BOARD MEETING DATE: March 2, 2012 AGENDA NO. 25

REPORT: Annual RECLAIM Audit Report for 2010 Compliance Year

SYNOPSIS: The annual report on the NOx and SOx RECLAIM program is prepared in accordance with Rule 2015 - Backstop Provisions. The report assesses emission reductions, availability of RECLAIM Trading Credits (RTCs) and their average annual prices, job impacts, compliance issues, and other measures of performance for the seventeenth 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 did not reconcile their emissions for the 2010 Compliance Year is included with the report.

COMMITTEE: Stationary Source, February 17, 2012, Reviewed

RECOMMENDED ACTION:
Approve the attached annual report.

Barry R. Wallerstein, D.Env.
Executive Officer

MN:JW:DL

Background

The Board adopted the RECLAIM program on October 15, 1993 to provide a more flexible compliance program than command-and-control for specific facilities, subject to the RECLAIM program, which represent AQMD's largest emitters of NOx and SOx. Although RECLAIM was developed as an alternative to command-and-control, it was designed to meet all state and federal clean air program requirements and a variety of performance criteria in order to ensure public health protection, air quality improvement, effective enforcement, and the same or lower implementation costs and job impacts.

Since the RECLAIM program replaced traditional command-and-control regulations, RECLAIM Rule 2015 - Backstop Provisions requires AQMD to conduct annual program audits to assess various aspects of the program and to verify that program objectives are met. AQMD staff has completed audits of facility records and completed the annual audit of the RECLAIM program for Compliance Year 2010. Based on audited emissions

in this report and previous annual reports, AQMD staff has determined that RECLAIM met its emissions goals for Compliance Year 2010, as well as for all previous compliance years with the only exception of NOx emissions in Compliance Year 2000. For that year, NOx emissions exceeded programmatic allocations primarily due to the California energy crisis during that period. For Compliance Year 2010, audited NOx emissions were 29% less than programmatic NOx allocations and audited SOx emissions were 35% less than programmatic SOx allocations.

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

Audit Findings

The audit of the RECLAIM Program during Compliance Year 2010 and trades of RTCs during calendar year 2011show that:

- Overall Compliance – Audited NOx and SOx emissions from RECLAIM facilities were significantly below programmatic allocations.

- Universe – The RECLAIM universe consisted of 284 facilities as of June 30, 2010. Three facilities were included into the RECLAIM universe and six RECLAIM facilities shut down between July 1, 2010 and June 30, 2011. Thus, 281 facilities were in the RECLAIM universe on June 30, 2011. Of the three included facilities, one facility opted to participate only in NOx RECLAIM, the second facility was a new power plant that opted to participate in both NOx and SOx RECLAIM, and the third facility was the result of a partial change of operator of an existing facility participating in both NOx and SOx RECLAIM. Of the six shutdown facilities, two reported high manufacturing costs, and another two cited a declining demand for products as the reasons for shutting down. The fifth facility was shut down after its operations were consolidated under other facilities within the District. The sixth facility that is identified as shutdown was a newly permitted facility that was actually never built.

- Facility Compliance – The vast majority of RECLAIM facilities complied with their Allocations during the 2010 compliance year (92% of NOx facilities and 100% of SOx facilities). Twenty-two facilities (8% of total facilities) exceeded their NOx allocations and no facility exceeded its SOx allocation during the 2010 compliance year. These 22 NOx facilities had total NOx emissions of 374 tons and did not have adequate allocations to offset 51.3 of those tons (14% of the NOx emissions from the 22 facilities, or 0.5% of total RECLAIM allocations).

- Job Impacts – The RECLAIM program had minimal impact on employment during the 2010 compliance year, which is consistent with previous years. RECLAIM facilities reported an overall net gain of 1,094 jobs, representing 1.06% of their total employment. Among the changes in employment, no jobs were reported lost due to RECLAIM, whereas two jobs gained due to RECLAIM were reported by one facility. The job loss and job gain data are compiled strictly from reports submitted by RECLAIM facilities. AQMD staff is not able to verify the reported job impacts data.

- Trading Activity – The RTC trading market activity during calendar year 2011 was slightly slower in terms of number of trades and much lower in total value compared to calendar year 2010. However, the changes in volumes of RTCs traded were mixed. A total of over $1 billion in RTCs has been traded since the adoption of RECLAIM, of which $12.9 million occurred in calendar year 2011 (compared to $47.6 million in calendar year 2010), excluding swaps. Every average annual price of discrete-year and IYB NOx and SOx RTCs traded in calendar year 2011 were below the applicable review thresholds [for discrete year RTCs: $15,000 per ton pursuant to Rule 2015(b)(6), $38,650 per ton for NOx and $27,828 per ton for SOx RTC overall program review thresholds pursuant to Health and Safety Code §39616(f); for IYB RTCs: $579,757 per ton of IYB NOx RTCs and $417,425 per ton of IYB SOx RTCs pursuant to Health and Safety Code Section 39616(f)].

  The average annual prices of RTCs traded during calendar years 2010 and 2011 are summarized in Tables 1 and 2 below:

Table 1 – Average Prices for Discrete-Year RTCs during Calendar Years 2010 and 2011

2010	2011
• $741 per ton for Compliance Year 2009 NOx RTCs • $2,367 per ton for Compliance Year 2010 NOx RTCs • $8,052 per ton for Compliance Year 2011 NOx RTCs	• $693 per ton for Compliance Year 2010 NOx RTCs • $1,561 per ton for Compliance Year 2011 NOx RTCs • $4,121 per ton for Compliance Year 2012 NOx RTCs
• $451 per ton for Compliance Year 2008 SOx RTCs • $1,286 per ton for Compliance Year 2010 SOx RTCs • No Compliance Year 2011 SOx RTCs traded	• $779 per ton for Compliance Year 2010 SOx RTCs • $500 per ton for Compliance Year 2011 SOx RTCs • No Compliance Year 2012 SOx RTCs traded

Table 2 – Average Prices for IYB RTCs during Calendar Years 2010 and 2011

2010	2011
• $95,761 per ton for NOx IYB RTCs • $109,219 per ton for SOx IYB RTCs	• $56,708 per ton for NOx IYB RTCs • $102,366 per ton for SOx IYB RTCs

- Investors Role – The role of investors in the RTC market remains significant. Based on both trading values and volume of trades with price, investor-involved trades constituted a significant portion of the trades recorded in calendar year 2011. For discrete NOx and SOx trades, 61% and 100% of the value and 63% and 100% of the volume of the respective trades involved investors. For IYB NOx and SOx trades, 64% and 99% of the value and 64% and 91% of the volume of respective trades involved investors. Compared to calendar year 2010, investor RTC holdings of total IYB NOx RTCs decreased slightly to 4.8% at the end of calendar year 2011 from 5.5% at the end of calendar year 2010, whereas investors' holdings of IYB SOx RTCs at the end of calendar year 2011 increased to 0.5% from 0.01% at the end of calendar year 2010.

- Other Findings – RECLAIM also met other applicable requirements including meeting the applicable federal offset ratio under New Source Review; having no significant seasonal fluctuation in emissions, and having no increase in health impacts due to toxics, since all RECLAIM facilities are subject to the same requirements for controlling toxic emissions as other, non-RECLAIM, facilities. The quarterly emission maps, pursuant to Rule 2015(b)(2) are also presented in this report.

Attachment
Annual RECLAIM Audit Report for 2010 Compliance Year

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Annual RECLAIM Audit Report for 2010 Compliance Year

March 2, 2012

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

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EXECUTIVE OFFICER

Barry R. Wallerstein, D.Env.

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LIST OF ABBREVIATIONS

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

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 represented 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 reducing emissions at their facility, and/or purchasing RECLAIM Trading Credits (RTCs) from other RECLAIM facilities, or from other RTC holders.

Rule 2015 - Backstop Provisions includes provisions for annual program audits focusing on specific topics, as well as a one-time comprehensive audit of the program's first three years, to ensure that RECLAIM is meeting all state and federal requirements and other performance criteria. Rule 2015 also provides backstop measures if the specific criteria are not met. This report constitutes the Rule 2015 annual audit report for Compliance Year 2010 (January 1 through December 31, 2010 for Cycle 1 and July 1, 2010 through June 30, 2011 for Cycle 2 facilities).

Chapter 1: RECLAIM Universe

When RECLAIM was first adopted in October 1993, a total of 394 facilities were identified as the initial "universe" of sources subject to the requirements of RECLAIM. From program adoption through June 30, 2010, the overall changes in RECLAIM participants were 118 facilities included into the program, 70 facilities excluded from the program, and 158 facilities ceased operation. Thus, the RECLAIM universe consisted of 284 active facilities on July 1, 2010. From July 1, 2010 through June 30, 2011, three facilities were included into the RECLAIM universe (two facilities in both the oxides of nitrogen [NOx] and oxides of sulfur [SOx] universes and one in the NOx universe only), no facility was excluded, and six NOx only facilities shut down and are no longer in the active RECLAIM universe. These changes resulted in a net decrease of three facilities in the universe, bringing the total number of active RECLAIM facilities to 281 by June 30, 2011.

Chapter 2: RTC Allocations and Trading

On January 7, 2005, the Governing Board adopted amendments to RECLAIM that resulted in an overall 22.5% reduction in NOx Allocations phased in from 2007 through 2011. For Compliance Year 2010, the cumulative NOx RTC reduction was 19.8% since 2007. Additionally, the Compliance Year 2010 RTC supply increased by 16.2 tons for NOx and decreased by 17.3 tons for SOx due to allocation adjustments for clean fuel production pursuant to Rule 2002(c)(12). Therefore, NOx and SOx RTC supplies for Compliance Year 2010 were 10,053

and 4,282 tons, respectively. On November 5, 2010, the Governing Board adopted further amendments to RECLAIM that will result in an overall reduction of 5.7 tons/day (or 48.4%) in SOx Allocations with the reductions phased in from 2013 through 2019.

During calendar year 2011, there were 380 registered RTC transactions with a total value of $12.9 million traded, excluding the values reported for swaps. Since the inception of the RECLAIM program in 1994, a total value of over one billion dollars has been traded in the RTC trading market, excluding swaps. In terms of volume traded in calendar year 2011, 3,432 tons of discrete NOx, 413 tons of discrete SOx RTCs, 498 tons of IYB NOx and 19 tons of IYB SOx RTCs were traded.

The average annual prices of discrete-year NOx RTCs traded during calendar year 2011 were $693 per ton for Compliance Year 2010 RTCs, $1,561 per ton for Compliance Year 2011 RTCs, and $4,121 per ton for Compliance Year 2012 RTCs. The average annual prices for discrete-year SOx RTCs traded during the same period were $779 per ton for Compliance Year 2010 RTCs and $500 per ton for RTCs for Compliance Year 2011. Therefore, the average annual prices for discrete NOx and SOx RTCs for all compliance years remained well below the $15,000 per ton threshold to evaluate and review the compliance aspects of the program set forth by AQMD Rule 2015, as well as the $38,650 per ton of NOx and $27,828 per ton of SOx discrete RTCs pre-determined overall program review thresholds established by the Governing Board pursuant to Health and Safety Code §39616(f).

The average annual price during calendar year 2011 for IYB NOx RTCs was $56,708 per ton, and the average annual price for IYB SOx RTCs was $102,366 per ton. Therefore, average annual IYB RTC prices did not exceed the $579,757 per ton of IYB NOx RTCs or the $417,425 per ton of IYB SOx RTCs pre-determined overall program review thresholds established by the Governing Board pursuant to Health and Safety Code §39616(f).

The role of investors in the RTC market remains significant. Based on both trading values and the number of trades with price, investors were involved in a significant portion of the trades recorded in calendar year 2011 (61% and 100% of total value and 63% and 100% of total volume for discrete NOx and SOx trades, respectively; 64% and 99% of total value and 64% and 91% of total volume for IYB NOx and SOx trades, respectively). Investors' holdings of IYB NOx RTCs was 4.8%, and IYB SOx RTCs was 0.5% at the end of calendar year 2011.

Chapter 3: Emission Reductions Achieved

For Compliance Year 2010, aggregate NOx emissions were below total allocations by 29% and aggregate SOx emissions were below total allocations by 35%. No emissions associated with breakdowns were excluded from reconciliation with facility allocations in Compliance Year 2010. Accordingly, no mitigation is necessary to offset excluded emissions due to approved Breakdown Emission Reports. Therefore, based on audited emissions, it can be concluded that RECLAIM has clearly achieved its targeted emission reductions.

Chapter 4: New Source Review Activity

The annual program audit assesses New Source Review (NSR) activity from RECLAIM facilities in order to ensure that RECLAIM is complying with federal NSR requirements and state no net increase (NNI) in emissions requirements, while providing flexibility to facilities in managing their operations and allowing new sources into the program. In Compliance Year 2010, a total of 30 NOx RECLAIM facilities had NSR NOx emission increases due to expansion or modification, and four SOx RECLAIM facilities had NSR SOx emission increases due to expansion or modification. The consistent trend of surplus NOx and SOx RTCs over their respective emissions has allowed for expansion and modification by existing facilities.

RECLAIM is required to comply with federal NSR emissions offset requirements at a 1.2-to-1 offset ratio for NOx emission increases and at least at a 1-to-1 offset ratio for SOx emission increases on a programmatic basis. In Compliance Year 2010, RECLAIM provided an offset ratio of 34-to-1 for NOx, demonstrating federal equivalency. RECLAIM inherently complies with the federally-required 1-to-1 SOx offset ratio for any compliance year provided aggregate SOx emissions under RECLAIM are lower than or equal to aggregate SOx allocations for that compliance year. As shown in Chapter 3, there was no programmatic SOx exceedance during Compliance Year 2010; in fact, there was a surplus of SOx RTCs. Therefore, RECLAIM more than complied with the federally-required SOx offset ratio and further quantification of the SOx offset ratio is unnecessary. Compliance with the federally-required offset ratio also demonstrates compliance with the state NNI requirements for new or modified sources. In addition, RECLAIM requires application of Best Available Control Technology (BACT) for all new or modified sources with emission increases.

Chapter 5: Compliance

There were 284 NOx and 32 SOx active facilities in the RECLAIM program at the start of Compliance Year 2010. During Compliance Year 2010, two facilities were included into both the NOx and SOx universes, one facility was included only into the NOx universe, no facilities were excluded, and six facilities in the NOx universe shut down. Of these 287 NOx RECLAIM Facility Permit holders during Compliance Year 2010, 265 facilities (92%) complied with their NOx allocations, and all of the SOx facilities (100%) complied with their SOx allocations. The 22 NOx facilities that exceeded their NOx allocations had aggregate NOx emissions of 374 tons and did not have adequate allocations to offset 51.3 tons (or 14%) of their emissions. This exceedance amount is small compared to the overall allocations for Compliance Year 2010 (0.5% of NOx allocations). The exceedances from these 22 facilities did not impact RECLAIM emission reduction goals. The overall RECLAIM NOx and SOx emission reduction targets and goals were met for Compliance Year 2010 (*i.e.*, aggregate emissions for all active RECLAIM facilities were well below aggregate allocations).

Chapter 6: Reported Job Impacts

This chapter compiles data as reported by RECLAIM facilities in their Annual Permit Emissions Program (APEP) report. The analysis focuses exclusively on job impacts at RECLAIM facilities and if those job impacts were directly

attributable to RECLAIM as reported by those facilities. There may be additional effects of the RECLAIM program on the local economy outside of RECLAIM facilities (*e.g.*, generating jobs for consulting firms, source testing firms and CEMS vendors) and also factors other than RECLAIM (*e.g.*, the current economic downturn), that impact the job market. These factors are not evaluated in this report.

According to the Compliance Year 2010 employment survey data gathered from APEP reports, RECLAIM facilities reported a net gain of 1,094 jobs, representing 1.06% of their total employment. One facility (0.35% of the active facilities) indicated that the RECLAIM program resulted in two job gains at its facility. Among the facilities that reported job losses, the indicated reasons for these losses were attributed to factors other than RECLAIM. Six RECLAIM facilities were listed as shutdown during Compliance Year 2010. None of these facilities reported on their APEP report that RECLAIM was a contributing factor in their decision to close. One facility identified in this report as shutdown was actually not built.

Chapter 7: Air Quality and Public Health Impacts

Audited RECLAIM emissions have been in an overall downward trend since the program's inception. NOx and SOx emissions in Compliance Year 2010 continued their downward trend (reduced by 2.5% and 5.8%, respectively, compared to Compliance Year 2009). Quarterly calendar year 2010 NOx emissions ranged from approximately two percent below to five percent above the mean NOx emissions for the year. Quarterly calendar year 2010 SOx emissions ranged from approximately seven percent below to nine percent above the year's mean SOx emissions. There was no significant shift in seasonal emissions from the winter season to the summer season. Furthermore, maps of quarterly Compliance Year 2010 emissions were prepared and are presented in this chapter pursuant to Rule 2015(b)(2).

The California Clean Air Act (CCAA) required a 50% reduction in population exposure to ozone, relative to a baseline averaged over three years (1986 through 1988), by December 31, 2000. Analysis of per capita exposure (the length of time each person is exposed) to ozone in 1998 and 2000 shows that the Basin achieved the December 2000 target for ozone well before the deadline. In fact, Los Angeles County, Orange County, and the South Coast Air Basin overall achieved compliance with the December 2000 target prior to 1994, and Riverside and San Bernardino Counties achieved compliance in 1996. In calendar year 2011, the per capita exposure to ozone continued to be well below the target set for December 2000.

Air toxic health risk is primarily caused by emissions of certain volatile organic compounds (VOCs) and fine particulates, such as metals. RECLAIM facilities are subject to the same air toxic, VOC, and particulate matter regulations as other sources in the Basin. All sources are subject, where appropriate, to the NSR Rule for Toxics (Rule 1401). In addition, new or modified sources with NOx or SOx emission increases are required to be equipped with BACT which minimizes to the extent feasible the increase of NOx and SOx emissions. Therefore, it can be concluded that the RECLAIM program creates no increased toxic impact beyond what would have occurred with the rules and control

measures RECLAIM subsumed, and therefore poses no increased adverse public health impacts.

INTRODUCTION

The South Coast Air Quality Management District (AQMD) REgional CLean Air Incentives Market (RECLAIM) program was adopted in October 1993 and replaced certain command-and-control rules regarding oxides of nitrogen (NOx) and oxides of sulfur (SOx) with a new market incentives program for facilities that meet the inclusion criteria. The goals of RECLAIM are to provide facilities with added flexibility in meeting emissions reduction requirements while lowering the cost of compliance. The RECLAIM program was designed to meet all state and federal clean air program requirements, as well as other performance criteria, such as equivalent or better air quality improvement, enforcement, implementation costs, job impacts, and no adverse public health impacts.

Since RECLAIM represents a significant change from traditional command-and-control regulations, RECLAIM rules include provisions for program audits in order to verify that the RECLAIM objectives are being met. The rules provide for a comprehensive audit of the first three years of program implementation and for annual audits. The audit results are used to help determine whether any program modifications are appropriate. AQMD staff has completed the initial tri-annual audit and each individual annual audit report through the 2010 Compliance Year Audit.

This report presents the annual audit and progress report of RECLAIM's seventeenth compliance year (January 1 through December 31, 2010 for Cycle 1 and July 1, 2010 through June 30, 2011 for Cycle 2 RECLAIM facilities), also known as Compliance Year 2010. As required by Rule 2015(b)(1) – Annual Audits, this audit assesses:

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

The annual audit is organized into the following chapters:

1. RECLAIM Universe
   This chapter discusses changes in the universe of RECLAIM sources that occurred from July 1, 2010 through June 30, 2011.
2. RTC Allocations and Trading
   This chapter summarizes changes in emissions allocations in the RECLAIM universe, RTC supply and RTC trading activity, average annual prices, availability of RTCs, and market participants.
3. Emission Reductions Achieved
   This chapter assesses emissions trends and reductions for RECLAIM sources, emissions associated with equipment breakdowns, and emissions control requirement impacts on RECLAIM sources compared to other stationary sources. It also discusses the latest amendments to the RECLAIM program.
4. New Source Review Activity
   This chapter summarizes New Source Review (NSR) activities at RECLAIM facilities.
5. Compliance
   This chapter discusses compliance activities and the compliance status of RECLAIM facilities. It also evaluates the effectiveness of AQMD's compliance program, as well as the monitoring, reporting, and recordkeeping (MRR) protocols for NOx and SOx.
6. Reported Job Impacts
   This chapter addresses job impacts and facilities permanently ceasing operation of all emission sources.
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 first adopted in October 1993, a total of 394 facilities were identified as the initial "universe" of sources subject to the requirements of RECLAIM. From program adoption through June 30, 2010, the overall changes in RECLAIM participants were 118 facilities included into the program, 70 facilities excluded from the program, and 158 facilities ceased operation. Thus, the RECLAIM universe consisted of 284 active facilities on July 1, 2010. From July 1, 2010 through June 30, 2011, three facilities were included into the RECLAIM universe (two facilities in both the oxides of nitrogen [NOx] and oxides of sulfur [SOx] universes and one in the NOx universe only), no facility was excluded, and six NOx only facilities shut down and are no longer in the active RECLAIM universe. These changes resulted in a net decrease of three facilities in the universe, bringing the total number of active RECLAIM facilities to 281 by June 30, 2011.

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 dry cleaners; restaurants; police and fire fighting facilities; construction and operation of landfill gas control, processing or landfill gas energy facilities; public transit facilities, potable water delivery operations; facilities that converted all sources to operate on electric power prior to October 1993; and facilities, other than electric generating facilities established on or after January 1, 2001, located in the Riverside County portions of the Mojave Desert Air Basin or the Salton Sea Air Basin.

Other categories of facilities are not automatically included but do have the option to enter the program at their discretion. These categories include electric utilities (exemption only for the SOx program); equipment rental facilities; facilities possessing solely "various locations" permits; schools or universities; portions of facility research operations; ski resorts; prisons; hospitals; publicly-owned municipal waste-to-energy facilities; publically-owned sewage treatment facilities operating with an approved regional growth plan; electrical power generating systems owned and operated by the Cities of Burbank, Glendale, or Pasadena or their successors; facilities on San Clemente Island; agricultural facilities; and electric generating facilities that are new on or after January 1, 2001 and located in the Riverside County portions of the Mojave Desert Air Basin or the Salton Sea Air Basin. An initial universe of 394 RECLAIM facilities was developed using the inclusion criteria initially adopted in the RECLAIM program based on 1990, 1991 and 1992 facility emissions data.

A facility that is not in a category that is specifically 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 NOx and/or SOx emissions above the four-ton per year threshold; or

It ceases to be categorically excluded and its reported NOx and/or SOx emissions are greater than or equal to four tons per year; or

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

Each RECLAIM facility is issued at the time of joining RECLAIM an annually declining allocation of emission credits ("RECLAIM Trading Credits" or "RTCs") based on its historic production level (if the facility existed prior to January 1, 1993), external offsets it previously provided, and any Emission Reduction Credits (ERCs) generated at and held by the facility. Each RECLAIM facility's RTC holdings constitute an annual emissions budget. RTCs may be bought or sold as the facilities deem appropriate (see Chapter 2 – RTC Allocations and Trading).

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 remaining RTCs and participate in the trading market.

Universe Changes

The RECLAIM rules include several mechanisms to exclude facilities originally included in the program and to add new facilities. The overall changes to the RECLAIM universe from the date of adoption (October 15, 1993) through the end of Compliance Year 2009 (June 30, 2010) were: the inclusion of 118 facilities (30 facilities created by partial change of operator of existing RECLAIM facilities), the exclusion of 70 facilities, and the shutdown of 158 facilities. Thus, the net change in the RECLAIM universe during the first 16 compliance years was a decrease of 110 facilities from 394 to 284 facilities. From July 2010 through June 30, 2011, three facilities were included, no facility was excluded, and six facilities shut down. These changes brought the total number of facilities in the RECLAIM universe to 281 facilities. These include 247 NOx-only, no SOx-only, and 34 both NOx and SOx RECLAIM facilities. The list of active facilities in the RECLAIM universe as of June 30, 2011 (the end of Compliance Year 2010 for Cycle 2 facilities) is provided in Appendix A.

Facility Inclusions and Exclusions

Between July 1, 2010 and June 30, 2011, three facilities were added to the RECLAIM universe. Two facilities are newly constructed power plants and opted to participate in the RECLAIM program. One of the two newly constructed power plants opted to participate in both the NOx and SOx portions of RECLAIM, whereas the other opted to participate in only the NOx portion. The third facility is the result of a partial change of operator of an existing facility participating in both NOx and SOx RECLAIM. These three facilities and the reasons for their inclusion are listed in Appendix B.

No facility was excluded from the RECLAIM universe between July 1, 2010 and June 30, 2011.

Facilities Permanently Ceasing Operations

Six RECLAIM facilities permanently ceased operations between July 1, 2010 and June 30, 2011. One of these facilities was planned but never built, and therefore does not represent an actual shutdown of formerly operating equipment. The second shutdown facility distributed its operations to other existing facilities and all equipment at this facility was shutdown. Finally, the high cost of manufacturing was cited by two other facilities, while the two remaining facilities stated that declining demand for their products, in addition to cost of manufacturing, were the reasons for shutdown. These facilities were in NOx RECLAIM and not in SOx RECLAIM. Appendix C lists these facilities and provides brief descriptions of the reported reasons for their closures.

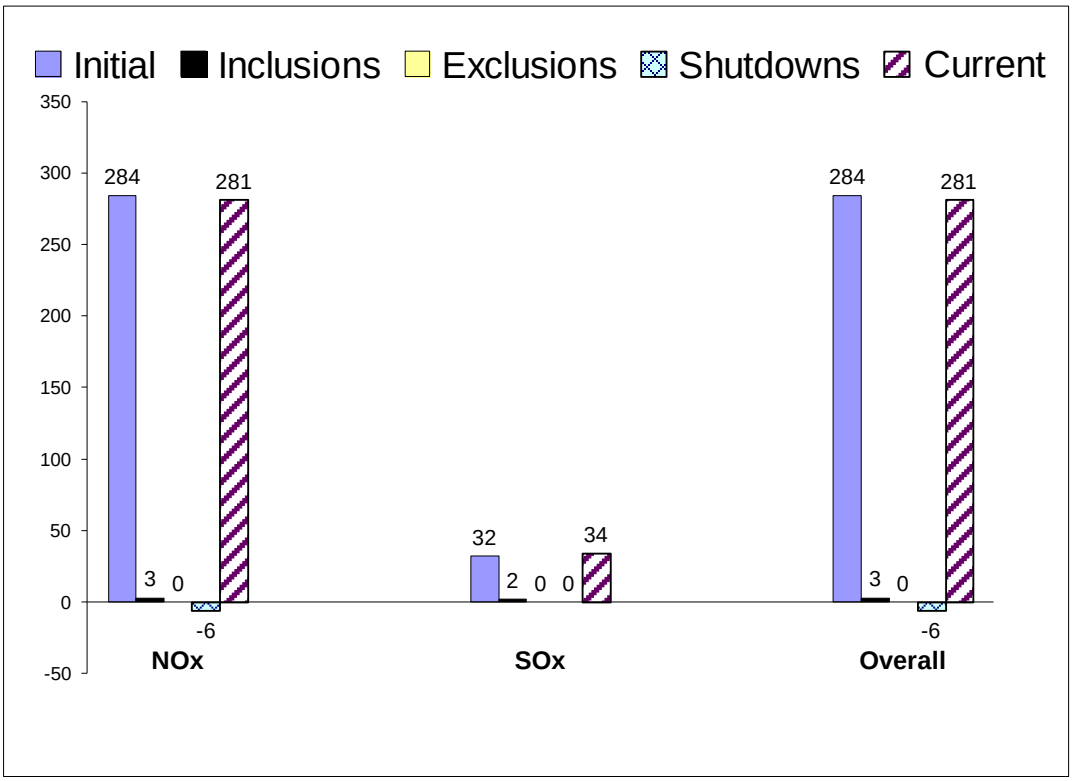
The combination of the above stated inclusions and shutdowns resulted in a net decrease of four facilities in the RECLAIM universe. Table 1-1 summarizes changes in the RECLAIM universe between the start of the program and June 30, 2011. Overall changes to the RECLAIM universe that occurred from July 1, 2010 through June 30, 2011 are illustrated in Figure 1-1.

Table 1-1
RECLAIM Universe Changes

	NOx Facilities	SOx Facilities	Total* Facilities
Universe – October 15, 1993 (Start of Program)	392	41	394
Inclusions – October 15, 1993 through June 30, 2010	118	10	118
Exclusions – October 15, 1993 through June 30, 2010	-69	-4	-70
Shutdowns – October 15, 1993 through June 30, 2010	-157	-15	-158
Universe – June 30, 2010	284	32	284
Inclusions – July 1, 2010 through June 30, 2011	3	2	3
Exclusions – July 1, 2010 through June 30, 2011	0	0	0
Shutdowns – July 1, 2010 through June 30, 2011	-6	0	-6
Universe – June 30, 2011	281	34	281

* Total facilities is not the sum of NOx and SOx facilities due to the overlap of some facilities being in both the NOx and SOx universes.

Figure 1-1
Universe Changes from July 1, 2010 through June 30, 2011



CHAPTER 2
RTC ALLOCATIONS AND TRADING

Summary

On January 7, 2005, the Governing Board adopted amendments to RECLAIM that resulted in an overall 22.5% reduction in NOx Allocations phased in from 2007 through 2011. For Compliance Year 2010, the cumulative NOx RTC reduction was 19.8% since 2007. Additionally, the Compliance Year 2010 RTC supply increased by 16.2 tons for NOx and decreased by 17.3 tons for SOx due to allocation adjustments for clean fuel production pursuant to Rule 2002(c)(12). Therefore, NOx and SOx RTC supplies for Compliance Year 2010 were 10,053 and 4,282 tons, respectively. On November 5, 2010, the Governing Board adopted further amendments to RECLAIM that will result in an overall reduction of 5.7 tons/day (or 48.4%) in SOx Allocations with the reductions phased in from 2013 through 2019.

During calendar year 2011, there were 380 registered RTC transactions with a total value of $12.9 million traded, excluding the values reported for swaps. Since the inception of the RECLAIM program in 1994, a total value of over one billion dollars has been traded in the RTC trading market, excluding swaps. In terms of volume traded in calendar year 2011, 3,432 tons of discrete NOx, 413 tons of discrete SOx RTCs, 498 tons of IYB NOx and 19 tons of IYB SOx RTCs were traded.

The average annual prices of discrete-year NOx RTCs traded during calendar year 2011 were $693 per ton for Compliance Year 2010 RTCs, $1,561 per ton for Compliance Year 2011 RTCs, and $4,121 per ton for Compliance Year 2012 RTCs. The average annual prices for discrete-year SOx RTCs traded during the same period were $779 per ton for Compliance Year 2010 RTCs and $500 per ton for RTCs for Compliance Year 2011[1]. Therefore, the average annual prices for discrete NOx and SOx RTCs for all compliance years remained well below the $15,000 per ton threshold to evaluate and review the compliance aspects of the program set forth by AQMD Rule 2015, as well as the $38,650 per ton of NOx and $27,828 per ton of SOx discrete RTCs pre-determined overall program review thresholds established by the Governing Board pursuant to Health and Safety Code §39616(f).

The average annual price during calendar year 2011 for IYB NOx RTCs was $56,708 per ton, and the average annual price for IYB SOx RTCs was $102,366 per ton. Therefore, average annual IYB RTC prices did not exceed the $579,757 per ton of IYB NOx RTCs or the $417,425 per ton of IYB SOx RTCs pre-determined overall program review thresholds established by the Governing Board pursuant to Health and Safety Code §39616(f).

The role of investors in the RTC market remains significant. Based on both trading values and the number of trades with price, investors were involved in a significant portion of the trades recorded in calendar year 2011 (61% and 100% of total value and 63% and 100% of total volume for discrete NOx and SOx

[1] There were no discrete-year 2012 SOx RTCs traded in calendar year 2011.

trades, respectively; 64% and 99% of total value and 64% and 91% of total volume for IYB NOx and SOx trades, respectively). Investors' holdings of IYB NOx RTCs was 4.8%, and IYB SOx RTCs was 0.5% at the end of calendar year 2011.

Background

The AQMD issues each RECLAIM facility emissions allocations for each compliance year, according to the methodology specified in Rule 2002, based on its historic production levels as reported to AQMD in its emission inventory reports (if the facility existed prior to January 1, 1993), any qualified external offsets it previously provided, and any unused ERCs generated at and held by the facility. These allocations are issued as RTCs, denominated in pounds of NOx or SOx with a specified 12-month term. Each RTC may only be used for emissions occurring within the term of that RTC. The RECLAIM program has two staggered compliance cycles—Cycle 1 with a compliance period of January 1 through December 31 of each year, and Cycle 2 with a compliance period of July 1 of each year through June 30 of the following year. Each RECLAIM facility is assigned to either Cycle 1 or Cycle 2 and the RTCs it is issued (if any) have corresponding periods of validity.

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

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

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

Also, in July 2007, AQMD adopted the 2007 AQMP, which serves as the region's attainment demonstration for the annual average PM2.5 standards. The 2007

AQMP included Control Measure CMB-02 – "Further SOx Reductions for RECLAIM (SOx)" which proposed to further reduce SOx allocations by approximately three tons per day, with the reductions phased in from 2011 to 2014.

On November 5, 2010, the Governing Board adopted changes to the RECLAIM program that will result in an overall reduction of 5.7 tons SOx per day when fully implemented in 2019 (the reductions are being phased in from 2013 through 2019: 3.0 tons per day in 2013, 4.0 tons per day in years 2014 through 2016, 5.0 tons per day in 2017 and 2018, and a cumulative 5.7 tons per day starting in 2019 and continuing thereafter). This reduction in SOx is an essential part in the South Coast Air Basin's effort in attaining the federal 24-hour average PM2.5 standard by 2020. These rule amendments also satisfied the requirements for BARCT in accordance with California Health and Safety Code §40440.

Although other chapters in this report present and discuss Compliance Year 2010 data, RTC trading and price data discussed in this chapter are for calendar year 2011.

RTC Allocations and Supply

The methodology for determining RTC allocations is established by Rule 2002. According to the rule, allocations may change when the universe of RECLAIM facilities changes, emissions associated with the production of re-formulated gasoline increase or decrease, or reported historical activity levels are updated. In addition to the allocation, RTCs may be generated by conversion of emissions reduction credits from mobile and area sources pursuant to approved protocols. The total RTC supply in RECLAIM is made up of all RECLAIM facilities' allocations, conversions of ERCs owned by RECLAIM and non-RECLAIM facilities (the window of opportunity to convert ERCs to RTCs other than during the process of a non-RECLAIM facility entering the program closed June 30, 1994), emissions associated with the production of re-formulated gasoline, and conversion of emission reduction credits from mobile sources and area sources governed pursuant to approved protocols. Changes in the RTC supply during Compliance Year 2010 are discussed below.

Allocations Adjustments Due to Inclusion and Exclusion of Facilities

Allocations for a facility are based on the facility's historical operations, emission reduction requirements under the command-and-control rules subsumed by RECLAIM, AQMP control measures subsumed by RECLAIM, and adjustments for BARCT equivalency. Facilities entering RECLAIM after 1994 are issued allocations according to the same methodology as that used for issuing RTCs to facilities initially included at the beginning of the program. However, allocations issued for these facilities are only applicable for the compliance year upon entry and forward. In addition, these facilities are issued allocations and Non-tradable/Non-usable Credits for Compliance Year 1994 for the sole purpose of establishing their starting allocation to ensure compliance with offset requirements under Rule 2005 - New Source Review for RECLAIM and the

trading zone restriction to ensure net ambient air quality improvement within the sensitive zone established by Health and Safety Code §40410.5.[2]

Two facilities opted to join the RECLAIM program – one joined the NOx portion and the other joined both NOx and SOx during Compliance Year 2010. Additionally, one other facility was included as a result of a partial change of operator and no facility was excluded during this compliance year. The opt-in facilities did not qualify for any allocation because both were new facilities without any prior operating histories. No additional allocation was issued to the facility that went through a partial change of operator of an existing facility. Therefore, no changes to the NOx or SOx RTC supplies occurred as a result of changes to the RECLAIM universe in Compliance Year 2010.

Allocations Adjustments Due to Clean Fuel Production

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

As a result of the amendment to Rule 2002 in January 2005 to further reduce RECLAIM NOx allocations, the NOx historical baseline Clean Fuel Adjustments for Compliance Year 2007 and subsequent years held by the facility were also reduced by the appropriate shave factors as stated in Rule 2002(f)(1)(A). On the other hand, Rule 2002(c)(12) entitles these refineries' to a Clean Fuels adjustment based on actual emissions. Therefore, each refinery is subject to an adjustment at the end of each compliance year by the difference between the amount of actual emission increases due solely due to production reformulated gasoline at each refinery and the amount of credits it was issued back in 2000 after discounting by the shave factors for the corresponding compliance year. For Compliance Year 2010, the overall effect of adjusting NOx allocations to account for these differences was a total of 16.2 tons of NOx RTCs (0.2% of total NOx allocation for Compliance Year 2010) were added to, and 17.3 tons of SOx RTCs (0.4% of total SOx allocation for Compliance Year 2010) were deducted from, refineries' Compliance Year 2010 holdings.

[2] These Compliance Year 1994 allocations and Non-tradable/Non-usable Credits are not included in the RTC supply as shown in Figures 2-1 and 2-2 of Chapter 2, and Figures 3-1 and 3-2 of Chapter 3. They are also not included in the "Total NOx RTCs" or "Total SOx RTCs" columns shown in Tables 3-1 and 3-2, respectively, of Chapter 3.

Changes in RTC Allocations Due to Activity Corrections

RECLAIM facilities' allocations are determined by their reported historical activity levels (*e.g.*, fuel usage, material usage, or production). If a facility makes corrections to its reported activity levels, the allocation is adjusted accordingly. There were no changes in RTC allocations due to activity corrections in Compliance Year 2010.

Conversions of Other Types of Emission Reduction Credits

Conversions of Mobile Source Emission Reduction Credits (MSERCs) and other types of emission reductions credits, besides regular stationary source ERCs issued under Regulation XIII – New Source Review, to RTCs are allowed under Rule 2008 – Mobile Source Credits, and several programs under Regulation XVI – Mobile Source Offset Programs and Regulation XXV – Intercredit Trading. Conversion of these credits to RTCs is allowed based on the respective approved protocol specified in each rule. Currently, Rules 1610 and 1612 allow the creation of MSERCs. However, there are no State Implementation Plan (SIP) approved protocols for conversion of MSERCs to RTCs. As a result, no new RTCs were issued as a result of conversion of other types of emission reduction credits in Compliance Year 2010.

Net Changes in RTC Allocations

The changes to RTC supplies described in the above sections resulted in a net increase of 16.2 tons of NOx RTCs and a decrease of 17.3 tons of SOx RTCs for Compliance Year 2010. Table 2-1 summarizes the changes in NOx and SOx RTC supplies that occurred in Compliance Year 2010 pursuant to Rule 2002.

Table 2-1
Changes in NOx and SOx RTCs Supplies during Compliance Year 2010 (tons/year)

Source	NOx	SOx
Universe changes	0	0
Clean Fuel/Reformulated Gasoline	16.2	-17.3
Activity corrections	0	0
MSERCs	0	0
Net change	16.2	-17.3

Note: The data in this table represents the changes that occurred over the course of Compliance Year 2010 to the Compliance Year 2010 aggregate NOx and SOx RTC supplies originally issued pursuant to Rule 2002, not the difference between 2010 aggregate RTC supply and that for any other compliance year.

Figures 2-1 and 2-2 illustrate the total NOx and SOx RTC supplies through the end of Compliance Year 2020.

Figure 2-1
NOx RTC Supply

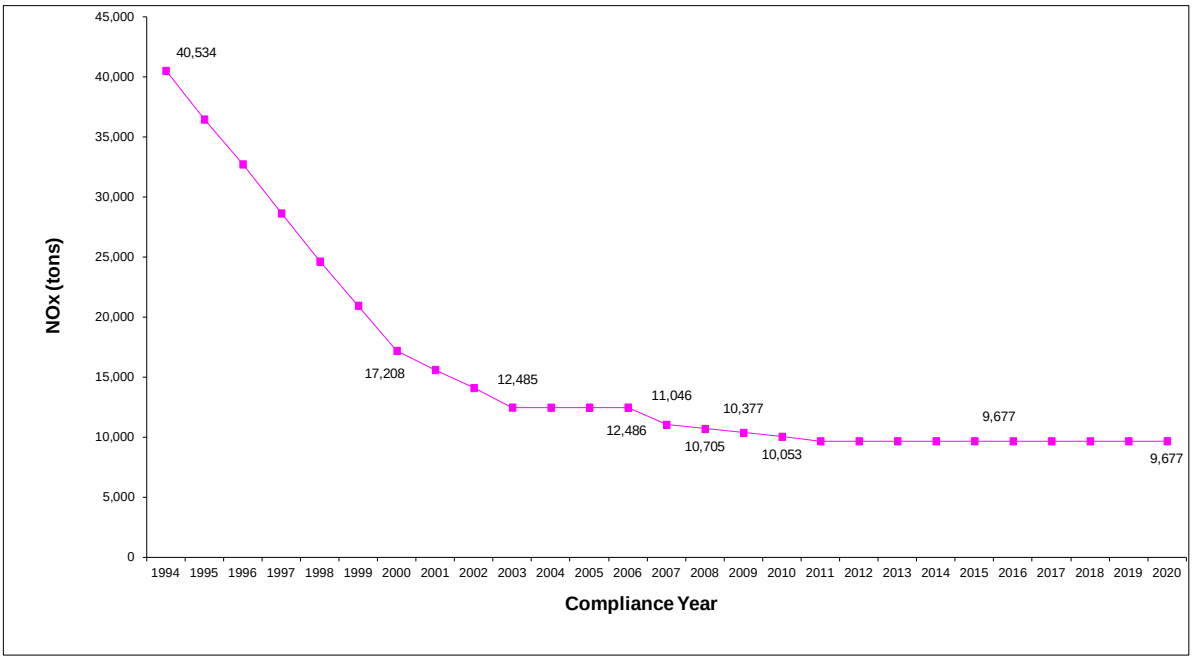
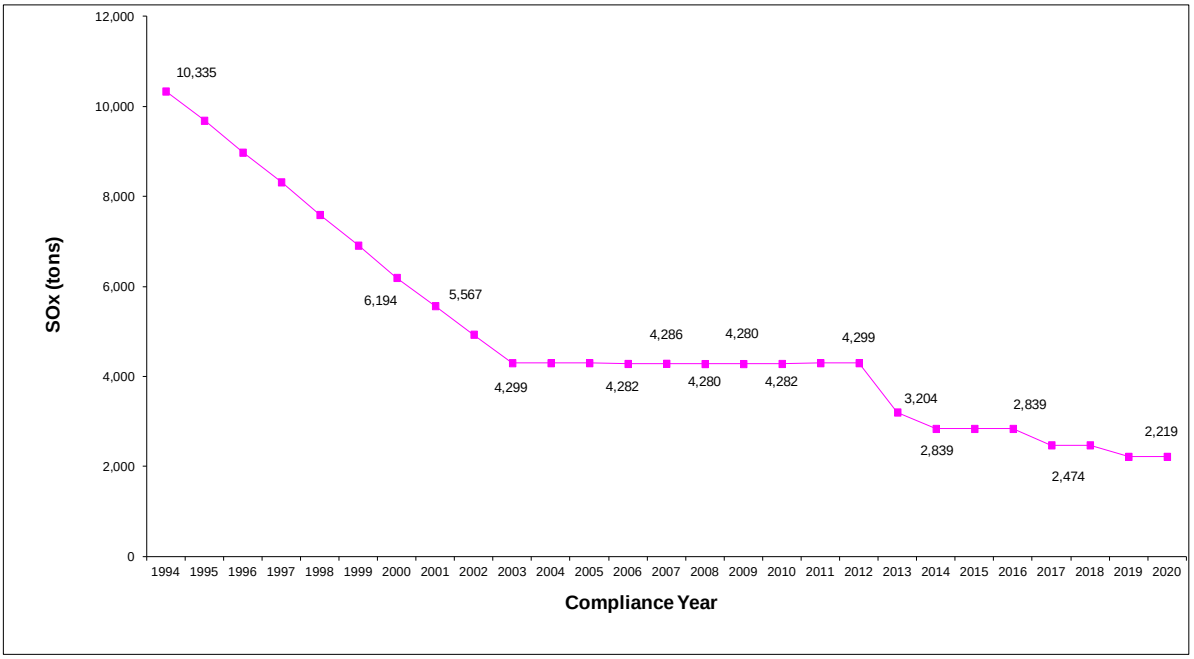


Figure 2-2
SOx RTC Supply



Upcoming Proposal for Credit Generation

AQMD is evaluating two potential new rules that would generate additional credits. One potential rule would allow generation of emission reduction credits through the control of exhaust emissions from auxiliary engines and/or boilers used on Ocean-Going Vessels while at berth in a commercial marine port (Proposed Rule 2512 – Credit Generation Program for Ocean-Going Vessels at Berth). The other potential rule would allow generation of emission reduction credits through the voluntary repowering of diesel–fueled auxiliary head end power generating units at passenger locomotives with cleaner engines (Proposed Rule 2511 – Credit Generation Program for Locomotive Head End Power Unit Engines). Under these two proposals, the resultant credits from both rules would be allowed to be used in the RECLAIM program. Currently, both proposed rules are under development by staff. Public meetings and Board consideration for these two potential rules are pending.

RTC Price Reporting Methodology

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

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

In this report, the Governing Board also established new program review thresholds for IYB trades through Board Resolution No. 07-20. Accordingly, the new program review price thresholds for IYB RTCs (equivalent to 15 times the 1993 thresholds used for discrete trades with CPI adjustments) are $579,757 per ton of NOx RTCs and $417,425 per ton of SOx RTCs in 2011 dollars.

RTC Trading Activity Excluding Swaps

Overall Trading Activity

The RTC market activity was slower in calendar year 2011 compared to years past. The total traded value in 2011 was the lowest value traded since calendar year 1997. The calendar year 2011 trading activity—380 total registered trade transactions (359 NOx trades and 21 SOx trades)—was slightly lower than

number of trade transactions in calendar year 2010 (394 total registered trade transactions). These trades included discrete and IYB RTCs traded with prices, discrete and IYB RTC transfers with zero price, and discrete and IYB RTC swap trades.

Excluding swap trades, a total value of $12.9 million was traded in calendar year 2011 ($11.9 million for NOx and $1.0 million for SOx) compared to the total value of $47.6 million traded in calendar year 2010 ($17.3 million for NOx and $30.3 million for SOx). This difference in the value traded was largely due to the decreased trading of IYB SOx RTCs which was at an exceptionally high level in 2009 probably induced by the then-impending rule amendment to the SOx portion of the RECLAIM program. Figure 2-3 shows historical trading values (excluding swaps). Figure 2-4 summarizes overall trading activity (excluding swaps) in calendar year 2011 by pollutant.

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

Figure 2-3
Annual Trading Values for NOx and SOx (Excluding Swaps)

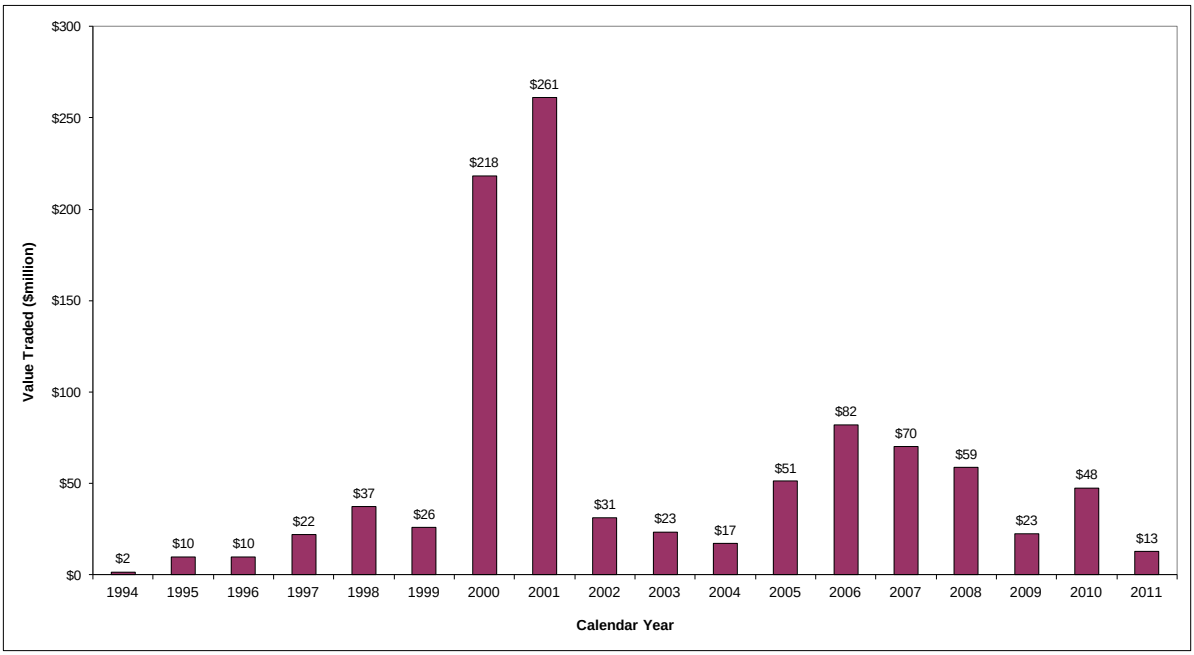
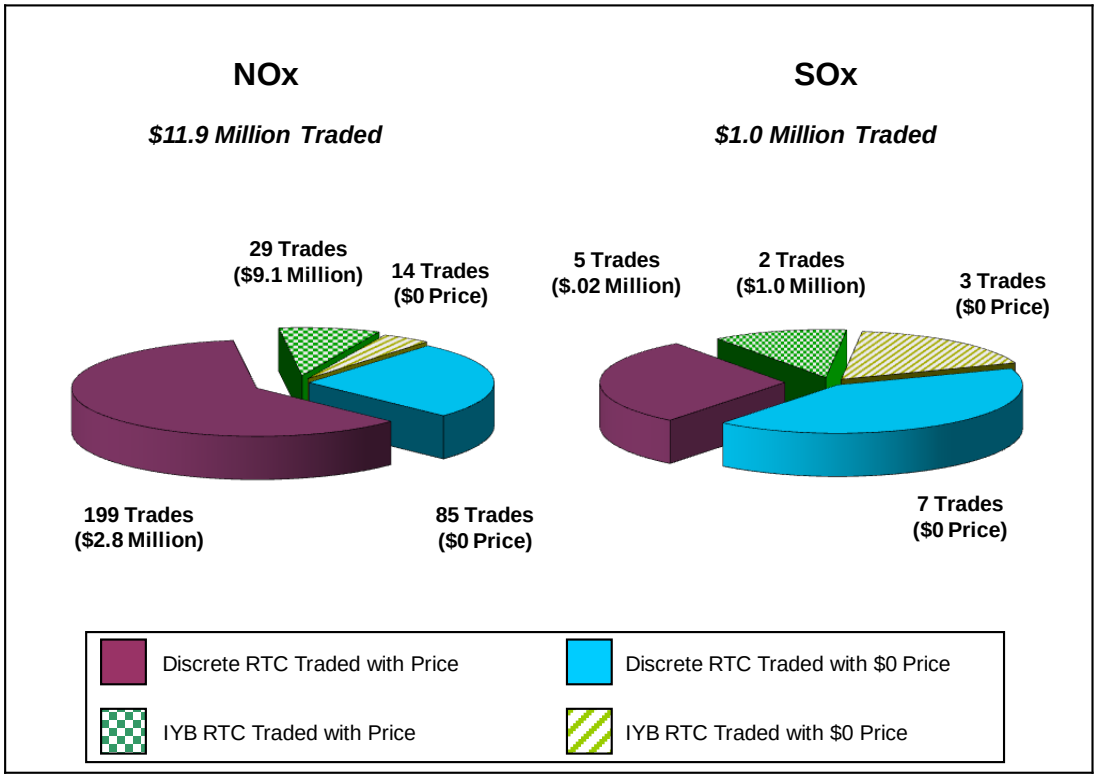


Figure 2-4
Calendar Year 2011 Overall Trading Activity (Excluding Swaps)



Discrete RTC Trading Activity

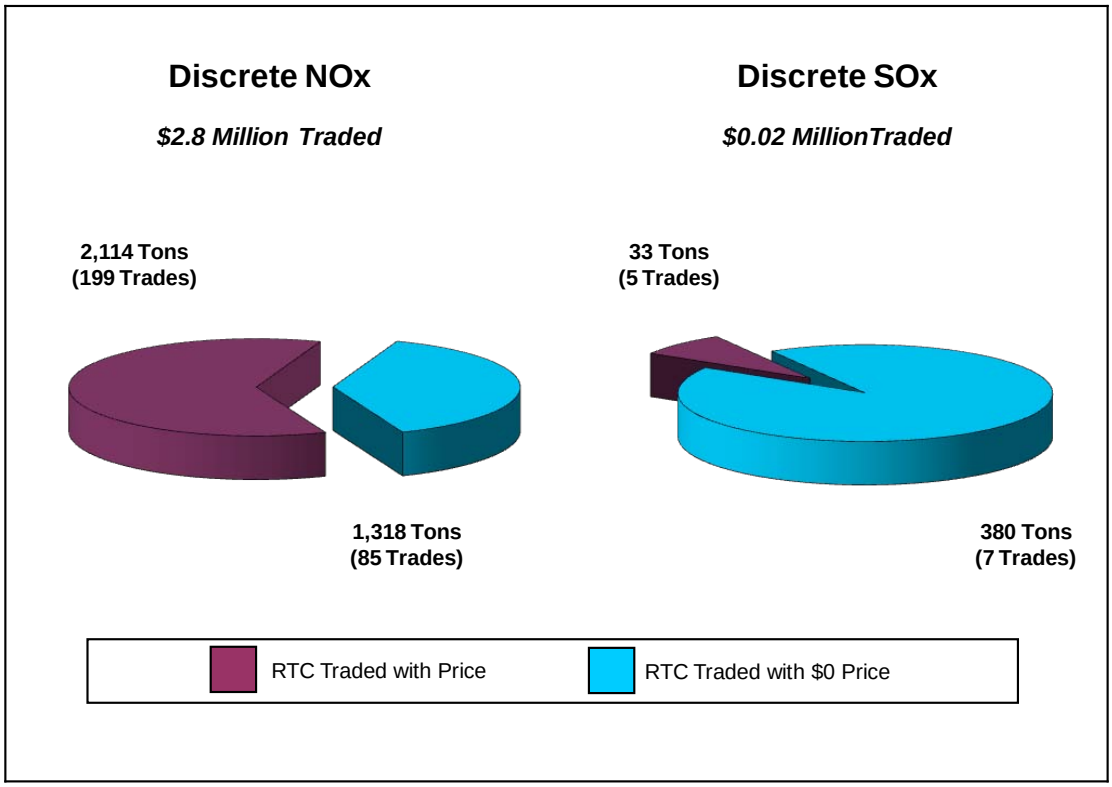
In calendar year 2011, there were a total of 284 discrete NOx trades and 12 discrete SOx trades of RTCs. Of the 284 discrete NOx trades, 199 were traded with price totaling 2,114 tons in volume and $2.8 million in value. Of the 12 SOx trades, five were traded with price totaling 33 tons in volume and $0.02 million in value. In addition to trades with prices, there were 85 discrete NOx trades of 1,318 tons and seven discrete SOx trades of 380 tons traded with zero price.

In calendar year 2011, trading of discrete NOx RTCs was limited to Compliance Years 2010, 2011 and 2012 only, with the exception of one trade, which was a transfer between two facilities under common ownership for Compliance Years 2012 to 2017 of discrete year NOx RTCs without price. Trading of discrete SOx RTCs was limited to Compliance Years 2010 and 2011 only.

Discrete NOx RTC trades with price in calendar year 2011 experienced a minor decrease in total quantity traded and total value when compared to trades in calendar year 2010. The quantity of discrete NOx RTCs traded with price decreased slightly from 2,194 tons in calendar year 2010 to 2,114 tons in calendar year 2011 and the total value of discrete NOx RTCs traded decreased from $3.0 million in calendar year 2010 to $2.8 million in calendar year 2011. The overall quantity of discrete NOx RTCs decreased from 3,593 tons traded in calendar year 2010 to 3,432 tons in calendar year 2011. Discrete SOx RTC trades with price in calendar year 2011 also showed a decrease in both

quantities traded and total value. The quantity traded with price decreased from 161 tons to 33 tons and the value of discrete SOx RTCs traded decreased from $0.08 million to $0.02 million from calendar year 2010 to 2011, respectively. Due to an increase in quantity of discrete SOx RTCs traded without price, the overall quantity of discrete SOx RTCs increased from 379 tons to 413 tons. Figure 2-5 illustrates the trading activity of discrete RTCs (excluding swaps) for calendar year 2011.

Figure 2-5
Calendar Year 2011 Trading Activity for Discrete RTCs (Excluding Swaps)



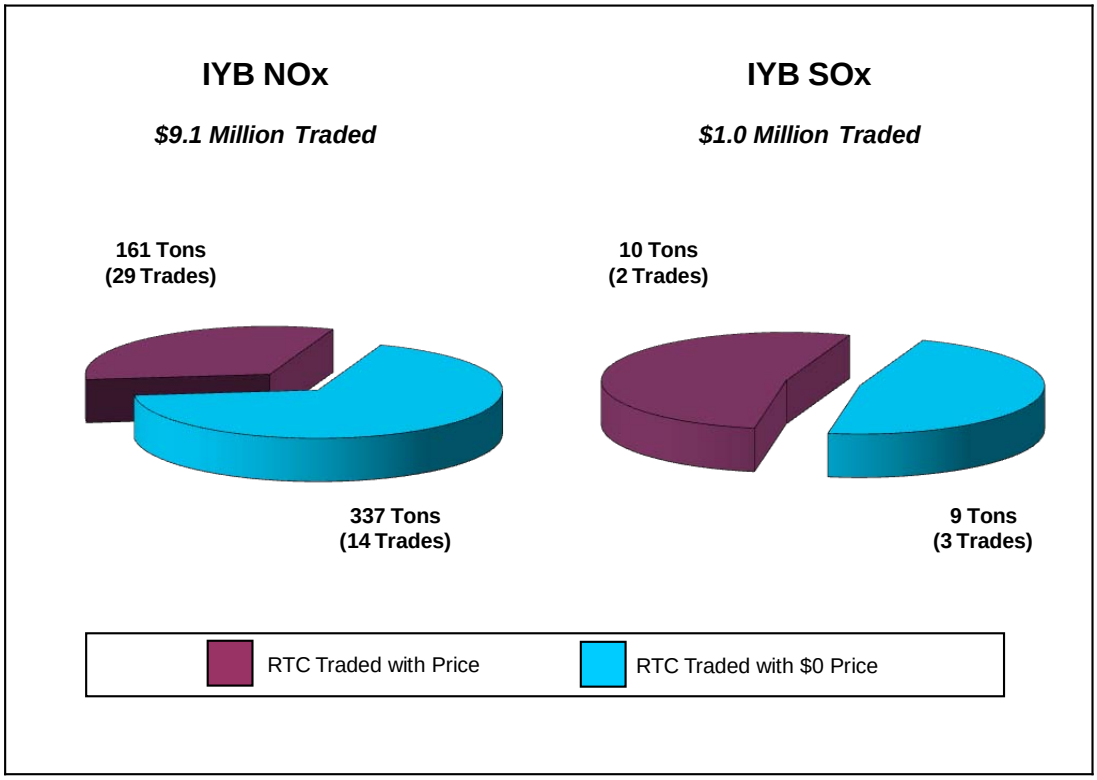
IYB RTC Trading Activity

IYB RTCs include RTCs valid for a certain specified start year and continuing into perpetuity. In calendar year 2011, there were 43 IYB NOx trades and five IYB SOx trades. All of these IYB trades included Compliance Year 2010, 2011, 2012 or 2013 as the start year. Of the 43 IYB NOx trades, 29 trades were with price totaling 161 tons and $9.1 million (compared to 13 trades with price totaling 149 tons and $14.3 million in 2010). This represents a 41% drop in the calendar year 2011 average price for IYB NOx RTCs from the average price of 2010 (from $95,971 per ton to $56,708 per ton).

There were two IYB SOx RTC trades in calendar year 2011 with price totaling ten tons, which was significantly lower than the ten trades with price totaling 277 tons traded in calendar year 2010. Both IYB SOx trades with price included Compliance Year 2011 as the start year. The total value of these IYB SOx

trades ($1 million) was also much lower than the total value in 2010 ($30.2 million). However, the average price for IYB SOx RTCs in calendar year 2011 only decreased by six percent from the average price of 2010 (from $109,219 per ton to $102,366 per ton). In addition to trades with prices, there were also 14 IYB NOx trades totaling 337 tons and three IYB SOx trades totaling nine tons traded with zero price. Figure 2-6 illustrates the calendar year 2011 IYB RTC trading activity excluding swap trades.

Figure 2-6
Calendar Year 2011 Trading Activity for IYB RTCs (Excluding Swaps)



Trade data presented in this report, including historical data prior to 2001, are compiled strictly according to the new reporting methodology approved by the Governing Board in 2007. Swap information and details of discrete and IYB trades were not required to be provided by trade participants prior to the amendment of Rule 2007 – Trading Requirements in May 2001. In compiling data for calendar years 1994 through part of 2001, any trade registration involving infinite-year RTCs was considered as a single IYB trade and swap trades were assumed to be nonexistent. Trading activity since inception of the RECLAIM program is illustrated in Figures 2-7 through 2-10 (discrete NOx trades, discrete SOx trades, IYB NOx trades, and IYB SOx trades, respectively) based on the new trade reporting methodology. The quantities traded without price for calendar years 2002 through 2006, as illustrated in Figures 2-7 through

2-10, have been revised to remove the double-counted swap volume in prior Annual RECLAIM Audits.[3]

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

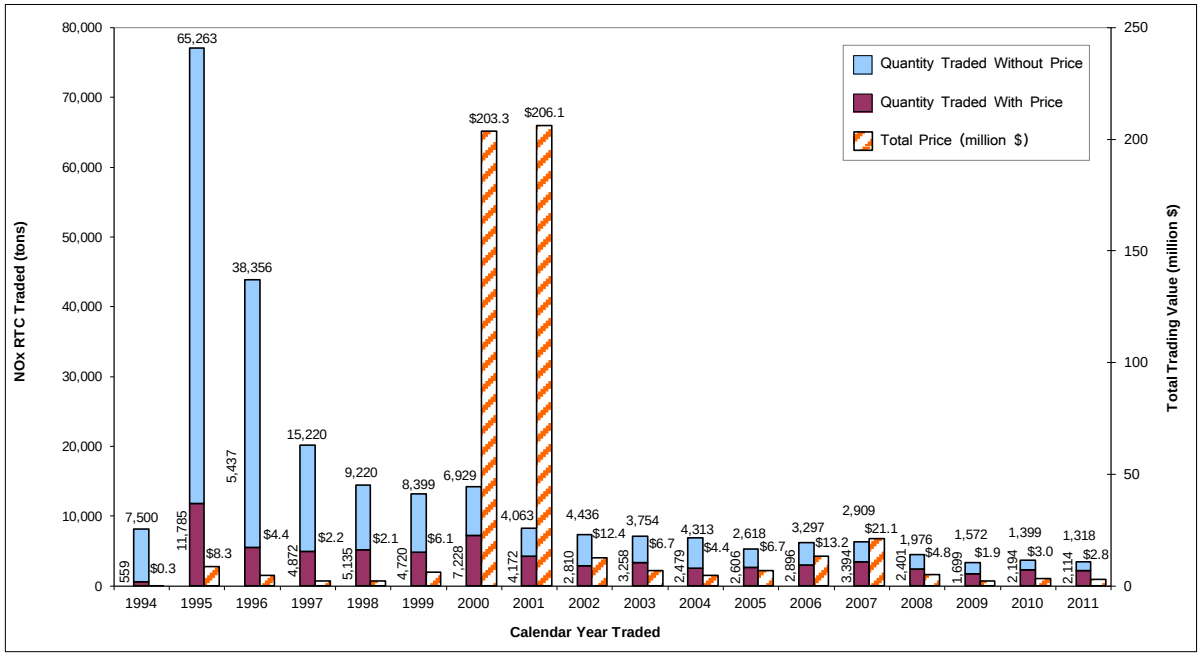
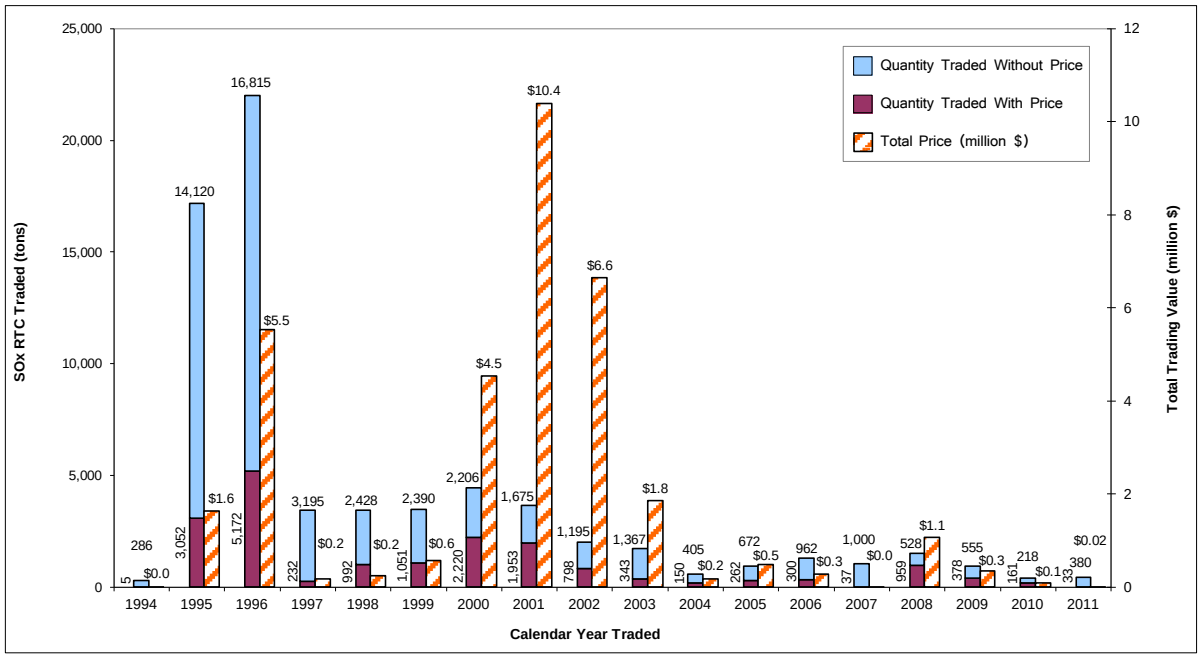


Figure 2-8
Discrete SOx RTCs Trades (Excluding Swaps)



[3] Swap trades were deducted twice from volume traded without price for calendar years 2002 through 2006. This did not impact any reported prices.

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

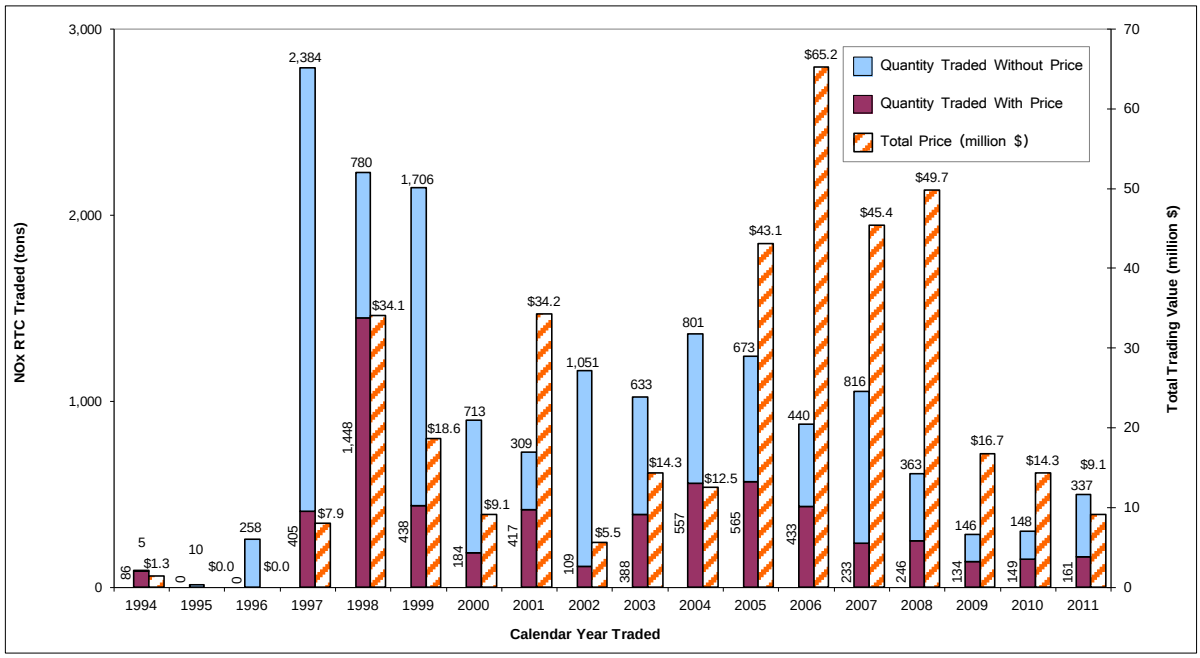
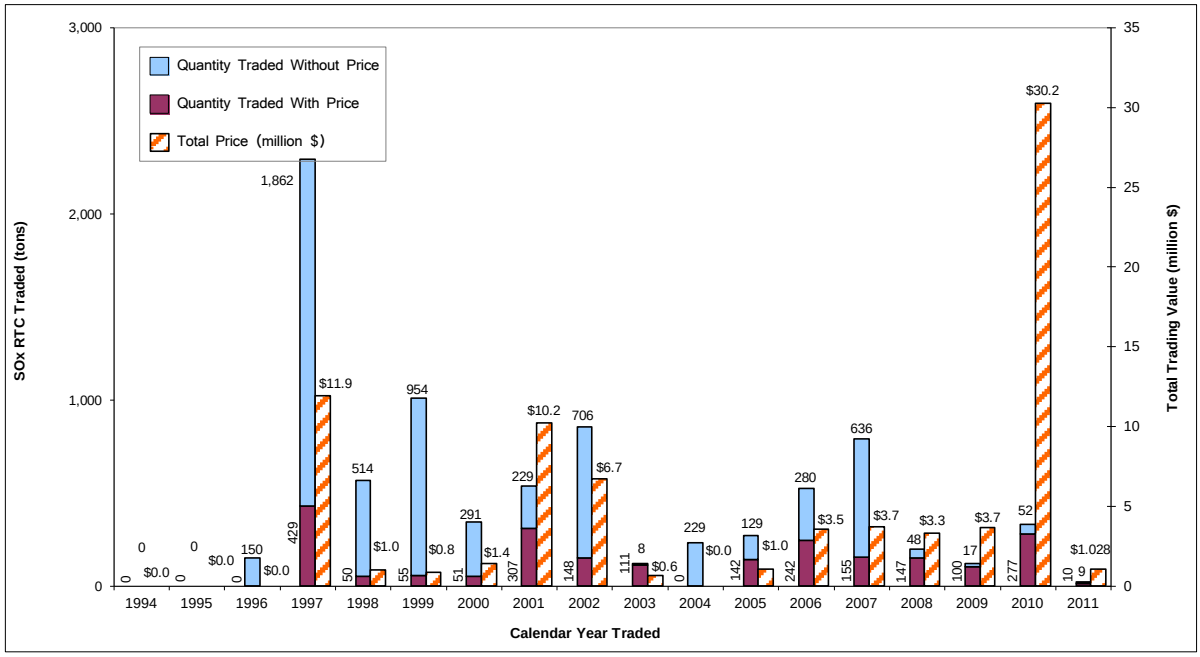


Figure 2-10
IYB SOx RTCs Trades (Excluding Swaps)



Swap Trades

In addition to traditional trades of RTCs for a price, RTC swaps also occurred between trading partners. There were swaps of RTCs with different zones, cycles, expiration years, and pollutants in calendar year 2011. No swaps in calendar year 2011 involved IYB RTCs. In some cases, swaps involved a combination of RTCs and cash payment as a premium. Trading parties swapping RTCs were required to report the agreed upon price of RTCs for each trade even though, with the exception of the above-described premiums, no money was actually exchanged. Over $2.2 million in total value was reported from RTCs that were swapped in calendar year 2011. The swap values are based on the prices reported on the RTC trade registrations. Since RTC swap trades occur when two trading partners exchange RTCs, values reported on both trades involved in the exchange are included in the calculation of the total value reported. However, in cases where commodities other than RTCs are involved in the swap, these commodity values are not included in the above reported total value. (For example, in the case of a swap of NOx RTCs valued at $10,000 for another set of RTCs valued at $8,000 together with a premium of $2,000, the value of such a swap would have been reported at $18,000 in Table 2-2).

For calendar years that have swap transactions with large values (*e.g.*, 2009) the inclusion of swap transactions in the average trade price calculations would result in calculated average annual prices dominated by swap transactions, and therefore, may not be representative of market prices actually paid for RTCs. Under the September 2007 Governing Board-approved price reporting methodology, prices of swap trades are excluded from analysis of average trade prices because the values of the swap trades are solely based upon prices agreed upon between trading partners and do not reflect actual funds transferred. Tables 2-2 and 2-3 present the calendar years 2001 through 2011 RTC swaps for NOx and SOx, respectively.

Table 2-2
NOx Registrations Involving Swaps*

NOx	Total Value ($ millions)	IYB RTC Swapped with Price (tons)	Discrete RTC Swapped with Price (tons)	Number of Swap Registrations with Price	Total Number of Swap Registrations
2001	$ 24.29	6.0	612.2	71	78
2002	$ 14.31	64.3	1,701.7	94	94
2003	$ 7.70	69.9	1,198.1	64	64
2004	$ 3.74	0.0	1,730.5	90	90
2005	$ 3.89	18.7	885.3	53	53
2006	$ 7.29	14.8	1,105.9	49	49
2007	$ 4.14	0.0	820.0	43	49
2008	$ 8.41	4.5	1,945.8	48	50
2009	$ 55.76	394.2	1,188.4	37	42
2010	$ 3.73	18.2	928.5	25	31
2011	$ 2.00	0.0	775.5	25	32

* There are swaps that are without price. Swaps without price are strictly transfers of RTCs between trading partners and their respective brokers. Information regarding swap trades was not required prior to May 9, 2001.

Table 2-3
SOx Registrations Involving Swaps*

SOx	Total Value ($ millions)	IYB RTC Swapped with Price (tons)	Discrete RTC Swapped with Price (tons)	Number of Swap Registrations with Price	Total Number of Swap Registrations
2001	$ 1.53	18.0	240.0	3	4
2002	$ 6.11	26.6	408.4	30	30
2003	$ 5.88	20.9	656.0	32	32
2004	$ 0.39	0.0	161.8	13	13
2005	$ 2.16	43.5	227.8	13	14
2006	$ 0.02	0.0	24.4	2	2
2007	$ 0.00	0.0	0.0	0	0
2008	$ 0.40	0.0	197.0	5	8
2009	$ 3.63	55.3	401.3	9	10
2010	$ 6.89	79.4	417.0	16	18
2011	$ 0.25	0.0	228.5	3	4

* There are swaps that are without price. Swaps without price are strictly transfers of RTCs between trading partners and their respective brokers. Information regarding swap trades was not required prior to May 9, 2001.

RTC Trade Prices

Discrete-Year RTC Prices

In calendar year 2011, the average annual prices for discrete-year NOx RTCs were $693 per ton for Compliance Year 2010, $1,561 per ton for Compliance Year 2011, and $4,121 per ton for Compliance Year 2012. The average annual prices for discrete-year SOx RTCs were $779 per ton for Compliance Year 2010 and $500 per ton for Compliance Year 2011[4]. Figures 2-11 and 2-12 present the average annual prices for discrete-year NOx and SOx RTCs during calendar years 2003 through 2011, respectively. Note that prices for a Compliance Year's RTCs may also be shown for the calendar year after those RTCs expired, since the average price for each compliance year is based on sales of both Cycle 1 RTCs expiring in December of that year, as well as Cycle 2 RTCs expiring in June of the following year. Furthermore, Cycle 1 RTCs expiring in December may be traded during the 60-day reconciliation period following the expiration date, which extends to the next calendar year.

Average annual prices in calendar year 2011 for discrete NOx and SOx RTCs for all compliance years remained well below the $15,000 per ton threshold to evaluate and review the compliance aspects of the program set forth by AQMD Rule 2015, as well as the $38,650 per ton of NOx and $27,828 per ton of SOx discrete RTCs pre-determined overall program review thresholds established by the Governing Board pursuant to Health and Safety Code §39616(f).

Investors were involved in a significant proportion of discrete-year RTC trades in calendar year 2011. They were involved with 61% with respect to value and 63% with respect to volume for discrete-year NOx RTCs. All discrete-year SOx RTCs traded in calendar year 2011 were sold by investors and as such, investors were involved with 100% of discrete-year SOx RTC transactions.

[4] There were no discrete-year 2012 SOx RTCs traded in calendar year 2011.

Figure 2-11
Average Annual Prices for Discrete-Year NOx RTCs during Calendar Years 2003 through 2011

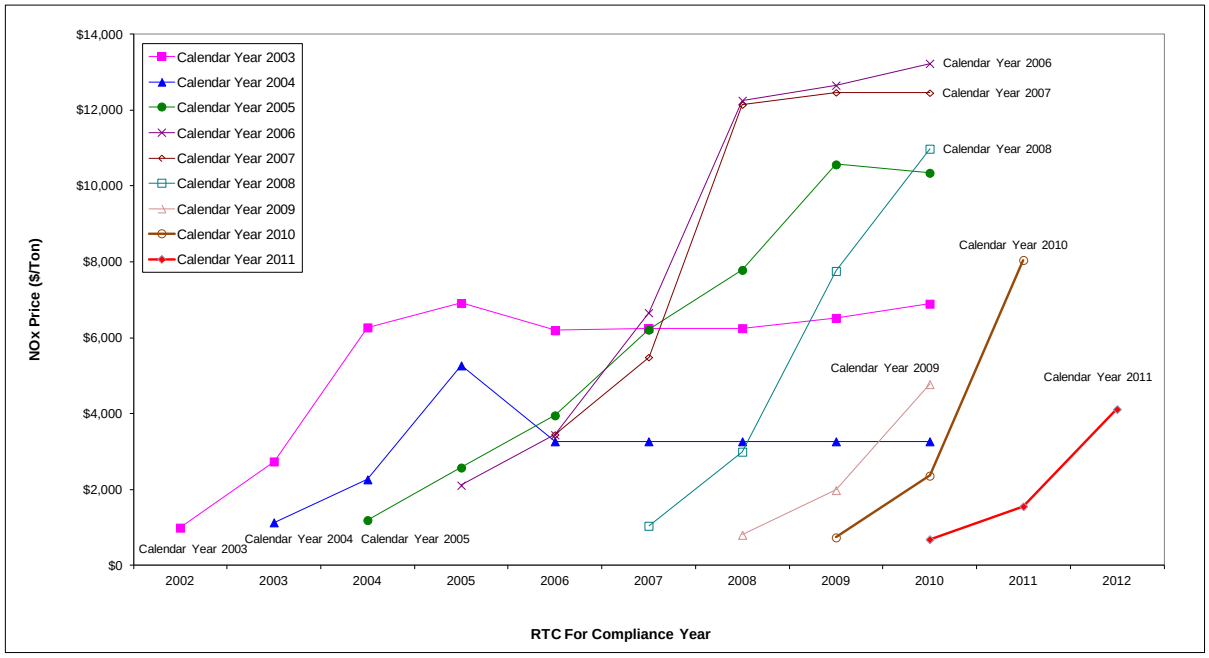
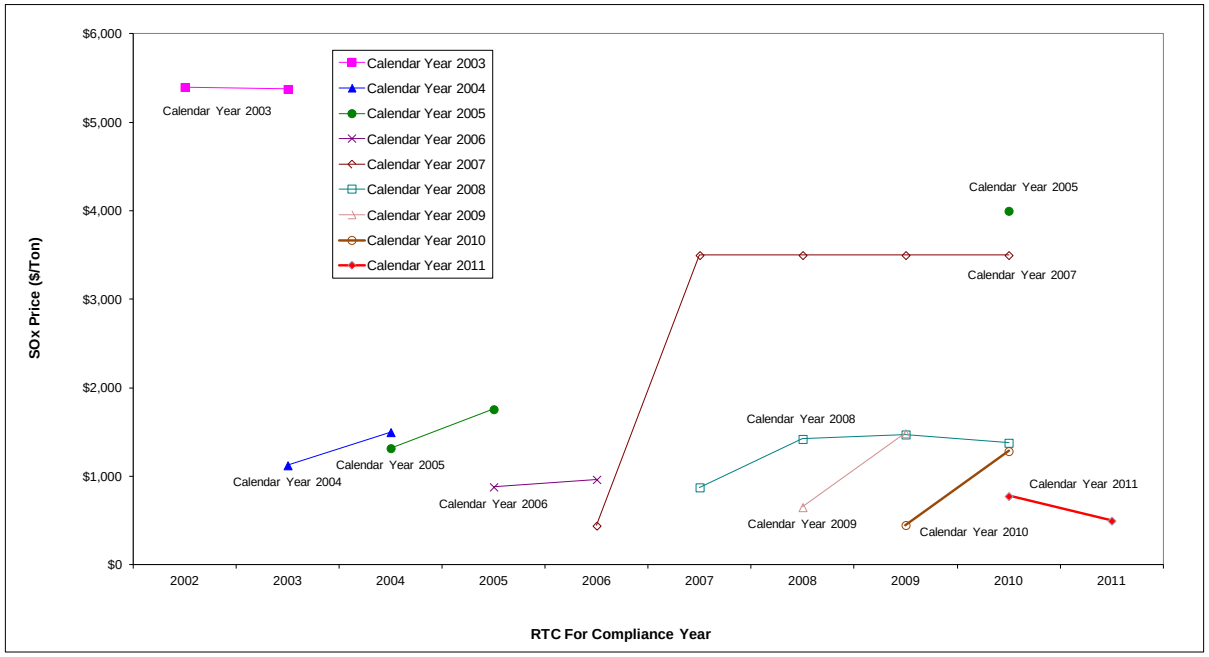


Figure 2-12
Average Annual Prices for Discrete-Year SOx RTCs during Calendar Years 2003 through 2010



Twelve-Month Rolling Average Prices of Compliance Year 2011 NOx RTCs

The January 2005 RECLAIM amendments directed the Executive Officer to calculate the 12-month rolling average price of NOx RTCs ("rolling average price") "for all trades for the current compliance year" excluding "RTC transactions reported at no price." Pursuant to the RTC price reporting and averaging methodology approved by the Governing Board in September 2007, "swap" transactions (the exchange of RTCs for other RTCs or for other emissions credits) were also excluded from the calculation of rolling average prices.

In the event that the rolling average price exceeds $15,000 per ton, the Executive Officer is required to report the rolling average price to the Governing Board. If the Governing Board determines that the rolling average price exceeds $15,000 per ton, AQMD is required to review the compliance aspects of the RECLAIM program and the Governing Board may direct the Executive Officer to convert the annual incremental Non-tradable/Non-usable RTCs (2.7%) back to active, tradable RTCs valid for the compliance year in which Cycle 1 facilities are operating at the time the finding is made. In its resolution amending Rule 2002(f), the Governing Board directed the Executive Officer to report the NOx RTC 12-month rolling average price data to the Stationary Source Committee (SSC) at least quarterly. Accordingly, such reports have been prepared by AQMD staff and submitted to the SSC on a quarterly basis. To date, the twelve-month rolling average prices have been far below and have not exceeded the $15,000 per ton threshold.

As shown in Table 2-4, the twelve-month rolling average prices of Compliance Year 2011 NOx RTCs have generally been declining since January 2011 and have not exceeded the $15,000 per ton threshold specified in Rule 2002(f). Therefore, it was not necessary for the Executive Officer to report the rolling average price to the Governing Board or for the Governing Board to require a compliance audit and consider reinstating the incremental NOx RTC adjustment for Compliance Year 2011. For Compliance Year 2010 NOx RTCs, the same findings were true and were included in the RECLAIM Annual Audit Report for 2009 Compliance Year, submitted to the Governing Board in March 2011.

Table 2-4
Twelve-Month Rolling Average Prices of Compliance Year 2011 NOx RTCs

Reporting Month	12-Month Period	Average Price ($/ton)
January 2011	January through December 2010	$ 8,052
February 2011	February 2010 through January 2011	$ 8,052
March 2011	March 2010 through February 2011	$ 7,999
April 2011	April 2010 through March 2011	$ 7,950
May 2011	May 2010 through April 2011	$ 7,850
June 2011	June 2010 through May 2011	$ 7,852
July 2011	July 2010 through June 2011	$ 6,783
August 2011	August 2010 through July 2011	$ 6,758
September 2011	September 2010 through August 2011	$ 4,026
October 2011	October 2010 through September 2011	$ 3,427
November 2011	November 2010 through October 2011	$ 2,784
December 2011	December 2010 through November 2011	$ 2,089
January 2012	January through December 2011	$ 1,561

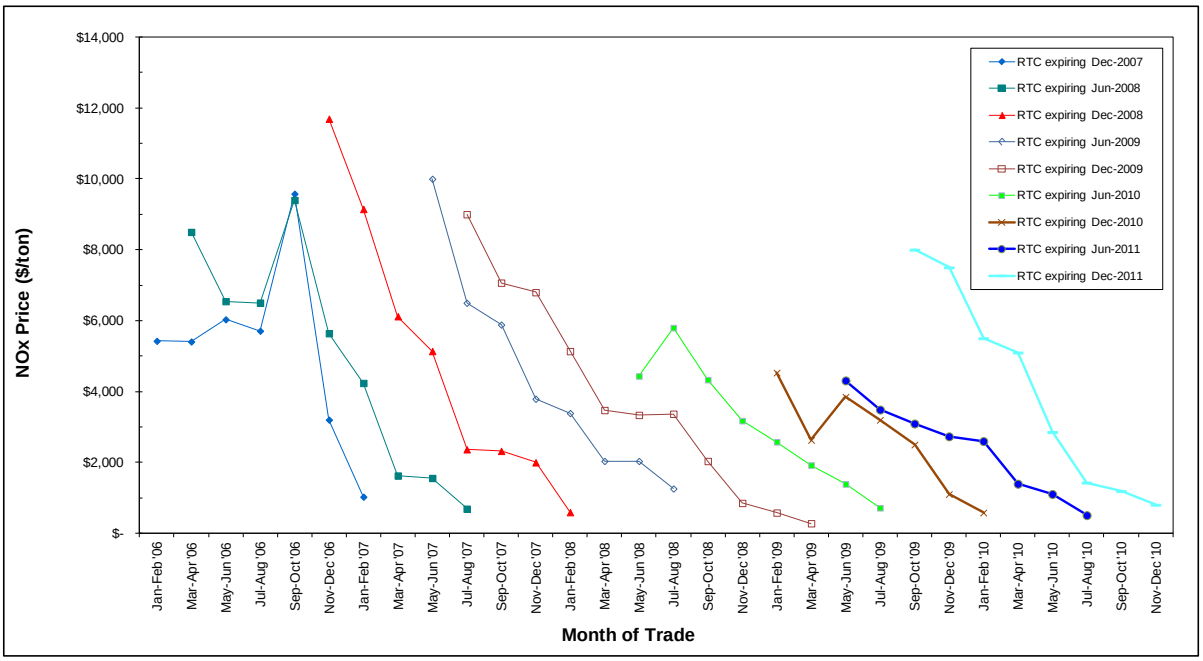
Note: The average prices for the August, September and October 2011 reporting months to the SSC have been corrected in the table above. The data presented to the SSC included two pending trades which were later voided. This resulted in less than 9% change in the twelve-month rolling average prices for August, September and October 2011 and did not change any of the findings and conclusions reported.

Average Price for NOx RTCs Nearing Expiration

Generally, RTC prices decrease as their expiration dates approach and during the sixty days after their expiration dates during which they can be traded. RTC prices are usually lowest during the 60 day-period following their expiration date during which facilities are allowed to trade and obtain RTCs to cover their emissions. This general trend has been repeated every year since 1994 except for Compliance Years 2000 and 2001 (during the California energy crisis), when NOx RTC prices increased as the expiration dates approached because the power plants' NOx emissions increased significantly and there was a shortage of NOx RTCs. Prices for NOx RTCs that expired in calendar year 2011 followed the general trend of RTC prices declining over the course of the Compliance Year and the sixty-day trading period thereafter.

The bi-monthly average price for these near-expiration NOx RTCs is shown in Figure 2-13 to illustrate the general price trend for these RTCs. The general declining trend of RTC prices nearing and just past expiration indicates that there was an adequate supply to meet RTC demand during the final reconciliation period following the end of the compliance years. A similar analysis is not performed for the price of SOx RTCs nearing expiration because there are not enough SOx trades over the course of the year to yield meaningful data, however SOx RTC prices have generally followed the same trends.

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



Note: A limited set of data points are used for clarity.

IYB RTC Prices

The average annual price for IYB NOx RTCs traded in calendar year 2011 is $56,708 per ton, which is significantly lower than the average annual price of $95,761 per ton traded in calendar year 2010. The average annual price for IYB SOx RTCs in calendar year 2011 is $102,366 per ton, which is slightly lower than the $109,219 per ton traded in calendar year 2010. There were only two IYB SOx trades with price totaling 10.0 tons in 2011 which is much lower than the 277.0 tons traded in 2010. Data regarding IYB RTCs traded with price (excluding swap trades) for NOx and SOx RTCs and their average annual prices since 1994 are summarized in Tables 2-5 and 2-6, respectively. In calendar year 2011, the average annual IYB RTC prices did not exceed the $579,757 per ton of NOx RTCs or the $417,425 per ton of SOx RTCs program review thresholds established by the Governing Board pursuant to California Health and Safety Code §39616(f).

Investors were again involved in a significant proportion of IYB trades in calendar year 2011. They were involved with 64% with respect to both value and to volume for IYB NOx RTCs. Investors were involved with 99% with respect to value and 91% with respect to volume for IYB SOx RTCs. A more detailed discussion of investor participation is presented later in this chapter.

Table 2-5
IYB NOx Pricing (Excluding Swap Registrations)

Calendar Year	Total Reported Value ($ millions)	IYB RTC Traded with Price (tons)	Number of IYB Registrations With Price	Average Price ($/ton)
1994*	$1.3	85.7	1	$15,623
1995*	$0.0	0	0	N/A
1996*	$0.0	0	0	N/A
1997*	$7.9	404.6	9	$19,602
1998*	$34.1	1,447.6	23	$23,534
1999*	$18.6	438.3	19	$42,437
2000*	$9.1	184.2	15	$49,340
2001*	$34.2	416.9	25	$82,013
2002	$5.5	109.5	31	$50,686
2003	$14.3	388.3	28	$36,797
2004	$12.5	557.0	52	$22,481
2005	$43.1	565.3	71	$76,197
2006	$65.2	432.9	50	$150,665
2007	$45.4	233.5	25	$194,369
2008	$49.7	245.6	27	$202,402
2009	$16.7	134.2	14	$124,576
2010	$14.3	149.0	13	$95,761
2011	$9.1	160.7	29	$56,708

* No information regarding swap trades was reported until May 9, 2001.

Table 2-6
IYB SOx Pricing (Excluding Swap Registrations)

Calendar Year	Total Reported Value ($ millions)	IYB RTC Traded with Price (tons)	Number of IYB Registrations With Price	Average Price ($/ton)
1994*	$0.0	0	0	N/A
1995*	$0.0	0	0	N/A
1996*	$0.0	0	0	N/A
1997*	$11.9	429.2	7	$27,738
1998*	$1.0	50.0	1	$19,360
1999*	$0.8	55.0	3	$14,946
2000*	$1.4	50.6	5	$27,028
2001*	$10.2	306.8	8	$33,288
2002	$6.7	147.5	5	$45,343
2003	$0.6	110.9	1	$5,680
2004	$0.0	0.0	0	N/A
2005	$1.0	141.5	3	$7,409
2006	$3.5	241.7	12	$14,585
2007	$3.7	155.2	5	$23,848
2008	$3.3	146.8	5	$22,479
2009	$3.7	100.0	4	$36,550
2010	$30.2	277.0	10	$109,219
2011	$1.03	10.0	2	$102,366

* No information regarding swap trades was reported until May 9, 2001.

Market Participants

RECLAIM market participants have traditionally included RECLAIM facilities, brokers, commodity traders, and private investors. Starting in calendar year 2004, mutual funds joined the traditional participants in RTC trades. Market participation expanded further in 2006, when foreign investors started participating in RTC trades. The two foreign investors[5] did not participate in any RTC trades in Calendar Year 2011.

RECLAIM facilities are the original sources and users of RTCs. They usually sell their surplus RTCs by the end of the compliance year or when they have a long-term decrease in emissions. Brokers match buyers and sellers, and usually do not purchase or own RTCs. Commodity traders and private investors actually invest in and own RTCs in order to seek profits by trading them. For discussion in this report, "investors" include all parties who hold RTCs other than RECLAIM facility permit holders and brokers.

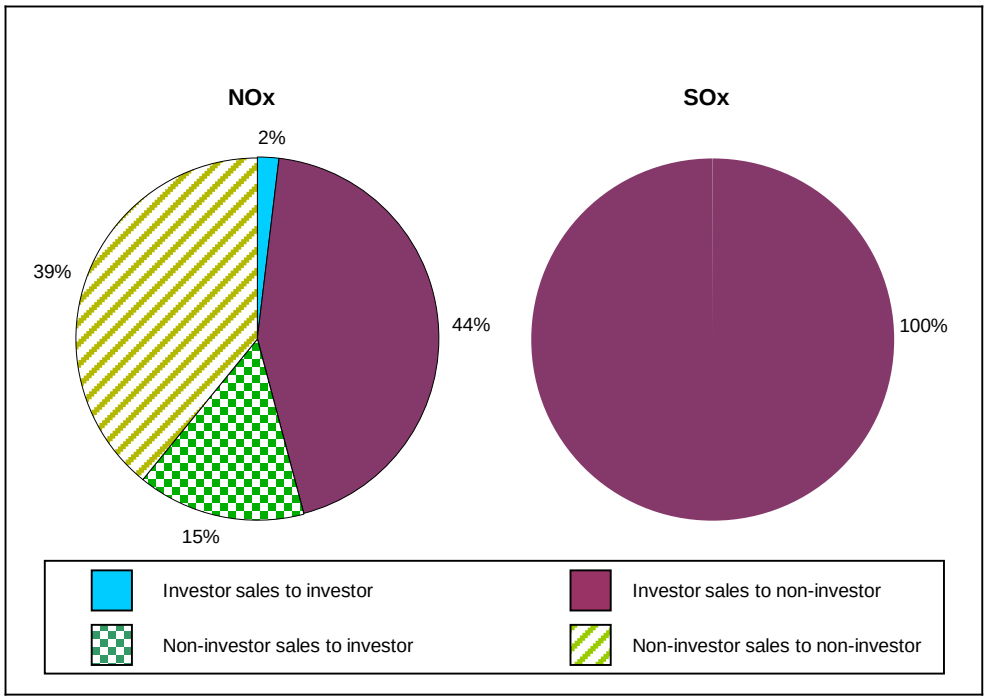
Investors' Participation

Commodity traders, mutual funds, and private investors invest in and own RTCs in order to seek profits by trading them. Investors' involvement in discrete NOx and SOx trades registered with price in calendar year 2011 is illustrated in Figures 2-14 and 2-15. In compiling data for these two figures, staff removed

[5] One of the two foreign investors is located in the Isle of Man and the other is located in Cayman Islands.

brokers' involvement[6]. Figure 2-14 is based on total value of discrete NOx and SOx RTCs traded, and shows that investors were involved in 61% and 100%, respectively, of the NOx and SOx trades reported by value. Figure 2-15 is based on discrete volume traded with price and shows that investors were involved in 63% and 100% of the NOx and SOx trades, respectively. Figures 2-16 and 2-17 provide similar data for both IYB NOx and SOx trades, and show that investors were involved in 64% of IYB NOx trades and 99% of IYB SOx trades on a reported value basis, and 64% of IYB NOx and 91% of IYB SOx trades on the basis of the number of pounds traded with price. As of the end of calendar year 2011, investors' holding of IYB NOx RTCs decreased slightly to 4.8% from 5.5% at the end of calendar year 2010. Mutual fund investors hold 3.3% of all IYB NOx RTCs. Investors increased their holding of IYB SOx RTCs to 0.5% at the end of calendar year 2011 from 0.01% at the end of calendar year 2010. No IYB SOx RTCs are currently held by mutual fund investors.

Figure 2-14
Calendar Year 2011 Investor-Involved Discrete NOx and SOx Trades Based on Value Traded



[6] The established convention for registering broker-involved RTC trades is to do so in two sequential steps: first from the seller to the broker, then from the broker to the buyer. However, to avoid double counting of brokered trades in this analysis, they are treated as if each brokered trade had been registered from the seller to the buyer in a single step. Trades reported without price are excluded from this analysis because they typically represent RTC exchanges between facilities under common ownership and trades associated with changes of facility operator, and are therefore, not reflective of market behavior.

Figure 2-15
Calendar Year 2011 Investor-Involved Discrete NOx and SOx Trades Based on Volume Traded with Price

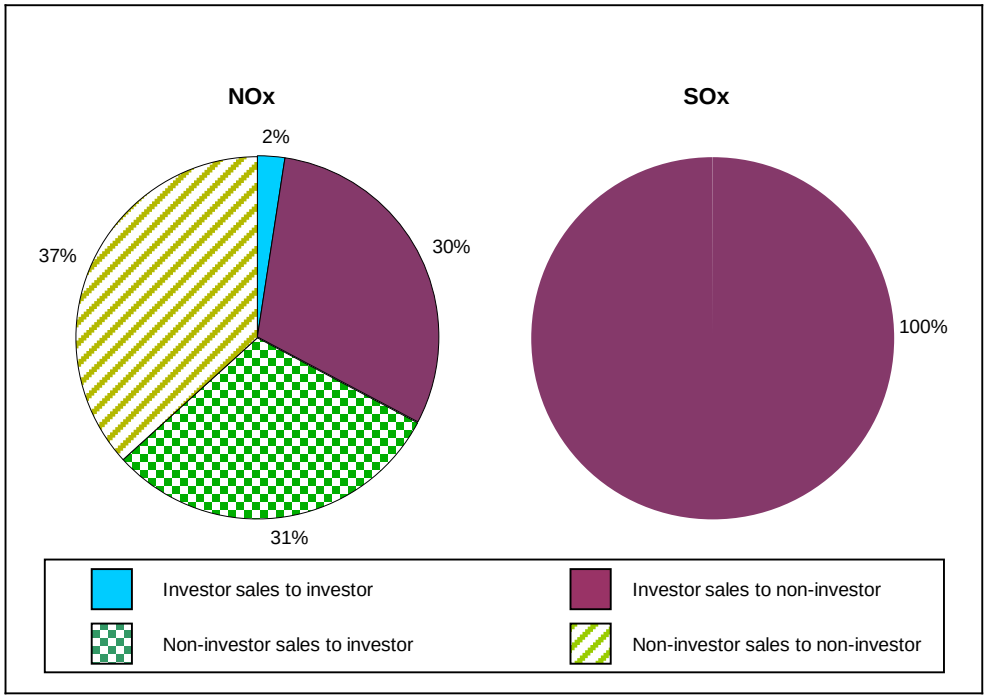


Figure 2-16
Calendar Year 2011 Investor-Involved IYB NOx and SOx Trades Based on Value Traded

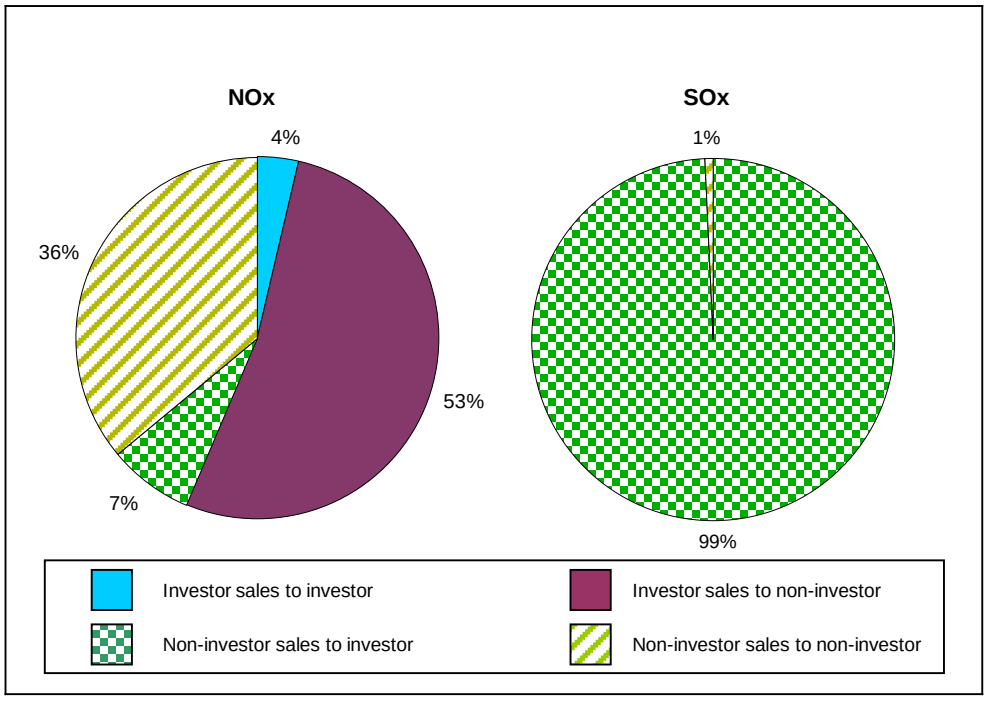
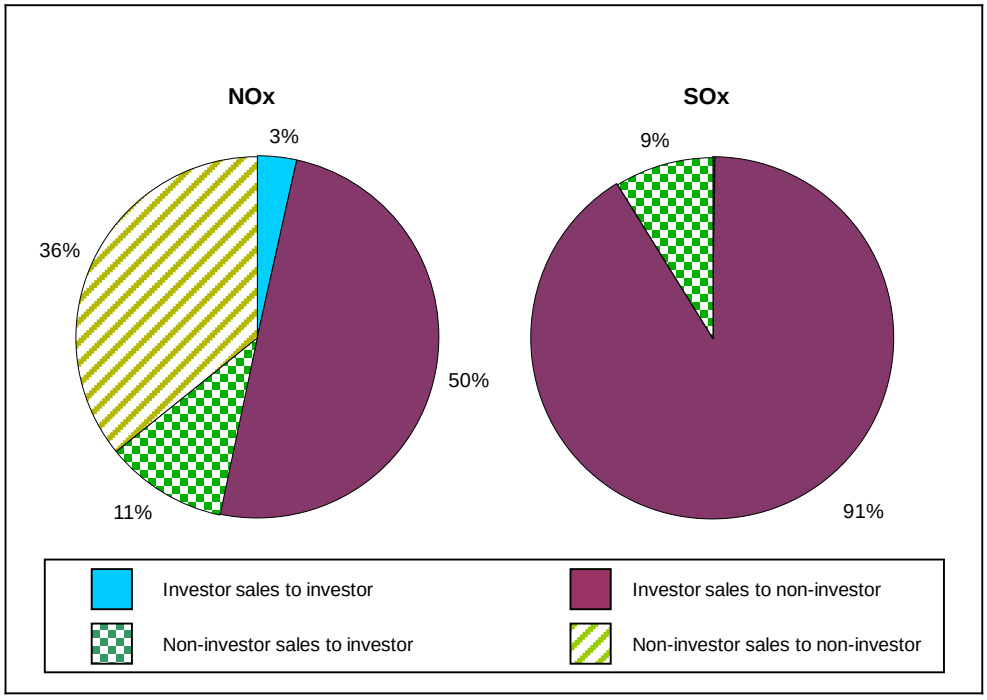


Figure 2-17
Calendar Year 2011 Investor-Involved IYB NOx and SOx Trades Based on Volume Traded with Price



The supply of IYB RTCs available for sale has been mainly from facilities that have permanently shut down. In past years, investors have purchased IYB RTCs from RECLAIM facilities that were shutting down. However, the six RECLAIM facilities that shut down during Compliance Year 2010 (refer to Chapter 1) held a total of 28.9 tons of IYB NOx RTCs. Of this amount, 11.2 tons was sold to investors, 15.7 tons were sold to other RECLAIM facilities and the remaining 2.0 tons have not yet been sold or transferred.

Investors' Impacts on RTC Market

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

To put investors' holdings in context, RECLAIM facilities have generally held back approximately 10% of their allocations each compliance year as a margin to ensure that they did not inadvertently find themselves exceeding (failing to

reconcile by securing sufficient RTCs to cover their emissions) their allocations if their reported emissions were increased as the result of any problems or errors discovered by AQMD during annual audits. For Compliance Year 2010, the total RECLAIM NOx emissions were 7,116 tons. However, Compliance Year 2010 spans a period marked by a depressed economy with low production at many manufacturing facilities and thus low emissions compared to historical levels. If the economy were to improve, total RECLAIM NOx emissions would likely approach recent historical levels. RECLAIM NOx emissions as recent as Compliance Year 2007 totaled 8,794 tons. If emissions were to remain constant at that 2007 level, the NOx RTC surplus in 2012 would be 883 tons (9% of allocation)[7], which is less than the traditional 10% compliance margin. Therefore, the current aggregate investors' holdings of 4.8% of NOx RTCs valid for Compliance Year 2012 and beyond (IYB RTCs) have the potential to result in a sellers' market.

While it can be argued that the holding of IYB NOx RTCs by investors as a group is still small relative to the total supply of IYB NOx RTCs (4.8% overall), there is no clear basis to estimate the level of IYB RTCs available for sale by non-investors or the extent of additional emissions reductions that will be achieved in calendar year 2012 and beyond. IYB RTCs represent an even more critical aspect of the program because these streams of RTCs are sought after to support growth at new or existing facilities. Active facilities are less likely to sell their future year RTCs as IYB. As a result, new RECLAIM facilities or facilities with modifications resulting in emissions increases are potentially at the mercy of investors holding IYB RTCs. Although investors' holdings of IYB NOx RTCs declined during calendar year 2011, they have the ability to purchase RTCs at any time so there is the potential for investors' holdings of IYB NOx RTCs to increase in the future.

On the other hand, overall emissions in RECLAIM will certainly change from now through 2012, and can be affected by various factors including installation of more emission control equipment, production changes, and shifts in industry sectors and in the economy, in general. In January 2005, AQMD identified cost-effective control opportunities outside the power producing industry that would amount to 3.7 tons per day of additional NOx reductions based on historical production rates. The significance of investors' holdings will certainly depend on the ability of RECLAIM facilities to generate adequate emissions reductions in time to dampen the effect of a sellers' market that may exist if demand surges in a short period of time, as it did during the California energy crisis of 2000-2001. Proposals to generate emission reduction credits from sources outside of RECLAIM (*i.e.*, mobile and area sources) can also dampen sudden price increases. AQMD staff continues to monitor investor participation in the market to ensure that such participation does not adversely impact the RECLAIM program.

Other Types of RTC Transactions and Uses

Another type of RTC trade, besides traditional trading and swapping activities, is a trade involving the contingent right (option) to buy or sell RTCs. In those

[7] Assuming emissions in 2012 stay at Compliance Year 2010 level, the NOx RTC surplus would be at 26.5% [(9,677 - 7,116)/9,677].

transactions, one party pays a premium for the right to purchase or sell RTCs owned by the other party at a pre-determined price within a certain time period. Until RTCs are transferred from seller to buyer, prices for options are not reported, because the seller is not paid for the actual RTCs, but only for the right to purchase or sell the RTCs at a future date. These rights may or may not be actually exercised. RTC traders are obligated to report options to the AQMD within five business days of reaching an agreement. These reports are posted on the AQMD website. There was no trade involving the contingent right (option) to buy or sell RTCs in calendar year 2011.

As in prior years, RTCs were used in other programs during calendar year 2011. A total of 95.6 tons of NOx RTCs and 21.3 tons of SOx RTCs were surrendered to mitigate impacts from construction projects under the California Environmental Quality Act and to satisfy variance conditions. These consisted solely of discrete year RTCs. The majority of surrendered NOx RTCs (97.6%) were used to mitigate impacts from construction projects, and the remaining surrendered NOx RTCs (2.4%) were used to satisfy excess emissions under variance conditions. All surrendered SOx RTCs were used to satisfy excess emissions under variance conditions.

CHAPTER 3
EMISSION REDUCTIONS ACHIEVED

Summary

For Compliance Year 2010, aggregate NOx emissions were below total allocations by 29% and aggregate SOx emissions were below total allocations by 35%. No emissions associated with breakdowns were excluded from reconciliation with facility allocations in Compliance Year 2010. Accordingly, no mitigation is necessary to offset excluded emissions due to approved Breakdown Emission Reports. Therefore, based on audited emissions, it can be concluded that RECLAIM has clearly achieved its targeted emission reductions.

Background

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

Emissions Audit Process

Since the inception of the RECLAIM program, AQMD has conducted annual audits of the emissions data submitted by RECLAIM facilities to ensure the integrity and reliability of facility reported data. The process includes reviews of APEP reports submitted by RECLAIM facilities and audits of field records and emission calculations. The audit process is described in further detail in Chapter 5 – Compliance.

AQMD staff adjusts the APEP-reported emissions based on audit results, as necessary. Whenever AQMD staff finds discrepancies, they discuss the findings with the facility operators and provide the operators an opportunity to review changes resulting from facility audits and to present additional data or information in support of the data stated in their APEP reports. This rigorous audit process, although resource intensive, reinforces RECLAIM's emissions monitoring and reporting requirements and enhances the validity and reliability of the reported emissions data. The audited emissions are used to determine if a facility complied with its allocations. The most recent five compliance years' audited emissions for each facility are posted on AQMD's web page after the audits are completed.

This annual RECLAIM audit report reflects audited NOx and SOx emissions data for Compliance Year 2010. Staff is currently working with one remaining facility located on Catalina Island to resolve validity of CEMS data issues that need further analysis. The impact of this analysis is not expected to change the overall findings related to the RECLAIM program's aggregate compliance. However, any necessary adjustment to this one facility's audit will be reflected in next year's annual RECLAIM audit report.

Emission Trends and Analysis

RECLAIM achieves its emission reduction goals on an aggregate basis by ensuring that annual emissions in total are below allocations. It is important to understand that the RECLAIM program is successful at achieving these emission reduction goals even when some individual RECLAIM facilities exceed their RTC account balances, provided aggregate RECLAIM emissions do not exceed aggregate RTCs issued. Therefore, aggregate NOx or SOx emissions from all RECLAIM sources are the basis for determining whether the programmatic emission reduction goals for that emittant are met each year. In aggregating emissions from RECLAIM facilities, audited emissions are used in the Annual RECLAIM Report for that Compliance Year. Issues related to two facilities' Compliance Year 2009 NOx emissions were resolved and staff updated Table 3-1 to reflect a net decrease in Compliance Year 2009's aggregate NOx emissions of 17 tons from a total of 7,317 tons to a total of 7,300 tons. Table 3-1 and Figure 3-1 show aggregate NOx emissions based on audited emission data for Compliance Years 1994 through 2010.

Table 3-1 and Figure 3-1 show that, programmatically, there were excess NOx RTCs remaining after accounting for fully audited NOx emissions for every compliance year since 1994, except for Compliance Year 2000 when NOx emissions exceeded the total RTC allocations for that year due to the California energy crisis. Since 2005, RECLAIM annual NOx emissions have been below total allocations (*i.e.*, the RECLAIM emission reduction goal) by at least 20 percent. For Compliance Years 2009 and 2010, the leftover NOx RTCs totaled 30 and 29 percent of the aggregate allocations, respectively, even though there was a programmatic reduction in RECLAIM NOx allocations adopted by the Governing Board as part of the January 2005 rule amendments. There may be other forces at play to cause such results in addition to actual emission reductions implemented through the application of air pollution control systems by RECLAIM facilities. Potentially, the effects of the nation's economic downturn and slow recovery over the last few years may also be contributing to lower aggregate emissions in the RECLAIM universe.

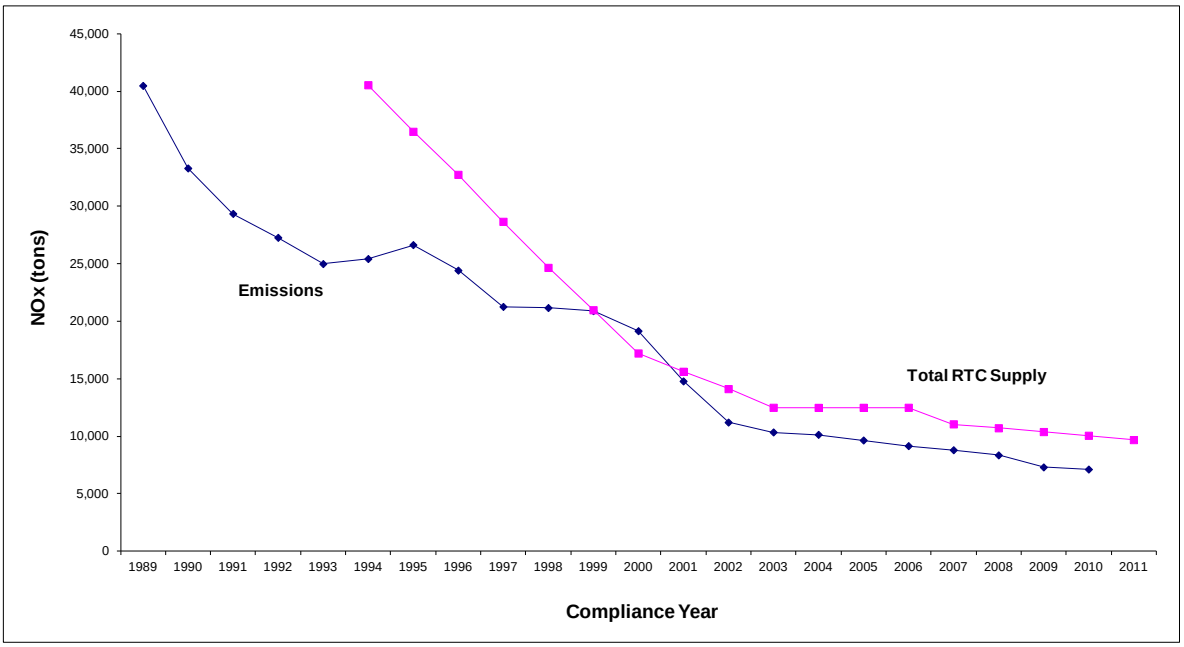
Table 3-1
Annual NOx Emissions for Compliance Years 1994 through 2010

Compliance Year	Audited Annual NOx Emissions[1] (tons)	Audited Annual NOx Emissions Change from 1994 (%)	Total NOx RTCs[2] (tons)	NOx RTCs Left Over (tons)	NOx RTCs Left Over (%)
1994	25,420	0%	40,534	15,114	37%
1995	26,632	4.8%	36,484	9,852	27%
1996	24,414	-4.0%	32,742	8,328	25%
1997	21,258	-16%	28,657	7,399	26%
1998	21,158	-17%	24,651	3,493	14%
1999	20,889	-18%	20,968	79	0.38%
2000	19,148	-25%	17,208	-1,940	-11%
2001	14,779	-42%	15,617	838	5.4%
2002	11,201	-56%	14,111	2,910	21%
2003	10,342	-59%	12,485	2,143	17%
2004	10,134	-60%	12,477	2,343	19%
2005	9,642	-62%	12,484	2,842	23%
2006	9,152	-64%	12,486	3,334	27%
2007	8,794	-65%	11,046	2,252	20%
2008	8,346	-67%	10,705	2,359	22%
2009	7,300	-71%	10,377	3,077	30%
2010	7,116	-72%	10,053	2,937	29%

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

[2] Total RTCs = Allocations + Converted ERCs.

Figure 3-1
NOx Emissions and Available RTCs



Similar to Table 3-1 and Figure 3-1 for NOx, Table 3-2 presents aggregate annual SOx emissions data for each compliance year based on audited emissions, and Figure 3-2 compares these audited aggregate annual SOx emissions with the aggregate annual SOx RTC supply. Furthermore, after resolving outstanding issues related to one facility's Compliance Year 2009 SOx emissions, staff updated Table 3-2 to reflect a net decrease in Compliance Year 2009's aggregate SOx emissions of 3 tons from a total of 2,949 tons to a total of 2,946 tons. As shown in Table 3-2 and Figure 3-2, RECLAIM facilities have not exceeded their SOx allocations on an aggregate basis in any compliance year since program inception. For Compliance Year 2010, SOx emissions were below total allocations by 35%. Similar to NOx RTC leftovers, the SOx RTCs leftovers for the last three compliance years, inclusive of Compliance Year 2010, remain in excess of 20%. The data indicates that RECLAIM met its programmatic SOx emission reduction goals and demonstrated equivalency in SOx emission reductions compared to the subsumed command-and-control rules and control measures. Based on updated emissions taken from audited data, annual SOx emissions have followed a general downward trend, except for increases in Compliance Years 1995, 1997, 2005, and 2007 compared to their respective previous year.

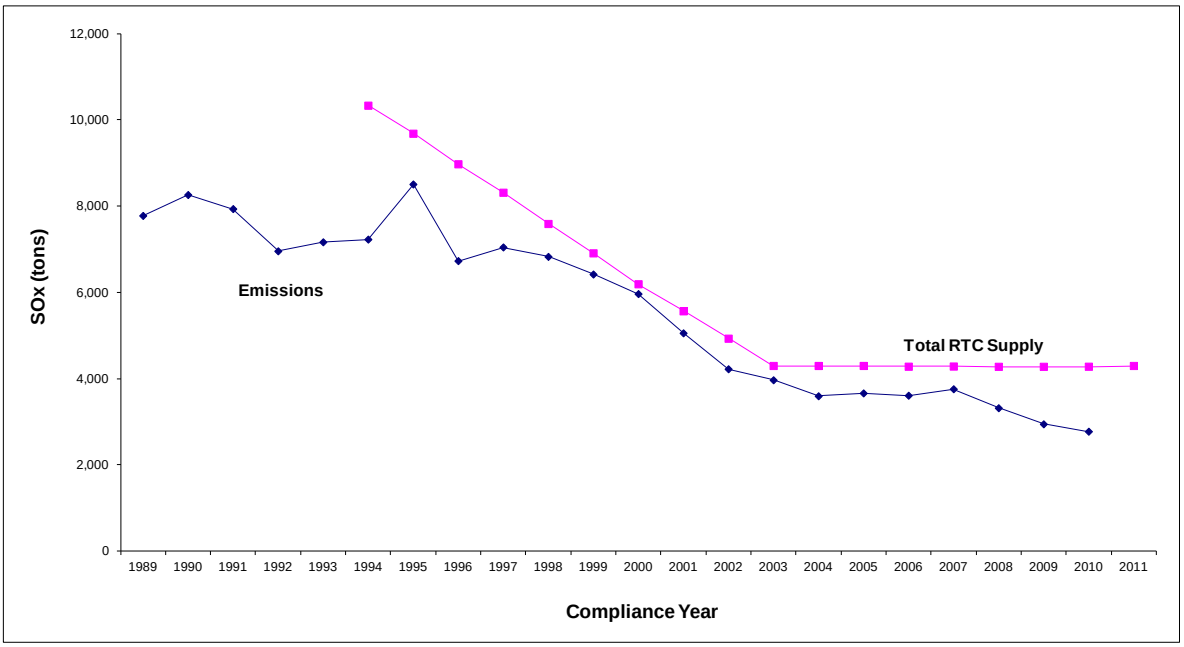
Table 3-2
Annual SOx Emissions for Compliance Years 1994 through 2010

Compliance Year	Audited Annual SOx Emissions[1] (tons)	Audited Annual SOx Emissions Change from 1994 (%)	Total SOx RTCs[2] (tons)	SOx RTCs Left Over (tons)	SOx RTCs Left Over (%)
1994	7,230	0%	10,335	3,105	30%
1995	8,508	18%	9,685	1,177	12%
1996	6,731	-6.9%	8,976	2,245	25%
1997	7,048	-2.5%	8,317	1,269	15%
1998	6,829	-5.5%	7,592	763	10%
1999	6,420	-11%	6,911	491	7.1%
2000	5,966	-17%	6,194	228	3.7%
2001	5,056	-30%	5,567	511	9.2%
2002	4,223	-42%	4,932	709	14%
2003	3,968	-45%	4,299	331	7.7%
2004	3,597	-50%	4,299	702	16%
2005	3,663	-49%	4,300	637	15%
2006	3,610	-50%	4,282	672	16%
2007	3,759	-48%	4,286	527	12%
2008	3,319	-54%	4,280	961	22%
2009	2,946	-59%	4,280	1,334	31%
2010	2,775	-62%	4,282	1,507	35%

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

[2] Total RTCs = Allocations + Converted ERCs.

Figure 3-2
SOx Emissions and Available RTCs



Comparison to Command-and-Control Rules

RECLAIM subsumed a number of command-and-control rules[1] and sought to achieve reductions equivalent to these subsumed rules. RECLAIM facilities are exempt from the subsumed rules' requirements that apply to SOx or NOx emissions once the facilities comply with the applicable monitoring requirements of Rules 2011 and 2012, respectively. During Compliance Year 2010, one of the subsumed rules, Rule 1110.2 – Emissions from Gaseous and Liquid-Fueled Engines was amended on July 9, 2010 and affected gaseous- and liquid-fueled engines producing more than 50 brake-horsepower. The purpose of this rule amendment was to add an exemption for internal combustion engines operated at one remote public safety communication facility in southwestern Riverside County on Santa Rosa Peak at over 7,400 foot altitude that does not have access to electric power or natural gas. Due to the location of the site having limited access during winter, this exemption allows the use of diesel generators. This amended rule did not impose a category-wide equipment emission limit change, but rather exempted a single non-RECLAIM facility from meeting its current command-and-control emission limit.

Another rule amended twice in Compliance Year 2010, Regulation IX – Standards of Performance for New Stationary Sources, had the potential to impact NOx or SOx sources at RECLAIM facilities. However, since Regulation IX was not subsumed by RECLAIM rules, the requirements of both amendments to Regulation IX would apply equally to equipment at facilities under both command-and-control rules and RECLAIM.

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

Amended March 5, 2010, Regulation IX incorporated new or amended federal standards by reference. Three actions enacted by USEPA in 2009, and incorporated by reference, affect facilities with fossil fuel-fired steam generators and industrial-commercial-institutional steam generating units; industries using stationary combustion turbines; and industries preparing and processing coal. These new source performance standards cover compliance alternatives for fossil fuel-fired steam generators and industrial-commercial-institutional steam generating units; amendment of SOx standards for certain stationary combustion turbines burning low-sulfur content biogas; and revision of some emission limits for certain equipment at coal preparation and processing plants.

On March 4, 2011 Regulation IX was again amended to incorporate by reference federal New Source Performance Standards (NSPS). Specifically, this action incorporated Subparts A and F– General Provisions, and New Source Performance Standards for Portland Cement Plants (USEPA effective date November 8, 2010, Reference: 75 FR54970, Vol. 75, No. 174, September 9, 2010). This amendment contained: 1) additional or revised emission limits for particulate matter (PM), opacity, nitrogen dioxide (NO2), and sulfur dioxide (SO2) for facilities that commenced construction, modification, or reconstruction after June 16, 2008; and, 2) additional testing and monitoring requirements for affected sources.

Program Amendments

During Compliance Year 2010, two new amendments to Regulation XX were adopted by AQMD's Governing Board: Rule 2002 – Allocations for Oxides of Nitrogen (NOx) and Oxides of Sulfur (SOx) on November 5, 2010, and Rule 2005 – New Source Review for RECLAIM on June 3, 2011. As discussed in Chapter 2 and Chapter 3 of last year's "Annual RECLAIM Audit Report for 2009 Compliance Year," the amendment to Rule 2002 was in response to USEPA's "Clean Air Fine Particle Implementation Rule" in March of 2007, whereby non-attainment areas are required to meet particulate matter with aerodynamic diameter less than 2.5 microns (PM2.5) standards by 2010. Since the 2007 AQMP identified NOx and SOx reductions as the two most effective tools in reaching attainment with the PM2.5 standards, the 2007 AQMP revision included both a formal request to extend USEPA's PM2.5 attainment date to 2015, and Control Measure CMB-02 ("Further SOx Reductions for RECLAIM"), which estimated that implementation of SOx BARCT could achieve at least three tons per day SOx emission reductions from 2011 to 2014. The amendment to Rule 2002 will result in an overall reduction of 5.7 tons SOx per day when fully implemented in 2019 (the reductions are being phased in from 2013 through 2019: 3.0 tons per day in 2013, 4.0 tons per day in years 2014 through 2016, 5.0 tons per day in 2017 and 2018, and 5.7 tons per day in 2019 and after).

In response to AQMD Governing Board Chairman Burke's "Helping Hand Initiative for 2009" at the January 9, 2009 Board Meeting to provide enhanced customer service to permit applicants and permit holders, the Governing Board amended Rule 2005 on June 3, 2011 by revising the RTC hold requirement to make it less burdensome for facilities while continuing to comply with the federal NSR and state no net increase (NNI) in emissions requirements. Rule 2005 required RECLAIM facilities that had an emissions increase subject to NSR since October 1993, to hold RTCs at the beginning of each compliance year equal to

the increase in its maximum potential emissions. The evaluation of emission increases is performed on a device-by-device basis, so any time a new NOx- or SOx-emitting RECLAIM device is installed it triggers the RTC hold requirement, regardless if the new device is replacing an older device and is lower-emitting than the one being replaced. Therefore, as time goes on, this type of emission increases, and the associated aggregate hold requirement, continues to grow even as aggregate emissions decline. As a result, there was concern that facilities would find themselves unable to modernize simply because they would not be able to obtain sufficient RTCs to satisfy the hold requirement at the beginning of a compliance year due to the built-in decreasing allocations, despite the requirement to reconcile all actual emissions from that unit on a quarterly basis and at the end of the compliance year. The RTC hold requirement applied even if the net impact of the facility's modernization effort was a reduction in RECLAIM emissions. The amount of RTCs required to be held is equal to the maximum potential emission level rather than the anticipated actual emission level. Additionally, this also could create an artificially high demand for RTCs at the beginning of a compliance year because actual emissions are generally less than maximum potential to emit. The held RTCs are not allowed to be traded until either the end of a compliance year or the end of a quarter, if the permit so allows. Generally, the value of RTCs declines as they approach their expiration date. This increases the operating cost of a new lower emitting source without any emission benefits (*i.e.*, the RTCs are required to be held when their cost is higher than the price they can be sold at the end of the holding period).

The amendment to Rule 2005 alleviated the impacts of the RTCs holding requirement for facilities initially permitted prior to the October 1993 adoption of RECLAIM that do not emit at a level higher than their starting allocations (plus Non-tradable/Non-usable RTCs for Compliance Year 1994), while continuing to satisfy federal emissions offset requirements. Specifically, amended Rule 2005 only subjects facilities that held AQMD permits prior to the October 1993 adoption of RECLAIM to the hold requirement for the first year after each increase in potential emissions. USEPA published a notice in the Federal Register [Federal Register Volume 76, Number 244 (Tuesday, December 20, 2011), pp.78829-78831] informing the public that it would be issuing a direct final rule approving Rule 2005, as amended by the Governing Board on June 3, 2011 into the SIP, on February 21, 2012 unless it received adverse comments prior to January 19, 2012. As of the closing date for adverse comments, none were received.

Backstop Provisions

Rule 2015 requires that AQMD review the RECLAIM program and implement necessary measures to amend it whenever aggregate emissions exceed the aggregate allocations by five percent or more, or whenever the average annual price of RTCs exceeds $15,000 per ton. Compliance Year 2010 aggregate NOx and SOx emissions were both below aggregate allocations as shown in Figures 3-1 and 3-2. At the same time, average annual prices for NOx and SOx RTCs in calendar year 2010 were below $15,000 per ton, as shown in Chapter 2. Therefore, there is no need to initiate a program review.

Breakdowns

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

As part of the annual audit report, Rule 2015(d)(3) requires AQMD to determine whether excess emissions approved for exclusion from securing RTCs to cover their emissions have been programmatically offset by unused RTCs within the RECLAIM program. If the breakdown emissions exceed the unused RTCs, any excess breakdown emissions must be offset by either: (1) deducting the amount of emissions not programmatically offset from the RTC holdings for the subsequent compliance year from facilities that had unmitigated breakdown emissions, proportional to each facility's contribution to the total amount of unmitigated breakdown emissions; and/or (2) RTCs obtained by the Executive Officer for the compliance year following the completion of the annual audit report in an amount sufficient to offset the unmitigated breakdown emissions.

As shown in Table 3-3, a review of APEP reports for Compliance Year 2010 found that no facilities requested to exclude breakdown emissions from being counted against their allocations. Thus, for Compliance Year 2010, no additional offsets are required pursuant to Rule 2015(d)(3).

Table 3-3
Breakdown Emission Comparison for Compliance Year 2010

Emittant	Unmitigated Breakdown Emissions[1] (tons)	Compliance Year 2010 Unused RTCs[2] (tons)
NOx	**0**	**2,937**
SOx	**0**	**1,507**

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

[2] Unused RTCs = RTC supply – Audited Emissions. Unused RTCs will be discounted by any unmitigated breakdown emissions, if any.

Impact of Changing Universe

As discussed in Chapter 1, two facilities were included into both the NOx and SOx universes, one facility was included into the NOx universe only, no facilities were excluded, and six facilities in the NOx universe shut down. Staff conducted

an analysis to evaluate the impact on emissions reductions due to these changes in the RECLAIM universe.

Facilities that were in operation prior to October 15, 1993 and are not categorically excluded may choose to enter the program even though they did not initially meet the inclusion criteria. They may also be included by AQMD if their facility-wide emissions increase to four tons or more per year of NOx or SOx or both. When one of these facilities enters the program, they are issued RTC allocations based on their operational history using the same methodology applied to facilities in the initial universe. Overall, inclusions shift the accounting of emissions from the universe of non-RECLAIM sources to the universe of RECLAIM sources without actually changing the overall emissions inventory. Inclusions also change the rules and requirements that apply to the affected facilities. There were no facilities that were in operation prior to October 15, 1993 that chose to opt-in to the RECLAIM program between July 1, 2010 and June 30, 2011 and none were included into the RECLAIM program based on the Rule 2001 threshold of actual NOx and/or SOx emissions greater than or equal to four tons.

Facilities that commenced operation on or after October 15, 1993 as non-RECLAIM facilities can either choose to enter RECLAIM or are included due to actual NOx or SOx emissions in excess of four tons or more per year. These facilities are not issued RTCs based on operational history except for those credits converted and issued based on external offsets provided by the facility. When a newly-constructed facility joins the RECLAIM universe, it is required to obtain sufficient RTCs to offset its NOx or SOx emissions. These RTCs must be obtained through the trading market and are not issued by AQMD to the facility. Such facilities increase the overall demand for the fixed supply of RTCs because they increase total RECLAIM emissions without increasing the total supply of RTCs. There were two newly-constructed facilities that elected to opt-in between July 1, 2010 and June 30, 2011. One was a NOx-only facility while the other was a NOx and SOx RECLAIM facility.

Additionally, facilities that undergo a partial change of operator may have an impact on emissions, depending on the operating conditions of the facility under the new operator. No additional allocations are issued to as a consequence of a facility splitting into two and undergoing a partial change of operator. Therefore, the supplies of NOx and SOx RTCs are not impacted. There was one facility included into both the NOx and SOx RECLAIM universes between July 1, 2010 and June 30, 2011 resulting from the partial change of operator of an existing RECLAIM 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 do new facilities: the overall demand for RTCs is reduced while the supply remains constant. As reported in Chapter 1, six NOx-only RECLAIM facilities shut down permanently between July 1, 2010 and June 30, 2011.

A facility is excluded from the RECLAIM universe if AQMD staff determines that the facility was included in the program in error. In such cases, both the

emissions and the RTCs that were issued to the facility for future years are withdrawn, thereby having a neutral impact on the RTC supply. Exclusions have the reverse affect as inclusions, in that the accounting of emissions is shifted from the RECLAIM universe of sources to the non-RECLAIM universe of sources. No facilities were excluded between July 1, 2010 and June 30, 2011.

In short, both inclusion of facilities that were initially permitted after the October 1993 adoption of RECLAIM, new facilities and facilities that result from a partial change of operator, and shutdown facilities change the demand for RTCs without changing the supply[2], while exclusions of existing facilities make corresponding changes to both the demand and the supply, thereby mitigating their own impact on the markets and shifting emissions between the RECLAIM and non-RECLAIM universes. Finally, inclusions of facilities that were initially permitted prior to the October 1993 adoption of RECLAIM most likely will affect demand more than supply because even though these facilities are issued RTC allocations based on their operational history, the amount, in many cases, is not enough to offset their current or future operations.

Compliance Year 2010 NOx and SOx audited emissions and initial allocations for facilities that were shutdown, excluded, or included into the program during Compliance Year 2010 are summarized in Tables 3-4 and 3-5.

Table 3-4
NOx Emissions Impact from the Changes in Universe (Tons)

Category	Compliance Year 2010 NOx Emissions (tons)	Compliance Year 2010 NOx Initial Allocations (tons)
Shutdown Facilities	2.8	45.6
Excluded Facilities	Not applicable	Not applicable
Included Facilities	1.6[a]	22.8[b]
RECLAIM Universe	7,116	10,053

[a] These NOx emissions are from the one included facility resulting from a partial change of operator that occurred in the last quarter of the compliance year. The two other included facilities (both opt-ins) had no impact on Compliance Year 2010 emissions because they are new facilities that have not yet started operations.

[b] The facility that resulted from a partial change of operator was required to hold enough NOx RTCs to cover its operations during the compliance year. The two opt-in facilities represent new construction and did not receive any initial allocations.

[2] Facilities that were initially permitted after the October 1993 adoption of RECLAIM and that provided NOx or SOx ERCs to offset their emissions would be issued RTCs corresponding to the ERCs provided.

Table 3-5
SOx Emissions Impact from the Changes in Universe (Tons)

Category	Compliance Year 2010 SOx Emissions (tons)	Compliance Year 2010 SOx Initial Allocations (tons)
Shutdown Facilities	Not applicable	Not applicable
Excluded Facilities	Not applicable	Not applicable
Included Facilities	0.45[a]	2.45[b]
RECLAIM Universe	2,775	4,282

[a] These SOx emissions are from the one included facility resulting from a partial change of operator that occurred in the last quarter of the compliance year. The second included facility was a NOx-only opt-in that would have no impact on SOx. The third included facility is a NOx and SOx opt-in but had no impact on Compliance Year 2010 emissions because it is a new facility that has not yet started operation.

[b] The facility that resulted from a partial change of operator was required to hold enough SOx RTCs to cover its operations during the compliance year. The two opt-in facilities represent new construction and did not receive any initial allocations.

CHAPTER 4
NEW SOURCE REVIEW ACTIVITY

Summary

The annual program audit assesses New Source Review (NSR) activity from RECLAIM facilities in order to ensure that RECLAIM is complying with federal NSR requirements and state no net increase (NNI) in emissions requirements, while providing flexibility to facilities in managing their operations and allowing new sources into the program. In Compliance Year 2010, a total of 30 NOx RECLAIM facilities had NSR NOx emission increases due to expansion or modification, and four SOx RECLAIM facilities had NSR SOx emission increases due to expansion or modification. The consistent trend of surplus NOx and SOx RTCs over their respective emissions has allowed for expansion and modification by existing facilities.

RECLAIM is required to comply with federal NSR emissions offset requirements at a 1.2-to-1 offset ratio for NOx emission increases and at least at a 1-to-1 offset ratio for SOx emission increases on a programmatic basis. In Compliance Year 2010, RECLAIM provided an offset ratio of 34-to-1 for NOx, demonstrating federal equivalency. RECLAIM inherently complies with the federally-required 1-to-1 SOx offset ratio for any compliance year provided aggregate SOx emissions under RECLAIM are lower than or equal to aggregate SOx allocations for that compliance year. As shown in Chapter 3, there was no programmatic SOx exceedance during Compliance Year 2010; in fact, there was a surplus of SOx RTCs. Therefore, RECLAIM more than complied with the federally-required SOx offset ratio and further quantification of the SOx offset ratio is unnecessary. Compliance with the federally-required offset ratio also demonstrates compliance with the state NNI requirements for new or modified sources. In addition, RECLAIM requires application of Best Available Control Technology (BACT) for all new or modified sources with emission increases.

Background

Emissions increases from the construction of new or modified stationary sources in non-attainment areas are regulated by both federal NSR and state NNI requirements to ensure that progress toward attainment of ambient air quality standards is not hampered. RECLAIM is designed to comply with federal NSR and state NNI requirements without hindering a facility's ability to expand or modify its operations[1].

Title 42, United States Code §7511a, paragraph (e), requires major sources in extreme non-attainment areas to offset emission increases of extreme non-attainment pollutants and their precursors at a 1.5-to-1 ratio based on potential to emit. However, if all major sources in the extreme non-attainment area are required to implement federal BACT, a 1.2-to-1 offset ratio may be used. Federal

[1] Federal NSR applies to federal major sources (sources with the potential to emit at least 10 tons of NOx or 100 tons of SOx per year for the South Coast Air Basin) and state NNI requirements apply to all NOx sources and to SOx sources with the potential to emit at least 15 tons per year in the South Coast Air Basin. RECLAIM's NSR provisions apply to all facilities in the program.

BACT is comparable to California's BARCT. AQMD requires all existing major sources to employ federal BACT/California BARCT and, therefore, is eligible for a 1.2-to-1 offset ratio for ozone precursors (*i.e.*, NOx and VOC). The federal offset requirement for major SO_2 sources is at least a 1-to-1 ratio, which is lower than the aforementioned 1.2-to-1 ratio. Even though the Basin is in attainment with SOx standards, SOx is a precursor to PM10 which is a non-attainment air pollutant in the Basin. The applicable offset ratio for PM10 is at least 1-to-1, thus, the applicable offset ratio for SOx is 1-to-1. Health and Safety Code §40920.5 requires "no net increase in emissions from new or modified stationary sources of non-attainment pollutants or their precursors" (*i.e.*, a 1-to-1 offset ratio on an actual emissions basis). All actual RECLAIM emissions are offset at a 1-to-1 ratio provided there is not a programmatic exceedance of aggregate allocations, thus satisfying the federal offset ratio for SOx and state NNI requirements for both SOx and NOx. Annual RTC allocations follow a programmatic reduction to reflect changes in federal BACT/California BARCT and thereby comply with federal and state offset requirements.

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

Rule 2005 – New Source Review for RECLAIM required RECLAIM facilities to provide, prior to the start of operation, sufficient RTCs to offset the annual increase in potential emissions for the first year of operation at a 1-to-1 ratio. After the first year of operation, the same rule also requires RECLAIM facilities to provide sufficient RTCs to offset the annual potential emissions from newly permitted equipment at a 1-to-1 ratio at the commencement of each compliance year. Although RECLAIM allows a 1-to-1 offset ratio for emissions increases, RECLAIM complies with the federal offset requirement by complying with the 1.2-to-1 offset requirement for NOx on an aggregate basis. This annual audit report assesses NSR permitting activities for Compliance Year 2010 to verify that programmatic compliance of RECLAIM with federal and state NSR requirements has been maintained.

Finally, as mentioned previously in Chapter 3, AQMD's Governing Board approved amendments to Rule 2005 – New Source Review for RECLAIM on June 3, 2011. This rule amendment removed a barrier for facilities to modernize by eliminating the requirement for an existing facility to hold sufficient RTCs in advance of second and subsequent compliance years provided its overall facility emissions remain under its 1994 initial allocations plus non-tradable credits. But for facilities that did not exist prior to October 1993, the requirement to hold sufficient RTCs in advance of second and subsequent compliance years remains unchanged. Also, all RECLAIM facilities must still hold adequate RTCs to

reconcile their emissions during a compliance year pursuant to Rule 2004. USEPA has published notice in the Federal Register regarding its intent to issue a direct final rule effective February 21, 2012, provided that no adverse comments are submitted by January 19, 2012. As mentioned in Chapter 3, the closing date for adverse comments had expired and none were received.

NSR Activity

Evaluation of NSR data for Compliance Year 2010 shows that RECLAIM facilities were able to expand and modify their operations while complying with NSR requirements. During Compliance Year 2010, a total of 30 RECLAIM facilities (18 in Cycle 1 and 12 in Cycle 2) were issued permits to operate, which resulted in a total of 89.28 tons per year of NOx emission increases from starting operations of new or modified sources, and four SOx RECLAIM facilities (one facility in Cycle 1 and three facilities in Cycle 2) experienced a total of 0.27 tons per year of SOx NSR emission increases that resulted from starting operations of new or modified sources. These emission increases were calculated pursuant to Rule 2005(d) – Emission Increase. NSR offset requirements[2] did not apply to the three new facilities included into RECLAIM mentioned in Chapter 1 because two of them are new power plants under construction that opted to participate in the RECLAIM program (the RTC hold requirement will apply to these facilities at the time of permit to operate issuance), whereas the third facility entered the RECLAIM program due to a partial change of operator without any emission increase. As in previous years, there were adequate unused RTCs (NOx: 2,937 tons, SOx: 1,507 tons; see Chapter 3) in the RECLAIM universe for use by new entrants into the program and for existing facilities to expand or increase production.

NSR Compliance Demonstration

RECLAIM is designed to programmatically comply with the federal NSR offset requirements. Meeting the NSR requirement (offset ratio of 1.2-to-1 for NOx and at least 1-to-1 for SOx) also demonstrates compliance with the state NNI requirements. Section 173 (c) of the federal Clean Air Act (CAA) states that only emissions reductions beyond the requirements of the CAA, such as federal Reasonably Available Control Technology (RACT), shall be considered creditable as emissions reductions for offset purposes. Since the initial allocations (total RTC supply in Compliance Year 1994) already met federal RACT requirements when the program was initially implemented, any emissions reductions beyond the initial allocations are available for NSR offset purposes until RACT becomes more stringent. The programmatic offset ratio calculations presented in the Annual RECLAIM Audit Reports for Compliance Years 1994 through 2004 relied upon aggregate Compliance Year 1994 allocations as representing RACT. However, staff recognizes that RACT may have become more stringent in the intervening years, so it may no longer be appropriate to calculate the programmatic offset ratio based upon aggregate 1994 allocations.

Aggregate allocations for each compliance year represent federal BACT, which is equivalent to local BARCT. Federal BACT is more stringent than federal RACT (*i.e.*, the best available control technology is more stringent than what is

[2] RTC hold requirements under NSR applies when a Permit to Operate is issued.

reasonably available), so staff started using current allocations (federal BACT) as a surrogate for RACT as the basis for calculating programmatic NOx and SOx offset ratios in the annual audit report for Compliance Year 2005 and is continuing to do so for NOx in this report. This is a more conservative (*i.e.*, more stringent) approach than using actual RACT and is much more conservative than using aggregate Compliance Year 1994 allocations. The advantage of this approach is that, as long as the calculated NOx offset ratio is at least 1.2-to-1, 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. However, if this very conservative approach should ever fail to demonstrate that the aggregate NOx offset ratio for any year is at least 1.2-to-1, that will not necessarily mean RECLAIM has not actually complied with the federally required 1.2-to-1 NOx offset ratio. Rather it will indicate that further analysis is required to accurately identify RACT so that the actual offset ratio can be calculated and a compliance determination made.

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

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

As stated in the previous section under the title of "NSR Activity", permits to operate were issued to 30 RECLAIM facilities and resulted in 89.28 tons of NOx emission increase pursuant to Rule 2005(d). Therefore, the Compliance Year 2010 NOx programmatic offset ratio calculated from this methodology is 34-to-1 as shown below:

$$\text{Offset Ratio} = \left(1 + \frac{2{,}937 \text{ tons}}{89.28 \text{ tons}}\right)\text{-to-1}$$

$$= 34 \text{ -to-1}$$

RECLAIM continues to generate sufficient excess emissions reductions to provide greater than 1.2-to-1 offset ratio for NOx emissions, as required by federal law. This compliance with the federal offset requirements is built into the RECLAIM program through annual reductions of the allocations assigned to RECLAIM facilities and the subsequent allocation adjustments adopted by the Governing Board to implement BARCT. The required offset ratio for SOx is 1-to-1. Since RECLAIM facilities are required to secure, at a minimum, adequate RTCs to cover their actual emissions, the offset ratio is met automatically provided there is no programmatic exceedance of aggregate SOx allocations for that compliance year. As stated earlier in Chapter 3, there were excess SOx

RTCs (1,507 tons) when compared to the total SOx emissions during Compliance Year 2010. Therefore, a separate calculation of the SOx offset ratio is not necessary.

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

The result of the review of the NSR activity in Compliance Year 2010 shows that RECLAIM is in compliance with both state NNI and federal NSR requirements. AQMD will continue to monitor NSR activity under RECLAIM in order to assure continued progress toward attainment of ambient air quality standards without hampering economic growth in the Basin.

Modeling Requirements

Rule 2004, as amended in May 2001, requires RECLAIM facilities with actual NOx or SOx emissions exceeding their initial allocation in Compliance Year 1994 by 40 tons per year or more to conduct modeling to analyze the potential impact of the increased emissions. The modeling analysis is required to be submitted within 90 days of the end of the compliance year. For Compliance Year 2010, two RECLAIM facilities[3] were subject to this requirement. The facilities submitted modeling analyses that showed that their NOx/SOx emissions complied with the most stringent ambient air quality standards set forth in Rule 2005, Appendix A.

[3] Under the requirements of Rule 2004(q), Conoco Phillips Company (Facility ID 800362) was required to submit modeling analysis for its SOx emissions and Mountainview Power Company (Facility ID 121737) was required to submit modeling analysis for its NOx emissions in Compliance Year 2010.

CHAPTER 5
COMPLIANCE

Summary

*There were 284 NOx and 32 SOx active facilities in the RECLAIM program at the start of Compliance Year 2010. During Compliance Year 2010, two facilities were included into both the NOx and SOx universes, one facility was included only into the NOx universe, no facilities were excluded, and six facilities in the NOx universe shut down. Of these 287 NOx RECLAIM Facility Permit holders during Compliance Year 2010, 265 facilities (92%) complied with their NOx allocations, and all of the SOx facilities (100%) complied with their SOx allocations. The 22 NOx facilities that exceeded their NOx allocations had aggregate NOx emissions of 374 tons and did not have adequate allocations to offset 51.3 tons (or 14%) of their emissions. This exceedance amount is small compared to the overall allocations for Compliance Year 2010 (0.5% of NOx allocations). The exceedances from these 22 facilities did not impact RECLAIM emission reduction goals. The overall RECLAIM NOx and SOx emission reduction targets and goals were met for Compliance Year 2010 (*i.e.*, aggregate emissions for all active RECLAIM facilities were well below aggregate allocations).*

Background

RECLAIM facilities have the flexibility to choose among compliance options to meet their annual allocations by reducing emissions, trading RTCs, or a combination of both. However, this flexibility must be supported by standardized emission MRR requirements to ensure the reported emissions are real, quantifiable, and enforceable. As a result, specific and detailed MRR protocols are specified in the RECLAIM regulation to guarantee accurate and verifiable emission reports.

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

Allocation Compliance

Requirements

At the beginning of the RECLAIM program in 1994, each RECLAIM facility received an annual allocation for each compliance year. For an existing facility new to the program, annual allocations are issued according to the same methodology used for those facilities that were included at the start of the program. However, a facility without an operating history prior to 1994 receives no allocation and must purchase enough RTCs to cover the emissions for their operations, except facilities that have provided ERCs to offset emission increases prior to entering RECLAIM. These facilities are issued RTCs, on an annual basis, converted from the amount of offsets provided and/or any ERCs generated at and held by the individual facility itself. Knowing their emission goals, RECLAIM facilities have the flexibility to manage their emissions in order to meet their allocations in the most cost-effective manner. Facilities may employ emission control technology to further reduce emissions, buy RTCs, or sell unneeded RTCs.

At the end of the reconciliation period for each quarter and each compliance year, a RECLAIM facility must hold sufficient RTCs in its allocation account to cover its quarterly as well as year-to-date emissions for the compliance year. Facilities may buy RTCs at any time during the year in order to ensure that their emissions are covered or trade excess RTCs. 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 each quarterly and annual reconciliation period, each facility is required to certify the emissions for the preceding quarter and/or compliance year by submitting its QCERs and/or APEP report, respectively.

Compliance Audit

Since the beginning of the program, AQMD has conducted annual audits of all emission reports submitted by RECLAIM facilities to ensure their integrity and reliability. The audit process includes conducting field inspections to check process equipment, monitoring devices, operational records, and emissions calculations in order to verify emissions reported electronically to AQMD or submitted in QCERs and APEP reports. These inspections revealed that some facilities made errors in quantifying their emissions such as arithmetic errors, used incorrect emission factors or adjustment factors (*e.g.*, pressure correction factors and bias adjustment factors), used emission calculation methodologies not allowed under the rules, used MDP inappropriately, or did not use MDP when required. Other common mistakes included reporting non-RECLAIM emissions and/or excluding reportable emissions.

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

Compliance Status

At the beginning of Compliance Year 2010, there were 284 NOx RECLAIM facilities and 32 SOx facilities. As stated in Chapter 1, two facilities were included into both the NOx and SOx universe, one facility was included only into the NOx universe, and six NOx-only facilities ceased operations during Compliance Year 2010. During this compliance year, a total of 22 RECLAIM facilities failed to reconcile their NOx emissions and no facility exceeded its SOx Allocations. Of these 22 facilities, 14 facilities failed to secure sufficient RTCs to cover their reported emissions during either the quarterly or annual year-to-date reconciliation periods as confirmed through audits. In addition to failing to secure sufficient RTCs to cover their reported emissions, audits for six of these 14 facilities revealed additional reasons for exceedance related to incorrect fuel usage, arithmetic errors, using incorrect emission factors, and omitting emissions from reportable sources. The remaining eight facilities exceeded their allocations as a result of recalculation of their emissions during the audit of the facility.

One facility exceeded its allocation because it failed to account for all reportable emissions in one quarter due to a calculation error. Another facility exceeded its allocation because the facility failed to account for emissions from contractor-owned portable internal combustion engines as well as from equipment exempt from obtaining a written permit pursuant to Rule 219. The third facility exceeded its allocation because it failed to apply MDP on process unit equipment and equipment exempt from obtaining a written permit pursuant to Rule 219 because of invalid fuel usage data. The fourth facility exceeded its allocation because the audit showed it failed to apply the correct form of MDP on process unit and equipment exempt from obtaining a written permit pursuant to Rule 219. The fifth facility exceeded its allocation because it used an incorrect emission factor and an incorrect higher heating value to calculate large source and process unit emissions. The sixth facility exceeded its allocation because it incorrectly determined fuel usage for its process unit internal combustion engines. The seventh facility exceeded its allocation because it incorrectly calculated emissions from equipment exempt from obtaining a written permit pursuant to Rule 219. In the eighth case, the facility exceeded its allocation because MDP was not applied to 21 days of data when the CEMS certification lapsed.

Overall, the allocation compliance rate is 92% (265 out of 287 facilities) for NOx RECLAIM facilities and 100% for SOx RECLAIM facilities. The 22 facilities, which had NOx emissions in excess of their individual NOx allocations, had 374 tons of NOx emissions and did not have adequate RTCs to cover 51.3 tons (or 14%) of their emissions. This amount is 0.5% of aggregate NOx allocations for Compliance Year 2010.

Impact of Missing Data Procedures

MDP was designed to provide a method for determining emissions when an emission monitoring system fails to yield valid emissions. For major sources, these occurrences may be caused by failure of the monitoring systems, the data acquisition and handling systems, or by lapses in the Continuous Emission Monitoring System (CEMS) certification period. Major sources are also required to use MDP for determining emissions whenever daily emissions reports are not submitted by the applicable deadline. When comparing actual emissions with a facility's use of substituted MDP emissions, the range of MDP emissions can

vary from "more representative" to emissions being overstated to reflect a "worst case"[1] scenario. For instance, an MDP "worst case" scenario may occur for major sources that fail to have their CEMS certified in a timely manner, and therefore, have no valid CEMS data that can be used in the substitution. In other cases, where prior CEMS data is available, MDP is applied in tiers depending on the duration of missing data periods and the historical availability of monitoring systems. As the duration of missing data periods gets shorter and the historical availability of monitoring systems gets higher, the substitute data yielded by MDP becomes more representative of actual emissions[2].

In addition to MDP for major sources, RECLAIM rules also define MDP for large sources and process units. These procedures are applicable when a process monitoring device fails or when a facility operator fails to record fuel usage or other monitored data (*e.g.*, hours of operation). The resulting MDP emissions reports are reasonably representative of the actual emissions because averaged or maximum emissions from previous operating periods may be used. However, for extended missing data periods (more than two months for large sources or greater than four quarters for process units) or when emissions data for the preceding year are unavailable, large source and process unit MDP are also based on maximum operation or worst case assumptions.

Based on APEP reports, 93 NOx facilities and 23 SOx facilities used MDP in reporting their annual emissions during Compliance Year 2010. In terms of mass emissions, 7.0% of the total reported NOx emissions and 6.1% of the total reported SOx emissions in the APEP reports were calculated using MDP for Compliance Year 2010. Table 5-1 compares the impact of MDP on reported annual emissions for the last few compliance years and the second compliance year, 1995 (MDP was not fully implemented during Compliance Year 1994).

Table 5-1
MDP Impact on Annual Emissions

	Percent of Reported Emissions Using Substitute Data*							
Emittant	**1995**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**
NOx	23.0% (65/6,070)	8.3% (106/824)	3.0% (88/359)	2.5% (48/220)	5.6% (78/489)	7.6% (86/625)	7.8% (103/554)	7.0% (93/488)
SOx	40.0% (12/3,403)	10.4% (16/373)	3.6% (15/161)	0.0% (0/0)	7.0% (14/262)	7.5% (9/242)	13.8% (15/403)	6.1% (23/168)

* Numbers in parenthesis that are separated by a forward slash represent the number of facilities that reported use of MDP in each compliance year and tons of emissions based on MDP.

Most of the issues associated with CEMS certifications were resolved prior to Compliance Year 1999. Since then, very few facilities have had to submit emissions reports based on the worst case scenario under MDP, which may considerably overstate the actual emissions from major sources. As an example, most facilities that reported emissions using MDP in 1995 did so because they

[1] Based on uncontrolled emission factor at maximum rated capacity of the source and 24 hours per day.
[2] Based on averaged emissions during periods before and after the period when data is not available.

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 uncontrolled operation at the maximum rated capacity of the facility's equipment, regardless of the actual operational level during the missing data periods. As a result, the calculations yielded substitute data that may have been much higher than the actual emissions. In comparison to the 65 NOx facilities implementing MDP in Compliance Year 1995, 93 facilities reported NOx emissions using MDP in Compliance Year 2010. Even though this number of facilities is higher than in 1995, the percentage of emissions reported using MDP during Compliance Year 2010 is much lower than it was in 1995 (7.1% compared to 23%). Additionally, in terms of quantity, NOx emissions in Compliance Year 2010 were 8% of those in Compliance Year 1995 (488 tons compared to 6,070 tons). Since most CEMS were certified and had been reporting actual emissions by the beginning of Compliance Year 2000, 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 likely to be representative of the actual emissions.

It is important to note that portions of annual emissions attributed to MDP include actual emissions from the sources as well as the possibility of overestimated emissions. As shown in Table 5-1, approximately 7% of NOx annual emissions were calculated using MDP in Compliance Year 2010. MDP may significantly overestimate emissions from some of the sources that operate intermittently and have low monitoring system availability, and/or lengthy missing data periods. Even though a portion of the 7% may be overestimated emissions due to conservative MDP, a significant portion (or possibly all) of it could have also been actual emissions from the sources. Unfortunately, the portion that represents the actual emissions cannot be readily estimated because the extent of this effect varies widely, depending on source categories and operating parameters, as well as the tier of MDP applied. As an example, refineries tend to operate at near maximum capacity for 24 hours per day and seven days per week, except for scheduled shutdowns for maintenance and barring major breakdowns or other unforeseeable circumstances. For Compliance Year 2010, a majority of NOx MDP emissions data (60%) as well as SOx MDP emissions data (91%) were reported by refineries. 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 but, due to low data availability, are required to calculate MDP based upon continuous operation.

Emissions Monitoring

Overview

The reproducibility of reported RECLAIM facility emissions—and thereby the enforceability of the RECLAIM program—is assured through a three-tiered hierarchy of MRR requirements. A facility's equipment falls into an MRR category based on the kind of equipment it is and on the level of emissions produced or potentially produced by the equipment. RECLAIM divides all NOx sources into major sources, large sources, process units, and equipment exempt from obtaining a written permit pursuant to Rule 219. All SOx sources are

divided into major sources, process units, and equipment exempt from obtaining a written permit 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, Timer, or CPMS
Reporting Frequency	Daily	Monthly	Quarterly

Continuous Emission Monitoring System (CEMS)

Requirements

CEMS represent both the most accurate and the most reliable method of calculating emissions because they continuously monitor all of the parameters necessary to directly determine mass emissions of NOx and SOx. They are also the most costly method. These attributes make CEMS the most appropriate method for the largest emission-potential equipment in the RECLAIM universe, major sources, which are relatively few in number but represent a majority of the total emissions from all equipment. Based on emissions reported in the QCERs, 75% of all RECLAIM NOx emissions come from major sources and 91% of all RECLAIM SOx emissions come from major sources.

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

Compliance Status

By the end of calendar year 1999, almost all facilities that were required to have CEMS had their CEMS certified or provisionally approved. The only remaining uncertified CEMS are for sources that recently became subject to major source reporting requirements and sources that modified their CEMS. Typically, 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.

Standing Working Group on RECLAIM CEMS Technical Issues

CEMS technical issues, which delayed certification of some 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 to CEMS issues. In the past, the SWG met quarterly to discuss progress and also bring up new issues. However, since existing issues have been resolved and new issues are infrequent and addressed on a case-by-case basis, the SWG currently is only convened as necessary.

Semiannual and Annual Assessments of CEMS

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

To verify the quality of CEMS, the RATA report compares the CEMS data to data taken simultaneously, according to approved testing methods (also known as reference methods), by a LAP-approved source testing contractor. In order to have a passing RATA, each of the following relative accuracy performance criteria must be met: ±20% for pollutant concentration, ±15% for stack flow rate, and ±20% for pollutant mass emission 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 2010 and 2011 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 calculations), and NOx and SOx mass emissions. However, the tables do not include SOx mass emissions calculated from total sulfur analyzer systems because such systems serve numerous devices, and therefore are not suitable for mass emissions-based RATA testing.

Table 5-3
Passing Rates Based on RATAs of Certified CEMS in 2010

Concentration						Stack Flow Rate				Mass Emissions			
NOx		SO_2		Total[1] Sulfur		In-Stack Monitor		F-Factor Based Calc.		NOx		SOx^2	
No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass
428	100	104	100	21	100	62	100	395	100	428	100	80	100

1. Includes Cylinder Gas Audit (CGA) tests.
2. Does not include SOx emissions calculated from total sulfur analyzers.

Table 5-4
Passing Rates Based on RATAs of Certified CEMS in 2011[1]

Concentration						Stack Flow Rate				Mass Emissions			
NOx		SO_2		Total[2] 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
372	100	76	100	15	100	61	100	346	100	372	100	65	100

1. All passing rates calculated from data submitted before January 10, 2012 and may exclude some data from the fourth quarter of calendar year 2011.
2. Includes Cylinder Gas Audit (CGA) tests.
3. Does not include SOx emissions calculated from total sulfur analyzers.

As indicated in Tables 5-3 and 5-4, the passing rates for NOx/SO_2 concentration, stack flow rate, and mass emissions were all 100%. 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 valid total sulfur analyzer data.

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 storage media such as floppy diskettes, compact discs (CDs) and digital video discs (DVDs), or by electronic mail using a standardized format. This system minimizes the amount of material the facility must submit to AQMD and also facilitates the RATA review process. With this added option, almost all facilities have employed the EDR system to report RATA results, which has helped AQMD expedite the review process. About 97% of RATA results were submitted using EDR in calendar year 2010 and about 99% in calendar year 2011.

Non-Major Source Monitoring, Reporting, and Recordkeeping

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

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

to large sources, variables used in emission calculations for process units are dependent on the equipment's specific process, but generally include fuel usage, applicable dry F-factor, and the higher heating value of the fuel used. Process units that are permitted with concentration limits are also required to be source-tested, but within specified five-year windows. Emissions for equipment exempt from obtaining a written permit pursuant to Rule 219 are quantified using emission factors and fuel usage. No source testing is required for such exempt equipment. Since emissions are fuel-based for both process units and exempt equipment, the monitoring equipment required to quantify emissions is a non-resettable fuel meter, corrected to standard temperature and pressure. Additionally, a timer may be used to record operational time. In such cases, fuel usage is determined based on maximum rated capacity of the source. Process units and exempt equipment must submit emission reports electronically on a quarterly basis.

Emissions Reporting

Requirements

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

- Major sources must use a Remote Terminal Unit (RTU) to telecommunicate emission data to the AQMD Central Station. The RTU collects data, performs calculations, generates the appropriate data files, and transmits the data to the Central Station. This entire process is required to be performed by the RTU without human intervention.
- Emission data for all equipment other than major sources may be transmitted via RTU or compiled manually and transmitted to the Central Station via modem. Alternatively, the existing AQMD internet based application, Web Access To Electronic Reporting System (WATERS), was upgraded January 2005 to allow RECLAIM facilities to transmit emission data for non-major sources via internet connection. 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 accurate daily emissions reports from major sources. If daily reports are not submitted by 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 facility operators. Undetected errors can cause facility operators to believe that daily reports were submitted when they were not received by the Central Station. In addition to providing operators a means to confirm the receipt of their reports, the WATERS application can also display electronic reports that were submitted to, and received by, the Central Station. This system helps reduce instances where MDP must be used for late or missing daily reports,

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

Protocol Review

Even though review of MRR protocols 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, occasional revisions to the protocols may be needed to achieve improved measurement and enforcement of RECLAIM emission reductions, while minimizing administrative costs to AQMD and RECLAIM participants.

Since the RECLAIM program was adopted, staff has produced rule interpretations and implementation guidance documents to clarify and resolve specific concerns about the protocols raised by RECLAIM participants. In situations where staff could not interpret existing rule requirements to adequately address the issues at hand, the protocols and/or rules have been amended.

A Compliance Advisory (dated December 6, 2011) was mailed to all RECLAIM facilities to provide guidance regarding the minimum recordkeeping standards for equipment exempt from obtaining a written permit pursuant to Rule 219, and to clarify the emission monitoring and quantification requirements for equipment that use pilot lights. As indicated in the advisory, the provisions in the advisory will be effective and enforced beginning April 1, 2012.

CHAPTER 6
REPORTED JOB IMPACTS

Summary

*This chapter compiles data as reported by RECLAIM facilities in their Annual Permit Emissions Program (APEP) report. The analysis focuses exclusively on job impacts at RECLAIM facilities and if those job impacts were directly attributable to RECLAIM as reported by those facilities. There may be additional effects of the RECLAIM program on the local economy outside of RECLAIM facilities (*e.g.*, generating jobs for consulting firms, source testing firms and CEMS vendors) and also factors other than RECLAIM (*e.g.*, the current economic downturn), that impact the job market. These factors are not evaluated in this report.*

According to the Compliance Year 2010 employment survey data gathered from APEP reports, RECLAIM facilities reported a net gain of 1,094 jobs, representing 1.06% of their total employment. One facility (0.35% of the active facilities) indicated that the RECLAIM program resulted in two job gains at its facility. Among the facilities that reported job losses, the indicated reasons for these losses were attributed to factors other than RECLAIM. Six RECLAIM facilities were listed as shutdown during Compliance Year 2010. None of these facilities reported on their APEP report that RECLAIM was a contributing factor in their decision to close. One facility identified in this report as shutdown was actually not built.

Background

The APEP reports submitted by RECLAIM facilities include survey forms that are used to evaluate the socioeconomic impacts of the program. Facilities were asked to indicate on the forms the number of jobs at the beginning of Compliance Year 2010 and any changes that took place during the compliance year in each of three categories: manufacturing, sale of products, and non-manufacturing. The number of jobs gained and lost reported by facilities in each category during the compliance year was tabulated.

Additionally, the APEP reports ask facilities that shutdown during Compliance Year 2010 to provide the reasons for their closure. The APEP reports also allow facilities to indicate whether the RECLAIM program led to the creation or elimination of jobs during Compliance Year 2010. Those facilities that reported a change in the number of jobs due to RECLAIM were asked to specify the number of jobs lost or gained, and to state why the job loss or creation was attributed to RECLAIM.

Since data regarding job impacts and facility shutdowns are derived from the APEP reports, the submittal of these reports are essential in assessing the influence that the RECLAIM program has on these issues. The following discussion represents data obtained from APEP reports submitted to AQMD for Compliance Year 2010 and clarifying information collected by AQMD staff. AQMD staff is not able to verify the reported job impacts information.

Job Impacts

Table 6-1 summarizes job impact data gathered from Compliance Year 2010 APEP reports and follow-up contacts with facilities' staff. It should be noted that the total number of facilities reporting job gains or losses does not equal the sum of the number of facilities reporting job changes in each category (*i.e.*, the manufacture, sales of products, and non-manufacture categories) due to the fact that some facilities may report changes under more than one of these categories. A total of 116 facilities reported 8,436 job gains, while 130 facilities reported a total of 7,342 job losses. Net job gains were reported in two of the three categories: sales of products (10), and non-manufacturing (2,650), whereas net job losses were reported in the third category: manufacturing (1,566). Table 6-1 shows a total net gain of 1,094 jobs, which represents a net increase of 1.06% at RECLAIM facilities during Compliance Year 2010.

Table 6-1
Job Impacts at RECLAIM Facilities for Compliance Year 2010

Description	Manufacture	Sales of Products	Non-Manufacture	Total
Initial Jobs	43,115	883	59,468	103,466
Overall Job Gain	2,017	136	6,283	8,436
Overall Job Loss	3,583	126	3,633	7,342
Final Jobs	41,549	893	62,118	104,560
Net Job Change	-1,566	10	2,650	1,094
Percent (%) Job Change	-3.63%	1.13%	4.46%	1.06%
Facilities Reporting Job Gains	83	23	64	116
Facilities Reporting Job Losses	96	27	77	130

Data in Table 6-1 include six RECLAIM facilities that were reported to be shutdown or ceasing operations in Compliance Year 2010 as listed in Appendix C. Two of these facilities reported high manufacturing costs, whereas another two facilities additionally cited a declining demand for products as the reasons for shutting down. The fifth facility was shut down after its operations were consolidated under other facilities within the District. The sixth facility that is listed as shutdown was actually never built. The Permits to Construct were inactivated in May 2007. Hence, the facility is no longer considered an active RECLAIM facility.

Only one facility reported job impacts (gains or losses) attributed to the RECLAIM program (refer to Appendix E). It reported a gain of two jobs to meet the monitoring, reporting and recordkeeping, as well as additional maintenance requirements, of the RECLAIM program. It should be noted that this analysis of socioeconomic impacts based on APEP reports and follow-up interviews is focused exclusively on changes in employment that occurred at RECLAIM facilities. The effect of the program on the local economy outside of RECLAIM facilities, including consulting and source testing jobs, is not considered.

It is not possible to compare the impact of the RECLAIM program on the job market *vis-à-vis* a scenario without RECLAIM. This is because factors other than RECLAIM (*e.g.*, the current economic downturn), also impact the job market. Based on the current year and past few years of data collected from RECLAIM

facilities, the job gains or losses attributed only to RECLAIM comprise a very small percentage (less than 2%) of the total number of jobs lost or gained in that period. Furthermore, there is no way to compare job impacts attributed to RECLAIM to job impacts attributed to command-and-control rules that would have been adopted in RECLAIM's absence, because these command-and-control rules do not exist. As mentioned previously, the effect of the RECLAIM program on the local economy outside of RECLAIM facilities (*e.g.*, generating jobs for consulting firms, source testing firms and CEMS vendors) is also not considered in this report.

CHAPTER 7
AIR QUALITY AND PUBLIC HEALTH IMPACTS

Summary

Audited RECLAIM emissions have been in an overall downward trend since the program's inception. NOx and SOx emissions in Compliance Year 2010 continued their downward trend (reduced by 2.5% and 5.8%, respectively, compared to Compliance Year 2009). Quarterly calendar year 2010 NOx emissions ranged from approximately two percent below to five percent above the mean NOx emissions for the year. Quarterly calendar year 2010 SOx emissions ranged from approximately seven percent below to nine percent above the year's mean SOx emissions. There was no significant shift in seasonal emissions from the winter season to the summer season. Furthermore, maps of quarterly Compliance Year 2010 emissions were prepared and are presented in this chapter pursuant to Rule 2015(b)(2).

The California Clean Air Act (CCAA) required a 50% reduction in population exposure to ozone, relative to a baseline averaged over three years (1986 through 1988), by December 31, 2000. Analysis of per capita exposure (the length of time each person is exposed) to ozone in 1998 and 2000 shows that the Basin achieved the December 2000 target for ozone well before the deadline. In fact, Los Angeles County, Orange County, and the South Coast Air Basin overall achieved compliance with the December 2000 target prior to 1994, and Riverside and San Bernardino Counties achieved compliance in 1996. In calendar year 2011, the per capita exposure to ozone continued to be well below the target set for December 2000.

Air toxic health risk is primarily caused by emissions of certain volatile organic compounds (VOCs) and fine particulates, such as metals. RECLAIM facilities are subject to the same air toxic, VOC, and particulate matter regulations as other sources in the Basin. All sources are subject, where appropriate, to the NSR Rule for Toxics (Rule 1401). In addition, new or modified sources with NOx or SOx emission increases are required to be equipped with BACT which minimizes to the extent feasible the increase of NOx and SOx emissions. Therefore, it can be concluded that the RECLAIM program creates no increased toxic impact beyond what would have occurred with the rules and control measures RECLAIM subsumed, and therefore poses no increased adverse public health impacts.

Background

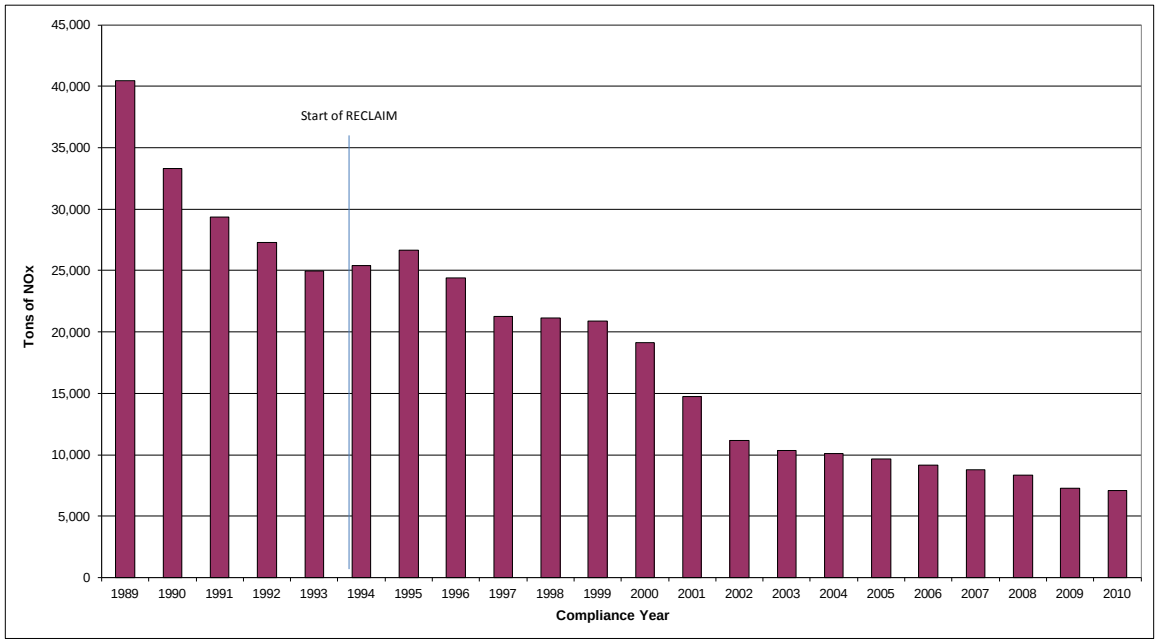
RECLAIM is designed to achieve the same, or higher level of, benefits in terms of air quality and public health as would have been achieved from implementation of the control measures and command-and-control rules that RECLAIM subsumed. Therefore, as a part of each annual program audit, AQMD evaluates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

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

Emission Trends for RECLAIM Sources

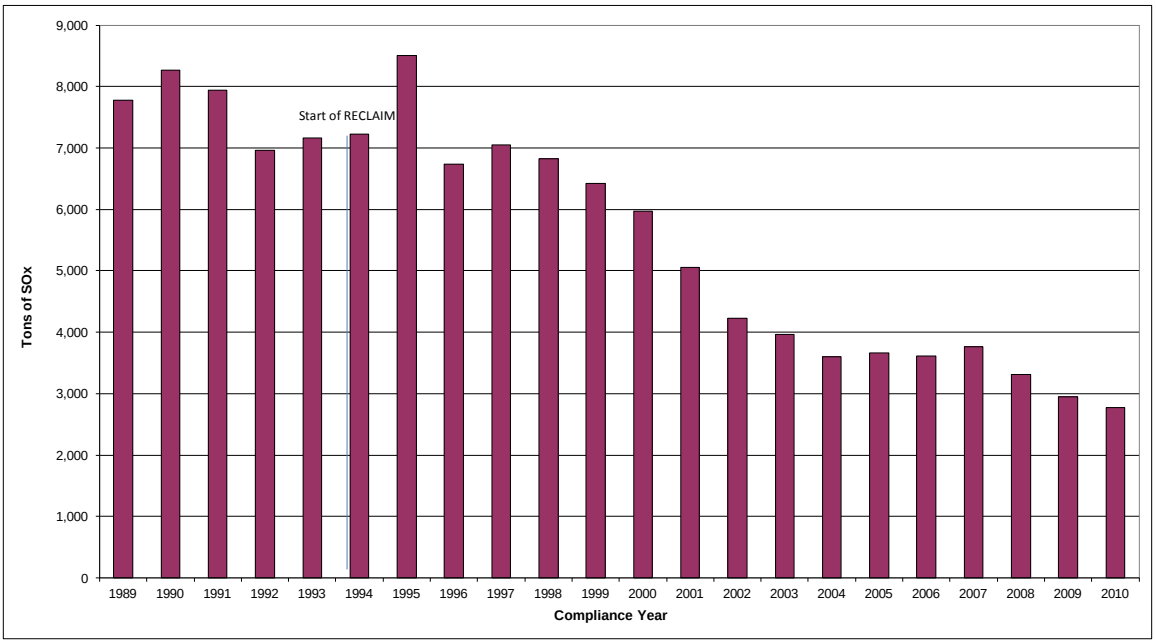
Concerns were expressed during program development that RECLAIM might cause sources to increase their aggregate emissions during the early years of the program due to perceived over-allocation of emissions. In Figures 7-1 and 7-2, which show NOx and SOx emissions from RECLAIM sources since 1989, the analysis of emissions from RECLAIM sources indicates that overall, RECLAIM emissions have been in a downward trend since program inception. Compliance Year 2010 NOx emissions were 2.5% lower and SOx emissions were 5.8% lower than they were in Compliance Year 2009.

Figure 7-1
NOx Emission Trend for RECLAIM Sources



Note: 1989-1993 emissions presented in this figure are the emissions from the facilities in the 1994 NOx universe.

Figure 7-2
SOx Emission Trend for RECLAIM Sources



Note: 1989-1993 emissions presented in this figure are the emissions from the facilities in the 1994 SOx universe.

NOx emissions have decreased every year since Compliance Year 1995. Since Compliance Year 1995, annual SOx emissions have also followed a general downward trend, except for slight increases in Compliance Years 1997, 2005, and 2007 compared to their respective previous compliance year.

The increase in NOx emissions from Compliance Year 1994 to 1995 can be attributed to the application of MDP at the onset of RECLAIM implementation. At RECLAIM's adoption in 1993, facilities with major sources were allowed to report emissions for their first year in the program by quantifying emissions using an emission factor and fuel throughput (interim reporting). This interim period allowed major sources time to certify their CEMS. However, many facilities with major sources had difficulties in certifying their CEMS by the end of the interim period, and consequently, reported emissions using MDP during Compliance Year 1995. As discussed in Chapter 5, since CEMS for these major sources had no prior data, MDP required the application of the most conservative procedure to calculate substitute data by assuming continuous operation at the maximum rated capacity without taking into account efficiency from the use of emissions controls, regardless of the actual operational level during missing data periods. As a result, the application of MDP during this time period yielded substitute data that may have been much higher than the actual emissions. Overall, the figures show that RECLAIM facilities did not increase their aggregate emissions during the earlier years of the program.

Seasonal Fluctuation in Emissions for RECLAIM Sources

During program development, another concern was that RECLAIM might cause facilities to shift emissions from the winter season into the summer ozone season, thus exacerbating poor air quality. To address this concern, AQMD staff analyzed quarterly audited emissions during calendar year 2010 and compared them with quarterly audited emissions for prior years to assess if there had been such a shift in emissions. This analysis is reflected in Figures 7-3, 7-4, 7-5, and 7-6.[1]

Figure 7-3 shows the 2010 mean quarterly NOx emissions, which is the average of the four quarterly aggregate emissions, versus the 2010 actual quarterly emissions and Figure 7-4 compares the 2010 quarterly NOx emissions with the quarterly emissions from 2002 through 2009. During calendar year 2010, aggregate quarterly NOx emissions varied from about two percent below the mean in the first quarter (January through March) to about five percent above the mean in the fourth quarter (October through December). Furthermore, Figure 7-4 shows that quarters 1, 2, and 3 of 2010 had lower aggregate RECLAIM NOx emissions than the corresponding quarter of any prior year since the program began in 1994. Additionally, the 2010 quarterly aggregate NOx emissions profile is relatively flat for the first three quarters compared to with profiles for several other recent years. Even though NOx emissions for the last quarter of the 2010 quarterly aggregate NOx emissions profile shows an emission increase, which may be attributed to an improvement in the economy, this increase did not result in a seasonal shift. Figures 7-3 and 7-4, together, show that the RECLAIM program has not caused a significant shift in NOx emissions from the winter season into the summer season.

[1] Data used to generate these figures were derived from audited data. Similar figures for calendar years 1994 through 2007 in previous annual reports were generated from a combination of audited and reported data available at the time the reports were written.

Figure 7-3
Calendar Year 2010 NOx Quarterly Emissions

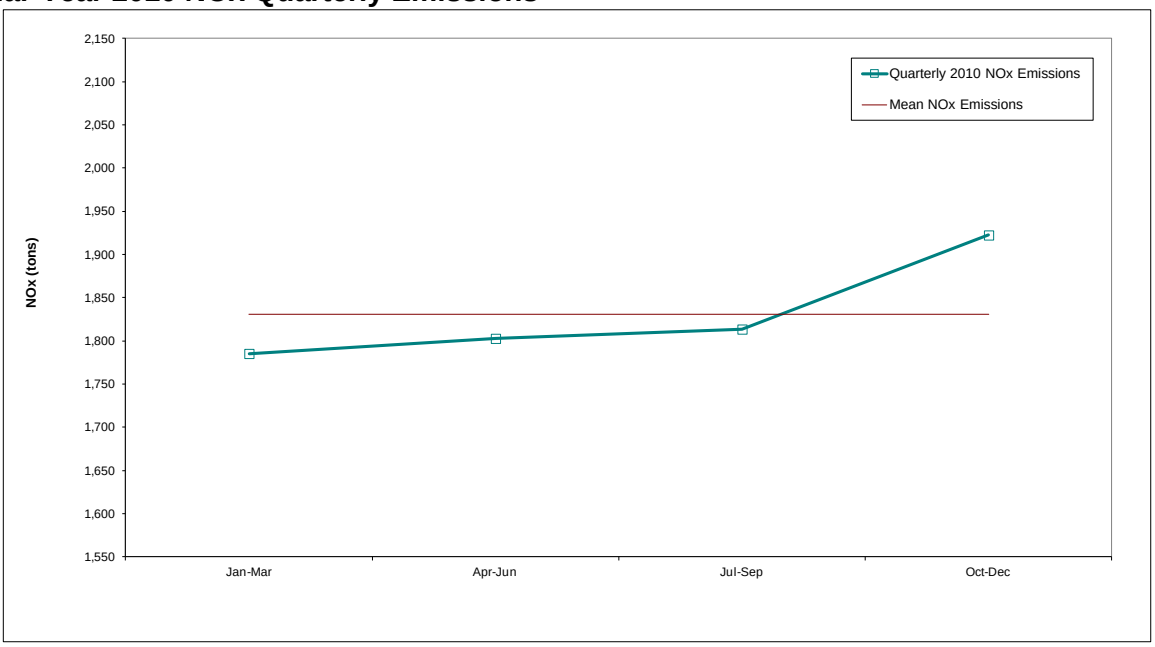


Figure 7-4
Quarterly NOx Emissions from Calendar Years 2002 through 2010

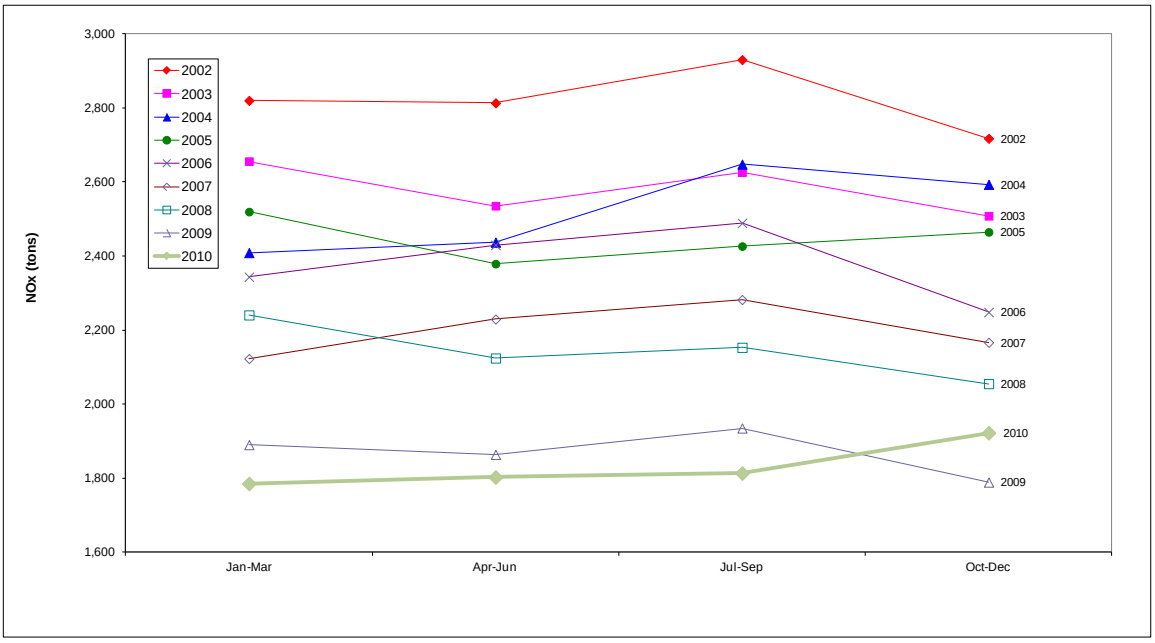


Figure 7-5 presents the 2010 mean quarterly SOx emissions versus the 2010 actual quarterly emissions and Figure 7-6 compares the 2010 quarterly SOx emissions with the quarterly emissions from 2002 through 2009. Figure 7-5 shows that quarterly SOx emissions during calendar year 2010 varied from seven percent below the mean in the second quarter (April through June) to nine percent above the mean in the third quarter (July through September). Figure 7-

6 reveals that the 2010 quarterly aggregate SOx emissions profile was similar to those for previous years.

This analysis shows that the RECLAIM program has not caused a significant shift in SOx emissions from the winter season into the summer season and that the calendar year 2010 seasonal emissions profile was similar to the corresponding profiles for other recent years.

Figure 7-5
Calendar Year 2010 SOx Quarterly Emissions

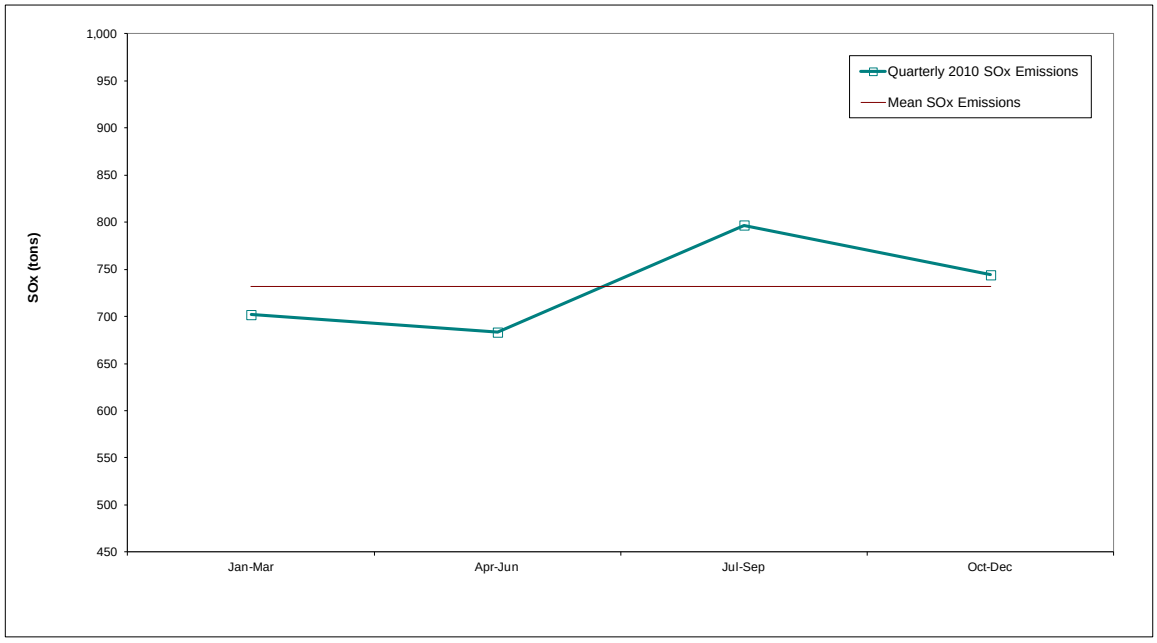
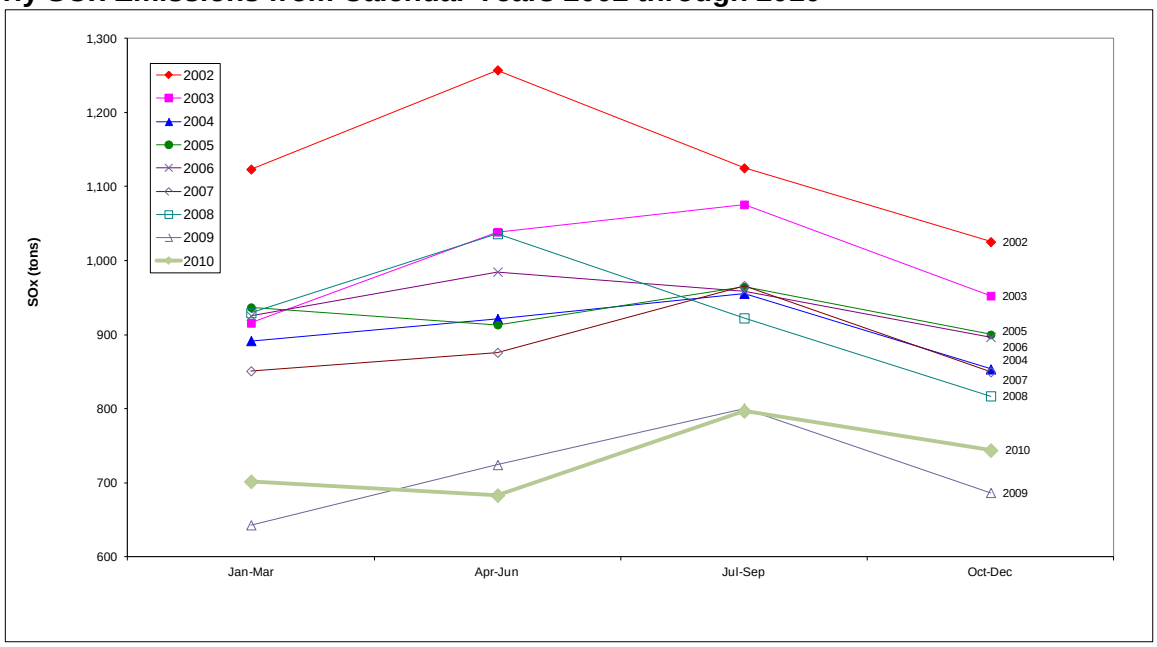


Figure 7-6
Quarterly SOx Emissions from Calendar Years 2002 through 2010



Emission Mapping

As part of this program audit, AQMD staff has also prepared District-wide maps based on the most current sum of certified quarterly emissions pursuant to Rule 2015(b)(2). These maps present the geographical distribution of emissions within the District and are included in Appendices F and G of this report. RECLAIM facilities can increase emissions, as long as they meet BACT requirements for new or modified equipment and provide RTCs to offset any emission increases. However, there are NSR implications if they increase their annual emissions above their Compliance Year 1994 Allocation including Non-tradable/Non-usable credits. This flexibility that a RECLAIM facility has to reduce emissions and/or purchase RTCs from other RECLAIM facilities or RTC holders to offset their emissions presents a potential concern that RECLAIM could alter the geographic distribution of emissions in the Basin and adversely affect air quality in certain areas. In general, RECLAIM NOx and SOx emissions are only 2.5% and 19.4%, respectively, of the projected total 2010 Basin-wide emissions inventory.

Grids are superimposed on emission maps as shown in Appendices F and G in order to geographically represent emissions, with shaded cells identifying emission ranges. Starting this year, emission maps are generated by a new computer application and can be used to conduct a grid-by-grid comparison of emissions in a calendar year to the emissions in the previous year. These maps will be posted quarterly on the AQMD's webpage along with copies of the maps prepared based on quarterly emissions and presented in previous annual audit reports.

Per Capita Exposure to Pollution

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

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

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

In July 1997, the USEPA established a new ozone National Ambient Air Quality Standard (NAAQS) of 0.085 ppm based on an 8-hour average measurement. As part of the Phase I implementation that was finalized in June 2004, the federal 1-hour ozone standard (0.12 ppm) was revoked effective June 2005. Effective May 27, 2008, the 8-hour NAAQS ozone standard was reduced to 0.075 ppm. To reflect this revised standard, Table 7-1 shows monitoring results based on this revised 8-hour federal standard.

Table 7-1 summarizes ozone data for calendar years 2001 through 2011 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 in calendar year 2011, the state 1-hour standard was exceeded on 94 days, which is about the average since 2008. The state 8-hour standard was exceeded on 127 days, which is the lowest number since 2007. As for the federal 8-hour standard, calendar year 2011 shows the lowest number of exceedances since calendar year 2001. Finally, the table shows that in calendar year 2011 the Basin maximum 1-hour and the Basin maximum 8-hour values were 0.16 ppm and 0.136 ppm, respectively, which is about the average since 2005 for both.

Table 7-1
Summary of Ozone Data

	Calendar Year										
	2001	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
Days exceeding state 1-hour standard (0.09 ppm)	121	118	133	110	111	102	99	98	100	83	94
Days exceeding state new 8-hour standard (0.07 ppm)	156	149	161	161	142	121	128	136	131	128	127
Days exceeding federal 8-hour standard (0.075 ppm)	132	135	141	126	116	114	108	121	113	109	107
Basin Maximum 1-hour ozone concentration (ppm)	0.191	0.169	0.216	0.163	0.163	0.175	0.171	0.176	0.176	0.143	0.16
Basin Maximum 8-hour ozone concentration (ppm)	0.146	0.148	0.200	0.148	0.145	0.142	0.137	0.131	0.128	0.123	0.136

The CCAA, which was enacted in 1988, established targets for reducing overall population exposure to severe non-attainment pollutants in the Basin—a 25% reduction by December 31, 1994, a 40% reduction by December 31, 1997, and a 50% reduction by December 31, 2000 relative to a calendar years 1986-88 baseline. These targets are based on the number of hours on average a person is exposed ("per capita exposure"[2]) to ozone above the state 1-hour standard of 0.09 ppm. Table 7-2 shows, the 1986-88 baseline, the actual per capita exposures each year since 1994 (RECLAIM's initial year), and the 1997 and 2000 targets set by the CCAA for each of the four counties in the district and the Basin overall. As shown in Table 7-2, the CCAA reduction targets were achieved as early as 1994 (actual 1994 Basin per capita exposure was 37.6 hours, which is below the 2000 target of 40.2 hours). The per capita exposure continues to remain much lower than the CCAA targets since RECLAIM started in 1994. For calendar year 2011, the actual per capita exposure for the Basin was 2.099 hours, which represents a 97.4% reduction from the 1986-88 baseline level.

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

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

Calendar Year	Basin	Los Angeles	Orange	Riverside	San Bernardino
1986-88 baseline[1]	80.5	75.8	27.2	94.1	192.6
1994 actual	37.6	26.5	9	71.1	124.9
1995 actual	27.7	20	5.7	48.8	91.9
1996 actual	20.3	13.2	4	42.8	70
1997 actual	5.9	3	0.6	13.9	24.5
1998 actual	12.1	7.9	3.1	25.2	40.2
2000 actual	3.8	2.6	0.7	8.5	11.4
2001 actual	1.73	0.88	0.15	6	5.68
2002 actual	3.87	2.16	0.13	11.12	12.59
2003 actual	10.92	6.3	0.88	20.98	40.21
2004 actual	3.68	2.26	0.50	6.82	12.34
2005 actual	3.11	1.43	0.03	6.06	12.54
2006 actual	4.56	3.08	0.68	8.02	13.30
2007 actual	2.90	1.50	0.35	4.65	10.53
2008 actual	4.14	2.04	0.26	7.50	14.71
2009 actual	2.872	1.538	0.078	3.884	10.539
2010 actual	1.184	0.377	0.107	2.451	4.476
2011 actual	2.099	0.848	0.015	3.456	8.125
1997 target[2]	48.3	45.5	16.3	56.5	115.6
2000 target[3]	40.2	37.9	13.6	47	96.3

[1] Average over three years, 1986 through 1988.

[2] 60% of the 1986-88 baseline exposures.

[3] 50% of the 1986-88 baseline exposures.

Table 7-2 shows that actual per capita exposures during all the years mentioned were well under the 1997 and 2000 target exposures limits. 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 in lieu of the 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 air toxics potentially caused by RECLAIM.

RECLAIM sources are subject to the same air toxic statutes and regulations (*e.g.*, AQMD Regulation XIV, State AB 2588, State Air Toxics Control Measures, Federal National Emissions Standards for Hazardous Air Pollutants, etc.) as other sources in the Basin. These regulations ensure that the implementation of

RECLAIM does not result in adverse air toxic health impacts. In addition, air toxic health risk is primarily caused by emissions of VOCs and fine particulates such as certain metals. VOC sources at RECLAIM facilities are subject to source-specific command-and-control rules the same way these rules apply to non-RECLAIM facilities, in addition to the toxics requirements described above. Sources of fine particulates and toxic metals emissions are also subject to the above-identified regulations pertaining to toxic emissions. Additionally, new or modified RECLAIM sources with NOx or SOx emission increases are also required to be equipped with BACT which minimizes to the best extent feasible NOx and SOx emissions.

In conclusion, implementation of NOx and SOx RECLAIM is not expected to adversely impact air toxic emissions. That is, the substitution of NOx and SOx RECLAIM for the command-and-control rules and the measures RECLAIM subsumes do not result in any significant impact on air toxic emissions; the same toxics requirements and VOC rules and control measures apply in either case; and any emission increases from new or modified sources are controlled by BACT. However, AQMD will continue to monitor and assess toxic impacts as part of future annual audits.

APPENDIX A
RECLAIM UNIVERSE OF SOURCES

The RECLAIM universe of active sources as of the end of Compliance Year 2010, June 30, 2011 is provided below.

Facility ID	Cycle	Facility Name	NOx/SOx
800088	2	3M COMPANY	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 and SOx
42676	2	AES PLACERITA INC	NOx
115536	1	AES REDONDO BEACH, LLC	NOx
148236	2	AIR LIQUIDE LARGE INDUSTRIES U.S., LP	NOx and SOx
3417	1	AIR PROD & CHEM INC	NOx
101656	2	AIR PRODUCTS AND CHEMICALS, INC.	NOx
5998	1	ALL AMERICAN ASPHALT	NOx
114264	1	ALL AMERICAN ASPHALT	NOx
3704	2	ALL AMERICAN ASPHALT, UNIT NO.01	NOx
140499	2	AMERESCO HUNTINGTON BEACH, L.L.C.	NOx
800196	2	AMERICAN AIRLINES INC	NOx
145836	2	AMERICAN APPAREL DYEING & FINISHING, INC	NOx
156722	1	AMERICAN APPAREL KNIT AND DYE	NOx
21598	2	ANGELICA TEXTILE SERVICES	NOx
74424	2	ANGELICA TEXTILE SERVICES	NOx
16642	1	ANHEUSER-BUSCH INC., (LA BREWERY)	NOx and 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

Facility ID	Cycle	Facility Name	NOx/SOx
119907	1	BERRY PETROLEUM COMPANY	NOx
166073	1	BETA OFF SHORE	NOx
155474	2	BICENT (CALIFORNIA) MALBURG LLC	NOx
132068	1	BIMBO BAKERIES USA INC	NOx
149491	2	BOEING REALTY CORP	NOx
115241	1	BOEING SATELLITE SYSTEMS INC	NOx
800067	1	BOEING SATELLITE SYSTEMS INC	NOx
800343	2	BOEING SATELLITE SYSTEMS, INC	NOx
131003	2	BP WEST COAST PROD.LLC BP CARSON REF.	NOx and SOx
131249	1	BP WEST COAST PRODUCTS LLC,BP WILMINGTON	NOx and SOx
98159	2	BREITBURN ENERGY CORP	NOx
25638	2	BURBANK CITY, BURBANK WATER & POWER	NOx
128243	1	BURBANK CITY,BURBANK WATER & POWER,SCPPA	NOx
800344	1	CALIFORNIA AIR NATIONAL GUARD, MARCH AFB	NOx
22607	2	CALIFORNIA DAIRIES, INC	NOx
138568	1	CALIFORNIA DROP FORGE, INC	NOx
800181	2	CALIFORNIA PORTLAND CEMENT CO	NOx and 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 and SOx
153992	1	CANYON POWER PLANT	NOx
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 and SOx
148925	1	CHERRY AEROSPACE	NOx
800030	2	CHEVRON PRODUCTS CO.	NOx and 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
164204	2	CITY OF RIVERSIDE, PUBLIC UTILITIES DEPT	NOx

Facility ID	Cycle	Facility Name	NOx/SOx
16978	2	CLOUGHERTY PACKING LLC/HORMEL FOODS CORP	NOx
800210	2	CONEXANT SYSTEMS INC	NOx
800362	1	CONOCOPHILLIPS COMPANY	NOx and SOx
800363	2	CONOCOPHILLIPS COMPANY	NOx and SOx
38440	2	COOPER & BRAIN - BREA	NOx
68042	2	CORONA ENERGY PARTNERS, LTD	NOx
152707	1	CPV SENTINEL LLC	NOx
50098	1	D&D DISPOSAL INC,WEST COAST RENDERING CO	NOx
63180	1	DARLING INTERNATIONAL INC	NOx
3721	2	DART CONTAINER CORP OF CALIFORNIA	NOx
7411	2	DAVIS WIRE CORP	NOx
143738	2	DCOR LLC	NOx
143739	2	DCOR LLC	NOx
143740	2	DCOR LLC	NOx
143741	1	DCOR LLC	NOx
132071	1	DEAN FOODS CO. OF CALIFORNIA	NOx
47771	1	DELEO CLAY TILE CO INC	NOx
800037	2	DEMENNO/KERDOON	NOx
125579	1	DIRECTV	NOx
800189	1	DISNEYLAND RESORT	NOx
142536	2	DRS SENSORS & TARGETING SYSTEMS, INC	NOx
800264	2	EDGINGTON OIL COMPANY	NOx and SOx
167432	2	EDISON MISSION HUNTINGTON BEACH, LLC	NOx and SOx
133813	1	EI COLTON, LLC	NOx
115663	1	EL SEGUNDO POWER, LLC	NOx
800372	2	EQUILON ENTER. LLC, SHELL OIL PROD. US	NOx and SOx
124838	1	EXIDE TECHNOLOGIES	NOx and SOx
17344	1	EXXONMOBIL OIL CORP	NOx
25058	2	EXXONMOBIL OIL CORP	NOx
800089	1	EXXONMOBIL OIL CORPORATION	NOx and SOx
800094	1	EXXONMOBIL OIL CORPORATION	NOx
95212	1	FABRICA	NOx
11716	1	FONTANA PAPER MILLS INC	NOx
346	1	FRITO-LAY, INC.	NOx
2418	2	FRUIT GROWERS SUPPLY CO	NOx

Facility ID	Cycle	Facility Name	NOx/SOx
142267	2	FS PRECISION TECH LLC	NOx
5814	1	GAINEY CERAMICS INC	NOx
115315	1	GEN ON WEST, INC.	NOx
153033	2	GEORGIA-PACIFIC CORRUGATED LLC	NOx
152857	2	GEORGIA-PACIFIC GYPSUM LLC	NOx
124723	1	GREKA OIL & GAS, INC	NOx
137471	2	GRIFOLS BIOLOGICALS INC	NOx
156741	2	HARBOR COGENERATION CO, LLC	NOx
157359	1	HENKEL CORPORATION	NOx
123774	1	HERAEUS METAL PROCESSING, LLC	NOx
113160	2	HILTON COSTA MESA	NOx
160888	1	HINES REIT EL SEGUNDO, LP	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
124808	2	INEOS POLYPROPYLENE LLC	NOx and SOx
129816	2	INLAND EMPIRE ENERGY CENTER, LLC	NOx
157363	2	INTERNATIONAL PAPER CO	NOx
106810	2	INTERSTATE BRANDS CORP	NOx
22364	1	ITT CORPORATION	NOx
16338	1	KAISER ALUMINUM FABRICATED PRODUCTS, LLC	NOx
21887	2	KIMBERLY-CLARK WORLDWIDE INC.-FULT. MILL	NOx and SOx
1744	2	KIRKHILL - TA COMPANY	NOx
800335	2	LA CITY, DEPT OF AIRPORTS	NOx
800170	1	LA CITY, DWP HARBOR GENERATING STATION	NOx
800074	1	LA CITY, DWP HAYNES GENERATING STATION	NOx
800075	1	LA CITY, DWP SCATTERGOOD GENERATING STN	NOx
800193	2	LA CITY, DWP VALLEY GENERATING STATION	NOx
61962	1	LA CITY, HARBOR DEPT	NOx
550	1	LA CO., INTERNAL SERVICE DEPT	NOx
115277	1	LAFAYETTE TEXTILE IND LLC	NOx
141295	2	LEKOS DYE AND FINISHING, INC	NOx
144455	2	LIFOAM INDUSTRIES, LLC	NOx
83102	2	LIGHT METALS INC	NOx
151394	2	LINN WESTERN OPERATING INC	NOx

Facility ID	Cycle	Facility Name	NOx/SOx
151532	2	LINN WESTERN OPERATING INC	NOx
152054	1	LINN WESTERN OPERATING INC	NOx
151415	2	LINN WESTERN OPERATING, INC	NOx
115314	2	LONG BEACH PEAKERS LLC	NOx
17623	2	LOS ANGELES ATHLETIC CLUB	NOx
58622	2	LOS ANGELES COLD STORAGE CO	NOx
125015	2	LOS ANGELES TIMES COMMUNICATIONS LLC	NOx
800080	2	LUNDAY-THAGARD COMPANY	NOx and SOx
38872	1	MARS PETCARE U.S., INC.	NOx
14049	2	MARUCHAN INC	NOx
3029	2	MATCHMASTER DYEING & FINISHING INC	NOx
2825	1	MCP FOODS INC	NOx
115563	1	METAL COATERS OF CALIFORNIA	NOx
94872	2	METAL CONTAINER CORP	NOx
155877	1	MILLERCOORS, LLC	NOx
12372	1	MISSION CLAY PRODUCTS	NOx
141585	1	MOMENTIVE SPECIALTY CHEMICALS, INC.	NOx
121737	1	MOUNTAINVIEW GENERATING STATION	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
18294	1	NORTHROP GRUMMAN CORP, AIRCRAFT DIV	NOx
800408	1	NORTHROP GRUMMAN SYSTEMS	NOx
800409	2	NORTHROP GRUMMAN SYSTEMS CORPORATION	NOx
112853	2	NP COGEN INC	NOx
45471	2	O N I S, DBA, CARMEUSE INDUSTRIAL SANDS	NOx
89248	2	OLD COUNTRY MILLWORK INC	NOx
47781	1	OLS ENERGY-CHINO	NOx
35302	2	OWENS CORNING ROOFING AND ASPHALT, LLC	NOx and SOx
7427	1	OWENS-BROCKWAY GLASS CONTAINER INC	NOx and SOx
151594	1	OXY USA, INC	NOx
151601	1	OXY USA, INC.	NOx
45746	2	PABCO BLDG PRODUCTS LLC,PABCO PAPER, DBA	NOx and SOx
17953	1	PACIFIC CLAY PRODUCTS INC	NOx
59618	1	PACIFIC CONTINENTAL TEXTILES, INC.	NOx

Facility ID	Cycle	Facility Name	NOx/SOx
2946	1	PACIFIC FORGE INC	NOx
130211	2	PAPER-PAK INDUSTRIES	NOx
800183	1	PARAMOUNT PETR CORP	NOx and SOx
800168	1	PASADENA CITY, DWP	NOx
133987	1	PLAINS EXPLORATION & PRODUCTION CO, LP	NOx
133996	2	PLAINS EXPLORATION & PRODUCTION COMPANY	NOx
137520	1	PLAINS WEST COAST TERMINALS LLC	NOx
800416	1	PLAINS WEST COAST TERMINALS LLC	NOx
800417	2	PLAINS WEST COAST TERMINALS LLC	NOx
800419	2	PLAINS WEST COAST TERMINALS LLC	NOx
800420	2	PLAINS WEST COAST TERMINALS LLC	NOx
800431	1	PRATT & WHITNEY ROCKETDYNE, INC.	NOx
7416	1	PRAXAIR INC	NOx
42630	1	PRAXAIR INC	NOx
152501	1	PRECISION SPECIALTY METALS, INC.	NOx
136	2	PRESS FORGE CO	NOx
105903	1	PRIME WHEEL	NOx
132191	1	PURENERGY OPERATING SERVICES, LLC	NOx
132192	1	PURENERGY OPERATING SERVICES, LLC	NOx
8547	1	QUEMETCO INC	NOx and 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
52517	1	REXAM BEVERAGE CAN COMPANY	NOx
114801	1	RHODIA INC.	NOx and SOx
61722	2	RICOH ELECTRONICS INC	NOx
139010	2	RIPON COGENERATION LLC	NOx
800182	1	RIVERSIDE CEMENT CO	NOx and SOx
800113	2	ROHR, INC.	NOx
18455	2	ROYALTY CARPET MILLS INC	NOx

Facility ID	Cycle	Facility Name	NOx/SOx
4242	2	SAN DIEGO GAS & ELECTRIC	NOx
161300	2	SAPA EXTRUDER, INC	NOx
155221	2	SAVE THE QUEEN LLC (DBA QUEEN MARY)	NOx
15504	2	SCHLOSSER FORGE COMPANY	NOx
20203	2	SCOPE PRODUCTS INC, DEXT CO	NOx
14926	1	SEMPRA ENERGY (THE GAS CO)	NOx
37603	1	SGL TECHNIC INC, POLYCARBON DIVISION	NOx
131850	2	SHAW DIVERSIFIED SERVICES INC	NOx
117227	2	SHCI SM BCH HOTEL LLC, LOEWS SM BCH HOTE	NOx
16639	1	SHULTZ STEEL CO	NOx
54402	2	SIERRA ALUMINUM COMPANY	NOx
85943	2	SIERRA ALUMINUM COMPANY	NOx
101977	1	SIGNAL HILL PETROLEUM INC	NOx
43201	2	SNOW SUMMIT INC	NOx
4477	1	SO CAL EDISON CO	NOx
5973	1	SO CAL GAS CO	NOx
800127	1	SO CAL GAS CO	NOx
800128	1	SO CAL GAS CO	NOx
8582	1	SO CAL GAS CO/PLAYA DEL REY STORAGE FACI	NOx
14871	2	SONOCO PRODUCTS CO	NOx
800338	2	SPECIALTY PAPER MILLS 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 and SOx
151798	1	TESORO REFINING AND MARKETING CO	NOx and SOx
800436	1	TESORO REFINING AND MARKETING CO	NOx and SOx
96587	1	TEXOLLINI INC	NOx
148340	2	THE BOEING CO. COMMERCIAL AVIATION SRVCS	NOx
14736	2	THE BOEING COMPANY	NOx
800110	2	THE BOEING COMPANY	NOx
800038	2	THE BOEING COMPANY - C17 PROGRAM	NOx

Facility ID	Cycle	Facility Name	NOx/SOx
11119	1	THE GAS CO./ SEMPRA ENERGY	NOx
153199	1	THE KROGER CO/RALPHS GROCERY CO	NOx
11435	2	THE PQ CORP	NOx and SOx
97081	1	THE TERMO COMPANY	NOx
800330	1	THUMS LONG BEACH	NOx
129497	1	THUMS LONG BEACH CO	NOx
800325	2	TIDELANDS OIL PRODUCTION CO	NOx
68118	2	TIDELANDS OIL PRODUCTION COMPANY ETAL	NOx
800240	2	TIN, INC. TEMPLE-INLAND, DBA	NOx
137508	2	TONOGA INC, TACONIC DBA	NOx
53729	1	TREND OFFSET PRINTING SERVICES, INC	NOx
9053	1	TRIGEN- LA ENERGY CORP	NOx
9217	1	TRIGEN-LA ENERGY CORP	NOx
11034	2	TRIGEN-LA ENERGY CORP	NOx
165192	2	TRIUMPH AEROSTRUCTURES, LLC	NOx
43436	1	TST, INC.	NOx
800026	1	ULTRAMAR INC	NOx and SOx
9755	2	UNITED AIRLINES INC	NOx
73022	2	US AIRWAYS INC	NOx
800149	2	US BORAX INC	NOx
800150	1	US GOVT, AF DEPT, MARCH AIR RESERVE BASE	NOx
12185	2	US GYPSUM CO	NOx and SOx
1073	1	US TILE CO	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
148896	2	VINTAGE PRODUCTION CALIFORNIA LLC	NOx
148897	2	VINTAGE PRODUCTION CALIFORNIA LLC	NOx
151899	2	VINTAGE PRODUCTION CALIFORNIA LLC	NOx
14495	2	VISTA METALS CORPORATION	NOx
146536	1	WALNUT CREEK ENERGY PARK	NOx and SOx
42775	1	WEST NEWPORT OIL CO	NOx and SOx
17956	1	WESTERN METAL DECORATING CO	NOx
51620	1	WHEELABRATOR NORWALK ENERGY CO INC	NOx

Facility ID	Cycle	Facility Name	NOx/SOx
127299	2	WILDFLOWER ENERGY LP/INDIGO GEN., LLC	NOx
158950	1	WINDSOR QUALITY FOOD CO. LTD.	NOx

APPENDIX B
FACILITY INCLUSIONS

As discussed in Chapter 1, three facilities were added to the RECLAIM universe between July 1, 2010 through June 30, 2011. The reasons for the inclusion are also provided.

Facility ID	Cycle	Facility Name	Program	Date	Reason
152707	1	CPV SENTINEL LLC	NOx	4/15/2011	Opt-in at facility request.
146536	1	WALNUT CREEK ENERGY PARK	NOx/SOx	5/5/2011	Opt-in at facility request.
167432	2	EDISON MISSION HUNTINGTON BEACH, LLC	NOx/SOx	5/4/2011	Partial change of operator from an existing facility.

APPENDIX C
RECLAIM FACILITIES CEASING OPERATION OR EXCLUDED

AQMD staff is aware of the following RECLAIM facilities that permanently shut down all operations, inactivated their RECLAIM permits, or were excluded from the RECLAIM universe during Compliance Year 2010. The reasons for shutdowns and exclusions cited below are based on the information provided by the facility and other information available to AQMD staff.

Facility ID	10141
Facility Name	Angelica Textile Services
City and County	Los Angeles, Los Angeles County
SIC	7213
Pollutants	NOx
1994 Allocation, lbs.	10,742
Reason for Shutdown	The facility shutdown and distributed its business to other facilities within the District under their ownership. None of the equipment was moved to any other facility within the District.

Facility ID	15164
Facility Name	Higgins Brick Co.
City and County	Chino Hills, San Bernardino County
SIC	3255
Pollutants	NOx
1994 Allocation, lbs.	76,382
Reason for Shutdown	Declining demand for products, manufacturing, production or raw material cost too high.

Facility ID	18695
Facility Name	US Gypsum Co.
City and County	Santa Fe Springs, Los Angeles County
SIC	3272
Pollutants	NOx
1994 Allocation, lbs.	46,150
Reason for Shutdown	Manufacturing, production or raw material cost too high.

Facility ID	23589
Facility Name	INTERNATIONAL EXTRUSION CORP
City and County	Alhambra, Los Angeles County
SIC	3354
Pollutants	NOx
1994 Allocation, lbs.	35,698
Reason for Shutdown	Declining demand for products and high cost of manufacturing.

Facility ID	65384
Facility Name	Criterion Catalysts& Technologies LP
City and County	Azusa, Los Angeles County
SIC	2819
Pollutants	NOx
1994 Allocation, lbs.	19,607
Reason for Shutdown	Manufacturing, production or raw material cost too high.

Facility ID	143261
Facility Name	Wellhead Power Colton LLC
City and County	Colton, San Bernardino County
SIC	4911
Pollutants	NOx
1994 Allocation, lbs.	0
Reason for Shutdown	This facility opted into the RECLAIM Program in 2005. However, it was never built and the Permits to Construct were cancelled in May 2007. Hence, the facility is no longer considered an active RECLAIM facility.

APPENDIX D
FACILITIES THAT EXCEEDED THEIR ANNUAL ALLOCATION FOR COMPLIANCE YEAR 2010

The following is a list of facilities that did not have enough RTCs to cover their NOx emissions in Compliance Year 2010 based on the results of audits conducted by AQMD staff.

Facility ID	Facility Name	Compliance Year
3029	MATCHMASTER DYEING & FINISHING INC	2010
3585	R. R. DONNELLEY & SONS CO, LA MFG DIV	2010
3704	ALL AMERICAN ASPHALT	2010
5998	ALL AMERICAN ASPHALT	2010
7411	DAVIS WIRE CORP	2010
8547	QUEMETCO INC	2010
16338	KAISER ALUMINUM FABRICATED PRODUCTS, LLC	2010
17956	WESTERN METAL DECORATING CO	2010
22364	ITT CORPORATION	2010
61722	RICOH ELECTRONICS INC	2010
83102	LIGHT METALS INC	2010
94930	CARGILL INC	2010
115130	VERTIS, INC	2010
124838	EXIDE TECHNOLOGIES	2010
131732	NEWPORT FAB, LLC	2010
141295	LEKOS DYE AND FINISHING, INC	2010
145836	AMERICAN APPAREL DYEING & FINISHING, INC	2010
151178	PACIFIC ENERGY RESOURCES, LLC	2010
153199	THE KROGER CO/RALPHS GROCERY CO	2010
155221	SAVE THE QUEEN LLC (DBA QUEEN MARY)	2010
800330	THUMS LONG BEACH	2010
800373	CENCO REFINING COMPANY	2010

APPENDIX E
REPORTED JOB IMPACTS ATTRIBUTED TO RECLAIM

Each year, RECLAIM facility operators are asked to provide employment data in their APEP reports. The report asks company representatives to quantify job increases and/or decreases, and to report 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 2010 is summarized below:

Facilities with actual job gains or losses attributed to RECLAIM:

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	2
Job Loss	0
Comments	Facility cited monitoring, reporting and recording responsibilities, as well as additional maintenance of the Continuous Emissions Monitoring System (CEMS) as the reasons for job gains.

APPENDIX F
QUARTERLY NOx EMISSION MAPS

Figure F-1: RECLAIM Facilities
Certified NOx Emissions (Tons) from 01/2010 to 03/2010

Figure F-2: RECLAIM Facilities
Certified NOx Emissions (Tons) from 04/2010 to 06/2010

Figure F-3: RECLAIM Facilities
Certified NOx Emissions (Tons) from 07/2010 to 09/2010

Figure F-4: RECLAIM Facilities
Certified NOx Emissions (Tons) from 10/2010 to 12/2010

Figure F-5: RECLAIM Facilities
Certified NOx Emissions (Tons) from 01/2010 to 12/2010

Figure F-6: RECLAIM Facilities
Certified NOx Emissions (Tons) from 01/2011 to 03/2011

Figure F-7: RECLAIM Facilities
Certified NOx Emissions (Tons) from 04/2011 to 06/2011

Figure F-8: RECLAIM Facilities
Certified NOx Emissions (Tons) 01/2011 to 06/2011

APPENDIX G
QUARTERLY SOx EMISSION MAPS

Figure G-1: RECLAIM Facilities
Certified SOx Emissions (Tons) from 01/2010 to 03/2010

Figure G-2: RECLAIM Facilities
Certified SOx Emissions (Tons) from 04/2010 to 06/2010

Figure G-3: RECLAIM Facilities
Certified SOx Emissions (Tons) from 07/2010 to 09/2010

Figure G-4: RECLAIM Facilities
Certified SOx Emissions (Tons) from 10/2010 to 12/2010

Figure G-5: RECLAIM Facilities
Certified SOx Emissions (Tons) 01/2010 to 12/2010

Figure G-6: RECLAIM Facilities
Certified SOx Emissions (Tons) from 01/2011 to 03/2011

Figure G-7: RECLAIM Facilities
Certified SOx Emissions (Tons) from 04/2011 to 06/2011

Figure G-8: RECLAIM Facilities
Certified SOx Emissions (Tons) 01/2011 to 06/2011