

BOARD MEETING DATE: March 2, 2007

AGENDA NO. 34

REPORT: Annual RECLAIM Audit Report for 2005 Compliance Year

SYNOPSIS: The annual report on the NO_x and SO_x RECLAIM program is prepared in accordance with Rule 2015 - Backstop Provisions. The report assesses emission reductions, average annual price and availability of RECLAIM Trading Credits (RTCs), job impacts, compliance issues, and other measures of performance for the twelfth year of this program. In addition, recent trends in trading future year RTCs are analyzed and presented in this report. Further a list of facilities that were unable to reconcile their emissions for the compliance year is included with the report.

COMMITTEE: Stationary Source, February 23, 2007

RECOMMENDED ACTIONS:

- Approve the attached annual report;
- Conclude that the average annual RTC price for Compliance Year 2010 NO_x RTCs traded in Calendar Year 2006 exceeded \$15,000 per ton;
- Direct staff to, within six months, perform an evaluation and review of the compliance and enforcement aspects of the RECLAIM program and prepare the results of such evaluation and review for the AQMD Governing Board's consideration and submittal to the Air Resources Board and Environmental Protection Agency, pursuant to Rule 2015(b)(6);
- Direct staff to review and assess the need to amend the RECLAIM program pursuant to Health and Safety Code §39616(f); and
- Direct staff to assess the existing methodology for determining average annual prices, pursuant to Rule 2015(b)(1) and Health and Safety Code §39616(f), and propose a recommended methodology for determining average prices for infinite-year blocks of RTCs.

Barry R. Wallerstein, D.Env.
Executive Officer

Background

The Board adopted the RECLAIM program on October 15, 1993 to provide a more flexible compliance program for RECLAIM facilities, which represent the largest emitters of NO_x and SO_x pollutants. RECLAIM was designed to meet all state and federal requirements for clean air programs and a variety of performance criteria to ensure protection of public health, air quality improvement, effective enforcement, implementation costs, and minimal job impacts.

RECLAIM represents a significant departure from traditional command-and-control regulations. Therefore, the RECLAIM rules provide for annual program audits to verify that the program objectives are being met. Rule 2015 – Backstop Provisions requires AQMD to conduct an annual program audit to assess various aspects of the program to verify that the program objectives are being met. AQMD staff completed the audit of RECLAIM Compliance Year 2005. The audit results showed that the aggregate NO_x emissions were achieving programmatic compliance and were in fact 23 percent less than the aggregate NO_x allocations for Compliance Year 2005. Aggregate SO_x emissions also continued to be less than aggregate SO_x allocations, and they were 16 percent less for Compliance Year 2005.

With the exception of Compliance Year 2010's NO_x RTCs, the average annual prices for all other NO_x and all SO_x RTCs traded in Calendar Year 2006 were below the program review threshold of \$15,000 per ton. During Calendar Year 2006, prices for NO_x RTCs valid for Compliance Years 2007 and after, especially for those RTCs traded in multi-year streams, were increasing. When compared to prices for NO_x RTCs for the same Compliance Year traded in Calendar Year 2005, the annual average prices of NO_x RTCs traded in Calendar Year 2006 were higher for RTCs valid for every Compliance Year except Compliance Years 2005, 2006, and 2007.

The annual average price for Compliance Year 2010 NO_x RTCs traded in Calendar Year 2006 was \$15,698 per ton (using the existing methodology for determining average annual prices for infinite-year blocks of RTCs). This is in excess of the \$15,000 per ton threshold specified for a program review pursuant to Rule 2015(b)(6) and Health and Safety Code §39616(f). Accordingly, staff will conduct and “submit to the Air Resources Board and the Environmental Protection Agency the results of an evaluation and review of the compliance and enforcement aspects of the RECLAIM program, including the deterrent effect of Rule 2004 paragraphs (d)(1) through (d)(4)”, which address penalty assessment in cases of allocation exceedance.

Audit Findings

The audit of RECLAIM's Compliance Year 2005 indicates that:

- Aggregate NOx and SOx emissions from RECLAIM facilities were below allocations.
- The RECLAIM universe consisted of 311 facilities at the end of the 2004 compliance year. There was a net decrease of seven facilities in the RECLAIM universe during the 2005 compliance year. Thus, there were 304 facilities in the RECLAIM universe at the end of the 2005 compliance year.
- Eight RECLAIM facilities shut down or were reported to be out of business during the 2005 compliance year and therefore are no longer active in the RECLAIM program. These facilities shut down mainly due to economic reasons. None of these facilities attributed the closing, in whole or in part, to RECLAIM.
- One new facility was added to the RECLAIM program by opting into the program.
- The vast majority of RECLAIM facilities (over 98 percent) complied with their Allocations during the 2005 compliance year. At the time of preparation of this report, five facilities were determined to have exceeded their Allocations during the 2005 compliance year. Failure to obtain sufficient RTCs to reconcile with emissions was the cause of exceedance.
- RECLAIM had minimal impact on employment during the 2005 compliance year, as in previous years. An overall net loss of 4,005 jobs was reported by all RECLAIM facilities. Only one facility (which moved part of its production to other facilities in the United States and Mexico) reported job losses (75 jobs lost) due to RECLAIM. Two other facilities reported job gains (a total of four jobs gained) due to RECLAIM.
- The RTC trading market remained active. A total of \$ 863 million in RTCs have been traded since the adoption of RECLAIM, of which \$83 million occurred in Calendar Year 2006. Except for Compliance Year 2010 NOx RTCs, the annual average prices of NOx and SOx RTCs traded in Calendar Year 2006 were below the program review threshold of \$15,000 per ton established in Rule 2015(b)(6). Upon Board direction, staff will complete a program evaluation and review pursuant to Rule 2015(b)(6) and Health and Safety Code §39616(f) within the next six months because the average annual price for compliance Year 2010 NOx RTCs exceeded \$15,000 per ton. Prices for future year NOx RTCs, especially those traded in multi-year streams, increased during Calendar Year 2006. The annual average prices for NOx RTCs valid for Compliance Year 2010 and after were the highest since the start of the program. Annual average prices for NOx RTCs ranged from \$2,353 per ton of Compliance Year 2005 through \$14,391 per ton of Compliance Year 2008 to \$15,698 per ton Compliance Year 2010. RTCs valid for Compliance Years 2011 to 2022 were traded

at average prices around \$11,100 per ton. In addition to individual year RTC trades, RTCs were also traded as blocks of RTCs valid for all years after a start year at a single price per pound for the whole block. Average prices for these “infinite-year” RTC blocks were \$28,827 and \$4,213 per ton of NO_x and SO_x, respectively¹. For comparison purposes, the annual average prices of RTCs traded during Calendar Years 2004, 2005, and 2006 are summarized in the attached Table 1 and Table 2.

- Staff believes that the high annual average prices presented above for NO_x RTCs are the result of the existing calculation methodology that is not appropriate for the manner in which RTCs have been traded in recent years. Specifically, the existing calculation methodology was not developed to handle trades of infinite-year blocks of RTCs. Therefore, staff has begun investigating alternative calculation methodologies that treat infinite-year blocks more appropriately. This topic will be investigated further during the recommended Rule 2015(b)(6) and Health and Safety Code §39616(f) program evaluation and review.
- Foreign entities started to trade RTCs in addition to the traditional RTC traders, such as RECLAIM facilities, brokers, commodity traders, private investors, and mutual funds during Calendar Year 2006. To date, there have been two foreign entities that have participated in RTC trades.

Attachments

- A. Tables Comparing Annual Average Prices for RTCs
- B. Resolution
- C. Annual RECLAIM Audit Report for the 2005 Compliance Year

¹ These dollars per ton figures are not on the basis as the preceding dollars per ton per year figures and they cannot be meaningfully compared in terms of dollars per ton per year for an infinite year RTC block. Therefore, they are only in dollars per ton.

ATTACHMENT A

TABLES COMPARING ANNUAL AVERAGE PRICES FOR RTCs

Table 1
Annual Average NOx RTC Price Comparison for the Last Three Calendar Years
(2004-2006)

	Annual Average NOx RTC Price (\$/Ton of RTC)		
	Calendar Year 2004	Calendar Year 2005	Calendar Year 2006
Same Compliance Year	\$1,359/ton for CY 2003	\$1,195/ton for CY 2004	\$2,353/ton for CY 2005
Next Compliance Year	\$2,633/ton for CY 2004	\$3,630/ton for CY 2005	\$4,282/ton for CY 2006
Future Compliance Year	\$4,792/ton for CY 2010	\$10,193/ton for CY 2010	\$15,698/ton for CY 2010

CY = Compliance Year

Table 2
Annual Average SOx RTC Price Comparison for the Last Three Calendar Years
(2004-2006)

	Annual Average SOx RTC Price (\$/Ton of RTC)		
	Calendar Year 2004	Calendar Year 2005	Calendar Year 2006
Same Compliance Year	\$1,026/ton for CY 2003	\$1,400/ton for CY 2004	\$864/ton for CY 2005
Next Compliance Year	\$3,052/ton for CY 2004	\$1,953/ton for CY 2005	\$1,410/ton for CY 2006
Future Compliance Year	No SOx RTCs beyond CY 2004 were traded with price	\$4,304/ton for CY 2010	\$2,209/ton for CY 2010

CY = Compliance Year

ATTACHMENT B

RESOLUTION

A Resolution of the Governing Board of the AQMD approving the RECLAIM 2005 Annual Report

WHEREAS, a public hearing has been properly noticed as required by Rule 2015(b)(1); and

WHEREAS, the AQMD Governing Board has held a public hearing in accordance with all provisions of law; and

WHEREAS, the AQMD Governing Board has determined that Rule 2015 - Backstop Provisions specifies that the RECLAIM program be audited on an annual basis in accordance with the provisions of Rule 2015(b)(1); and

WHEREAS, using the existing average annual RTC price calculation methodology that has been used in all previous RECLAIM Annual Reports, staff has calculated an average annual price for Compliance Year 2010 NO_x RTCs traded in Calendar Year 2006 of \$15,698 per ton; and

WHEREAS, Rule 2015 (b)(6) specifies that within six months after a determination that the average annual RTC price has exceeded \$15,000 per ton, the Executive Officer shall submit to the Air Resources Board and the Environmental Protection Agency the results of an evaluation and review of the compliance and enforcement aspects of the RECLAIM Program, including the deterrent effect of Rule 2004 paragraphs (d)(1) through (d)(4); and

WHEREAS, Health and Safety Code §39616(f) specifies that the district board shall reassess a market-based incentive program if the market price of the program's trading credits exceeds a predetermined level set by the district board, which was set by the AQMD Governing Board at \$15,000 per ton for average annual price for RTCs; and

WHEREAS, the AQMD Governing Board has determined that, in accordance with Rule 2015(b)(6), such an evaluation and review shall include, but not be limited to, an assessment of the rates of compliance with applicable emission caps, an assessment of the rate of compliance with monitoring, recordkeeping and reporting requirements, and assessment of the ability of the AQMD to obtain appropriate penalties in cases of

noncompliance, and an assessment of whether the program provides appropriate incentives to comply; and

WHEREAS, a need exists to evaluate the applicability of Rule 2015(b)(1) and Health and Safety Code §39616(f) to trades of infinite-year blocks of RTCs and the appropriate methodology for determining prices for infinite-year blocks of RTCs and the price threshold for infinite-year blocks of RTCs to trigger review of RECLAIM's enforcement effectiveness and protocols, pursuant to Rule 2015(b)(6) and program review pursuant to Health and Safety Code §39616(f); and

NOW, THEREFORE, BE IT RESOLVED, that the AQMD Governing Board does hereby approve the RECLAIM 2005 Annual Audit Report; and

BE IT FURTHER RESOLVED, the AQMD Governing Board hereby finds that, using the existing calculation methodology, the average annual price of Compliance Year 2010 NOx RTCs traded in Calendar Year 2010 exceeded \$15,000 per ton; and

BE IT FURTHER RESOLVED, the AQMD Governing Board directs staff to prepare for the AQMD Governing Board's consideration for submittal to the Air Resources Board and the Environmental Protection Agency the results of an evaluation and review of the compliance and enforcement aspects of the RECLAIM Program conducted pursuant to Rule 2015(b)(6), including the deterrent effect of Rule 2004 paragraphs (d)(1) through (d)(4) within six months and that such an evaluation and review include, but not be limited to, an assessment of the rates of compliance with applicable emission caps, an assessment of the rate of compliance with monitoring, recordkeeping and reporting requirements, and assessment of the ability of the AQMD to obtain appropriate penalties in cases of noncompliance, and an assessment of whether the program provides appropriate incentives to comply; and

BE IT FURTHER RESOLVED, the AQMD Governing Board directs staff to prepare for the AQMD Governing Board's review a reassessment of the RECLAIM Program and recommendations for any necessary future amendments to Regulation XX – REgional CLean Air Incentives Market (RECLAIM) pursuant to Health and Safety Code §39616(f); and

BE IT FURTHER RESOLVED, the AQMD Governing Board directs staff to submit, with the results of the evaluation, either a recommendation that paragraphs (d)(1) through (d)(4) of Rule 2004 be continued without change, or proposed amendments to the RECLAIM rules setting forth revisions to paragraphs (d)(1) through (d)(4) of Rule 2004; and

BE IT FURTHER RESOLVED, the AQMD Governing Board directs staff to evaluate and propose a recommended methodology for determining prices for infinite-year blocks of RTCs.

DATE: _____

CLERK OF THE BOARD

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

**Annual RECLAIM Audit Report for the
2005 Compliance Year**

March 2, 2007

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EXECUTIVE OFFICER

BARRY R. WALLERSTEIN, D.Env.

TABLE OF CONTENTS

Executive Summary _____ **ES-1**

INTRODUCTION _____ **I-1**

Chapter 1: RECLAIM Universe _____ 1-1
Chapter 2: RTC Allocations and Trading _____ 2-1
Chapter 3: Emission Reductions _____ 3-1
Chapter 4: New Source Review Activity _____ 4-1
Chapter 5: Compliance _____ 5-1
Chapter 6: Job Impacts _____ 6-1
Chapter 7: Air Quality and Public Health Impacts _____ 7-1

List of Abbreviations

Appendix A: RECLAIM Universe of Sources
Appendix B: Facility Inclusions
Appendix C: RECLAIM Facilities Ceasing Operation or Excluded
Appendix D: Facilities that were Unable to Reconcile Emissions for Compliance Year
2005
Appendix E: Job Impacts Attributed to RECLAIM
Appendix F: Alternative Pricing Methodology for Calculating Average Annual RTC
Price
Appendix G: Quarterly NOx Emission Maps
Appendix H: Quarterly SOx Emission Maps

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 more comprehensive three-year audit 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 2005 compliance year (January 1 through December 31, 2005 for Cycle 1 and July 1, 2005 through June 30, 2006 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. Between program adoption through the end of Compliance Year 2004, a cumulative sum of 106 facilities were included into the program, 69 were excluded from the program, and 120 facilities ceased operation. Thus, the RECLAIM universe consisted of 311 active facilities on July 1, 2005. During Compliance Year 2005, one facility was included into the RECLAIM universe, no facilities were excluded, while eight facilities shut down and are no longer in the active RECLAIM universe. These changes resulted in a net decrease of seven facilities in the universe, bringing the total number of facilities to 304 at the end of Compliance Year 2005. All of these changes occurred within the facilities included in the oxides of nitrogen (NO_x) universe and there were no changes to the facilities included in the oxides of sulfur (SO_x) universe during Compliance Year 2005.

Chapter 2: RTC Allocations and Trading

For Compliance Year 2005, there were only slight changes to the NO_x and SO_x RECLAIM Trading Credit (RTC) supplies. There was a decrease of 0.83 ton from the NO_x RTC supply and an increase of 0.40 ton to the SO_x RTC supply, both due to adjustment for clean fuel production pursuant to Rule 2002(c)(12). There was no other change to the NO_x and SO_x RTC supplies for future years.

The Calendar Year 2006 trading market continued to be active with 730 registered RTC transactions, a total volume of 20,058 tons, and a total value of

almost \$83 million. Since the inception of the RECLAIM program in 1994, a total of \$863 million were traded in the RTC trading market. In 2006, there were a total of 8,404 tons of NOx RTCs traded with prices and a total value of \$79 million in value. This volume was six percent higher than the total volume of NOx RTCs traded with prices in 2005. The total value traded was 32 percent higher than that traded in 2005. This increased value is a result of higher prices paid for future NOx RTCs that are valid for Compliance Year 2008 and after.

Average annual prices for NOx RTCs valid for Compliance Year 2008 and after traded during Calendar Year 2006 were higher than the prices for the same vintages traded during Calendar Year 2005 and were the highest since the start of the program. Average annual NOx RTC prices ranged from \$2,353 per ton for Compliance Year 2005 to around \$15,698 per ton for Compliance Year 2010. RTCs valid for Compliance Years 2011 to 2022 were traded at average prices around \$11,100 per ton. NOx RTCs for future years (starting Compliance Year 2009 and beyond) were generally traded in multi-year streams that included an infinite-year RTC block. Compliance Year 2005 Cycle 1 NOx RTCs were traded at under \$2,000 per ton toward the end of the 2005 Cycle 1 reconciliation period, but Cycle 2 Compliance Year 2005 RTCs were traded above \$2,000 per ton toward the end of the Cycle 2 reconciliation period.

The \$15,698 per ton average annual price of Compliance Year 2010 NOx RTCs calculated based on the existing methodology exceeded the \$15,000 per ton program review threshold as set in Rule 2015(b)(6). Therefore, upon Governing Board direction, staff will conduct an evaluation and review of compliance and enforcement aspects of RECLAIM pursuant to Rule 2015(b)(6) Health and Safety Code §39616(f). The results of this evaluation and review will be completed within six months of this report and will be submitted to the U.S. Environmental Protection Agency (EPA) and California Air Resources Board (CARB)

In Calendar Year 2006, SOx RTC trades continued to be active. In 2006, there were a total of 1,712 tons of SOx RTCs traded with prices and a total value of \$3.8 million in value. The total volume of trades with price was 660 tons (or 62 %) higher than the Calendar Year 2005 volume. The total value was about the same as Calendar Year 2005. The average annual prices for SOx RTCs, ranging from \$864 per ton for Compliance Year 2005 to \$2,623 per ton for Compliance Years 2011, 2012, and 2013, returned to the pre-Calendar Year 2000 price range.

Infinite-year block trades are trades of RTCs valid for all years after a certain start year wherein the RTCs are traded at a price per pound for the entire block of specified years instead of price per pound per year. In the past, infinite-year block trades typically consisted of a block of RTCs that were valid starting from Compliance Year 2011 and extending through all years thereafter. In the most recent years, infinite-year block trades began to occur with start years beyond 2011. They have also become much more common in recent years and represent the majority of the Calendar Year 2006 trade volume. A total of only 3,835 tons out of a total of 8,404 tons of NOx RTCs traded (46 %) were for RTCs not involved with infinite-year block trades and 324 tons out of a total of 1,712 tons of SOx RTC traded (19 %) were for RTCs not involved with infinite-year RTC blocks. The average annual prices were \$28,827 and \$4,213 per ton of NOx and SOx infinite-year RTC block, respectively. The average price for all NOx infinite-year RTC blocks traded in Calendar Year 2006 increased

significantly over the average price (\$10,678 per ton without amortizing) for infinite-year NOx RTCs traded in Calendar Year 2005.

Besides higher prices for future year RTCs, staff found that some facilities report the price for an infinite-year block of RTCs as a single lump sum while others spread the cost over varying numbers of years. Staff believes that this inconsistent reporting of the price of infinite-year RTC blocks also contributed to the average annual price for Compliance Year 2010 NOx RTC exceeding \$15,000 per ton. Staff has evaluated an alternative method for calculating average annual RTC prices to better incorporate data from infinite-year block trades. Under this alternative methodology, the one-time cost of infinite-year block trades is amortized using an interest rate of four percent. For illustration purposes, average annual prices were calculated using two amortization periods—15 years and perpetuity. The average annual prices based on this methodology were all below the \$15,000 per ton level for all RTCs, using either amortization period.

The RTC market also saw an additional type of participant during Calendar Year 2006. Two foreign entities started to trade RTCs in addition to the traditional RTC traders, such as RECLAIM facilities, brokers, commodity traders, private investors, and mutual funds (which also started to trade RTCs in Calendar Year 2005). The role of investors in the RTC market has become significant. Based on both trading values and number of trades, investor-involved trades constituted the majority of the trades recorded in 2006 (over 80 percent based on dollar value traded) even though at the end of the year their RTC holdings constituted only three percent of the total RTC supply.

Chapter 3: Emission Reductions

Aggregate NOx and SOx emissions from RECLAIM facilities continued to be below allocations for Compliance Year 2005. Total aggregate NOx emissions declined from Compliance Year 2004 levels and were below total allocations by 23 percent. On the other hand, Compliance Year 2005 aggregate SOx emissions increased slightly (by one percent) from the previous year but were below total allocations by approximately 16 percent. Therefore, aside from the effects of the California energy crisis on Compliance Years 2000 and 2001 emissions, it can be concluded that RECLAIM has achieved its targeted emission reductions since aggregate emissions are below aggregate allocations. Finally, no emissions associated with breakdowns were excluded from being accounted against facility allocations in Compliance Year 2005. As such, 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 and state NSR requirements, while providing flexibility to facilities in managing their operations and allowing new sources into the program. In Compliance Year 2005, one new facility joined the RECLAIM NOx program, while no facility joined the SOx program. In Calendar Year 2005, nineteen RECLAIM facilities had NSR NOx emission increases due to expansion or modification. These data indicate

that the RECLAIM program does not inhibit start-up of a new facility or expansion at existing RECLAIM facilities.

RECLAIM is required to comply with federal NSR requirements at a 1.2-to-1 offset ratio for NO_x emission increases and at a 1-to-1 offset ratio for SO_x emission increases on a programmatic basis. In Calendar Year 2005, RECLAIM provided an offset ratio of 118-to-1 for NO_x on an aggregate basis, demonstrating federal equivalency. There were no NSR increases for RECLAIM SO_x during Calendar Year 2005. Compliance with the federally required offset ratio also demonstrates compliance with the state requirement of no net emissions increases from 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 311 NO_x facilities and 33 SO_x facilities in operation in the RECLAIM program at the start of the 2005 compliance year. One new facility elected to join the NO_x RECLAIM Program during the 2005 compliance year. Of these 312 NO_x RECLAIM facilities, 307 facilities (98 percent) complied with their NO_x allocations and all 33 SO_x facilities complied with their SO_x allocations during Compliance Year 2005. Verification of facility-reported emissions and audits of facility records for the compliance year are still on-going. Initial results for Compliance Year 2005 revealed that the overall RECLAIM NO_x and SO_x emission goals were met for this compliance year. Five facilities were found to have exceeded their individual allocations. The amounts of emissions in excess of individual allocations ranged from 117 pounds to 5.1 tons and the combined excess NO_x emissions from these five facilities totaled 6.5 tons. The only cause for exceeding allocation in Compliance Year 2005 was failure to obtain sufficient RTCs to reconcile with quarterly and/or annual emissions.

Chapter 6: Job Impacts

According to the Compliance Year 2005 employment survey, the RECLAIM program had no impact on jobs at most facilities. RECLAIM facilities reported a net loss of 4,005 jobs, representing 3.55 percent of total employment. Most of these losses were attributed to factors other than RECLAIM. Eight RECLAIM facilities were listed as shut down during Compliance Year 2005. None of these facilities indicated that RECLAIM was a contributing factor in their decision to close, and none of them listed any jobs lost specifically due to RECLAIM on their survey forms. However, three operating facilities identified job impacts due to the RECLAIM program: only one facility reported the loss of 75 jobs, and the other two facilities reported a total of four jobs gained.

Chapter 7: Air Quality and Public Health Impacts

Emissions reported by RECLAIM facilities have been in an overall downward trend since the program's inception. When compared to the previous compliance year, NO_x emissions in Compliance Year 2005 continued its downward trend and SO_x emissions increased slightly (by one percent). Quarterly NO_x emissions ranged from approximately three percent below to two percent above the mean

NOx emissions throughout Calendar Year 2005. Quarterly SOx emissions ranged from approximately four percent below to three percent above the mean SOx emissions throughout Calendar Year 2005. Thus, there is no seasonal fluctuation in emissions. Furthermore, this year's analysis, as in each previous year's analysis, of the geographical distribution of emissions on a quarterly basis does not show any distinct shift in the geographical distribution of emissions.

The California Clean Air Act (CCAA) requires a 50 percent 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 Compliance Year 2005, the per capita exposure to ozone continues 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. Additionally, RECLAIM facilities are subject to the same air toxic regulations as other sources in the Basin. Therefore, it can be concluded that there is no toxic impact due to the implementation of the RECLAIM program beyond what would have occurred pursuant to 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 regulations 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 requirements for clean air programs, 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, the RECLAIM rules include provisions for program audits in order to verify that the RECLAIM objectives are being met. The rules provide for both annual audits and a more comprehensive audit of the first three years of program implementation. The audit results are used to help determine whether any program modifications are appropriate.

The RECLAIM Program Three-Year Audit and Progress Report was presented to the Governing Board May 8, 1998. This report presents the annual audit and progress report of RECLAIM's twelfth compliance year (January 1 through December 31, 2005 for Cycle 1 and July 1, 2005 through June 30, 2006 for Cycle 2), also known as the 2005 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 (NSR) 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 during the 2005 compliance year.
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. The latest amendments made to the RECLAIM program and emissions associated with equipment breakdowns are also discussed.
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 and evaluates the effectiveness of the South Coast Air Quality Management District's (AQMD's) compliance program and the oxides of nitrogen (NOx) and oxides of sulfur (SOx) monitoring, reporting, and recordkeeping (MRR) protocols.
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. Between program adoption through the end of Compliance Year 2004, a cumulative sum of 106 facilities were included into the program, 69 were excluded from the program, and 120 facilities ceased operation. Thus, the RECLAIM universe consisted of 311 active facilities on July 1, 2005. During Compliance Year 2005, one facility was included into the RECLAIM universe, no facilities were excluded, while eight facilities shut down and are no longer in the active RECLAIM universe. These changes resulted in a net decrease of seven facilities in the universe, bringing the total number of facilities to 304 at the end of Compliance Year 2005. All of these changes occurred within the facilities included in the oxides of nitrogen (NOx) universe and there were no changes to the facilities included in the oxides of sulfur (SOx) universe during Compliance Year 2005.

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 all facilities located in the Riverside County portions of the Mojave Desert Air Basin and the Salton Sea Air Basin. Furthermore, there are other categories of facilities that are not automatically subject to RECLAIM, but these 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, and agricultural facilities. 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 discovered by AQMD staff to meet the applicability requirements of RECLAIM, but was initially misclassified as not subject to RECLAIM.

The facilities in the RECLAIM universe 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 universe and to add new facilities to the universe. The overall changes to the RECLAIM universe from the date of adoption through the end of Compliance Year 2004 were: inclusion of 106 facilities (81 facilities were included and 25 facilities were created by partial change of operator of existing RECLAIM facilities), exclusion of 69 facilities, and 120 facility shutdowns. Thus, the net change in the RECLAIM universe during the first 11 compliance years was a decrease from 394 to 311 facilities. During Compliance Year 2005, one facility was included, no facilities were excluded, and eight facilities shut down. These changes brought the total number of facilities in the RECLAIM universe to 304 facilities by the end of Compliance Year 2005. All the changes occurred within the NOx RECLAIM universe. There were no changes to the SOx RECLAIM universe in Compliance Year 2005, with the number of SOx facilities remaining the same at 33 facilities.

Table 1-1 summarizes the changes in the RECLAIM universe between the start of program and the end of Compliance Year 2005. The current list of facilities in the RECLAIM universe as of June 30, 2006 is listed in Appendix A.

**Table 1-1
RECLAIM Universe Changes**

	NOx Facilities	SOx Facilities	Total Facilities
Start of Program	392	41	394
Inclusions—1994-2004	106	8	106
Exclusions—1994-2004	68	4	69
Shutdowns—1994-2004	119	12	120
End of Compliance Year 2004	311	33	311
Inclusions—2005	1	0	1
Exclusions—2005	0	0	0
Shutdowns—2005	8	0	8
End of Compliance Year 2005	304	33	304

Facility Inclusions and Exclusions

During Compliance Year 2005, one facility entered the RECLAIM program voluntarily to participate in the NOx market. The facility which was included is listed in Appendix B.

While a facility may apply for entry into the RECLAIM program, it is not officially included in the program until it is issued a Facility Permit. Six facilities have filed applications to enter the RECLAIM program but the Facility Permits for these six facilities were either issued after the end of Compliance Year 2005, or the applications are currently pending.

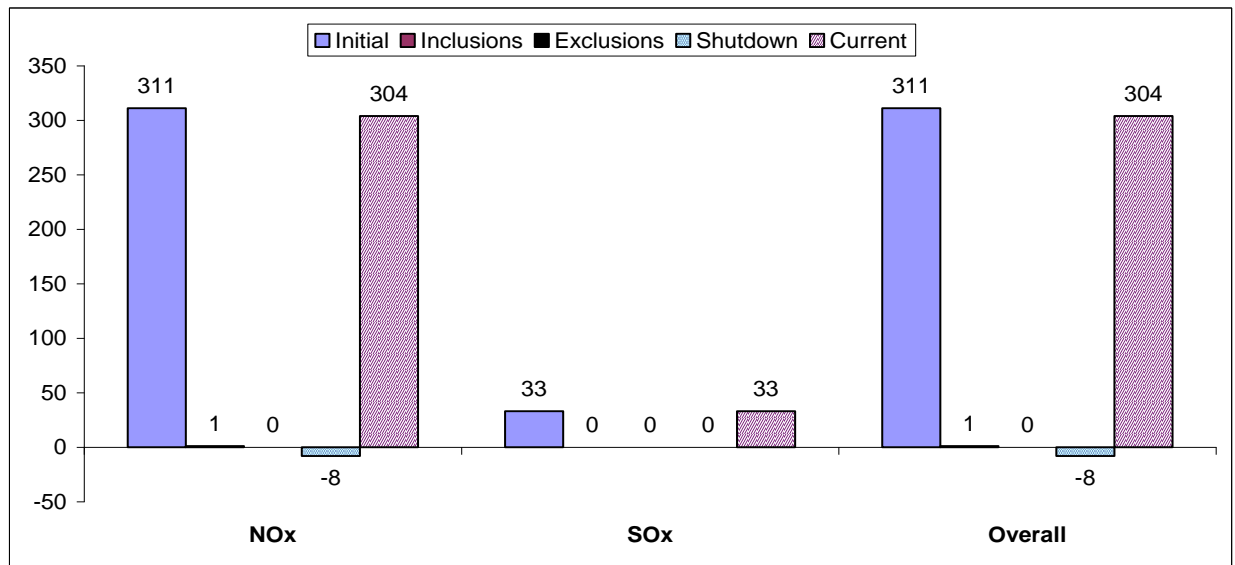
No facilities were excluded from RECLAIM in Compliance Year 2005.

Facilities Permanently Ceasing Operations

Eight RECLAIM facilities permanently ceased operations between January 1, 2005 and June 30, 2006. Shutdown facilities have the option to retain or sell their RTCs. Of these eight facilities, none cited air pollution regulations as a contributing factor in their decision to cease operation. Appendix C lists the shutdown facilities and brief descriptions of the known reasons for closing down operations.

These eight facilities which shut down were NOx only facilities. These changes along with the facility inclusion resulted in a net decrease of 7 facilities in the RECLAIM Universe. Additionally, overall changes to the RECLAIM universe that occurred during Compliance Year 2005 are illustrated in Figure 1-1.

Figure 1-1
Universe Changes during Compliance Year 2005



CHAPTER 2 RTC ALLOCATIONS AND TRADING

Summary

For Compliance Year 2005, there were only slight changes to the NOx and SOx RECLAIM Trading Credit (RTC) supplies. There was a decrease of 0.83 ton from the NOx RTC supply and an increase of 0.40 ton to the SOx RTC supply, both due to adjustment for clean fuel production pursuant to Rule 2002(c)(12). There was no other change to the NOx and SOx RTC supplies for future years.

The Calendar Year 2006 trading market continued to be active with 730 registered RTC transactions, a total volume of 20,058 tons, and a total value of almost \$83 million. Since the inception of the RECLAIM program in 1994, a total of \$863 million were traded in the RTC trading market. In 2006, there were a total of 8,404 tons of NOx RTCs traded with prices and a total value of \$79 million in value. This volume was six percent higher than the total volume of NOx RTCs traded with prices in 2005. The total value traded was 32 percent higher than that traded in 2005. This increased value is a result of higher prices paid for future NOx RTCs that are valid for Compliance Year 2008 and after.

Average annual prices for NOx RTCs valid for Compliance Year 2008 and after traded during Calendar Year 2006 were higher than the prices for the same vintages traded during Calendar Year 2005 and were the highest since the start of the program. Average annual NOx RTC prices ranged from \$2,353 per ton for Compliance Year 2005 to around \$15,698 per ton for Compliance Year 2010. RTCs valid for Compliance Years 2011 to 2022 were traded at average prices around \$11,100 per ton. NOx RTCs for future years (starting Compliance Year 2009 and beyond) were generally traded in multi-year streams that included an infinite-year RTC block. Compliance Year 2005 Cycle 1 NOx RTCs were traded at under \$2,000 per ton toward the end of the 2005 Cycle 1 reconciliation period, but Cycle 2 Compliance Year 2005 RTCs were traded above \$2,000 per ton toward the end of the Cycle 2 reconciliation period.

The \$15,698 per ton average annual price of Compliance Year 2010 NOx RTCs calculated based on the existing methodology exceeded the \$15,000 per ton program review threshold as set in Rule 2015(b)(6). Therefore, upon Governing Board direction, staff will conduct an evaluation and review of compliance and enforcement aspects of RECLAIM pursuant to Rule 2015(b)(6) Health and Safety Code §39616(f). The results of this evaluation and review will be completed within six months of this report and will be submitted to the United States Environmental Protection Agency (EPA) and California Air Resources Board (CARB)

In Calendar Year 2006, SOx RTC trades continued to be active. In 2006, there were a total of 1,712 tons of SOx RTCs traded with prices and a total value of \$3.8 million in value. The total volume of trades with price was 660 tons (or 62 %) higher than the Calendar Year 2005 volume. The total value was about the same as Calendar Year 2005. The average annual prices for SOx RTCs, ranging from \$864 per ton for Compliance Year 2005 to \$2,623 per ton for

Compliance Years 2011, 2012, and 2013, returned to the pre-Calendar Year 2000 price range.

Infinite-year block trades are trades of RTCs valid for all years after a certain start year wherein the RTCs are traded at a price per pound for the entire block of specified years instead of price per pound per year. In the past, infinite-year block trades typically consisted of a block of RTCs that were valid starting from Compliance Year 2011 and extending through all years thereafter. In the most recent years, infinite-year block trades began to occur with start years beyond 2011. They have also become much more common in recent years and represent the majority of the Calendar Year 2006 trade volume. A total of only 3,835 tons out of a total of 8,404 tons of NO_x RTCs traded (46 %) were for RTCs not involved with infinite-year block trades and 324 tons out of a total of 1,712 tons of SO_x RTC traded (19 %) were for RTCs not involved with infinite-year RTC blocks. The average annual prices were \$28,827 and \$4,213 per ton of NO_x and SO_x infinite-year RTC block, respectively. The average price for all NO_x infinite-year RTC blocks traded in Calendar Year 2006 increased significantly over the average price (\$10,678 per ton without amortizing) for infinite-year NO_x RTCs traded in Calendar Year 2005.

Besides higher prices for future year RTCs, staff found that some facilities report the price for an infinite-year block of RTCs as a single lump sum while others spread the cost over varying numbers of years. Staff believes that this inconsistent reporting of the price of infinite-year RTC blocks also contributed to the average annual price for Compliance Year 2010 NO_x RTC exceeding \$15,000 per ton. Staff has evaluated an alternative method for calculating average annual RTC prices to better incorporate data from infinite-year block trades. Under this alternative methodology, the one-time cost of infinite-year block trades is amortized using an interest rate of four percent. For illustration purposes, average annual prices were calculated using two amortization periods—15 years and perpetuity. The average annual prices based on this methodology were all below the \$15,000 per ton level for all RTCs, using either amortization period.

The RTC market also saw an additional type of participant during Calendar Year 2006. Two foreign entities started to trade RTCs in addition to the traditional RTC traders, such as RECLAIM facilities, brokers, commodity traders, private investors, and mutual funds (which also started to trade RTCs in Calendar Year 2005). The role of investors in the RTC market has become significant. Based on both trading values and number of trades, investor-involved trades constituted the majority of the trades recorded in 2006 (over 80 percent based on dollar value traded) even though at the end of the year their RTC holdings constituted only three percent of the total RTC supply.

Background

When a facility enters the RECLAIM program, it is issued allocations for each compliance year based on the facility's operational history and the methodology specified in Rule 2002. Allocations are issued as RTCs, denominated in pounds of NO_x or SO_x within a specific year. Each RTC may only be used for emissions occurring within the term of the RTC. The RECLAIM program has two staggered compliance cycles – Cycle 1 for the compliance period of January 1 through

December 31 of each year, and Cycle 2 for the 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 issued RTCs with corresponding periods of validity.

The issuance of allocations for future years provides RECLAIM facilities guidance to 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.

Through trading, RECLAIM facilities may acquire 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. After the end of each compliance year, RECLAIM facilities have a 60-day reconciliation period to account for their total annual emissions and to secure adequate RTCs.

In an effort to achieve additional NO_x reductions pursuant to the 2003 AQMP Control Measure #2003 CMB-10 and requirements for demonstrating Best Available Retrofit Control Technology (BARCT) equivalency under state law, the AQMD embarked on the 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, California Air Resources Board (CARB), and the United States Environmental Protection Agency (USEPA). On January 7, 2005, the AQMD Governing Board adopted several changes to the RECLAIM program. Among other amendments, the changes resulted in cumulative reductions of 7.7 tons NO_x per day, a more than 20 percent reduction, from all RECLAIM facilities by Compliance Year 2011 when fully implemented. The reductions are to be implemented in phases—4.0 tons per day in 2007 and an additional 0.925 tons per day in each of the following four years, 2008-2011. By adopting these rule amendments, the AQMD showed that, relative to the subsumed control measures, RECLAIM is achieving “equivalent or greater emission reductions at equivalent or less cost” as required by California Health and Safety Code §39616(e).

Unlike other chapters in this report where data pertain to Compliance Year 2005, RTC prices discussed in this chapter are for Calendar Year 2006. RTC prices during Calendar Year 2005 were presented in the previous Annual RECLAIM Audit Report submitted to the Governing Board in March 2006.

RTC Allocations and Supply

The methodology for determining RTC allocations is stated in Rule 2002. According to this rule, allocations for facilities may change when there is a change in the universe of RECLAIM facilities, to compensate for additional emissions at facilities producing re-formulated gasoline, or when reported historical activity levels are updated. In addition, RTCs can be generated by conversions of emissions reductions from mobile and area sources. Changes in the RTC supply during Compliance Year 2005 are discussed below. The aggregate of all RECLAIM facilities' allocations, conversions of ERCs owned by RECLAIM and non-RECLAIM facilities, and conversion of ERCs from mobile sources and area sources, make up the total RTC supply in the program.

Allocations Adjustments Due to Inclusion and Exclusion of Facilities

Allocations for a facility are based on its historical operation and the emission reduction requirements under the command-and-control rules, the AQMP control measures subsumed by RECLAIM, and reduction for BARCT equivalency. As stated in Chapter 1 – RECLAIM Universe, during Compliance Year 2005, one new facility opted into the NO_x RECLAIM Program; no existing facility was excluded, and eight facilities shut down and therefore were removed from the RECLAIM Universe. No initial allocation was issued to the new facility that opted in because it was a new facility with no prior operating history. Therefore, no changes to NO_x or SO_x RTC supplies occurred as a result of inclusion and exclusion of RECLAIM facilities in Compliance Year 2005.

Allocations Adjustments Due to Clean Fuel Production

Rule 2002(c)(12) – Clean Fuel Adjustment to Starting Allocation, provides refineries with RTCs to compensate for actual emissions directly related to the production of CARB Phase II reformulated gasoline. The amount of RTCs eligible is based on actual emissions for the subject compliance year and historical production data. Based on the historical production data submitted under application, qualifying refineries were issued an aggregate baseline of 86.5 tons of NO_x and 42.3 tons of SO_x for Compliance Year 1999, 101.8 tons of NO_x and 41.4 tons of SO_x for Compliance Year 2000, and 98.4 tons of NO_x and 40.2 tons of SO_x for each subsequent Compliance Year. These facilities are required to submit records to substantiate actual emission increases due solely to production of reformulated gasoline annually. If actual emission increases or decreases for a subject year are different than the projected amount, the RTCs issued will be adjusted accordingly (*i.e.*, excess RTCs issued will be deducted if emissions were less than the amount of RTCs issued; conversely, additional RTCs will be issued if emissions are higher than projected). For Compliance Year 2005, actual NO_x emissions were lower than those projected at the time the applications were approved. On the other hand, SO_x emissions were higher than those projected. As a result, 0.83 tons of NO_x RTCs were reduced from refineries and 0.40 tons of SO_x RTCs were added to refineries due to this rule section during Compliance Year 2005.

Changes in RTC Allocations Due to Activity Corrections

Allocation of RECLAIM facilities were determined based on their reported historical activities. If a facility makes corrections to their reported activities, the allocation is adjusted accordingly. There were no changes in RTC allocation due to activity correction in Compliance Year 2005.

Conversions of Mobile Source Emission Reductions

Conversions of Mobile Source Emission Credits (MSERCs) to RTCs are allowed under Rule 2008 – Mobile Source Credits, and several programs under Regulation XVI – Mobile Source Offset Programs. In Compliance Year 2005, there were no new RTCs issued as a result of conversion of MSERCs. Further information on MSERC generation is provided in Chapter 3.

Net Changes in RTC Allocations

The changes to RTC supplies described in the above sections resulted in a net decrease in RTC supply of 0.83 tons of NOx RTCs and an increase of 0.40 tons of SOx RTCs for Compliance Year 2005. Table 2-1 summarizes the changes in NOx and SOx RTC supplies that occurred in Compliance Year 2005 pursuant to Rule 2002.

Table 2-1
Changes in NOx and SOx RTCs supplies during Compliance Year 2005 (tons/year)

Source	NOx	SOx
Universe changes	0	0
Clean Fuel/Reformulated Gasoline	-0.83	0.40
Activity corrections	0	0
MSERC Conversion	0	0
Net change	-0.83	0.40

Figures 2-1 and 2-2, respectively, illustrate the total NOx and SOx RTC supplies at the end of Compliance Year 2005.

Figure 2-1
NOx RTC Supply

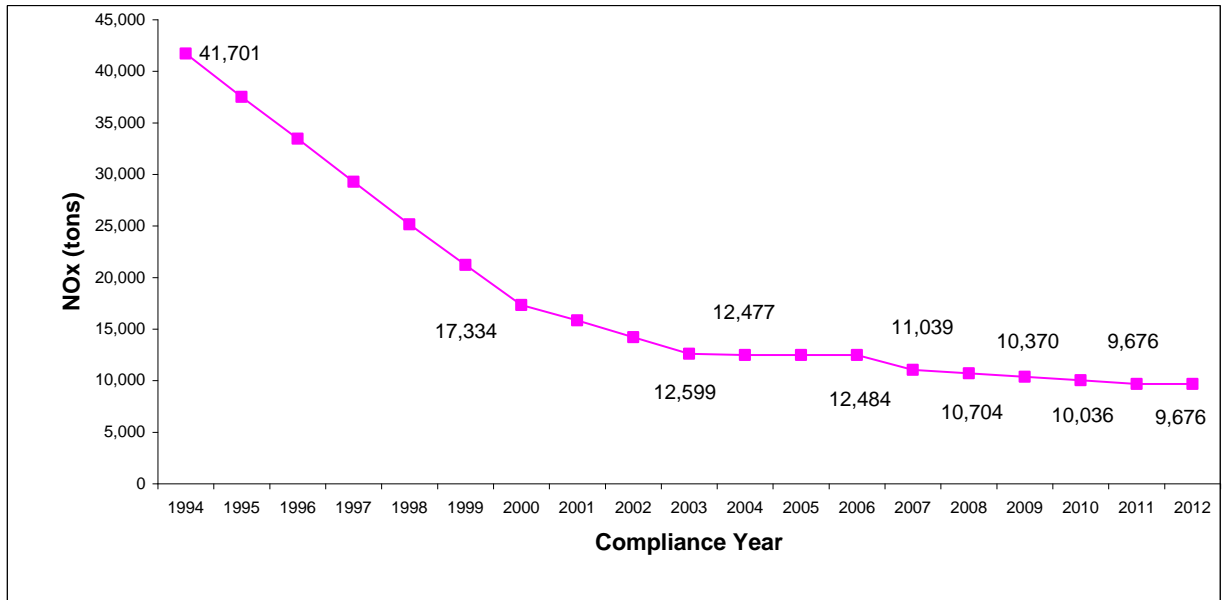
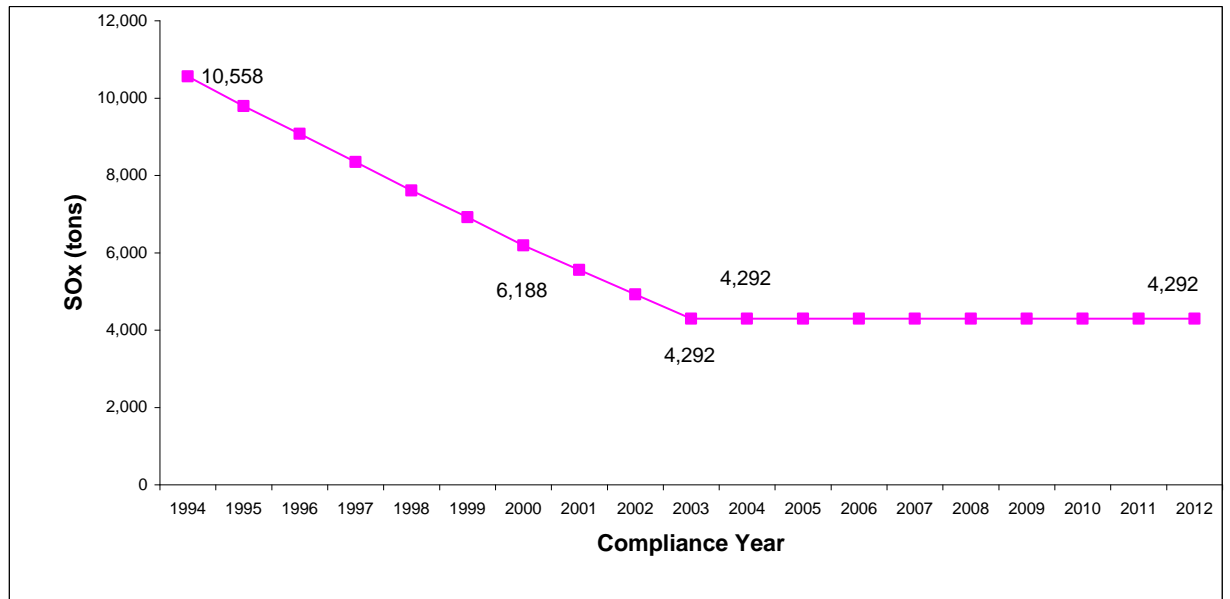


Figure 2-2
SOx RTC Supply



RTC Trading Activity

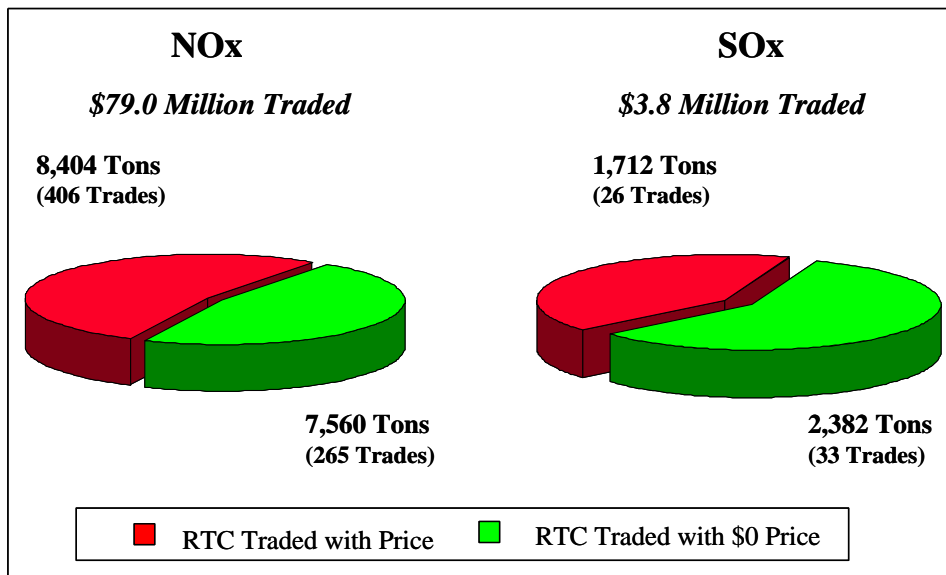
AQMD rules require buyers and sellers to jointly file a trade registration within five business days of reaching an agreement to trade RTCs. The quantity and values of the RTCs traded are decided between buyers and sellers. In Compliance Year 2003, the RTC Trading software was enhanced to include data from trades that involved continuous streams of RTCs that extend infinitely forward in time (infinite-year block trades). At the same time, the trade registration form was upgraded to support multiple year transactions in two different ways. The first is to report a block of finite years of RTCs with start and end year that are being traded at a price of dollars per pound per year. The other is to report an infinite-year block of RTCs with a starting year and extend to “all years after.” In this type of transaction, the price reported is in terms of dollars per pound of RTCs. Again, the buyers and sellers are free to choose the start and end year of the infinite-year block trades, the quantity, and the price for the transactions. So, trades can involve any distinct years of credits or an infinite stream of credits with any start year.

Traditionally, streams of infinite-year RTCs were traded as blocks starting from Compliance Year 2011 and forward with prices set at a fixed price per pound (instead of price per pound per year). However, in Calendar Year 2004, infinite-year block trades were reported with blocks starting from years different than Compliance Year 2011. These types of trades are discussed in more detail later in this chapter. Similar to Compliance Year 2003’s annual report, unless otherwise stated, RTC trade-related data include infinite-year block trades, whereas, RTC trade-related data reported in RECLAIM audit reports prior to Compliance Year 2003 did not include these infinite-year block trades.

The RTC market continued to be active in Calendar Year 2006. There were 730 approved trades totaling 20,058 tons of NOx and SOx RTCs during Calendar

Year 2006. These trades included both RTCs traded with prices and transfers with \$0 price. Since the inception of the RECLAIM program in 1994, a total of 387,823 tons of NOx RTCs and 135,103 tons of SOx RTCs were traded. Of these RTCs, those traded with price include 113,974 tons of NOx RTCs and 31,308 tons of SOx RTCs with a total value of \$863 million (\$777 million for NOx and \$85.8 million for SOx RTCs). Figure 2-3 summarizes trading activity in Calendar Year 2006 by pollutant.

**Figure 2-3
Calendar Year 2006 Trading Activity**



In Calendar Year 2006, 432 trades (406 of NOx and 26 of SOx) totaling 8,404 tons of NOx and 1,712 tons of SOx occurred with prices. These trades included current and future year RTCs. The total value of the RTCs traded with prices in Calendar Year 2006 was almost \$83 million. Most of these trades with prices were conducted through brokers.

Besides trades with prices, trades with \$0 price generally occur when a seller transfers or escrows RTCs to a broker, when there is a transfer between facilities under common operator, or between facilities that have gone through change of ownership.

In addition to traditional trades of RTCs for price, different variations of RTC swaps occurred between facilities and traders. There were swaps of current year RTCs for next year RTCs and swaps of RTCs from different cycles for the same pollutant. RTCs were also swapped for ERCs of other pollutants. These swaps could involve a combination of RTCs and cash payment as a premium. In any case, trading parties swapping RTCs were required to report the equivalent price of RTCs under individual trades. Therefore, the price analysis includes all values of RTCs that were swapped.

Figures 2-4 and 2-5 present trade volumes in tons (with and without prices) and total values of NOx and SOx RTCs traded, respectively, since the inception of RECLAIM.

Figure 2-4
Total Quantity of NOx RTCs Traded

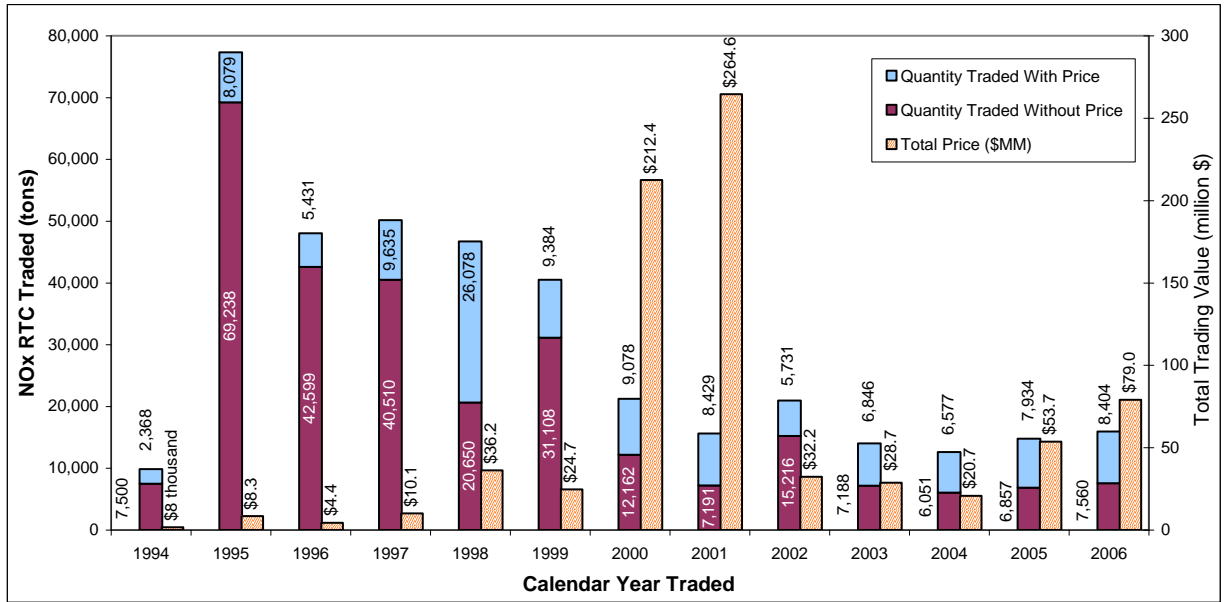
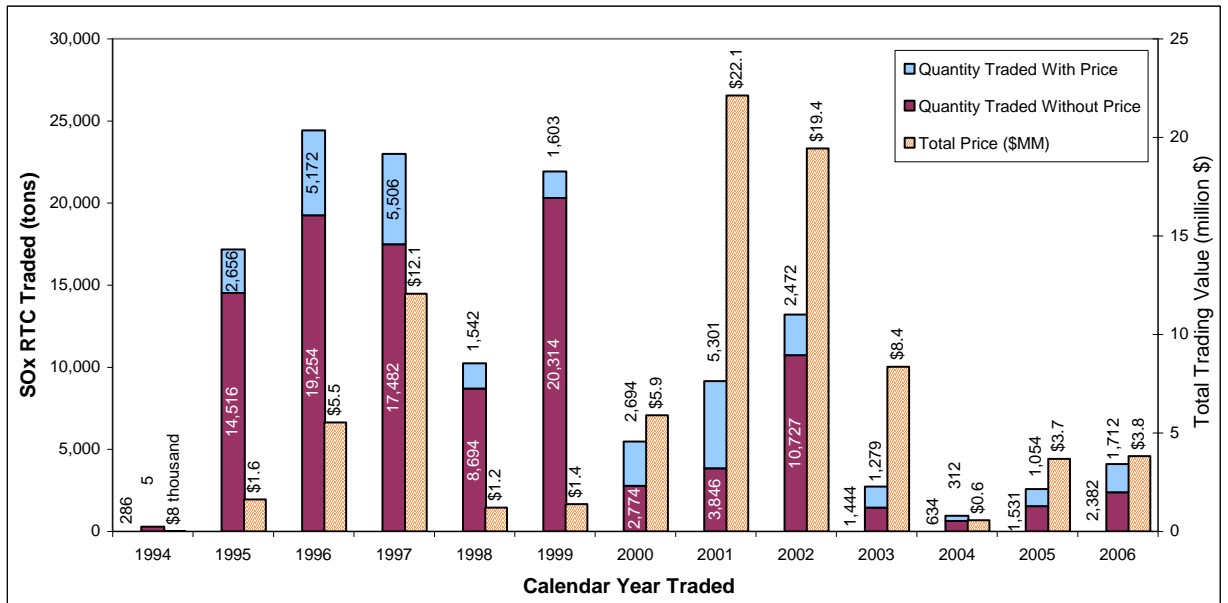


Figure 2-5
Total Quantity of SOx RTCs Traded



Comparison of Calendar Year 2006 Trading Activity to Previous Years

Overall trading activities in Calendar Year 2006 were about the same as in Calendar Year 2005. A total of 730 trades were approved by AQMD in Calendar Year 2006 compared to 740 in Calendar Year 2005. In terms of total quantity traded, 20,058 tons of NO_x and SO_x RTCs were traded in Calendar Year 2006 versus 17,376 tons in Calendar Year 2005. The total value of RTCs traded was \$82.8 million compared to \$57.4 million transacted in Calendar Year 2005.

In 2006, there were a total of 8,404 tons of NO_x RTCs traded with prices with a total value of \$79 million in value. This volume was about six percent higher than the total volume of NO_x RTCs traded with prices in 2005. However, the total value traded was 32 percent higher than that traded in 2005. This is a result of higher prices for future NO_x RTCs that are valid for Compliance Years 2008 and after (see Figure 2-6).

Prior to Calendar Year 2005, almost all trades of individual year RTCs were for Compliance Years 2010 and prior; RTCs for Compliance Years beyond 2010 were primarily traded as infinite-year blocks. Beginning in Calendar Year 2004, NO_x trades deviating from this norm started occurring (*i.e.*, infinite-year blocks were traded with start years other than 2011). Starting Calendar Year 2006, trades involving SO_x began following this same trend. Refer to the discussion of RTC Prices, below, for further information regarding infinite-year block trades.

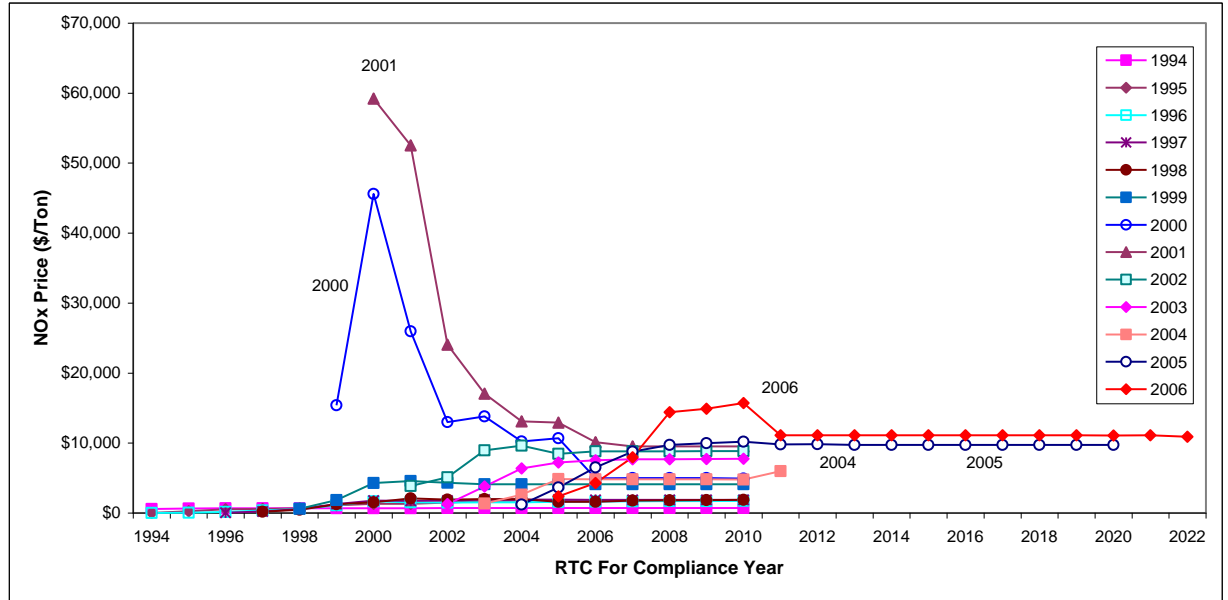
Trading activity in the SO_x market slightly increased in Calendar Year 2006 compared to Calendar Year 2005. In Calendar Year 2006, 4,094 tons of SO_x RTCs were traded, of which 1,712 tons were traded with prices with a total value of \$3.8 million. The volume of trades with price increased 38 percent compared to Calendar Year 2005 (1,712 tons vs. 1,054 tons), yet the total value increased only about three percent, reflecting a general decrease in price for SO_x RTCs.

RTC Prices

Average annual prices for NO_x RTCs traded in Calendar Year 2006 followed trends similar to those in prior years except for Calendar Years 2000 and 2001. The average prices of NO_x RTCs steadily rose from a low price for near term RTCs to a higher price for future credits. During 2006, NO_x RTC average prices ranged from a low of \$2,353 per ton for the Compliance Year 2005, through \$7,962 per ton for Compliance Year 2007, to \$15,698 per ton for Compliance Year 2010, then dropped back down to about \$11,100 per ton for Compliance Years 2011 to 2021. Average annual prices for NO_x RTCs were about \$28,800 per ton for infinite-year RTC blocks. The prices that involve infinite-year RTC blocks are discussed in further detail in the "Impact of Infinite-Year Block Trades on Average RTC Prices" section. When compared to average annual prices for Calendar Year 2005 trades, 2006 prices for NO_x RTCs valid for Compliance Year 2007 and earlier were lower and prices for NO_x RTCs valid for Compliance Year 2008 and after were higher—in fact, they were the highest average annual prices for RTCs valid in future years since the inception of RECLAIM. The increase in average annual prices for Compliance Year 2008 and subsequent years resulted from a significant rise in infinite-year block trades with price and a concurrent decrease in single year trades with price. Figure 2-6 compares

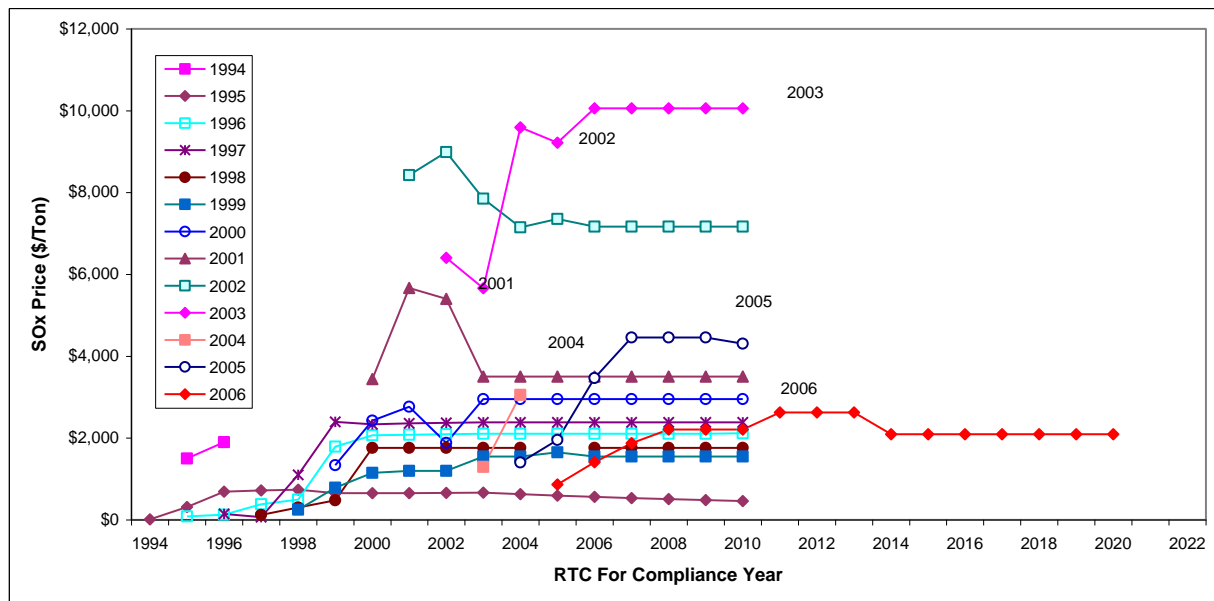
average annual prices of NOx RTCs in 2006 to those from other years since 1999.

Figure 2-6
Yearly Average Prices for NOx RTCs during Calendar Years 1994 through 2006



On the other hand, average annual prices for SOx RTCs were lower in Calendar Year 2006 than 2005; the highest average annual SOx RTC prices occurred during Calendar Year 2003. During Calendar Year 2006, the average annual price for SOx RTCs ranged from \$1,410 per ton for Compliance Year 2006 to around \$2,209 per ton for Compliance Years 2008 through 2010. The average annual price for infinite-year RTC blocks was about \$4,200 per ton. Figure 2-7 illustrates average annual SOx RTC prices by Compliance Year for each Calendar Year of trading.

Figure 2-7
Yearly Average Prices for SOx RTCs during Calendar Years 1994 through 2006



As shown in figures 2-6 and 2-7, except for Compliance Year 2010 NOx RTCs, all average annual prices for NOx and SOx RTCs during Calendar Year 2006 were below the \$15,000 per ton program review threshold established by Rule 2015(b)(6). Because the average annual price for Compliance Year 2010 NOx RTCs traded in Calendar Year 2006 calculated based on the existing methodology exceeded the threshold, staff will conduct upon AQMD Board direction, an evaluation and review of compliance and enforcement aspects of RECLAIM consistent with the requirements of Rule 2015(b)(6). The results of this evaluation and review will be presented to the Governing Board, California Air Resources Board, and the United States Environmental Protection Agency within six months of approval of this annual report by the Governing Board.

California Health and Safety Code §39616(f) specifies that the district board “shall reassess a market-based incentive program if the market price of emission trading units exceeds a predetermined level set by the district board.” In the case of RECLAIM, the Governing Board set the program reassessment threshold at \$15,000 per ton when it adopted the program in October 1993.

Impact of Infinite-Year Block Trades on Average RTC Prices

Some trades involve the transfer of RTCs from a start year and extend infinitely forward in time. In such cases, the parties agree on a one-time price for a block of infinite-year RTCs commencing in a specified year. The parties also decide how to report the infinite stream in their contract and to AQMD. Therefore, presently various infinite-year block trades are reported differently according to the needs of the parties involved. This decision is generally based on accounting and tax concerns. In some cases the trade is reported as a single line item while in other cases, the RTCs for the first years are reported as individual line items followed by a final line item representing a later year and all years subsequent to

it. For example a trade of ten pounds of 2011 and beyond cycle 1 NOx RTCs at a hypothetical price of \$1,000 dollars per pound could be reported as illustrated in Table 2-2, Table 2-3, or Table 2-4.

Table 2-2
Infinite Block Trade Reporting Example 1
(10 pounds for year 2011 and all subsequent years at a one-time transaction cost of \$10,000)

Compliance Year	Pounds NOx	Price per Pound	Total Price
2011 and beyond	10	\$1,000/lb	\$10,000

Table 2-3
Infinite Block Trade Reporting Example 2
(10 pounds for years 2011 through 2013 at a price of \$2,500 each year and year 2014 and all subsequent years at a one-time cost of \$2,500, adding to a total transaction cost of \$10,000)

Compliance Year	Pounds NOx	Price per Pound	Total Price
2011	10	\$250/lb	\$2,500
2012	10	\$250/lb	\$2,500
2013	10	\$250/lb	\$2,500
2014 and beyond	10	\$250/lb	\$2,500

Table 2-4
Infinite Block Trade Reporting Example 3
(10 pounds for years 2011 through 2019 at a price of \$1,000 each year and year 2020 and all subsequent years at a one-time cost of \$1,000, adding to a total transaction cost of \$10,000)

Compliance Year	Pounds NOx	Price per Pound	Total Price
2011	10	\$100/lb	\$1,000
2012	10	\$100/lb	\$1,000
2013	10	\$100/lb	\$1,000
2014	10	\$100/lb	\$1,000
2015	10	\$100/lb	\$1,000
2016	10	\$100/lb	\$1,000
2017	10	\$100/lb	\$1,000
2018	10	\$100/lb	\$1,000
2019	10	\$100/lb	\$1,000
2020 and beyond	10	\$100/lb	\$1,000

The three examples presented in Tables 2-2, 2-3, and 2-4 clearly illustrate that the way in which an infinite-year block trade is reported has a drastic impact on the reported price per pound for RTCs identified as discrete year trades on the trade registration form. These reporting decisions result in artificially changing the agreed upon number of dollars for a set number of pounds of RTCs forever to a smaller number of dollars per pound per year. In addition, the valuation of the infinite-year block is also altered dependent on the reporting methodology.

Traditionally, infinite-year blocks have been consistently traded with the start year commencing from Compliance Year 2011 and extending infinitely forward in time. Deviation from this norm was first seen in Calendar Year 2004. Since then, the

start years for infinite-year blocks have become increasingly varied. The reporting of infinite-year block trades during 2006 ranged from single line items, such as Example 1 in Table 2-2 (which mimics the manner in which infinite-year block trades were reported until 2004), to trades that are similar to Example 3 in Table 2-4 with the infinite-year block starting in Compliance Year 2023 (a total of 17 discrete years followed by an 18th year and beyond line item).

In terms of calculating the average annual price for RTCs valid for a particular compliance year, staff has used reported price per pound data for each of the years reported as single year line items in infinite-year block trades, but has excluded the price reported as line item infinite-year blocks (e.g. the last lines in Examples 2 and 3). Thus, Example 2 (Table 2-3) would have been treated as three ten-pound trades at \$250 per pound for years 2011, 2012, and 2013, but the year 2014 and beyond portion of this example would have been excluded from the calculation of average price. However, if the same trade was reported as in Example 3 (Table 2-4), it would have resulted in a very different impact on average prices for Compliance Years 2011 through 2019. If it was reported as in Example 1 (Table 2-2), on the other hand, it would not factor into the average price calculations at all. These examples illustrate that the impact of reported prices for infinite-year block trades on calculated average RTC prices is significant and is caused by inconsistent and arbitrary reporting techniques by the RTC traders. The overall impact of this situation was initially minor because infinite-year block trades were consistently reported as one line item with 2011 as the starting year until recent years and because there was trade involving discrete year RTC beyond 2010. However, as reporting of these trades have become increasingly frequent and varied, their impact on calculated average prices has become quite significant.

In light of the inconsistent price reporting, staff has found that the average annual prices for RTCs for discrete years have been significantly impacted. In response, staff has evaluated one alternative approach for including infinite-year block trades in the calculation of average annual RTC prices that provides consistent valuation of RTC prices, includes all prices paid for the RTCs (including the infinite-years portion), and addresses the time value of money. Specifically, the evaluated alternative methodology consists of amortizing the full one-time cost of infinite-year block trades evenly over time using an interest rate of four percent regardless of how they are reported. Four percent is the same interest rate AQMD uses for other purposes, such as cost effectiveness calculations. Staff has evaluated two amortizing periods—fifteen years and infinite years (which is equivalent to an annuity)—for illustration purposes. Thus, for purposes of calculating average RTC costs, Examples 1, 2, and 3 are all treated as ten pounds traded at a total cost of \$10,000 which would cost \$89.90 per pound in each of the years 2011 through 2025 (fifteen year period amortization) or \$40.00 per pound in 2011 and all subsequent years in perpetuity (an annuity). To further illustrate the impact of these infinite-year block trades on average annual price, staff has also calculated the average prices for RTCs traded in discrete quantity for discrete compliance years excluding all infinite-year block trades.

Tables 2-5 and 2-6 compare the results based on the existing methodology, one evaluated alternative methodology (shown with two amortizing periods), and a variation of the existing methodology excluding infinite-year blocks for NO_x and

SOx, respectively, for trades that occurred during calendar year 2006. As pointed out above, the prices calculated by the existing methodology are artificially skewed high because of a few trades wherein the total one-time cost was reported apportioned among a relatively small number of years. As discussed above, the one alternative methodology evaluated by staff is more technically sound and treats all infinite-year block trades¹ consistently. While conducting the analysis with the evaluated alternative methodology, staff reviewed each trade which included both individual year line items and an infinite-year block line item to determine if the individual year line items actually constituted a portion of the infinite-year block trade (as in Examples 2 and 3) or were separate trades reported on the same trade registration form. Three criteria were established for determining when individual line items included in the same trade form as infinite-year block trades are actually part of the infinite-year block trade:

1. The RTC quantities are the same in the individual years and in the infinite-year block; or
2. The RTC quantities are the same in the individual years and in the infinite-year block after backing out the January 7, 2005 adjustment of NOx RTC holdings pursuant to Rule 2002(f)(1); or
3. The RTC prices per pound are the same in the individual years and in the infinite-year block.

All items submitted on any trade registration form which meet at least one of the above three criteria are considered elements of the infinite-year block trade. Any trade registration form submitted with an infinite-year block trade and additional line items that do not meet any of the criteria identified above are evaluated individually by staff to determine if it is appropriate to consolidate the discrete line items into the infinite-year block trade or if they should be considered separate trades. The review of all trade forms submitted in Calendar Year 2006 yielded only one trade that combined an infinite-year block trade with a discrete year trade that was not a part of the infinite-year block on a single trade registration. There was an additional trade registration which did not fit any of the criteria identified above but, upon investigation by staff, was determined to be a single infinite-year block trade. The rest of the 2006 trade registrations with infinite-year block trades fit at least one of the three criteria. Refer to Appendix F for further explanation of this method of calculating average annual RTC prices.

The remaining issue to be resolved regarding the evaluated alternative methodology is to determine the appropriate number of years over which to amortize the cost of the infinite-year block. An argument can be made for amortizing over infinite years (*i.e.*, converting the payment to an annuity) because it matches the payment to the lifetime of the RTCs in the trade. However, it does not reflect a realistic assessment of what the actual duration of the RECLAIM program or its successors is likely to be or of the typical planning horizon for businesses. Therefore, staff believes that converting the cost of infinite-year block trades to annuities would artificially reduce the annualized cost of such trades. AQMD typically assumes a ten-year equipment life when

¹ For the remainder of this chapter, the term "infinite-year block trade" will be used to include the portions of trades reported as individual years but which are actually elements of an infinite-year block.

conducting cost effectiveness calculations (except for internal combustion engines and dry cleaning equipment). However, staff believes that a ten-year averaging period for purposes of amortizing the one-time cost of an infinite-year block of RTCs would represent an excessively conservative estimate of planning horizons and of the period over which RTCs can reasonably be expected to remain in use because RTC use is tied to the life of facilities, not the life of individual pieces of equipment. Although the South Coast Air Basin is scheduled to achieve attainment with ambient air quality standards over time, success at achieving attainment will not obviate the need for RECLAIM as maintenance strategy. Therefore, for example, staff considers fifteen years to be the minimum reasonable planning horizon for area businesses and a conservative compromise between a lump sum payment and an annuity for purposes of calculating average annual RTC prices. Staff intends to further evaluate and seek input regarding the appropriate amortization period for infinite-year block trades in the program review to be conducted pursuant to Rule 2015(b)(6).

Finally, staff has determined the average one-time (not annualized) price per infinite-life pound for infinite-year block trades (e.g., \$1,000 per pound in the examples of Tables 2-2, 2-3, and 2-4). This average provides useful information regarding the market value of infinite-year blocks of RTCs but it cannot be meaningfully compared with the average annual prices calculated by the above-described methodologies or the program review trigger point of \$15,000 per pound specified in Rule 2015(b)(6) as the average price per pound forever is fundamentally different from the average price per pound per year.

Using the aforementioned methods, Calendar Year 2006 trade data are presented in Tables 2-5 (NOx) and 2-6 (SOx). The last column of these tables show that, excluding infinite-year block trades, the highest average annual RTC prices were \$12,974 (2009 NOx RTCs) and \$966 per ton (2006 SOx RTCs).

Table 2-5
Average Annual NOx RTC Prices for Trades During Calendar Year 2006
(dollars per ton)

Compliance Year	Existing Methodology (As Reported)	Evaluated Alternative Methodology (15 Year Amortization)	Evaluated Alternative Methodology (Annuity)	Existing Methodology But Excluding Infinite Blocks
2005	\$2,353	\$2,347.78	\$2,330.20	\$2,322.25
2006	\$4,282	\$4,243.04	\$3,704.12	\$3,522.72
2007	\$7,962	\$8,380.58	\$6,771.94	\$6,879.50
2008	\$14,391	\$13,195.33	\$9,177.58	\$12,385.37
2009	\$14,906	\$13,719.22	\$8,583.02	\$12,974.16
2010	\$15,698	\$13,945.20	\$7,120.28	\$12,825.42
2011	\$11,109	\$13,583.57	\$6,041.10	
2012	\$11,109	\$13,583.57	\$6,041.10	
2013	\$11,109	\$13,583.57	\$6,041.10	
2014	\$11,109	\$13,583.57	\$6,041.10	
2015	\$11,109	\$13,583.57	\$6,041.10	
2016	\$11,092	\$13,583.57	\$6,041.10	
2017	\$11,092	\$13,583.57	\$6,041.10	
2018	\$11,092	\$13,583.57	\$6,041.10	
2019	\$11,092	\$13,583.57	\$6,041.10	
2020	\$11,086	\$13,603.16	\$6,041.10	
2021	\$11,099	\$13,563.40	\$6,041.10	
2022	\$10,889	\$13,517.92	\$6,041.10	
2023		\$12,963.09	\$6,041.10	
2024		\$12,097.69	\$6,041.10	
2025		\$12,094.93	\$6,041.10	

**Table 2-6
Average Annual SOx RTC Prices for Trades During Calendar Year 2006
(dollars per ton)**

Compliance Year	Existing Methodology (As Reported)	Evaluated Alternative Methodology (15 Year Amortization)	Evaluated Alternative Methodology (Annuity)	Existing Methodology But Excluding Infinite Blocks
2005	\$864	\$846.55	\$789.76	\$858.94
2006	\$1,410	\$974.97	\$702.42	\$966.18
2007	\$1,874	\$983.80	\$437.53	
2008	\$2,209	\$1,219.19	\$542.22	
2009	\$2,209	\$1,219.19	\$542.22	
2010	\$2,209	\$1,219.19	\$542.22	
2011	\$2,623	\$1,311.82	\$583.41	
2012	\$2,623	\$1,311.82	\$583.41	
2013	\$2,623	\$1,311.82	\$583.41	
2014	\$2,090	\$1,311.82	\$583.41	
2015	\$2,090	\$1,311.82	\$583.41	
2016	\$2,090	\$1,311.82	\$583.41	
2017	\$2,090	\$1,311.82	\$583.41	
2018	\$2,090	\$1,311.82	\$583.41	
2019	\$2,090	\$1,311.82	\$583.41	
2020	\$2,090	\$1,398.45	\$583.41	
2021		\$1,579.37	\$583.41	
2022		\$1,579.37	\$583.41	
2023		\$1,417.74	\$583.41	
2024		\$1,417.74	\$583.41	
2025		\$1,417.74	\$583.41	

Table 2-6 shows that the average annual price of SOx RTCs continued to remain well below the \$15,000 per ton program review trigger specified in Rule 2015(b)(6) regardless of the averaging methodology employed. For NOx, however, Table 2-5 shows that the average annual price remained below \$15,000 per ton for all averaging methodologies except the existing calculation methodology. Specifically, the artificially high average NOx prices calculated using the existing methodology resulted in an average price of \$15,698 per ton for Compliance Year 2010 RTCs traded in calendar year 2006. It also resulted in average prices approaching \$15,000 per ton in 2008 (\$14,391 per ton) and 2009 (\$14,906 per ton). As stated above, these prices were the artifacts of inconsistent and arbitrary price reports for infinite-year block trades. The average annual prices arrived at using the one alternative methodology evaluated by staff shows that all the average annual prices for NOx RTCs are below \$15,000 per ton. For comparison purposes, amortizing the cost of infinite-year block trades over fifteen years at four percent per year interest results in average annual NOx RTC prices of \$13,195 per ton in 2008, \$13,719 per ton in 2009, and \$13,945 per ton in 2010. Thus, in the future, average costs per ton may again exceed \$15,000 per ton even under the evaluated alternative methodology. However, this would not be merely due to the individual traders' reporting techniques. As discussed above, Rule 2015(b)(6) and Health and

Safety Code §39616(f) require the Executive Officer to review certain aspects of the program and submit the results to the Air Resources Board and the Environmental Protection Agency in the event that the average annual price of RTCs exceeds \$15,000 per ton. Staff, upon the Board’s direction, at this time will conduct this review even though it believes the 2010 exceedance of the \$15,000 per ton threshold is the result of an inappropriate calculation methodology. In future annual reports, staff will adjust, consistent with the results of the recommended Rule 2015(b)(6) and Health and Safety Code §39616(f) program review, the average annual price analysis for NOx and SOx RTCs to exclude any possible effect the prices for infinite-year block RTCs may have on average annual prices for discrete year trades. Staff will use the appropriate methodology developed after stakeholder input during the program review. This methodology may use the fifteen-year amortization or the annualized method, or may reflect a different comparison point for infinite-year block trades, depending on the results of the program review. More detailed discussion of the program review is presented in the Program Review Section of the next chapter.

Starting in Calendar Year 2004, infinite-year block trades began being reported with start years other than 2011. In Calendar Year 2006, over 60% of the infinite-year block trades of NOx RTCs had starting years of 2021, 2022, or 2023 while the majority of the infinite-year block trades for SOx RTCs had 2011 as the starting year. Tables 2-7 and 2-8 lists quantities of NOx and SOx RTCs involved in infinite-year block trades which carried a price for the RTCs by start year, respectively.

**Table 2-7
Distribution of NOx RTCs Traded in Infinite-Year Blocks with Price**

Start Year of Infinite RTCs Block	NOx RTCs Traded in 2004 (tons)	NOx RTCs Traded in 2005 (tons)	NOx RTCs Traded in 2006 (tons)
2010	7.6	0	0
2011	547.8	420.8	110.3
2012	1.6	17.8	0
2013	0	8.3	0
2014	0	0	0
2016	0	0	11.3
2020	0	0	5.5
2021	0	137.1	168.8
2022	0	0	85.1
2023	0	0	29.5

**Table 2-8
Distribution of SOx RTCs Traded in Infinite-Year Blocks with Price**

Start Year of Infinite RTCs Block	SOx RTCs Traded in 2004 (tons)	SOx RTCs Traded in 2005 (tons)	SOx RTCs Traded in 2006 (tons)
2011	0	185.0	171.4
2014	0	0	20.4
2021	0	0	50.0

In addition to the preceding analysis and discussion of average annual RTC prices, staff also analyzed the average prices of infinite-year block trades independently on their own terms. That is, rather than converting the one-time price of infinite-year blocks into annualized prices so they could be treated like discrete year-specific trades (and averaged with them), they were evaluated in terms of price per pound of infinite life rather than price per pound per year. All infinite-year block trades were included in the analysis without segregating them by start year.

During Calendar Year 2006, there were a total of 8,404 tons of NOx RTCs with prices, of which 3,835 tons (46 %) did not involve infinite-year blocks. Prices for infinite-year blocks of NOx RTCs ranged from \$9,000 to \$149,080 per ton with an average price of \$28,827 per ton. When compared to infinite-year NOx RTC blocks traded in Calendar Year 2005 (\$10,678 per ton), the average price for NOx infinite-year RTC blocks traded in Calendar Year 2006 increased significantly. Similarly, there were a total of 1,712 tons of SOx RTCs traded with prices, of which 324 tons (19 %) did not involve infinite-year blocks. Prices of infinite-year SOx RTC blocks ranged from \$1,080 to \$10,000 per ton with an average price of \$4,213 per ton. This average price is lower than the infinite-year SOx RTC blocks traded in 2005 (\$6,084 per ton). It is also noted that in arriving at average prices for infinite year blocks, only the prices reported for the infinite-year line items were averaged; the artificial reporting effect, which was fully elaborated above, has not been removed. The average prices of infinite blocks of RTCs traded in Calendar Year 2006 are significantly greater if the total prices for the blocks including the portions assigned to individual year line items on the trade forms are included in the calculation: \$150,982 per ton of NOx and \$14,585 per ton of SOx.

Applicability of \$15,000 per Ton Program Review Threshold to Infinite-Year Block Trades

The possibility of infinite-year block trades was not contemplated at the time RECLAIM was adopted in October 1993 because that original version of the program continued to 2010 only; it was not until the July 1996 program amendments that it was extended to infinite years. Therefore it is unclear if the \$15,000 per ton program review threshold adopted for average annual price is also applicable to infinite-year block trades for future annual RECLAIM audits. One possibility, which is discussed in detail above, is to amortize the cost of infinite-year block trades and include them in the calculation of average annual price. Alternatively, a separate threshold could be established for the average price of infinite-year block trades without amortization. Staff proposes to further

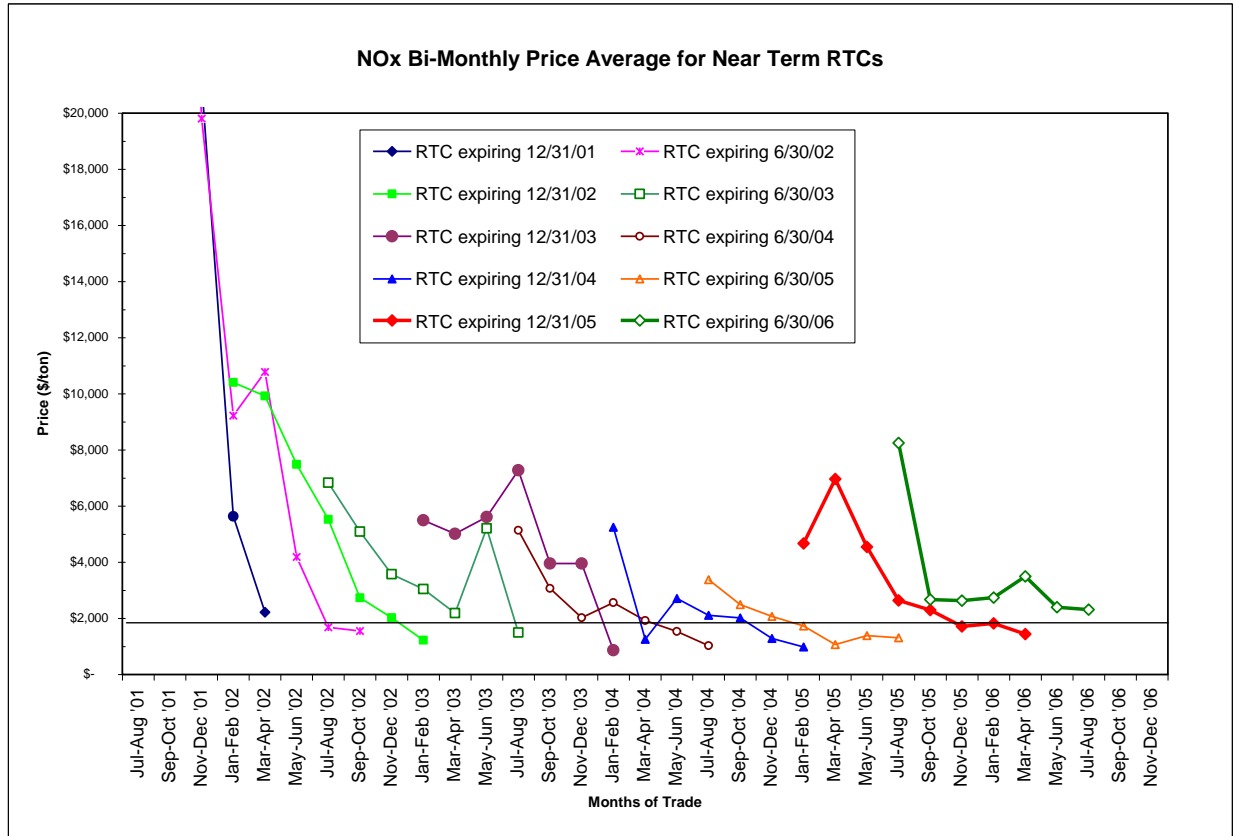
evaluate this issue as an element of the recommended Rule 2015(b)(6) and Health and Safety Code §39616(f) program reviews.

Prices for NOx RTCs near 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 was repeated every year since 1994 except for Compliance Years 2000 and 2001. During that period, NOx RTC prices increased as the expiration dates approached because there was a shortage of NOx RTCs. In Calendar Year 2006, prices for NOx RTCs expiring within the same calendar year followed the general trend where RTC prices started declining over the course of their Compliance Year.

The bi-monthly average prices for these NOx RTCs are shown in Figure 2-8. This graph shows that since 2001 the average prices for NOx RTCs near expiration have followed a generally declining trend which reflected that there was enough supply to meet the RTC demand during the final reconciliation period following the end of the compliance years. Figure 2-8 further shows that the average prices of RTCs generally dipped below \$2,000 per ton during the 60 days following their expiration date (i.e., during the reconciliation period for their Compliance Year) except for those expiring in June 2006, which dropped early in the compliance year and remained relatively stable afterward at an average price above the \$2,000 per ton level.

Figure 2-8
Bi-Monthly Average Prices for NOx RTCs near Expiration



Trends in RTC Trades

RECLAIM market participants traditionally included RECLAIM facilities, brokers, commodity traders and private investors. RECLAIM facilities are the sources and users of RTCs. They usually sell their RTC surplus by the end of the compliance year or when they have a long term decrease in emissions. Brokers serve as facilitators and match buyers and sellers. Most brokers usually do not purchase and own the credits, even though commissions have been paid in the form of RTCs. On the other hand, commodity traders, and private investors are parties that actually invest in and own RTCs, and seek profit by trading credits. Unlike RECLAIM facilities, investors do not have the burden of allocation compliance.

Starting in Calendar Year 2005, mutual funds in addition to the traditional traders participated in RTCs trades. Market participation further expanded in 2006. Investors from foreign countries started to join in RTC trades. To date, there are four mutual funds and two foreign entities registered with the AQMD for the purposes of trading RTCs. The four mutual funds are controlled by one common fund manager. To ensure that RECLAIM trading requirements can be properly enforced, the foreign entities have been asked, prior to their participation in the RECLAIM market, to consent to the jurisdiction of California courts in case of litigations. In addition, staff is preparing amendments to Rule 2007 to address

jurisdictional concerns in case of litigation. The amendments will be proposed for the Governing Board's consideration in the spring of 2007.

In Calendar Year 2006, investors were involved in a significant portion of RTC trades. Figures 2-9 and 2-10 illustrate investor's involvement among trades registered in Calendar Year 2006. In compiling data for these two figures, staff removed brokers' involvement. Figure 2-9 is based on total value traded and shows that investors were involved in 83 percent of the trades. On the other hand, Figure 2-10 is based on number of trades that were reported with prices and shows that investors were involved in 71 percent of the trades. The amount of RTCs held by investors at the end of 2006 is only three percent of the allocations per compliance year.

Figure 2-9
Shares of Investor-Involved Trades Based on Value Traded

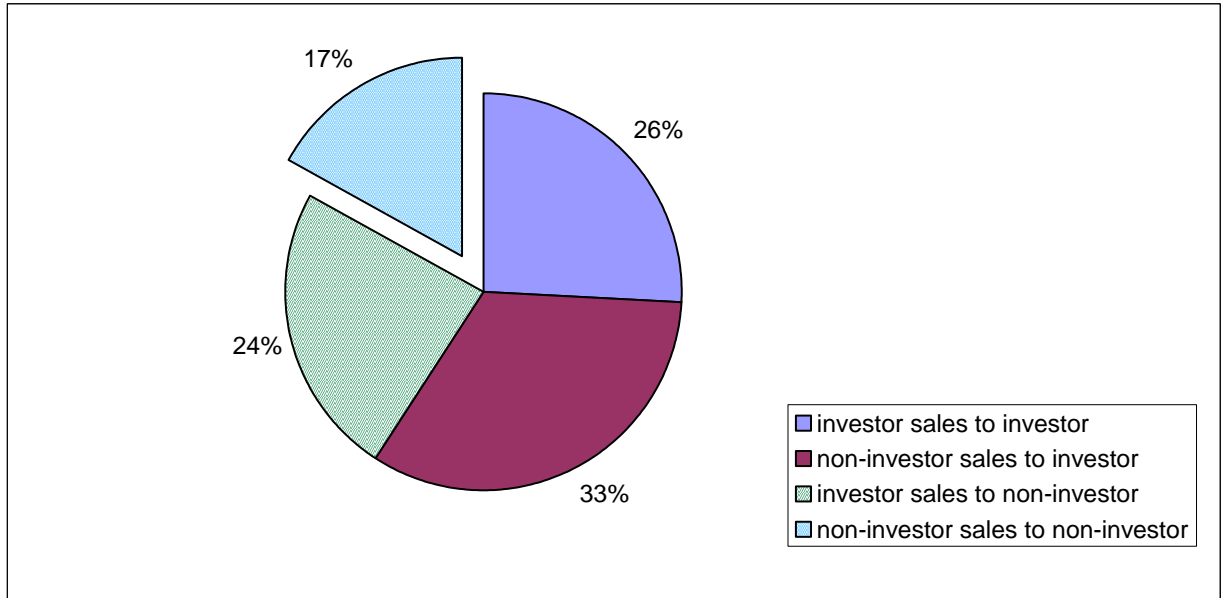
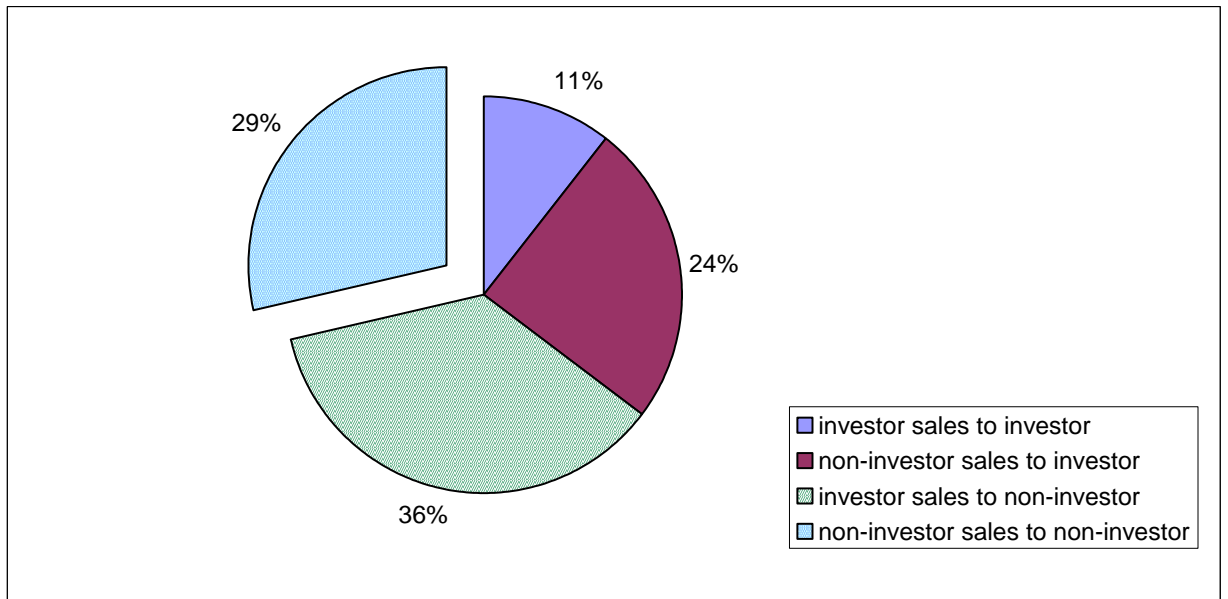


Figure 2-10
Shares of Investor-Involved Trades Based on Number of Trades with Price



As mentioned above, different types of RTC swaps were reported in Calendar Year 2006. As in earlier years, swaps occurred between RTCs of different expiration dates or of different zones, and between NO_x and SO_x. There were also swaps of RTCs for ERCs. In addition to swaps, there were reports of many contingent rights to purchase. Another type of RTC trade, besides the traditional trading and swapping activities, are trades 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 the RTCs owned by the other party at a pre-determined price within a certain period of time. Until RTCs are transferred from seller to buyer, prices for options are not included since the seller is not paid for the actual RTCs, but just for the right to purchase or sell the RTCs at a future date. Such rights may or may not be actually exercised. Of special interest, one of the contingent rights to purchase, reported in 2006, allowed the buyer to have the full use of the optioned RTCs during the option term. Under that option, the seller transferred the optioned RTCs to the buyer upon payment of the option premium. At the end of the option term, the buyer had the choice of keeping the RTCs and paying the previously agreed upon price or returning the full amount of the RTCs to the seller with no further obligation, in which case the RTCs would have been leased for the duration of the option term. In fact, the optioned RTCs were returned to the seller.

There were also reports of other use of RTCs during 2006. RTCs were provided in a project to mitigate impacts from construction projects pursuant to a California Environmental Quality Act document. RTCs were surrendered to satisfy variance conditions, settlements with the AQMD, and settlements with EPA. None of these cases were related to violations of RECLAIM provisions; they consumed a total of 41.7 tons of NO_x RTCs and 253.7 tons of SO_x.

CHAPTER 3 EMISSION REDUCTIONS

Summary

Aggregate NOx and SOx emissions from RECLAIM facilities continued to be below allocations for Compliance Year 2005. Total aggregate NOx emissions declined from Compliance Year 2004 levels and were below total allocations by 23 percent. On the other hand, Compliance Year 2005 aggregate SOx emissions increased slightly (by one percent) from the previous year but were below total allocations by approximately 16 percent. Therefore, aside from the effects of the California energy crisis on Compliance Years 2000 and 2001 emissions, it can be concluded that RECLAIM has achieved its targeted emission reductions since aggregate emissions are below aggregate allocations. Finally, no emissions associated with breakdowns were excluded from being accounted against facility allocations in Compliance Year 2005. As such, no mitigation is necessary to offset excluded emissions due to approved Breakdown Emission Reports.

Background

One major objective of the RECLAIM program audit is to assess whether RECLAIM is achieving its targeted emission reductions. The annual allocations given to RECLAIM facilities reflect the required emission reductions mirroring the reductions anticipated under command-and-control rules. In January 2005, the Board adopted further reductions to RECLAIM allocations starting Compliance Year 2007 to implement BARCT. As such, RECLAIM is designed to achieve the same level of emissions reductions as would have been achieved in aggregate by implementing the subsumed rules and command-and-control measures as well as complying with state and federal law, such as California Health and Safety Code §39616(e).

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 objective of the program. To correct this problem, the Governing Board amended Regulation XX to bifurcate power producing facilities (as defined in Rule 2000(c)(56)) from the rest of the RECLAIM program participants to stabilize the RTC prices. Power producing facilities were still subject to the requirements of the RECLAIM Program, except that they could not purchase additional RTCs to offset their emissions. Instead these facilities were able to participate, if needed, in the Mitigation Fee Program which was in effect through the end of the 2004 compliance year. However, RECLAIM rules were 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. The only remaining trade restriction on power producing facilities after this amendment is that NOx RTCs issued to power producing facilities as original allocations by the AQMD for Compliance Years 2005 or 2006 may only be sold

or transferred to new power generating facilities brought on-line as of January 1, 2004 or later. In addition to the Mitigation Fee Program, Rule 2020 – RECLAIM Reserve provides a reserve of NOx emission reductions that also could have been used for the RECLAIM Air Quality Investment Program (AQIP) or for natural gas turbine power plant peaking sources under the State Emission Reduction Credit Bank. However, no facility applied to participate in any of these three programs, which concluded at the end of the 2004 compliance year.

Emissions Audit Process

Since the inception of the program, AQMD has conducted annual audits of the data submitted by RECLAIM facilities to ensure the integrity and reliability of the data. The process begins when each facility submits a comprehensive Annual Permit Emissions Program (APEP) report within sixty days of the end of each compliance year. AQMD staff then reviews the APEP reports to assess the accuracy of reported emissions. This process includes field inspections to check the equipment, monitoring devices, and operational records. It also involves verification of emissions data reported during the course of the year (daily, monthly, quarterly, and annually).

The Compliance Year 2005 audits revealed 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). Consequently, the reported emissions in the APEP reports for those facilities were adjusted to correct the errors. Whenever AQMD staff found discrepancies, they were discussed with the facility operators. In cases where staff felt that the facility may have additional input, facilities were provided an opportunity to review the changes and to present additional data or arguments in support of the data in their APEP reports. This kind of rigorous audit process reinforces RECLAIM's emissions monitoring and reporting requirements and enhances the validity and reliability of the reported emissions data.

Emission Trends and Analysis

RECLAIM achieves its emission reduction goals on an aggregate basis by ensuring that aggregate annual emissions are below allocations. It is important to understand that the RECLAIM program is successful at achieving these emission reduction goals even when individual RECLAIM facilities exceed their RTC account balances, provided aggregate RECLAIM emissions do not exceed aggregate RTC balances by pollutant. Table 3-1 summarizes NOx emissions from RECLAIM facilities since program inception. 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), were used when emissions data from completed audits were not available.

Table 3-1
Annual NOx Emissions for Compliance Years 1994 through 2005

	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%	15,693	-28	-0.18%
2002	10,943	-56.8%	14,044	3,101	22%
2003	9,942	-60.7%	12,484	2,542	20%
2004	9,953	-60.7%	12,477	2,524	20%
2005	9,556	-62.3%	12,484	2,928	23%

Table 3-1 shows that, programmatically, there were excess NOx RTCs left over after accounting for NOx emissions for every compliance year since 1994, except for Compliance Years 2000 and 2001. Since 2002, RECLAIM NOx emissions have been at or below 80% of annual allocations. Therefore, except for these two years, RECLAIM facilities have met the program's annual NOx emission goals. During Compliance Year 2000, power producing facilities operated at a production level significantly higher than their past operation levels due to California's energy crisis. The high production level continued into Compliance Year 2001. The high production resulted in elevated emissions from the power producing sector.

Table 3-2 and 3-3 are prepared to illustrate emission trends between Compliance Years 2000 and 2005, and the emission impacts from power producing facilities. Table 3-2 illustrates the impact of NOx emissions from the power producing facilities on the overall RECLAIM NOx allocations in Compliance Year 2000. Table 3-3 presents Compliance Year 2005 emissions in the same fashion as Table 3-2. Although power producing facilities were initially allocated 1,705 tons of NOx RTCs for Compliance Year 2005 based on their historical operations, these facilities only reported 445 tons of NOx emissions in Compliance Year 2005. This level was approximately 6,300 tons (93%) below emissions from power producing facilities in Compliance Year 2000. The decrease in emission 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 9,111 tons of NOx in Compliance Year 2005 which was almost 4,600 tons (34%) less than their emissions in Compliance Year

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.

2000. In aggregate, annual NOx emissions in Compliance Year 2005 totaled 9,556 tons from RECLAIM facilities. This total is over 53% less than the 20,491 tons of NOx emissions in Compliance Year 2000. Thus, both power producing and non-power producing sectors contributed to the decreases in emissions between Compliance Years 2000 and 2005. As a result, Compliance Year 2005 NOx emissions again achieved aggregate RECLAIM emission reduction goals and were below the total allocations by 23 percent.

**Table 3-2
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]	13,703		6,788		20,491
Difference [tons] (Exceedance)	(1,358)	1192	(1,936)	(4,486)	(3,294)

**Table 3-3
NOx Emissions and Allocations for Compliance Year 2005**

	Compliance Year 2005				
	Non-Power Producing Facilities (a)		Power Producing Facilities (b)		All Facilities (a) + (b)
	RTCs Held	Initial Allocations	RTCs Held	Initial Allocations	
Allocations [tons]	10,457	10,779	2,027	1,705	12,484
Emissions [tons]	9,111		445		9,556
Difference [tons] (Exceedance)	1,346	1,668	1,582	1,260	2,928

As shown in Table 3-4, 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 reduction compared to the subsumed command-and-control measures. Table 3-4 shows that since 1995, annual SOx emissions have decreased every year except for slight increases in Compliance

Year 2005 and in Compliance Year 1998. Overall, the reductions in SOx emissions resulted mainly from emission reductions projects implemented at the area's refineries. Typical projects included removal of sulfur compounds from feed streams and refinery fuel gas, and the use of catalysts to reduce SOx emissions. However, as explained by the representative for the facility with Compliance Year 2005's largest SOx increase (one of the area's refineries), part of the reason for the slight increase in SOx emissions relative to Compliance Year 2004 was the fact that this facility processed more sour crude oil (*i.e.*, higher sulfur content crude oil) during Compliance Year 2005. Figures 3-1 and 3-2 illustrate the comparison of emissions and the RTC supply for NOx and SOx, respectively.

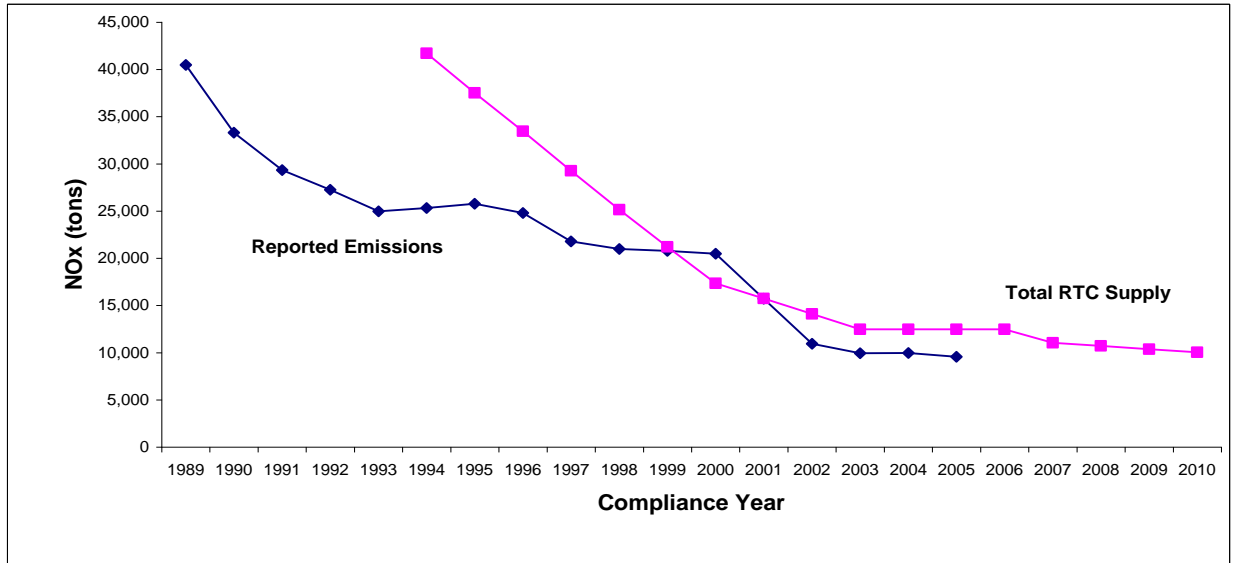
Table 3-4
Annual SOx Emissions for Compliance Years 1994 through 2005

	Annual SOx Emissions ³ (tons)	% Change from 1994	Total SOx RTCs ⁴ (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%

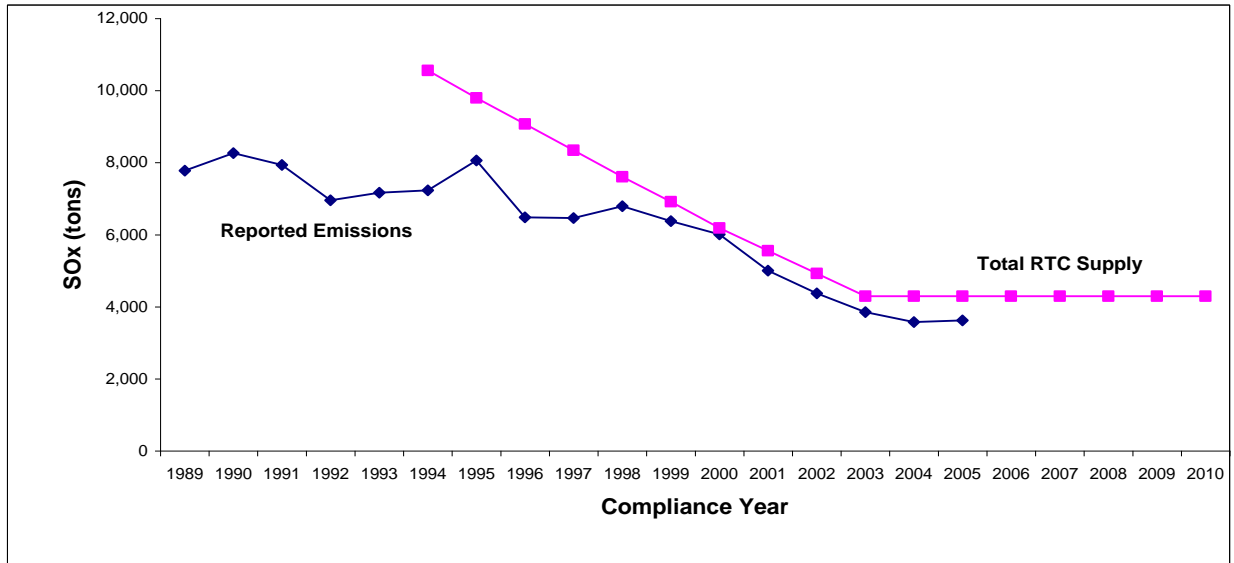
³ The RECLAIM universe is divided into two cycles with compliance schedules staggered by six months. Compliance years for Cycle 1 facilities run from January 1 through December 31, and Cycle 2 compliance years are from July 1 through June 30.

⁴ Total RTCs = Allocations + Converted ERCs.

**Figure 3-1
NOx Emissions and Available RTCs**



**Figure 3-2
SOx Emissions and Available RTCs**



Comparison to Command-and-Control Rules

RECLAIM subsumed a number of command-and-control rules⁵, and sought to achieve equivalent reductions as these subsumed rules. RECLAIM facilities are exempt from the requirements of the subsumed rules which apply to NOx or SOx emissions. The only rule that was amended since the completion of the Compliance Year 2004 annual report was subsumed Rule 1146.2 – Emissions of

⁵ See Tables 1 and 2 of Rule 2001.

Oxides of Nitrogen From Large Water Heaters and Small Boilers in May 2006. The rule was amended to lower the NOx emission limits of most new equipment subject to this rule by a set future date. Rule 1146.2 specifically exempts RECLAIM sources from its requirements; emissions from these sources at RECLAIM facilities are required to be reported with other RECLAIM emissions and to be reconciled with RTCs. Therefore, they are subject to the overall reduction goals of the RECLAIM program. Also, since RECLAIM requires the application of Best Available Control Technology (BACT) for all new or modified sources with emission increases⁶, newly installed sources at RECLAIM facilities will have to meet at a minimum the same requirements under Rule 1146.2.

Program Amendments

The latest RECLAIM rule amendments adopted in May 2005 included administrative changes to clarify rule applicability related to ship emissions, provided for an alternative RTC holding period for offsetting emission increases subject to RECLAIM New Source Review, clarified the RTC holding requirement in cases of change of operator of a RECLAIM facility, and corrected a previous omission under Rule 2007 – Trading Requirements. There have been no new amendments since the last annual report. However, when the Board adopted amendments to the RECLAIM Program in January 2005, the Board directed staff to assemble a stakeholder task force to examine the future RECLAIM Trading structure. Additionally, administrative amendments to Rules 2002, 2004, 2007, and 2010 are currently being drafted and are scheduled for a Public Hearing on April 6, 2007.

Stakeholder Task Force Meetings

A RECLAIM Stakeholder Task Force was assembled to consider and develop recommendations regarding emission reduction objectives, program efficiency, market viability, and business stability. The task force included market participants, agency representatives and members of the environmental community and academia. The meetings were held on September 30 and November 1 of 2005, and March 28 and July 27 of 2006. The discussions and the resulting recommendations regarding the proposals presented at the task force meetings are being compiled in a report to be submitted to the Board for consideration.

Some of the issues raised at these meetings included standardizing price reporting for future streams of RTCs, allowing facilities to pool RTCs during reconciliation, converting SOx RTCs to PM10 ERCs, identifying innovative technologies, enhancing the protocols for reporting trades, providing more safeguards to the RECLAIM market, and allowing facilities to exit from the RECLAIM market (“RECLAIM off-ramping”). Staff evaluated RECLAIM off-ramping as a possible change to the future RECLAIM structure. Staff also conducted a survey assessing the interests and opinions of RECLAIM facilities regarding the proposal. Additionally, staff performed a case study analysis of small emitters and developed recommendations regarding the RECLAIM off-ramping proposal. Staff initiated the rule amendment process to allow facilities

⁶ BACT for non-RECLAIM sources subject to the Rule 1146.2 amendments will be at least as stringent as the new rule requirements by the effective date of those requirements.

with no RECLAIM sources and meeting certain criteria to exempt from reporting zero emissions on a quarterly basis (QCERs) and annual basis (APEPs). The rule amendment is scheduled to be considered by the Board at its meeting in April of 2007.

Rule 2015 – Backstop Provisions

Rule 2015 requires that the AQMD review the program and implement necessary measures to amend the program 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 2005 aggregate NOx and SOx emissions were both below aggregate allocations as shown in Figures 3-1 and 3-2. As shown in Chapter 2, average annual prices for SOx RTCs in Calendar 2006 were below \$15,000 per ton.

The calculated Compliance Year 2010 average annual NOx price of \$15,698 per ton using the existing calculation methodology is above the Rule 2015(b)(6) threshold of \$15,000 per ton. This overage triggered a program review regarding “the compliance and enforcement aspects of the RECLAIM program, including the deterrent effect of Rule 2004 paragraphs (d)(1) through (d)(4).” The intent of this requirement is to initiate a review to ensure that the program has adequate deterrents in place to ensure compliance with allocations and monitoring, recordkeeping, and reporting (MRR) requirements in light of the high cost of RTCs. As provided under Rule 2015(b)(6), staff, upon Governing Board direction, will conduct an evaluation and review of the compliance and enforcement aspects of the RECLAIM program and will submit to ARB and EPA the results of the review within six months of this report.

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 compliance with the facility’s allocations. In order to qualify for such an exclusion, the facility must demonstrate that the excess emissions were the result of a fire or of 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 the total reported annual RECLAIM emissions must be approved by AQMD in writing. In addition, facilities are asked 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 to be excluded from allocation compliance have been programmatically offset by unused RTCs within the RECLAIM program. If the breakdown emissions exceed the unused RTCs, any excess breakdown emissions remaining 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) with 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 2005 compliance year found that no facilities requested to exclude their breakdown emissions from being counted against their allocations. Thus, for Compliance Year 2005, no additional offset is required pursuant to Rule 2015(d)(3).

**Table 3-5
Breakdown Emission Comparison for Compliance Year 2005**

Emittant	Unmitigated Breakdown Emissions ⁷ (tons)	Compliance Year 2005 Unused RTCs ⁸ (tons)
NOx	0	2,928
SOx	0	671

Rule 2020 – RECLAIM Reserve

In May 2001, the Board adopted Rule 2020 – RECLAIM Reserve to establish a reserve of emission reduction credits for use by facilities participating in the RECLAIM AQIP, the Mitigation Fee Program, or the State Emission Reduction Credit Bank. For a limited time, a facility that met all of the eligibility requirements and paid the appropriate participation fees could obtain RTCs through one of these programs. Under Rule 2020, fees paid by facilities participating in the RECLAIM AQIP and the Mitigation Fee Program could be used to fund emission reduction projects implemented according to the protocols contained in the pilot credit generation rules listed in Table 3-6. Emission reduction credits deposited into the State Emission Reduction Credit Bank were funded through the Carl Moyer Memorial Air Standards Attainment Program, which is a state program.

The deadline specified in Rule 2020 for submitting an application to generate Mobile Source Emission Reduction Credits (MSERC) or Area Source Credits (ASC) for the RECLAIM Reserve was January 1, 2004. Credits from the Reserve were available to qualified RECLAIM facilities only through the end of Compliance Year 2004. In Compliance Year 2005, no facilities applied for participation in any of the three programs for which Reserve credits were designated and no new control strategies were approved. However, Rule 2020(d)(3) specifies that all emission reductions generated through an approved control strategy will be designated to the Reserve through the entire implementation of the project.

⁷ Data for unmitigated breakdown emissions (not counted against Allocation) as reported under Annual Permit Emissions Program (APEP) reports.

⁸ Unused RTCs = RTC supply – Reported Emissions.

Table 3-6
Pilot Credit Generation Rules

Rule Description	Adoption Date (SIP Approval Date)
Rule 1612.1 – Mobile Source Credit Generation Pilot Program	3/16/01 (2/7/2002)
Rule 1631 - Pilot Credit Generation Program for Marine Vessels	5/11/01 (2/7/2002) 10/4/2002 Amendments (11/24/2003)
Rule 1632 - Pilot Credit Generation Program for Hotelling Operations	5/11/01 (2/7/2002)
Rule 1633 – Pilot Credit Generation Program for Truck/Trailer Refrigeration Units	5/11/01 (2/7/2002)
Rule 1634 – Pilot Credit Generation Program for Truck Stops	11/9/01 (11/24/03)
Rule 2507 – Pilot Credit Generation Program for Agricultural Pumps	5/11/01 (2/7/2002)

Proposals for credit generation under rules 1612.1, 1631, and 2507 were approved prior to January 1, 2004. No applications were received for credit generation under the other rules. Project proponents were to be paid by AQMD out of the RECLAIM Reserve. Credits generated were to be used by facilities that applied to use the Reserve. However, AQMD was able to meet the needs of these facilities by purchasing credits in the market during the applicable reconciliation period. MSERC generation under Rule 1631 ended June 30, 2005, but projects implemented under Rules 1612.1 and 2507 continued to generate credits through the end of Compliance Year 2005. Previous audit reports have included NOx emission reductions claimed under Rule 1631, and no additional activity level reports have been received since the last audit report. However, verification of the reported credit generation under Rule 1631 has not been completed, and no MSERCs generated by the repowering of marine vessels have been converted to RTCs and deposited into the Reserve.

Table 3-7 shows that a total of 4.68 tons of emission reductions were generated between October 1, 2003 and June 30, 2006 under Rule 1612.1. The table includes credits resulting from an activity level report for the 2004 Compliance Year that was unavailable for the previous audit report, as well as revised calculation of credits reported in the previous report. At the time of preparation of this report, the 2006 activity level report for a project that includes 21 of the 36 new low-emitting heavy-duty trucks purchased under Rule 1612.1 has not been received. Data in support of credit generation pursuant to Rule 1612.1 have not been audited by AQMD staff and no credits have been deposited in the RECLAIM Reserve. Although not audited or deposited into the RECLAIM Reserve, these reductions have benefited the environment. Furthermore, the environment will continue to benefit from the emission reductions resulting from these projects, since it is now too late for any facility to access the reserve.

Table 3-7
Emission Reductions Achieved Pursuant to Rule 1612.1

Reporting Period ⁹	Number of Refuse Haulers Generating Credits	Reported NOx Reductions (tons)	10% Retirement (tons)	NOx MSERCs (tons)
2004	36	2.79	0.28	2.51
2005	36	1.67	0.17	1.50
2006	36	0.74	0.07	0.67
	Total	5.20	0.52	4.68

Table 3-8 shows that a total of 27.94 tons of NOx emission reductions were achieved in Compliance Year 2005 through the electrification of agricultural pumps under Rule 2507, after accounting for the ten percent retirement to benefit the environment. Reports submitted by the credit generator have been audited by AQMD staff. However, additional records have been requested and no credits generated pursuant to Rule 2507 have been deposited in the RECLAIM Reserve.

Table 3-8
Emission Reductions Achieved Pursuant to Rule 2507

Calendar Year	Number of Agricultural Pumps Generating Credits	NOx Reductions ¹⁰ (tons)	10% Retirement (tons)	NOx ASCs (tons)
2005	30	20.54	2.05	18.49
2006 ¹¹	30	10.50	1.05	9.45
	Total	31.04	3.10	27.94

Table 3-9 shows that the total reported NOx reduction achieved pursuant to Rule 2020, after discounting ten percent pursuant to the retirement provision that is common to all of the pilot credit generation programs, was 32.62 tons. Again, it must be noted that an audit of these programs has not been completed. As such, no credits have been deposited in the RECLAIM Reserve. Furthermore, no credit was used by RECLAIM facilities.

⁹ The reporting period for 15 of the refuse haulers is 10/1/03-6/30/06. For this project, the emission reductions reported for 2004 include October-December of 2003. For the other 21 refuse haulers, the reporting period is 1/23/04-6/30/06.

¹⁰ Records submitted to support these emission reductions have been audited. Numbers are subject to change, pending review of additional records. No credits have been deposited into the RECLAIM Reserve.

¹¹ Data for this year includes only the first two quarters of Calendar Year 2006.

Table 3-9
Summary of Emission Reduction Credits under Rule 2020

Rule Number	Reported NOx Reductions (tons)	10% Retirement (tons)	NOx Emission Reductions (tons)
2507	31.04	3.10	27.94
1612.1	5.20	.52	4.68
Total	36.24	3.62	32.62

Impact of Changing Universe

As discussed in Chapter 1, changes to the NOx RECLAIM universe during Compliance Year 2005 were: one facility opted to join RECLAIM, no facilities were excluded, and eight facilities ceased operations. There were no changes to the SOx RECLAIM universe in Compliance Year 2005. Staff conducted an analysis to evaluate the impact on emissions reductions due to such changes in the RECLAIM universe.

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 the 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. For Compliance Year 2005, one facility opted to join the NOx RECLAIM program. This facility is still under construction and has not started operations. No allocation will be issued to this new facility.

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 does a new facility — in this case the overall demand for RTCs is reduced while the supply remains constant. During Compliance Year 2005, eight NOx RECLAIM facilities shut down permanently.

A facility is excluded from the Universe if it is determined that the facility was included in the program in error. Emissions from excluded facilities are also excluded from the emissions in the RECLAIM market. In such cases, the RTCs that were issued to the facility for future years are also withdrawn, thereby decreasing the supply of RTCs.

Facilities that were in operation prior to October 15, 1993 may subsequently choose to enter the program even though they did not initially meet the inclusion criteria. If 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. No operational facilities existing prior to October 15, 1993 chose to opt-in to the RECLAIM program in Compliance Year 2005.

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.

Table 3-10 summarizes NOx emissions and allocations from new facilities and from facilities that were shut down, excluded from the program, or included into the program for the Compliance Year 2005.

Table 3-10
NOx Emissions Impact from the Changes in Universe (Tons)

Category	2005 NOx Emissions (tons)	2005 NOx Initial Allocations (tons)
Shutdown Facilities	0.5	17.8
Excluded Facilities	No facility excluded	No facility excluded
Included Facilities	0	0
RECLAIM Universe	9,556	12,484

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 and state NSR requirements, while providing flexibility to facilities in managing their operations and allowing new sources into the program. In Compliance Year 2005, one new facility joined the RECLAIM NOx program, while no facility joined the SOx program. In Calendar Year 2005, nineteen RECLAIM facilities had NSR NOx emission increases due to expansion or modification. These data indicate that the RECLAIM program does not inhibit start-up of a new facility 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 a 1-to-1 offset ratio for SOx emission increases on a programmatic basis. In Calendar Year 2005, RECLAIM provided an offset ratio of 118-to-1 for NOx on an aggregate basis, demonstrating federal equivalency. There were no NSR increases for RECLAIM SOx during Calendar Year 2005. Compliance with the federally required offset ratio also demonstrates compliance with the state requirement of no net emissions increases from 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 and state NSR requirements to ensure that progress toward attainment of ambient air quality standards is not hampered. RECLAIM is designed to comply with federal and state NSR requirements without hindering facilities' ability to expand or modify their operations.

Sources in extreme non-attainment areas such as the South Coast Air Basin are required by Title 42, United States Code §7511a(e), to mitigate their emissions increases by providing emissions offsets at a 1.2-to-1 ratio or higher for extreme non-attainment pollutants and their precursors. The federal offset requirement for major SOx sources is at least a 1-to-1 ratio. Rule 2005 – New Source Review for RECLAIM requires RECLAIM facilities to provide, at the time when permits to operate are issued, sufficient RTCs to offset the annual emission increase 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 emissions from the 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 demonstrating compliance 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 RECLAIM emissions offset ratio and the higher offset ratios required under federal law for NO_x.

Major sources in extreme non-attainment areas are required by federal NSR to offset emission increases of extreme non-attainment pollutants and their precursors at a 1.5-to-1 ratio. However, if all major sources in the extreme non-attainment area are required to implement federal Best Available Control Technology (BACT), a 1.2-to-1 offset ratio may be used. Federal BACT is comparable to California's Best Available Retrofit Control Technology (BARCT). AQMD does require 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.*, NO_x and VOC).

RECLAIM requires BACT analysis for new or modified sources with emissions increases of RECLAIM pollutants. This provision demonstrates compliance with both the state and federal requirements regarding control technologies. In addition to offset and BACT requirements, RECLAIM subjects those RTC trades, which 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, as established in Health and Safety Code §40410.5. This annual audit report assesses NSR permitting activities for the 2005 calendar year to verify that programmatic compliance of RECLAIM with state and federal NSR requirements has been maintained.

NSR Activity

Evaluation of NSR data for Calendar Year 2005 indicates that RECLAIM facilities continue to successfully expand or modify their operations while complying with NSR requirements. One new facility joined the NO_x program and no new or existing facility joined the SO_x program. There was no NSR activity at the new facility because the facility is still under construction and has not started operation. Nineteen existing RECLAIM facilities experienced a total of 25 tons per year of NO_x NSR emission increases due to expansion or modification. There was no SO_x NSR emission increase at the SO_x RECLAIM facilities.

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 NO_x and at least 1-to-1 for SO_x) also indicates compliance with the state requirement of no net emission increases from new or modified sources. 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 at the time the program was initially implemented, any emissions reductions beyond the initial allocations are available for NSR offset purposes until such time as RACT becomes more stringent. The programmatic offset ratio calculations presented in all previous Annual RECLAIM Audit Reports (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 Best Available Control Technology (BACT, which is equivalent to local Best Available Retrofit Control Technology or 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 is using current allocations (BACT) as a surrogate for RACT as the basis for calculating programmatic offset ratios in this Annual Audit 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 NO_x and 1-to-1 for SO_x, 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 (including those resulting from NSR emission increases) are offset at a ratio of at least 1-to-1. This leaves all unused allocations available to provide offsets beyond 1-to-1 for NSR emission increases. That is, the Compliance Year 2005 aggregate RECLAIM offset ratios are expressed by the following formulas:

$$\text{Offset Ratio} = \left(1 + \frac{\text{total unused Compliance Year 2005 allocations}}{\text{total NSR emission increases}}\right)\text{-to-1}$$

The Compliance Year 2005 NO_x programmatic offset ratio calculated from this methodology is 118-to-1:

$$\begin{aligned}\text{Offset Ratio} &= \left(1 + \frac{2,928 \text{ tons}}{25 \text{ tons}}\right)\text{-to-1} \\ &= 118\text{-to-1}\end{aligned}$$

There were no NSR SO_x increases during Compliance Year 2005, so there is no Compliance Year 2005 SO_x programmatic offset ratio. Therefore, RECLAIM continues to generate sufficient excess emissions reductions to provide greater than 1.2-to-1 and 1-to-1 offset ratios for NO_x and SO_x, respectively, as required by federal law. This compliance with the federal offset requirements is built into the design of the RECLAIM program through the annual reductions of the allocations assigned to RECLAIM facilities.

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 mitigate 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 Calendar Year 2005 shows that RECLAIM is in compliance with both state 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 NO_x or SO_x emissions exceeding their initial allocation in Compliance Year 1994 by forty (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 2005, two RECLAIM facilities were found to be subject to this requirement. One of these facilities had emissions which exceeded its Compliance Year 1994 NO_x allocation by 58 tons and the other exceeded its 1994 SO_x allocation by 55.9 tons. Both facilities conducted and submitted modeling analyses pursuant to this requirement.

CHAPTER 5 COMPLIANCE

Summary

There were 311 NOx facilities and 33 SOx facilities in operation in the RECLAIM program at the start of the 2005 compliance year. One new facility elected to join the NOx RECLAIM Program during the 2005 compliance year. Of these 312 NOx RECLAIM facilities, 307 facilities (98 percent) complied with their NOx allocations and all 33 SOx facilities complied with their SOx allocations during Compliance Year 2005. Verification of facility-reported emissions and audits of facility records for the compliance year are still on-going. Initial results for Compliance Year 2005 revealed that the overall RECLAIM NOx and SOx emission goals were met for this compliance year. Five facilities were found to have exceeded their individual allocations. The amounts of emissions in excess of individual allocations ranged from 117 pounds to 5.1 tons and the combined excess NOx emissions from these five facilities totaled 6.5 tons. The only cause for exceeding allocation in Compliance Year 2005 was failure to obtain sufficient RTCs to reconcile with quarterly and/or annual emissions.

Background

RECLAIM facilities are provided with the flexibility to choose among compliance options, either trading RTCs or reducing emissions, to meet their annual allocations. However, this flexibility must be supported by standardized emission MRR requirements to ensure the reported emissions are real, quantifiable, and enforceable. In order to meet clean air goals, AQMD must ensure 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 more accurate and up-to-date emission reports. Once facilities install and complete the 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 the monitoring and reporting equipment. Failure to obtain quality assured data from the monitoring equipment or failure to file daily emissions reports by the time due results in emissions determined instead by a rule prescribed methodology known as Missing Data Procedure (MDP). Depending on the performance of the monitoring equipment (*i.e.*, availability of quality-assured data), the MDP uses a tiered approach to calculate emissions. As availability of quality-assured data increases, the calculated emissions become more representative of the actual emissions.

Allocation Compliance

Requirements

At the beginning of the 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 initially included at the start of the program. A new facility without prior operating history receives no allocation and must purchase enough RTCs to cover the emissions for the upcoming compliance year before the start of that compliance year. With the knowledge of 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 reconciliation period for each quarter and each compliance year, a RECLAIM facility must hold sufficient RTCs in its allocation account to cover its 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 compliance 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 on 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 field inspections to check the equipment, monitoring devices, operational records, and checking emissions calculations to verify the emissions reported to AQMD's Central Station or submitted in QCERs and APEP reports. These inspections revealed 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. Therefore, some of the reported emissions in the QCER or APEP reports had to be adjusted after completion of the audits.

Whenever an audit revealed a facility to be in exceedance 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.

As indicated in Chapter 2, using the existing calculation methodology, the average annual price for Compliance Year 2010 NO_x RTCs traded in Calendar Year 2006 was over Rule 2015(b)(6)'s program review threshold level of \$15,000 per ton. Pursuant to this provision and Health and Safety Code §39616(f), staff, upon Governing Board's direction, will be initiating a review of the compliance

and enforcement aspects of the RECLAIM program and submitting the results to CARB and EPA. The review will assess:

- The rate of compliance with applicable emission caps;
- The rate of compliance with monitoring recordkeeping and reporting requirements;
- The ability of AQMD to obtain appropriate penalties in cases of noncompliance; and
- Whether the program provides appropriate incentives to comply with RECLAIM requirements.

Based on the findings, appropriate amendments, if any, to Rule 2004(d) – Prohibition of Emissions in Excess of Annual Allocation and to any other RECLAIM rules as necessary will be submitted to the Governing Board for its consideration and adoption.

Compliance Status

At the beginning of Compliance Year 2005, there were 311 NO_x RECLAIM facilities. As stated in Chapter 1, one new facility joined the NO_x RECLAIM program bringing the number of NO_x RECLAIM facilities to 312 during Compliance Year 2005. Based on QCERs, APEP reports or completed AQMD audit results, enforcement action was taken on five NO_x facilities. All five of these facilities exceeded their allocation in Compliance Year 2005 because they failed to acquire sufficient RTCs to cover their reported emissions during either the quarterly or annual reconciliation periods. This corresponded to an overall compliance rate of 98 percent (307 out of 312 facilities) for NO_x RECLAIM facilities and 100 percent (33 out of 33 facilities) for SO_x RECLAIM facilities. The amount of excess emissions from these facilities totaled 6.5 tons of NO_x. Appendix D lists facilities that were determined to have failed to reconcile NO_x emissions for Compliance Year 2005. Staff is conducting audits of emissions reported by facilities. As facility-reported emissions are verified and audits are completed, the list of facilities that exceeded their allocations is updated whenever applicable. The up-to-date list is available to the public at AQMD Headquarters in Diamond Bar by contacting RECLAIM Administration Team staff. Additional cases of allocation violation may be identified.

Impact of Missing Data Procedure

MDP was designed to provide a method for determining emissions when an emission monitoring system fails to yield valid emissions. These occurrences may be caused by failure of the monitoring systems or the data acquisition and handling system (DAHS), which is required for major sources. In addition, major sources are required to use MDP for determining emissions whenever daily emissions reports are not submitted by the applicable deadline. Different sets of MDP are defined for different source classifications.

In addition to MDP for major sources, there are also MDP defined in the RECLAIM rules for large sources and process units. These procedures are applicable when a process monitoring device fails or when the facility operators fail to record process rates or fuel usage. However, the resulting emissions

reports are reasonably representative of the actual emissions because average or maximum emissions from previous operating periods are allowed to be used.

Based on Compliance Year 2005 APEP reports, 88 NOx facilities and 15 SOx facilities used MDP in reporting their annual emissions. In terms of mass emissions, 3.0 percent of the total reported NOx emissions and 3.6 percent of the total reported SOx emissions in the APEP reports for Compliance Year 2005 were calculated using MDP. However, as discussed above, the majority of these emissions are representative of actual emissions from RECLAIM sources. Table 5-1 compares the impact of MDP on annual emissions for the last few compliance years versus the first compliance year (1995) with MDP impact (MDP did not apply during the 1994 compliance year).

**Table 5-1
MDP Impact on Annual Emissions**

Emittant	Percent of Reported Emissions Using Substitute Data ¹						
	1995	2000	2001	2002	2003	2004	2005
NOx	23.0% (65)	6.5% (82)	8.1% (47)	3.4% (85)	4.5% (87)	8.3% (106)	3.0% (88)
SOx	40.0% (12)	10.7% (13)	11.0% (9)	4.8% (14)	4.7% (15)	10.4% (16)	3.6% (15)

As indicated in Table 5-1, the current impact of MDP on reported emissions is at its lowest level since the first year MDP applied. 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 Continuous Emission Monitoring System (CEMS) certifications were resolved prior to the 1999 compliance year. Very few facilities have had to submit emissions reports based on the worst case scenario under MDP that may considerably overstate the actual emissions from major sources. This scenario is applicable to sources that failed to have their CEMS certified in a timely manner where required, and therefore, no valid CEMS data can be used in the substitution. In 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 historic availability of monitoring systems gets higher, the substitute data yielded by MDP become more representative of actual emissions.

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 their 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

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

than the actual emissions. On the other hand, 88 facilities reported NO_x emissions using MDP in Compliance Year 2005. Even though this is higher than those in 1995 in terms of the number of facilities, MDP used in Compliance Year 2005 is much lower than in Compliance Year 1995 in terms of the percentage of emissions reported and the actual mass emissions. Since most CEMS had been certified and had been reporting actual emissions by the beginning of the 1997 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 possible overestimated emissions due to MDP bias. For example, it is estimated that three percent of NO_x annual emissions were reported using MDP in Compliance Year 2005. This does not mean that three percent of Compliance Year 2005 reported NO_x emissions were not real. A portion of the three percent may be overestimated emissions due to MDP bias, 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 an example, refineries tend to operate at maximum capacity for 24 hours/day and seven days/week, 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 2005, a significant portion of NO_x emissions data quantified using MDP (42 percent) and the majority of SO_x emissions data quantified using MDP (84 percent) 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 NO_x sources into major sources, large sources, process units, and equipment exempt pursuant to Rule 219. All SO_x 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 Systems (CEMS)

Requirements

CEMS 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 CEMS the most appropriate method for the largest equipment in terms of emission potential 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 CEMS, or Alternative Continuous Emission Monitoring Systems (ACEMSs), 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. The requirements for ACEMS are that they 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 CEMS, had their CEMS certified or provisionally approved. The uncertified CEMS are for sources that recently became subject to major source reporting requirements or 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 CEMS in the certification process at any time. However, there are no longer any CEMS that have been in the process for a significant length of time and that are experiencing delays due to unusual circumstances.

Standing Working Group on RECLAIM CEMS Technical Issues

CEMS technical issues, which delayed certification of many CEMS, 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 (SWG) on RECLAIM CEMS Technical Issues was formed to provide a forum in which facility representatives, consultants and

AQMD staff could discuss and work out technically sound and reasonable solutions. In the past, the SWG met quarterly to discuss progress and also bring up new issues. However, the SWG no longer meets regularly, but can be convened as necessary.

Semiannual and Annual Assessments of CEMS

RECLAIM facilities have been conducting the Relatively Accuracy Test Audit (RATA) of certified CEMS—using private sector testing laboratories approved under the AQMD Laboratory Approval Program (LAP)—at their prescribed intervals, 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 percent or less.

To verify the quality of CEMS, 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 percent for pollutant concentration, ±15 percent for stack flow rate, and ±20 percent 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 2005 and 2006 calendar years' passing rates for RATAs of certified CEMS for NOx and SOx concentration, total sulfur in fuel gas concentrations, stack flow rate (in-stack monitors and F-factor based calculation), 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 conducive to mass emissions-based RATA testing.

**Table 5-3
Passing Rates Based on Relative Accuracy Test Audits of Certified CEMS in 2005²**

Concentration						Stack Flow Rate				Mass Emissions			
NOx		SO ₂		Total Sulfur		In-Stack Monitor		F-Factor Based Calc.		NOx		SOx ³	
No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass
364	100	71	100	20	100	45	100	369	100	364	100	71	100

Table 5-4 summarizes the 2006 calendar year passing rates for RATAs of certified CEMS, for NOx and SOx concentration, total sulfur in fuel gas

² For CEMS certified in Calendar Year 2005, all passing rates were calculated from data submitted before January 6, 2006 and may exclude data from the 4th quarter of Calendar Year 2005. About 10 percent of test audits were still submitted in paper form. RATA's include Cylinder Gas Audit (CGA) tests.

³ Does not include SOx emissions calculated from total sulfur analyzers.

concentrations, stack flow rate (in-stack monitors and F-factor based calculation), and NOx and SOx mass emissions.

**Table 5-4
Passing Rates Based on Relative Accuracy Test Audits of Certified CEMS in 2006⁴**

Concentration						Stack Flow Rate				Mass Emissions			
NOx		SO ₂		Total Sulfur		In-Stack Monitor		F-Factor Based Calc.		NOx		SOx ⁵	
No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass
355	100	62	100	18	100	42	100	370	100	355	100	62	100

As indicated in Tables 5-3 and 5-4, the passing rates for NOx/SO₂ 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. A greater familiarity with individual sources on the part of testing laboratories has also contributed to the high passing rates.

Electronic Data Reporting of RATA Results

Facilities operating CEMS 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 has to 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 that, in turn, has helped the AQMD in expediting the review process.

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 rule compliance data to the AQMD Central Station. The

⁴ For CEMS certified in Calendar Year 2006, all passing rates were calculated from data submitted before January 7, 2007 and may exclude data from the 4th quarter of Calendar Year 2006. About 5 percent of test audits were still submitted in paper form. RATA’s include Cylinder Gas Audit (CGA) tests.

⁵ Does not include SOx emissions calculated from total sulfur analyzers.

RTU collects data, performs calculations, generates the appropriate data files, and transmits the data to the Central Station.

- Rule compliance 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, starting in 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 from 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 within the specified deadlines, RECLAIM rules may require that emissions from CEMS 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 the facility operators. Undetected errors will cause the facility operators to believe that the daily reports were submitted when they were not received by the AQMD. In addition to providing operators a means to confirm the receipt of the reports, the WATERS application can also be used to view the electronic reports that were submitted to, and received by, the Central Station. This system helps to reduce instances where MDP had to be used for late or missing daily reports in that the operators can re-submit the daily reports if there were communication errors.

Protocol Review

Even though it was 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 cost to the AQMD and RECLAIM participants.

Since the 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 make interpretations to existing rule requirements to adequately address the issues at hand, the protocols or rules have been amended. Since the last RECLAIM rule amendments in May of 2005 specifying protocols for monitoring, reporting, and recordkeeping emissions from ships, there have been no new amendments to the RECLAIM rules. 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 2005 employment survey, the RECLAIM program had no impact on jobs at most facilities. RECLAIM facilities reported a net loss of 4,005 jobs, representing 3.55 percent of total employment. Most of these losses were attributed to factors other than RECLAIM. Eight RECLAIM facilities were listed as shut down during Compliance Year 2005. None of these facilities indicated that RECLAIM was a contributing factor in their decision to close, and none of them listed any jobs lost specifically due to RECLAIM on their survey forms. However, three operating facilities identified job impacts due to the RECLAIM program: only one facility reported the loss of 75 jobs, and the other two facilities reported a total of four jobs gained.

Background

The Annual Permit Emissions Program (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 2005 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 were tabulated on the basis of data reported by facilities.

Additionally, the APEP survey forms provided an opportunity for facilities that were shut down during Compliance Year 2005 to explain the reasons for closure. The forms also allowed facilities to indicate whether the RECLAIM program led to the creation or elimination of jobs during Compliance Year 2005. Those who 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.

Job Impacts

Table 6-1 summarizes job impact data gathered from Compliance Year 2005 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 job changes reported in each category (*i.e.*, the manufacture, sales of products, and non-manufacture categories) due to the fact that a given facility may report under all three of these categories. A total of 142 facilities reported 9,174 job gains, while 149 facilities reported a total of 13,179 job losses. Net job losses were reported in each survey category, including 1,785 manufacturing jobs, 20 sales of products jobs, and 2,200 non-manufacturing jobs. The total net loss of 4,005 jobs represents a net change in jobs at RECLAIM facilities of 3.55% during Compliance Year 2005.

Table 6-1
Job Impacts at RECLAIM Facilities for Compliance Year 2005

Description	Manufacture	Sales of Products	Non-Manufacture	Total
Initial Jobs	49,160	1,221	62,433	112,814
Overall Job Gain	4,358	135	4,681	9,174
Overall Job Loss	6,143	155	6,881	13,179
Final Jobs	47,375	1,201	60,233	108,809
Net Job Change	-1,785	-20	-2,200	-4,005
Percent Job Change	-3.63%	-1.64%	-3.52%	-3.55%
Facilities Reporting Job Gains	107	30	76	142
Facilities Reporting Job Losses	116	31	89	149

Compliance Year 2005 APEP reports were not submitted by 14 of the 304 facilities in the RECLAIM universe. Two of the facilities that failed to submit their APEPs were found to have shut down, while the other 12 were still in operation. Another 14 facilities listed zero jobs in all categories on their survey forms. All of these facilities are oil field production operations with no personnel on site. However, the companies employ an unspecified number of maintenance personnel at off-site locations.

The eight facilities identified in Chapter 1 as ceasing operation or excluded from RECLAIM during Compliance Year 2005 are listed in Appendix C. Four of these facilities shut down manufacturing operations during past compliance years, but remained in the program until their permits were inactivated. Included in the 14 facilities identified above which did not submit 2005 APEP reports, two of the facilities that shut down manufacturing operations did not submit APEP reports. Company representatives for these two facilities had previously informed AQMD inspectors that the plants were closing for economic reasons unrelated to RECLAIM. The other two facilities that were excluded during the 2005 Compliance Year, but actually closed during past Compliance Years, did submit APEP reports. Neither company reported job losses due to RECLAIM during Compliance Year 2005.

The remaining four facilities shut down their manufacturing operations and canceled their RECLAIM facility permits during Compliance Year 2005. One of these facilities did not report the closure on their APEP forms, and they did not complete the employment survey. One facility was required to cease production after failing to demonstrate compliance with the terms and conditions of an Order for Abatement. This case involved the violation of a non-RECLAIM rule. One facility indicated in their APEP report that the high cost of manufacturing and the decline in demand for products forced them to shut down, and the last facility reported that production was consolidated at a nearby plant in order to lower production costs. Finally, none of the companies whose APEP reports indicated that they had closed in Compliance Year 2005 listed RECLAIM as a factor in the decision to shut down, and none of them reported any job losses due to RECLAIM.

Three facilities reported job impacts attributed to the RECLAIM program (refer to Appendix E). All of these facilities were still in operation. One facility indicated that they have relocated part of their operation to other facilities located in the

United States and Mexico. A company representative contacted by AQMD staff cited economics as the main reason for relocation. However, permitting burden also contributed to the decision. For the purposes of reporting, they estimated that 75 jobs were lost due to permitting burdens. The January 2005 amendments to RECLAIM the rules, which reduced allocations for Compliance Year 2007 and beyond, also played a role in their final decision to move production to other areas. The facility had purchased RTCs to satisfy their past and future emissions, even after they had installed NOx control equipment.

The two other facilities with job impacts reported a total of four jobs gained due to the RECLAIM program. Both companies indicated that additional workers were needed to perform monitoring, recordkeeping and reporting duties, and to facilitate source testing and compliance inspections.

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 is not considered.

CHAPTER 7

AIR QUALITY AND PUBLIC HEALTH IMPACTS

Summary

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 2005 continued its downward trend and SOx emissions increased slightly (by one percent). Quarterly NOx emissions ranged from approximately three percent below to two percent above the mean NOx emissions throughout Calendar Year 2005. Quarterly SOx emissions ranged from approximately four percent below to three percent above the mean SOx emissions throughout Calendar Year 2005. Thus, there is no seasonal fluctuation in emissions. Furthermore, this year's analysis, as in each previous year's analysis, of the geographical distribution of emissions on a quarterly basis does not show any distinct shift in the geographical distribution of emissions.

The California Clean Air Act (CCAA) requires a 50 percent 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 Compliance Year 2005, the per capita exposure to ozone continues 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. Additionally, RECLAIM facilities are subject to the same air toxic regulations as other sources in the Basin. Therefore, it can be concluded that there is no toxic impact due to the implementation of the RECLAIM program beyond what would have occurred pursuant to the rules and control measures RECLAIM subsumed.

Background

RECLAIM is designed to achieve the same, or a 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 maintains 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 for RECLAIM sources for 1989 through 2005.

Figure 7-1
NOx Emission Trend for RECLAIM Sources

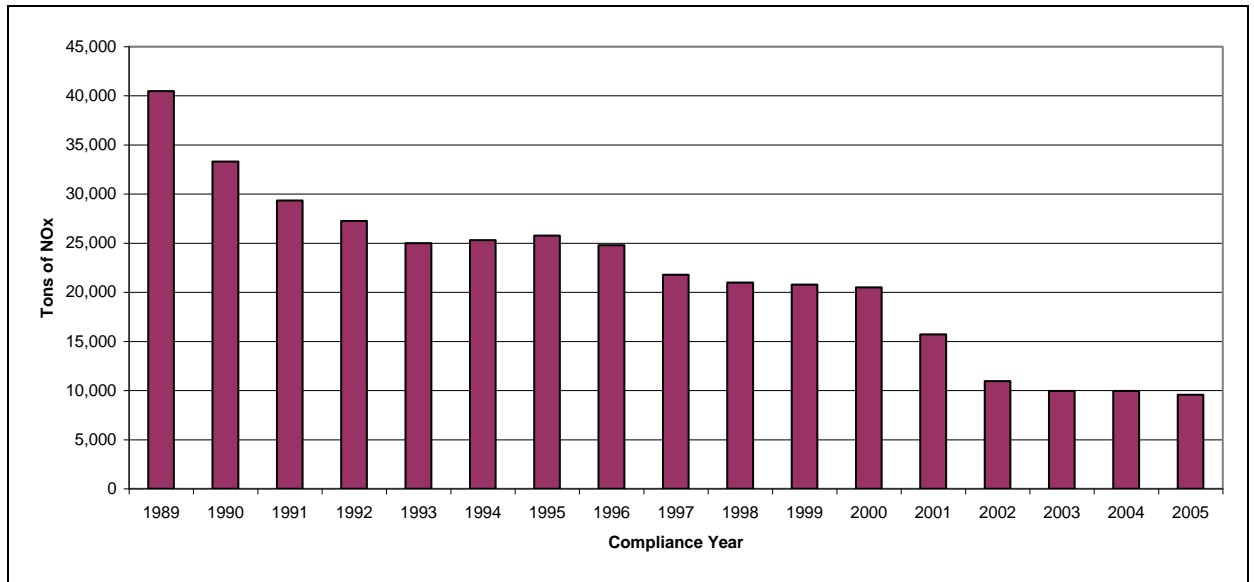
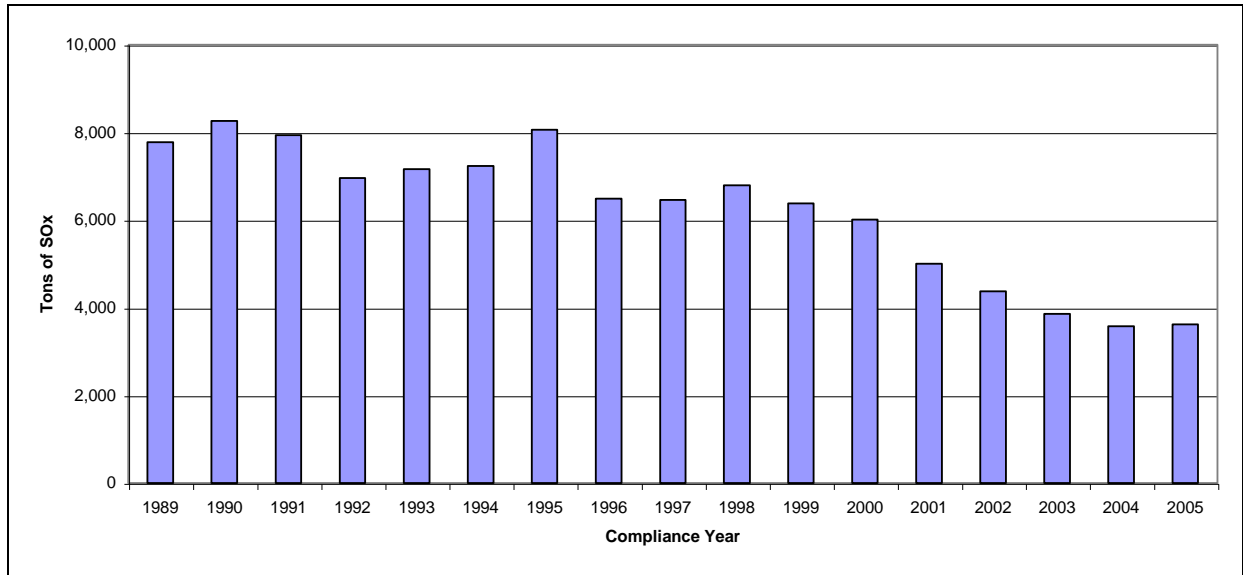


Figure 7-2
SOx Emission Trend for RECLAIM Sources



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 there was 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 there were slight increases in Compliance Year 2005 and in Compliance Year 1998. 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 air quality. To address this concern, AQMD staff analyzed quarterly emissions during Calendar Year 2004 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 2005 NOx Quarterly Emissions

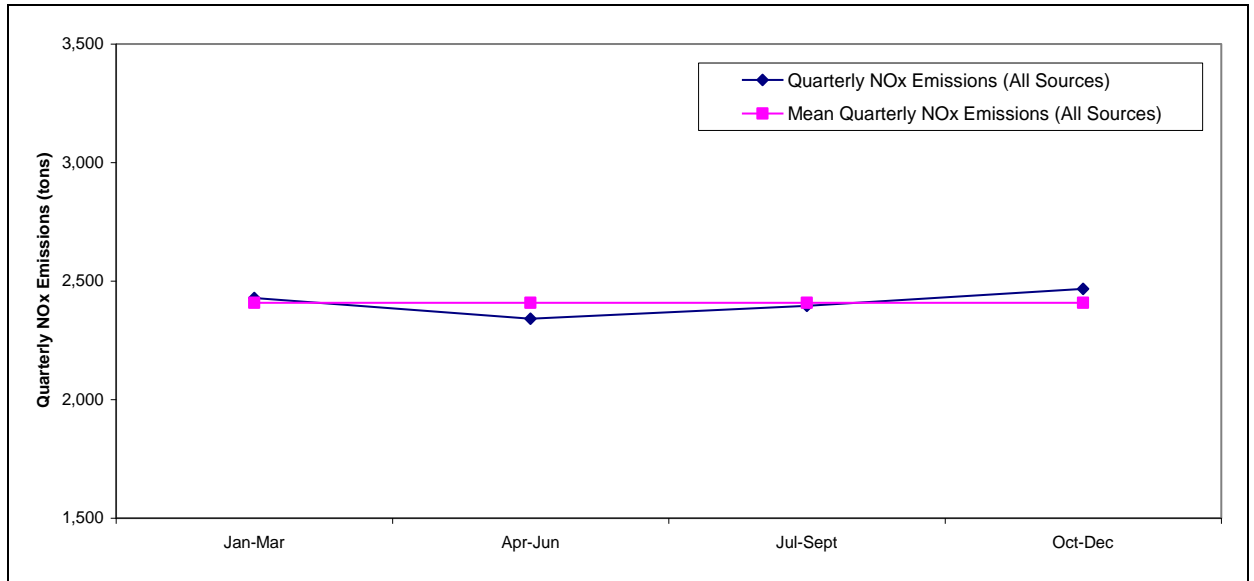


Figure 7-3 shows the mean quarterly NOx emissions, which is the average of the four quarterly emissions, versus the actual quarterly emissions. Aggregate quarterly NOx emissions varied from about three percent below the mean in the second quarter (April through June) to about two percent above the mean in the fourth quarter (October through December). Thus, there is no significant seasonal shift in NOx emissions.

Figure 7-4
Calendar Year 2005 SOx Quarterly Emissions

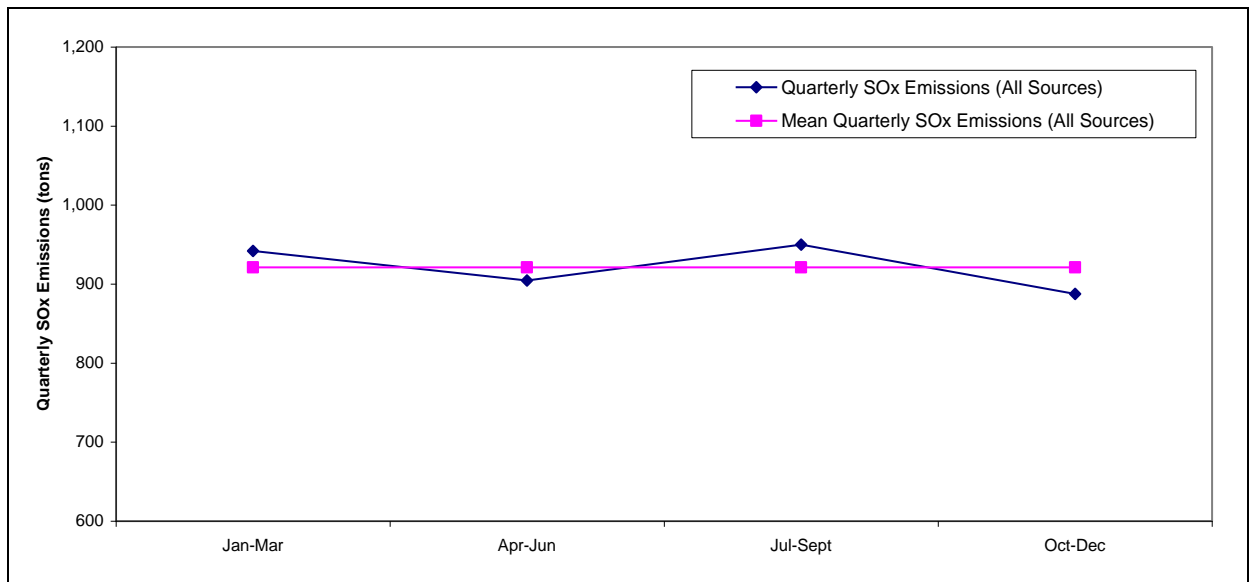


Figure 7-4 showed that quarterly SOx emissions during Calendar Year 2005 varied from about three percent above the mean in the third quarter (July through September) to about four percent below the mean in the fourth quarter (October

through December). Therefore, there was no significant seasonal shift of SOx emissions.

Geographic Distribution of Emissions

As part of this program audit, AQMD staff examined the quarterly emissions maps, which were 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 above their Compliance Year 1994 Allocation including non-tradable credits. Because of this flexibility and the ability of RECLAIM facilities to purchase RTCs from other facilities, some people were 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 2005 (all four quarters of 2005 and the first two quarters of 2006). These maps are included in Appendices F and G. The quarterly emission maps 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 the continuation of the traditional command-and-control regulations and implementation of 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 exposure to ozone for 1994 and 1997 were below the projections.

Table 7-1 summarizes Calendar Years 1998 through 2006 ozone data 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 2006 shows the lowest number of days exceeding the state standard. The table also shows the number of days exceeding both the federal one-hour and eight-hour standards, as well as the Basin maximum, were higher in Calendar Year 2006 when compared to 2005. In July 1997, the USEPA established a new ozone National Ambient Air Quality Standards (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 was revoked. Therefore to reflect the new standard,

Table 7-1 now also shows the number of days exceeding the new federal eight-hour ozone standard. Future annual reports will continue showing the monitoring results based on this new 8-hour standard as well as provide the previous 1-hour values for reference purposes.

**Table 7-1
Summary of Ozone Data**

	Calendar Year								
	1998	1999	2000	2001	2002	2003	2004	2005	2006
Days exceeding state standard	113	120	125	121	118	133	110	111	102
Days exceeding federal 1-hour standard	62	42	40	36	49	68	27	28	35
Days exceeding federal 8-hour standard	111	113	111	100	99	120	90	84	86
Basin Maximum (pphm)	24	17	18.5	19.1	16.9	21.6	16.3	16.3	17.5

Table 7-2 compares the actual per capita exposures to the exposure milestones as specified in the CCAA for Calendar Years 1997 and 2000. The CCAA establishes specific milestones for achieving reductions in overall population exposure to severe non-attainment pollutants in the Basin. These milestones include a 25 percent reduction by December 31, 1994, a 40 percent reduction by December 31, 1997, and a 50 percent reduction by December 31, 2000, relative to a Calendar Years' 1986-88 baseline. The data presented in Table 7-2 for actual per capita exposure for the four counties, and the Basin overall, have shown substantial progress toward continuous attainment of the state standard. As indicated in Table 7-2, actual reductions in per capita exposure in Calendar Year 1997 have gone well beyond the 50 percent reduction target scheduled for Calendar Year 2000.

Table 7-2
Per Capita Exposure to Ozone above the State 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
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

The above tables (Tables 7-1 and 7-2) together show that actual per capita exposure during all the years mentioned continues to be well under the projected exposure 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 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 as a result of RECLAIM.

RECLAIM sources are subject to the same air toxic regulations (*i.e.*, AQMD Regulation XIV, State AB 2588, Federal National Emissions Standards for Hazardous Air Pollutants, etc.) as other sources in the Basin. These regulations further 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 NO_x or SO_x emissions. The majority of VOC sources at RECLAIM facilities are subject to source-specific command-and-control rules,

¹ Average over three years, 1986 through 1988.

² 60% of the 1986-88 baseline exposures.

³ 50% of the 1986-88 baseline exposures.

in addition to the applicable toxics requirements described above. Similarly, 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 not relevant 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
AQIP	Air Quality Investment Program
AQMD	South Coast Air Quality Management District
AQMP	Air Quality Management Plan
ASC	Area Source Credit
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
CPMS	Continuous Process Monitoring System
DAHS	Data Acquisition and Handling System
EDR	Electronic Data Reporting
ERC	Emission Reduction Credit
LAP	Laboratory Approval Program
MDP	Missing Data Procedures
MRR	Monitoring, Recordkeeping and Reporting
MSERC	Mobile Source Emission Reduction Credit
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 the end of the 2005 compliance year 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
104012	1	AERA ENERGY LLC	NOx
104013	2	AERA ENERGY LLC	NOx
104015	2	AERA ENERGY LLC	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
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
21290	1	ALPHA BETA CO/RALPH GROCERY CO	NOx
140499	2	AMERESCO HUNTINGTON BEACH, L.L.C.	NOx
800196	2	AMERICAN AIRLINES INC (EIS USE)	NOx
45527	2	AMERICAN RACING EQUIPMENT 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
117290	2	B BRAUN MEDICAL, INC	NOx
800016	2	BAKER COMMODITIES 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
134768	1	BENTLEY-SIMONSON INC	NOx
134781	1	BENTLEY-SIMONSON INC	NOx
119907	1	BERRY PETROLEUM COMPANY	NOx
132068	1	BIMBO BAKERIES USA INC	NOx
113240	2	BLACK HILLS ONTARIO LLC	NOx
136516	2	BLACKSAND PARTNERS LP	NOx
145188	2	BLUE HERON PAPER CO OF CALIF LLC	NOx
133405	1	BODYCOTE THERMAL PROCESSING	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

ANNUAL RECLAIM AUDIT

Facility ID	Cycle	Facility Name	Market
131249	1	BP WEST COAST PRODUCTS LLC,BP WILMINGTON	NOx/SOx
10340	1	BREA CANYON OIL CO INC	NOx
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 (NSR USE)	NOx/SOx
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
8791	2	CAL-PACIFIC DYEING & FINISHING CORP	NOx
9141	1	CANNERS STEAM CO INC	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
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
110982	1	COMMONWEALTH ALUMINUM CONCAST	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
143741	1	DCOR LLC	NOx
143739	2	DCOR LLC	NOx
143740	2	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
38872	1	DOANE PET CARE COMPANY	NOx
800038	2	DOUGLAS PRODUCTS DIVISION	NOx
142536	2	DRS TECHNOLOGIES, INC.	NOx
104571	2	E & J TEXTILE GROUP, 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
800370	1	EQUILON ENTER., LLC, SHELL OIL PROD. U S	NOx/SOx
117247	1	EQUILON ENTERPRISES, LLC	NOx/SOx

ANNUAL RECLAIM AUDIT

Facility ID	Cycle	Facility Name	Market
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	GAINNEY CERAMICS INC	NOx
11016	2	GEORGIA-PACIFIC CORP	NOx
10055	2	G-P GYPSUM CORP	NOx
137471	2	GRIFOLS BIOLOGICALS INC	NOx
40196	2	GUARDIAN INDUSTRIES CORP.	NOx/SOx
106325	2	HARBOR COGENERATION CO	NOx
45953	1	HAYES LEMMERZ INTERNATIONAL CAL INC	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
106810	2	INTERSTATE BRANDS 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
7931	1	LA PAPER BOX & BOARD MILLS	NOx
115277	1	LAFAYETTE TEXTILE IND LLC	NOx
144455	2	LIFOAM INDUSTRIES, LLC	NOx
83102	2	LIGHT METALS INC	NOx
31046	2	LISTON BRICK COMPANY OF CORONA	NOx
14229	2	LORBER INDUSTRIES OF CALIFORNIA	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
14049	2	MARUCHAN INC	NOx
18865	2	MASTERFOODS USA	NOx
3029	2	MATCHMASTER DYEING & FINISHING INC	NOx
2825	1	MCP FOODS INC	NOx
100844	2	MEDALLION CALIFORNIA PROPERTIES CO	NOx
115563	1	METAL COATERS OF CALIFORNIA	NOx

ANNUAL RECLAIM AUDIT

Facility ID	Cycle	Facility Name	Market
94872	2	METAL CONTAINER CORP	NOx
141012	1	MILLER BREWERIES WEST LP	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
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	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
60531	2	PACIFIC FABRIC FINISHING	NOx
2946	1	PACIFIC FORGE INC	NOx
800417	2	PACIFIC TERMINALS LLC	NOx
137520	1	PACIFIC TERMINALS LLC	NOx
800416	1	PACIFIC TERMINALS LLC	NOx
800419	2	PACIFIC TERMINALS LLC - HUNTINGTON	NOx
800420	2	PACIFIC TERMINALS LLC - LONG BEACH	NOx
800208	2	PAPER PAK PROD. INC	NOx
130211	2	PAPER-PAK INDUSTRIES	NOx
800183	1	PARAMOUNT PETR CORP (EIS USE)	NOx/SOx
800168	1	PASADENA CITY, DWP (EIS USE)	NOx
119920	1	PECHINEY CAST PLATE INC	NOx
133987	1	PLAINS EXPLORATION & PRODUCTION CO, LP	NOx
133996	2	PLAINS EXPLORATION & PRODUCTION COMPANY	NOx
115449	1	PLAYA PHASE I COMMERCIAL LAND, LLC	NOx
800431	1	PRATT & WHITNEY ROCKETDYNE, INC.	NOx
7416	1	PRAXAIR INC	NOx
42630	1	PRAXAIR INC	NOx
133046	1	PRECISION SPECIALTY METALS INC	NOx
136	2	PRESS FORGE CO	NOx
132191	1	PUREENERGY OPERATING SERVICES, LLC	NOx
132192	1	PUREENERGY 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

ANNUAL RECLAIM AUDIT

Facility ID	Cycle	Facility Name	Market
800182	1	RIVERSIDE CEMENT CO (EIS USE)	NOx/SOx
98812	2	RMS FOUNDATION INC	NOx
800113	2	ROHR,INC	NOx
18455	2	ROYALTY CARPET MILLS INC	NOx
93073	1	SABA PETROLEUM INC	NOx
108701	1	SAINT-GOBAIN CONTAINERS, INC.	NOx/SOx
4242	2	SAN DIEGO GAS & ELECTRIC	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
101977	1	SIGNAL HILL PETROLEUM INC	NOx
22373	1	SMURFIT-STONE CONTAINER ENTERPRISES, 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
9114	2	SOMITEX PRINTS OF CAL INC.	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
96587	1	TEXOLLINI INC	NOx
4451	1	TEXTRON FASTENING SYSTEMS SANTA ANA OPER	NOx
14736	2	THE BOEING COMPANY	NOx
800110	2	THE BOEING COMPANY	NOx
11119	1	THE GAS CO./ SEMPRA ENERGY	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
11674	1	TRI-ALLOY INC	NOx
9053	1	TRIGEN- LA ENERGY CORP	NOx
9217	1	TRIGEN-LA ENERGY CORP	NOx
11034	2	TRIGEN-LA ENERGY CORP	NOx
16575	1	TRIGEN-LA ENERGY CORP	NOx
43436	1	TST, INC.	NOx
800026	1	ULTRAMAR INC (NSR USE ONLY)	NOx/SOx

ANNUAL RECLAIM AUDIT

Facility ID	Cycle	Facility Name	Market
9755	2	UNITED AIRLINES INC	NOx
60342	2	UNITED STATES CAN CO	NOx
800258	1	UNOCAL CORP., HARTLEY CENTER	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
122012	2	VINTAGE PETROLEUM, INC DEL VALLE OIL FLD	NOx
14495	2	VISTA METALS CORPORATION	NOx
126501	2	VOUGHT AIRCRAFT INDUSTRIES	NOx
143261	1	WELLHEAD POWER COLTON LLC	NOx
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
129238	1	XYRON INC	NOx

APPENDIX B FACILITY INCLUSIONS

As discussed in Chapter 1, one facility was added to the NOx market of the RECLAIM universe during the 2005 compliance year.

Facility ID	Cycle	Facility Name	Market	Date	Reason
129816	2	INLAND EMPIRE ENERGY CENTER, LLC	NOx	8/5/2005	Opt-in at facility request.

APPENDIX C

RECLAIM FACILITIES CEASING OPERATION OR EXCLUDED

AQMD staff is aware of the following RECLAIM facilities that permanently shut down all operations or inactivated their RECLAIM permits during the 2005 compliance year. The reasons for shutdown cited below are based on AQMD staff's best available information.

Facility ID	861
Facility Name	H. J. Heinz, L.P.
City and County	Terminal Island, Los Angeles County
SIC	3411
Pollutants	NOx
1994 Allocation	8,844
Reason for Shutdown	Canning operations were sold in 2000, but the company maintained an active permit for a wastewater treatment system until 2005. They continue to operate labeling equipment for imported products. All current operations are exempt from permit requirements. The company did not attribute any job losses to RECLAIM.

Facility ID	5830
Facility Name	Intermetro Industries Corp.
City and County	Rancho Cucamonga, San Bernardino County
SIC	3496
Pollutants	NOx
1994 Allocation	13,180
Reason for Shutdown	Manufacturing operations were shut down 4/16/04 due to the high costs of manufacturing. The facility permit was inactivated 1/19/05. The facility was converted to a distribution center. The company did not attribute any job losses to RECLAIM.

Facility ID	34055
Facility Name	Sully Miller Contracting Co.
City and County	Irwindale, Los Angeles County
SIC	3295
Pollutants	NOx
1994 Allocation	13,910
Reason for Shutdown	Operations were shut down 7/23/2005 due to consolidation of production at another plant within the AQMD. The company reported a loss of four jobs, but did not attribute the job losses to RECLAIM.

ANNUAL RECLAIM AUDIT

Facility ID 60540
Facility Name American Racing Equipment Inc., Plant #2
City and County Rancho Dominguez, Los Angeles County
SIC 3714
Pollutants NOx
1994 Allocation 6,324
Reason for Shutdown The APEP stated that the facility was not shut down, but their permits were inactivated 8/12/2005. A company contact did not respond to a request for comment. No job losses due to RECLAIM were reported.

Facility ID 89429
Facility Name Paradise Textile
City and County Chino, San Bernardino County
SIC 2260
Pollutants NOx
1994 Allocation 10,675
Reason for Shutdown The facility ceased operations 2/1/2006. The company cited the high cost of manufacturing and declining demand for products as the reasons. They did not attribute any job losses to RECLAIM.

Facility ID 118618
Facility Name Uni President (USA), Inc.
City and County City of Industry, Los Angeles County
SIC 2099
Pollutants NOx
1994 Allocation 3,942
Reason for Shutdown APEP reports were not submitted for Compliance Years 2004 or 2005. The inspector reported that the facility ceased operations during the 4th quarter of Compliance Year 2003 due to competition in the noodle manufacturing industry. The permits were inactivated 1/19/2006. No job losses were attributed to RECLAIM in the 2003 APEP report.

Facility ID 122295
Facility Name Falcon Foam
City and County Los Angeles, Los Angeles County
SIC 3086
Pollutants NOx
1994 Allocation 7,156
Reason for Shutdown The facility was unable to comply with Rule 1175 - Control of Emissions from the Manufacture of Polymeric Cellular (Foam) Products. Foam manufacturing operations were shut down 12/31/2005 in response to Order for Abatement 3529-8. Foam cutting operations continued until June, 2006. A consultant for the company indicated that job losses resulting from the closure were not due to RECLAIM.

ANNUAL RECLAIM AUDIT

Facility ID	122822
Facility Name	Consolidated Film Industries, LLC
City and County	Hollywood, Los Angeles County
SIC	7384
Pollutants	NOx
1994 Allocation	69,485
Reason for Shutdown	No APEP was submitted. The facility ceased operations at this location in May 2003. Production was consolidated at another facility within AQMD following Consolidated Film Industries' change of ownership. No job losses were attributed to RECLAIM in the 2004 APEP report.

APPENDIX D
FACILITIES THAT WERE UNABLE TO RECONCILE EMISSIONS
FOR COMPLIANCE YEAR 2005

The following is a list of facilities that were determined to have not reconciled their allocations with their NOx and/or SOx emissions in Compliance Year 2005 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

Armstrong World Industries Inc. (ID# 12155)

Praxair Inc. (ID# 42630)

Raytheon Company (ID# 114997)

Raytheon Company (ID# 115041)

Xyron Inc. (ID# 129238)

APPENDIX E

JOB IMPACTS ATTRIBUTED TO RECLAIM

Each year, RECLAIM facility operators are asked to provide employment data by completing survey forms included in their Annual Permit Emissions Program (APEP) report. The survey forms allow 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 Compliance Year 2005 is summarized below:

Facilities with actual job gains or losses attributed to RECLAIM:

Facility ID	2083
Facility Name	Superior Industries International Inc.
City and County	Van Nuys, Los Angeles County
SIC	3714
Pollutant(s)	NOx
Cycle	1
Job Gain	0
Job Loss	75
Comments	"Work moved to other corporate facilities in U.S. and Mexico due to permitting burdens." A company representative contacted by AQMD staff cited economics as the main reason for relocation. However, permitting burden also contributed to the decision. For the purposes of reporting, they estimated that 75 jobs were lost due to permitting burdens. The January 2005 amendments to the RECLAIM rules, which reduced allocations for Compliance Year 2007 and beyond, also played a role in their final decision to move production to other areas. The facility had purchased RTCs to satisfy their past and future emissions, even after they had installed NOx control equipment.
Facility ID	112853
Facility Name	NP Cogen Inc.
City and County	Los Angeles, Los Angeles County
SIC	4911
Pollutant(s)	NOx
Cycle	2
Job Gain	1
Job Loss	0
Comments	The facility indicated no job gains or losses under the categories of manufacturing, sales of products, or non-manufacturing. They indicated that RECLAIM contributed to the creation of one job, commenting that a person is needed to "address the administration of RECLAIM and Title V paperwork, testing and verification of data".

ANNUAL RECLAIM AUDIT

Facility ID	800074
Facility Name	LA City DWP, Haynes Generating Station
City and County	Long Beach, Los Angeles County
SIC	4911
Pollutant(s)	NOx
Cycle	1
Job Gain	3
Job Loss	0
Comments	The facility indicated no job gains under the categories of manufacturing, sales of products, or non-manufacturing. They listed 3 jobs gained due to RECLAIM and commented that the jobs were added because of "maintenance of CEMS, increased monitoring & reporting, scheduling of approved contractors, and increased inspections".

APPENDIX F

ONE ALTERNATIVE PRICING METHODOLOGY FOR CALCULATING AVERAGE ANNUAL RTC PRICE

This appendix outlines the steps of an alternative methodology for determining average annual RTC price based on fifteen-year amortization of infinite-year block trades. The five example trades presented in Table F-1 are used for purposes of illustration.

Step 1: Identifying Infinite-Year Block Trades

Table F-1 demonstrates the different types of trade registrations AQMD receives. Examples of infinite-year block trades include Trade Registration No.s EX-02 (one infinite-year transaction—Line “C”), EX-04 (a complete infinite block trade including multiple single-year transactions—Lines “F”-“K”—and one infinite-year transaction beginning Compliance Year 2013 and extending “All years after”—Line “L”) and EX-05 (a mixed trade consisting of a single-year transaction—Line “N,” and an infinite-year block—Lines “O” and “P”). Line “N” is excluded from the evaluation since it is not part of the infinite-year block. Refer to the discussion of the Impact of Infinite-Year Block Trades on Average RTC Prices in Chapter 2 for an explanation of the criteria used to determine if individual line items on a trade registration form are part of an infinite-year block trade.

Step 2: Calculating Overall Cost for Infinite-Year Trades

The reported cost of each line belonging to an infinite-year block trade is summed. The resulting costs from the examples presented in Table F-1 are listed in Table F-2.

Step 3: Calculating Price per Pound for Infinite-Year Trades

The total cost of each infinite-year block trade is divided by the quantity traded in the infinite year (Lines “C”, “L”, and “P”). These values are listed in Table F-2.

Step 4: Amortize the Price per Pound for Infinite-Year Trades

The price per pound is amortized over a 15-year period based on a real interest rate of 4%. These values are listed in Table F-2.

Step 5: Assign annual cost to the appropriate compliance year

The amortized cost per year is assigned to the initial year of each infinite-year block and the following 14 years. Also, the quantities traded are updated to reflect the quantity of infinite-year RTCs in order to maintain the total cost of the infinite-year block. Table F-3 reflects the amortized prices for each RTC traded by compliance year for all five examples.

Step 6: Calculate the Average Annual Price

The weighted average annual RTC price for each compliance year is calculated taking into account all trades. The resulting average annual prices for each year are listed in Table F-3.

Table F-1
Identifying Transactions of Infinite-Year Block Trades

Registration No. EX-01

Transaction Line No.	From Comp. Year	To Comp. Year	Quantity (Pounds/Year)	Price (\$/Pound)
A	2006	Single Year Trade	2,000	\$1.50
B	2008	Single Year Trade	500	\$4.00

Registration No. EX-02

Transaction Line No.	From Comp. Year	To Comp. Year	Quantity (Pounds/Year)	Price (\$/Pound)
C	2009	All Years After	800	\$80.00

Registration No. EX-03

Transaction Line No.	From Comp. Year	To Comp. Year	Quantity (Pounds/Year)	Price (\$/Pound)
D	2009	Single Year Trade	200	\$5.50
E	2010	Single Year Trade	300	\$6.50

Registration No. EX-04

Transaction Line No.	From Comp. Year	To Comp. Year	Quantity (Pounds/Year)	Price (\$/Pound)
F	2007	Single Year Trade	883	\$10.00
G	2008	Single Year Trade	856	\$10.00
H	2009	Single Year Trade	829	\$10.00
I	2010	Single Year Trade	802	\$10.00
J	2011	Single Year Trade	775	\$10.00
K	2012	Single Year Trade	775	\$10.00
L	2013	All Years After	775	\$10.00

Registration No. EX-05

Transaction Line No.	From Comp. Year	To Comp. Year	Quantity (Pounds/Year)	Price (\$/Pound)
N	2006	Single Year Trade	10,000	\$1.00
O	2010	Single Year Trade	400	\$20.00
P	2011	All Years After	400	\$25.00

Table F-2
Overall Cost, Price per Pound, and Amortization for 15 Years Calculations for
Infinite Year Trades

Registration No. EX-02

Trans. Line No.	From Comp. Year	To Comp. Year	Quantity (Pounds/Year)	Price (\$/Pound)	Total Cost of Infinite-Year Trade	Price Per Pound of Infinite-Year Trade (\$/Pound Infinite-Year RTC)	Price Per Pound of Infinite-Year Trade Amortized for 15 Years (\$/Pound/Year)
C	2009	All Years After	800	\$80.00	\$64,000.00		
					\$64,000.00	\$80.00	\$7.19

Registration No. EX-04

Trans. Line No.	From Comp. Year	To Comp. Year	Quantity (Pounds/Year)	Price (\$/Pound)	Total Cost of Infinite-Year Trade	Price Per Pound of Infinite-Year Trade (\$/Pound Infinite-Year RTC)	Price Per Pound of Infinite-Year Trade Amortized for 15 Years (\$/Pound/Year)
F	2007	Single Year Trade	883	\$10.00	\$8,830.00		
G	2008	Single Year Trade	856	\$10.00	\$8,560.00		
H	2009	Single Year Trade	829	\$10.00	\$8,290.00		
I	2010	Single Year Trade	802	\$10.00	\$8,020.00		
J	2011	Single Year Trade	775	\$10.00	\$7,750.00		
K	2012	Single Year Trade	775	\$10.00	\$7,750.00		
L	2013	All Years After	775	\$10.00	\$7,750.00		
					\$56,950.00	\$73.48	\$6.61

Registration No. EX-05

Trans. Line No.	From Comp. Year	To Comp. Year	Quantity (Pounds/Year)	Price (\$/Pound)	Total Cost of Infinite-Year Trade	Price Per Pound of Infinite-Year Trade (\$/Pound Infinite-Year RTC)	Price Per Pound of Infinite-Year Trade Amortized for 15 Years (\$/Pound/Year)
N	2006	Single Year Trade	10,000	\$1.00	Not Infinite-Year Trade		
O	2010	Single Year Trade	400	\$20.00	\$8,000.00		
P	2011	All Years After	400	\$25.00	\$10,000.00		
					\$18,000.00	\$45.00	\$4.05

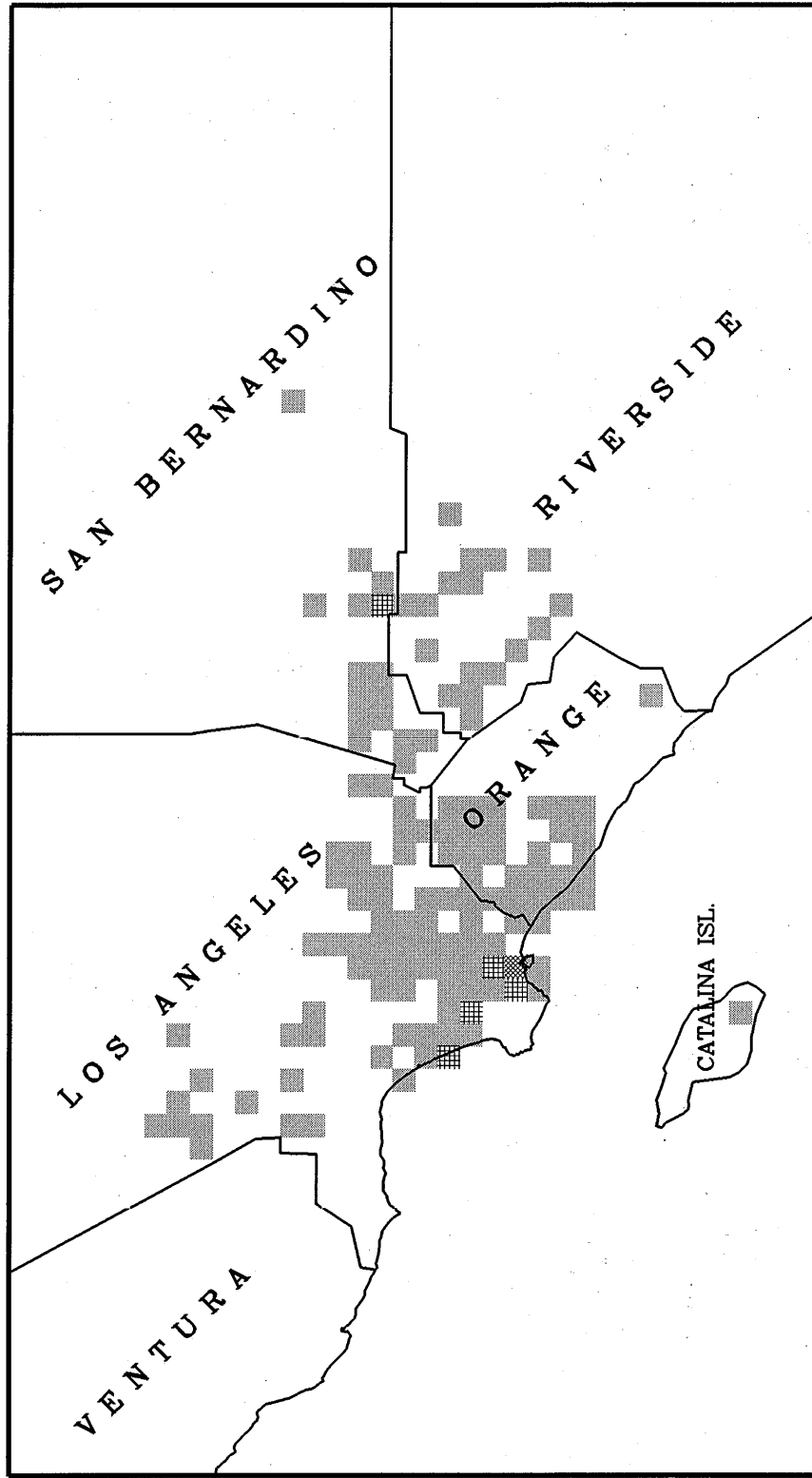
Table F-3
Assigning Yearly Prices and Calculation of Average Annual Price

Year	Reg. No EX-01		Reg. No EX-02		Reg. No EX-03		Reg. No EX-04		Reg. No EX-05		Total \$	Total Quantity (Lbs)	Average Annual Price (\$/Lb)		
	Qty.	Price/lb.	Qty.	Price/lb.	Qty.	Price/lb.	Qty.	Price/lb.	Qty.	Price/lb.					
2006	2,000	\$1.50									10,000	\$1.00	\$13,000.00	12,000	\$1.08
2007							775	\$6.61					\$5,122.75	775	\$6.61
2008	500	\$4.00					775	\$6.61					\$7,122.75	1,275	\$5.59
2009			800	\$7.19	200	\$5.50	775	\$6.61					\$11,974.75	1,775	\$6.75
2010			800	\$7.19	300	\$6.50	775	\$6.61	400	\$4.05			\$14,444.75	2,275	\$6.35
2011			800	\$7.19			775	\$6.61	400	\$4.05			\$12,494.75	1,975	\$6.33
2012			800	\$7.19			775	\$6.61	400	\$4.05			\$12,494.75	1,975	\$6.33
2013			800	\$7.19			775	\$6.61	400	\$4.05			\$12,494.75	1,975	\$6.33
2014			800	\$7.19			775	\$6.61	400	\$4.05			\$12,494.75	1,975	\$6.33
2015			800	\$7.19			775	\$6.61	400	\$4.05			\$12,494.75	1,975	\$6.33
2016			800	\$7.19			775	\$6.61	400	\$4.05			\$12,494.75	1,975	\$6.33
2017			800	\$7.19			775	\$6.61	400	\$4.05			\$12,494.75	1,975	\$6.33
2018			800	\$7.19			775	\$6.61	400	\$4.05			\$12,494.75	1,975	\$6.33
2019			800	\$7.19			775	\$6.61	400	\$4.05			\$12,494.75	1,975	\$6.33
2020			800	\$7.19			775	\$6.61	400	\$4.05			\$12,494.75	1,975	\$6.33
2021			800	\$7.19			775	\$6.61	400	\$4.05			\$12,494.75	1,975	\$6.33
2022			800	\$7.19					400	\$4.05			\$7,372.00	1,200	\$6.14
2023			800	\$7.19					400	\$4.05			\$7,372.00	1,200	\$6.14
2024									400	\$4.05			\$1,620.00	400	\$4.05

**APPENDIX G
QUARTERLY NOX EMISSION MAPS**

RECLAIM Facilities

Certified NOx Emissions (Tons) from 01/2005 to 03/2005

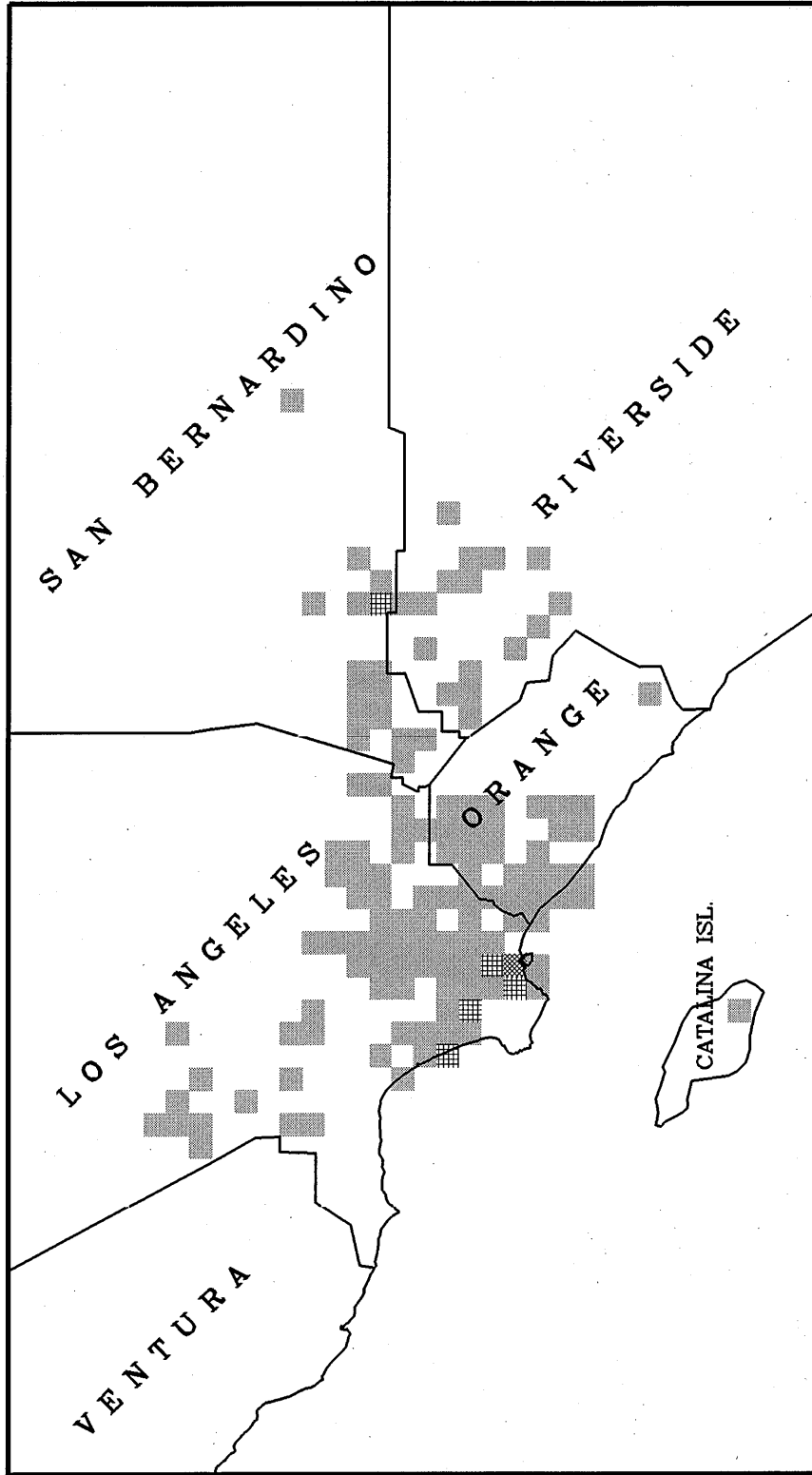


max. emissions = 385 tons

Generated on 12/27/2006

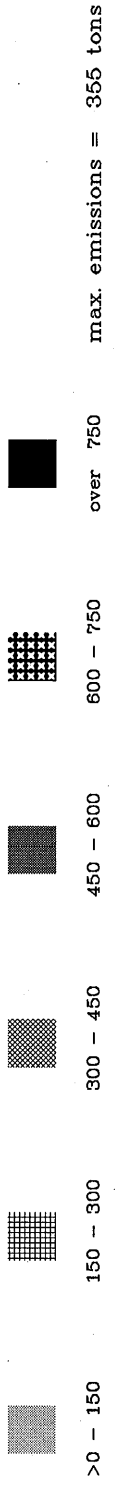
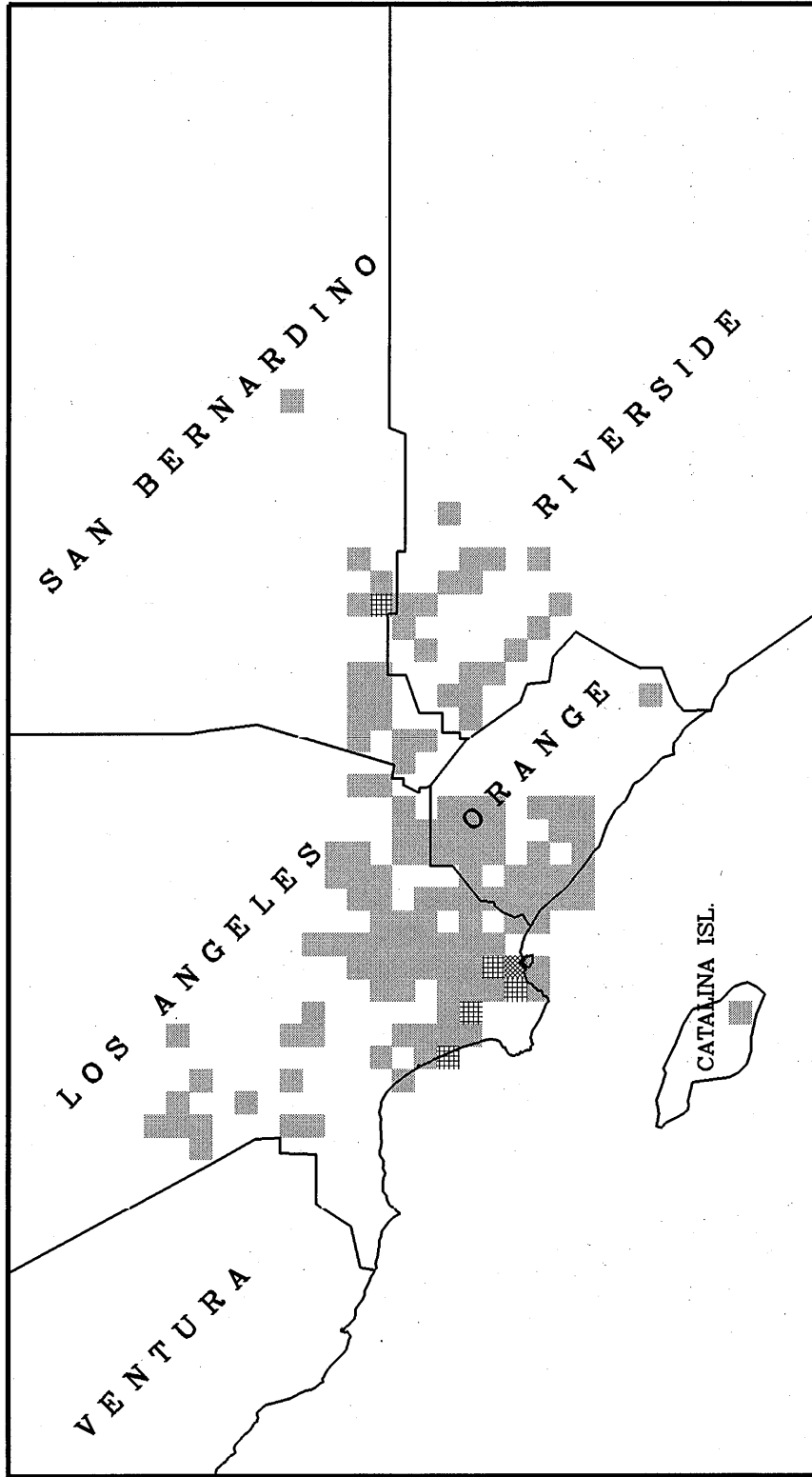
RECLAIM Facilities

Certified NOx Emissions (Tons) from 04/2005 to 06/2005



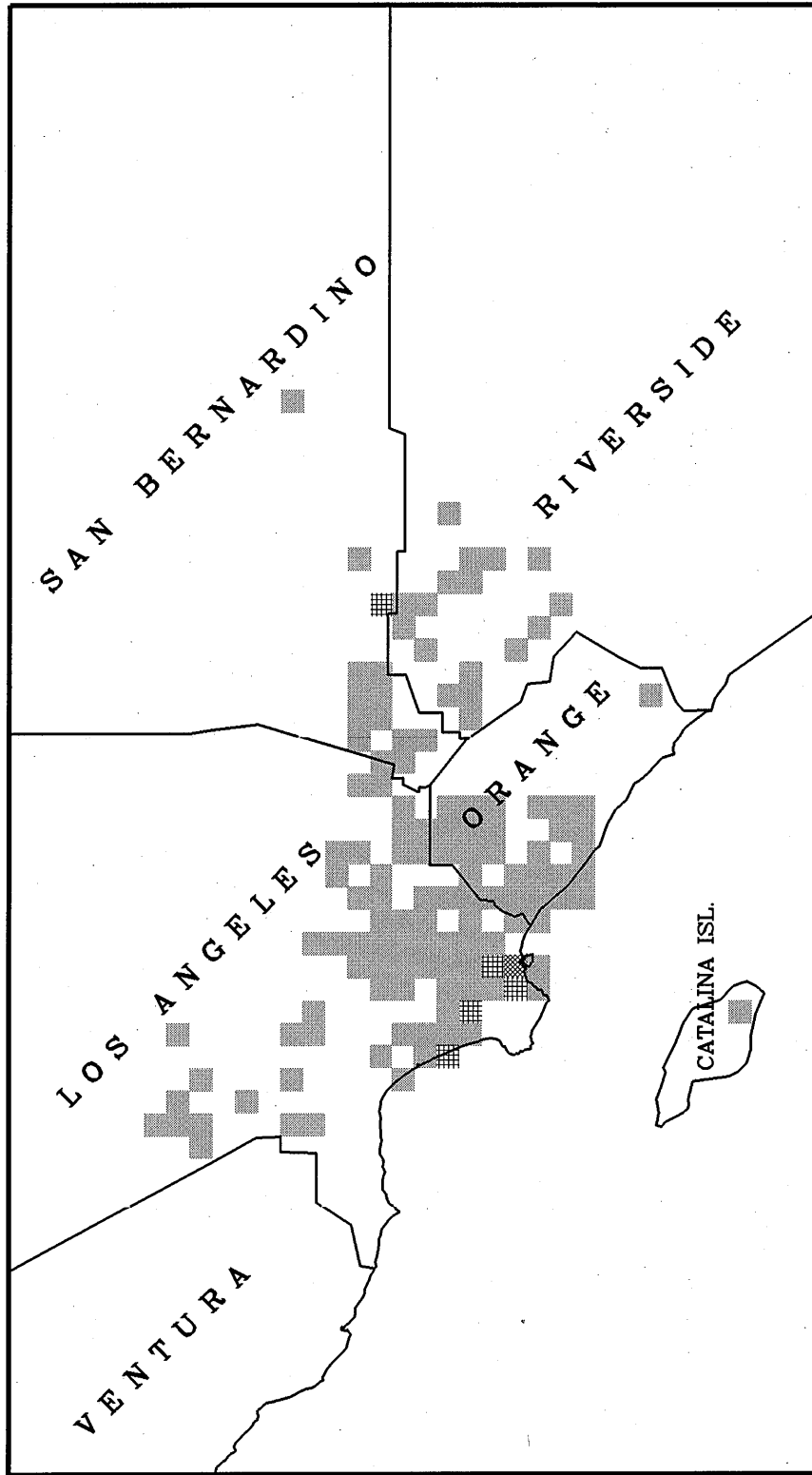
RECLAIM Facilities

Certified NOx Emissions (Tons) from 07/2005 to 09/2005



RECLAIM Facilities

Certified NOx Emissions (Tons) from 10/2005 to 12/2005

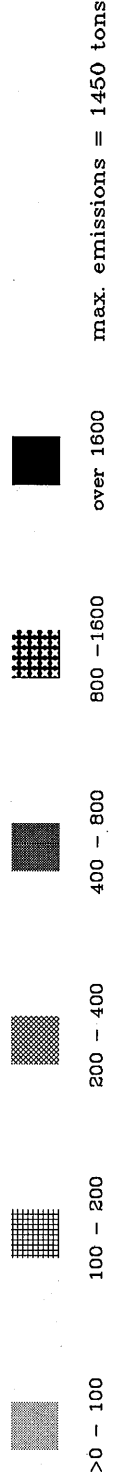
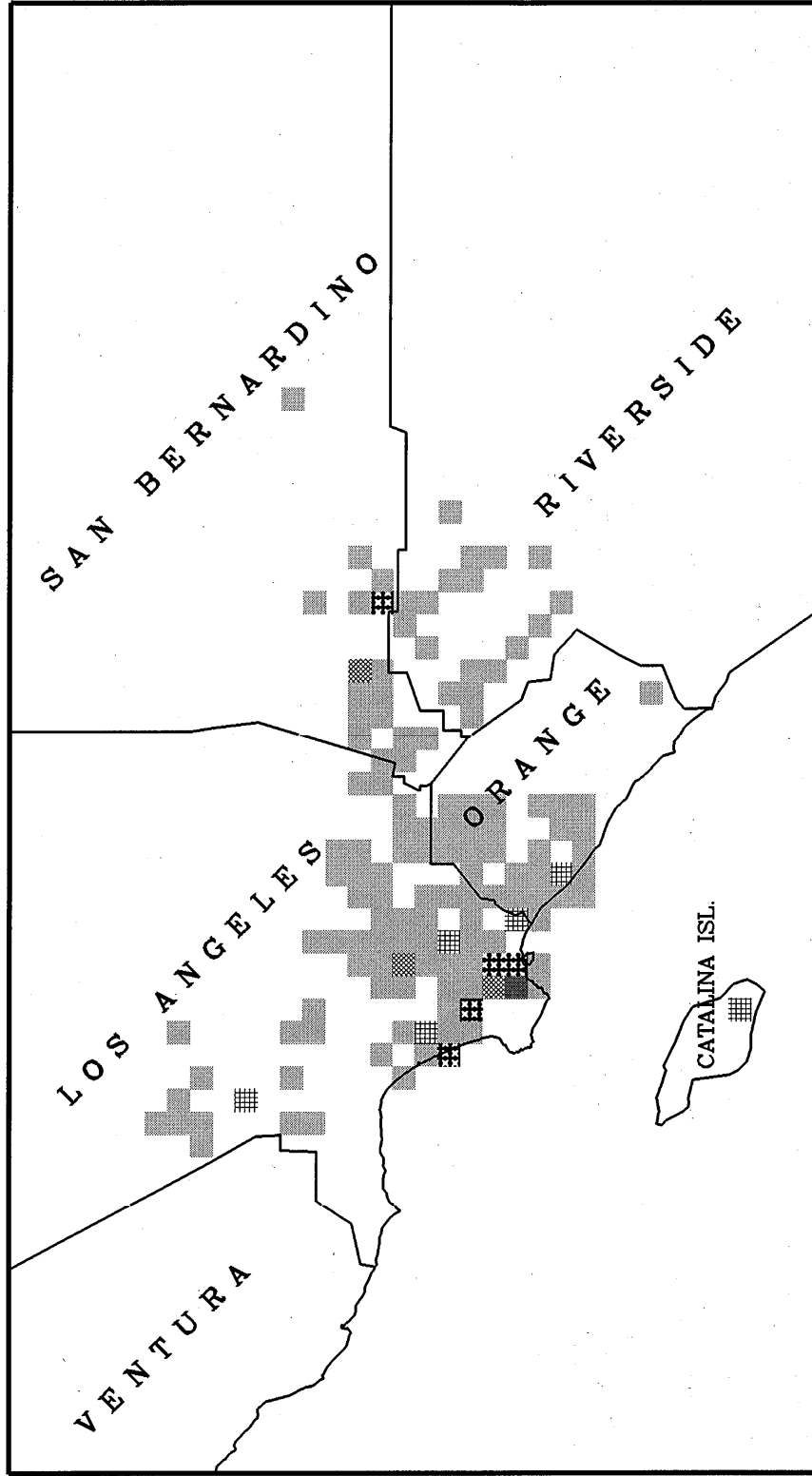


max. emissions = 377 tons

Generated on 12/27/2006

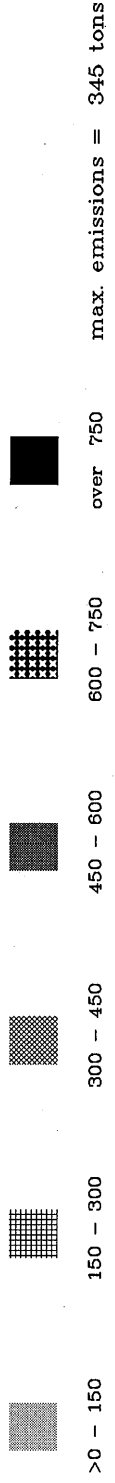
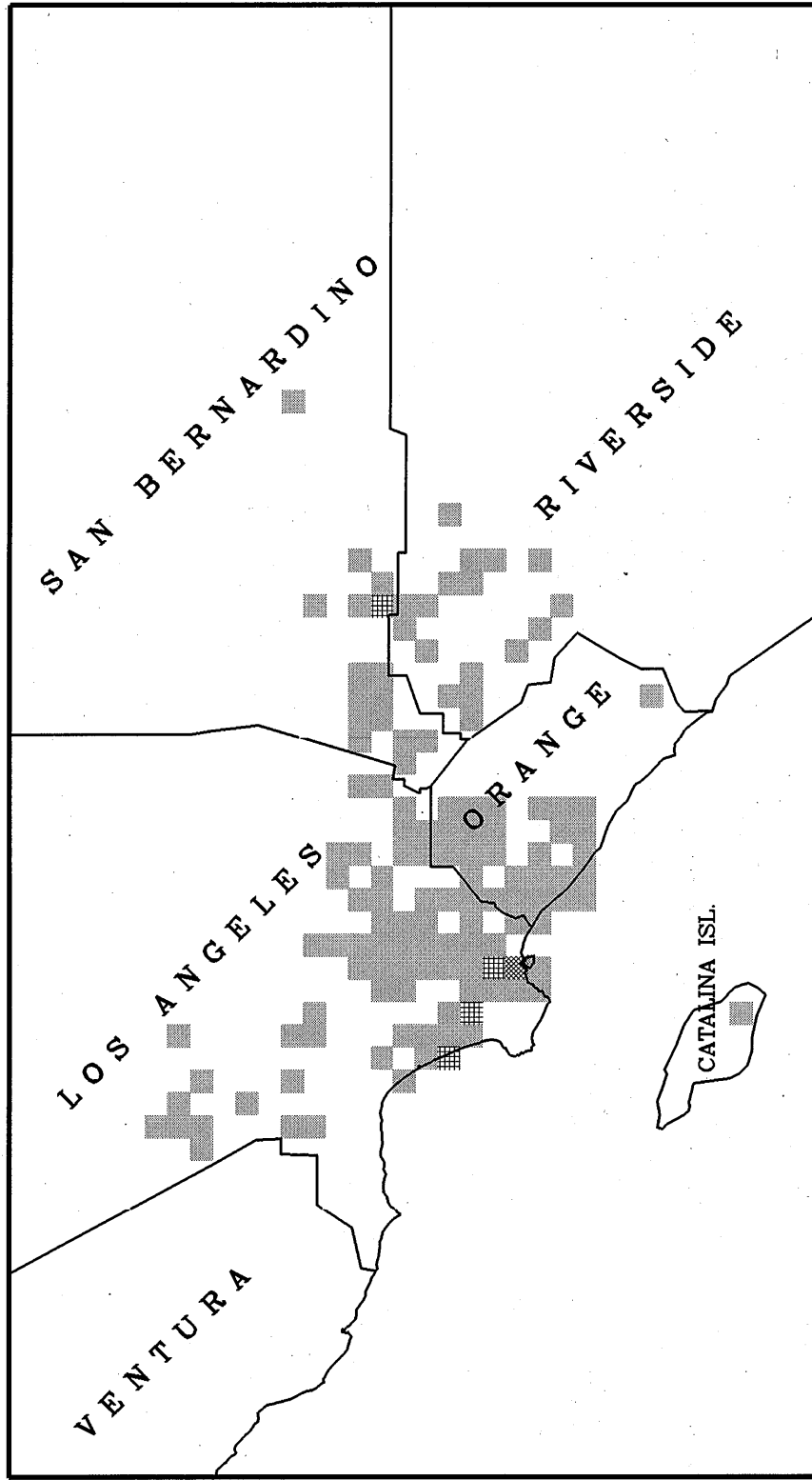
RECLAIM Facilities

Certified NOx Emissions (Tons) Year to date (12/31/2005)



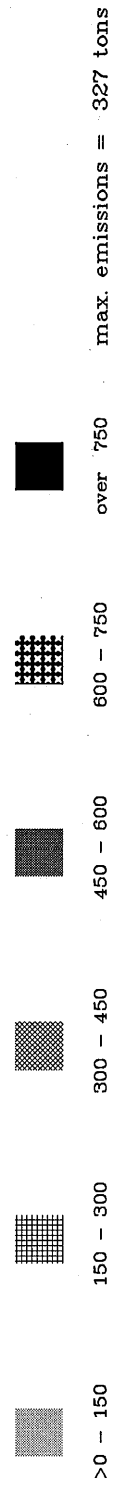
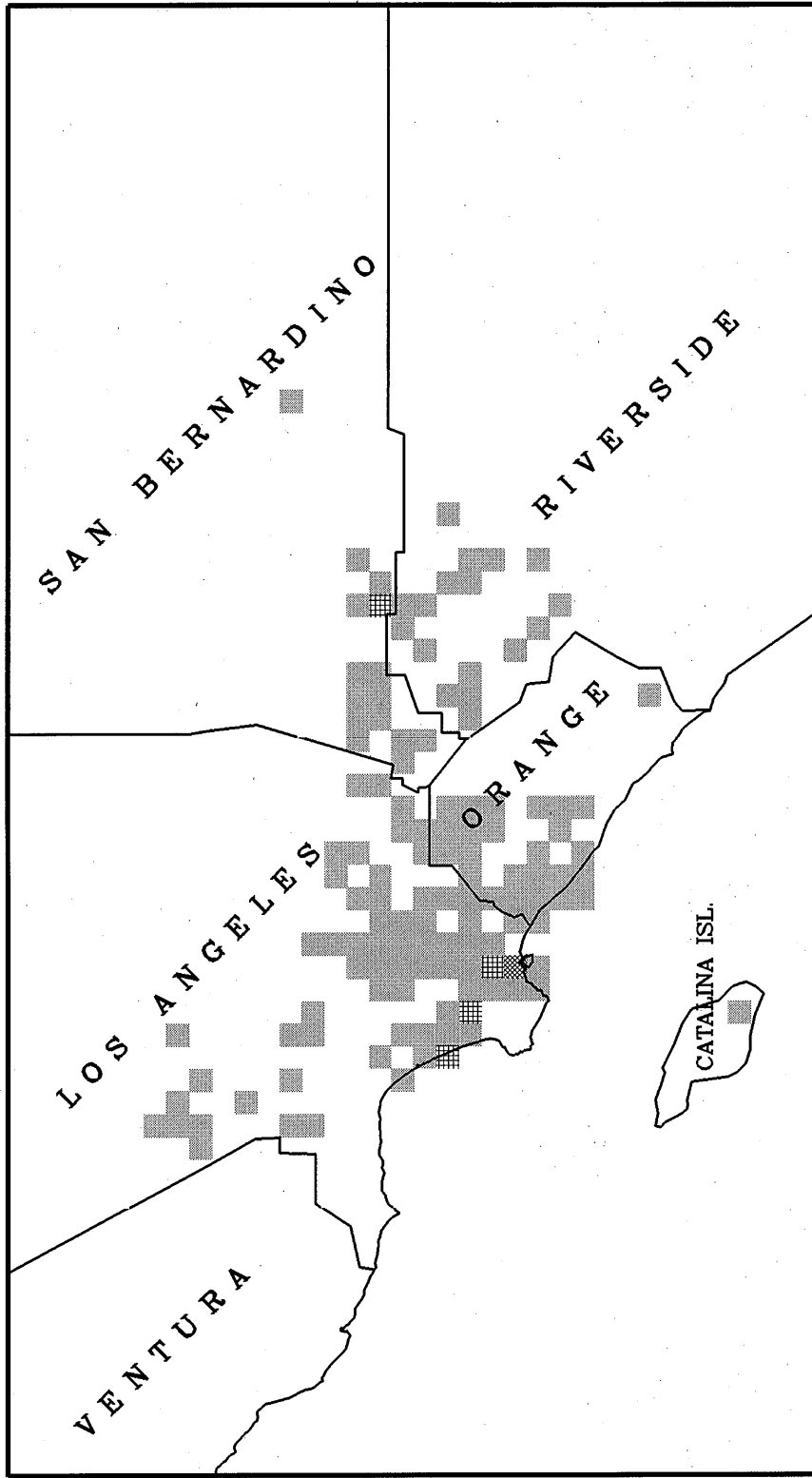
RECLAIM Facilities

Certified NOx Emissions (Tons) from 01/2006 to 03/2006



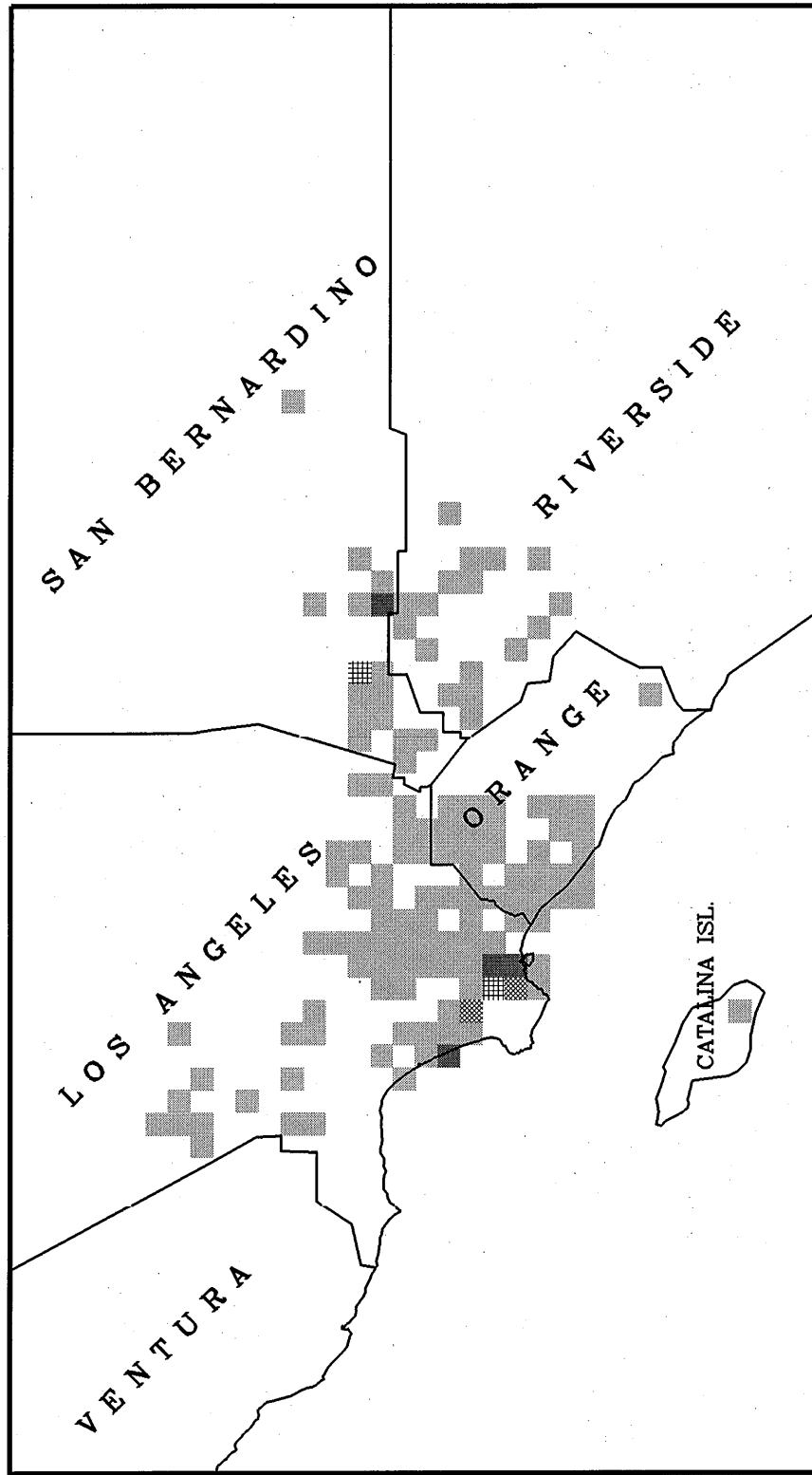
RECLAIM Facilities

Certified NOx Emissions (Tons) from 04/2006 to 06/2006



RECLAIM Facilities

Certified NOx Emissions (Tons) Year to date (06/30/2006)



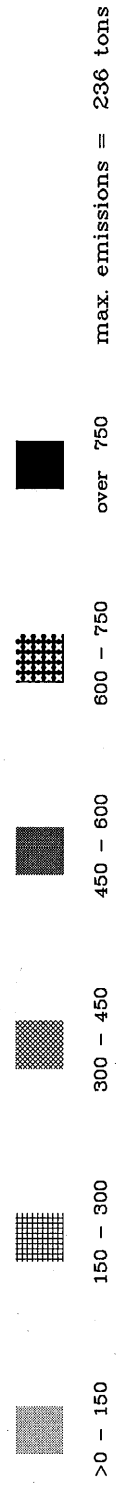
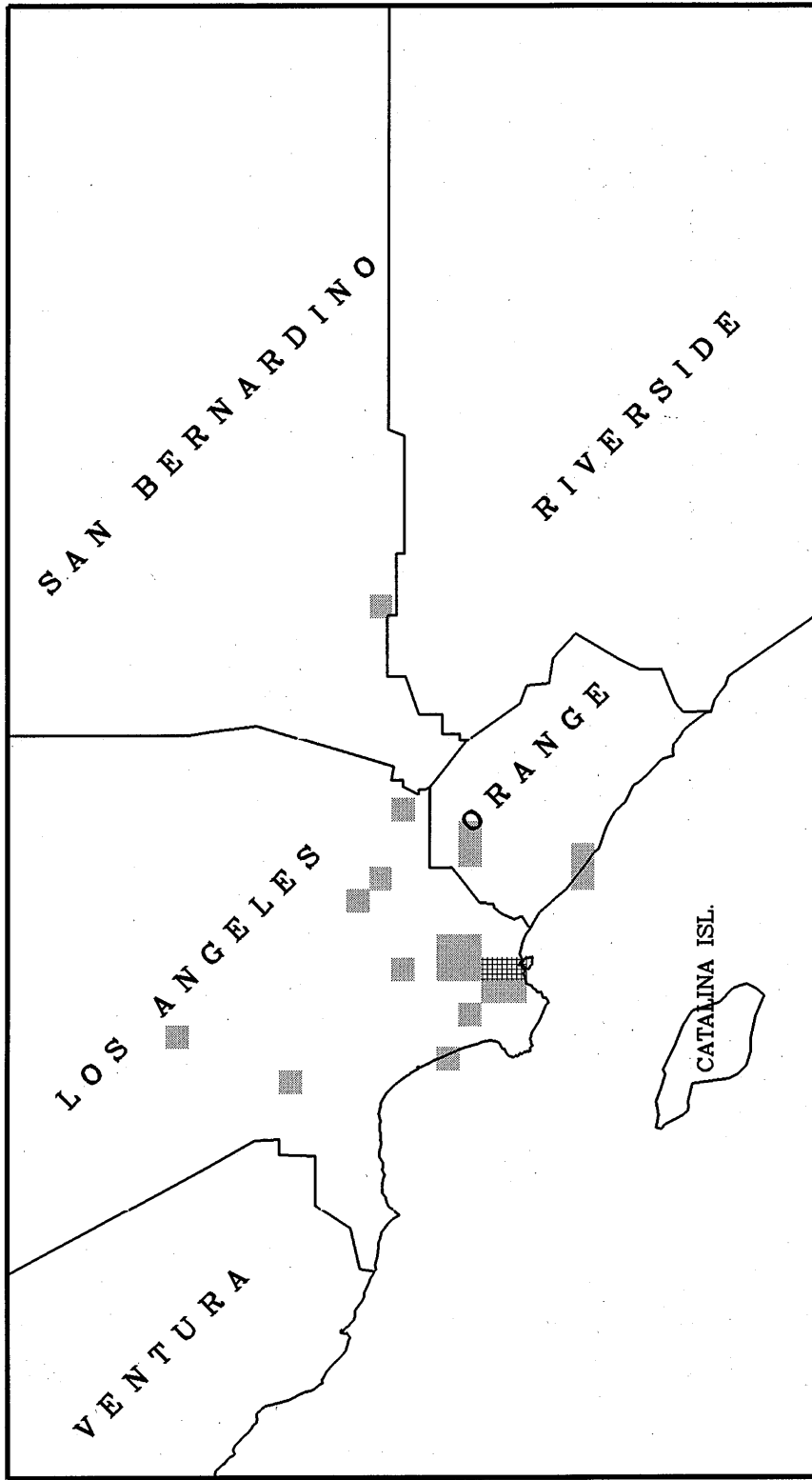
max. emissions = 673 tons

Generated on 12/27/2006

**APPENDIX H
QUARTERLY SOX EMISSION MAPS**

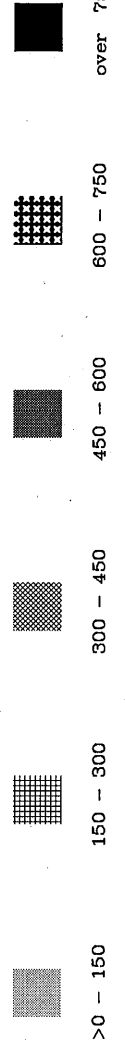
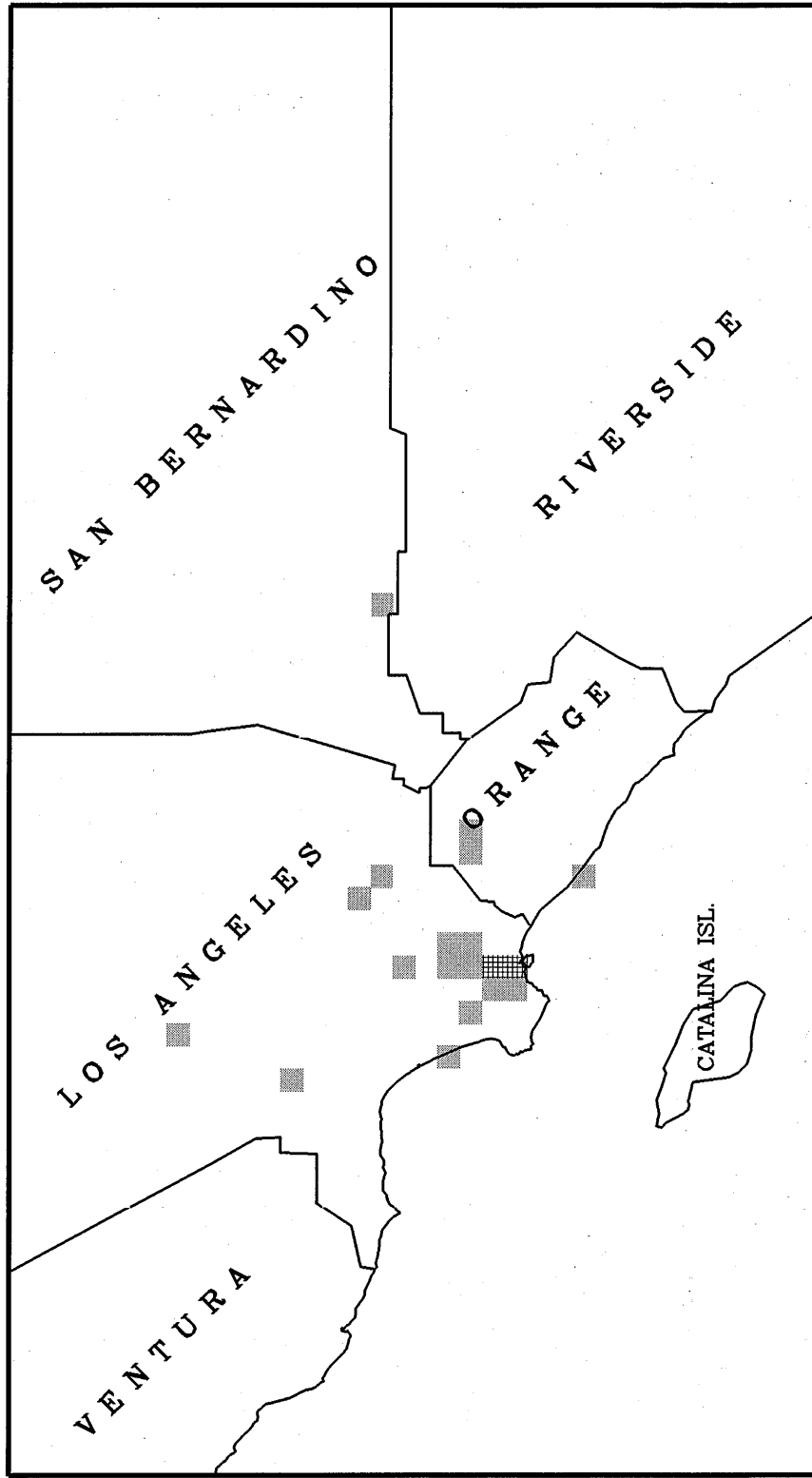
RECLAIM Facilities

Certified SOx Emissions (Tons) from 01/2005 to 03/2005



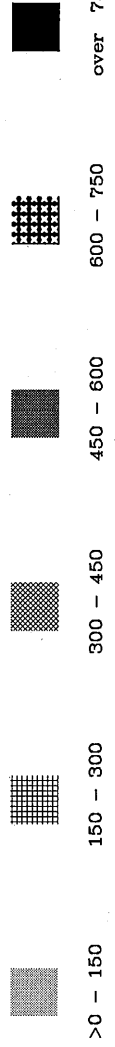
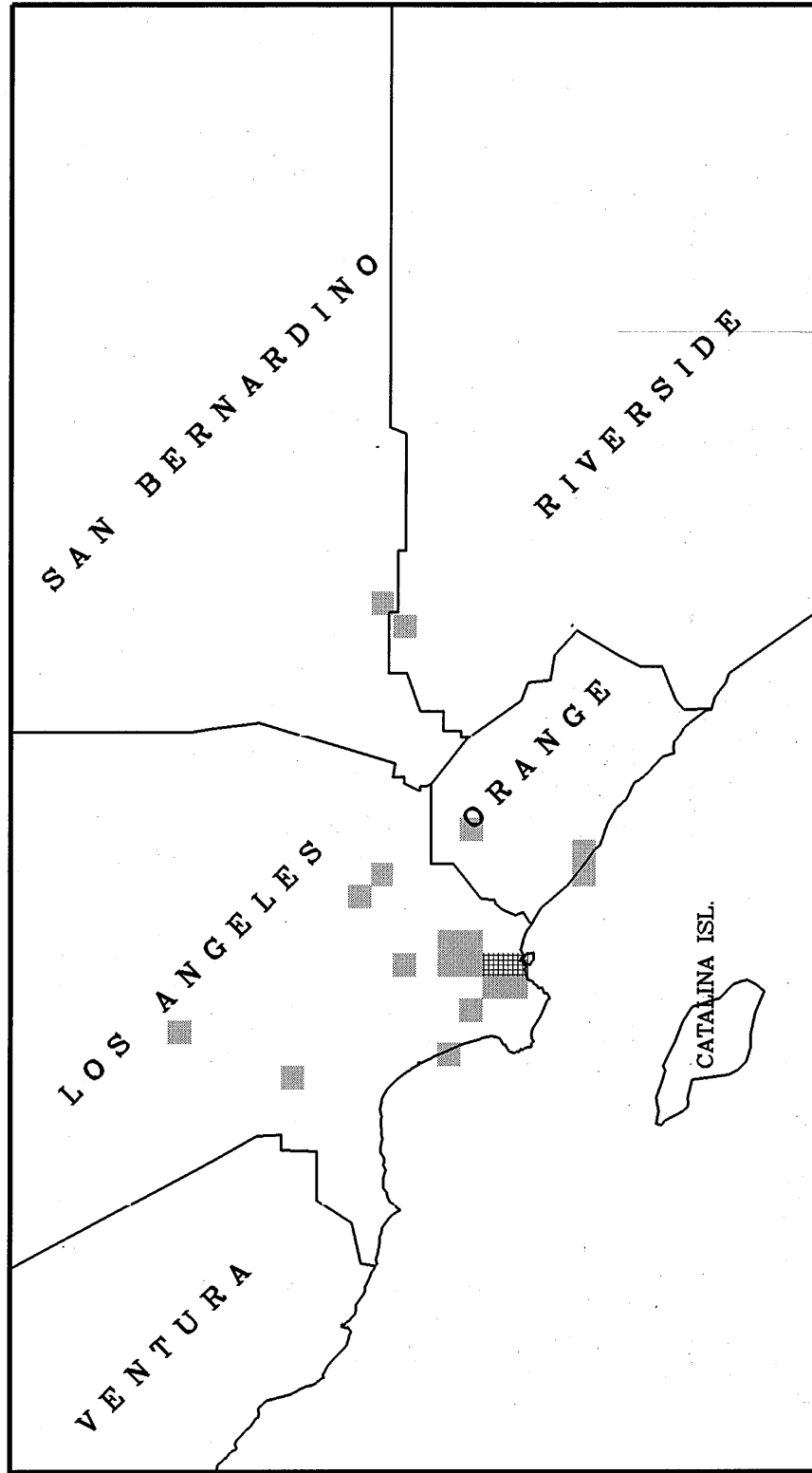
RECLAIM Facilities

Certified SOx Emissions (Tons) from 04/2005 to 06/2005



RECLAIM Facilities

Certified SOx Emissions (Tons) from 07/2005 to 09/2005

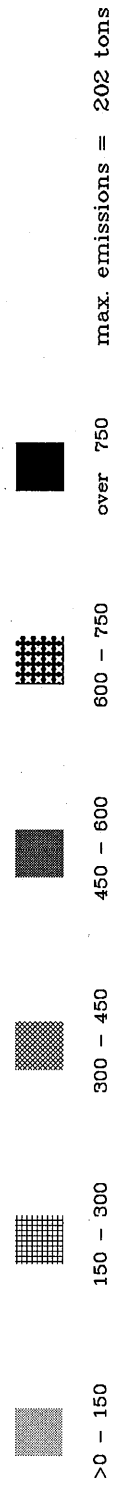
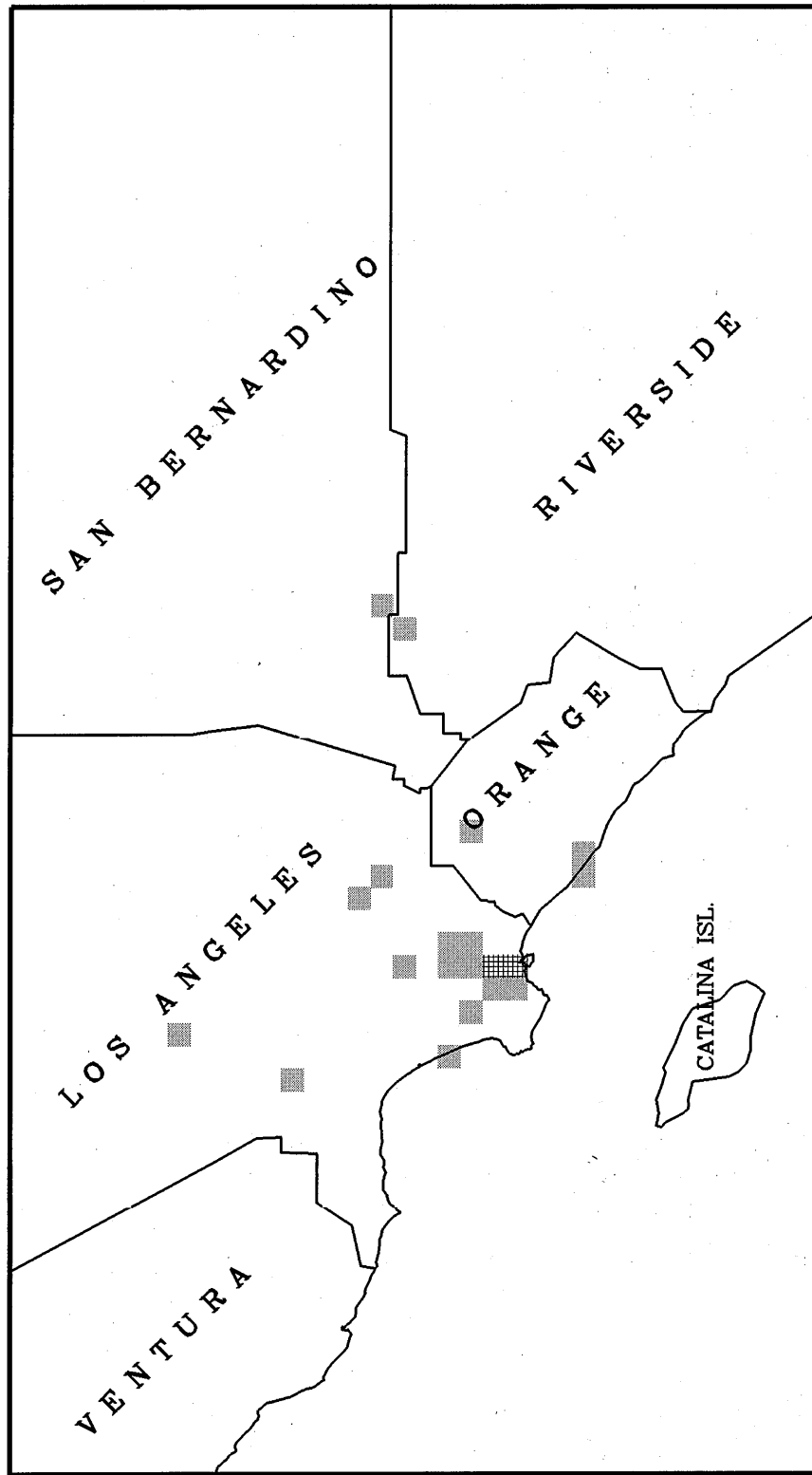


max. emissions = 217 tons

Generated on 12/27/2006

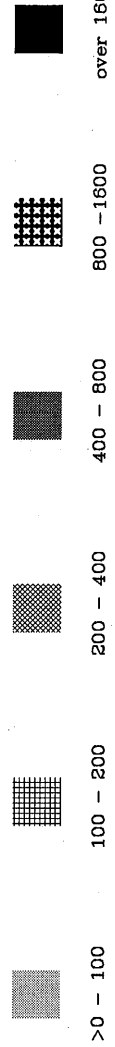
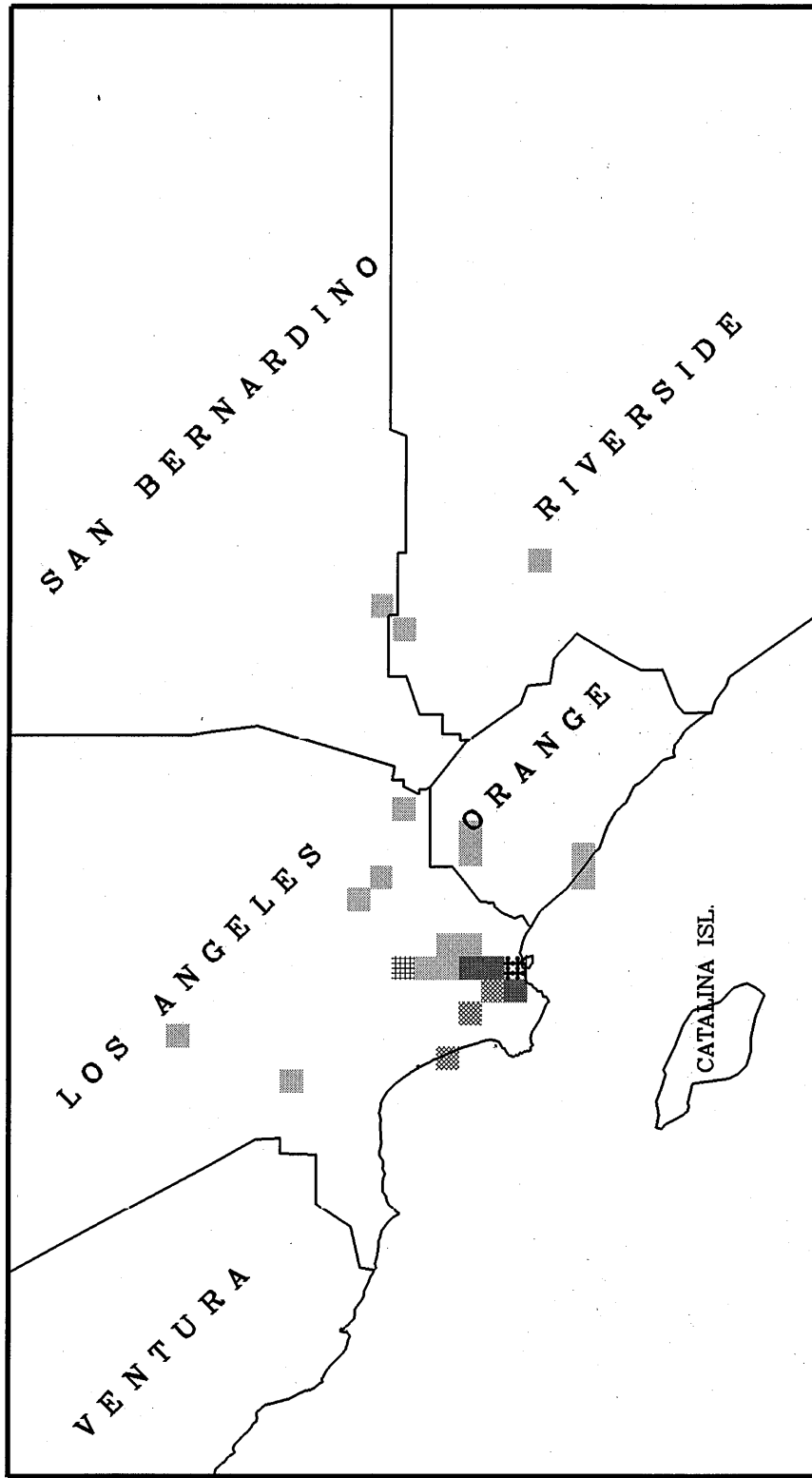
RECLAIM Facilities

Certified SOx Emissions (Tons) from 10/2005 to 12/2005



RECLAIM Facilities

Certified SOx Emissions (Tons) Year to date (12/31/2005)

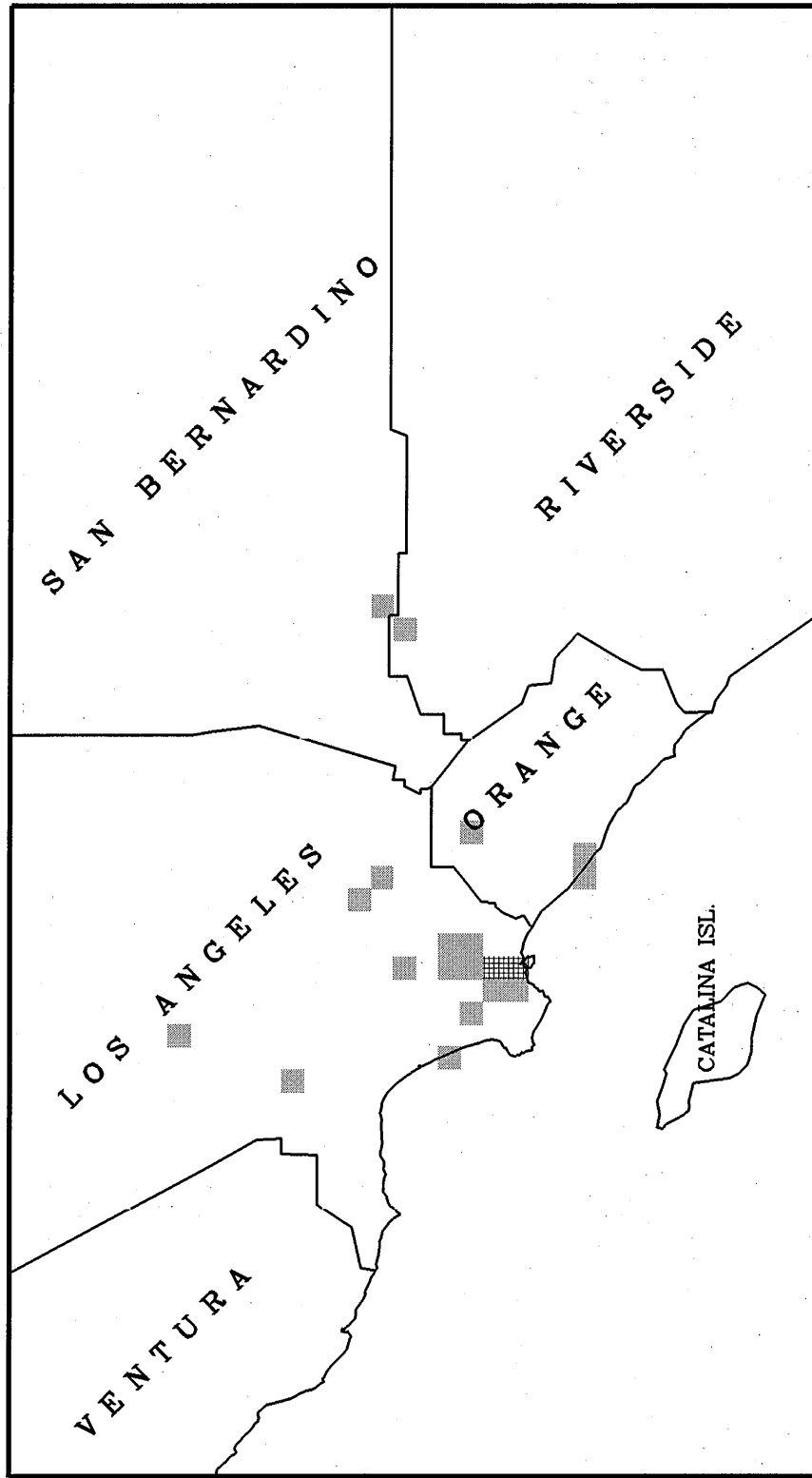


max. emissions = 806 tons

Generated on 12/27/2006

RECLAIM Facilities

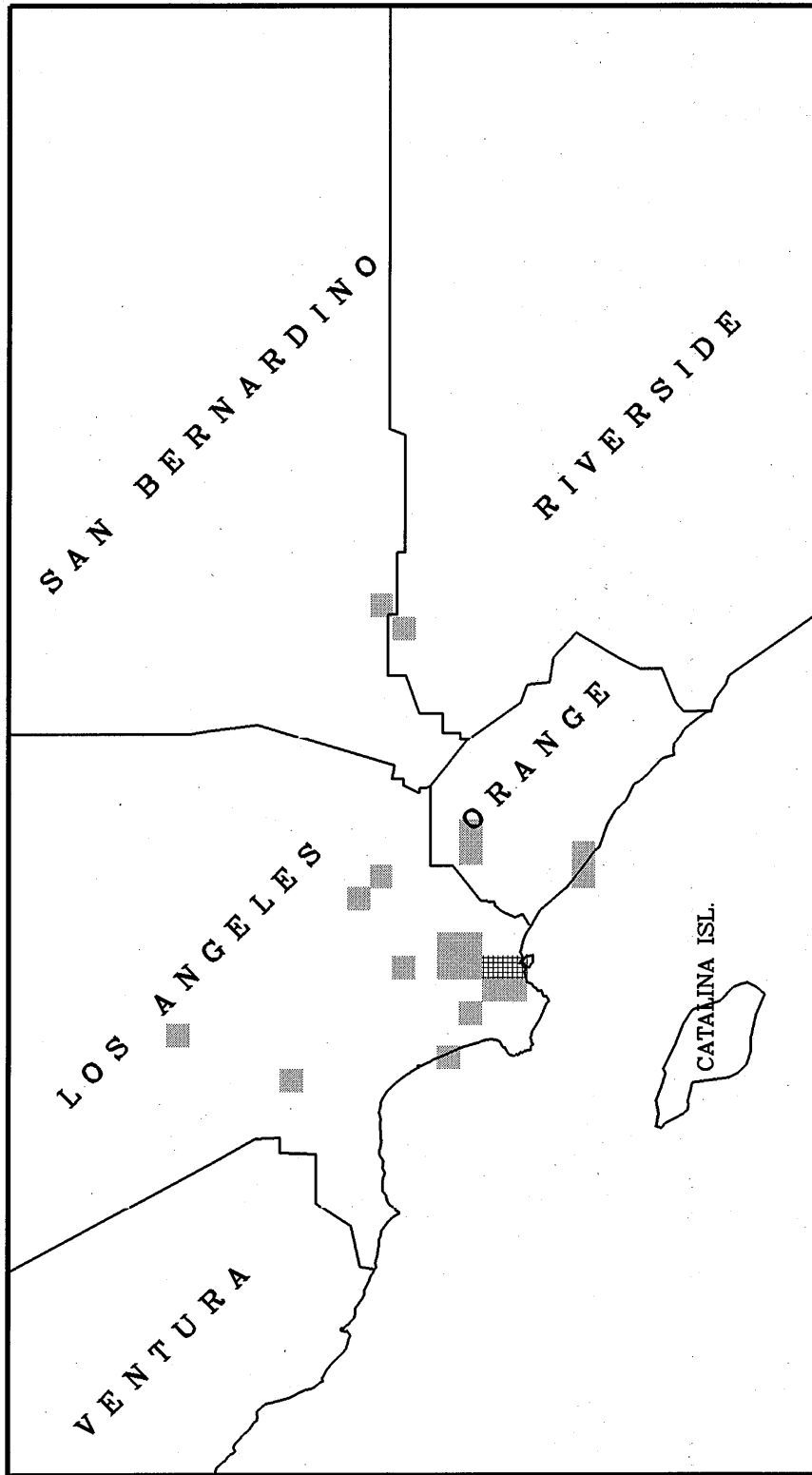
Certified SOx Emissions (Tons) from 01/2006 to 03/2006



>0 - 150 150 - 300 300 - 450 450 - 600 600 - 750 over 750 max. emissions = 268 tons

RECLAIM Facilities

Certified SOx Emissions (Tons) from 04/2006 to 06/2006



RECLAIM Facilities

Certified SOx Emissions (Tons) Year to date (06/30/2006)

