Retrofit Control Technology
CARB	California Air Resources Board
CCAA	California Clean Air Act
CEMS	Continuous Emissions Monitoring System
EDR	Electronic Data Reporting
ERC	Emission Reduction Credit
IYB RTC	Infinite Year Block RECLAIM Trading Credit
LAP	Laboratory Approval Program
MDP	Missing Data Procedures
MRR	Monitoring, Recordkeeping and Reporting
MSERC	Mobile Source Emission Reduction Credit
NNI	No Net Increase
NOx	Oxides of Nitrogen
NSR	New Source Review
QCER	Quarterly Certification of Emissions Report
RACT	Reasonably Available Control Technology
RATA	Relative Accuracy Test Audit
RECLAIM	REgional CLean Air Incentives Market
RTC	RECLAIM Trading Credit
RTU	Remote Terminal Unit
SOx	Oxides of Sulfur
SWG	Standing Working Group
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound
WATERS	Web Access To Electronic Reporting System

APPENDIX A
RECLAIM UNIVERSE OF SOURCES

The RECLAIM universe of active sources as of June 30, 2008 is provided below.

Facility ID	Cycle	Facility Name	Market
800088	2	3M COMPANY	NOx
16395	2	AAA GLASS CORP	NOx
73635	1	ABLESTIK LABORATORIES	NOx
104017	1	AERA ENERGY LLC	NOx
23752	2	AEROCRAFT HEAT TREATING CO INC	NOx
115394	1	AES ALAMITOS, LLC	NOx
115389	2	AES HUNTINGTON BEACH, LLC	NOx/SOx
42676	2	AES PLACERITA INC	NOx
115536	1	AES REDONDO BEACH, LLC	NOx
148236	2	AIR LIQUIDE LARGE INDUSTRIES U.S., LP	NOx/SOx
3417	1	AIR PROD & CHEM INC	NOx
101656	2	AIR PRODUCTS AND CHEMICALS, INC.	NOx
5998	1	ALL AMERICAN ASPHALT	NOx
114264	1	ALL AMERICAN ASPHALT	NOx
3704	2	ALL AMERICAN ASPHALT, UNIT NO.01	NOx
140499	2	AMERESCO HUNTINGTON BEACH, L.L.C.	NOx
800196	2	AMERICAN AIRLINES INC	NOx
145836	2	AMERICAN APPAREL DYEING AND FINISHING INC.	NOx
10141	2	ANGELICA TEXTILE SERVICES	NOx
21598	2	ANGELICA TEXTILE SERVICES	NOx
74424	2	ANGELICA TEXTILE SERVICES	NOx
16642	1	ANHEUSER-BUSCH INC., (LA BREWERY)	NOx/SOx
117140	2	AOC, LLC	NOx
11640	1	ARLON ADHESIVE SYSTEM/DECORATIVE FILMS	NOx
12155	1	ARMSTRONG WORLD INDUSTRIES INC	NOx
16737	2	ATKINSON BRICK CO	NOx
10094	2	ATLAS CARPET MILLS INC	NOx
800437	2	ATTENDS HEALTHCARE PRODUCTS INC	NOx
117290	2	B BRAUN MEDICAL, INC	NOx
800016	2	BAKER COMMODITIES INC	NOx
147764	2	BALL AEROSOL AND SPECIALTY CONTAINER INC	NOx
117785	1	BALL METAL BEVERAGE CONTAINER CORP.	NOx
800205	2	BANK OF AMERICA NT & SA, BREA CENTER	NOx
40034	1	BENTLEY PRINCE STREET INC	NOx
119907	1	BERRY PETROLEUM COMPANY	NOx
155474	2	BICENT (CALIFORNIA) MALBURG LLC	NOx
132068	1	BIMBO BAKERIES USA INC	NOx
149491	2	BOEING REALTY CORP	NOx
115241	1	BOEING SATELLITE SYSTEMS INC	NOx
800067	1	BOEING SATELLITE SYSTEMS INC	NOx
800343	2	BOEING SATELLITE SYSTEMS, INC	NOx
131003	2	BP WEST COAST PROD.LLC BP CARSON REF.	NOx/SOx
131249	1	BP WEST COAST PRODUCTS LLC,BP WILMINGTON	NOx/SOx
98159	2	BREITBURN ENERGY CORP	NOx
25638	2	BURBANK CITY, BURBANK WATER & POWER	NOx
128243	1	BURBANK CITY, BURBANK WATER & POWER,SCPPA	NOx
800344	1	CALIFORNIA AIR NATIONAL GUARD, MARCH AFB	NOx
22607	2	CALIFORNIA DAIRIES, INC	NOx
138568	1	CALIFORNIA DROP FORGE, INC	NOx
800181	2	CALIFORNIA PORTLAND CEMENT CO	NOx/SOx

Facility ID	Cycle	Facility Name	Market
46268	1	CALIFORNIA STEEL INDUSTRIES INC	NOx
107653	2	CALMAT CO	NOx
107654	2	CALMAT CO	NOx
107655	2	CALMAT CO	NOx
107656	2	CALMAT CO	NOx
119104	1	CALMAT CO	NOx/SOx
94930	1	CARGILL INC	NOx
22911	2	CARLTON FORGE WORKS	NOx
118406	1	CARSON COGENERATION COMPANY	NOx
141555	2	CASTAIC CLAY PRODUCTS, LLC	NOx
800373	1	CENCO REFINING COMPANY	NOx/SOx
148925	1	CHERRY AEROSPACE	NOx
800030	2	CHEVRON PRODUCTS CO.	NOx/SOx
56940	1	CITY OF ANAHEIM/COMB TURBINE GEN STATION	NOx
129810	1	CITY OF RIVERSIDE PUBLIC UTILITIES DEPT	NOx
139796	1	CITY OF RIVERSIDE PUBLIC UTILITIES DEPT	NOx
16978	2	CLOUGHERTY PACKING LLC/HORMEL FOODS CORP	NOx
800210	2	CONEXANT SYSTEMS INC	NOx
800362	1	CONOCOPHILLIPS COMPANY	NOx/SOx
800363	2	CONOCOPHILLIPS COMPANY	NOx/SOx
38440	2	COOPER & BRAIN - BREA	NOx
2537	2	CORONA CITY, DEPT OF WATER & POWER	NOx
68042	2	CORONA ENERGY PARTNERS, LTD	NOx
65384	1	CRITERION CATALYST CO L.P.	NOx
15982	2	CUSTOM ALLOY SALES INC	NOx
50098	1	D&D DISPOSAL INC,WEST COAST RENDERING CO	NOx
63180	1	DARLING INTERNATIONAL INC	NOx
3721	2	DART CONTAINER CORP OF CALIFORNIA	NOx
7411	2	DAVIS WIRE CORP	NOx
143738	2	DCOR LLC	NOx
143739	2	DCOR LLC	NOx
143740	2	DCOR LLC	NOx
143741	1	DCOR LLC	NOx
132071	1	DEAN FOODS CO. OF CALIFORNIA	NOx
47771	1	DELEO CLAY TILE CO INC	NOx
800037	2	DEMENNO/KERDOON	NOx
125579	1	DIRECTV	NOx
800189	1	DISNEYLAND RESORT	NOx
142536	2	DRS TECHNOLOGIES, INC.	NOx
800264	2	EDGINGTON OIL COMPANY	NOx/SOx
133813	1	EI COLTON, LLC	NOx
115663	1	EL SEGUNDO POWER, LLC	NOx
800372	2	EQUILON ENTER. LLC, SHELL OIL PROD. US	NOx/SOx
117247	1	EQUILON ENTERPRISES, LLC	NOx/SOx
124838	1	EXIDE TECHNOLOGIES	NOx/SOx
17344	1	EXXONMOBIL OIL CORP	NOx
25058	2	EXXONMOBIL OIL CORP	NOx
800089	1	EXXONMOBIL OIL CORPORATION	NOx/SOx
800094	1	EXXONMOBIL OIL CORPORATION	NOx
95212	1	FABRICA	NOx
11716	1	FONTANA PAPER MILLS INC	NOx
346	1	FRITO-LAY NORTH AMERICA, INC.	NOx
2418	2	FRUIT GROWERS SUPPLY CO	NOx
142267	2	FS PRECISION TECH LLC	NOx
5814	1	GAINEY CERAMICS INC	NOx
11016	2	GEORGIA-PACIFIC CORP	NOx
10055	2	G-P GYPSUM CORP	NOx
124723	1	GREKA OIL & GAS, INC	NOx
137471	2	GRIFOLS BIOLOGICALS INC	NOx

Facility ID	Cycle	Facility Name	Market
106325	2	HARBOR COGENERATION CO	NOx
123774	1	HERAEUS METAL PROCESSING, INC.	NOx
141585	1	HEXION SPECIALTY CHEMICALS, INC.	NOx
15164	1	HIGGINS BRICK CO	NOx
113160	2	HILTON COSTA MESA	NOx
800066	1	HITCO CARBON COMPOSITES INC	NOx
2912	2	HOLLIDAY ROCK CO INC	NOx
800003	2	HONEYWELL INTERNATIONAL INC	NOx
124619	1	IMPRESS USA INC	NOx
123087	2	INDALEX WEST INC	NOx
124808	2	INEOS POLYPROPYLENE LLC	NOx/SOx
129816	2	INLAND EMPIRE ENERGY CENTER, LLC	NOx
23589	2	INTERNATIONAL EXTRUSION CORP	NOx
22364	1	ITT INDUSTRIES, CANNON	NOx
119134	2	ITW CIP CALIFORNIA	NOx
16338	1	KAISER ALUMINUM & CHEM CORP	NOx
21887	2	KIMBERLY-CLARK WORLDWIDE INC.-FULT. MILL	NOx/SOx
1744	2	KIRKHILL RUBBER CO	NOx
800335	2	LA CITY, DEPT OF AIRPORT	NOx
800170	1	LA CITY, DWP HARBOR GENERATING STATION	NOx
800074	1	LA CITY, DWP HAYNES GENERATING STATION	NOx
800075	1	LA CITY, DWP SCATTERGOOD GENERATING STN	NOx
800193	2	LA CITY, DWP VALLEY GENERATING STATION	NOx
61962	1	LA CITY, HARBOR DEPT	NOx
550	1	LA CO., INTERNAL SERVICE DEPT	NOx
115277	1	LAFAYETTE TEXTILE IND LLC	NOx
141295	2	LEKOS DYE AND FINISHING, INC	NOx
144455	2	LIFOAM INDUSTRIES, LLC	NOx
83102	2	LIGHT METALS INC	NOx
151394	2	LINN WESTERN OPERATING, INC.	NOx
151415	2	LINN WESTERN OPERATING, INC.	NOx
151532	2	LINN WESTERN OPERATING, INC.	NOx
152054	1	LINN WESTERN OPERATING, INC.	NOx
115314	2	LONG BEACH GENERATION LLC	NOx
17623	2	LOS ANGELES ATHLETIC CLUB	NOx
58622	2	LOS ANGELES COLD STORAGE CO	NOx
125015	2	LOS ANGELES TIMES COMMUNICATIONS LLC	NOx
800080	2	LUNDAY-THAGARD COMPANY	NOx/SOx
38872	1	MARS PETCARE U.S., INC.	NOx
14049	2	MARUCHAN INC	NOx
18865	2	MASTERFOODS USA	NOx
3029	2	MATCHMASTER DYEING & FINISHING INC	NOx
148340	2	MCDONNELL DOUGLAS CORP/COM AIRCRAFT SERV	NOx
2825	1	MCP FOODS INC	NOx
153478	2	MEGA PRINTEX, INC.	NOx
115563	1	METAL COATERS OF CALIFORNIA	NOx
94872	2	METAL CONTAINER CORP	NOx
155877	1	MILLERCOORS, LLC	NOx
12372	1	MISSION CLAY PRODUCTS	NOx
121737	1	MOUNTAINVIEW POWER COMPANY LLC	NOx
11887	2	NASA JET PROPULSION LAB	NOx
40483	2	NELCO PROD. INC	NOx
12428	2	NEW NGC, INC.	NOx
131732	2	NEWPORT FAB, LLC	NOx
800167	2	NORTHROP GRUMMAN CORP	NOx
18294	1	NORTHROP GRUMMAN CORP, AIRCRAFT DIV	NOx
800408	1	NORTHROP GRUMMAN SPACE & MISSION SYSTEMS	NOx
800409	2	NORTHROP GRUMMAN SPACE & MISSION SYSTEMS	NOx
112853	2	NP COGEN INC	NOx

Facility ID	Cycle	Facility Name	Market
45471	2	OGLEBAY NORTON INDUSTRIAL SANDS INC	NOx
89248	2	OLD COUNTRY MILLWORK INC	NOx
47781	1	OLS ENERGY-CHINO	NOx
35302	2	OWENS CORNING ROOFING AND ASPHALT, LLC	NOx/SOx
7427	1	OWENS-BROCKWAY GLASS CONTAINER INC	NOx/SOx
45746	2	PABCO BLDG PRODUCTS LLC,PABCO PAPER, DBA	NOx/SOx
17953	1	PACIFIC CLAY PRODUCTS INC	NOx
59618	1	PACIFIC CONTINENTAL TEXTILES, INC.	NOx
151178	1	PACIFIC ENERGY	NOx
60531	2	PACIFIC FABRIC FINISHING	NOx
2946	1	PACIFIC FORGE INC	NOx
137520	1	PACIFIC TERMINALS LLC	NOx
800416	1	PACIFIC TERMINALS LLC	NOx
800417	2	PACIFIC TERMINALS LLC	NOx
800419	2	PACIFIC TERMINALS LLC - HUNTINGTON	NOx
800420	2	PACIFIC TERMINALS LLC - LONG BEACH	NOx
130211	2	PAPER-PAK INDUSTRIES	NOx
800183	1	PARAMOUNT PETR CORP (EIS USE)	NOx/SOx
800168	1	PASADENA CITY, DWP (EIS USE)	NOx
133987	1	PLAINS EXPLORATION & PRODUCTION CO, LP	NOx
133996	2	PLAINS EXPLORATION & PRODUCTION COMPANY	NOx
144792	1	PLAINS EXPLORATION AND PRODUCTION CO	NOx
800431	1	PRATT & WHITNEY ROCKETDYNE, INC.	NOx
7416	1	PRAXAIR INC	NOx
42630	1	PRAXAIR INC	NOx
152501	1	PRECISION SPECIALTY METALS INC	NOx
136	2	PRESS FORGE CO	NOx
105903	1	PRIME WHEEL	NOx
132191	1	PURENERGY OPERATING SERVICES, LLC	NOx
132192	1	PURENERGY OPERATING SERVICES, LLC	NOx
8547	1	QUEMETCO INC	NOx/SOx
19167	2	R J NOBLE COMPANY	NOx
3585	2	R. R. DONNELLEY & SONS CO, LA MFG DIV	NOx
20604	2	RALPHS GROCERY CO	NOx
115041	1	RAYTHEON COMPANY	NOx
114997	1	RAYTHEON COMPANY	NOx
115172	2	RAYTHEON COMPANY	NOx
800371	2	RAYTHEON SYSTEMS COMPANY - FULLERTON OPS	NOx
20543	1	REDCO II	NOx
15544	2	REICHHOLD INC	NOx
115315	1	RELIANT ENERGY ETIWANDA, INC.	NOx
52517	1	REXAM PLC, REXAM BEVERAGE CAN COMPANY	NOx
114801	1	RHODIA INC.	NOx/SOx
61722	2	RICOH ELECTRONICS INC	NOx
139010	2	RIPON COGENERATION LLC	NOx
800182	1	RIVERSIDE CEMENT CO (EIS USE)	NOx/SOx
800113	2	ROHR,INC	NOx
18455	2	ROYALTY CARPET MILLS INC	NOx
4242	2	SAN DIEGO GAS & ELECTRIC	NOx
155221	2	SAVE THE QUEEN LLC (DBA QUEEN MARY)	NOx
15504	2	SCHLOSSER FORGE COMPANY	NOx
20203	2	SCOPE PRODUCTS INC, DEXT CO	NOx
14926	1	SEMPRA ENERGY (THE GAS CO)	NOx
37603	1	SGL TECHNIC INC, POLYCARBON DIVISION	NOx
131850	2	SHAW DIVERSIFIED SERVICES INC	NOx
117227	2	SHCI SM BCH HOTEL LLC, LOEWS SM BCH HOTE	NOx
16639	1	SHULTZ STEEL CO	NOx
54402	2	SIERRA ALUMINUM COMPANY	NOx
85943	2	SIERRA ALUMINUM COMPANY	NOx

Facility ID	Cycle	Facility Name	Market
101977	1	SIGNAL HILL PETROLEUM INC	NOx
43201	2	SNOW SUMMIT INC	NOx
4477	1	SO CAL EDISON CO	NOx
5973	1	SO CAL GAS CO	NOx
800127	1	SO CAL GAS CO (EIS USE)	NOx
800128	1	SO CAL GAS CO (EIS USE)	NOx
8582	1	SO CAL GAS CO/PLAYA DEL REY STORAGE FACI	NOx
14871	2	SONOCO PRODUCTS CO	NOx
103618	1	SPECIALTY BRANDS INC	NOx
800338	2	SPECIALTY PAPER MILLS INC	NOx
131824	2	STEELCASE, INC.	NOx
126498	2	STEELSCAPE, INC	NOx
105277	2	SULLY MILLER CONTRACTING CO	NOx
19390	1	SULLY-MILLER CONTRACTING CO.	NOx
23196	2	SUNKIST GROWERS, INC	NOx
2083	1	SUPERIOR INDUSTRIES INTERNATIONAL INC	NOx
3968	1	TABC, INC	NOx
18931	2	TAMCO	NOx
14944	1	TECHALLOY CO., INC.	NOx/SOx
800436	1	TESORO REFINING AND MARKETING COMPANY LOS ANGELES REFINERY	NOx/SOx
96587	1	TEXOLLINI INC	NOx
14736	2	THE BOEING COMPANY	NOx
800110	2	THE BOEING COMPANY	NOx
800038	2	THE BOEING COMPANY - C17 PROGRAM	NOx
11119	1	THE GAS CO./ SEMPRA ENERGY	NOx
153199	1	THE KROGER CO/RALPH GROCERY CO	NOx
11435	2	THE PQ CORP	NOx/SOx
97081	1	THE TERMO COMPANY	NOx
800330	1	THUMS LONG BEACH	NOx
129497	1	THUMS LONG BEACH CO	NOx
800325	2	TIDELANDS OIL PRODUCTION CO	NOx
68118	2	TIDELANDS OIL PRODUCTION COMPANY ETAL	NOx
800240	2	TIN, INC. TEMPLE-INLAND, DBA	NOx
137508	2	TONOGA INC, TACONIC DBA	NOx
53729	1	TREND OFFSET PRINTING SERVICES, INC	NOx
9053	1	TRIGEN- LA ENERGY CORP	NOx
9217	1	TRIGEN-LA ENERGY CORP	NOx
11034	2	TRIGEN-LA ENERGY CORP	NOx
43436	1	TST, INC.	NOx
800026	1	ULTRAMAR INC (NSR USE ONLY)	NOx/SOx
9755	2	UNITED AIRLINES INC	NOx
73022	2	US AIRWAYS INC	NOx
800149	2	US BORAX INC	NOx
800150	1	US GOVT, AF DEPT, MARCH AIR RESERVE BASE	NOx
12185	2	US GYPSUM CO	NOx/SOx
18695	1	US GYPSUM CO	NOx
1073	1	US TILE CO	NOx
83738	1	USDF	NOx
800393	1	VALERO WILMINGTON ASPHALT PLANT	NOx
111415	2	VAN CAN COMPANY	NOx
14502	2	VERNON CITY, LIGHT & POWER DEPT	NOx
115130	1	VERTIS, INC	NOx
101369	2	VINTAGE PETROLEUM	NOx
148896	2	VINTAGE PETROLEUM, INC DEL VALLE OIL FLD	NOx
151601	1	VINTAGE PRODUCTION CALIFORNIA LLC	NOx
151899	2	VINTAGE PRODUCTION CALIFORNIA LLC	NOx
14495	2	VISTA METALS CORPORATION	NOx
126501	2	VOUGHT AIRCRAFT INDUSTRIES	NOx
143261	1	WELLHEAD POWER COLTON LLC	NOx

Facility ID	Cycle	Facility Name	Market
42775	1	WEST NEWPORT OIL CO	NOx/SOx
17956	1	WESTERN METAL DECORATING CO	NOx
1962	2	WEYERHAEUSER COMPANY	NOx
51620	1	WHEELABRATOR NORWALK ENERGY CO INC	NOx
127299	2	WILDFLOWER ENERGY LP/INDIGO ENERGY FAC	NOx

APPENDIX B
FACILITY INCLUSIONS

As discussed in Chapter 1, three facilities were added to the RECLAIM universe from July 1, 2007 through June 30, 2008.

Facility ID	Cycle	Facility Name	Market	Date	Reason
115314	2	LONG BEACH GENERATION LLC	NOx	06-April-07	Reactivation of a previously shutdown facility
148236	2	AIR LIQUIDE LARGE INDUSTRIES U.S., LP	NOx/SOx	09-May-08	Partial change of operator from Chevron Products Co.
155474	2	BICENT (CALIFORNIA) MALBURG LLC	NOx	15-May-08	Partial change of operator from Vernon City Light & Power

One other facility was added to the SOx market, but this inclusion did not affect the number of facilities in the entire RECLAIM universe because it formerly participated in the NOx-only market. The data presented below is associated with the entry of this facility into the SOx market only.

Facility ID	Cycle	Facility Name	Market	Date	Reason
800080	2	LUNDAY-THAGARD COMPANY	NOx/SOx	10-Jun-08	Inclusion

APPENDIX C
RECLAIM FACILITIES CEASING OPERATION OR EXCLUDED

AQMD staff is aware of the following RECLAIM facilities that permanently shut down all operations, inactivated their RECLAIM permits, or were excluded from the RECLAIM Universe from July 1, 2007 through June 30, 2008. The reasons for shutdowns and exclusions cited below are based on the best information available to AQMD staff.

Facility ID	22373
Facility Name	Smurfit-Stone Container Enterprises, Inc
City and County	Los Angeles, Los Angeles County
SIC	2631
Pollutants	NOx
1994 Allocation	381,699
Reason for Shutdown	A facility representative reported that the shutdown was due to high cost of manufacturing in California after which production was moved out of California.

Facility ID	31046
Facility Name	Liston Brick Company of Corona
City and County	Corona, Riverside County
SIC	3354
Pollutants	NOx
1994 Allocation	27,950
Reason for Shutdown	Facility did not file APEP. The facility had been unable or unwilling to comply with various District regulations and EPA's MACT requirements since 2001. In the meanwhile, the facility declared bankruptcy and claimed inability to comply with applicable regulatory requirements due to the bankruptcy. The Hearing Board issued an Abatement Order (#4941-1) requiring the facility to comply with District regulations or face shutdown. As terms of a settlement of numerous Notices of Violation, issued both before and during the Abatement Order, the facility agreed to terminate all operations.

Facility ID	40196
Facility Name	Guardian Industries Corp.
City and County	Fullerton, Orange County
SIC	3211
Pollutants	NOx/SOx
1994 Allocation	166,362
Reason for Shutdown	Cost of meeting RECLAIM air pollution regulations.

Facility ID	45527
Facility Name	American Racing Equipment, Inc.
City and County	Compton, Los Angeles County
SIC	3714
Pollutants	NOx
1994 Allocation	47,462
Reason for Shutdown	Facility did not file APEP. A facility representative stated to AQMD inspector that decline in demand for their products was the reason for shutting down.

Facility ID	106810
Facility Name	Interstate Brands Corp
City and County	Pomona, Los Angeles County
SIC	2051
Pollutants	NOx
1994 Allocation	11,250
Reason for Shutdown	Declining demand for products, high cost of manufacturing, production or raw material, cost of meeting governmental and air pollution regulations.

Facility ID	113240
Facility Name	Black Hills Ontario LLC
City and County	Ontario, San Bernardino County
SIC	4923
Pollutants	NOx
1994 Allocation	74,908
Reason for Shutdown	Steam host ceased operations and permanently shut down. Consequently, facility had to shut down.

Facility ID	115449
Facility Name	Playa Phase I Commercial Land, LLC
City and County	Culver City, Los Angeles County
SIC	6552
Pollutants	NOx
1994 Allocation	26,070
Reason for Shutdown	Another facility purchased the property and removed all equipment without operating. Property to be redeveloped shortly.

Facility ID	145188
Facility Name	Blue Heron Paper Co of California, LLC
City and County	Pomona, San Bernardino County
SIC	2621
Pollutants	NOx
1994 Allocation	861,630
Reason for Shutdown	Declining demand for products, and manufacturing, production or raw material costs were too high. This facility was mistakenly removed from Compliance Year 2006 Annual Report, Appendix A when it was still an active facility.

APPENDIX D
FACILITIES THAT WERE UNABLE TO RECONCILE EMISSIONS FOR COMPLIANCE YEAR 2007

The following is a list of facilities that failed to reconcile their allocations with their NOx and/or SOx emissions in Compliance Year 2007 based on emissions reported under QCERs, the APEP report filed by the facility or completed audits conducted by AQMD staff. This list is being maintained and updated as audits are completed. The updated list is available by contacting the RECLAIM Administration Team at 21865 Copley Drive, Diamond Bar, CA 91765, (909) 396-3119.

Facilities That Failed to Reconcile NOx Emissions with Their Allocations

WEYERHAEUSER COMPANY (ID# 1962)
SO CAL EDISON CO (ID# 4477)
ALL AMERICAN ASPHALT (ID# 5998)
DAVIS WIRE CORP (ID# 7411)
CLOUGHERTY PACKING LLC/HORMEL FOODS CORP (ID# 16978)
WESTERN METAL DECORATING CO (ID# 17956)
OWENS CORNING ROOFING AND ASPHALT, LLC (ID# 35302)
MARS PETCARE U.S., INC. (ID# 38872)
CARGILL INC (ID# 94930)
VERTIS, INC (ID# 115130)
BOEING SATELLITE SYSTEMS INC (ID# 115241)
BERRY PETROLEUM COMPANY (ID# 119907)
STEELSCAPE, INC (ID# 126498)
MILLER BREWERIES WEST LP (ID# 141012)[1]
EXXONMOBIL OIL CORPORATION (ID# 800094)
NORTHROP GRUMMAN CORP (ID# 800167)
RIVERSIDE CEMENT CO (ID# 800182)
CONOCOPHILLIPS COMPANY (ID# 800363)

[1] This facility had a subsequent change of operator in Compliance Year 2007, currently identified in Appendix A as MillerCoors, LLC (ID#155877). However, the Notice of Violation for failing to reconcile their emissions with their allocations was issued to the original facility, Miller Breweries West LP (ID#141012).

Facilities That Failed to Reconcile SOx Emissions with Their Allocations

ULTRAMAR INC (ID# 800026)
RIVERSIDE CEMENT CO (ID# 800182)

APPENDIX E
JOB IMPACTS ATTRIBUTED TO RECLAIM

Each year, RECLAIM facility operators are asked to provide employment data in their APEP report. The report forms ask company representatives to report job increases and/or decreases, and to quantify the positive and/or negative impacts of the RECLAIM program on employment at their facilities.

The detailed information for facilities reporting that RECLAIM contributed to job gains or losses during their 2007 compliance years (January 1 through December 31, 2007 for cycle1 facilities and July 1, 2007 through June 30, 2008 for cycle 2 facilities) is summarized below:

Facilities with actual job gains or losses attributed to RECLAIM:

Facility ID	18931
Facility Name	Tamco
City and County	Rancho Cucamonga, San Bernardino County
SIC	3312
Pollutant(s)	NOx
Cycle	2
Job Gain	1
Job Loss	0
Comments	The job gain is due to increased reporting requirements in all areas of environmental compliance of which RECLAIM is a part.

Facility ID	3029
Facility Name	Matchmaster Dyeing & Finishing Inc
City and County	Los Angeles, Los Angeles County
SIC	2269
Pollutant(s)	NOx
Cycle	2
Job Gain	0
Job Loss	20
Comments	Excessive fees for environmental compliance; not limited to RECLAIM or even AQMD requirements.

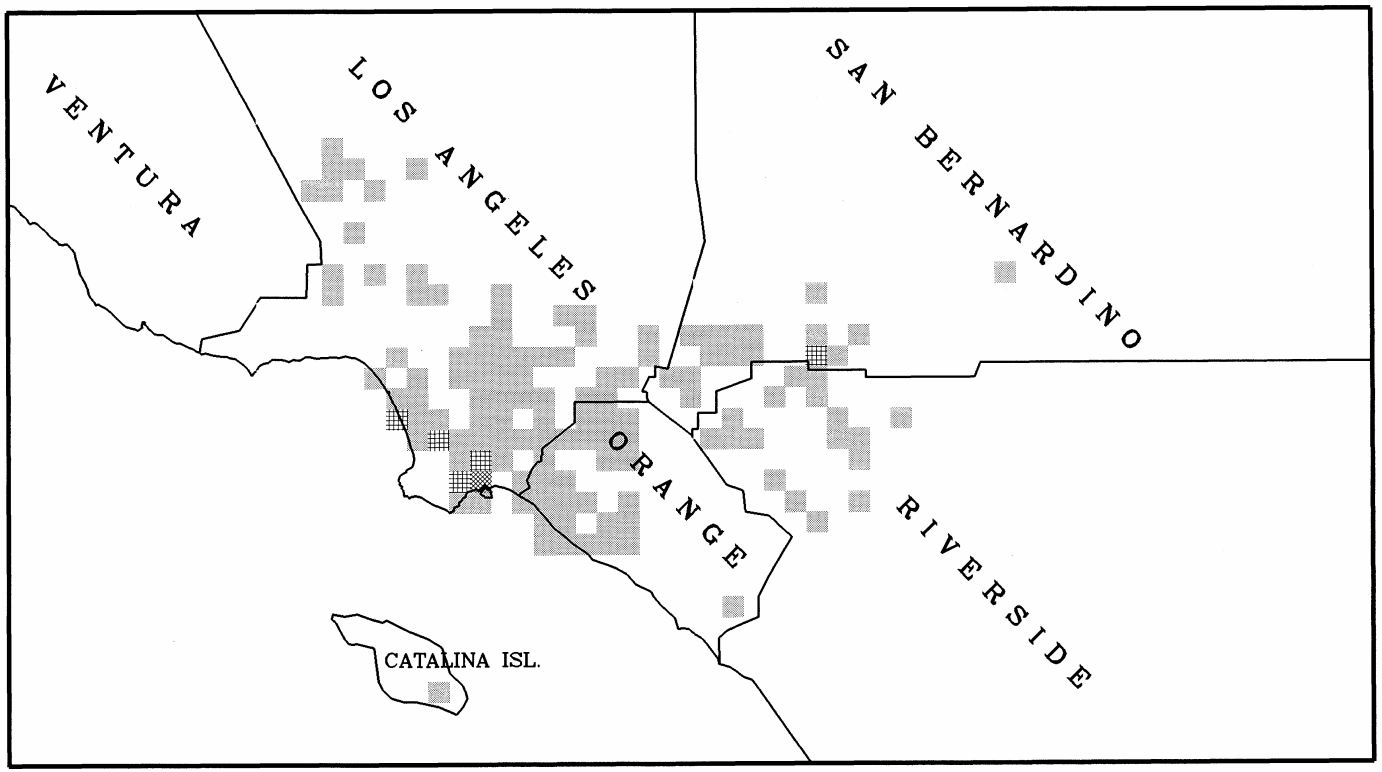
Facility ID	40196
Facility Name	Guardian Industries Corp.
City and County	Fullerton, Orange County
SIC	3211
Pollutant(s)	NOx/SOx
Cycle	2
Job Gain	0
Job Loss	40
Comments	Per representative, facility shutdown due to RECLAIM air pollution costs.

Facility ID	141585
Facility Name	Hexion Specialty Chemicals, Inc.
City and County	Lynwood, Los Angeles County
SIC	2821
Pollutant(s)	NOx
Cycle	1
Job Gain	0
Job Loss	14
Comment	Facility stated that alkyd production line had to be phased-out due to stringent air quality regulations.

APPENDIX F
QUARTERLY NOX EMISSION MAPS

RECLAIM Facilities

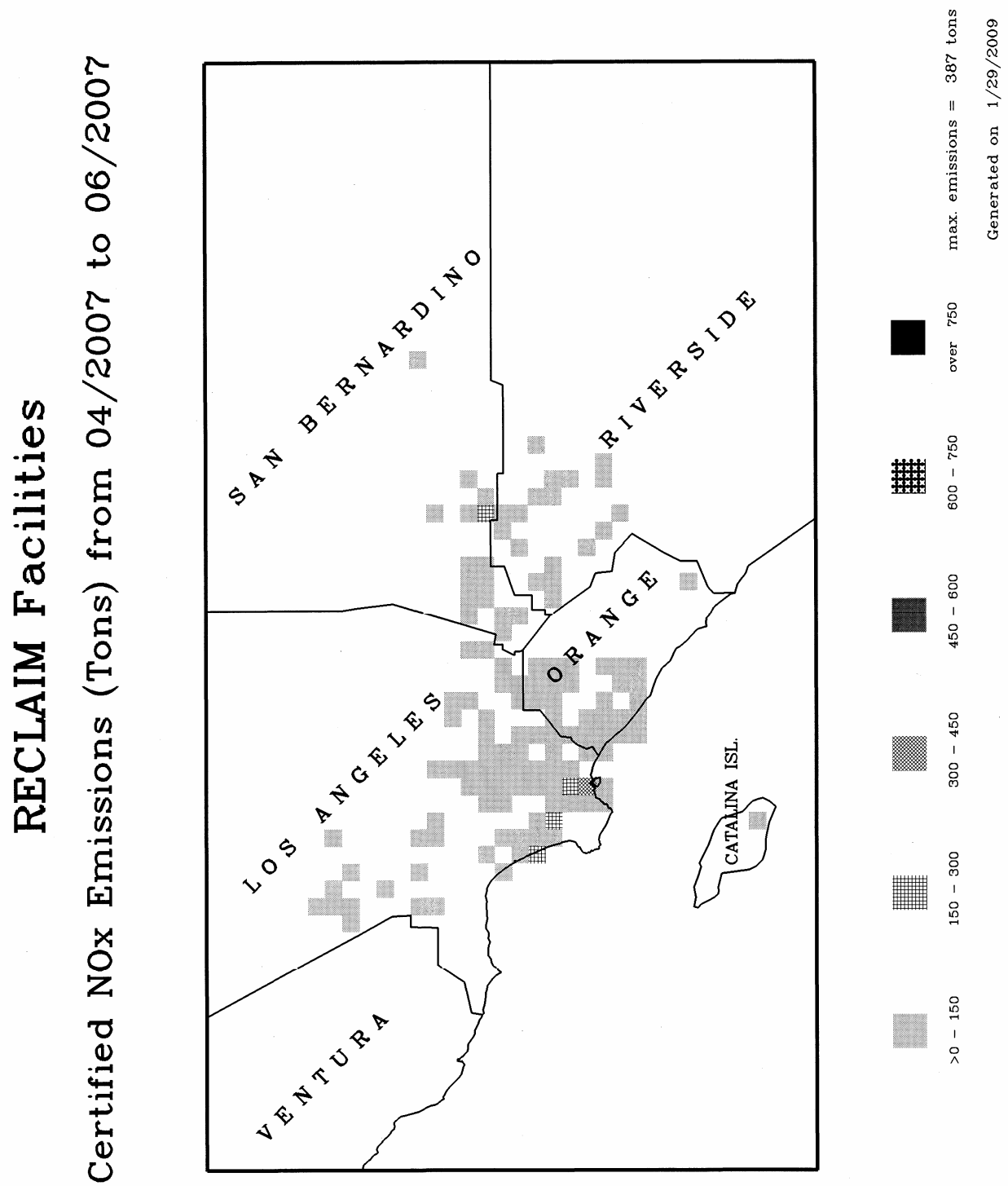
Certified NOx Emissions (Tons) from 01/2007 to 03/2007



>0 – 150 | 150 – 300 | 300 – 450 | 450 – 600 | 600 – 750 | over 750

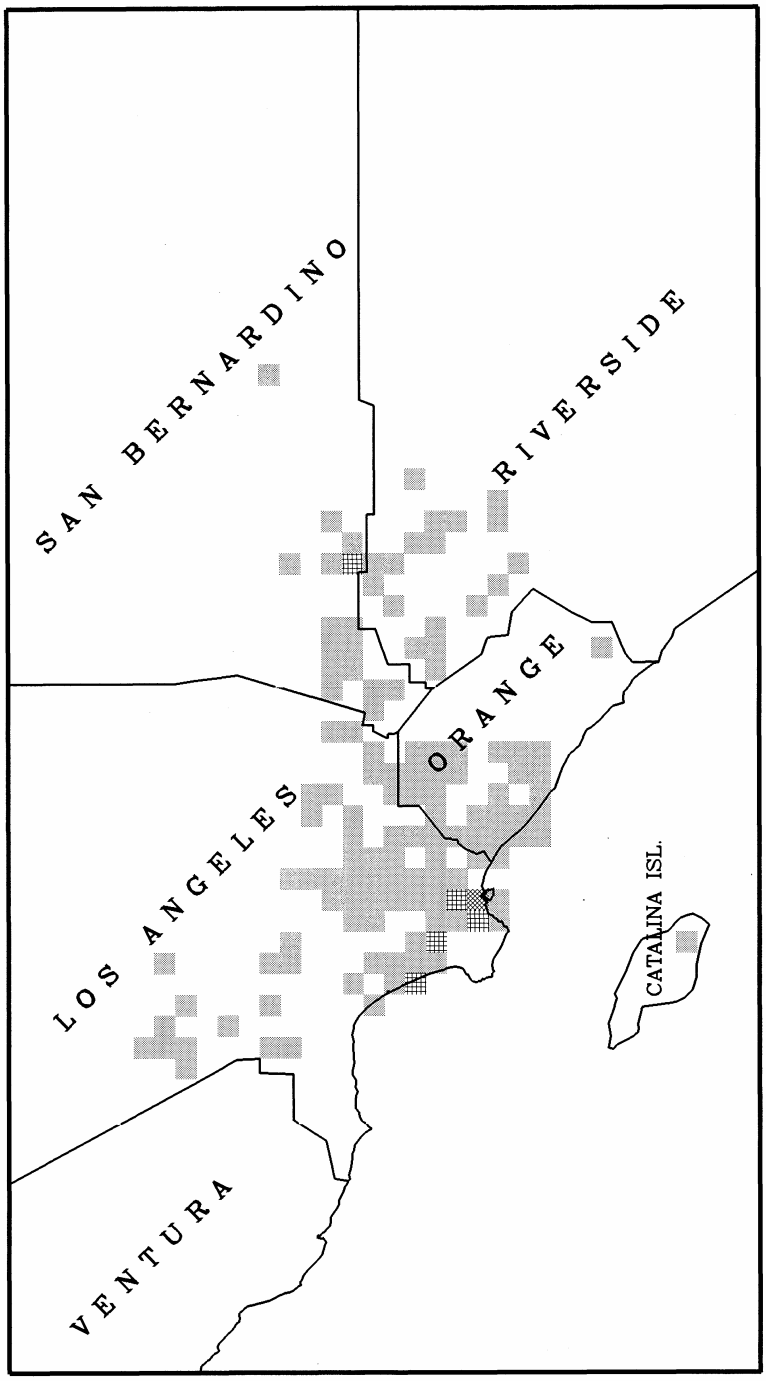
max. emissions = 358 tons

Generated on 1/29/2009


RECLAIM Facilities
Certified NOx Emissions (Tons) from 04/2007 to 06/2007
SAN BERNARDINO
RIVERSIDE
ORANGE
LOS ANGELES
VENTURA
CATALINA ISL.
>0 - 150
150 - 300
300 - 450
450 - 600
600 - 750
over 750
max. emissions = 387 tons
Generated on 1/29/2009

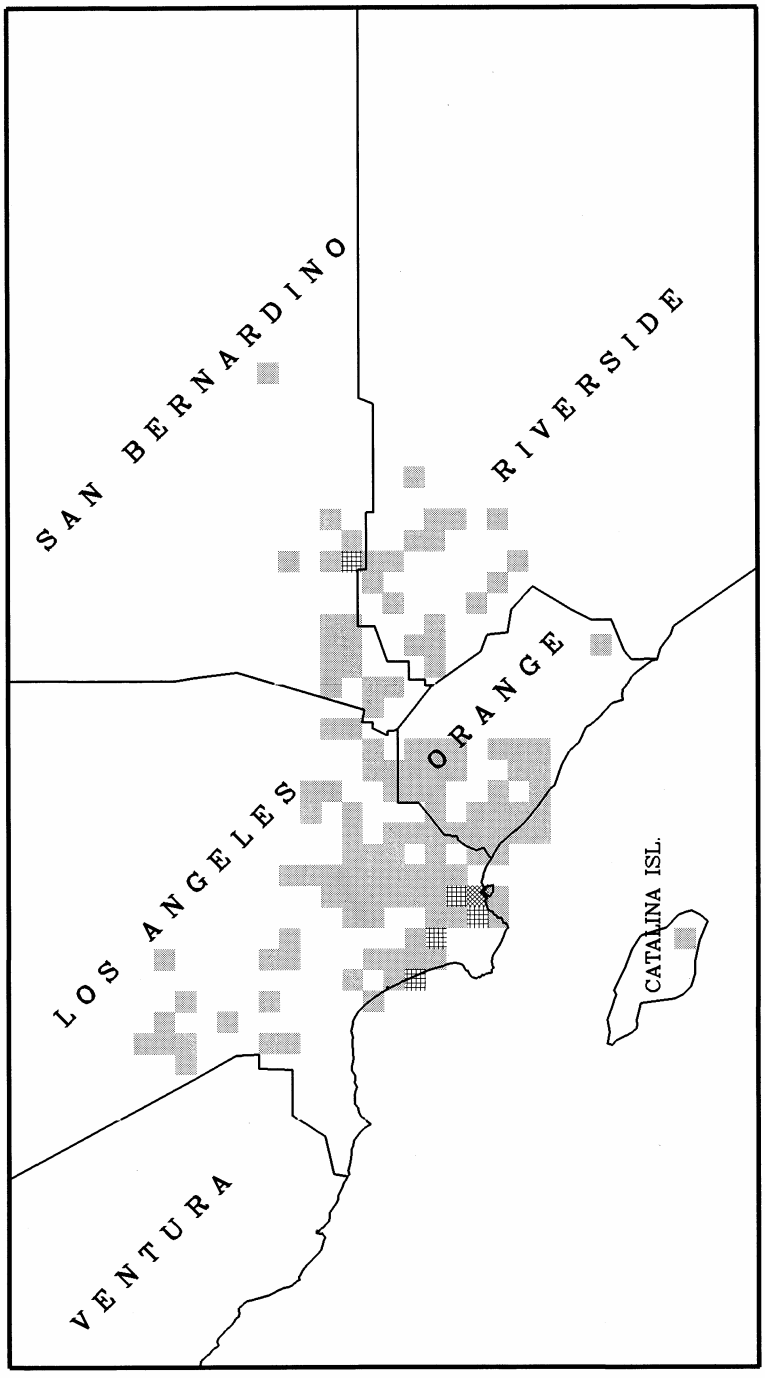
RECLAIM Facilities

Certified NOx Emissions (Tons) from 07/2007 to 09/2007



RECLAIM Facilities

Certified NOx Emissions (Tons) from 10/2007 to 12/2007

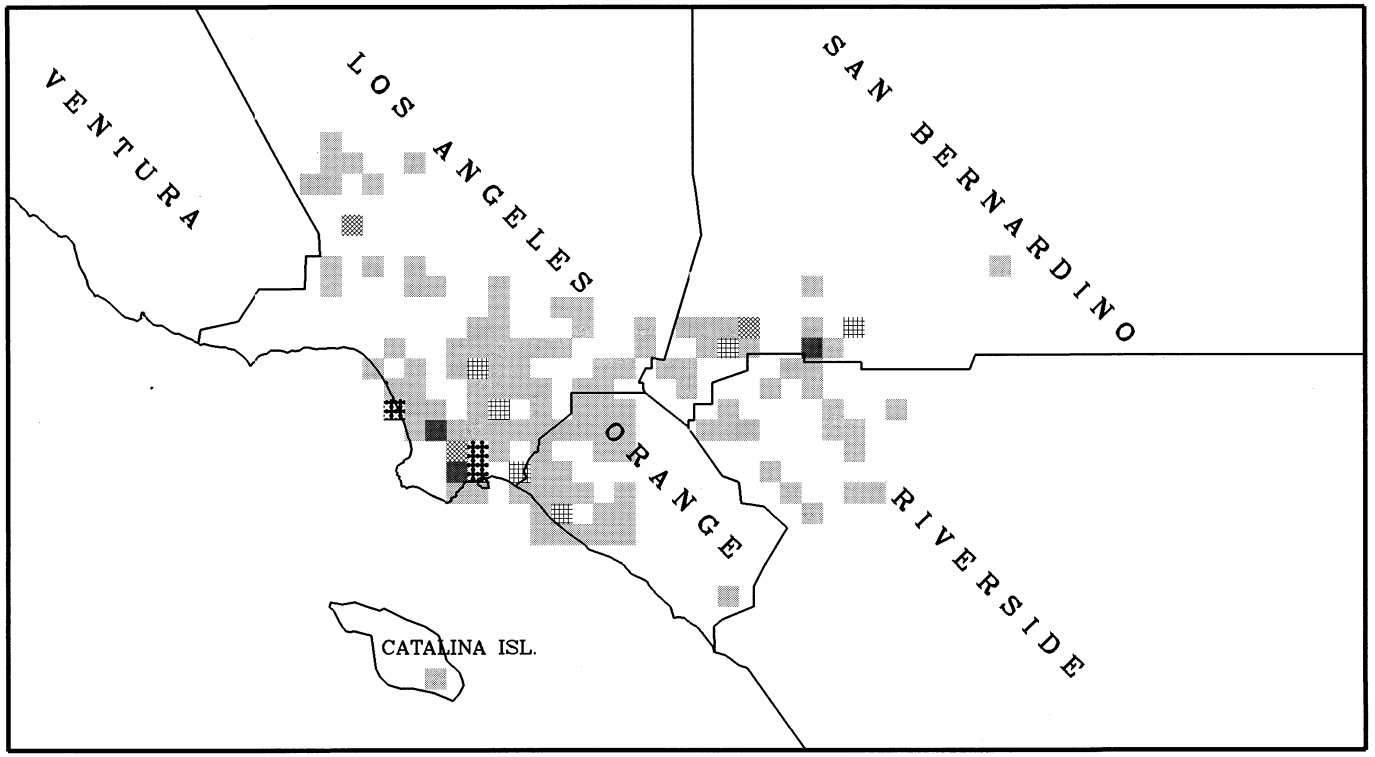


>0 – 150 | 150 – 300 | 300 – 450 | 450 – 600 | 600 – 750 | over 750 | max. emissions = 327 tons

Generated on 1/29/2009

RECLAIM Facilities

Certified NOx Emissions (Tons) Year to date (12/31/2007)



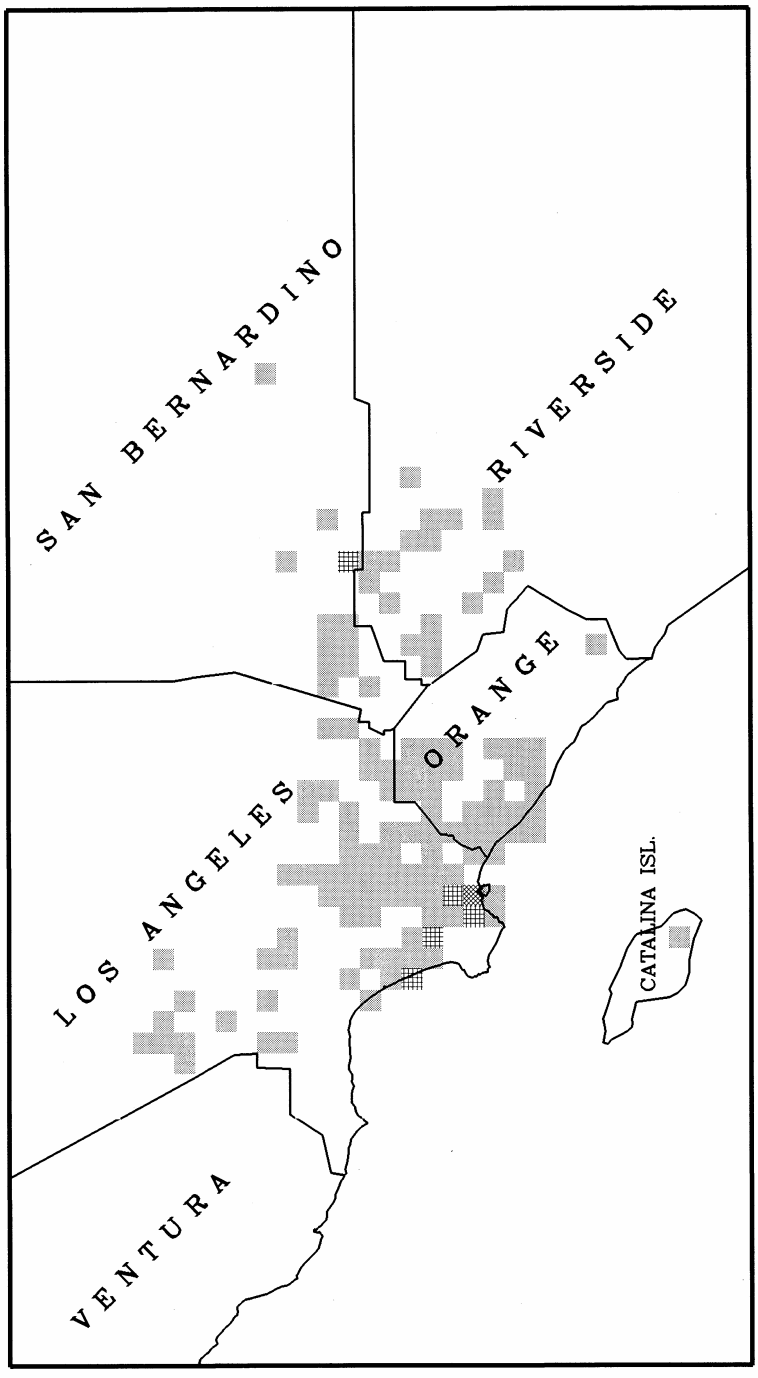
>0 – 100 | 100 – 200 | 200 – 400 | 400 – 800 | 800 –1600 | over 1600

max. emissions = 1432 tons

Generated on 1/29/2009

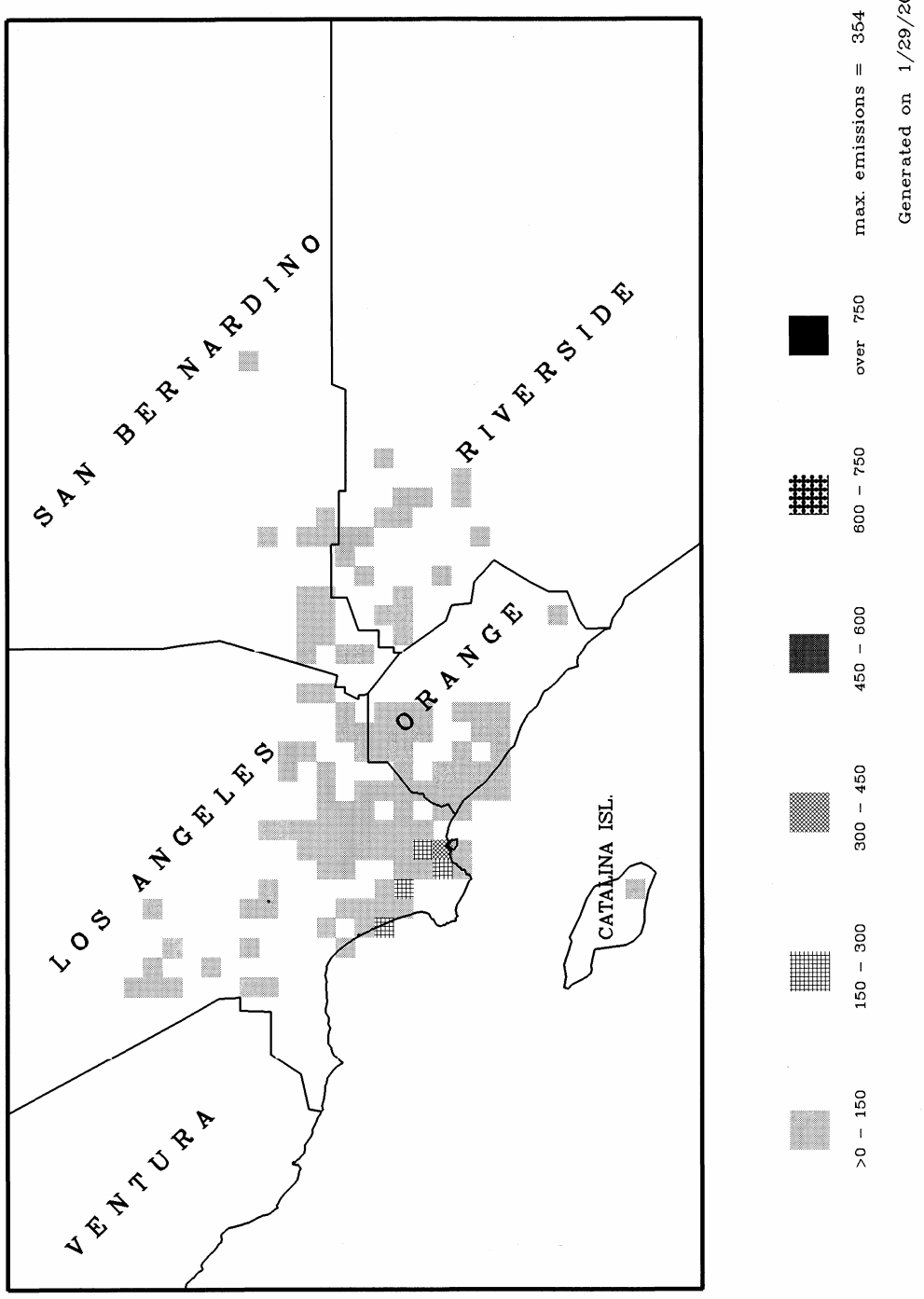
RECLAIM Facilities

Certified NOx Emissions (Tons) from 01/2008 to 03/2008



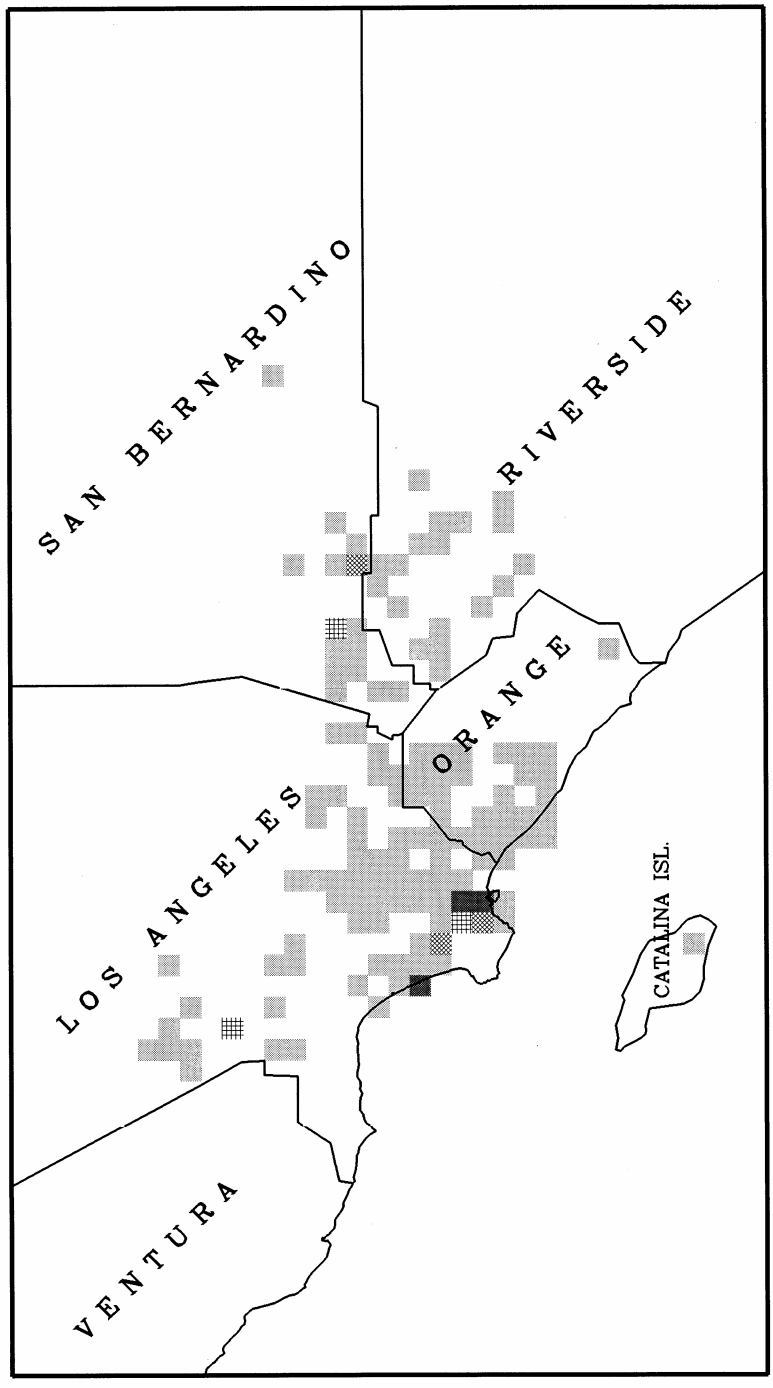
RECLAIM Facilities

Certified NOx Emissions (Tons) from 04/2008 to 06/2008



RECLAIM Facilities

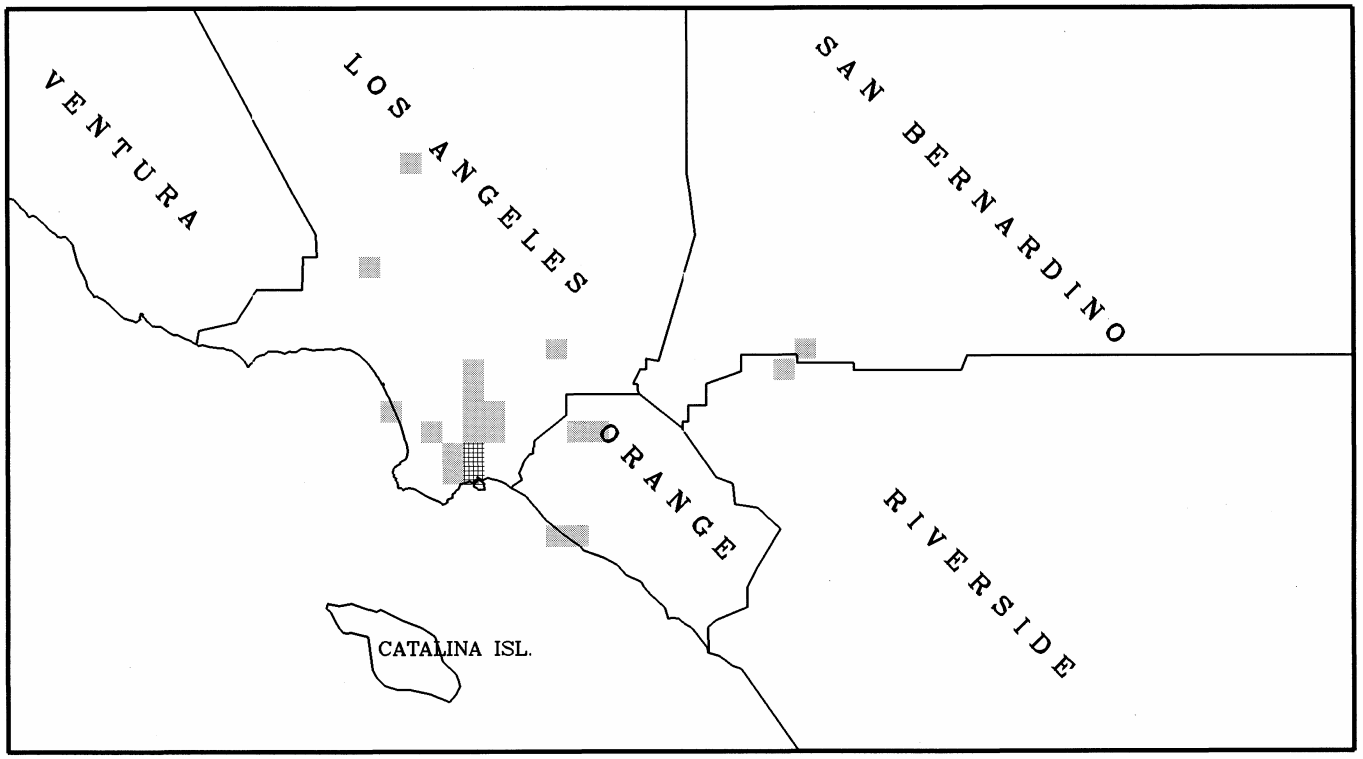
Certified NOx Emissions (Tons) Year to date (06/30/2008)



APPENDIX G
QUARTERLY SOX EMISSION MAPS

RECLAIM Facilities

Certified SOx Emissions (Tons) from 01/2007 to 03/2007



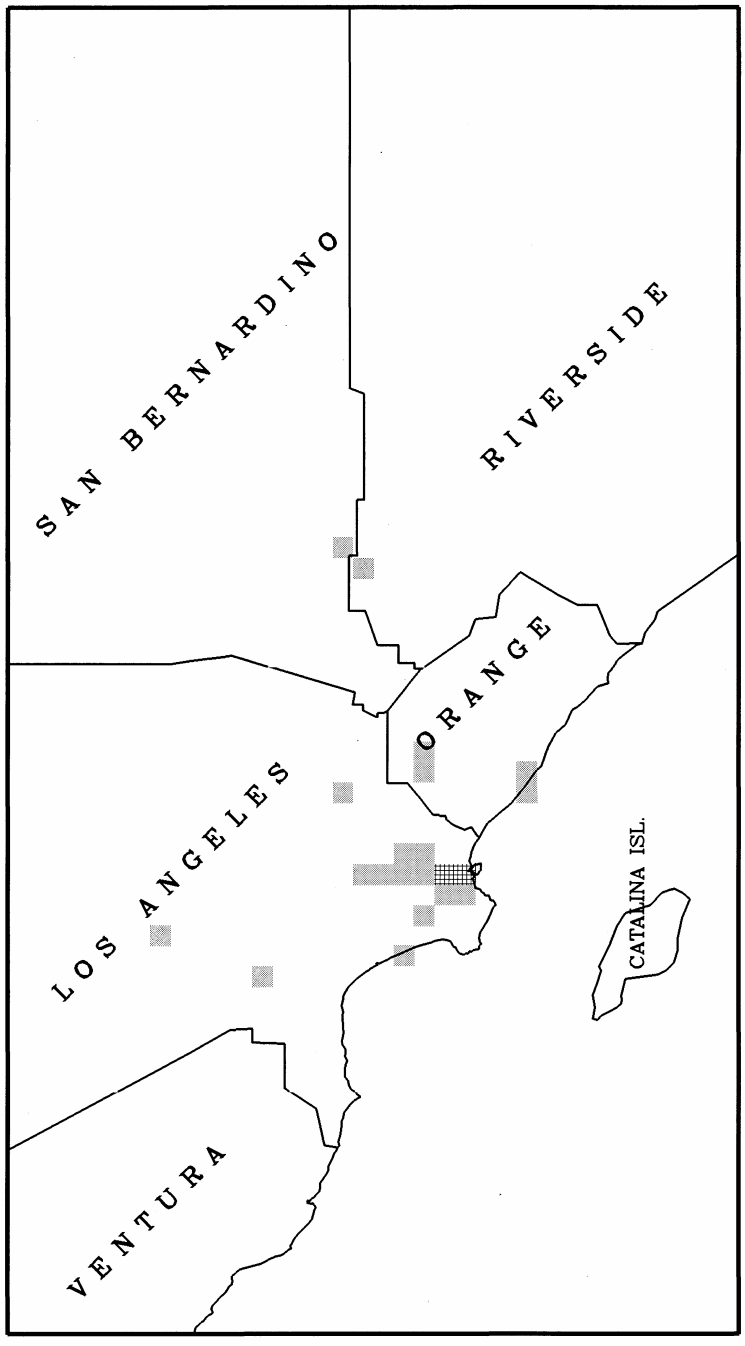
>0 – 150 | 150 – 300 | 300 – 450 | 450 – 600 | 600 – 750 | over 750

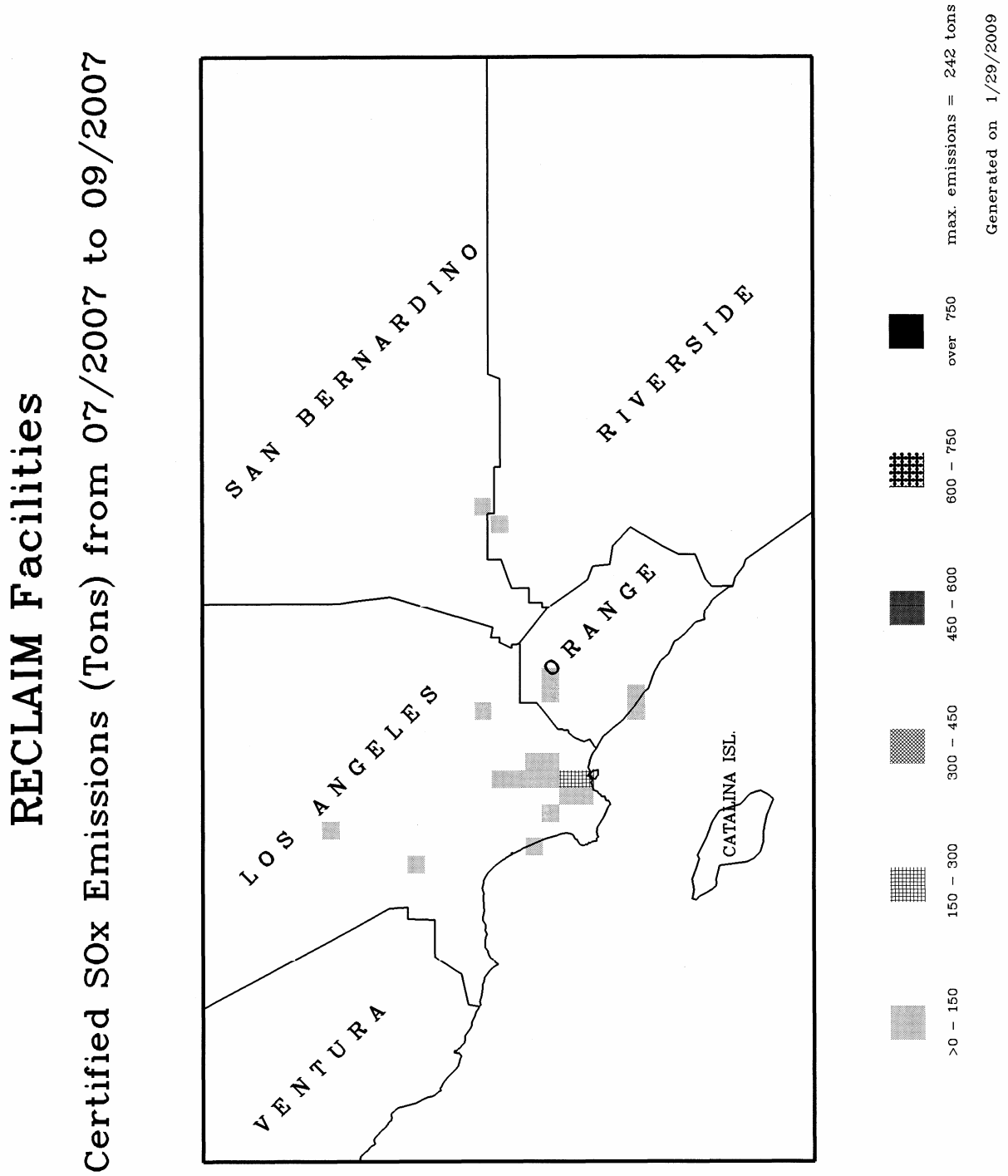
max. emissions = 194 tons

Generated on 1/29/2009

RECLAIM Facilities

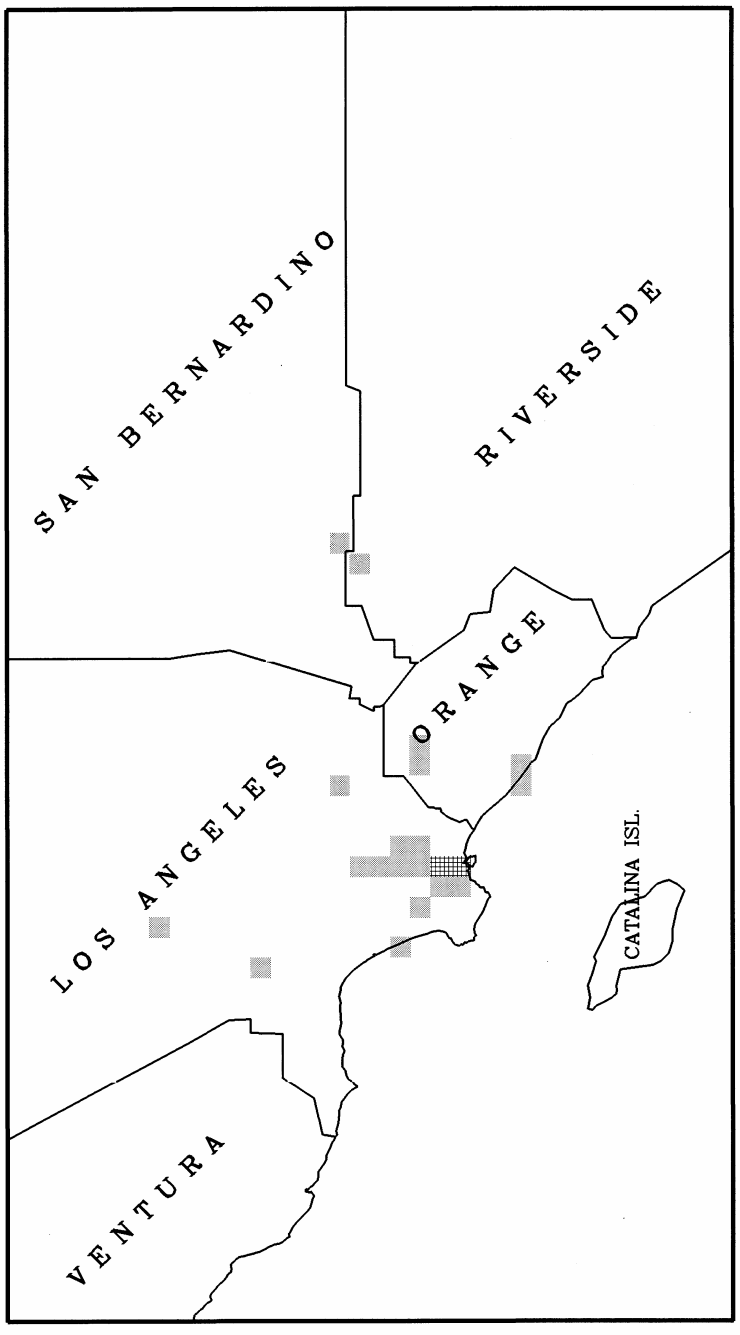
Certified SOx Emissions (Tons) from 04/2007 to 06/2007

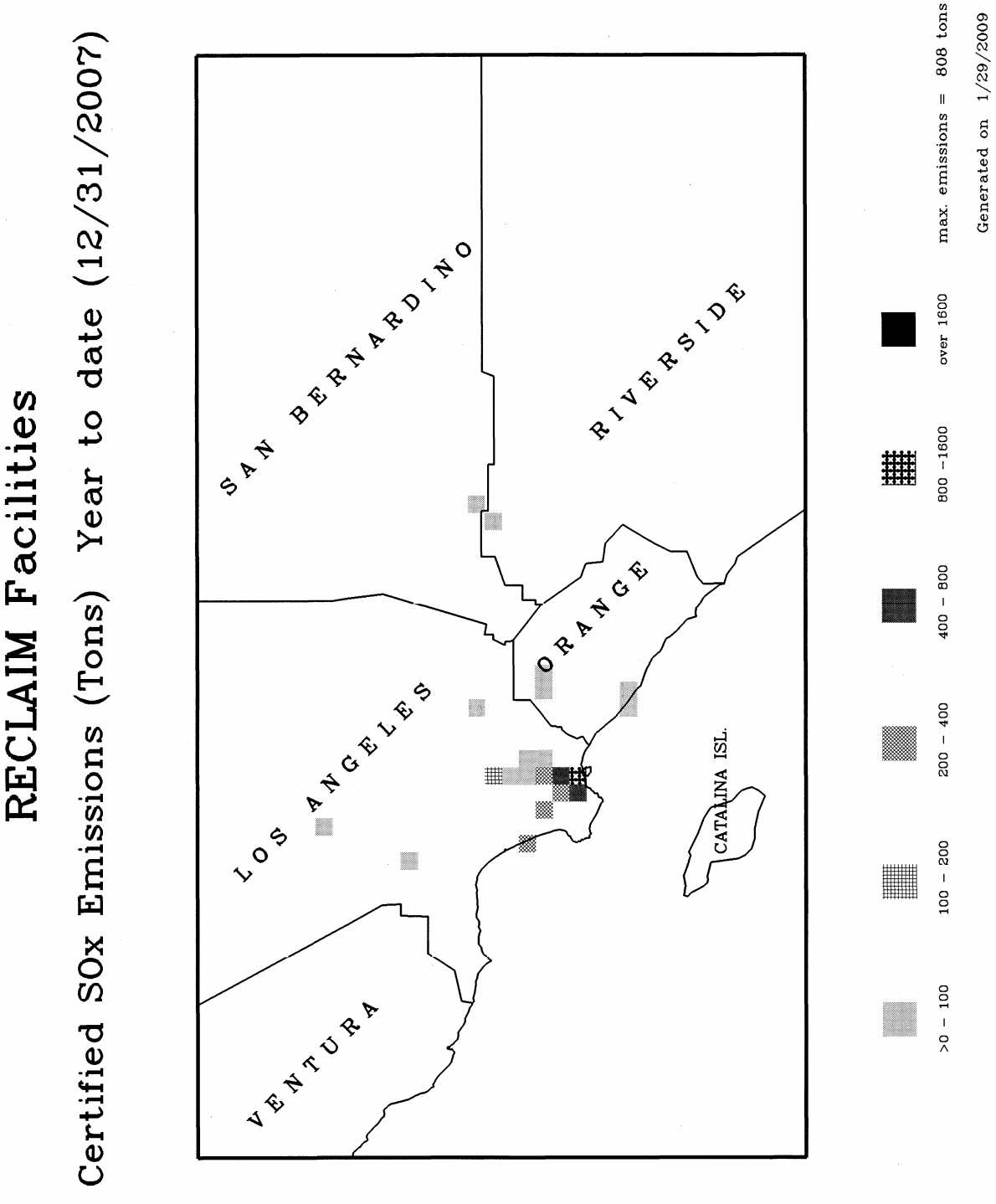



RECLAIM Facilities
Certified SOx Emissions (Tons) from 07/2007 to 09/2007
SAN BERNARDINO
RIVERSIDE
ORANGE
LOS ANGELES
VENTURA
CATALINA ISL.
>0 - 150
150 - 300
300 - 450
450 - 600
600 - 750
over 750
max. emissions = 242 tons
Generated on 1/29/2009

RECLAIM Facilities

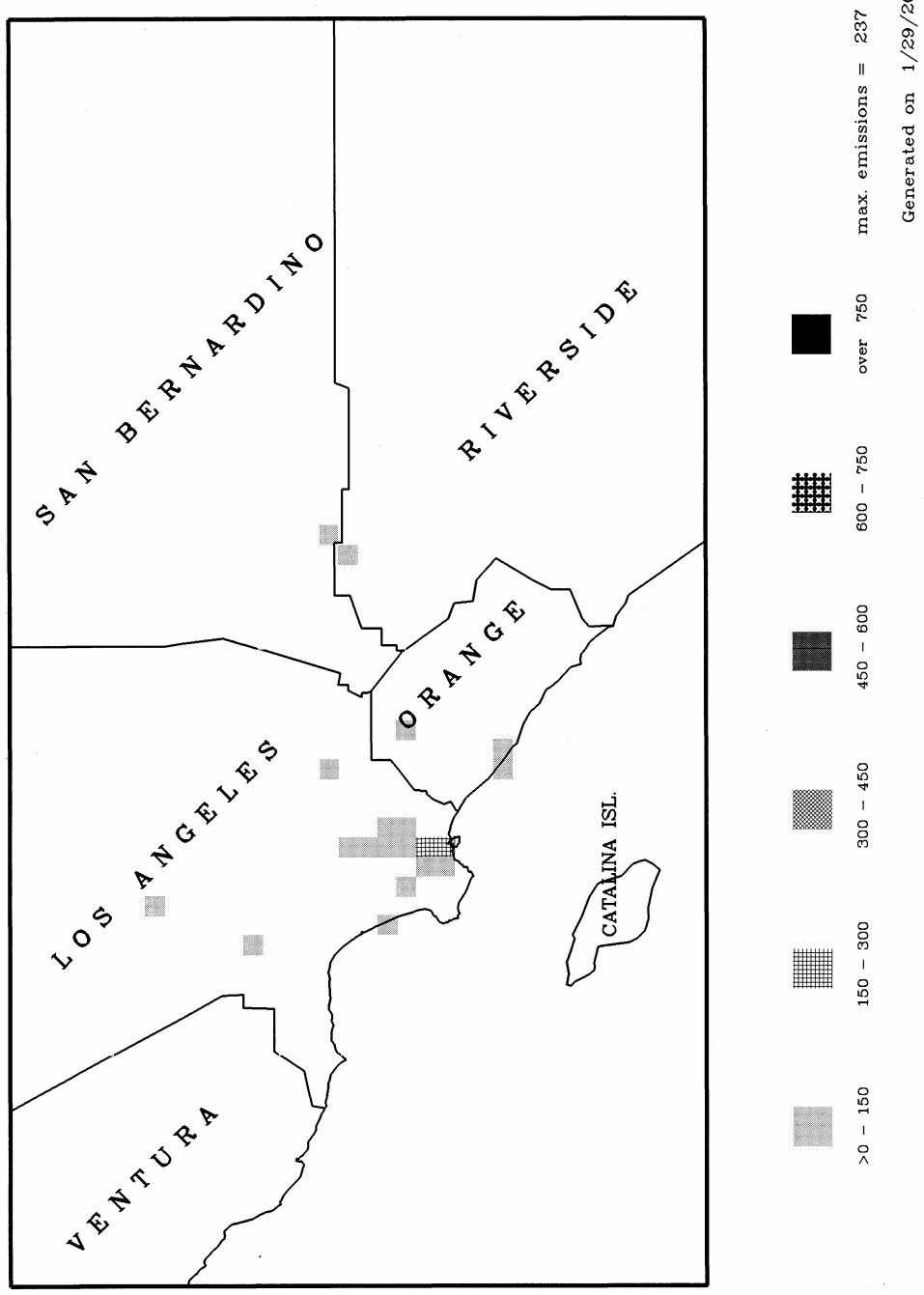
Certified SOx Emissions (Tons) from 10/2007 to 12/2007




RECLAIM Facilities
Certified SOx Emissions (Tons) Year to date (12/31/2007)
SAN BERNARDINO
RIVERSIDE
ORANGE
LOS ANGELES
VENTURA
CATALINA ISL.
>0 - 100
100 - 200
200 - 400
400 - 800
800 -1600
over 1600
max. emissions = 808 tons
Generated on 1/29/2009

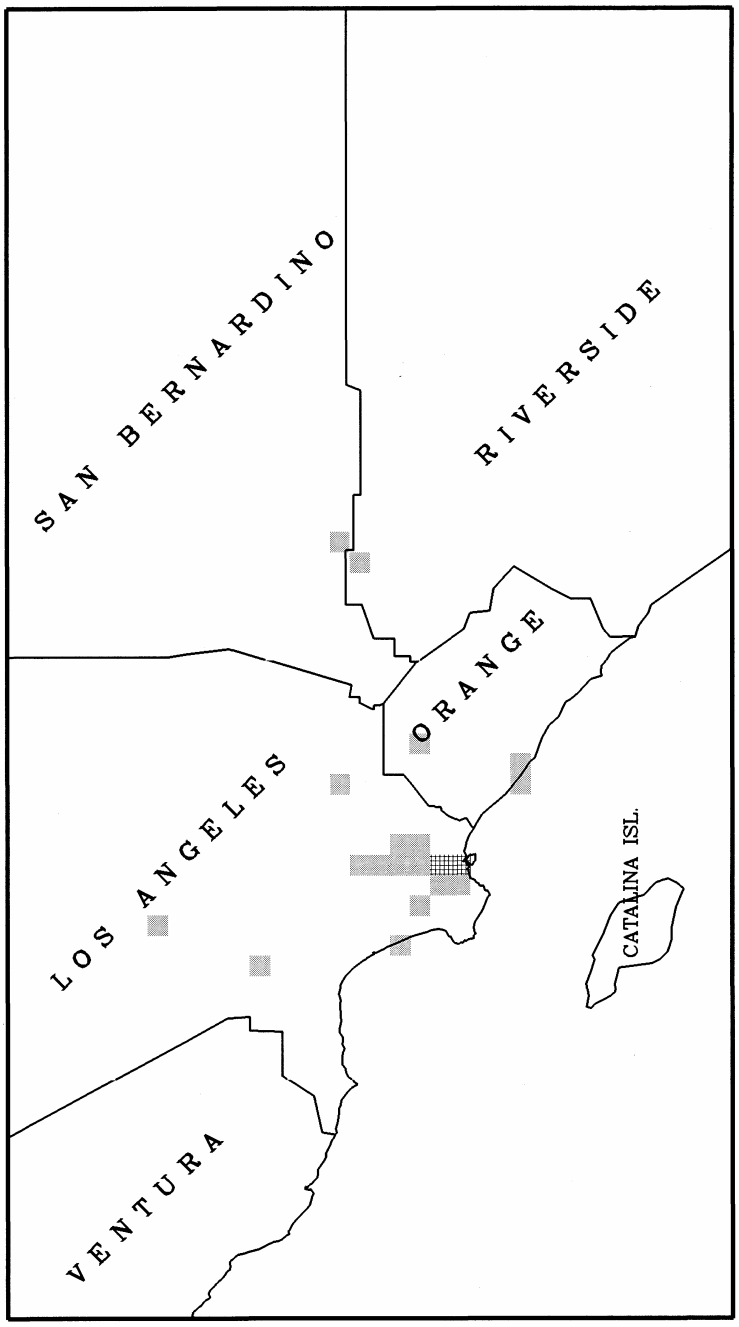
RECLAIM Facilities

Certified SOx Emissions (Tons) from 01/2008 to 03/2008



RECLAIM Facilities

Certified SOx Emissions (Tons) from 04/2008 to 06/2008



RECLAIM Facilities

Certified SOx Emissions (Tons) Year to date (06/30/2008)