BOARD MEETING DATE: March 1, 2013 AGENDA NO. 29

REPORT: Annual RECLAIM Audit Report for 2011 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 eighteenth 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 2011 Compliance Year is included with the report.

COMMITTEE: Stationary Source, February 15, 2013, 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 SCAQMD'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.

RECLAIM Rule 2015 - Backstop Provisions requires SCAQMD to conduct annual program audits to assess various aspects of the program and to verify that program objectives are met. SCAQMD staff has completed audits of facility records and completed the annual audit of the RECLAIM program for Compliance Year 2011. Based on audited emissions in this report and previous annual reports, SCAQMD staff has

determined that RECLAIM met its emissions goals for Compliance Year 2011, 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 (by 11%) primarily due to the California energy crisis during that period. For Compliance Year 2011, audited NOx emissions were 25% less than programmatic NOx allocations and audited SOx emissions were 36% less than programmatic SOx allocations.

Audit Findings

The audit of the RECLAIM Program's Compliance Year 2011 and trades of RTCs that occurred during calendar year 2012 show that:

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

- Universe – The RECLAIM universe consisted of 281 facilities as of June 30, 2011. No facilities were included into the RECLAIM universe and five RECLAIM facilities shut down between July 1, 2011 and June 30, 2012. Thus, 276 facilities were in the RECLAIM universe on June 30, 2012. Of the five shutdown facilities, one was sold to an adjacent facility but none of the permitted equipment was retained by the buyer. The second facility shutdown when the property on which the facility was located came under foreclosure. The third facility relocated and consolidated operations outside the District. The fourth facility declared bankruptcy. The last facility gave multiple reasons for its closure including high manufacturing costs, declining demand for products, consolidation of operations in other locations outside the SCAQMD, and the cost of meeting governmental (including air pollution) regulations.

- Facility Compliance – The vast majority of RECLAIM facilities complied with their Allocations during the 2011 compliance year (93% of NOx facilities and 100% of SOx facilities). Nineteen facilities (7% of total facilities) exceeded their NOx allocations and no facility exceeded its SOx allocation during the 2011 compliance year. These 19 NOx facilities had total NOx emissions of 675 tons and did not have adequate allocations to offset 62.5 of those tons (9% of the sum of the NOx emissions from the 19 facilities, or 0.6% of total RECLAIM allocations). Pursuant to Rule 2010(b)(1)(A), all 19 facilities had their respective exceedances deducted from their annual Allocations for the compliance year subsequent to SCAQMD's determination that the facilities exceeded their Compliance Year 2011 Allocations.

- Job Impacts – The RECLAIM program had minimal impact on employment during the 2011 compliance year, which is consistent with previous years. RECLAIM facilities reported an overall net loss of 314 jobs, representing 0.31% of their total employment. All except one of the facilities that reported job losses cited factors other than RECLAIM as the reasons for these job losses. Only one facility, which reported to have completely shut down its operations, cited RECLAIM as one of the

many contributing factors, attributing a loss of 120 jobs partly due to the cost of meeting air pollution and other regulations. The job loss and job gain data are compiled strictly from reports submitted by RECLAIM facilities. SCAQMD staff is not able to verify the accuracy of the reported job impacts data.

- Trading Activity – The RTC trading market activity during calendar year 2012 was slightly slower in terms of number of trades but higher in total value compared to calendar year 2011. A total of over $1.02 billion in RTCs has been traded since the adoption of RECLAIM, of which $18.8 million occurred in calendar year 2012 (compared to $12.9 million in calendar year 2011), excluding swaps. Average annual price of infinite-year block (IYB) and all compliance years' discrete-year and NOx and SOx RTCs traded in calendar year 2011 were below the applicable review thresholds for the average price [pursuant to Rule 2015(b)(6) for discrete year RTCs: $15,000 per ton threshold; and overall program review thresholds established by the Governing Board pursuant to Health and Safety Code §39616(f): $39,433 per ton for NOx and $28,392 per ton for SOx discrete-year RTCs, $591,502 per ton of NOx and $425,882 per ton of SOx IYB RTCs].

  The average annual prices of RTCs traded during calendar years 2011 and 2012 are summarized in Tables 1 and 2 below:

Table 1 – Average Prices for Discrete-Year RTCs during Calendar Years 2011 and 2012

2011	2012
• $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	• $578 per ton for Compliance Year 2011 NOx RTCs • $1,162 per ton for Compliance Year 2012 NOx RTCs • $4,053 per ton for Compliance Year 2013 NOx RTCs
• $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	• $450 per ton for Compliance Year 2011 SOx RTCs • $759 per ton for Compliance Year 2012 SOx RTCs • No Compliance Year 2013 SOx RTCs traded

Table 2 – Average Prices for IYB RTCs during Calendar Years 2011 and 2012

2011	2012
• $56,708 per ton for NOx IYB RTCs • $102,366 per ton for SOx IYB RTCs	• $48,146 per ton for NOx IYB RTCs • $125,860 per ton for SOx IYB RTCs

- Role of Investors– Investors were active in the RTC market. Based on both trading values and volume of trades with price, investors were involved in a significant

portion of the trades recorded in calendar year 2012. For discrete NOx and SOx trades, 57% and 22% of the value and 59% and 37% of the volume of the respective trades involved investors. For IYB NOx and SOx trades, 68% and 11% of the value and 64% and 14% of the volume of respective trades involved investors. Compared to calendar year 2011, investor RTC holdings of total IYB NOx and SOx RTCs increased slightly to 4.9% (from 4.8% at the end of calendar year 2011) for IYB NOx RTCs and 0.7% (from 0.5% at the end of calendar year 2011) for IYB SOx RTCs at the end of calendar year 2012.

- Other Findings – RECLAIM also met other applicable requirements including meeting the applicable federal offset ratio under New Source Review and having no significant seasonal fluctuation in emissions. Additionally, there is no evidence that RECLAIM resulted in any increase in health impacts due to toxics.

Attachment
Annual RECLAIM Audit Report for 2011 Compliance Year

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Annual RECLAIM Audit Report for 2011 Compliance Year

March 1, 2013

Executive Officer
Barry R. Wallerstein, D.Env.

Deputy Executive Officer
Engineering & Compliance
Mohsen Nazemi, P.E.

Assistant Deputy Executive Officer
Engineering & Compliance
Jill Whynot

Senior Enforcement Manager
RECLAIM Administration
Danny Luong, P.E.

Authors: Mitch Haimov, M.S., Air Quality Analysis and Compliance Supervisor
Don Nguyen, Senior Air Quality Engineer
Fortune Chen, Air Quality Specialist
Chris Hynes, Air Quality Specialist
Kyu-Kyu Leong Remillard, Air Quality Engineer II
Sandys Thomas, Air Quality Engineer II
Susan Tsai, Air Quality Engineer II
Shannon Lee, Air Quality Engineer II

Contributors: Tom Chico, Program Supervisor
Mark Bassett, Air Quality Specialist
Mark Coleman, Air Quality Specialist
Tom Lee, Air Quality Engineer II

Reviewed by: Mohsen Nazemi, P.E., Deputy Executive Officer
Jill Whynot, Assistant Deputy Executive Officer
Danny Luong, P.E., Senior Enforcement Manager
Barbara Baird, District Counsel
William Wong, Principal Deputy District Counsel

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

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Miguel A. Pulido
Mayor, City of Santa Ana
Cities of Orange County

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
SCAQMD	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 (SCAQMD) 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 2011 (January 1 through December 31, 2011 for Cycle 1 and July 1, 2011 through June 30, 2012 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, 2011, the overall changes in RECLAIM participants were 121 facilities included into the program, 70 facilities excluded from the program, and 164 facilities ceased operation. Thus, the RECLAIM universe consisted of 281 active facilities on July 1, 2011. From July 1, 2011 through June 30, 2012, no facility was included into the RECLAIM universe, no facility was excluded, and five facilities shut down (one facility in both the NOx and SOx universes and four in the NOx universe only) and are no longer in the active RECLAIM universe. These changes resulted in a net decrease of five facilities in the universe, bringing the total number of active RECLAIM facilities to 276 as of June 30, 2012.

Chapter 2: RTC Allocations and Trading

The amendments to NOx RECLAIM adopted by the Governing Board on January 7, 2005 resulted in an overall 22.5% reduction in NOx Allocations in 2011. The Compliance Year 2011 RTC supply increased by 13.0 tons for NOx and decreased by 16.8 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 2011 were 9,690 and 4,283 tons, respectively. The amendments to SOx RECLAIM that the Governing Board adopted on November

5, 2010 phase in SOx reductions from 2013 through 2019 and will result in an overall reduction of 5.7 tons/day (or 48.4%) in SOx Allocations.

During calendar year 2012, there were 363 registered RTC transactions with a total value of over $18.8 million traded, excluding the values reported for swaps. Since the inception of the RECLAIM program in 1994, a total value of over $1.02 billion dollars has been traded in the RTC trading market, excluding swaps. In terms of volume traded in calendar year 2012, 3,301 tons of discrete NOx, 1,091 tons of discrete SOx RTCs, 131 tons of infinite-year block (IYB) NOx and 569 tons of IYB SOx RTCs were traded.

The average annual prices of discrete-year NOx RTCs traded during calendar year 2012 were $578 per ton for Compliance Year 2011 RTCs, $1,162 per ton for Compliance Year 2012 RTCs, and $4,053 per ton for Compliance Year 2013 RTCs. The average annual prices for discrete-year SOx RTCs traded during the same period were $450 per ton for Compliance Year 2011 RTCs and $759 per ton for RTCs for Compliance Year 2012. 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 SCAQMD Rule 2015, as well as the $39,433 per ton of NOx and $28,392 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 2012 for IYB NOx RTCs was $48,146 per ton, and the average annual price for IYB SOx RTCs was $125,860 per ton. Therefore, average annual IYB RTC prices did not exceed the $591,502 per ton of IYB NOx RTCs or the $425,882 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).

Investors were active in the RTC market. 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 2012 (57% and 22% of total value and 59% and 37% of total volume for discrete NOx and SOx trades, respectively; 68% and 11% of total value and 64% and 14% of total volume for IYB NOx and SOx trades, respectively). Investors' holdings of IYB NOx RTCs were 4.9%, and IYB SOx RTCs were 0.7% at the end of calendar year 2012.

Chapter 3: Emission Reductions Achieved

For Compliance Year 2011, aggregate NOx emissions were below total allocations by 25% and aggregate SOx emissions were below total allocations by 36%. No emissions associated with breakdowns were excluded from reconciliation with facility allocations in Compliance Year 2011. 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 clearly achieved its targeted emission reductions for Compliance Year 2011.

As discussed in Chapter 2, the January 2005 amendments to Rule 2002 require a NOx RTC reduction ("shave") of 22.5%, phased-in over Compliance Years 2007 through 2011. The Rule 2002 amendments also included provisions extending the phase-in process over an additional year or years if the average

cost of current year NOx RTCs exceeded $15,000 per ton along the way. However, the cost of current year NOx RTCs remained well below $15,000 per ton each year. Thus, Compliance Year 2011 marked the completion of the NOx shave, as adopted by the Board on January 7, 2005, without any need to extend the phase-in process.

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 2011, a total of 24 NOx RECLAIM facilities had NSR NOx emission increases, and five 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, modification, and modernization by existing facilities.

RECLAIM is required to comply with federal NSR emissions offset requirements at a 1.2-to-1 offset ratio programmatically for NOx emission increases and a 1-to-1 offset ratio for SOx emission increases on a programmatic basis. In Compliance Year 2011, RECLAIM provided an offset ratio based on the compliance year's total unused allocations and total NSR emission increases of 39-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 2011; 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

Of the 281 NOx RECLAIM Facility Permit holders during Compliance Year 2011, 262 facilities (93%) complied with their NOx allocations, and all of the SOx facilities (100%) complied with their SOx allocations. The 19 NOx facilities that exceeded their NOx allocations had aggregate NOx emissions of 675 tons and did not have adequate allocations to offset 62.5 tons (or 9%) of their combined emissions. This exceedance amount is small compared to the overall allocations for Compliance Year 2011 (0.6% of NOx allocations). The exceedances from these 19 facilities did not impact RECLAIM emission reduction goals. Pursuant to Rule 2010(b)(1)(A), all 19 facilities had their respective exceedances deducted from their annual Allocations for the compliance year subsequent to SCAQMD's determination that the facilities exceeded their Compliance Year 2011 Allocations. The overall RECLAIM NOx and SOx emission reduction targets and

goals were met for Compliance Year 2011 (*i.e.*, aggregate emissions for all 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) reports. The analysis focuses exclusively on job impacts at RECLAIM facilities and determination 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 prevailing economic climate), that impact the job market. These factors are not evaluated in this report.

According to the Compliance Year 2011 employment survey data gathered from APEP reports, RECLAIM facilities reported a net loss of 314 jobs, representing 0.31% of their total employment. All but one of the facilities that reported job losses cited factors other than RECLAIM as the reasons for these job losses. The only facility that reported to have shut down its operations cited RECLAIM as one of the contributing factors, attributing a loss of 120 jobs partly due to the cost of meeting air pollution requirements and other regulations. Five RECLAIM facilities were listed as shutdown during Compliance Year 2011. One of these facilities reported on their APEP report that the cost of complying with air quality and other governmental regulations was a contributing factor in their decision to close. The other four facilities did not report any job losses due to RECLAIM.

Chapter 7: Air Quality and Public Health Impacts

Audited RECLAIM emissions have been in an overall downward trend since the program's inception. When compared to Compliance Year 2010, the Compliance Year 2011 NOx emissions increased slightly (2.6%) and 2011 SOx emissions continued in a downward trend, reducing by 1.7%. Quarterly calendar year 2011 NOx emissions fluctuated within two percent of the mean NOx emissions for the year. Quarterly calendar year 2011 SOx emissions fluctuated within six percent of the year's mean SOx emissions. There was no significant shift in seasonal emissions from the winter season to the summer season.

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. The Basin achieved the December 2000 target for ozone well before the deadline. In calendar year 2012, the per capita exposure to ozone (the length of time each person is exposed) 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. RECLAIM and non-RECLAIM facilities that emit toxic air contaminants are

required to report those emissions to SCAQMD. Those toxics emissions reports are used to identify candidates for the Toxics Hot Spots program (AB2588), which in turn quantifies toxic risk from facilities in the program and identifies those that are required do public notice and/or reduce the risk. So far, there is no evidence that RECLAIM has caused or allowed higher toxic risk in areas adjacent to RECLAIM facilities.

INTRODUCTION

The South Coast Air Quality Management District (SCAQMD) 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. SCAQMD staff has completed the initial tri-annual audit and each individual annual audit report through the 2011 Compliance Year Audit.

This report presents the annual audit and progress report of RECLAIM's eighteenth compliance year (January 1 through December 31, 2011 for Cycle 1 and July 1, 2011 through June 30, 2012 for Cycle 2 RECLAIM facilities), also known as Compliance Year 2011. 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, 2011 through June 30, 2012.
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 SCAQMD'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 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, 2011, the overall changes in RECLAIM participants were 121 facilities included into the program, 70 facilities excluded from the program, and 164 facilities ceased operation. Thus, the RECLAIM universe consisted of 281 active facilities on July 1, 2011. From July 1, 2011 through June 30, 2012, no facility was included into the RECLAIM universe, no facility was excluded, and five facilities shut down (one facility in both the NOx and SOx universes and four in the NOx universe only) and are no longer in the active RECLAIM universe. These changes resulted in a net decrease of five facilities in the universe, bringing the total number of active RECLAIM facilities to 276 as of June 30, 2012.

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. 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 facilities conducting 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 SCAQMD 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 facility deems 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 2010 (June 30, 2011) were: the inclusion of 121 facilities (33 facilities created by partial change of operator of existing RECLAIM facilities), the exclusion of 70 facilities, and the shutdown of 164 facilities. Thus, the net change in the RECLAIM universe during the first 17 compliance years was a decrease of 113 facilities from 394 to 281 facilities. From July 1, 2011 through June 30, 2012, no facility was included, no facility was excluded, and five facilities shut down. These changes brought the total number of facilities in the RECLAIM universe to 276 facilities. These include 243 NOx-only, no SOx-only, and 33 both NOx and SOx RECLAIM facilities. The list of active facilities in the RECLAIM universe as of June 30, 2012 (the end of Compliance Year 2011 for Cycle 2 facilities) is provided in Appendix A.

Facility Inclusions and Exclusions

Between July 1, 2011 and June 30, 2012, no facility was included to or excluded from the RECLAIM universe.

Facilities Permanently Ceasing Operations

Five RECLAIM facilities permanently ceased operations between July 1, 2011 and June 30, 2012. Two of these facilities consolidated their operations to other existing facilities outside the District. One of these two facilities further stated that declining demand for their products, in addition to the cost of manufacturing, and the cost of meeting environmental regulations were the reasons for

shutdown. Another facility shutdown their operation and sold the property to its adjacent facility. The facility that bought the property did not retain any of the equipment of the RECLAIM facility. One facility declared bankruptcy and shutdown its operation while foreclosure of the property forced the shutdown of the other. Four of the five facilities permanently ceasing operations were in NOx RECLAIM, with the remaining shutdown facility was in both NOx and SOx RECLAIM. Appendix C lists these facilities and provides brief descriptions of the reported reasons for their closures.

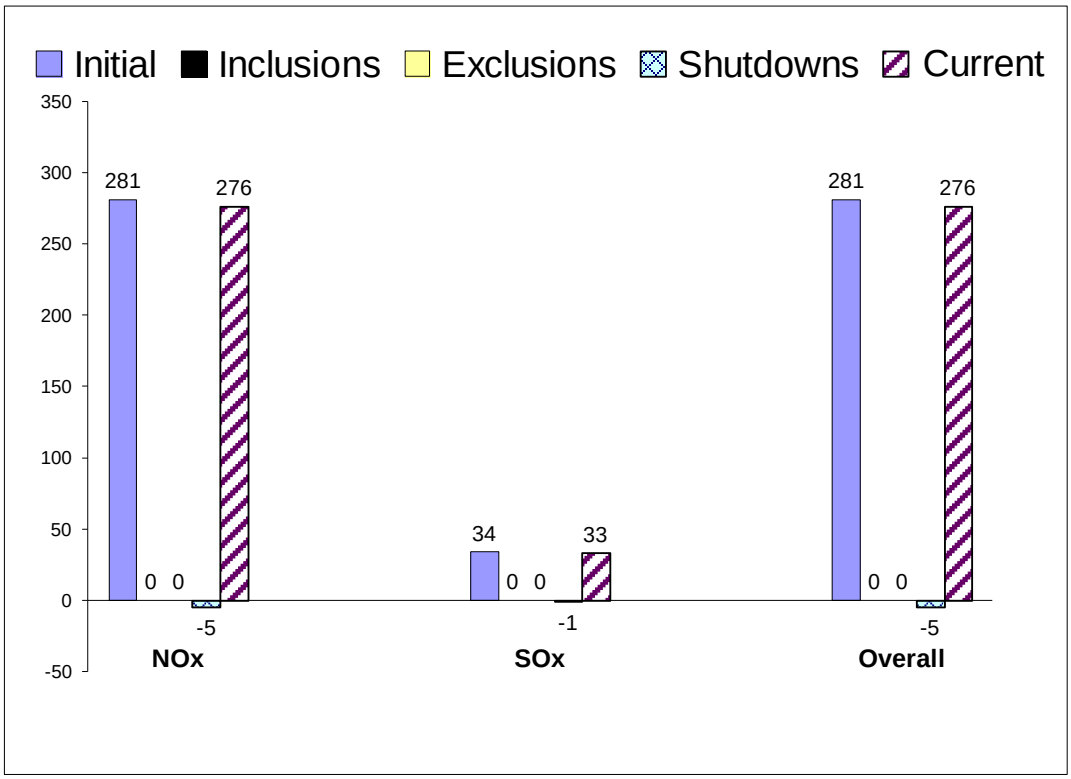
These shutdowns resulted in a net decrease of five facilities in the RECLAIM universe. Table 1-1 summarizes changes in the RECLAIM universe between the start of the program and June 30, 2012. Overall changes to the RECLAIM universe that occurred from July 1, 2011 through June 30, 2012 are illustrated 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, 2011	121	12	121
Exclusions – October 15, 1993 through June 30, 2011	-69	-4	-70
Shutdowns – October 15, 1993 through June 30, 2011	-163	-15	-164
Universe – June 30, 2011	281	34	281
Inclusions – July 1, 2011 through June 30, 2012	0	0	0
Exclusions – July 1, 2011 through June 30, 2012	0	0	0
Shutdowns – July 1, 2011 through June 30, 2012	-5	-1	-5
Universe – June 30, 2012	276	33	276

* 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, 2011 through June 30, 2012



CHAPTER 2
RTC ALLOCATIONS AND TRADING

Summary

The amendments to NOx RECLAIM adopted by the Governing Board on January 7, 2005 resulted in an overall 22.5% reduction in NOx Allocations in 2011. The Compliance Year 2011 RTC supply increased by 13.0 tons for NOx and decreased by 16.8 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 2011 were 9,690 and 4,283 tons, respectively. The amendments to SOx RECLAIM that the Governing Board adopted on November 5, 2010 phase in SOx reductions from 2013 through 2019 and will result in an overall reduction of 5.7 tons/day (or 48.4%) in SOx Allocations.

During calendar year 2012, there were 363 registered RTC transactions with a total value of over $18.8 million traded, excluding the values reported for swaps. Since the inception of the RECLAIM program in 1994, a total value of over $1.02 billion dollars has been traded in the RTC trading market, excluding swaps. In terms of volume traded in calendar year 2012, 3,301 tons of discrete NOx, 1,091 tons of discrete SOx RTCs, 131 tons of infinite-year block (IYB) NOx and 569 tons of IYB SOx RTCs were traded.

The average annual prices of discrete-year NOx RTCs traded during calendar year 2012 were $578 per ton for Compliance Year 2011 RTCs, $1,162 per ton for Compliance Year 2012 RTCs, and $4,053 per ton for Compliance Year 2013 RTCs. The average annual prices for discrete-year SOx RTCs traded during the same period were $450 per ton for Compliance Year 2011 RTCs and $759 per ton for RTCs for Compliance Year 2012. 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 SCAQMD Rule 2015, as well as the $39,433 per ton of NOx and $28,392 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 2012 for IYB NOx RTCs was $48,146 per ton, and the average annual price for IYB SOx RTCs was $125,860 per ton. Therefore, average annual IYB RTC prices did not exceed the $591,502 per ton of IYB NOx RTCs or the $425,882 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).

Investors were active in the RTC market. 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 2012 (57% and 22% of total value and 59% and 37% of total volume for discrete NOx and SOx trades, respectively; 68% and 11% of total value and 64% and 14% of total volume for IYB NOx and SOx trades, respectively). Investors' holdings of IYB NOx RTCs were 4.9%, and IYB SOx RTCs were 0.7% at the end of calendar year 2012.

Background

SCAQMD issues each RECLAIM facility emissions allocations for each compliance year, according to the methodology specified in Rule 2002 – Allocations for Oxides of Nitrogen (NOx) and Oxides of Sulfur (SOx), based on its historic production levels as reported to SCAQMD 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 until 30 days after the end of each of the first three quarters of each compliance year to reconcile their quarterly and year-to-date emissions, and until 60 days after the end of each compliance year to reconcile their total annual emissions by securing adequate RTCs.

California Health and Safety Code §40440 requires SCAQMD to monitor the advancement in Best Available Retrofit Control Technology (BARCT) and periodically re-assess the RECLAIM program to ensure that RECLAIM achieves equivalent emission reductions to the command-and-control BARCT rules it subsumes. Pursuant to 2003 AQMP Control Measure #2003 CMB-10 – "Additional NOx Reductions for RECLAIM (NOx)" SCAQMD began the RECLAIM rule amendment process that 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 changes to the RECLAIM program that 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 were 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, SCAQMD 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 to be 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.

Recently, on December 7, 2012 SCAQMD Governing Board adopted the 2012 AQMP that includes Control Measure CMB-01 – Further NOx Reductions for RECLAIM which proposes to reduce NOx emissions further by 3 to 5 tons per day. The reductions will be in two phases – 2 to 3 tons per day by Compliance Year 2015 in Phase I and an additional 1 to 2 tons per day by 2020 in Phase II. The rule development and adoption process for Phase I reduction is expected to be completed in 2013. The proposal is to implement the first phase of reduction in 2015 if attainment of 24-hr PM 2.5 standard is not met by 2014. If not triggered in 2015, these reductions will be consolidated with the Phase II reductions for a total of 3-5 tons per day in the 2015 AQMP.

Although other chapters in this report present and discuss Compliance Year 2011 data, RTC trading and price data discussed in this chapter are for calendar year 2012.

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 these allocated RTCs, 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 2011 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 entitled to allocations just as those facilities that were 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.[1] These credits are not allowed to be used to offset current emissions because they are expired credits.

No facilities were included or excluded from the RECLAIM program in Compliance Year 2011. Therefore, there were no changes to the NOx or SOx RTC supplies in Compliance Year 2011 due to changes in the RECLAIM universe.

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 in the amount of the difference between the amount of actual emission increases due solely due to production of 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 2011, the overall effect of adjusting NOx allocations to account for these differences was a total of 13.0 tons of NOx RTCs (0.1% of total NOx allocation for Compliance Year 2011) added to, and 16.8 tons of SOx RTCs (0.4% of total SOx allocation for Compliance Year 2011) deducted from refineries' Compliance Year 2011 holdings.

[1] These Compliance Year 1994 allocations and Non-tradable/Non-usable Credits for facilities that entered the program after the 1994 Compliance Year 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 2011.

Conversions of Other Types of Emission Reduction Credits

Conversions of Mobile Source Emission Reduction Credits (MSERCs) and other types of emission reduction 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 – Old-Vehicle Scrapping and 1612 – Credits for Clean On-Road Vehicles 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 2011.

Net Changes in RTC Allocations

The changes to RTC supplies described in the above sections resulted in a net increase of 13.0 tons of NOx RTCs and a decrease of 16.8 tons of SOx RTCs for Compliance Year 2011. Table 2-1 summarizes the changes in NOx and SOx RTC supplies that occurred in Compliance Year 2011 pursuant to Rule 2002.

Table 2-1
Changes in NOx and SOx RTCs Supplies during Compliance Year 2011 (tons/year)

Source	NOx	SOx
Universe changes	0	0
Clean Fuel/Reformulated Gasoline	13.0	-16.8
Activity corrections	0	0
MSERCs	0	0
Net change	13.0	-16.8

Note: The data in this table represents the changes that occurred over the course of Compliance Year 2011 to the Compliance Year 2011 aggregate NOx and SOx RTC supplies originally issued pursuant to Rule 2002, not the difference between 2011 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

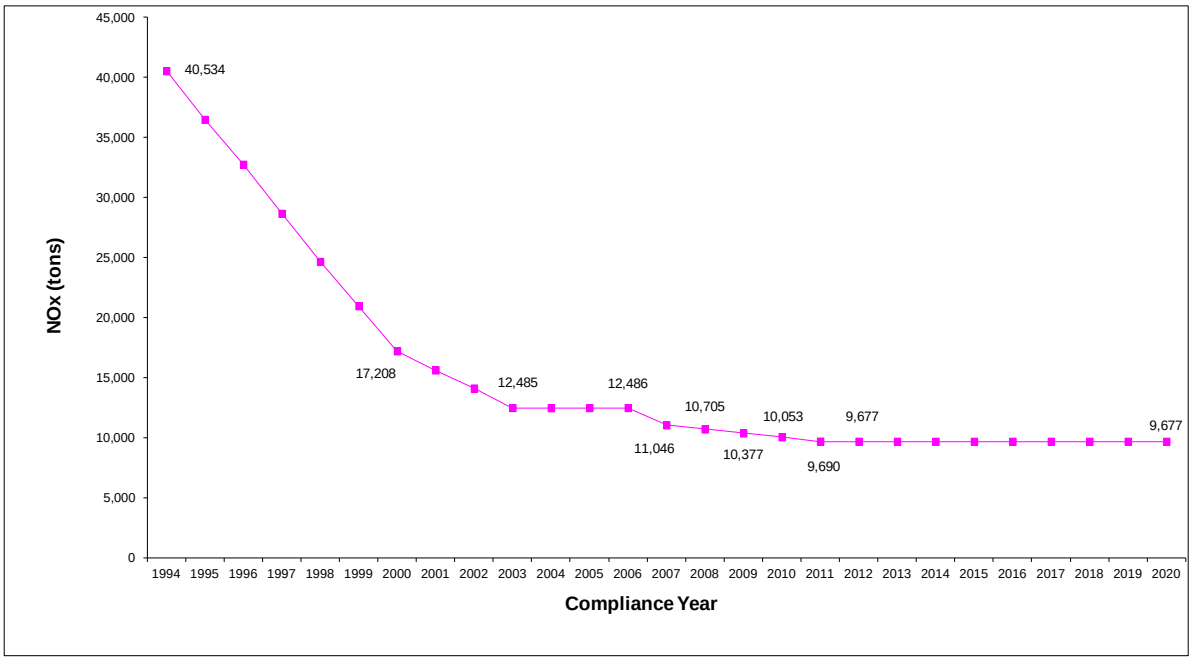
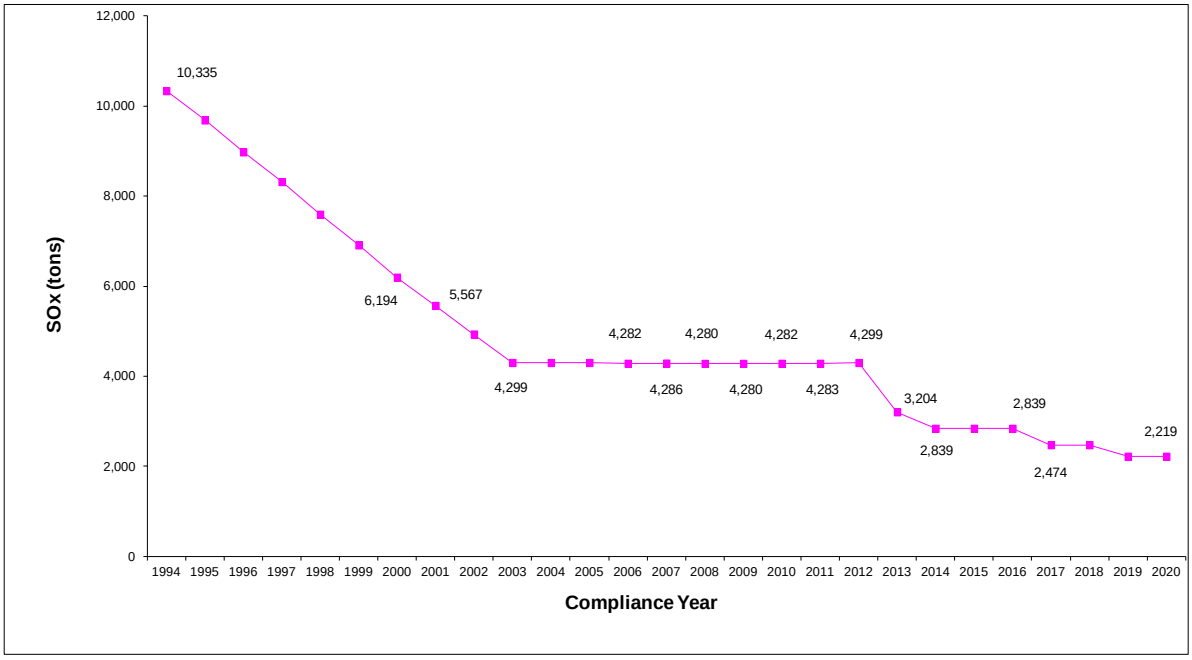


Figure 2-2
SOx RTC Supply



Upcoming Proposal for Credit Generation

Proposed Rule 2511 – Credit Generation Program for Locomotive Head End Power Unit Engines and Proposed Rule 2512 – Credit Generation Program for Ocean-Going Vessels at Berth are two potential rules that could generate credits that would be allowed to be used in the RECLAIM program. Proposed Rule 2511 would allow generation of emission reduction credits through the voluntary repowering of diesel–fueled auxiliary head end power generating units on passenger locomotives with cleaner engines. Proposed Rule 2512 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. SCAQMD staff is currently working with stakeholders on developing these rules. Public meetings and Board consideration for these proposed rules are pending.

RTC Price Reporting Methodology

RTC trades are reported to SCAQMD as one of two types: discrete-year RTCs or infinite-year blocks (IYBs) trades that involves blocks of RTCs with a specified start year and continuing into perpetuity. Discrete-year trades prices are reported in terms of dollars per pound and IYB trade prices are reported as total dollar value for total amount of IYB RTCs traded. In addition, the trading partners are required to identify any swap trades 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.

For this report, the average annual price for discrete-year RTCs are averaged in dollars per ton of RTCs for each discrete compliance year while, the average price for IYB RTCs are averaged as a total dollar value per ton of IYB RTC. Because swap trades have the potential to adversely impact the calculated average annual prices of RTCs, therefore, reported prices for swap trades are excluded from the calculation of average annual RTC price

This reporting methodology was approved by the Governing Board on September 7, 2007, details regarding this reporting methodology for RTC trades, which 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 $591,502 per ton of NOx RTCs and $425,882 per ton of SOx RTCs in 2011 dollars.

RTC Trading Activity Excluding Swaps

Overall Trading Activity

The RTC market activity in calendar year 2012 was comparable to the market activity in calendar year 2011. The calendar year 2012 trading activity—363 total registered trade transactions (332 NOx trades and 31 SOx trades)—was slightly lower than the number of trade transactions in calendar year 2011 (380 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 over $18.8 million was traded in calendar year 2012 ($4.2 million for NOx and $14.6 million for SOx) compared to the total value of $12.9 million traded in calendar year 2011 ($11.9 million for NOx and $1.0 million for SOx). The decrease in the NOx value traded was due to the decrease of NOx IYB trades in 2012. The increase in the SOx value traded was largely due to one transaction of 100 tons per year of IYB SOx RTCs early in the year. Figure 2-3 shows historical trading values (excluding swaps). Figure 2-4 summarizes overall trading activity (excluding swaps) in calendar year 2012 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. The number of this type of trades decreased in 2012 when compared to 2011 (from 109 trades in 2011 to 91 trades in 2012), resulting in the decrease in the total number of trades in 2012. 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)

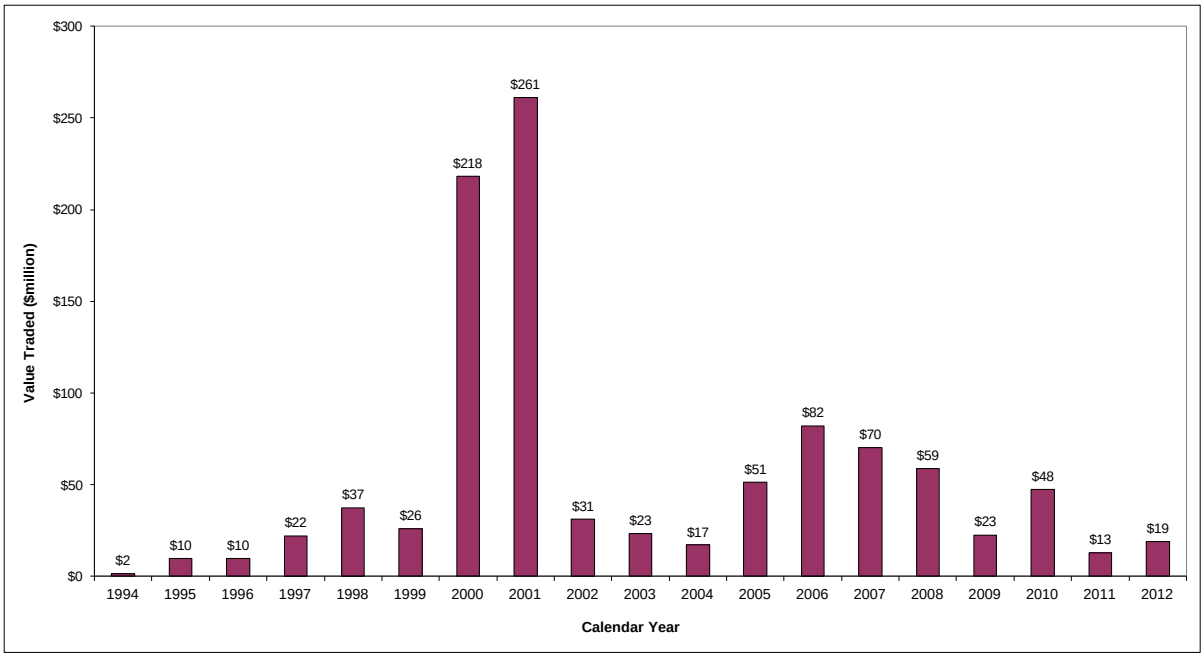
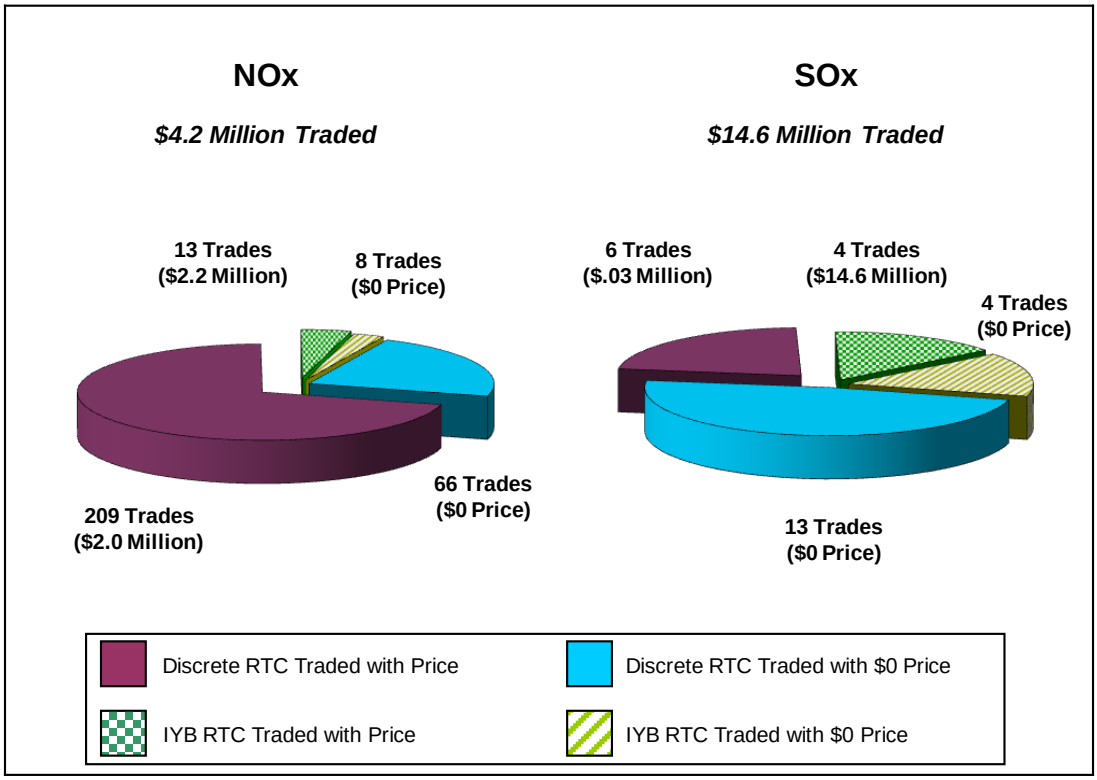


Figure 2-4
Calendar Year 2012 Overall Trading Activity (Excluding Swaps)



Discrete RTC Trading Activity

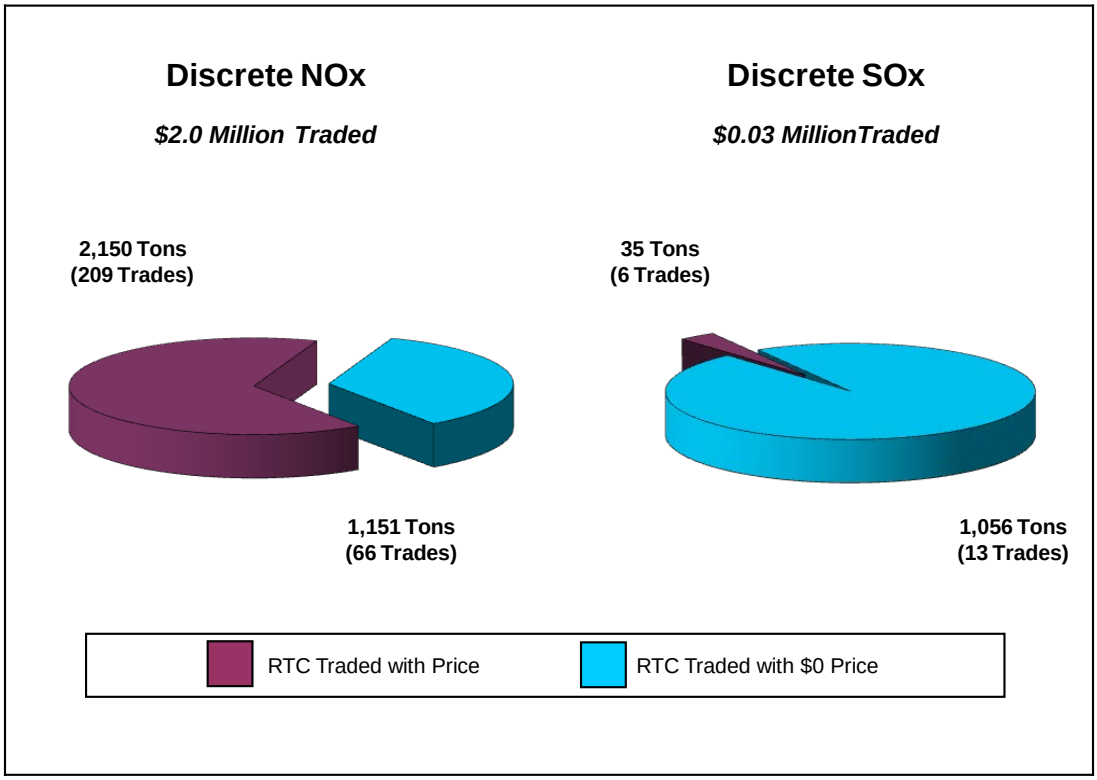
In calendar year 2012, there were a total of 275 discrete NOx trades and 19 discrete SOx trades of RTCs. Of the 275 discrete NOx trades, 209 were traded with price totaling 2,150 tons in volume and $2.0 million in value. Of the 19 SOx trades, six were traded with price totaling 35 tons in volume and $0.03 million in value. In addition to trades with prices, there were 66 discrete NOx trades of 1,151 tons and 13 discrete SOx trades of 1,056 tons traded with zero price.

In calendar year 2012, trading of discrete NOx RTCs was limited to Compliance Years 2011, 2012, and 2013 only. Trading of discrete SOx RTCs was limited to Compliance Years 2011 and 2012 only.

Discrete NOx RTC trades with price in calendar year 2012 experienced a minor increase in total quantity traded (2,114 tons in calendar year 2011 to 2,150 tons in 2012) and a decrease in total value when compared to trades in calendar year 2011 ($2.8 million in 2011 vs. $2.0 million in 2012). The overall quantity of discrete NOx RTCs decreased from 3,445 tons traded in calendar year 2011 to 3,301 tons in calendar year 2012. Discrete SOx RTC trades with price in calendar year 2012 showed an increase in both quantities traded and total value. The quantity traded with price increased from 33 tons to 35 tons and the value of discrete SOx RTCs traded increased from $0.02 million to $0.03 million from calendar year 2011 to 2012, respectively. In calendar year 2012, two large SOx RECLAIM facilities changed operator and the SOx RTCs were transferred

without price. As a result there was a large increase in quantity of discrete SOx RTCs traded without price; the overall quantity of discrete SOx RTCs increased from 413 tons to 1,091 tons. Figure 2-5 illustrates the trading activity of discrete RTCs (excluding swaps) for calendar year 2012.

Figure 2-5
Calendar Year 2012 Trading Activity for Discrete RTCs (Excluding Swaps)



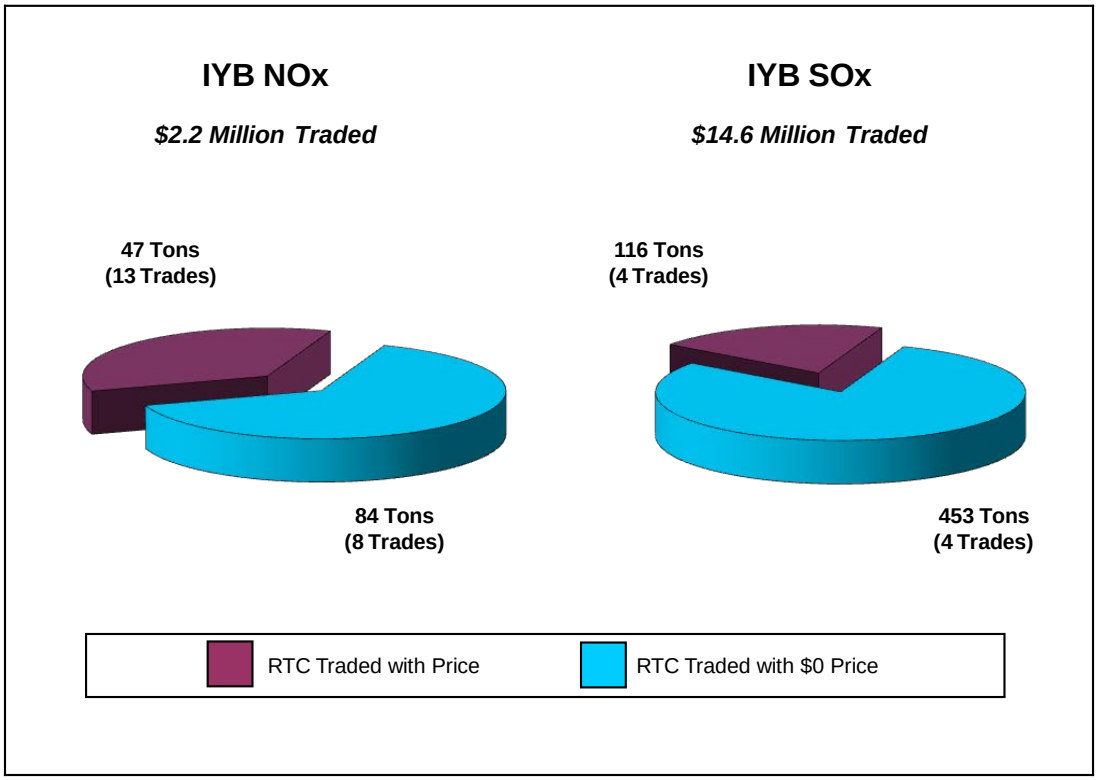
IYB RTC Trading Activity

IYB RTCs include RTCs valid for a certain specified start year and continuing into perpetuity. In calendar year 2012, there were 21 IYB NOx trades and eight IYB SOx trades. All of these IYB trades included Compliance Year 2011, 2012, 2013 or 2014 as the start year. Of the 21 IYB NOx trades, 13 trades were with price totaling 47 tons and $2.2 million (compared to 29 trades with price totaling 161 tons and $9.1 million in 2011). This represents a 15% drop in the calendar year 2012 average price for IYB NOx RTCs from the average price of 2011 (from $56,708 per ton to $48,146 per ton).

There were four IYB SOx RTC trades in calendar year 2012 with price totaling 116 tons, which was much higher than the two trades with price totaling 10 tons traded in calendar year 2011. These IYB SOx trades with price included Compliance Years 2012, 2013 and 2014 as the start year. The total value of these IYB SOx trades ($14.6 million) was also much higher than the total value traded in 2011 ($1 million). The average price for IYB SOx RTCs in calendar year 2012 increased by 23% from the average price of 2011 (from $102,366 per

ton to $125,860 per ton). In addition to trades with prices, there were also eight IYB NOx trades totaling 84 tons and four IYB SOx trades totaling 453 tons traded with zero price. The large increase in IYB SOx RTCs traded without prices resulted from two large SOx RECLAIM facilities that transferred IYB SOx RTCs from the old operator to the new operator as part of the changes of operator. Figure 2-6 illustrates the calendar year 2012 IYB RTC trading activity excluding swap trades.

Figure 2-6
Calendar Year 2012 Trading Activity for IYB RTCs (Excluding Swaps)



Prior to the amendment of Rule 2007 – Trading Requirements in May 2001 swap information and details of discrete and IYB trades were not required to be provided by trade participants. In compiling data for calendar years 1994 through part of 2001, any trade registration involving IYB 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 trade reporting methodology described in the earlier section of this report.

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

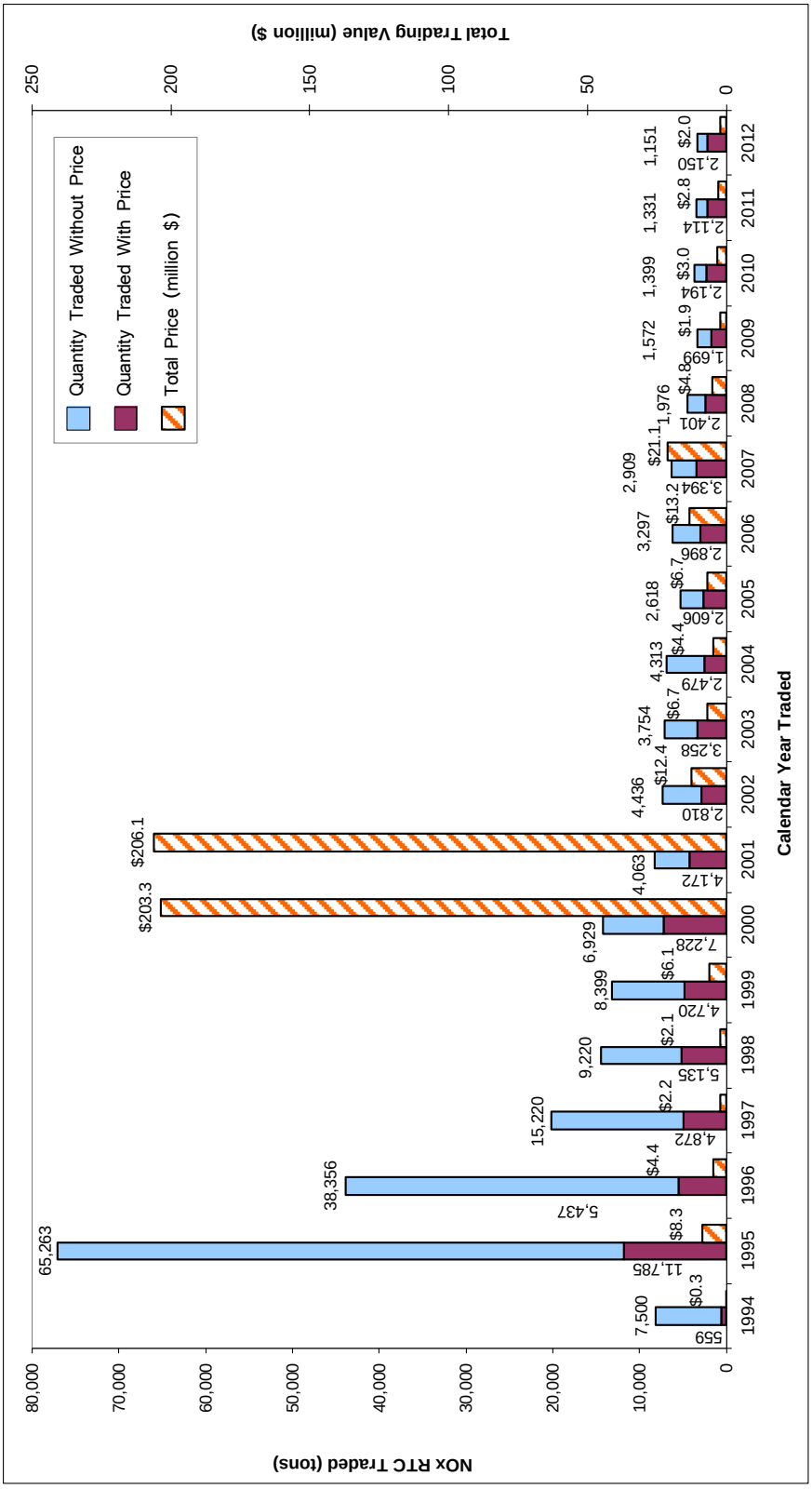


Figure 2-8
Discrete SOx RTCs Trades (Excluding Swaps)

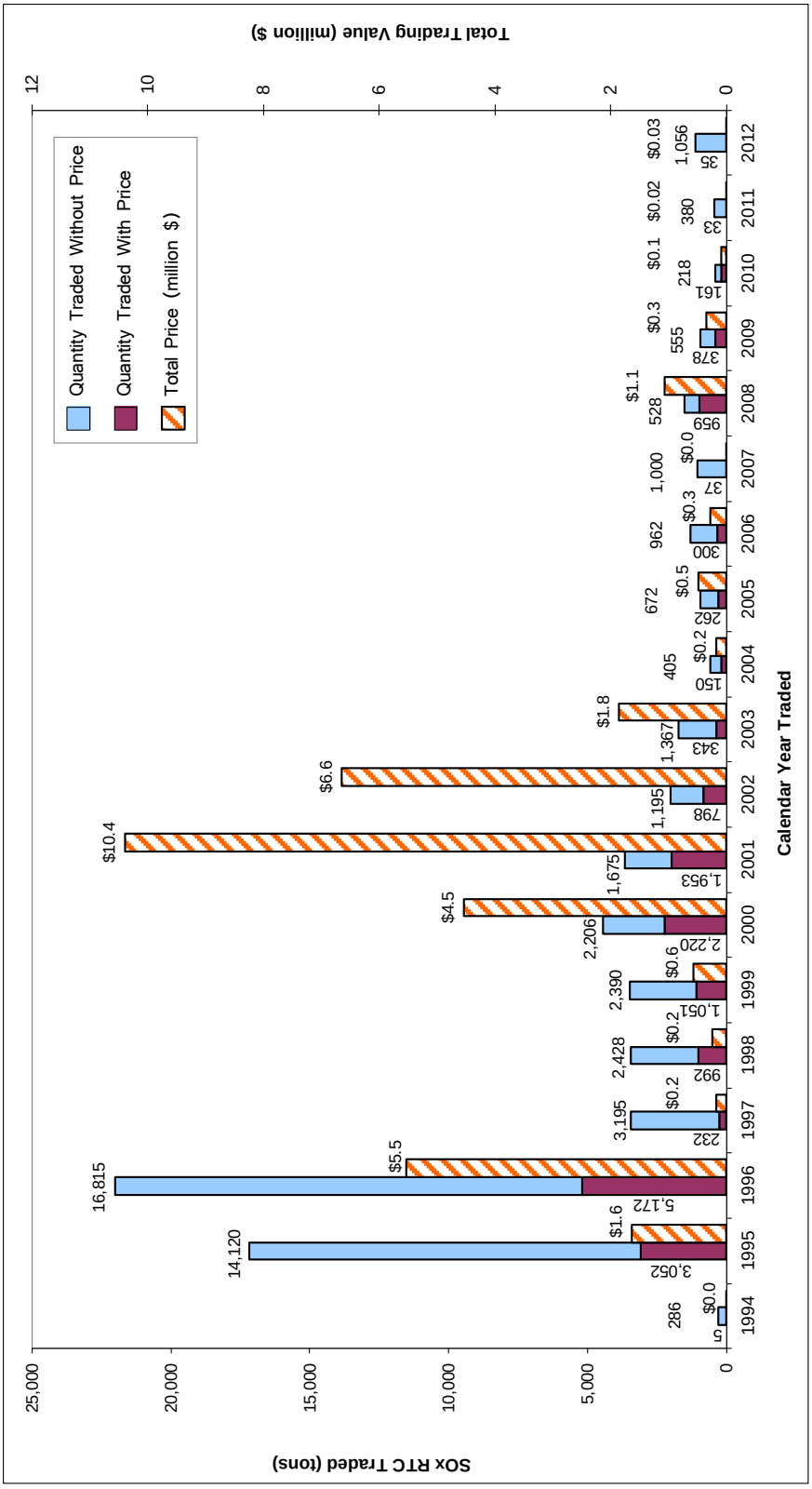


Figure 2-9
IYB NOx RTCs Trades (Excluding Swaps)

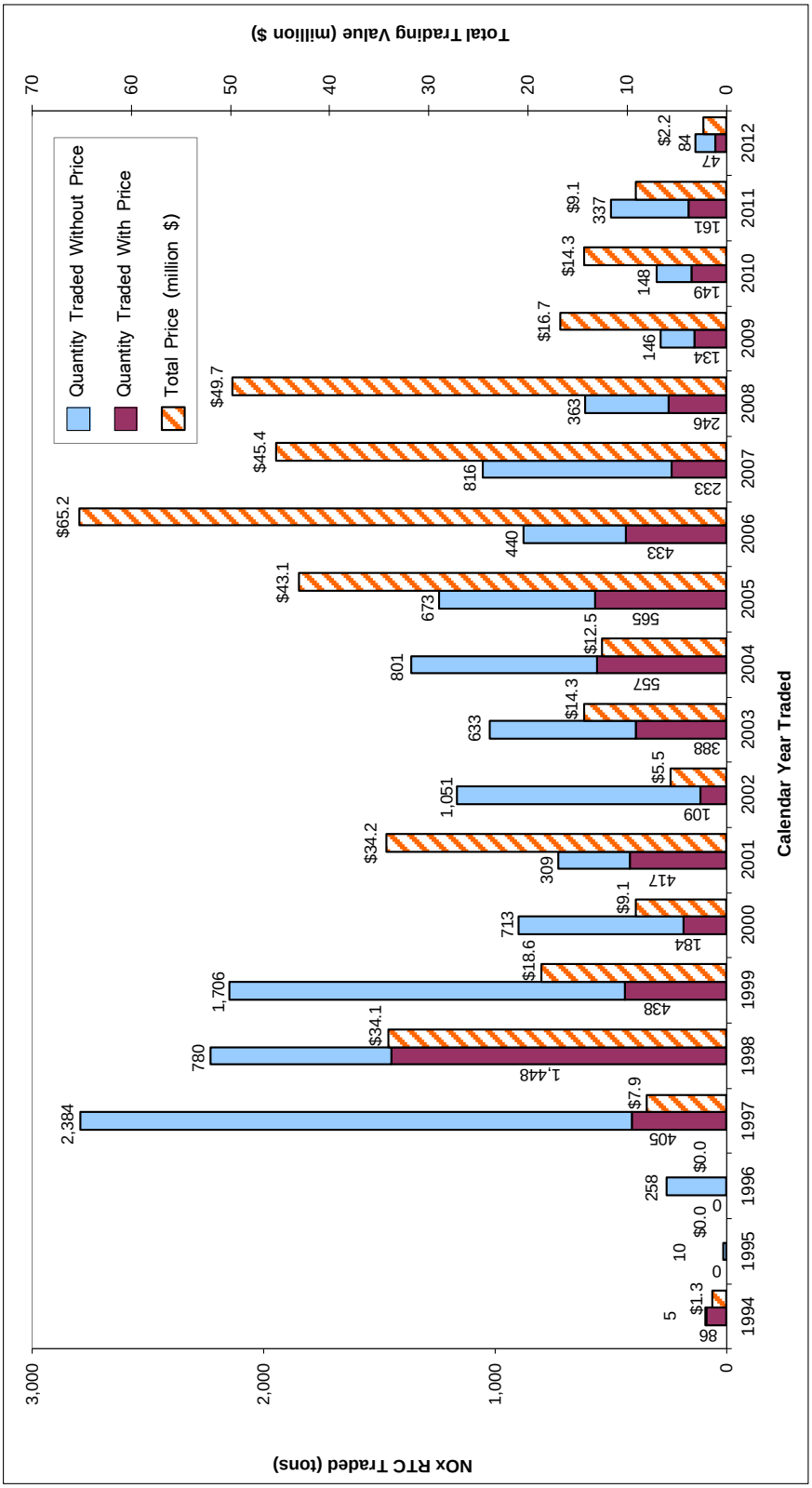
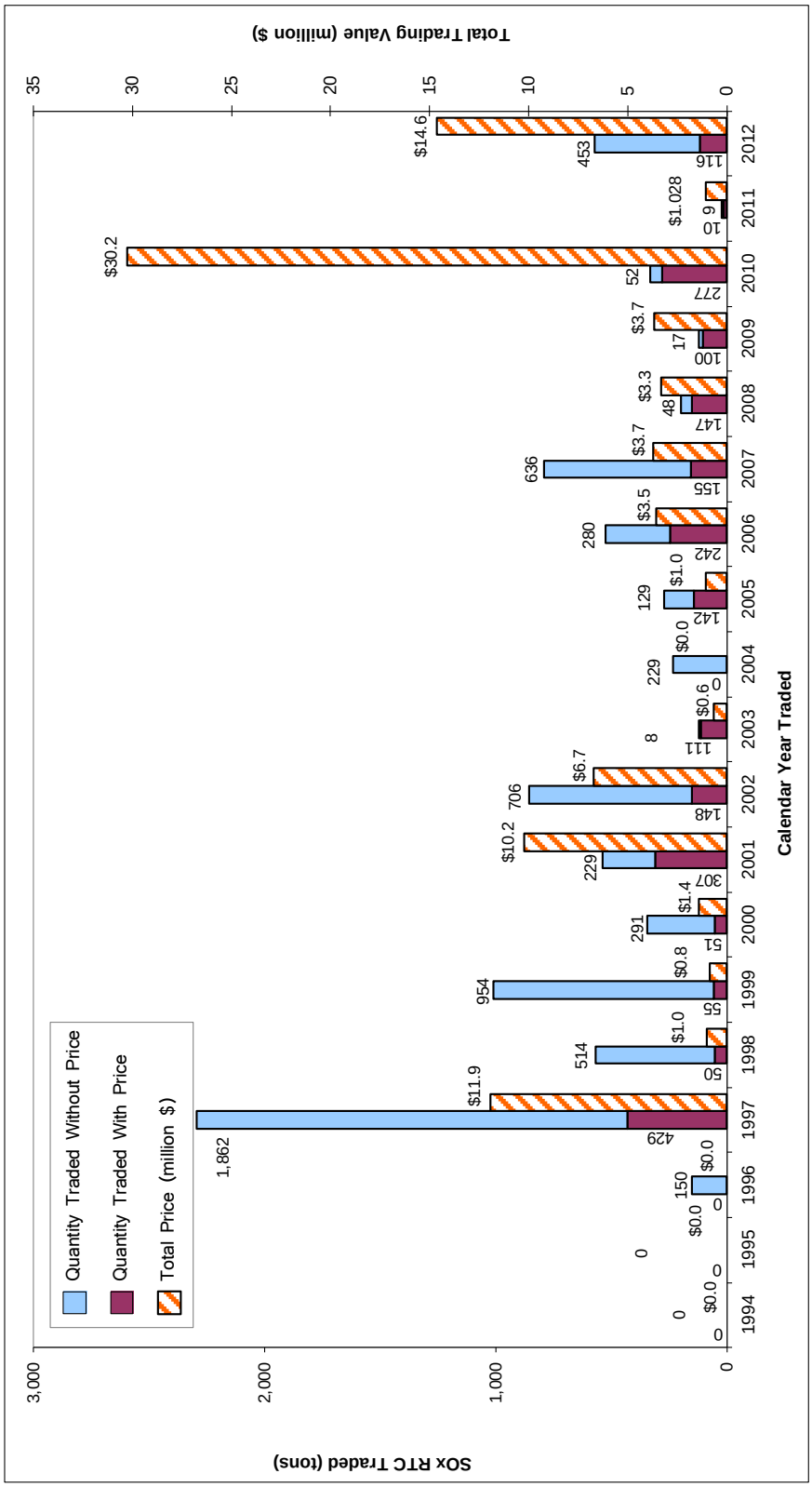


Figure 2-10
IYB SOx RTCs Trades (Excluding Swaps)



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 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 $28 million in total value was reported from RTCs that were swapped in calendar year 2012 (the bulk of the total value was from the SOx IYB swaps between two refineries). 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 (*e.g.,* 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. 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 2012 RTC swaps for NOx and SOx, respectively.

Table 2-2
NOx Registrations Involving Swaps*

Year	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	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	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	775.5	25	32
2012	$ 1.29	0	928.1	36	36

* 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*

Year	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	161.8	13	13
2005	$ 2.16	43.5	227.8	13	14
2006	$ 0.02	0	24.4	2	2
2007	$ 0.00	0	0	0	0
2008	$ 0.40	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	228.5	3	4
2012	$ 27.01	100.0	7.5	4	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 2012, the average annual prices for discrete-year NOx RTCs were $578 per ton for Compliance Year 2011, $1,162 per ton for Compliance Year 2012, and $4,053 per ton for Compliance Year 2013. The average annual prices for discrete-year SOx RTCs were $450 per ton for Compliance Year 2011 and $759 per ton for Compliance Year 2012[2]. In calendar year 2011 the average price of discrete-year 2011 SOx RTCs was $500 per ton, almost one-third less than the corresponding $759 per ton for discrete-year 2012 SOx RTCs traded in calendar year 2012. However, these average prices are based on only one trade and four trades, respectively. Averages based on such small populations are expected to be highly variable. Similarly, in calendar year 2012, there also was a substantial difference in the average price of Compliance Year 2010 SOx RTCs compared to 2011 SOx RTCs ($779 per ton to $450 per ton). Again, this variability resulted from the fact that these average prices are based on only four trades of Compliance Year 2010 SOx RTCs and three trades of Compliance Year 2011 SOx RTCs that occurred in calendar year 2012. Figures 2-11 and 2-12 present the average annual prices for discrete-year NOx and SOx RTCs during calendar years 2004 through 2012, 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 2012 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 SCAQMD Rule 2015, as well as the $39,433 per ton of NOx and $28,392 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 2012. They were involved with 57% with respect to value and 59% with respect to volume for discrete-year NOx RTCs and 22% with respect to value and 37% with respect to volume for discrete-year SOx RTCs.

[2] There were no discrete-year 2013 SOx RTCs traded in calendar year 2012.

Figure 2-11
Average Annual Prices for Discrete-Year NOx RTCs during Calendar Years 2004 through 2012

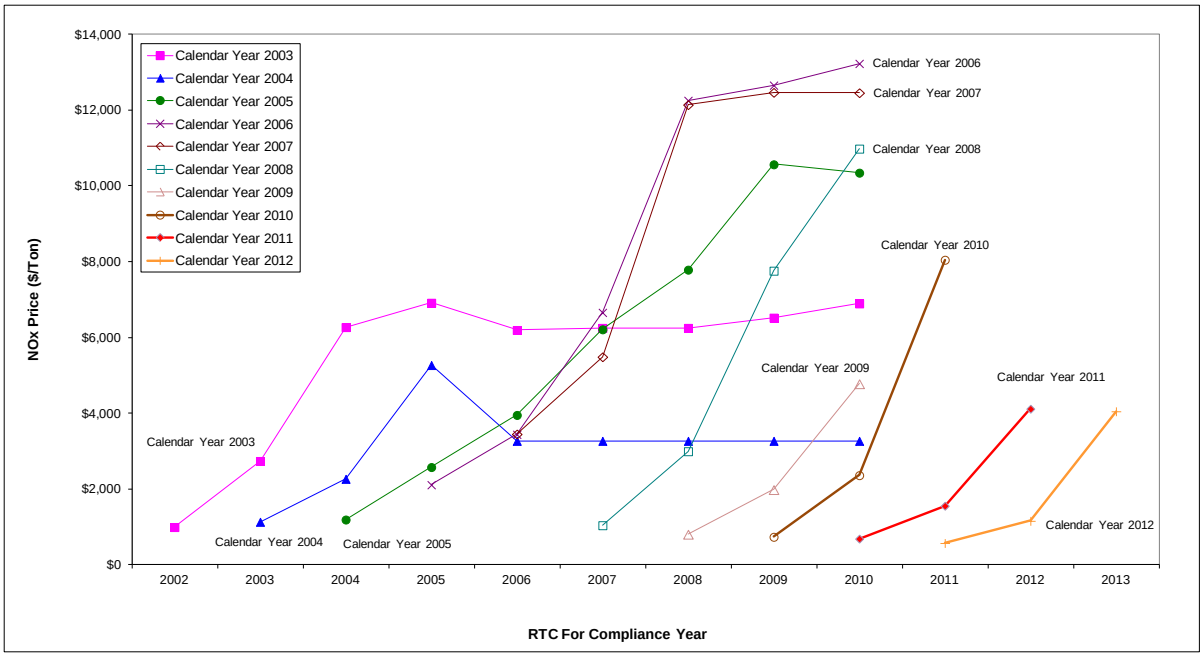
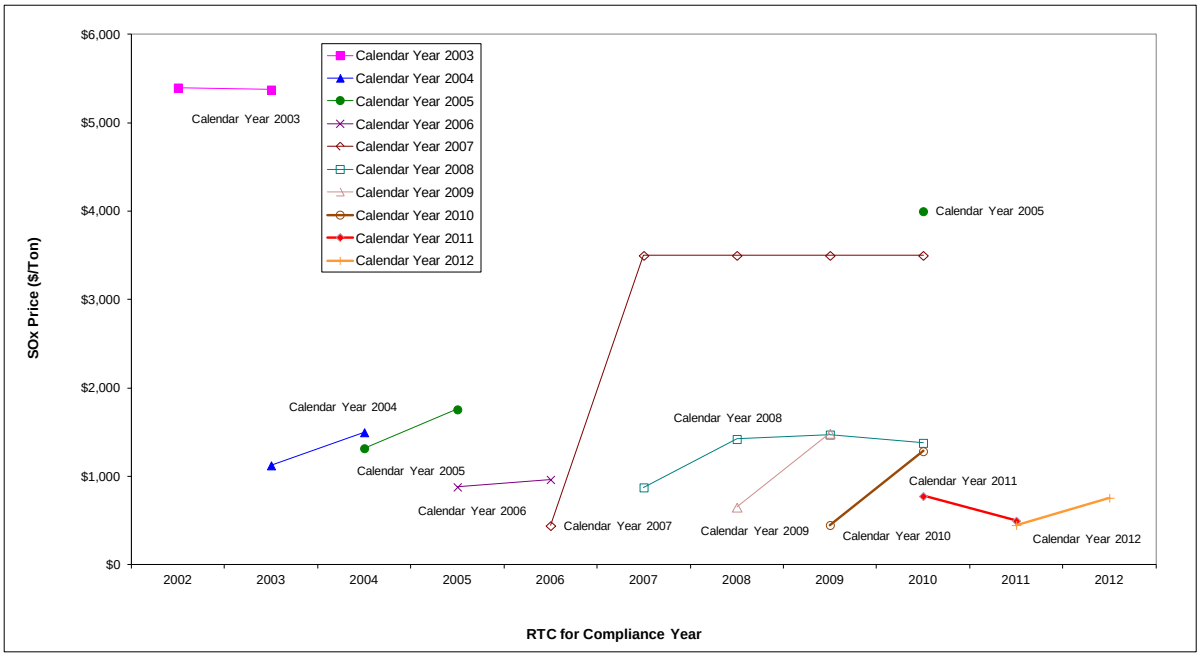


Figure 2-12
Average Annual Prices for Discrete-Year SOx RTCs during Calendar Years 2004 through 2012



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." "Swap" transactions (the exchange of RTCs for other RTCs or for other emissions credits) are 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, SCAQMD 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 SCAQMD 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. Furthermore, Compliance Year 2011 was the last that had annual incremental Non-tradable/Non-usable RTCs (the previously described NOx "shave" has been fully implemented), so there is no longer the potential for such Non-tradable/Non-usable RTCs to be converted to active tradable RTCs. Nevertheless, staff continues to monitor the twelve-month rolling average price of current-year NOx RTCs on a monthly basis and report the rolling average prices to the Stationary Source Committee on a quarterly basis.

As shown in Table 2-4, the twelve-month rolling average prices of Compliance Year 2012 NOx RTCs have generally been flat or declining since January 2012 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. For Compliance Year 2011 NOx RTCs, the same findings were true and were included in the RECLAIM Annual Audit Report for 2010 Compliance Year, submitted to the Governing Board in March 2012.

Table 2-4
Twelve-Month Rolling Average Prices of Compliance Year 2012 NOx RTCs

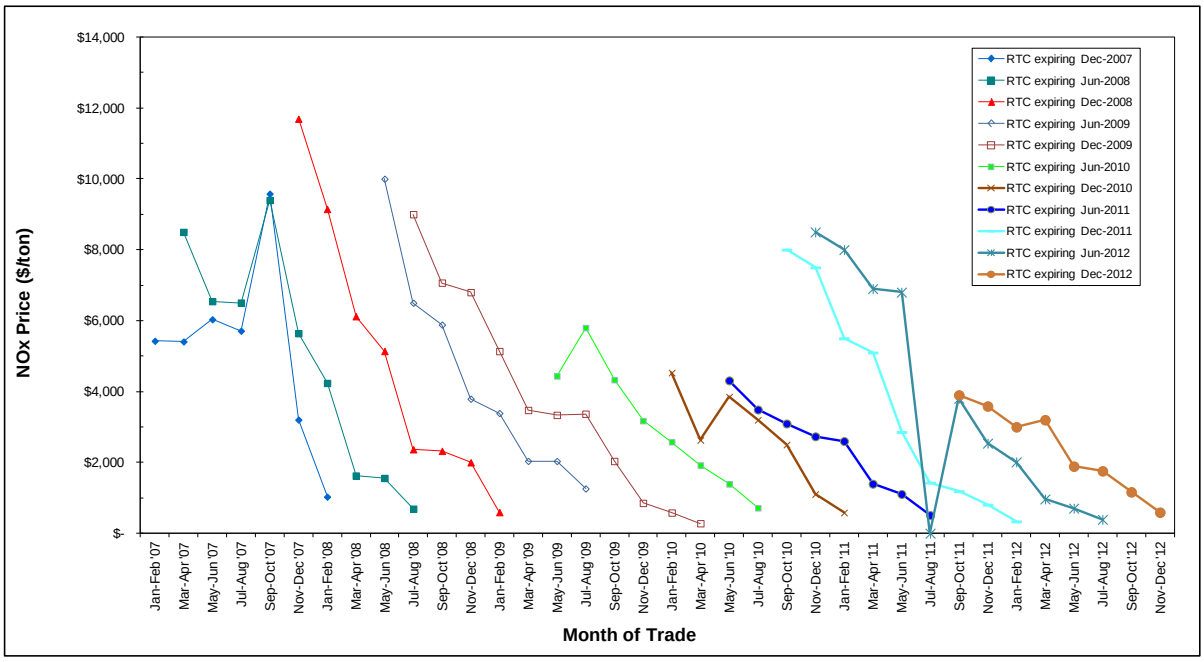
Reporting Month	12-Month Period	Average Price ($/ton)
January 2012	January through December 2011	$4,121
February 2012	February 2011 through January 2012	$4,121
March 2012	March 2011 through February 2012	$4,127
April 2012	April 2011 through March 2012	$4,127
May 2012	May 2011 through April 2012	$4,113
June 2012	June 2011 through May 2012	$4,113
July 2012	July 2011 through June 2012	$4,085
August 2012	August 2011 through July 2012	$4,023
September 2012	September 2011 through August 2012	$3,837
October 2012	October 2011 through September 2012	$3,826
November 2012	November 2011 through October 2012	$3,072
December 2012	December 2011 through November 2012	$2,507
January 2013	January through December 2012	$1,162

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 2012 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: Data is presented for a limited number of RTC expiration dates for graphical clarity.

IYB RTC Prices

The average annual price for IYB NOx RTCs traded in calendar year 2012 is $48,146 per ton, which is lower than the average annual price of $56,708 per ton traded in calendar year 2011. The average annual price for IYB SOx RTCs in calendar year 2012 is $125,860 per ton, which is higher than the $102,366 per ton traded in calendar year 2011. There were only four IYB SOx trades with price totaling 116 tons in 2012 which is much higher than the 10 tons traded in 2011. However, one IYB SOx trade was for 100 tons at the price of $130,000 per ton. This trade accounted for the majority of the quantity of IYB SOx trades in 2012 and also skewed the average price higher for IYB SOx RTCs. 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 2012, the average annual IYB RTC prices did not exceed the $591,502 per ton of NOx RTCs or the $425,882 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 2012. They were involved with 68% with respect to value and 64% with respect to volume for IYB NOx RTCs and 11% with respect to value and 14% with respect to volume for IYB SOx RTCs.

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
2012	$2.2	46.6	13	$48,146

* 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
2012	$14.6	116.2	4	$125,860

* 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. However, foreign investors have not participated in any RTC trades since calendar year 2008.

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 2012 is illustrated in Figures 2-14 and 2-15. Figure 2-14 is based on total value of discrete NOx and SOx RTCs traded, and shows that investors were involved in 57% and 22%,

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 59% and 37% of the NOx and SOx trades by volume, respectively. Figures 2-16 and 2-17 provide similar data for both IYB NOx and SOx trades, and show that investors were involved in 68% of IYB NOx trades and 11% of IYB SOx trades on a reported value basis, and 64% of IYB NOx and 14% of IYB SOx trades on the basis of the number of pounds traded with price. As of the end of calendar year 2012, investors' holding of IYB NOx RTCs increased slightly to 4.9% from 4.8% at the end of calendar year 2011. Mutual fund investors hold 3.2% of all IYB NOx RTCs. Investors increased their holding of IYB SOx RTCs to 0.7% at the end of calendar year 2012 from 0.5% at the end of calendar year 2011. No IYB SOx RTCs are currently held by mutual fund investors.

Figure 2-14
Calendar Year 2012 Investor-Involved Discrete NOx and SOx Trades Based on Value Traded

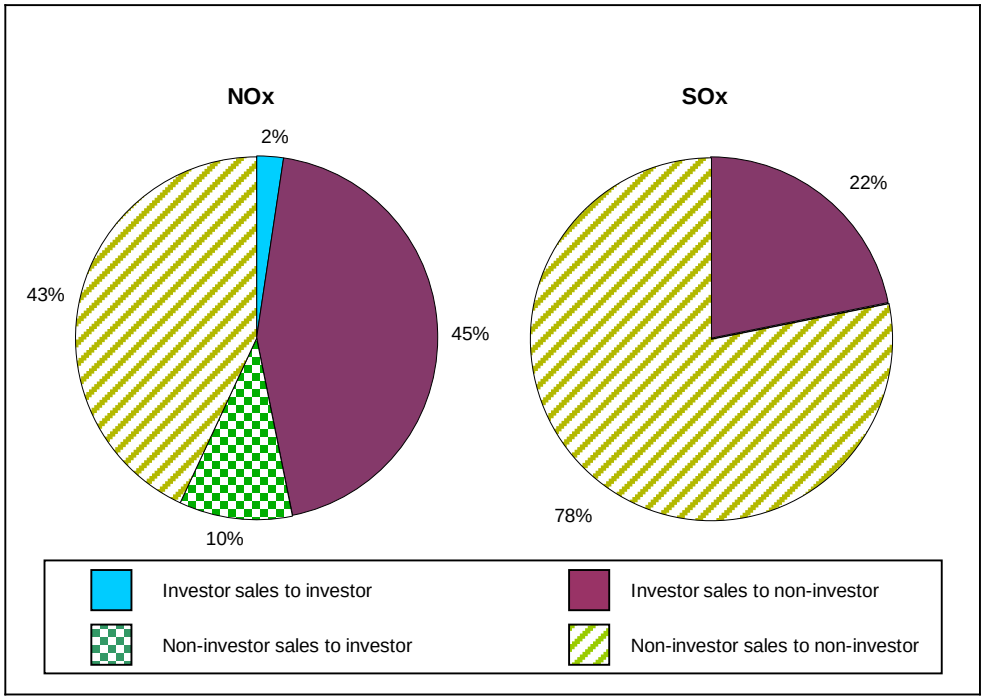


Figure 2-15
Calendar Year 2012 Investor-Involved Discrete NOx and SOx Trades Based on Volume Traded with Price

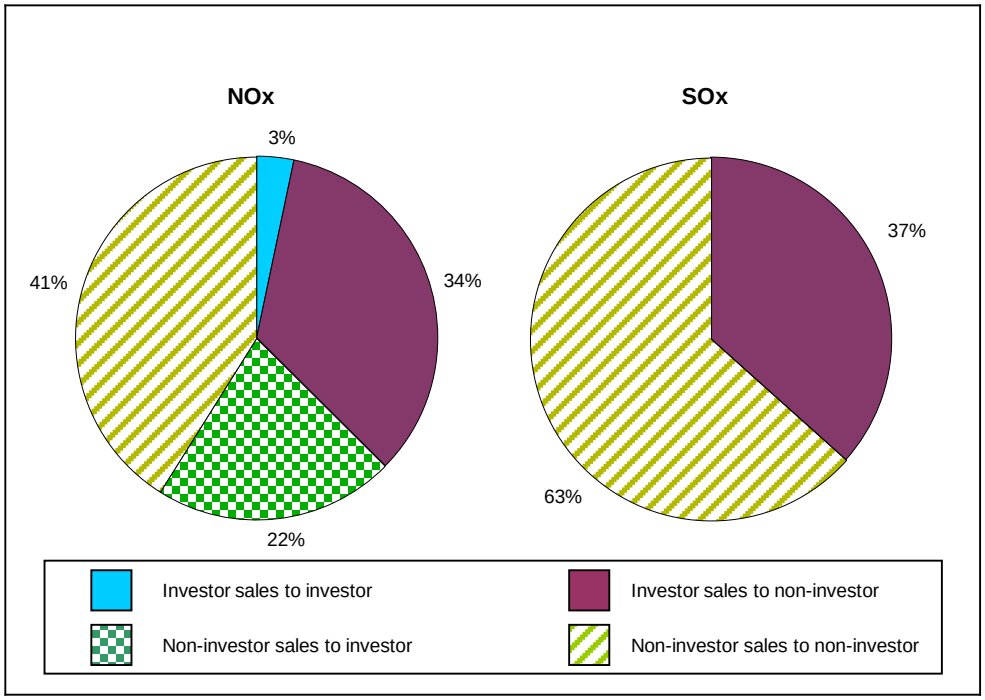


Figure 2-16
Calendar Year 2012 Investor-Involved IYB NOx and SOx Trades Based on Value Traded

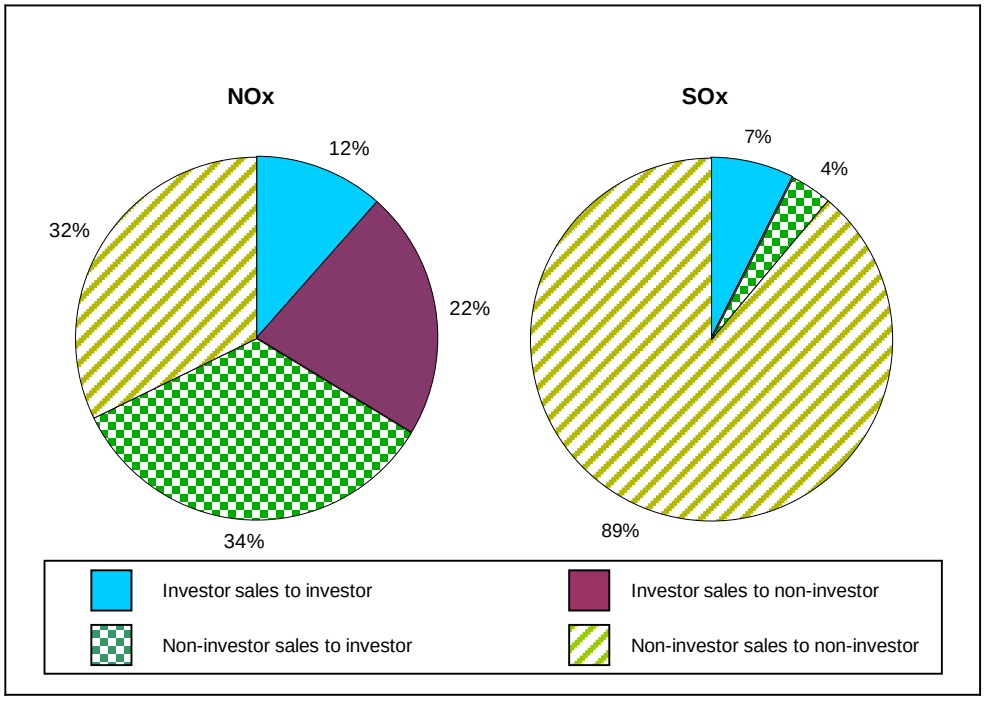
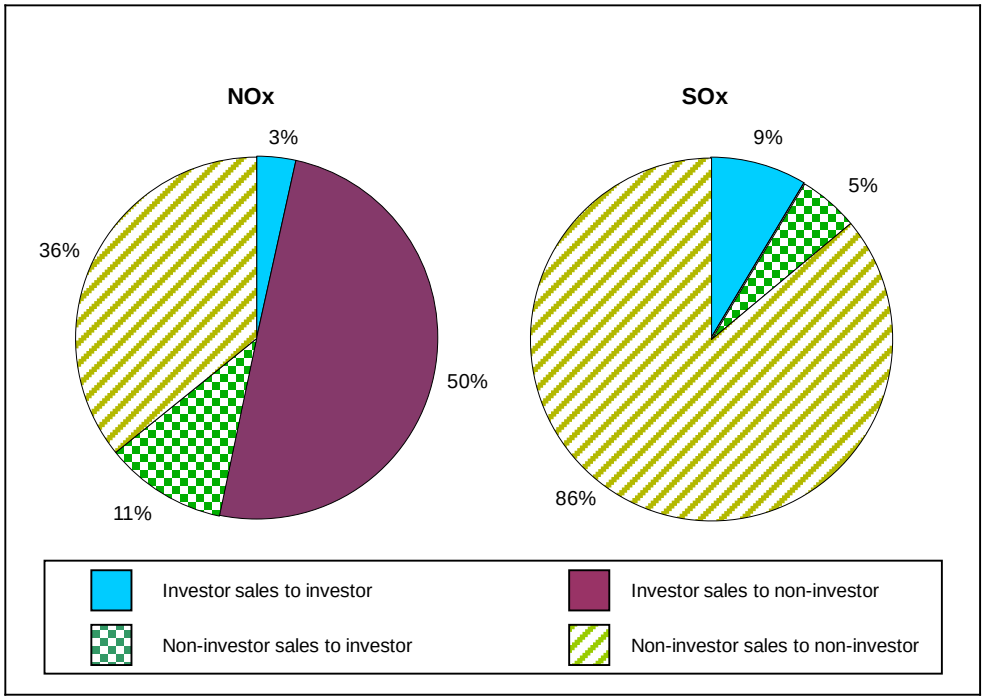


Figure 2-17
Calendar Year 2012 Investor-Involved IYB NOx and SOx Trades Based on Volume Traded with Price



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. The five RECLAIM facilities that shut down during Compliance Year 2011 (refer to Chapter 1) held a total of 25.3 tons of IYB NOx RTCs and 5.2 tons of IYB SOx RTCs. Of this amount, 21.6 tons of IYB NOx RTCs were sold to investors, 2.8 tons of IYB NOx RTCs were sold to non-investors, and the remaining 0.9 tons of IYB NOx RTCs have not yet been sold or transferred. All of the IYB SOx RTCs were sold to investors. Note that not all of these sales occurred in calendar year 2012, as facilities often decrease production in years prior to shutting down.

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 their allocations (failing to reconcile by securing sufficient RTCs to cover their emissions) if their reported emissions were increased as the result of any problems or errors discovered by SCAQMD during annual audits. For Compliance Year 2011, the total RECLAIM NOx emissions were 7,302 tons. However, Compliance Year 2011 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 896 tons (9% of allocation)[3], which is less than the traditional 10% compliance margin. Therefore, the current aggregate investors' holdings of 4.9% of NOx RTCs valid for Compliance Year 2012 and beyond (more than half the total surplus IYB RTCs in this scenario) 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 (4.9% 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 future years. 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 did not increase substantially during calendar year 2012, 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 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, SCAQMD 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. Staff anticipates that there are two primary mechanisms that will drive the implementation of these control technologies: implementation of BACT when existing sources reach the end of their useful lives and are replaced and demand for RTCs approaching the supply driving up RTCs prices and incentivizing the installation of emission controls. The first of these mechanisms will occur gradually over time and the second is unlikely to be significant until economic conditions change resulting in increased production at RECLAIM facilities. 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

[3] Assuming emissions in 2012 stay at Compliance Year 2011 level, the NOx RTC surplus would be at 24.6% [(9,690 -7,302)/9,690].

emission reduction credits from sources outside of RECLAIM (*i.e.*, mobile and area sources) can also dampen sudden price increases. SCAQMD 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 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 SCAQMD within five business days of reaching an agreement. These reports are posted on the SCAQMD website. There was no reported trade involving the contingent right (option) to buy or sell RTCs in calendar year 2012.

As in prior years, RTCs were used in other programs during calendar year 2012. A total of 97.3 tons of NOx RTCs and 11.2 tons of SOx RTCs (approximately one percent and one quarter percent of the year's RTC supply, respectively) 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 (96.9%) were used to mitigate impacts from construction projects, and the remaining surrendered NOx RTCs (3.1%) 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 2011, aggregate NOx emissions were below total allocations by 25% and aggregate SOx emissions were below total allocations by 36%. No emissions associated with breakdowns were excluded from reconciliation with facility allocations in Compliance Year 2011. 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 clearly achieved its targeted emission reductions for Compliance Year 2011.

As discussed in Chapter 2, the January 2005 amendments to Rule 2002 require a NOx RTC reduction ("shave") of 22.5%, phased-in over Compliance Years 2007 through 2011. The Rule 2002 amendments also included provisions extending the phase-in process over an additional year or years if the average cost of current year NOx RTCs exceeded $15,000 per ton along the way. However, the cost of current year NOx RTCs remained well below $15,000 per ton each year. Thus, Compliance Year 2011 marked the completion of the NOx shave, as adopted by the Board on January 7, 2005, without any need to extend the phase-in process.

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 changes to 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 resulted in cumulative NOx allocation reductions of 22.5% from all RECLAIM facilities in Compliance Year 2011, with the biggest single-year reduction of 11.7% in Compliance Year 2007. Similarly, the Board again amended Rule 2002 in November 2010 to implement changes in BARCT for SOx. Specifically, the November 2010 amendments call for reducing aggregate RECLAIM SOx emissions by 4,161,000 pounds per year (48%), with the reductions phased-in from Compliance Year 2013 through Compliance Year 2019. A little over half of the SOx reductions are scheduled to occur in Compliance Year 2013 (Cycle 1 facilities are currently in Compliance Year 2013 and it will commence for Cycle 2 facilities July 1, 2013). 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, SCAQMD 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.

SCAQMD staff adjusts the APEP-reported emissions based on audit results, as necessary. Whenever SCAQMD 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 SCAQMD's web page after the audits are completed.

This annual RECLAIM audit report reflects audited NOx and SOx emissions data for Compliance Year 2011. Staff is currently working with one remaining facility 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. Table 3-1 and Figure 3-1 show aggregate NOx emissions based on audited emission data for Compliance Years 1994 through 2011.

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 Compliance Year 2007, the first year of the programmatic reduction in RECLAIM NOx allocations which were adopted by the Governing Board as part of the January 2005 rule amendments, the unused NOx RTCs have been at least 20 percent of the aggregate allocations. 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. As shown in Table 3-1, Compliance Year 2011 NOx emissions increased slightly (3%) when compared to those in

Compliance Year 2010 and rose to approximately the same level as in 2009. This may be a reflection of the economy turnaround in the region.

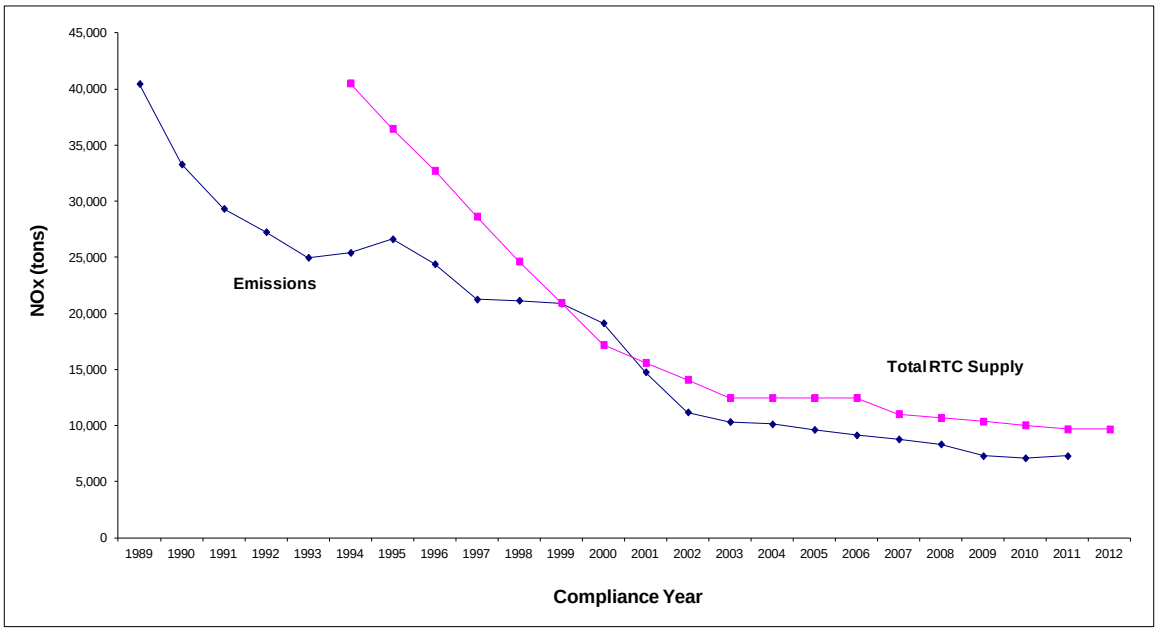
Table 3-1
Annual NOx Emissions for Compliance Years 1994 through 2011

Compliance Year	Audited Annual NOx Emissions[1] (tons)	Audited Annual NOx Emissions Change from 1994 (%)	Total NOx RTCs[2] (tons)	Unused NOx RTCs (tons)	Unused NOx RTCs (%)
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%
2011	7,302	-71%	9,690	2,388	25%

[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. 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 2011, SOx emissions were below total allocations by 36%. Similar to the unused NOx RTCs, the unused SOx RTCs for the last four compliance years, inclusive of Compliance Year 2011, 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 audited emission 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.

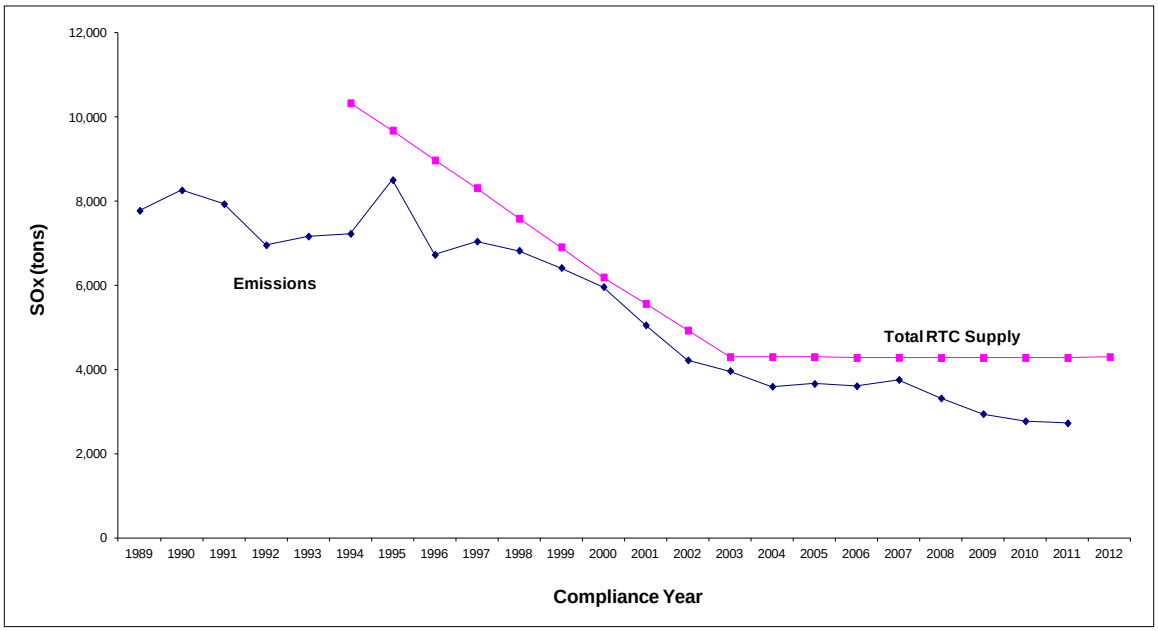
Table 3-2
Annual SOx Emissions for Compliance Years 1994 through 2011

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%
2011	2,727	-62%	4,283	1,556	36%

[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 - Requirements for Monitoring, Reporting, and Recordkeeping for Oxides of Sulfur (SOx) Emissions or 2012 - Requirements for Monitoring, Reporting, and Recordkeeping for Oxides of Nitrogen (NOx) Emissions, respectively. Rule 1315 - Federal New Source Review Tracking System was adopted during Compliance Year 2011 (February 4, 2011). It was developed to maintain SCAQMD's ability to issue permits to major sources that require offsets under federal NSR, but obtain offset credits from the SCAQMD's Priority Reserve under Rule 1309.1 and/or are exempt from offsets under SCAQMD Rule 1304 – Exemptions. The requirements of Rule 1315 apply to SCAQMD rather than to regulated facilities. Therefore, Rule 1315 is not subsumed by RECLAIM even though Rule 2001 identifies Regulation XIII – New Source Review (which includes Rule 1315) as subsumed by both NOx and SOx RECLAIM.

Another Regulation XIII rule, Rule 1325 - Federal PM2.5 New Source Review Program, was adopted on June, 3 2011 and incorporated U.S. EPA's NSR requirements for PM2.5 into Regulation XIII. This rule applies only to facilities located in the South Coast Air Basin when they experience either of the following events: 1) become a major source of PM2.5 (potential to emit PM2.5 or either of

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

its precursors (NOx or SOx)[2] reaches 100 tons or more per year) or 2) a major source of PM2.5 has a major modification (its potential to emit PM2.5 increases by 10 or more tons per year or its potential to emit NOx or SOx increases by 40 tons or more per year). Since Regulation XIII is identified under Rule 2001 as one of the subsumed rules, Rule 1325 does not apply to NOx at NOx RECLAIM facilities or to SOx at SOx RECLAIM facilities; the requirements regarding PM2.5 apply equally to both RECLAIM and non-RECLAIM facilities. Note, however, that RECLAIM facilities with any increase in potential to emit are subject to Rule 2005 – New Source Review for RECLAIM (that is, the corresponding RECLAIM applicability has a much lower emission increase threshold of one pound per day of emission).

Other rules amended during Compliance Year 2011 but not subsumed by RECLAIM included Regulation IX – Standards of Performance for New Stationary Sources (amended twice in Compliance Year 2011), Rule 1470 - Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines, Rule 1147 – NOx Reductions from Miscellaneous Sources (but RECLAIM facilities are exempt), and Rule 218.1 – Continuous Emission Monitoring Performance Specifications.

The March 2012 Annual RECLAIM Audit Report for 2010 Compliance Year presented details of amendments made on March 4, 2011,to Regulation IX. On April 6, 2012, additional amendments were made to Regulation IX to incorporate changes by referencing federal New Source Performance Standards (NSPSs) enacted by the U.S. EPA in 2011. However, because Regulation IX is not subsumed, its provisions apply equally to RECLAIM and non-RECLAIM facilities. Therefore, these amendments do not result in differential impacts on non-RECLAIM facilities compared with RECLAIM facilities.

Rule 1470 - Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines was amended on May 4, 2012 in response to the 2007 and 2011 amendments to the state Airborne Toxic Control Measure (ATCM) for Stationary Compression Ignition Engines. The amendments primarily impacted NOx and PM requirements for new stationary emergency standby diesel engines. The NOx emission limits were removed due to technical feasibility, and PM requirements were retained for sensitive receptors. Other categories of engines continue to have to comply with Rule 1401 risk assessment requirements and specified emission rates. Other amendments to Rule 1470 directly referenced the ATCM amendments. Again, because rule 1470 is not subsumed it applies equally to RECLAIM and non-RECLAIM facilities and there are no differential impacts between RECLAIM and non-RECLAIM facilities as a result of these amendments.

The September 9, 2011 amendment to Rule 1147 occurred in response to compliance challenges experienced by facilities impacted by the Rule, and delayed the NOx emission limit compliance dates for equipment subject to Rule 1147. The rule amendment also limited the requirements for fuel and time meters and reduced the compliance cost due to emissions testing and clarified existing requirements. Though Rule 1147 will result in delayed emissions

[2] The 100 ton per year threshold is not cumulative; that is, a facility becomes a major source of PM2.5 when its potential to emit reaches 100 tons of PM2.5 *or* NOx *or* SOx individually per year, not 100 tons of PM10 *and* NOx *and* SOx combined per year.

reductions from equipment subject to the rule, it would achieve the same reductions as the previous version of the rule by 2014. Even though Rule 1147 is not subsumed under RECLAIM, Rule 1147(g)(1)(B) explicitly exempts the provisions of the rule from applying to equipment under RECLAIM. Since this rule amendments does not impact RECLAIM emission reduction and delays non-RECLAIM emission reductions to 2014 without changing the non-RECLAIM emission reductions that will be realized after the 2014 implementation date, the amendment delays non-RECLAIM emission reductions relative to RECLAIM emission reductions in the short term but has no impact beyond 2014.

Finally, the May 4, 2012 amendment to Rule 218.1 – Continuous Emission Monitoring Performance Specifications, aligned the calibration requirements for CEMS on non-operating days with the provisions of Regulation XX – Regional Clean Air Incentive Market (RECLAIM) and also corrected a typographical error. Rule 218.1 prescribes the performance specifications for certification of CEMS under Rule 218. However, although Rule 218(b)(1)(a) specifically exempts CEMS monitoring required under RECLAIM, the amendments mirror existing RECLAIM requirements so the effect of the amendments is to eliminate a previously existing discrepancy in the CEMS calibration requirements applicable to non-RECLAIM compared to RECLAIM facilities.

Regulation IX and Rule 1470 apply equally to equipment at facilities under both command-and-control rules and RECLAIM. The amendments to Rule 1147 and Rule 218.1 do not impact NOx and SOx sources at RECLAIM facilities.

Program Amendments

During Compliance Year 2011, one new amendment to Regulation XX was adopted by SCAQMD's Governing Board: Rule 2005 – New Source Review for RECLAIM on June 3, 2011. This amendment was in response to SCAQMD Governing Board Chairman Burke's original "Helping Hand Initiative for 2009" at the January 9, 2009 Board Meeting and revised 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.

As discussed in Chapter 2, on December 7, 2012 SCAQMD Governing Board adopted the 2012 AQMP that included Control Measure CMB-01 – Further NOx Reductions from RECLAIM which proposes to reduce NOx emissions by 3 to 5 tons per day by 2020.

On November 5, 2010, the Governing Board adopted amendments to Rule 2002 that will result in an overall reduction of 5.7 tons of SOx per day when fully implemented in 2019 in an effort to attain the federal 24-hour average PM2.5 standard by 2020. One the requirements of this amended rule is that by July 1, 2012, SOx emissions at the exhaust of a Fluidized Catalytic Cracking Unit, as measured at the final stack venting gases originating from the facility's FCC Regenerator, including after the CO Boiler or any additional controls in the system following the regenerator, are to meet a concentration limit of 25 ppmv dry at 0% oxygen on a 365-day rolling average. In order to demonstrate compliance with this limit, the operator of a FCCU is required to use SOx reducing additives in the FCCU by July 1, 2011. However, the use of SOx reducing additives was not required for those operators that had an existing wet gas scrubber in operation at BARCT levels prior to November 5, 2010 or who

could have demonstrated to the Executive Officer that the FCCU would achieve this limit by using other control methods.

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 SCAQMD 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 SCAQMD to determine whether excess emissions approved to be excluded from RTC reconciliation 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 2011 found that no facilities requested to exclude breakdown emissions from being counted against their allocations. Thus, for Compliance Year 2011, no additional offsets are required pursuant to Rule 2015(d)(3).

Table 3-3
Breakdown Emission Comparison for Compliance Year 2011

Emittant	Unmitigated Breakdown Emissions[1] (tons)	Compliance Year 2011 Unused RTCs[2] (tons)
NOx	0	2,388
SOx	0	1,556

[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, no facilities were included into or excluded from the NOx or SOx universes and five facilities shut down in Compliance Year 2011. Changes to the universe of RECLAIM facilities have the potential to impact emissions and the supply and demand on RTCs, and therefore, may impact RECLAIM emission reduction goals.

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 SCAQMD 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 pursuant to the methodology prescribed under Rule 2002. 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, 2011 and June 30, 2012 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 be 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. There were no facilities that elected to opt-in between July 1, 2011 and June 30, 2012. 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 SCAQMD 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.

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 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. Between July 1, 2011 and June 30, 2012 there were no facilities included into the RECLAIM universe 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, five RECLAIM facilities

(one of which was a NOx and SOx facility, and the other four which were NOx facilities) shut down permanently between July 1, 2011 and June 30, 2012.

A facility is excluded from the RECLAIM universe if SCAQMD 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, 2011 and June 30, 2012.

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[3], 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 2011 NOx and SOx audited emissions and initial allocations for facilities that were shutdown, excluded, or included into the program during Compliance Year 2011 are summarized in Tables 3-4 and 3-5.

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

Category	Compliance Year 2011 NOx Emissions (tons)	Compliance Year 2011 NOx Initial Allocations (tons)
Shutdown Facilities	7.7	23.3
Excluded Facilities	Not applicable	Not applicable
Included Facilities	Not applicable	Not applicable
RECLAIM Universe	7,302	9,690

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

Category	Compliance Year 2011 SOx Emissions (tons)	Compliance Year 2011 SOx Initial Allocations (tons)
Shutdown Facilities	0.0	5.2
Excluded Facilities	Not applicable	Not applicable
Included Facilities	Not applicable	Not applicable
RECLAIM Universe	2,727	4,283

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

Backstop Provisions

Rule 2015 requires that SCAQMD 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 2011 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 2011 were below $15,000 per ton, as shown in Chapter 2. Therefore, there is no need to initiate a program review.

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 2011, a total of 24 NOx RECLAIM facilities had NSR NOx emission increases, and five 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, modification, and modernization by existing facilities.

RECLAIM is required to comply with federal NSR emissions offset requirements at a 1.2-to-1 offset ratio programmatically for NOx emission increases and a 1-to-1 offset ratio for SOx emission increases on a programmatic basis. In Compliance Year 2011, RECLAIM provided an offset ratio based on the compliance year's total unused allocations and total NSR emission increases of 39-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 2011; 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

[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.

emit. However, if all major sources in the extreme non-attainment area are required to implement federal BACT, a 1.2-to-1 offset ratio may be used. Federal BACT is comparable to California's BARCT. SCAQMD 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 in hourly potential to emit 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 requires 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 2011 to verify that programmatic compliance of RECLAIM with federal and state NSR requirements has been maintained.

SCAQMD's Governing Board approved amendments to Rule 2005 – New Source Review for RECLAIM on June 3, 2011 which eliminated the requirement for an existing facility (defined as existing prior to October 1993) 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. Facilities that did not exist prior to October 1993 are still subject to the RTC hold requirement at the start of each year. Also, all RECLAIM facilities must

still hold adequate RTCs to reconcile their emissions during a compliance year pursuant to Rule 2004.

NSR Activity

Evaluation of NSR data for Compliance Year 2011 shows that RECLAIM facilities were able to expand and modify their operations while complying with NSR requirements. During Compliance Year 2011, a total of 24 RECLAIM facilities (15 in Cycle 1 and 9 in Cycle 2) were issued permits to operate, which resulted in a total of 62.06 tons per year of NOx emission increases from starting operations of new or modified sources, and five SOx RECLAIM facilities (four facilities in Cycle 1 and one facility in Cycle 2) experienced a total of 3.11 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. There were no emission increases from new facilities this year as no new facilities were included into RECLAIM (see Chapter 1) in Compliance Year 2011. As in previous years, there were adequate unused RTCs (NOx: 2,388 tons, SOx: 1,556 tons; see Chapter 3) in the RECLAIM universe for use to offset these emission increases at the appropriate offset rations.

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 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 issued to 24 RECLAIM facilities resulted in 62.06 tons of NOx emission increase pursuant to Rule 2005(d). Therefore, the Compliance Year 2011 NOx programmatic offset ratio calculated from this methodology is 39-to-1 as shown below:

$$\text{Offset Ratio} = \left(1 + \frac{2{,}388 \text{ tons}}{62.06 \text{ tons}}\right)\text{-to-1}$$

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

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 (1,556 tons) when compared to the total SOx emissions during Compliance Year 2011. 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 2011 shows that RECLAIM is in compliance with both state NNI and federal NSR requirements. SCAQMD 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 2011, one RECLAIM facility[2] was subject to this requirement. The facility submitted modeling analysis that showed that its NOx emissions complied with the most stringent ambient air quality standards set forth in Rule 2005, Appendix A.

[2] Under the requirements of Rule 2004(q), Mountainview Power Company (Facility ID 160437) was required to submit modeling analysis for its NOx emissions in Compliance Year 2011.

CHAPTER 5
COMPLIANCE

Summary

*Of the 281 NOx RECLAIM Facility Permit holders during Compliance Year 2011, 262 facilities (93%) complied with their NOx allocations, and all of the SOx facilities (100%) complied with their SOx allocations. The 19 NOx facilities that exceeded their NOx allocations had aggregate NOx emissions of 675 tons and did not have adequate allocations to offset 62.5 tons (or 9%) of their combined emissions. This exceedance amount is small compared to the overall allocations for Compliance Year 2011 (0.6% of NOx allocations). The exceedances from these 19 facilities did not impact RECLAIM emission reduction goals. Pursuant to Rule 2010(b)(1)(A), all 19 facilities had their respective exceedances deducted from their annual Allocations for the compliance year subsequent to SCAQMD's determination that the facilities exceeded their Compliance Year 2011 Allocations. The overall RECLAIM NOx and SOx emission reduction targets and goals were met for Compliance Year 2011 (*i.e.*, aggregate emissions for all 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, 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 subsumed under Rule 2001. 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 or at the time a facility is included in the RECLAIM program, each RECLAIM facility is issued an annual allocation for each compliance year pursuant to methodology prescribed under Rule 2002. For a facility in existence prior to October 1993, it is issued allocations by the SCAQMD based on its historical production rate. 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. Additionally, all facilities entering RECLAIM holding any ERCs generated at and held by the individual facility itself have those ERCs converted to RTCs and added to their allocated RTCs. 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.

Facilities may buy RTCs or sell excess RTCs at any time during the year in order to ensure that their emissions are covered. There is a thirty day reconciliation period commencing at the end of each of the first three quarters of each compliance year. In addition, after the end of each compliance year, there is a 60-day reconciliation period (instead of 30 days at the end of the first three quarters) during which facilities have a final opportunity to buy or sell RTCs for that compliance year. Each 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 at the end of each reconciliation period. 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 Quarterly Certification of Emissions Reports (QCERs) and/or APEP report, respectively.

Compliance Audit

Since the beginning of the program, SCAQMD 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 SCAQMD 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 omitting 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. This extensive and rigorous audit process ensures valid and reliable emissions data.

Compliance Status

During this compliance year, a total of 19 RECLAIM facilities failed to reconcile their NOx emissions and no facility exceeded its SOx Allocations. Of these 19 facilities, thirteen facilities failed to secure sufficient RTCs to cover their reported emissions during either the quarterly or annual reconciliation periods as confirmed through audits. In addition to failing to secure sufficient RTCs to cover their reported emissions, the audits for two of these thirteen facilities revealed additional reasons for exceedance related to rounding errors, using incorrect emission factors and omitting emissions from reportable sources.

The remaining six facilities exceeded their allocations as a result of corrections made to reported emissions through the facility audits. One facility exceeded its allocation because it failed to account for reportable emissions from equipment exempt from obtaining a written permit pursuant to Rule 219. Another facility exceeded its allocation because the facility used incorrect emission factors to calculate emissions from one process unit as well as from equipment exempt from obtaining a written permit pursuant to Rule 219. The third facility exceeded its allocation because it incorrectly determined fuel usage from equipment exempt from obtaining a written permit pursuant to Rule 219. The fourth facility exceeded its allocation because the facility failed to continuously monitor emissions from its major source bypass stack. As a result, MDP was used to calculate emissions based on the worst case assumption. The fifth facility exceeded its allocation because it used an incorrect higher heating value to determine major source emissions and failed to apply MDP for two types of incidences (for days beyond the Relative Accuracy Test Audit (RATA) due date when a RATA test report was submitted more than 60 days after the actual RATA test date and for days in which the daily electronic emissions report was not transmitted to SCAQMD). The sixth facility exceeded its allocation because it incorrectly determined MDP for a process unit whose fuel meter failed.

Overall, the Compliance Year 2011 allocation compliance rate is 93% (262 out of 281 facilities) for NOx RECLAIM facilities and 100% (34 out of 34 facilities) for SOx RECLAIM facilities. The 19 facilities that had NOx emissions in excess of their individual NOx allocations had 675 tons of NOx emissions and did not have adequate RTCs to cover 62.5 of those tons (or 9%). This amount is 0.6% of aggregate NOx allocations for Compliance Year 2011. Pursuant to Rule 2010(b)(1)(A), all 19 facilities had their respective exceedances deducted from their annual emissions Allocations for the compliance year *subsequent to SCAQMD's determination that the facilities exceeded their Compliance Year 2011 Allocations*.

As discussed in Chapter 3 of this report, one the requirements of the November 5, 2010 amendment to Rule 2002 is that by July 1, 2012, SOx emissions at the exhaust of a Fluidized Catalytic Cracking Unit, as measured at the final stack venting gases originating from the facility's FCC Regenerator, including after the CO Boiler or any additional controls in the system following the regenerator, are to meet a concentration limit of 25 ppmv dry at 0% oxygen on a 365-day rolling average. In order to demonstrate compliance with this limit, the operator of a FCCU is required to use SOx reducing additives in the FCCU by July 1, 2011.

However, the use of SOx reducing additives was not required for those operators that had an existing wet gas scrubber in operation at BARCT levels prior to November 5, 2010 or who could have demonstrated to the Executive Officer that the FCCU would achieve this limit by using other control methods. Based on refinery-provided data, all refineries' FCCUs complied with this SOx provision of Rule 2002 by the July 1, 2012 deadline.

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 four quarters or more 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, 94 NOx facilities and 19 SOx facilities used MDP in reporting portions of their annual emissions during Compliance Year 2011. In terms of mass emissions, 6.2% of the total reported NOx emissions and 12.4% of the total reported SOx emissions in the APEP reports were calculated using MDP for Compliance Year 2011. 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).

[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 for which data is not available.

Table 5-1
MDP Impact on Annual Emissions

Year	Percent of Reported Emissions Using Substitute Data*	
	NOx	SOx
1995	23.0% (65/6,070)	40.0% (12/3,403)
2005	3.0% (88/359)	3.6% (15/161)
2006	2.5% (48/220)	0.0% (0/0)
2007	5.6% (78/489)	7.0% (14/262)
2008	7.6% (86/625)	7.5% (9/242)
2009	7.8% (103/554)	13.8% (15/403)
2010	7.0% (93/488)	6.1% (23/168)
2011	6.2% (94/435)	12.4% (19/328)

* 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 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, 94 facilities reported NOx emissions using MDP in Compliance Year 2011. Even though this number of facilities is higher than in 1995, the percentage of emissions reported using MDP during Compliance Year 2011 is much lower than it was in 1995 (6.2% compared to 23%). Additionally, in terms of quantity, NOx emissions in Compliance Year 2011 were 7% of those in Compliance Year 1995 (435 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 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 6% of NOx annual emissions were calculated using MDP in Compliance Year 2011. 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 6% 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 2011, a majority of NOx MDP emissions data (75%) as well as SOx MDP emissions data (98%) 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. Even though the number of major sources monitored by either CEMS or Alternative Continuous Emission Monitoring Systems (ACEMS) represent 20% and 62% of all permitted RECLAIM NOx and SOx sources, respectively, audited emissions for Compliance Year 2011 revealed that 79% of all RECLAIM NOx emissions and 97% of all RECLAIM SOx emissions were determined by CEMS or ACEMS.

ACEMS are alternatives to CEMS that 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 SCAQMD 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

SCAQMD 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 SCAQMD 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 2011 and 2012 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 2011

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
372	100	76	100	15	100	61	100	346	100	372	100	65	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 2012[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
336	100	84	100	14	100	42	100	341	100	336	100	53	100

1. All passing rates calculated from data submitted before January 13, 2013 and may exclude some data from the fourth quarter of calendar year 2012.
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. RATA reports for all total sulfur analyzers during calendar years 2011 and 2012 have indicated passing results.

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. SCAQMD, 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 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 SCAQMD 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 SCAQMD expedite the review process. About 99% of RATA results were submitted using EDR in calendar year 2011 and about 99% in calendar year 2012.

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. Alternately, 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 SCAQMD, and to help automate compliance tracking. Under RECLAIM, facilities report their emissions electronically on a per device basis to SCAQMD's Central Station computer as follows:

- Major sources must use a Remote Terminal Unit (RTU) to telecommunicate emission data to the SCAQMD 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 on a daily basis.
- 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, emissions from non-major sources may use the SCAQMD internet based application, Web Access To Electronic Reporting System (WATERS) 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 SCAQMD 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 SCAQMD 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.

Most recently, 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.

CHAPTER 6
REPORTED JOB IMPACTS

Summary

This chapter compiles data as reported by RECLAIM facilities in their Annual Permit Emissions Program (APEP) reports. The analysis focuses exclusively on job impacts at RECLAIM facilities and determination 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 prevailing economic climate), that impact the job market. These factors are not evaluated in this report.

According to the Compliance Year 2011 employment survey data gathered from APEP reports, RECLAIM facilities reported a net loss of 314 jobs, representing 0.31% of their total employment. All but one of the facilities that reported job losses cited factors other than RECLAIM as the reasons for these job losses. The only facility which reported to have shut down its operations cited RECLAIM as one of the contributing factors, attributing a loss of 120 jobs partly due to the cost of meeting air pollution requirements and other regulations. Five RECLAIM facilities were listed as shutdown during Compliance Year 2011. One of these facilities reported on their APEP report that the cost of complying with air quality and other governmental regulations was a contributing factor in their decision to close. The other four facilities did not report any job losses due to RECLAIM.

Background

The APEP reports submitted by RECLAIM facilities include survey forms that are used to evaluate the socioeconomic impacts of the program. Facilities were asked to indicate on the forms the number of jobs at the beginning of Compliance Year 2011 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, APEP reports ask facilities that shutdown during Compliance Year 2011 to provide the reasons for their closure. APEP reports also allow facilities to indicate whether the RECLAIM program led to the creation or elimination of jobs during Compliance Year 2011. 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 is essential in assessing the influence that the RECLAIM program has on these issues. The following discussion represents data obtained from APEP reports submitted to SCAQMD for Compliance Year 2011 and clarifying information collected by SCAQMD staff. SCAQMD staff is not able to verify the accuracy of the reported job impacts information.

Job Impacts

Table 6-1 summarizes job impact data gathered from Compliance Year 2011 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 6,362 job gains, while 128 facilities reported a total of 6,676 job losses. Net job gains were reported in one of the three categories: non-manufacturing (154), whereas net job losses were reported in the remaining two categories: manufacturing (376), and sales of products (92). Table 6-1 shows a total net loss of 314 jobs, which represents a net jobs decrease of 0.31% at RECLAIM facilities during Compliance Year 2011.

Table 6-1
Job Impacts at RECLAIM Facilities for Compliance Year 2011

Description	Manufacture	Sales of Products	Non-Manufacture	Total
Initial Jobs	40,607	993	60,130	101,730
Overall Job Gain	2,085	125	4,152	6,362
Overall Job Loss	2,461	217	3,998	6,676
Final Jobs	40,231	901	60,284	101,416
Net Job Change	-376	-92	154	-314
Percent (%) Job Change	-0.93%	-9.26%	0.26%	-0.31%
Facilities Reporting Job Gains	86	22	56	116
Facilities Reporting Job Losses	89	31	70	128

Data in Table 6-1 include five RECLAIM facilities that were reported to be shutdown or ceasing operations in Compliance Year 2011 as listed in Appendix C. One of the shutdown facilities was sold to an adjacent facility but none of the permitted equipment was retained by the buyer. In the case of the second facility, it shutdown when the property on which the facility was located came under foreclosure. The third facility relocated and consolidated operations outside the District, whereas the fourth facility declared bankruptcy. The last facility gave multiple reasons for its closure including high manufacturing costs, declining demand for products, consolidation of operations in other locations outside the South Coast Air Basin, and the cost of meeting governmental and air pollution regulations.

Only one facility reported job impacts (gains or losses) attributed to the RECLAIM program (refer to Appendix E). This facility was the last shutdown facility described above. It reported a loss of 120 jobs. Additionally, one facility reported a gain of one to three consulting jobs. However, it is not clear if additional jobs were created at the consulting firm or existing positions were more fully utilized. Furthermore, as explained below, the analysis in this report only considers job gains and losses at RECLAIM facilities. Therefore, these reported consulting jobs are not further addressed in this report and are not included in Table 6-1. 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 prevailing economic climate), 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. When compared to Compliance Year 2010, the Compliance Year 2011 NOx emissions increased slightly (2.6%) and 2011 SOx emissions continued in a downward trend, reducing by 1.7%. Quarterly calendar year 2011 NOx emissions fluctuated within two percent of the mean NOx emissions for the year. Quarterly calendar year 2011 SOx emissions fluctuated within six percent of the year's mean SOx emissions. There was no significant shift in seasonal emissions from the winter season to the summer season.

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. The Basin achieved the December 2000 target for ozone well before the deadline. In calendar year 2012, the per capita exposure to ozone (the length of time each person is exposed) 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. RECLAIM and non-RECLAIM facilities that emit toxic air contaminants are required to report those emissions to SCAQMD. Those toxics emissions reports are used to identify candidates for the Toxics Hot Spots program (AB2588), which in turn quantifies toxic risk from facilities in the program and identifies those that are required do public notice and/or reduce the risk. So far, there is no evidence that RECLAIM has caused or allowed higher toxic risk in areas adjacent to RECLAIM facilities.

Background

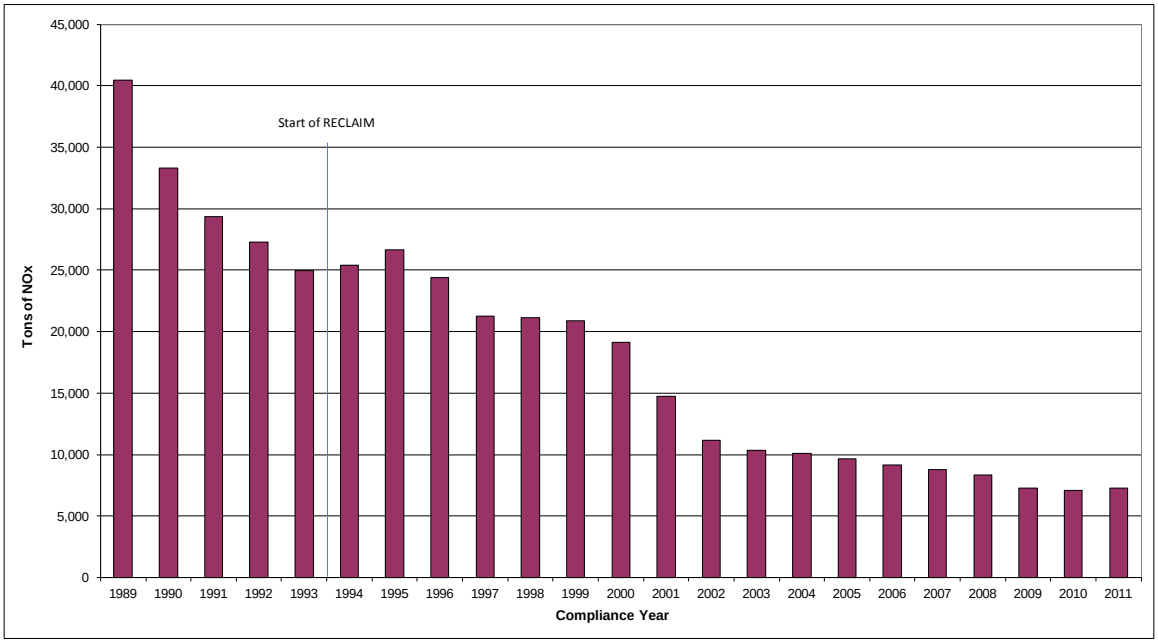
RECLAIM is designed to achieve the same, or higher level of, benefits in terms of air quality and public health as would have been achieved from implementation of the control measures and command-and-control rules that RECLAIM subsumed. Therefore, as a part of each annual program audit, SCAQMD evaluates per capita exposure to air pollution, toxic risk reductions, emission trends, and seasonal fluctuations in emissions. SCAQMD also generates quarterly emissions maps depicting the geographic distribution of RECLAIM emissions. As mentioned in last year's annual report, these maps are no longer part of this annual report but instead are posted quarterly on SCAQMD's webpage (http://www.aqmd.gov/reclaim/Qtrly_Maps.htm) including all quarterly emissions maps presented in previous annual audit reports. This chapter addresses:

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

Emission Trends for RECLAIM Sources

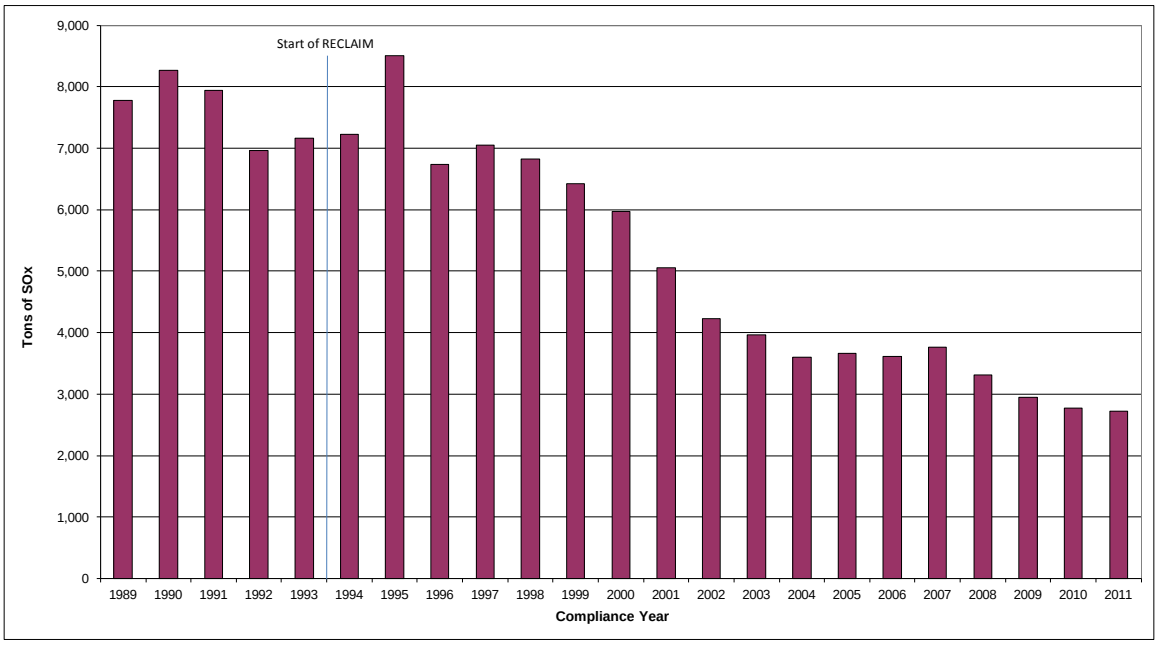
Concerns were expressed during program development that RECLAIM might cause sources to increase their aggregate emissions during the early years of the program due to perceived over-allocation of emissions. In Figures 7-1 and 7-2, which show NOx and SOx emissions from RECLAIM sources since 1989, the analysis of emissions from RECLAIM sources indicates that overall, RECLAIM emissions have been in a downward trend since program inception and the concerns on emission increase during early years of RECLAIM did not materialize.

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 decreased every year since Compliance Year 1995 through Compliance Year 2010. NOx emissions increased slightly in Compliance Year 2011 and returned to the level of Compliance Year 2009 but were still much lower than the programmatic goal as shown in Table 3-1. 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. SOx emissions continued to decrease in Compliance Year 2011.

The increase in NOx and SOx 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) while they were certifying their CEMS. However, many facilities had difficulties certifying their CEMS within this time frame, and consequently reported their Compliance Year 1995 emissions using MDP. 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. As a result, the application of MDP during this time period yielded substitute data that may have been much higher than the actual emissions. In addition, emissions after Compliance Year 1995 decreased steadily through 2000. Thus, 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 since RECLAIM emission goals are structured on an annual basis, thus exacerbating poor summer air quality. To address this concern, "seasonal fluctuations" were added as part of the required analysis. Accordingly, SCAQMD staff performed a two-part analysis of the quarterly variation in RECLAIM emissions:

1. In the first part, staff qualitatively compared the quarterly variation in Compliance Year 2011 RECLAIM emission to the quarterly variation in emissions from the same universe of sources prior to the implementation of RECLAIM
2. In the second part, staff analyzed quarterly audited emissions during calendar year 2011 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]

Quarterly emissions data from the universe of RECLAIM sources before they were in the program is not available. Therefore, a quantitative comparison of the seasonal variation of emissions from these sources while operating under RECLAIM with their seasonal emissions variation prior to RECLAIM is not feasible. However, a qualitative comparison has been conducted, as follows:

- NOx emissions from RECLAIM facilities are dominated by refineries and power plants.
- SOx emissions from RECLAIM facilities are especially dominated by refineries.
- Prior to RECLAIM refinery production was generally highest in the summer months because more people travel during summer, increasing demand for gasoline and other transportation fuels.
- Electricity generation prior to RECLAIM was generally highest in the summer months because of increased demand for electricity to drive air conditioning units.
- As a result, emissions from refineries (NOx and SOx) and from power plants (NOx) were highest in the summer months prior to implementation of RECLAIM.
- Thus, pre-RECLAIM emissions from the universe of RECLAIM sources were highest in the summer months because they were dominated by emissions from refineries and power plants.
- Therefore, provided a year's summer quarter RECLAIM emissions do not exceed that year's quarterly average emissions by a substantial amount, RECLAIM can be concluded not to have resulted in a shift of emissions to the summer months that year relative to the pre-RECLAIM emission pattern.

Summer (third) quarter 2011 RECLAIM NOx and SOx emissions exceed the 2011 quarterly average emissions by less than one percent and five percent, respectively. Based on the foregoing logic, it is clear that these small seasonal

[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.

fluctuations in RECLAIM emissions are consistent with pre-RECLAIM emissions from the same universe of sources. Therefore, RECLAIM did not cause a shift in emissions to the summer months relative to the pre-RECLAIM emissions patterns.

Figure 7-3 shows the 2011 mean quarterly NOx emissions, which is the average of the four quarterly aggregate emissions, versus the 2011 actual quarterly emissions and Figure 7-4 compares the 2011 quarterly NOx emissions with the quarterly emissions from 2002 through 2010. During calendar year 2011, aggregate quarterly NOx emissions varied from less than two percent below the mean in the first quarter (January through March) to about one percent above the mean in the fourth quarter (October through December). Furthermore, Figure 7-4 shows that the first, second, and third quarters of 2011 had lower aggregate RECLAIM NOx emissions than the corresponding quarter of any prior year since the program began in 1994. Additionally, the 2011 quarterly aggregate NOx emissions profile is relatively flat compared with profiles from recent years. 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 in recent years relative to early years of the program.

Figure 7-3
Calendar Year 2011 NOx Quarterly Emissions

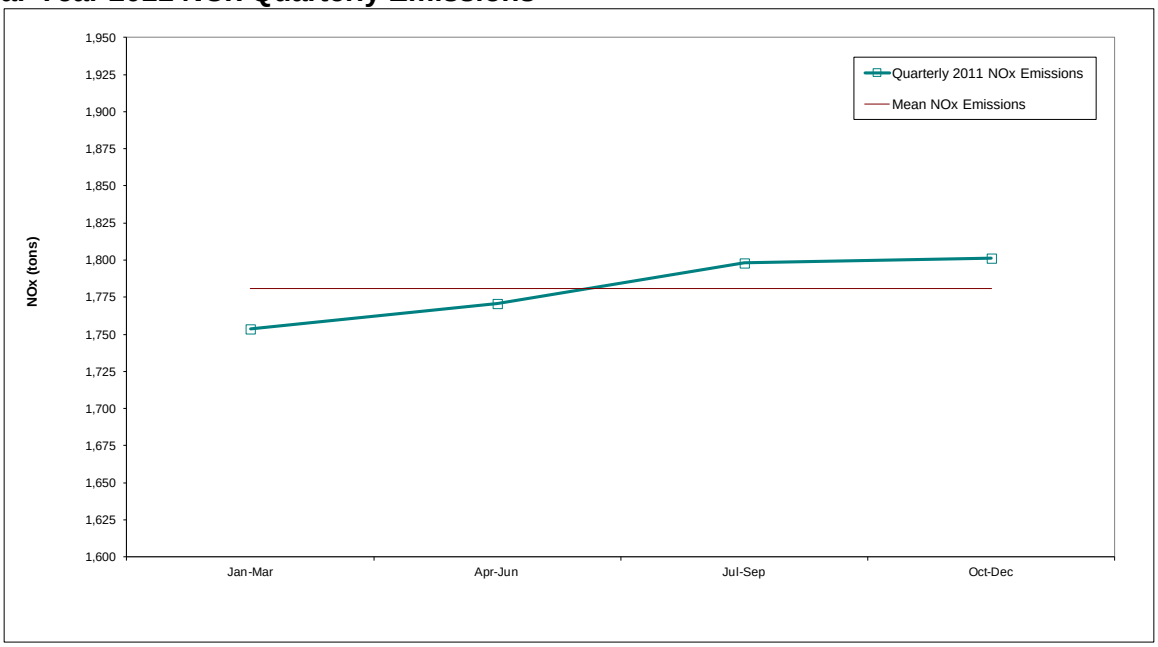


Figure 7-4
Quarterly NOx Emissions from Calendar Years 2002 through 2011

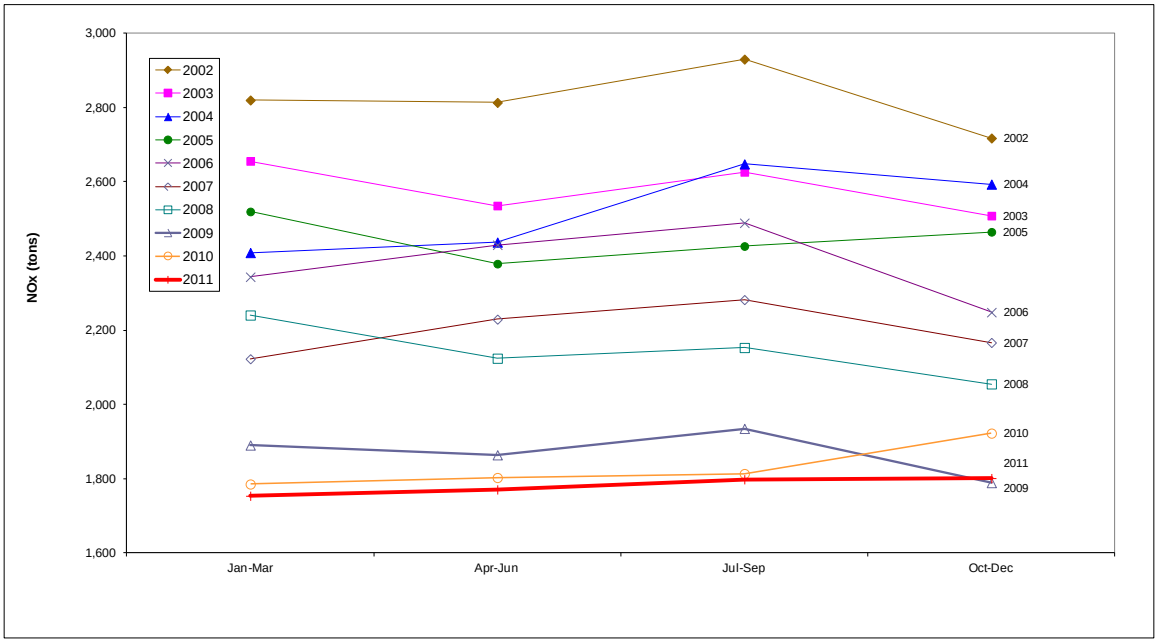


Figure 7-5 presents the 2011 mean quarterly SOx emissions versus the 2011 actual quarterly emissions and Figure 7-6 compares the 2011 quarterly SOx emissions with the quarterly emissions from 2002 through 2010. Figure 7-5 shows that quarterly SOx emissions during calendar year 2011 varied from four percent below the mean in the first quarter (January through March) to five percent above the mean in the third quarter (July through September). Figure 7-6 reveals that the 2011 quarterly aggregate SOx emissions profile was similar to those for previous years and that all four quarters of 2011 had lower aggregate emissions than the corresponding quarters of any prior year since the program began in 1994.

This analysis shows that the RECLAIM program has not caused a significant shift in SOx emissions from the winter season into the summer season in recent years relative to early years of the program and that the calendar year 2011 seasonal emissions profile was similar to the corresponding profiles for other recent years.

Figure 7-5
Calendar Year 2011 SOx Quarterly Emissions

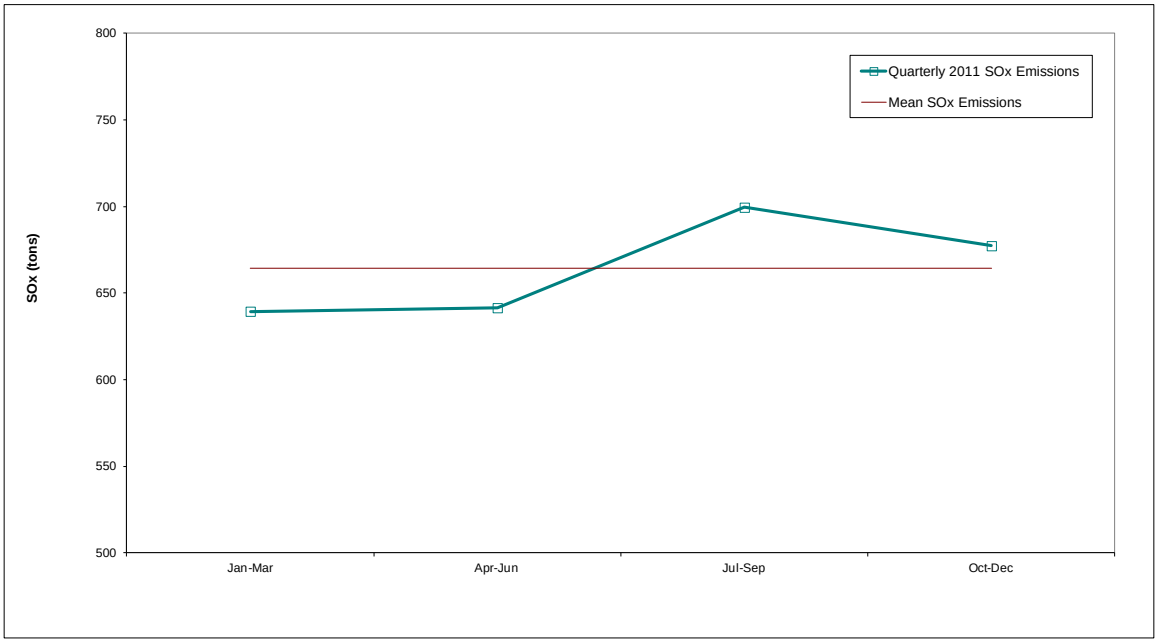
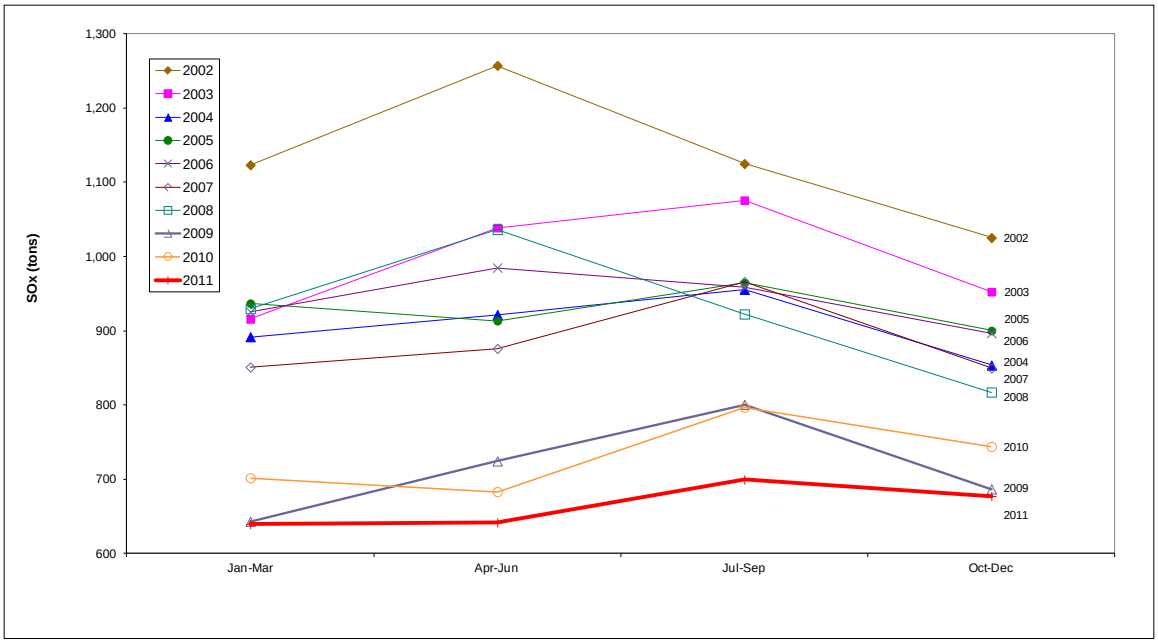


Figure 7-6
Quarterly SOx Emissions from Calendar Years 2002 through 2011



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 2012 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 the number of days that exceeded the state and federal ambient ozone standards increased from calendar year 2011 to 2012; however, the Basin's maximum ozone concentrations, based both on 1-hour and 8-hour averaging periods, decreased over the same period. The increase in the number of days exceeding the ambient ozone standards is due to the increase in the number of hot days in 2012 compared to 2011. As temperature increases, more ground-level ozone is produced thus creating more instances when the ozone concentration moves above the state and federal standards. The lower maximum concentrations are likely due to a combination of the inversion layer breaking in the afternoons of the hottest days in 2012 and reduced overall emissions in 2012 relative to 2011[2].

[2] 2012 basin-wide emissions data is not yet available to confirm this theory.

Table 7-1
Summary of Ozone Data

Year	Days exceeding state 1-hour standard (0.09 ppm)	Days exceeding state new 8-hour standard (0.07 ppm)	Days exceeding federal 8-hour standard (0.075 ppm)	Basin Maximum 1-hour ozone concentration (ppm)	Basin Maximum 8-hour ozone concentration (ppm)
2001	121	156	132	0.191	0.146
2002	118	149	135	0.169	0.148
2003	133	161	141	0.216	0.200
2004	110	161	126	0.163	0.148
2005	111	142	116	0.163	0.145
2006	102	121	114	0.175	0.142
2007	99	128	108	0.171	0.137
2008	98	136	121	0.176	0.131
2009	100	131	113	0.176	0.128
2010	83	128	109	0.143	0.123
2011	94	127	107	0.160	0.136
2012	103	143	117	0.148	0.113

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"[3]) 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 2012, the actual per capita exposure for the Basin was 2.366 hours, which represents a 97.1% reduction from the 1986-88 baseline level.

[3] SCAQMD 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 cells. 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
2012 actual	2.366	1.050	0.050	2.587	9.776
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.

One of the safeguards to ensure that the implementation of RECLAIM does not result in adverse air toxic health impacts is that RECLAIM sources are subject to the same air toxic statutes and regulations (*e.g.*, SCAQMD 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. Additionally, 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 metal emissions are also subject to the above-identified regulations pertaining to toxic emissions. Moreover, 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.

Under the Annual Emissions Reporting (AER) Program, facilities that have the potential to emit: 1) four tons per year or more of VOC, NO_X, SO_X, or PM, or 100 tons per year or more of CO; or 2) any one of 24 toxic air contaminants (TACs) and ozone depleting compounds (ODCs) emitted above specific thresholds (Rule 301 Table IV), are required to report their emissions annually to the SCAQMD. Beginning with the FY 2000-01 reporting cycle, toxics emission reporting for the AB2588 Program was incorporated into the SCAQMD's AER Program. The data collected in the AER program is used to determine which facilities will be required to take further actions under the AB2588 Hot Spots Program.

Facilities in the AB2588 Program are required to submit a comprehensive toxics inventory, which is then prioritized using Board-approved procedures (see SCAQMD website at http://www.aqmd.gov/prdas/AB2588/AB2588_B2.html) into one of three categories: low, intermediate, or high priority. Facilities ranked with low priority are exempt from future reporting. Facilities ranked with intermediate priority are classified as District tracking facilities, which are then required to submit a complete toxics inventory once every four years (or quadrennially). In addition to reporting their toxic emissions quadrennially, facilities designated as high priority are required to submit a health risk assessment (HRA) to determine their impacts to the surrounding community. To date, SCAQMD staff has reviewed and approved over 300 facility HRAs. About 96 percent of the facilities have cancer risks below 10 in a million and over 98 percent of the facilities have acute and chronic non-cancer hazard indices less than 1.

Facilities with cancer risks above 10 in a million or a non-cancer hazard index above 1 are required by AB2588 to conduct a public notice and SCAQMD holds a public meeting to discuss their health risk. Thus far, the SCAQMD has conducted 45 public notification meetings for the AB2588 Program.

The Board also established the following action risk levels in Rule 1402: cancer burden of 0.5, a cancer risk of 25 in a million, and a hazard index of 3.0. Facilities above the action risk levels must reduce their risks below the action risk levels within three years. To date 21 facilities were required to reduce risks and all of these facilities have reduced risks well below the action risk levels mandated by Rule 1402.

Lastly, the SCAQMD staff conducts Multiple Air Toxic Exposure Studies (MATES) periodically to assess cumulative air toxic impacts to the residents and workers of southern California. These studies also help document progress in reducing toxic impacts. The third version of MATES (*i.e.*, MATES III) was conducted over a two year period from April 2004 to March 2006. Monitoring

conducted at that time indicated resident and worker exposure to 1,3-butadiene, benzene, perchloroethylene, and methylene chloride was reduced by 50 percent or more since MATES II (conducted from April 1998 to March 1999) and exposure to formaldehyde and acetaldehyde was reduced by 9 percent. Exposure to toxic metals, such as arsenic, cadmium, lead, and nickel, was reduced by over 25 percent from the levels observed in MATES II. MATES IV is currently underway.

There have been concerns voiced regarding the potential that trading of RTCs can allow for higher production at a RECLAIM facility which may indirectly cause higher secondary emissions of toxic air contaminants, and thereby, make worse the health risk in the vicinity of the facility. If any facility significantly experiences such circumstances, the above described requirements related to toxic emissions under the AB2588 program and/or Rule 1402 would be triggered and the appropriate risk reduction measures would be required. Also, based on the results of recent MATES studies, cumulative air toxic impacts on residents and workers in Southern California have been declining. Therefore, staff has not found any evidence that would suggest that the substitution of NOx and SOx RECLAIM for the command-and-control rules and the measures RECLAIM subsumes caused a significant increase in public exposure to air toxic emissions relative to what would have happened if the RECLAIM program was not implemented. Staff 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 2011, June 30, 2012 is provided below.

Facility ID	Cycle	Facility Name	Program
800088	2	3M COMPANY	NOx
23752	2	AEROCRAFT HEAT TREATING CO INC	NOx
115394	1	AES ALAMITOS, LLC	NOx
115389	2	AES HUNTINGTON BEACH, LLC	NOx/SOx
42676	2	AES PLACERITA INC	NOx
115536	1	AES REDONDO BEACH, LLC	NOx
148236	2	AIR LIQUIDE LARGE INDUSTRIES U.S., LP	NOx/SOx
3417	1	AIR PROD & CHEM INC	NOx
101656	2	AIR PRODUCTS AND CHEMICALS, INC.	NOx
5998	1	ALL AMERICAN ASPHALT	NOx
114264	1	ALL AMERICAN ASPHALT	NOx
3704	2	ALL AMERICAN ASPHALT, UNIT NO.01	NOx
140499	2	AMERESCO HUNTINGTON BEACH, L.L.C.	NOx
800196	2	AMERICAN AIRLINES INC	NOx
145836	2	AMERICAN APPAREL DYEING & 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/SOx
117140	2	AOC, LLC	NOx
167066	1	ARLON GRAPHICS L.L.C.	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
800205	2	BANK OF AMERICA NT & SA, BREA CENTER	NOx
40034	1	BENTLEY PRINCE STREET INC	NOx
119907	1	BERRY PETROLEUM COMPANY	NOx
166073	1	BETA OFF SHORE	NOx

Facility ID	Cycle	Facility Name	Program
155474	2	BICENT (CALIFORNIA) MALBURG LLC	Nox
132068	1	BIMBO BAKERIES USA INC	NOx
149491	2	BOEING REALTY CORP	NOx
115241	1	BOEING SATELLITE SYSTEMS INC	NOx
800067	1	BOEING SATELLITE SYSTEMS INC	NOx
800343	2	BOEING SATELLITE SYSTEMS, INC	NOx
131003	2	BP WEST COAST PROD.LLC BP CARSON REF.	NOx/SOx
131249	1	BP WEST COAST PRODUCTS LLC,BP WILMINGTON	NOx/SOx
98159	2	BREITBURN ENERGY CORP	NOx
25638	2	BURBANK CITY, BURBANK WATER & POWER	NOx
128243	1	BURBANK CITY,BURBANK WATER & POWER,SCPPA	NOx
800344	1	CALIFORNIA AIR NATIONAL GUARD, MARCH AFB	NOx
22607	2	CALIFORNIA DAIRIES, INC	NOx
138568	1	CALIFORNIA DROP FORGE, INC	NOx
800181	2	CALIFORNIA PORTLAND CEMENT CO	NOx/SOx
46268	1	CALIFORNIA STEEL INDUSTRIES INC	NOx
107653	2	CALMAT CO	NOx
107654	2	CALMAT CO	NOx
107655	2	CALMAT CO	NOx
107656	2	CALMAT CO	NOx
119104	1	CALMAT CO	NOx/SOx
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/SOx
148925	1	CHERRY AEROSPACE	NOx
800030	2	CHEVRON PRODUCTS CO.	NOx/SOx
56940	1	CITY OF ANAHEIM/COMB TURBINE GEN STATION	NOx
129810	1	CITY OF RIVERSIDE PUBLIC UTILITIES DEPT	NOx
139796	1	CITY OF RIVERSIDE PUBLIC UTILITIES DEPT	NOx
164204	2	CITY OF RIVERSIDE, PUBLIC UTILITIES DEPT	NOx
16978	2	CLOUGHERTY PACKING LLC/HORMEL FOODS CORP	NOx
800210	2	CONEXANT SYSTEMS INC	NOx
38440	2	COOPER & BRAIN - BREA	NOx

Facility ID	Cycle	Facility Name	Program
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/SOx
167432	2	EDISON MISSION HUNTINGTON BEACH, LLC	NOx/SOx
133813	1	EI COLTON, LLC	NOx
115663	1	EL SEGUNDO POWER, LLC	NOx
800372	2	EQUILON ENTER. LLC, SHELL OIL PROD. US	NOx/SOx
124838	1	EXIDE TECHNOLOGIES	NOx/SOx
17344	1	EXXONMOBIL OIL CORP	NOx
25058	2	EXXONMOBIL OIL CORP	NOx
800089	1	EXXONMOBIL OIL CORPORATION	NOx/SOx
800094	1	EXXONMOBIL OIL CORPORATION	NOx
95212	1	FABRICA	NOx
11716	1	FONTANA PAPER MILLS INC	NOx
346	1	FRITO-LAY, INC.	NOx
2418	2	FRUIT GROWERS SUPPLY CO	NOx
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

Facility ID	Cycle	Facility Name	Program
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/SOx
129816	2	INLAND EMPIRE ENERGY CENTER, LLC	NOx
157363	2	INTERNATIONAL PAPER CO	NOx
22364	1	ITT CORPORATION	NOx
16338	1	KAISER ALUMINUM FABRICATED PRODUCTS, LLC	NOx
21887	2	KIMBERLY-CLARK WORLDWIDE INC.-FULT. MILL	NOx/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
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

Facility ID	Cycle	Facility Name	Program
800080	2	LUNDAY-THAGARD COMPANY	NOx/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
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/SOx
7427	1	OWENS-BROCKWAY GLASS CONTAINER INC	NOx/SOx
169754	1	OXY USA INC	NOx
151594	1	OXY USA, INC	NOx
151601	1	OXY USA, INC.	NOx
45746	2	PABCO BLDG PRODUCTS LLC,PABCO PAPER, DBA	NOx/SOx
17953	1	PACIFIC CLAY PRODUCTS INC	NOx
59618	1	PACIFIC CONTINENTAL TEXTILES, INC.	NOx
2946	1	PACIFIC FORGE INC	NOx
130211	2	PAPER-PAK INDUSTRIES	NOx
800183	1	PARAMOUNT PETR CORP	NOx/SOx
800168	1	PASADENA CITY, DWP	NOx
168088	1	PCCR USA	NOx
171107	2	PHILLIPS 66 CO/LA REFINERY WILMINGTON PL	NOx/SOx
171109	1	PHILLIPS 66 CO/LOS ANGELESREFINERY	NOx/SOx
133987	1	PLAINS EXPLORATION & PRODUCTION CO, LP	NOx

Facility ID	Cycle	Facility Name	Program
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/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
15544	2	REICHHOLD INC	NOx
52517	1	REXAM BEVERAGE CAN COMPANY	NOx
114801	1	RHODIA INC.	NOx/SOx
61722	2	RICOH ELECTRONICS INC	NOx
139010	2	RIPON COGENERATION LLC	NOx
800182	1	RIVERSIDE CEMENT CO	NOx/SOx
800113	2	ROHR, INC.	NOx
18455	2	ROYALTY CARPET MILLS INC	NOx
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

Facility ID	Cycle	Facility Name	Program
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
160437	1	SOUTHERN CALIFORNIA EDISON	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
2083	1	SUPERIOR INDUSTRIES INTERNATIONAL INC	NOx
3968	1	TABC, INC	NOx
18931	2	TAMCO	NOx
14944	1	TECHALLOY CO., INC.	NOx/SOx
151798	1	TESORO REFINING AND MARKETING CO	NOx/SOx
800436	1	TESORO REFINING AND MARKETING CO	NOx/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
11119	1	THE GAS CO./ SEMPRA ENERGY	NOx
153199	1	THE KROGER CO/RALPHS GROCERY CO	NOx
11435	2	THE PQ CORP	NOx/SOx
97081	1	THE TERMO COMPANY	NOx
800330	1	THUMS LONG BEACH	NOx
129497	1	THUMS LONG BEACH CO	NOx

Facility ID	Cycle	Facility Name	Program
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/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
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/SOx
42775	1	WEST NEWPORT OIL CO	NOx/SOx
17956	1	WESTERN METAL DECORATING CO	NOx
51620	1	WHEELABRATOR NORWALK ENERGY CO INC	NOx
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, no new facility was added to the RECLAIM universe between July 1, 2011 through June 30, 2012.

APPENDIX C
RECLAIM FACILITIES CEASING OPERATION OR EXCLUDED

SCAQMD 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 2011. The reasons for shutdowns and exclusions cited below are based on the information provided by the facility and other information available to SCAQMD staff.

Facility ID	12185
Facility Name	US Gypsum Co
City and County	South Gate, Los Angeles County
SIC	2631
Pollutants	NOx/SOx
1994 Allocation	19,594
Reason for Shutdown	Operations shutdown, property was sold to adjacent facility. None of the permitted equipment was retained by the buyer.

Facility ID	20543
Facility Name	REDCO II
City and County	North Hollywood, Los Angeles County
SIC	4212
Pollutants	NOx
1994 Allocation	6,764
Reason for Shutdown	Foreclosure of property on which facility was located.

Facility ID	23196
Facility Name	SUNKIST GROWERS, INC
City and County	Ontario, San Bernardino County
SIC	2033
Pollutants	NOx
1994 Allocation	17,781
Reason for Shutdown	Facility relocated to Tipton, CA as part of consolidation of operations.

Facility ID	106810
Facility Name	Interstate Brands Corp.
City and County	Pomona, Los Angeles County
SIC	2051
Pollutants	NOx
1994 Allocation	11,250
Reason for Shutdown	Company declared bankruptcy.

Facility ID	117785
Facility Name	BALL METAL BEVERAGE CONTAINER CORP.
City and County	Torrance, Los Angeles County
SIC	3411

Pollutants	NOx
1994 Allocation	36,602
Reason for Shutdown	High cost of manufacturing, declining demand for products, consolidation of operations at other locations outside the South Coast Air Basin, and the cost of meeting air pollution and other environmental regulations.

APPENDIX D
FACILITIES THAT EXCEEDED THEIR ANNUAL ALLOCATION FOR COMPLIANCE YEAR 2011

The following is a list of facilities that did not have enough RTCs to cover their NOx emissions in Compliance Year 2011 based on the results of audits conducted by SCAQMD staff.

Facility ID	Facility Name	Compliance Year
7411	DAVIS WIRE CORP	2011
11119	THE GAS CO/SEMPRA ENERGY PICO RIVERA	2011
15504	SCHLOSSER FORGE COMPANY	2011
16338	KAISER ALUMINUM FABRICATED PRODUCTS, LLC	2011
18931	TAMCO	2011
21598	ANGELICA TEXTILE SERVICES	2011
46268	CALIFORNIA STEEL INDUSTRIES INC	2011
47771	DELEO CLAY TILE CO INC	2011
51620	WHEELABRATOR NORWALK ENERGY CO INC	2011
83102	LIGHT METALS INC	2011
115130	VERTIS, INC	2011
132068	BIMBO BAKERIES USA INC	2011
133996	PLAINS EXPLORATION & PRODUCTION COMPANY	2011
142536	DRS SENSORS & TARGETING SYSTEMS, INC	2011
145836	AMERICAN APPAREL DYEING & FINISHING, INC	2011
153199	THE KROGER CO/RALPHS GROCERY CO	2011
153992	CANYON POWER PLANT	2011
166073	BETA OFFSHORE	2011
800182	RIVERSIDE CEMENT CO (EIS USE)	2011

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 2011 is summarized below:

Facilities with actual job gains or losses attributed to RECLAIM:

Facility ID	117785
Facility Name	BALL METAL BEVERAGE CONTAINER CORP.
City and County	Torrance, Los Angeles County
SIC	3411
Pollutant(s)	NOx
Cycle	1
Job Gain	0
Job Loss	120
Comments	The facility ceased operations in Compliance Year 2011 and listed high manufacturing costs, declining demand for products, consolidation of its operations in other locations outside the South Coast Air Basin, and the cost of meeting air pollution regulations and other governmental regulations as the reasons for shutting down. When contacted, the facility representative stated that the costs mentioned above were higher in the South Coast Air Basin when compared to other parts of the country. When asked about the specific impact of RECLAIM, he stated that during the annual RECLAIM audit, the facility had to dedicate one employee for 2 weeks to respond to inquiries from SCAQMD.